## PART I.

# Report of the Comptroller-General 

TO THB

General Assembly

For the Fiscal Year, 1907.

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## LETTER OF TRANSMITTAL.

Columbia, S. C.
To the Honorable General Assembly:
Herewith is submitted the Annual Report of the Pension Department of the State of South Carolina for the fiscal year 1907.
A. W. Jones,

Comptroller-General.

## PENSION LAWS.

## PENSIONS.

Chapter 22, Code of 1902, as amended in 1902:
Section 1065 . The sum of at least one hundred and fifty thousand dollars shall be annually appropriated to pay the pensions provided for by this Chapter, and in case the same, or such amount as shall be appropriated, shall be insufficient, then the amount so appropriated shall be distributed proportionately among those legally entitled to receive the same: Provided, That those pensioners described in Section 1066, as Class A, Class B, Class C, No. I, and Class C, No. 3, shall have been first paid in full: Provided, further, In case the same, or such amount as shall be appropriated, shall be more than sufficient, then the amount so appropriated shall be distributed proportionately among those legally entitled to receive the same.

Sec. 1066. The applicant must have been a resident of the State for fwo years prior to the time of the application.
In order to obtain the benefits of this Chapter, the applicant, qualified by residence, must also show :
(A) If a man:
rst. That he was a bona fide soldier or sailor in the service of the State or in the Confederate States in the War Between the States; and

2d. Either (a) that while in such service he lost a leg or arm, or sight, or received other bodily injury whereby he has become disabled, or that he is totally disabled by paralysis, and, further, that neither himself nor his wife has an income exceeding one hundred and fifty dollars per annum, nor property sufficient to produce such an income; or (b) that he has reached the age of sixty years, and that neither he nor his wife is receiving an annual income of seventyfive dollars from any source, nor possessed of property sufficient to produce such an income.
(B) If a woman:
ist. That she is the widow of a man who was a bona fide soldier or sailor in the service of the State or of the Confederate States in the War Between the States; and

2d. That she has never remarried, or, having remarried, is again a widow.


3d. That either (a) she is sixty years of age or (b) that her husband lost his life in the service of the State or of the Confederate States in the War Between the States; and

4th. That she has not an income of one hundred dollars per annum nor property sufficient to produce the same.

5th. The classification of all pensioners shall be as follows:
Class A-Those who, as a result of wounds received in said war, are physically helpless, or who, while in such service, lost both arms or both legs, or sight, or who are disabled by paralysis and are unable to make a living, whose income, or his wife's, does not exceed $\$ 150$ per annum.

Class B-Those who, while in such service, lost one arm or one leg, and whose income, or his wife's, does not exceed $\$ 150$ per annum.

Class C, No. I-Those soldiers and sailors disabled by wounds received during said war, whose income, or his wife's, does not exceed $\$ 150$ per annum.

Class C, No. 2-Those who have reached the age of sixty years, and whose income, or his wife's, does not exceed $\$ 75$ per annum.

Class C, No. 3-Widows of those who lost their lives while in such service of the State or of the Confederate States, and whose income does not exceed $\$ 100$ per annum.

Class C, No. 4-Widows above the age of sixty (60) years, whose income does not exceed $\$ 100$ per annum.

Sec. io66a. That on and after the passage of this Act all widows of soldiers and seamen in the service of the State or of the Confederate States, who were married to such soldiers or seamen at the close of the War Between the States, shall be entitled to pensions irrespective of the age of such widows:.Provided, That they are otherwise entitled to the same under existing laws.

Sec. 2. That all soldiers or seamen now entitled to pensions under existing laws, who have become totally blind, or who may hereafter become blind, shall be placed in Class A of pensions and paid accordingly.

Sec. 3. No bona fide soldier or seaman who served the State or the Confederate States in the late War Between the States, and is otherwise entitled to a pension under existing laws, shall be denied his pension on account of not having attained the age of sixty years.

Sec. 1067. The persons described in the preceding sections shall be entitled to a pension upon complying with the other provisions of
this chapter, and each pensioner of the several jlasses shall be paid the amounts hereinafter set forth, to wit:

Class A, eight dollars per month.
Class B, six dollars per month.
Class C, No. I, four dollars per month.
Class C, No. 2, three dollars per month.
Class C, No. 3, four dollars per month.
Class C, No. 4, three dollars per month.
Sec. 1068. Before any soldier or sailor shall receive any payment provided in this Act, he shall make an application, in writing, through the township representative, addressed to the County Pension Board, to be appointed as hereinafter directed for each county of the State, setting forth in detail the nature of the disabling wound, if any, the company and regiment or battalion in which he served, and the time and place of receiving the wound, and showing that neither he nor his wife is in receipt of the income as hereinafter specified, and showing, further, the time and place of residence within the State by the applicant. Such application shall be verified by the oath of the applicant, made before any officer in the State authorized to administer oaths, and shall be accompanied by the affidavit of one or more credible witnesses, stating that they knew the applicant was a soldier or sailor, or the wife of such, as the case may be, and believe the allegations made in the application to be true: Provided, That said application shall show that the applicant is not drawing a pension in any other State.

Sec. 1069. Such application shall be verified also by a certificate of the Auditor of the county in which the applicant resides, showing amount of tax return, and that his income does not exceed the amount stated, and that he is not possessed of sufficient property to produce such income; and it shall be the duty of the Auditor to furnish such certificates, if he shall so find the facts, without fee or charge.

Sec. ro70. In each county of the State the said application shall be submitted to a Board composed of four ex-Confederate soldiers or sailors (to be chosen as hereinafter provided), who shall not be holders of or applicants for a pension, and a regular practicing physician to be selected by them, which said five persons shall constitute
the County Pension Board. They shall meet on the third Monday in January of each year, and shall examine each applicant under rules and regulations prescribed by the State Board of Pensioners. After first being duly sworn fairly and impartially to discharge the duties of their office, and after said oaths are duly filed in the office of the Clerk of Court, the said County Pension Board shall proceed with the discharge of the duties imposed upon them, and shall certify their approval to the State Board of Pensions, giving in detail the reasons which influenced them to grant or oppose each application, accompanied by all the evidences upon which they made their decisions.

Sec. 1071. Four members of said Board shall constitute the quorum. A majority of the members of the Board present may determine any matter presented to them, subject, however, to a right of review of the State Board. As soon as such County Board completes its list as above, giving the names of the pensioners, their residences and amounts per month to which they are entitled, they shall certify the same to the State Board of Pensioners, to be reviewed by them. The compensation of the members of said Board shall be two dollars per day for each day's service, not exceeding, however, five days' service in any one year.

Sec. 1071a. That each County Pension Board of the respective counties in this State shall, at its first meei.ing in January, in each year, elect one of its members to the position of Pension Commissioner, whose duty it shall be to attend in the Auditor's office of his county every Saturday during the month of January in each year, for the purpose of meeting the pension applicants, and to arrange and fix up all pension papers in a condition to go before said Board, which said Board shall meet on the first Monday in February of each year, to pass upon said applications. Said Commissioner shall be, and is hereby authorized and required to administer oaths. When said applications have been approved by said Board, said Commissioner shall write up the lists of same. *Said Board shall meet again on the first Monday in [February] in each year, to sign said lists, and immediately forward same to the Comptroller-General. Said Fension Commissioner shall be allowed two dollars per

[^0]day as pay for his services, but shall not be paid for more than ten days' service in one year.

Sec. 1072. The State Board of Pensioners shall thereupon pass upon the names contained in said lists, and shall certify to the Clerks of Courts of the various counties the lists of the names and amounts approved by them, and said Clerks of Courts shall record the same in a book, and said roll so made up shall be designated "Approved Pension Rolls for 19-," and such persons shall constitute the pensioners entitled to receive the aid herein provided for the current year.

Sec. 1073. Every application approved by the County Board, with all papers upon which they act, shall be filed in the ComptrollerGeneral's office by the first day of February of each year, to be by him submitted to the State Board of Pensions for their review. In the examination of the application of each person for a pension, the said Board shall inquire particularly into all the facts set forth in the application, and shall have the right to examine such witnesses and to take such evidence as to determine the right of such applicant to pension; and for the purpose of this chapter the Chairman of each County Pension Board shall have the right to administer oaths. In making their report to the State Board of Pensions, they shall set forth, in concise and plain language, giving in detail (and separately) their findings upon each material allegation contained in the application.

Sec. 1074. Each of the said County Boards shall keep a book in which they shall make a list of the applicants for pensions, setting forth the approval and disapproval, which book shall be filed in the office of the Clerk of Court of Common Pleas for each county; and the Clerk shall from said book certify to the Comptroller-General, on or before the first of February of each year, the number of pensioners who are still alive and entitled to the pension.

Sec. 1075. The State Board of Pensions shall have the authority, and it shall be their duty, to revise the list of pension claims allowed by each County Board, and to confirm or reject any pension claim allowed by such Board, as they may deem proper and right upon the facts presented by the said Board, or upon such additional facts connected therewith as they may procure; but shall have no right in
any case to grant a pension unless the same has been regularly approved by the County Board of Pensions.

Sec. ro76. The County Board of Pensions shall be constituted as follows: On the first Saturday in August of each year the surviving soldiers and sailors of the State or the Confederate States in the late War Between the States, in each township, shall meet at a time and place therein designated by the Chairman of the County Board, by two weeks' public notice, and having organized by electing a Chairman and Secretary, shall elect by ballot an ex-Confederate soldier or sailor, not a holder of nor an applicant for a pension, as the representative of the veterans of said township.

The representatives so elected shall meet at the County Courthouse on the first Monday of September following, and, having organized by electing a presiding officer and Secretary, shall elect from their own number four, who, having selected a competent physician and elected one of themselves as Chairman, shall constitute, together with such physician, the County Pension Board for one year, or until their successors are elected and qualified. In those townships where the veterans failed to select a representative as herein provided, the Chairman of the County Pension Board shall appoint some person otherwise qualified as representative until such election shall be had; and in those counties where the survivors failed to organize a County Board as herein provided, the State Board of Pensions may appoint four ex-Conícderate soldiers or sailors otherwise qualified to organize and constitute said County Board.

Sec. 1077. In case there shall be in any township no person qualified to act as representative, then the veterans may elect, or in case of their failure so to do, the Chairman of the County Pension Board may appoint, some properly qualified veteran residing elsewhere in said county.

Scc. ro78. The Comptroller-General shall be Chairman of the State Board of Pensions, and he, with three ex-Confederate soldiers, not holders of nor applicants for pensions, to be selected by the United Confederate Veterans' Association at their annual meetings, together with a competent plysician to be selected by them, shall constitute the said State Board of Pensions. That the Comptroller-General shall appoint a suitable person to serve as Clerk of State Board of Pensions; said Clerk to receive a salary of six hundred dollars per
annum for his services. In case of failure to select by the said Veterans' Association, the three members, properly qualified, shall be appointed by the Governor. The term of office of the elected members of said Board shall be for one year, and until their successors are elected or appointed and have qualified.

Sec. 1079. The compensation of the members of the County Pension Boards shall be two dollars per day, not to exceed five days, and the compensation of the State Board shall be four dollars per day, not to exceed five days, and the latter shall be allowed mileage at the rate of five cents per mile.

Sec. 1080. In counties where the survivors fail or refuse to comply with the provisions hereof, the State Board shall make such regulations for the distribution of the fund for such counties as they deem best.

Sec. 108r. It shall be the duty of the Comptroller-General to issue on the first Monday in April of each year, to the party entitled to receive a pension hereunder, his warrant for such sum as may be herein prescribed, so long as such name shall remain on the pension roll as above prescribed, or until informed of the death or removal from the State of such pensioner: Provided, That the Comptroller-General shall forward the amount due the pensioners of each county to the Clerk of Court of the several counties of the State, to be paid out by said Clerk of Court without additional compensation.

Sec. 1082. It shall be the duty of the Comptroller-General to prepare and cause to be printed forms in blank on which such applications, certificates and affidavits may be conveniently made, and he shall cause the same to be distributed in the several counties of the State in such number and such manner as in his judgment may be necessary.

Sec. 1083. Whenever the name of any person who has been declared entitled to receive a pension under the laws of this State shall have been omitted, by any accident, from the proper lists, it shall be the duty of the State Board of Pensions to allow, and the duty of the Comptroller-General to issue his warrant for, the amount of the pension to which such person would have been entitled; said amount to be paid out of the next regular appropriation for pensions, after the
fact of such accident or mistake shall have been determined by said State Board of Pensions, and said amounts shall be paid out of said appropriation before the same shall be apportioned among the persons entitled thereto.

Sec. 1083a. That from and after the approval of this Act (February 20, 1902), the County Board of Commissioners of the various counties of this State shall have the right, in their discretion, to extend county aid to indigent Confederate soldiers in their respective counties, at the home of such soldiers or at the home of some relative or friend: Provided, That it shall be established to the satisfaction of said Board that such soldier is deserving of aid and is physically unable to earn a support and that he does not obtain a sufficient pension from the State to support him.

Sec. 2. That no ex-Confederate soldier shall be disfranchised by reason of his having received, or receiving such aid as aforesaid.

Sec. 1084. That after the approval of this Act, any person to whom a pension should be paid under the laws of this State shall die before receiving the same in any year, the amount shall be paid to the Clerk of Court of the county where claimant resided, and by him paid out in defraying the expenses of the last illness, or a monument, or both of such claims, upon like proof as required in case of executors, and any balance to the widow, children, person with whom the deceased resided at the time of his or her death, or in the order named, without charge or commission: Provided, That nothing herein contained shall be construed to extend the right to a pension beyond the year in which pensioners shall die.

Sec. 1085. Any person drawing a pension shall be competent as a witness in behalf of an applicant and competent to make the proof herein required by affidavit.

## RULES.

## For the Guidance of County Pension Commissioners and Pension Boards as Authorized by the Code

 and Acts of 1902.$$
\text { Columbia, S. C., November 7, } 1907 .
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ist. The County Boards will meet and organize at once by electing one of their number County Pension Commissioner.

The Pension Commissioner of each county will attend in the County Auditor's office on each Saturday in January, 1908. This Commissioner is charged with the duty of preparing all pension papers in a condition to go before the County Board (which County Board meets on the first Monday in February). The Pension Commissioner is cautioned to use in each instance the proper blank for the applicant.

Immediately after the adjournment of the County Board (the first Monday in March, 1908) the Pension Commissioners will proceed to prepare the list as follows: Use the Pension Report for pensioners of 1901, 1902, 1903, 1904, 1905, 1906 and 1907, marking off those dead, removed from the State, transferred to another county, or dropped, giving reason. Then make a list of the approved pensioners for 1908 . The County Board can sign report, after making corrections therein.

If it is proposed to raise any pensioner from the class in which his name is enrolled, it will be necessary to prepare a new application, setting forth the facts, and if approved by the County Pension Board, send the same to the State Pension Board. In no instance must he send an application for a person who is already on the roll, except where it is proposed to raise said applicant to a higher class, and then the application must so state.

## TRANSFERS.

A suitable blank will be furnished him, on which he can certify to other Commissioners and County Boards that the party desiring to go to another county is regularly on the pension list in his county. We do not want approved applications to come here from any county where the applicant is an approved pensioner in some other county.

## COUNTY PENSION BOARDS.

The County Pension Boards elected this year under the pension law shall meet during this year, and elect one of their number County Pension Commissioner, who shall perform the duties prescribed in the Act approved February 25, 1902.

The County Pension Boards are instructed instead of meeting in January, 1908, to meet the ist Monday in February, 1908, and pass on all the applications prepared and submitted to them by the Pension Commissioner, approving or disapproving the same. They will meet again the first Monday in March, 1908, at which time they will examine and verify the lists submitted to them by the Pension Commissioner, and sign and immediately forward the same to the Comptroller-General. They are instructed to give due notice of the manner in which applications must be made under the law, as the State Pension Board will not consider applications for pensions except where they come in the regular way and time prescribed by law.

Do not send to this office disapproved applications for pension.
By Act approved 24th day of February, 1906 (see Sec. 1085), a pensioner is allowed to certify as a witness.

Class A-Those who as a result of wounds received in the war are physically helpless, or who while in such service lost both arms, or both legs, or are totally blind, whether the result of service or not, or who are disabled by paralysis and are unable to make a living, and whose income or his wife's does not exceed $\$ 150$. This does not include soldiers whose disabilities arise from diseases and causes arising since the war, except those totally blind.

Class B-Those who have lost one arm or one leg and whose income or his wife's does not exceed $\$ 150$.

Class C, No. I-Those soldiers and sailors disabled by wounds received during the war, whose income or his wife's does not exceed $\$ 75$.

Class C, No. 2-Those soldiers whose income does not exceed \$75, irrespective of age.

Class C, No. 3-Widows of those who lost their lives while in the service of the State or Confederate States, and whose income does not exceed $\$ 100$. Where a widow of a Confederate soldier marries after the death of her second husband, she is entitled to apply and draw a pension on account of the services of her first husband, provided she is entitled under the other provisions of the pension law. Such widow must apply in her own proper name, but at the same
time state that she is asking for a pension as the widow of her dead husband, giving his name, company and regiment, etc.

Class C, No. 4-Widows above the age of sixty ( 60 ) years whose income does not exceed $\$ 100$, or if not sixty years of age, can receive a pension if married at close of war.

County boards cannot be too careful in these matters of "income" or "physical condition."

He is a very poor man whose gross income from labor, rent and other sources does not exceed $\$ 75$, or poor lands, if any, that will not produce this amount gross.

Property sufficient to produce $\$ 75$ in applicant's or his wife's name debars him.

Where soldiers or widows dispose of their property by giving or selling to their children, they are debarred.

Pensioners who move to another State are not entitled to a pension. The pension law provides that this fund shall be distributed April Ist; therefore, it is very important that you mail the pension lists, with the approved applications of your county, promptly on the first Monday in March.

Let County Boards act promptly and fairly, giving the State Board full information, with complete reports for each county, the surgeons of the Boards are requested to give full information in wounded classes; stating not only nature of wound; but extent of disability arising therefrom.

In making reports to the State Board, the reports should be signed by each member of the County Pension Board.
A. W. JONES,

Comptroller-General, Chairman.
D. R. FLENNIKEN, W. H. HARDIN, DR. B. M. LEBBY, DR. WM. WESTON, Surgeon.
Attest: Kate F. Maher, Pension Clerk.

## ARTIFICIAL LIMB FUND.

The following Act was passed at the last session of the General Assembly:

## AN ACT TO PROVIDE A MINIMUM SUM FOR THE ANNUAL APPROPRIATION FOR PENSIONS AND FIX THE SAME AT $\$ 250,000$.

Section I. Be it enacted by the General Assembly of the State of South Carolina, That from and after the approval of this Act there shall be annually appropriated a sum of not less than two hundred and fifty thousand ( $\$ 250,000$ ) dollars to pay the pensions now or hereafter to be provided by law.

Sec. 2. That every man who while he was a bona fide soldier or sailor in the service in this State, or in the Confederate States, in the War between the States, lost a limb, shall upon application to the State Pension Board be entitled to be furnished with a first-class limb to supply such limb: Provided, Such application must be approved by the Pension Commissioner of the county in which he resides.

Sec. 3. The Comptroller-General is required to furnish such applicants all necessary blanks therefor.

Sec. 4. The sum of five thousand ( $\$ 5,000$ ) dollars is hereby appropriated and set aside out of the amount appropriated for the pension fund, to be used, if so much be necessary, to carry into effect the provision of Section 2 of this Act.

Sec. 5. That all Acts or parts of Acts inconsistent with this Act be, and the same are hereby, repealed.

Approved February 19, 1907.
In conformity with its provisions, the State Pension Board advertised for bids for furnishing a first-class limb. Several firms appeared before the State Board and submitted specimens. The contract was awarded to Mr. A. L. Peters, of Richmond, Va., to furnish a first-class limb as follows:

Leg-\$6o.
Arm above elbow- $\$ 60$.
Arm below elbow- $\$ 50$.

The following will show those Confederate soldiers who have received limbs up to this date and furnished receipts that same are satisfactory:

Aiken County-D. F. Tippet, Mark Maddox, E. Starnes.
Anderson County-W. A. Bigby, W. L. Bolt, A. C. McGee, B. F. Dacus.

Cherokee County-T. M. Allison, G. W. Eargle, G. W. Austelle.
Chesterfield County-C. D. Boan.
Colleton County-J. S. Buchanan, H. R. Martin.
Darlington County-E. W. Cannon, C. Odam.
Edgefield County-J. M. Miner.
Fairfield County-J. L. Richmond.
Florence County-George E. Kadell, H. E. C. Fountain, Stephen Lane.

Georgetown County-John Ford.
Greenville County-J. A. Searcy, Ervin Batson, J. D. Etheridge, O. T. Jones.

Greenwood County-E. M. Sharp, T. J. Griffin, J. J. Burdette, J. E. Harter.

Horry County—C. L. Johnson.
Lancaster County-Britton Parker.
Laurens County-J. D. Mock.
Lee County-J. M. Miller.
Lexington County-V. V. Crim, J. A. Derrick, W. R. Rister, S. M. Roof.

Newiberry County-J. D. Smith, J. N. Bass, George Lester, W. R. Jones.

Orangcburg County-H. M. Smith, D. W. Sawyer.
Richland County-Augustine Bacon, R.' S. Rutledge, George Bruns.

Saluda County-L. L. Smith.
Spartanburg County-R. M. Jolley, S. S. Bearden, J. M. Brown, E. B. Chapman, W. J. McDowell, M. B. Smith, J. E. Middleton, Thomas Busby.

Union County-J. M. Mardis.
York County-Robert Burns, Lewis Faile.

The following orders are on hand to be taken:
W. G. Austin.
W. J. Brown.
W. L. Galloway.
W. F. Todd.

Thomas Grant.
J. A. Hinnant.

John Odam.
John M. Hudgens.
A. J. Snow.

James Simpson.
H. P. Blakeley.

Samuel A. Byrd.
Franklin Graham.
W. A. Foyce.
N. M. Correll.

Thomas H. Buckett.
I. I. White.

Seaborn McManus.
J. H. Gardner.
J. H. Boulware.
J. P. A. Davidson.

It appears that there are seventy-nine applicants for limbs. The contractor has delivered fifty-eight limbs under the contract and received $\$ 3,201.00-$ io per cent. being reserved, as per contract, to secure satisfaction and repair of limbs for five years.

The appropriation of $\$ 5,000$, it appears at this time, will be sufficient to supply those who have applied up to date. However, I understand that there are several who are now applying and who are entitled to this fund. If such be the case, then we will need a small appropriation of, say, $\$ \mathrm{I}, 000$, if so much be necessary, to cover these applicants or any others who may apply hereafter.

# LIST OF PENSIONERS PAID SINCE DISBURSEMENTS, <br> <br> MAY 22d. 

 <br> <br> MAY 22d.}


#### Abstract

Anderson County-C. P. Rogers, Class A, reduced to Class C No. 2 by County Board ; on examination by surgeon of State Board, relnstated. C No. 2: W. A. Davis, J. C. Allen, J. W. Bannlster, corrections as to service. M. F. Wilson, C No. 2, reported dead by error. L. P. Shaw reported dead by error. C No. 4: Mary Gray, widow of pensioner, application corrected as to service. Aiken County-C No. 4: Hepsey Asbill, application overlooked by County Board. Barnwell County-C No. 2: J. W. Benton reported erfoneously as living out of State. R. H. Johnson, C No. 2, reported dead by error. Beaufort County-W. M. Hutson, C No. 2, reported dead by error. Charleston County-Susan C. Simons, C No. 3, reported dead by error. Cherokee County-A. W. Bridges, C No. 2, reported erroneously as having left State. Fllzabeth Fowler, widow of pensloner, application overlooked by County Board.

Chesterfield County- $\$$. J. Outen, Class C No. 2, transferred to Class A, on evidence that he is totally blind. Adellne Rodgers, Sarah Jordan, widows of pensioners.

Clarendon County-W. C. Venning, C No. 2, Sarah Welch, C No. 4, reported dead by error.

Darlington County-J. W. Defee, Class C No. 2, reported dead by error. Dorchester County-J. N. Inflnger, correction as to disabllity, placed In C No. 1. Edgefeld County-Loulsa Eidson, C No. 4, correction as to property. Fairfteld County-Judge Wilson, J. M. McDonald, F. V. Gantt, C No. 2, reported dead by error. Fannle Hood, C No. 4, reported dead by error.

Greenwood County-J. J. Wells, C No. 2, application received too late for regular disbursement.

Greenville County-B. T. Grifith, application corrected an to service, placed in C No. 1. Class C No. 4: N. E. Peden, Mrs. McCallister, widows of pensloners. Kershaw County-Emma Hisdon, C No. 4, reported dead by error. J. D. Douglass, C No. 2, moved from Chesterfield to Kershaw, and reported dead in Chesterfeld. Lee County-M. T. Mixon, C No. 2, reported dead by error ln Florence, moved to Lee.

Lancaster County-Arthur Baker, C No. 2, reported dead in Fairfleld, moved to Lancaster.

Lexington County-Addie Banks, correction as to husband's service. Marlboro County-Mary Swett, C No. 4, reported dead by error. Richland County-L. W. Kelly, H. F. Jumper, C No. 2, applications corrected as to service. W. D. Davis, correction as to property, C No. 2. Moved from Fairfeld to Richland and reported dead in Falrfeld County: M. J. Sloan, C No. 4, and Nicholas Gladden, C No. 2.

Saluda Cownty-W. D. McGhee, C No. 1, reported erroneously as having left State. J. W. Smith, C No. 2, application overlooked by County Board.

Apartanburg County-In Class C No. 1 there shonld have been two pensioners named J. M. Johnson, and one was dropped through error. W. D. O'Shields, C No. 2, correction made as to property. Addle Smith, C No. 4, reported dead by mistake. Union County-Ira Lipsey, transferred from C No. 2 to C No. 1 on correct statement as to disablity. M. C. Lake, C No. 2, correction made as to property. Ramath Baten, Texana Briggs, widows of pensloners.


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STATEMENT-DISBURSEMENTS OF APPROPRIATIONS FOR PENSIONS-1007.-Con.


# PENSIONS APPROVED 1907. 

## ABBEVILLE COUNTY. <br> Changer in goll binct labt payment.


#### Abstract

Dead-Clase A: W. L. McCord. Clags B: Matthew Knight. C, No. 1: F. M. Bell. C, No. 2 : Joseph Bowen, Tollver Burton, J. A. McCalister, B. C. Watking, W. W. Sprouse. C, No. 3: Moriah Long, Elizabeth Napler. C, No. $1:$ Elizabeth Bowen, Buman Gunter, Catherine Taylor, Susan Poore.

Transferred to Other Countlem-Barah S. Lively to Anderson Coanty. Transferred to Other Classes-From Class B to $\mathbf{A}$ : J. M. Carlisle. From C, No. 2, to A: B. W. Wideman. From C, No. 2, to C, No. 1: H. Y. Fuller, 8. T. Ridwerde


Class A, 2907.
Carlisle, J. M. (Co. G, 19th), paralysed.
Williams, B. W. (Co. D, Tth), paralysed.
OLase O, NJo. 1, 2 sool.
Creswell, T. V., Abbeville-Co. G, 14th S. C. V. (Wounded right leg.)
Willams, J. F., MeCormick-Co. G, 1st S. C. res. (Bhot through left ado and right foot.)
Wilson, John B., Abbeville-Co. H, ist reg. (Wounded in thigh.)
Olase C, No. 1, we
Langley, J. H., Troy-Co. G, 14th reg. (Wounded head and groin.)
Class C, NO. 1, 1906.
Newby, E. G., MeCormick-Co. C, 7th reg. (Shot In face.)

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\text { Clase C, No. 1, } 1906 .
$$

Edwards, W. W., Abbeville-Co. C, 7th reg. (Shot in hip.)
Gaston, W. H., Abbeville-Co. G, 14th reg. (Shot In hip.)

$$
\text { Clase C, No. 1, } 1507 .
$$

Fuller, H. Y., Honea Path (Co. C, James'. Battalion), wounded In tace. Edwards, B. E., Abbeville (Co. D, 7th S. C.), wounded In thigh.

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\text { Clase O, No. 2, } 1901
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Alewine, F. M., Globe (Co. I, 19th B. C. V.), age 60.
Algary, W. C., Donalds (Co. F, Holcomb Legion), age 61.
Arnold, J. M., Abbeville (Co. F, 6th S. C. C.), age 71.
Brown, M. C., Globe (Co. I, 10th reg.), age 65.
Bardette, B. K., Willington (Co. A, Ist reg.), age 70. Clem, R. A., MeCormick (Co. G, 14 th reg.), age 63. Cobb, Wm. H., Abbeville (Co. F, Holcomb Legion), age 64. Etheridge, Wade, Abbeville (Co. F, 24th reg.), age 76. Fields, G. W., Lowndeaville (Co. I, 19th reg.), age 64. Gray, J. B., McCormick (Co. H, 19th reg.), age 62. Hall, J. D., Antreville (Co. F, 24th reg.), age 65. Elintod, J. R., Globe (Co. K, Orr'a), age 86.
Hughey, J. M., abbeville (Co. A, ist 8. C. V.), age 61. Hunter, J. T., Sharon (Co. G, 14th reg.), age 62. Jenninga, W. A., Donalda (Co. G, Orr'i), age 61. Johnson, Robt., Pettlgrew (Capt. Smith, Ga. Arsenal), age 70.
Knight, J. M., Donalde (Co. A, 6th S. C. C.), age 67.
Latimer, W. T., Donalds (Co. G, Orr's), age 66.
Loftis, H., Lowndeeville (Co. I, 14th reg.), age 74.

McCarry, J. W., Abbeville, (Co. I, 14th reg.), age. 71.
MeCurry, 8. A., Antreville (Co. C, 6th S. C. C.), age 75.
McKellar, J. R., Smithville (Co. C, 6th reg.), age 62.
Miner, J. L., Antreville (Co. A, 1at g. C. C.), age 68.
Moore, W. C., Abbeville (1st B. C. C.), age 67.
Morrow, Geo. A., Antreville (Co. I, 14th B. C. Vol.), age 60.
Mardock, David, Antreville (Co. G, Bacon's reg.), age 81.
Rlchardaon, 8. M., Due West (Co. G, Orr's), age 60.
Rickets, W. M. (Co. E. 20th reg.) Transferred from Anderson County.
Robinson, Isaac, Due West (Co. I, 18th reg.), age 64.
Stewart, W. A., Donalds (Co. F, 24th reg.), age 60.
Stone, A. H., Due West (Co. E, 20th reg.), age 65.
Taylor, Lewif, Abbeville (Co. A. Lucas's bat.), age 77.
Tulles, E. M., Abbeville (Co. A, 14th S. C. V.), age 64.
Tarnage, J. F., McCormick (Co. C, 7th reg.), age 68.
Wideman, C. A., Sandover (Co. C, 7th reg.), age 63.
Wldeman, 8. B., McCormick (Co. H, 7th bat.), age 70.
Woodharst, A. J., Lebanon (Co. G, 1st S. C. C.), age 68.
Olass C, No. 2, 1908.
Blanchett, J. J. (Co. I, 14th B. C.), age 60.
Bruce, W. E., Calhoun Falls (Co. C, 14th reg.), age 65.
Dillithaw, James A., Willington (Co. G, 14th reg.), age 60.
Sharpton, J. P., McCormick (Co. G, 14th reg.), age 60.
Winn, M. H., Lowndesville (Co. B, Orr's reg.), age 60.
Class C, No. 2, 1008.
Branyon, D. A., Honea Path (Co. F, 27th S. C. V.), age 61.
Blackwell, Joel, Due West (Co. C, 14th S. C. V.), age 82.
Gullebean, J. C., Abbeville (Co. H, 7th S. C.), age 67.
Samon, A. C., Donalds (Beauregard's battery), age 61.
Clase C, No. 2, 1904.
Edwards, J. J., Abbeville (Co. A, 2d Rifles).
Hughes, Clcero, $A$ bbeville (Co. A, 1st S. C.)
Moore, T. A., Antrevllle (Co. G, 19th).
Clase C, No. 2, 1905.
Cann, O. L., Abbeville (Co. I, 14th reg.)
Humphrles, 8. C., Donalds (Co. D, Orr's). Dead ; money refunded.
McCarley, I. L., Antreville (Co. C, 4th \&. C. V.)
Poore, H. C., Abbeville (Co. A, 1st S. C.)
Class O, No. 2, 1906.
Barnes, M. W., Lowndesville (Co. I, 14th reg.)
Brown, J. J., McCormick (Co. G, 1st reg.)
Fortescue, J. T., Abbeville (Co. G, i5th reg.)
Martin, S. E., Donalds (Co. G, 1 st Cav.)
Clase C, No. 2, 1907.
Bosdell, s. C., Abbeville (Co. C, 7th reg.).
Howard, D. H., Abbevllle (Co. F, 24th B. C.).
Magill, William, Abbeville (Co. G, 1st S. C.).
McCombs, William, Abbeville (Co. G, 1st S. C.).
Price, J. F., MeCormick (Co. I, 24th \&. C.).
Watson, S. A., Lowndesville (Co. B, Williams' Battalion).

## Clase C, No. 8, 1901.

Whiows of Boldiere Who Lost Their Lives in the Serotoe of the Confederate Btates.
Bonds, M. J., Lowndesville (Co. B, 60ih Alabama).
Bratcher, M. A., Globe (Co. B, 7th S. C. V.)

Botte, Matilda (Co. F, Hampton's Legion).
Bagwell, E. C., Donald (Co. E, 16th reg.)
Bowen, Flizabeth, Antreville (Co. G, Orr's).
Cooley, Mary F., Abbeville (Co. A, Bth S. C. C.)
Cor, Malinda, Troy (Co. G, 14th reg.)
Cochran, M. J., Lowndesville (Co. I, 14th reg.)
Duncan, Mary (Co. I, 19th reg.). Dead ; money refunded.
Fergumon, F. J., Antreville (Co. I, 14th reg.)
Flinn, H. L., Dne West (Co. I, Orr's reg.)
Patterson, Mary E., Lowndesville (Co. I, 14th S. C.)
Patterson, M. J., Lowndesville (Co. C, 15th Mississippi).
Simpson, Mary E., Due Weat (Co. G, Orr's reg.)
Smith, Mary E., Abbeville (Co. F, Holcomb's Legion).
Watkins, Balle, Abbeville (Co. C, James' bat.)
Wilson. Sarah A.. Abbeville (Co. K, 40th Mississlppl).
Yeargen, Nancy, Lowndesville (Co. I, 14th S. C. V.). Dead; money retunded.
Clase 0, No. 3, 19es.
MeCallister, L. A., Lowndesville (Co. B, 14th reg.)
Clase O, No. S, 190 .
Brock, Margaret F., Due West (Co. G, 1st S. C. Rlfles).
Class C, No. 3, 1904.
Sutherland, Martha, Abbeville (Co. I, Bacon's).
Class C, No. S. 1906.
Baker, E. J., Lowndeaville (Co. G, 37th Ga.). Dead; money refunded.
Class C, No. S, 1907.
Hussey. M. J., Bordeaux (51st Ga.).
Clase O, No. 4, 1901.
Bellott, 8. J., Lowndeaville (Co. H, 19th reg.), age 78. Dead; money refanded.
Bigby, Francel, Globe (Co. K, Orr's), age 61.
Bopworth. Allte, McCormick (Co. C, 10th reg.), age 65.
Bowle, M. J., Due West (Co. G, Orr's), age 63.
Brown, Laura, McCormick (Co. H, 18th reg.), age 67. Dead; money refunded.
Campbell, Alice E., Abbeville (Co. D, 7th reg.), age 60.
Clay. Barah, Abbevlle (Co. B, Bacon's reg.), age 65.
Cleveland, N. A.. Lowndesville (Co. I. 14th reg.), age 74.
Dillishaw, Amanda, MeCormick (Co. B, 1st S. C.), age 69.
Dawsby, Mary A., Abbéville (Co. G, 6th S. C. C.), age 67.
Ford, Jane, McCormick (Co. I, Bacon's reg.), age 69.
Hill, Rebecca, Donalds (Co. F, 7th reg.), age 76.
Kay, E. E. (Co. E, 20th reg.), age 61. Dead : money refonded.
McAllister, Mary C., Lowndesville (Co. G, 1st S. C. C.), age 61.
McKee, Nancy J., Abbeville (Co. A, 2d Rifies), age 67. Dead; money refunded.
MeKinney, Lucinda, Bordeaux (Co. C, 7th 8. C. I.), age 67.
MeNalr, Catherlne B., Willington (Co. A, 1st S. C. V.), age 68.
Martln, Frances, Abbeville (Co. G, 1st S. C. V.), age 69.
Morrison, Samantha, Antrevlle (Co. G, Orr'a reg.), age 66.
Palmer, Mary F., Wellington (Co. D. 1st S. C. V.), age 62.
Palmer. M. J., Pettlgrew (Co. C, 7th reg.), age 61.
Bich, M. C., Hunters (Co. K, 7th reg.), age 62.
Smith. E. C., Abbeville (Co. B, Orr's), age 68.
Spence, Kattie, MeCormick (Co. C, Bacon'g reg.), age 87. Truett, S. M., Sandover (Co. G, 14th S. C. V.), age 63.
Vaughn. Margaret, Mt. Carmel (Co. G, 1st S. C. V.), age 71.
Watkins, Susan W., Bandover (Co. I, Bacon's reg.), age 62.

## OLas: C, No. 4, now

Willamm, Janle, Abbeville (Co. G, Orr'r), age 61.
Class O, No. $\&$ reve
Crawford, M. L., Donalde (Co. G, Orr's), age 62.
Fisher, Sarah, Abbeville (Co. I, Hampton's Legion).
MeWhorter, N. H., Due Weat (Co. G, Orr's).
Poore, Mary Ann, Abbeville (Hampton's Legion), age 68.
Smith, M. A., Abbeville (Co. G, 1st B. C. C.), age 68.
Shlllits, Elluabeth, Abbeville (Co. A, 1st S. C. C.)
Taylor, Martha (Co. F, Bacon's), age 63.
Wilson, Sarah M., Abbeville (Co. G, 1st B. C. C.)
Olass C, NO. 4. 1905.
Brown, Sarah, Troy (Co. G, 14th reg.), age 77.
Mobley, A. C., Due Weat (Co. B, Whllame's reg.)
Class C, No. \&, 1906.
Agee, Josephlne, MeCormick (Co. C, 3d Ga.), age 67. Derracott, C. J., Willington (Co. C, 7th reg.), age 83. Dawsby, Margaret L. (Co. A, 2d Rifles).
Flsher, Nancy, Level Land (Co. I, 17th reg.), age 69. Jeans, Raney, Level Land (Co. K, Orr's), age 82. Dead; money refunded. Jennings, Martha, McCormiek (Co. K, 15 th reg.), age 60.
Mathis, M. L., Bordeaux (Co. H, 19th reg.), age 61. Martln, M. J., Hunters (Co. A, Ist 8. C. C.), age 60. Rlchey, Janle H. (Co. H, 1st S. C. C.), age 64.
Slmpson, Mollie E., Abbeville (Co. B, 7th reg.), age 63.
Maxwell, Anna M., Abbevllle (Co. C, 18th Ga. Battalion), age 63.
Schroder, E. C., Abbeville (Co. G, 10th S. C. reg.), age 64.
Olass C, No. 4, 1906.
McComb, Mary J., Hunters (Co. A. 2d S. C. R.), age 62.
Heynolds, Martha L., Abbeville (Co. C, 1st reg.), age 62. Smith, Josephine, McCormick (Co. C, 5th reg.), age 60. Thompson, Mary E.. Abbeville (Co. F, Hol. Leglon), age 63. Watkins, Lavinla, Abbeville (Co. B, Hampton Legion), age 70.

Class C, No. $4,1907$.
Allen. Sarah C., Abbeville (Co. D, 7th), age 70.
Adamb. Sarab-A., Antreville (Co. F, 24th), age 63.
Cates, S. C., Abbeville (Co. I, 14th), age 83.
Renkin, Ann, McCormick (Co. F, 2d S. C. V.).

## AIKEN COUNTY.

## CHANGES IN ROLL SINCD LABT PAYMENT.

Dead-C, No. 1: Michael Anderbon, P. P. Williams, W. M. Mayer, James M. Cook. C, No. 2: L. F. Cushman, John Hucabee, Wlillam Lambert, John Sanquinett, Marshal Stevenson, M. C. Wright, Matthew Alexander, Absalom Jackson, John Cooper, E. J. Raule. Clase C, No. 3: Ellzabeth Argo. Class C, No. 4: Indiana Barkedale, Mary Brown, Elvira Hutto, Ellzabeth Moseley, Salley Pool, Susan E. Turner, Mary Broom, Mary Galloway, Mary Horsey, Sarah Gregory, C. E. Page, Julla Taylor.

Transferred to Other Countlea-R. Gregory to Anderson. J. E. Delk to Barnwell. D. F. Hastings to Greenvood. Theresa Hutto to Lexington. Halda Padgett to Baluda.

Transferred from Other Countles-From Colleton, Robert Galloway.
Transferred to Other Classes-W. L. Koon from C No. 1, to A: D. P. Ergle from C No. 2, to A: Willam Carter, from C No. 2, to C No. 1: J. T. Jones, from C No. 2, to C No. 1.

Clases $A, 1906$.
Stevenson, H. T., Alten-Co. C, Hol. Legion. (Totally blind.)
Class A, 1907.
Ergle, D. P., Graniteville-Ca. K, 19th. (Bllnd.)
Koon, W. L., Warrenville-Co. A, 1st Fla. (Blind.)
Class B, 1801.
Addison, H. W., Aiken-Co. H, Kershaw' reg. (Lost one leg.)
Howard, H. B., Graniteville-Co. F, 7th 8. C. (Left arm paralyzed from wound.)
Jackson, James, Granlteville-Co. F, 7th S. C. (Lost right arm.)
Jenninge, H. J., Langleg-Co. B, 14th S. C. (Lost right leg.)
Maddox, Mark, Vaucluse-Co. F, 7th reg. (Lost fight leg.)
Mitchell, E. A., Vaucluse-Co. I, Pal. S. S (Lost right leg.)
Starnes, Ezekiel, Salley-Co. I, 20th reg.' (Lost left leg.)
Tippet, D. F.-Co. D, 14th N. C. (Lost arm.)

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\text { Olase C. No. 1. } 1901 .
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Adkinson, J. B., Oakwood-Co. B, Pal. S. S. (Shot througb left leg.)
Berton, A. B., Langley-Co. A, 1st S. C. (Wounded through chest.)
Barton, Charles T., Alken-Co. K, 19th reg. (Wounded bead and leg.)
Brooks, Robert, Graniteville-Co. F, 7th reg. (Wounded in arm.)
Green, Jack, Vauclose-Co. K, 19th reg. (Wounded left foot.)
Heath, J., Talatha-Co. A, 12th reg. (Wounded forearm; deaf and damb.)
Green, J. J., Hafthorne-Co. E, 18t reg. (Lost one eye.) 1902.
Holly, W. M., North Augusta-Co. D, 12th Ga. (Wounded head and leg.) 1902.
Haghes, P. W., Warrenville-Co. B, 2d reg. (Wounded left leg.)
Key, J. J., Talatha-Co. H, 14th S. C., (Wounded arm and head.)
Lamb, Thos., Vancluse-Co. I, 22d reg. (Wounded arm and breast.)
Lowe. J. J., Wagener-Co. F. 2d S. C. (Wounded right foot.)
Trler, A. T., Talatha-Co. A, 1st reg. (Wounded arm.)
Ramey, Madison, Alken-Matthews, 2d Art. (Wounded In bead and paralysis.)
Tucker, J. B., Bath-Co. A, Pal. S. S. (Wounded in leg.)
Widener, Abram, Hawthorne-Co. G, 2d S. C. Art. (Wounded arm and side.)

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\text { Clase C, No. 1, } 1904 .
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Dean, R. F., (Co. A, 22d 8. C.) Wounded in leg.
Weeks, J. A., Montmorencl (Co. H, Matthews's). Wounded in eyes.
Clase C, No. 1, 1905.
Braswell, G. P., Aiken (Co. I, 20th). Disabled from disease.
Carley, Jobn, Langley (Co. F. 7th s. C.) Wounded in chest.
O'Bryant, Wm. (Co. E, Cobb's Legion). Wounded right heel.

Olase O, No. 1, 1908.
Gunter, Able, Wagener (Co. 1, 20th's. C. V.) Wounded in leg.
Patterson,. S. L., Hamburg (Co. D, 2d S. C.) Wounded in knee.
Storey, Jasper, Ridge Sprlng (Co. D, 19th reg.) Wonnded in anikie. Dead; money refunded.

Class C, No. 1, 1907.
Carter, William, Alken (Co. E, 2d Art.). Wounded in shoulder.
Jones, Jos. T., Bath (Co. C, Orr's). Wounded in hand.

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\text { Class C, No. 2, } 1901
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Able, Newton, Wagener (Co. I, 27th reg.), age 65.
Alewine, J., Chinquapin (Co. A, 20 th reg.), age 63.
Attaway, C. B., Granltevlle (Co. B, 19th reg.), age 60.
Bell, W. P., Windsor (Co. K, 2d S. C. V.), age 64.
Bentley, J. B., Talatha (Co. G, 2d S. C. Art.), age 73.
Bolton, A., Langley (Co. A, $22 d$ reg.), age 66.
Boyd, Ben, Talatha (Co. B, 6th reg.), age 69.
Boyd, E. B., Talatha (Co. H, 9th reg.), age 65.
Burnslde, B. F., Salley (Co. C, 1st Ga. Reg.), age 60.
Chapman, T., Montmorencl (Matthews's reg.), age 70.
Cook, B. D., Langley (Pegram's Pee Dee Art.), age 63.
Corley, Albert, Granlteville (Co. K, 25th reg.), age 60.
Dunn, J. H., Warrenville (Co. I, Hampton Legion), age 61.
Evans, R. L., Wlndsor (Co. E, 2d Art.), age 73.
Ford, Jesse W., Langley (Matthews's H. Art.), age 62.
Ford, Jos., Talatha (Co. H, 14th reg.), age 74.
Halr, B. R., Baptlst (Co. H, 2d S. C. Art.), age 65.
Hall, Jeremlah, Sawyer (Co. I, 20th reg.), age 68.
Harley, F. D., Langley (Co. A, 2d S. C. Art.), age 70.
Holly, C. C., Langley (Co. E, 2d S. C. Art.), age 62.
Jowers, Henry, Langley (Co. D, 23d Ga.), age 62.
Johns, John, Cowden (Co. D, 18t S. C. Art.), aged 66. Dead ; money refunded.
Key, J. A., Sleepy Hollow (Co. F, 7th reg.), age 60.
Klrkland, G. W., Granltevlile (Co. I, 20th S. C. V.), age 68.
Klrkiand, Willam, Brldge Spring (Co. F, Matthews), age 88.
Knowles, M., Langley (Co. G, 20th reg.), age 60.
Lowe, D., WIndsor (Co. H. Gth S. C. V.), age 67.
McClaln, Fdward, Turner (Co. D; Holcomb Leglon), age 61.
McClane, H. J., Wagener (Co. B, 17th S. C.), age 68.
Murrah, J. M., Millbrook (Co. C, 1st S. C. C.), age 64.
O'Bannon, Wm., Bath (Co. II, 14th S. C. V.), age 61.
Padgett, Manley, Bath (Co. A, 19th S. C.), age 74.
Patterson, Harmon, Langley (Co. G, 20th S. C. V.), age 61.
Posey, P. P., Edisto Mills (Co. D, 14th S. C.), age 67.
Randall, B., Windsor (Co. A, 2d Art.), age 81.
Randall, M. B., FIndsor (Co. H, 14th S. C.), age 72.
Ready, A., Cowden (Co. T, B. Art.), age 65.
Renew, A. J., Langley (Co. H, 57th Ga.), age 65.
Rlpley, A. C., Fureka (Co. K, 2d S. C. Art.), age 65.
Scott, Jesse M., Alken (Co. B, S. C. Cav.), age 62. Dead; money refunded.
Smith, R. K., Alken (Co. A, 14th reg.), age 64.
Snelllng, C. Z., Granitevlle (Co. R, 2d Art.), age 64.
Spradley, L. G., Vaucluse (Co. B, 6th S. C. Cav.), age 67.
Story, W.. Fdisto Mills (Co. I, 20th reg.), age 65.
Wells, Thos., Beulah (20th reg.), age 73.
Wllling, Joseph, Merritts Brldge (Co. H, 7th reg.), age 66.
Woodward, Furman, Montmorencl (Co. H, 14th S. C.), age 60.
Yon, C. H., WIndsor (Co. H, 2d reg.), age 66.

## OLase O, No. \&, 2902.

Boylston, C. J., Windsor (Co. A, 2d Art.), age 62.
Everett, J. D., Beech Island (Co. -, 10 th S. C. C.), age 71.
Eriday, P. A., Graniteville (Co. F, 7th reg.), age 60.
Maddox, Greene, Vazcluse (Co. F, 14th S. C.), age 60.
Outz, J. H., Graniteville (Co. C, 14th S. C.), age 62.
Padgett, Amos W., Alten (Co. F, 27th S. C. V.), age 69.
Powell, Freeman, Granitevlle (Co. D, 6th reg.), age 63.
Rlpley, Henry, Graniteville (Co. K, 2d S. C. A.), age 68.
Taylor, Jamen A., Grandterille (Co. F, 7th S. C. V.), age 63.
Wheeler, T. E., Alken (Co. D, 1st S. C. A.), age 71.
Class C, No. 2. 1905.
Britt, James, Bath (Co. A, 2 d Art.)
Blackwell, T. J., Granlteville (Co. A, 7th reg.), age 60.
Boyleaton, B. B., Davis Bridge (Inglis's), age 71.
Bradock, J. G. H., Langley (Co. B, 22d Ga. I.), age 61.
Brown, D. T., Granitevllle (Co. B, 14th bat.)
Clayton, J. 8. P., Kitchlngs Mill (Co. A, 1st 8. C. A.)
Carpenter, John M., Langley (Co. H, 7 th reg.), age 72.
Clark, Eldred, Granltevlle (Co. D, 1st S. C. A.), age 65.
Cook, John A., Wagener (Co. I, 22d reg.), age 65.
Conhman, A. J., Alken (Co. D, 6th S. C. V.), age 65.
Clark, Hards, Graniteville (Co. F, 7th reg.), age 62.-
Douglass, S. M, Bath (Co. G, 3d reg.), age 60.
Erang, John W., Granlteville (Co. C, 7th bat.), age 64.
Floyd, Wiley, North Augneta (Co. F, 12th bat.), age 77.
Gatings, W. J., Alken (Co. K, 15th S. C. V.), age 62.
Herdin, George A., Aiken (Co. B, 19th g. C. I.), age 62.
Jactson, I. P., Aiken (Co. I, 20th bat.)
Lybrand, George W., Graniteville (Co. A, 10th reg.), age 60.
Lott, H. B., WIndsor (Co. A, 2d B. C. A.), age 62.
Owens, J. L., Hawthorne (Co. D, Holcomb's Legion), age 62.
Sanders, F., Rldge Spring (Co. I, 20ṭh reg.), age 61.
Thornal, W. E., Granlteville (Co. H, 2tth reg.), age 67.
Woodward, J. B., Montmorencl (Co. E, 2d S. C. A.), age 60.
Watson, Milledge, Graniteville (Co. D, 19th B. C.), age 61.
Wright, W. M., Montmorencl (Co. F, 2d Art.), age 62.
Olase C, No. 2, 1904.
Conrtney, A. A., Alken (Co. H, 2d Artllery).
Caller, L. B. (Co. H, 2 8. C.)
Cooper, Danlel, Salley (Co. I, 20th S. C. V.)
Douglass, Solomon, Langley (Co. A, 19th S. C.)
Faulkner, Glbson, Langley (Co. K, 14th S. C.)
Galloway, Robt. Co. K, 11th S. C.). From Colleton County.
James, I. Green, Talatha (Co. D, Holcomb Legion).
Heth, James, North Auguata (Co. I, 48th Ga. Vol.)
Heath, S. L., Whlte Pond (Co. D, 6th S. C.)
Bydrlek, Fmanuel, Langley (Co. I, 20th reg.)
Jackson, Arthur, Langley (Co. C, 8th reg.)
Eitchinga, P. M, Kitchlngs Mills (Co. H, 2d reg.)
Love, W. C., Montmorencl (Co. H, Oth reg.)
Mason, E, Aiken (Co. H, 2d Artll.)
Mitchom, Thoman, Langley (Co. G, Hampton Legion).
Pemberton, J. I., Windsor (Co. C. Reserves).
Redd, John, Oakwood (Co. H, 2d reg.)
Stringteld, John, WIndsor (Co. H, Matthewa).
Taylor, G. W., Roseland (Co. K, 1st reg.)
Weathersbee, Wlley, Montmorencl (Co. H, 2d Artll.)
Williams, Rufns F., Sawyer (Co. I, 20th reg.)

## Clase O, No. 2, 1905.

Grice, James G., Monetta (Co. K, 7th reg.)
Garvin, J. Emanuel, Wagener (Co. F, 22d).
Butto, W. B., Samarla (Co. I, 20th).
Jordan, L. R., Wagener (Co. H, 14th).
Kennedy, J. W., Mossy (Co. E, Hagood's).
Lowe, C. F., Wagener (Co. E, 2d reg.)
Overstreet, Jullus, Langley (Co. F, 7th).
Heady, Wm. E., Langley (Co. D, Holcomb Legion).
Redd, J. L., Windsor (Co. H, 2d S. C. A.)
Rowell, F. R., Kathwood (Co. C, 1st Cav.)
Redd, Jefferson, Windsor (Co. H, Mathews's Art.)
Sentell, O., Langley (Co. K, 7th S. C. I.)
Strobel, J. D., Graniteville (Co. E, 1st S. C.)
Stone, John, Windsor (Co. F, 19th).
Wllson, W. W., Bath (Co. 1, 45th Ga.)
Wroe, George, Monetta (Co. K, 7th).
Walker, W. J., Davis Bridge (Co. K, 32d Ga.)
Wall, James, Windsor (Co. H, 14th S. C. V.)
Wates, T. A., Bath (Co. G, 1st S. C.)
Class O, No. 8, 1906.
Bagget, E. F., Alken (Co. I, 20th reg.).
Blackman, M., Talatha (Co. A, Mathews' Artll.)
Cockrell, Jno. E., Langley (Co. D, 14th S. C. V.)
Eldson, E. W., Langley (Co. C, 19th reg.)
Gardner, W. M., Talatha (Co. G, 2d Artil.)
Nimons, J. H., Langley (Co. H, 17th reg.)
Redd, B. R., Warrenville (Co. B, 2d $\Delta$ rtil.)
Rumley, J. D., Bath (Co. C, 1st S. C. C.)
Shepperd, Sam'l C, Granlteville (Co. H, IIol. Legion).
Taylor, John J., Granlteville (Co. B, State Reserves).
Whlkerson, R. M., Langley (Co. B, Lucas').
Wheeler, Jno. G., Alken (Co. B, Mainlgault's).
Class C, No. 2, 1907.
Baggott, J. F. Windsor (Co. I, 20th S. C. V.).
Coker, Thos. L., Bath (Co. D, 21st Battalion).
Dodgens, William (Co. K, 14tid Battalion).
Edwards, T. P., North Augusta (Co. F, 11th S. C. V.).
Harris, Z. T., Oakwood (Co. M, 7th S. C. V.).
Hatcher, W. E., Alken (Co. F, 7th S. C. V.).
Maddor, Bogan (Co. F, 7th S. C. V.).
McElmurray, Minus, Fllenton (Co. G, 2d S. C. V.).
Padgett, J. R. Warrenville (Co. A, 19th S. C. V.).
Senn, W. R., Alken (Co. H, 20th S. C. Battalion).
Eumley, Thos., Bath (Co. C, 1st S. C. Cay.).
Redd, Wesley, Salley (Co. A, Art.).
Radcliffe, O. R., Springfleld (Co. B, 5th Cav.).
Tyler, J. W., Hawthorne (Co. A, 1st S. C. V.).
Taylor, Geo. W., Granlteville (Co. K, 14th).
Wooley, Frby, Windsor (Co. H, 2d Art.).
Whllis, W. C., Aiken (Co. H, 2d Art.).
Whittle, Hezeklah, Wagener (Co. B, 14th).
Whlson, P. T., Jackson (Co. E, 2d Art.).
Whately, T. W., Alken (Co. C, 1st S. C. Cav.).
Class O, No. 3, 1001.
Widoses of Soldiers Who Lost Thedr Lives th the Servios of the Confolerede Etetem.
Balley, H. M., Balley (Hagood's Brigade).
Bonds, Cherry, Langles (Co. I, Lamar's Heavy Artillery).

Eddson, Martha, Alken (Co. A, 19th reg.)
Hamllton, Ellxabeth, Granltevile (Co. K, 24th reg.)
Kennedy, Martha, Bethcar (Co. I, 20th reg.)
Rawle, Batira, Wagener (Co. I, 20th reg.)
Redd, Rebecca, Langley (2d B. C. Artillery).
Spradiey, Lacinda, Monetta (Co. F, 19th reg.)
William, Barah, Perry (Co. 1, 22d 8. C. V.)
Olase O, NO. s, 1903.
Boyd, Ann, Talatha (Co. B, 6th reg.)
Burthelter, Ann, Graniteville (Co. B, 19th B. C.)
Willamson, Mary Ann, Salley (Co. D. Kitt's reg.)

Olase O, No. S, 1904.
Johnson, Margaret, Salley (Co. I, 22d reg.)

Class C, No. S, 1905.
Beigler, E. T., Graniteville (Co. K, 24th).
Whittle, Elizabeth, Graniteville (Co. A, 22d).
Clase C, No. 4, 1901.
Arthur, Nancy, Alken (Co. E, Missinsippl Valley), age 69.
Bell, Fimlly. Findsor (Co. B, B. C. V.), age 70.
Bontwright, Fmellne, Merritts Bridge (Co. F, 19th reg.), age 66.
Brown, F. R., Langley (Co. K, 18 th reg.), age 86.
Busbee, Permelia, Sawyer (Co. F, 19th reg.), age 85.
Boyd, Mary (Co. B, 22d Ga.), age 65.
Cotton, Elizabeth, Aiken (Co. H, 14th S. C. V.), age 88.
Couch, M. E., Vaucluse (Co. B, 6th reg.), age 61.
Clark, Elizabeth, Alken (Co. I, 24th reg.), age 84.
Cook, Irena, Bath (Co. A, 1st reg.), age 81.
Corder, Flizabeth, Aiken (Co. F, 19th reg.), age 72.
Corley, Cynthia, Langley (Co. E, 7th reg.), age 63.
Courtney, Sablaa, Vancinge (Co. I, 22d reg.), age 62.
Creed, Elizabeth, Grailtevilie (Co. A, 19th reg.), age 62.
Day, Cynthia, Granlteville (Co. A, 19th reg.), age 67.
Denny, B. A., Vaucluse (Co. D, 19th reg.), age 63.
Donald, Matlda, Graniteville (Co. F, 7th reg.), age 60.
Eabanks, Cynthia, Windsor (Co. H, B. C. V.), age 62.
Erans, Adellne, Alken (Co. E, 2 d Artillery), age 70.
Franklln, Lon, Langley (Co. E, Merriwether's), age 68.
Gunter, B. A., Perry, (Co. I, 20th S. C. V.), age 60.
Harley, Ellsabeth, Bath (Co. A, 2d B. C.), age 88.
Hatcher, Frances, Edisto Mills (Co. C, 2d reg.), age 68.
Heath, Flizabeth, Alken (Co. H, 14th reg.), age 78.
Eolman, Ann E., Salley (Co. B, 2d Artlliery), age 65.
Mays, L. V., Langley (Co. A, 22d s. C.), age 62.
Moyer, Rachel, Rldge Spring (Merrlwether's), age 78.
Parter, Martha, Beech Island (Co. E, 2d 8. C. Artllery), age 6.
Blpley, Frances, Eureka (Co. K, 2d reg.), age 60.
Belgler, Mary And, Beardam (Co. H, 2d reg.), age 68.
Sanders, Letitia, Edisto Mills (Co. F, Merriwether's), age 75.
8atcher, Nancy, Edisto Mills (Co. A, 19th S. C.), age 65.
Toole, B. A., Langley (Co. H, 2d Artlllery), age 64.
Weathersbee, J. C., Langley (Co. K, 1st S. C. V.), ase 60.
Willams, Elsabeth, Alfen (Co. A, 19th reg.), age 71.
Wine, Mary A., Graalteville (Co. F, 7th reg.), age 61.
Woodward, Laura V., Alken (Co. D, 28d Ga.), age 62.

Clase C, No. 4, 2908.
Berbuse, C. (German Volunteers). Transferred from Charleston.
Bryant, Margaret (Co. I, 7th reg.), age 60.
Blackman, Frances, Silverton (Co. D, 6th S. C.), age 65.
Busbee, Jerushla, Wagener (Co. H, 3d S. C.), age 78.
Barton, Elizabeth, Warrenville (Co. A, 19th reg.), age 61.
Broun, S. J., Kitchings Mills (Co. E, 2d B. C. bat.), age 61.
Cumbee. Almeda, Edisto Mills (Co. K, 2d reg.), age 60.
Jones, Joanna, Langley (Co. G, 4th S. C.), age 66.
Jackaon, F. L., Timmermad (Co. K, 19th reg.), age 60.
Key, Winnie, Talatha (Co. E, 2d S. C. A.), age 60.
Keadle, Dellah, Windsor (Co. A, 2d B. C. A.), age 65.
Kitchings, Martha, Davis Bridge (Co. H, 2d Art.), ege 70.
Lott, Matilda, Langley (Co. A, 19th reg.), age 70.
Padgett, Winnle (Co. F, 2d Art.), age 70.
Reams, Julla F., Langley (Co. K, 2 d S. C. A.), age 60.
Rlchardson, M. L., Aiken (Co. D, 32d Ga. reg.), age 64.
Rearden, Susan E., Granlteville (Co. F, 7th S. C. V.), age 60.
Widener, Sarepta, Spring Church (Co. G, 2d bat.), age 64.
Weeks, Mary H., Langley (Co. F, 2d Art.), age 60.
Wooley, Affa, Bush (Co. G,, 1st S. C. V.), age 69.
Youngblood, Mary E., WIndsor (Co. H, 2d Art.), age 64.
Class C, No. h, 1905.
Blackman, F'izabeth, Langley (Co. K, 14th S. C.), age 67.
Drons, Sallie Silverton (Co. G, 1st reg.), age 71.
Rankins, Francis, Langiey (Co. G, 13th reg.), age 71.
King, M. E., Bath (Co. K, 15th S. C.), age 60.
Woodward, Sarah Ann, Montmorencl (Co. A), nge 60.
Class C, No. 4, 1904.
Asbill, N. C., Monetta (Co. F, 19th reg.), age 69.
Carter, E., Langley (Co. C, 1st S. C. V.), age 60.
Eubanks, Ollvia L., White Pond (Co. H, 14th reg.), age 60.
Fanning, Sarah A., Salley (Co. I, 22d reg.), age 70.
Halr, Mary, Langley (Co. D, 3d reg.), age 69.
Hankinson, Lydia, Langley (Co. C, 1 st Cav.), age 60.
Plunkett, Rhoda, Alken (Co. K, 2d S. C.), age 77.
Scott, Ellzabeth, Vaucluse (Co. B, 6th reg.), age 60.
Toole, Minty, Talatha (Co. A, 2d S. C. A.), age 64.
Class C, No. \&, 1905.
Burckbalter, Misgouri, Aiken (Co. G, Hampton), age 63.
Baxley, C. S., North Augusta (Co. A, 18th), age 60.
Clark, Amanda, Langley (Co. G, 7th), age 61.
Dean, N. C., Vaucluse (Co. E, 2d), age 60.
Curtis, Rachel, Salley (Rutledge Rifles), age 60.
Cushman, Martha, Nine (reek (Co. A, Heavy Art.), age 68.
Ford, Sarah P., Warrenville (Co. D, 6th S. C.), age 60.
Goss, Paullna, Houleton (Co. A, 2d), age 62.
Garvin, Nancy, Wagener (Co. 1, 20th), age 68.
Eufr, Winnle, Wagener (Co. H, 14th), age 63.
Hutto, Louisa, Graniteville (Co. K, 19th), age 60.
Holman, Abble L., Langley (Co. B, 2d), age 62. Dead; money refunded.
Kitchlngs, M. L., Granlteville (Co. H, 2d S. C.), age 72.
Martin, N. G., Sllverton (Co. F, 44th Va.), age 60.
Morris, Frances, Alken (Co. E, 2d Art.), age 60.
Meyer, Lou, Kathwood (Co. C, 1st), age 60.
Moseley, Emma F., Aiken (Co. F, 2d), age 60.
Pool, Ellzabeth, Wagener (Co. I, 2d), age 75.

Bamuela, Elisabeth, Graniteville (Ca. E, 2d), age 61. Weathersbee, Frances, Windsor (Co. I, 2d), age 61. Walker, Barah, Langley (Co. EV, 2d), age 62.

Olese C, NO. $4,1906$.
Dubose, Frances, Windsor (Co. A, 2d S. C. V.), age 69.
Day, James, Eureka (Co. H, 14th), age 67.
Frankiln, Catherine, Langley '(Co. F, 7th), age 67.
Buff, B. A., Aiken (Co. C, 2d), age 66.
Walker, H. T., Graniteville (Co. H, 14th), age 60.
Clase O, No. 4, 1907.
Agbill, Hepsey, Monetta (Co. F, 10th), age 60.
Anderson, Salley, Langley (Co. K, 13th S. C. V.), age 68. Allen, Ansema Bethcor (Co. A, 2d), age 65.
Altman, Mary Ann, Springfield (Co. I, 20th), age 62.
Bradford, Martha J., Beech Ibland (Co. E, 2d), age 60. Cook, Catherine. Wagener (Co. I, 22d), age 75.
Cowan, Kate C., Alken-Langley (Co. H, 7th), age 60. Falkner, Mlnerva, Bath (Co. C, 15th), age 77.
Franklln, Martha A., Granlteville (Co. B, 10th), age 65.
Fontz, Amanda, Madison (Co. A, 2d S. C. V.), age 65. Glover, Luvenia, Langley (Co. C, 1st S. C. A.), age 60. Hydrick, Frances, Samaria (Co. I, 20th Battalion), age 62.
Keel, Jane. Kitching's Mill (Co. H, 2d S. C. A.), age 64.
Keel, Emmeline, Salley (Co. A, 1st I), age 60.
Momeley, Fannle, White Pond (Co. H, 14th S. C. V.), age 68.
Mobley, S. L., Mobley, Furela (Co. H, 4th S. C. V.), age 74. MartIn, Morgranla, Wagener (Co. B, 1st), age 61.
Richardson. Christina, Langley (1st S. C. I.), age 63.
Schautz, B. E., Ridge Spring (Co. G, 1st S. C. V.), age 60.
Thompson, Eliza, Bath (Gunboat "Chicora"), age 68.
Wright, Elizabeth, Alken (Co. A, 22d 8. C. V.), age 60.

## ANDERSON COUNTY.

## CHANGIE IN ROLL BINCD LAST PAYMTNT.

Dead-Claśs A: J. R. Burns, C. F. Holcomb. C, No. 1: P. L. Adams, J. W. Adams. C, No. 2: G. W. Belcher, William Davis, W. P. Davis, J. A. Elgin, W. P. Davis, J. A. Eigin, J. W. Ford, J. L. Gordon, J. B. MeGee, John W. Martin, R. $\mathbb{R}$. Pulliam, H. W. Shaw, W. M. Woodson, J. W. Cann, W. M. Ellison, J. T. Lindiey, J. N. Lewis, J. E. Hembree, W. F. Clinkscales, A. T. Mauldin, W. T. Turner, C. A. Kay. C, No. 3: Mallnda Suttles, S. T. Willingham. C, No. 4: Jane KIng, M. J. King, Caroline McBreaty, Lucind Owlinga, Sarah A. Smith, Mary Shirley, F. J. McGill, Ruth Yeargan, Sophia Flemming.

Transferred to Other Countles-D. Moore to Greenwood. Nancy Waddell to Oconee. Mary S. Kirby to Richland. F. S. J. James to Pickens.

Remarried-Agnes Roblnson.
Tranferred to Other Classeg-J. T. Jones from C, No. 2, to $A$; W. H. Griffin from C, No. 2, to A; L. M. Watson from C, No. 2, to C, No. 1 ; From C, No. 4, to C, No. 8: Jane Queen, Nancy A. Smith, S. C. Dickson.

Transferred From Other Countles-Richard Gregory from Alken. E. C. Thompson from Greenville. J. B. Newton from Oconee. Sarah Lively from Abbeville.

Class A, 1901.
Smith, J. W., Anderson-Co. I, 19th reg. (Totally bilnd from wounde.)
Olass A, 1904.
Blackwell, J. M., Starr (Co. F, 20th reg.) Totally blind. Jenkins, W. G., Pelzer (Co. K, 4th reg.) Paralyzed. Looper, J. P., Anderson (Co. H, 3d S. C. C.) Totally blind.

Class A, 1905.
Prince, W. P. (Co. G, Beauregard's battery). Totally bllnd; dead; money refunded. Holtzelaw, J. L. (Co. C, 1st). Totally bllnd.

Class A, 1906.
Aughtrey, Wm. Pelzer-Co. E, Bozeman Guards. (Bllnd.)
Rodgers, C. P., Anderson-Co. D, 4th. (Paralyzed.)
Stewart, E. W., Anderson-Co. C, 4th. (Paralyzed.)
Class A, 1907.
Burnett, G. R., Pelzer (Co. E, Hol. Legion). Paralyzed. Griffin, W. E., Pelzer (Co. D, 27th). Blind. Jones, J. T., Leptus (Co. L, Orr's). Paralyzed. Tribble, M. P., Anderson (Co. E, 7th S. C.). Blind.

Class B, 1901.
Boyle, M. L., Pelzer-Co. A, Orr's Rifes. (Loss of left hand.) Cobb, T. H., Anderson-Co. D, 2d Rifles. (Complete use right arm.)
Davis, J. D., Roberta-Co. L, 2d Rifles. (Lost left leg.)
Jones, J. A. H., Anderson-Co. D, P. S. S. (Lost right arm.)
Moody, Harvey, Pelzer-Co. K, 35th N. C. (Paralysls right arm.)
Rampey, J. F., Pledmont-Co. D, 2d Rifles. (Partial paralysis side.)
Class B, 1902.
Brown, E. Z., Fairdeal-Co. D, Orr's reg. (Lost one leg.)
Darby, T. J., Belton-Co. A, 20th S. C. (Lost one leg.)
Class B, 1906.
MeGee, A. C., Belton-Co. B, 7th. (Lost right leg.)

Class B, 1907.
Major, D. W.-Co. Ln P. B. G. (Lost right arm.)
Clase C, No. 1, 1901.
Addison, W. D., Pelzer-Co. D, Hampton Legion. (Wounded in arm.)
Brooks, J. R., Anderson-Co. F, 2d Rifles. (Wounded in left leg.)
Cullins, A. N., Broyles-Co. D, 1st Rifles. (Wounded In right hand.)
Hembree, J. N., Majors-Co. I, 1st S. C. (Gunshot wound in head.)
Jennings, J. B., Belton-Co. K, 2d Rifles. (Shot through shoulder.)
Long. A. P., Pelzer-Co. K, 16th S. C. V. (Wounded in arm.)
Richardeon, Perry, Anderson-Co. D, 1st Rifles. (Wounded In left foot.)
Owens, Dock, Anderson-Co. F, Hol. Legion. (Wounded head.)
Ecott, L. J., Anderson-Co. L, 1st Rifles. (Gunshot wound ankle.)
Sonith, L. C., Majors-Co. I, P. S. S. (Wounded in right thigh.)
Webb, B. F., Guyton-Co. G, 22d reg. (Wounded in left foot.)
Whitten, M. B., Denver-Co. G, 22d reg. (Wounded in left leg.)

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\text { Class C, NO. 1, } 1904
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Crumpton, A. P.-Co. F, Hampton's Leglon. (Wounded knee.)
Graham, R. M., Pendieton-Co. D, 2d S. C. Blfes. (Wounded hlp.)
Kay, J. L., Anderson-Co. E, 20th S. C. (Wounded leg.)
Walker, B. F., Belton-Bearreguard's Art. (Wounded leg.)
Clase C, No. 1, 280 s.
J. D. Garrison, Pelzer-Co. D, 2d S. C. Blfles. (Wounded In leg.)
T. G. Hawkins, Pelzer-Co. C, 16th S. C. V. (Wounded left hand.)
J. B. Satterfleld, Wllllamston-Co. E, Hampton Legion. (Wounded right blp.)

Olass C, No. 1, 1904.
Garrison, David, Belton (Co. F, Hampton Legion). Wounded right hand.

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\text { Class C, No. 1, } 1905 .
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Crawford, R. C., Anderson (Co. I, Ist Inf.) Wounded in shoulder.
Payne, W. H., Pledmont (Co. B, 16th). Shot In both legs.
8herard, J. W., Iqa (Co. F, 24th). Wounded In left hlp.
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Class C, No. 1, 1908.
Caldwell, Henry, Anderson-Co. L, 2d S. C. Rlfles. (Blind from wound.)
W. F. Campbell, Ira-Co. 1, 14th. (Wounded left thigh.)
W. A. Fant, Anderson-Co. C, P. S. S. (Wounded in hands.)

Glenn, W. A., Anderson-Co. C, 1st. (Wounded left leg.)
Green, W. L., Pelzer-Co. D, Hampton Leglon.
Gregory, Rlchard, Warrenville-Co. H, 7th. (Wounded In shoulder; from Alken.)
Class C, 1907.
Davis, 8. J., Anderson-Co. B, 7th Infantry. (Wounded left leg.)
Cann, J. G., Pendleton-Co. 1, 14th S. C. V. (Wounded left knee.)
Watmon, L. M., Anderson-Co. B, 62d N. C. (Wounded right leg.)
Clasa C, No. 8, 1901.
Adams, J. D., Peizer (Co. B, 1st B. C. C.), age 69.
Aahley, W. A., Annle (Co. G, Orr's Rites), age 63.
Barnett, Benj., Iola (Co. F, 2d S. C. Rifles), age 66.
Barrett, S. J., Roberts (Co. G, 25th reg.), age 71.
Batea, Green, Pelzer (Co. G, 16th reg.), age 65.
Black. J. H., Pledmont (Co. D, 18th 8. C. V.), age 60.
Breazele, L. B., Blaine (Co. C, 14th Cav.), age 72.
Brownlig. Thomas J., Broyles (Co. D, 2d S. C. Rilien), age 07.
Burteth W. H., Anderton (Co. K, 22d reg.), age 64.

Cartee, J. B. (Co. D, 18th reg.), age 76.
Caldwell, J. R., Crayton (Co. K, 2d S. C. Rifles), age 64.
Callahan, N. C., Mountaln Creek (Co. E, 20th reg.), age 67.
Campbell, G. J., McClure (Co. C, Barnett's bat.), age 80.
Chllders, Tench, Pelzer (Co. E, 13th reg.), age 64.
Clark, T. E., Inez (Co. A, 1at S. C. C.), age 65.
Coker, M. Y., Pelzer (Co. A, Hampton Legion), age 68.
Cole, T. S., Alplne (Co. G, 8d B. C. C.), age 66.
Curry, J. F., Pelzer (Co. C, 1st Heavy Artillery), age 67.
Davenport, H. B., Belton (Co. E. Hampton Legion), age 66.
Davenport, John, Pelzer (Co. E, Hampton Legion), age 68.
Davis, C. S., Pledmont (Co. L, Orr's Rifles), age 75.
Davis, W. M., Pendieton (Co. L, 2d Rifes), age 66.
Duncan, Richard (Co. I, 19th S. C. V.)
Dickson, Hugh, Plercetown (Co. F, 一 Reg.), age 61.
Diron, A. L., Anderson (Co. F, 1 st reg.), age 75.
Dodd, R. E., Pendleton (Co. C, Blanchett), age 88.
Dodd, J. J., Anderson (Co. C, 4th Cavalry), age 64.
Driver, R. W., Sadlers Creek (Co. I, 6th S. C. C.), age 64.
Dunlap, W. F., Belton (Co. E, 20th reg.), age 75.
Eaton, Jos., Holland (Co. E, 1st S. C. regulars), age 68.
Elgin, H., Annle (Co. E, 20th reg.), age 70.
Elrod, F. V. (Co, D, 18 th ).
Fields, Stephen, Crayton (Co. F, 20th reg.), age 77.
Fowler, J. W., Waco (Co. L, Ist Rifles), age 65.
Gilfillan, John (Co. C, 17th S. C. V.)
Gambrell, G. W., Honea Path (Co. G, 2d Rifles), age 64.
Gambrell, U. L., Anderson (Co. L, Orr's Rifles), age 63.
Garrison, M. W., Denver (Co. B, Orr's Rifles), age 79.
Gentry, A. W., Broyles (Co. G, 10th reg.), age 68.
Gentry, J. L., Waco (Co. I, 1st S. C. reg.), age 64.
Gibson, W. M., Pendleton (Co. K, P. S. S.), age 60.
Greer, D. A., Honea Path (Co. F, 56th Ga.), age 64.
Gunnells, B. F., Honea I'ath (Co. B, 1st Regulars), age 64.
Harper, J. R., Honea Path (Co. K, Orr's Rifes), age 65.
Harris, H. W., Belton (Co. B, 16th reg.), age 77.
Harris, J. W., Pelzer (Co. E, 6th S. C. C.), age 68.
Hellams, W. L., Belton (Co. L, Orr's Rifles), age 63.
Hewin, J. M. C.. Starr (Co. G, 2d Rifles), age 67.
Jones, Levin (Co. II, 19th reg.), age 64.
Kay, J. S., Pelzer (Co. L, 2d Rifles), age 60.
Long, M. T., Corinne (Co. M, P. S. S.), age 67.
Loyd, J. W., Marvin (Co. E, 16th S. C. V.), age 74.
McAbee, James, Pendleton (Co. K, 3d S. C. V.), age 60.
McAbee, W. J. (Co. K, 3d reg.), age 69.
McAllster, B. A., Anderson (Co. C. 4th reg.), age 70.
McWhorten, J. J., Pledmont (Co. I. 1st S. C. V.), age 65.
Martin, John W., Broyles (Co. C, Orr's Rides), age 60 . Dead ; money refunded.
Massey, R. B., Troy (Co. G, 14th Ga.), age 70.
Miller, John, Belton (Co. I, 2d Kentucky 1.), age 62.
Mitchell, E. M., Honea Path (Co. E, 20th Vol.), age 68.
Mltchell, J. F., Belton (Co. K, Orr's Rlfles), age 62.
Morgan, W. C. (Co. F, 25th). Transferred from Greenville County.
McGhee, G. L. (Co. F, 24th reg.) Transferred from Oconee.
Motes, W. J. C., Honea Path (Co. C, James), age 68.
Mulliken, M. H., Newell (Co. D, 4th reg.), age 63.
Norrell, J. E., Pelzer (Co. A, 2d S. C. V.), age 65.
Owens, D. W., Autun (Co. H, 4th S. C. V.), age 64. Dead; pald widow.
Owens, Rlchard, Pelzer (Co. F, Holcomb Legion), age 64.
Parls, Thomas H., Pledmont (Co. I, 3d S. C. V.), age 84.
Park, J. B., Pelzer (Co. E, 20th reg.), age 61.
Pearl, H. H., Honea Path (Co. B, 1st Reg. Infantry), ase 64.

Ragsdale, N. W., Belton (Co. K, Orr's Rlfles), age 68.
Rice, B. B., Denver (Co. G, 22d S. C. V.), age 78.
Roberson, H. A. (Co. C, 19th), age 64.
Rogers, T. L.. Plercetown (Co. B, 7th S. C. C.), age 85.
Roland, William R., Pendleton (Co. G, 22d S. C. V.), age 69.
Saylors, Isaac. Belton (Co. E, 20th reg.), age 63.
Seigler, J. R., Belton (Co. G, 14th reg.), age 67.
Shannon, J. D., Pelzer (Co. B, 15th Ga.), age 64.
Shlriey. A. Y., Waco (Co. L, Orr's RIdes), age 72.
Simpson, L. J., Anderson (McBeth Lt. Artil.), age 61.
Smith, A. O., Pelzer (Co. F. 16th reg.). age 63.
Smith, Bazil, Pelzer (Co. E, 1st reg.), age 76.
Smith, Caleb, Belton (Co. E, 20th reg.), age 61.
8mith, J. F., Whllamston (Co. E, 16th S. C. V.), age 71.
Smlth, T. L., Pelzer (Co. I, 54th N. C.), age 64.
Sammerell, P. M., Roberts (Co. F, 1st S. C. C.), age 65.
Taylor, WIllam, Starr (Co. F, 24th reg.), age 67.
Thompson, G. T., Belton (Co. E., 16th reg.), age 64.
Townsend, W. T., Anderson (Co. G. 19th reg.), age 64.
Farnadore, D. J., Belton (Co. E, 20th reg.), age 62.
Falker, C. C., Anderson (Beauregard's Lt. Artillery), age 61.
Watson, C. M., Anderson (Co. K, 6th reg.), age 63.
Webb, C. L., Septus (Co. 7, 22d reg.), age 61.
Wells, T. S., Broyles (Co. D, 2d S. C. R.), age 62.
Wicker, Samuel, Alpinc (Co. G, Holcomb Legion), age 75.
Filmon, Willam M., Septus (Co. G, 22d reg.), age 70.
Wyan, W. M., Pledmont (Co. G, 4th reg.), age 79.
Fard, D. P. (Co. D, 18th Ga.), age 69.

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\text { Clase O, No. 2, } 1902 .
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Bally. J. W. (Co. G, Hampton).
Blact, A. H., Plercetown (Co. B, 16th S. C. V.), age 68.
Blackston, J. H., Pledmont (Co. C, 4th S. C. V.), age 66.
Brock, J. H., Holland (Co. C, Orr's reg.), age 61.
Browning, W. F., Anderson (Co. D, 2d 8. C. Rifles), age 61.
Byrd, D. M. (Co. F, 8th reg.)
Cobb. H. D., Pelzer (Co. D, 22d S. C. V.), age 77.
Gambrell, A. R., Pelzer (Co. L, P. S. S.), age 64.
Gilmer, C. B., Roberts (Co. G,. 6 th reg.), age 62.
Girard, Thos., Olive (Co. K, 4th reg.), age 70.
Greer, J. F., Williamston (Co. A. 2d S. C. reg.), age 70.
Greer. R. A., Anderson (Co. K, Orr's reg.), age 60.
Hatcher, John J., Broyles (Co. D, 2d S. C. Rifles), age 60.
Hill, W. A., Pelzer (Co. D, 39th N. C. V.), age 63.
Gagnes, N. A., Honea Path (Co. F. Folcomb's Legion), age 69.
Rubbard, J. B., Anderson (Co. K, 22d S. C. V.), age 61.
Hutchinson, J. F., Pledmont (Co. H, 13th S. C. V.), age 81.
liby. S. V., Wllliamston (Co. G, 22d reg.), age 68.
Jones, P. A. Anderson (Co. L, Orr's reg.), age 65.
Kay, C. M., Belton (Co. F, 20th reg.), age 68.
Lewls, John (Co. K, 4th S. C. V.), age 61.
MeClelland. T. P.. Anderson (Co. F, Holcomb's Legion), age 60.
Magaha, James, Honea Path (Co. A. 1st S. C. V.), age 60.
Maviy, Henry N., Major (Co. F. 2d S. C. V.), age 62.
Moore, R. F., Belton (Co. A, 6th S. C. C.), age 61.
Moore. G. Y., Honea Path (Co. C, 14th reg.), age 63.
Kullinaz, W. C.. Pendleton (Co. A, Preston's Bat.), age 66.
Owing. R. A., Williamston (Co. F. 25th N. C.), age 62.
Owins, T. A., Pelzer (Co. D, 18th S. C. V.), age 67.
Bmart. John, Belton (Beauregard's Bat.), age 61.
Btages, W. D., Beardam (Co. F, 25th N. C.), age 61.
Taylor, W. S., Whllamston (Co. K, 2), age 64.

Young, W. J., Pledmont (Co. H, 4th S. C.), age 68.
Wilson, James (Co. B, 4th reg.), age 68.
Class C, No. 2, 1908.
Baldwin, J. W., Anderson (Co. B, 1st S. C. reg.), age 66. Bohannon, A. E., Anderson (Co. D, 2d Rifes), age 61. Collins, J. W., Pelzer (Co. C, 4th S. C. C.), age 60.
Davenport, J. M., Pelzer (Co. E, Hampton Legion), age 60.
Harrison, T. J., Pelzer (Co. A, Earle's bat.), age 64.
Hewln, P. W., Anderson (Co. F, 2d Rifles), age 61.
Irvin, G. W., Pelzer (Co. A, 2d Rifles), age 64.
Lindsay, P. N., Belton (Co. K, 22d S. C.)
Prewett, E. O., Belton (Co. E, 20th reg.), age 60.
Phillips, T. F., Anderson (Co. I, 14th S. C.), age 60.
Stegall, Sidney, Pelzer (Co. F, 1st Art.)
Sanders, Wm. (Co. B, 37th Va.)
Class C, No. 2, 1904.
Alverson, W. B., Pelzer (Co. B, 16th reg.)
Austin, Chris., Pelzer (Co. E, Hampton Legion).
Blakely, R. L., Piedmont (Co. B, 2d reg.)
Bagwell, J. A., Honea Path (Co. G, 2d Reserves).
Fowler, M. F., Belton (Co. B, 4th bat.)
Guyton, A. M., Plercetown (Co. D, Orr's).
Gambrell, J. P., Brushy Creek (Co. H, 2d bat.)
Hamby, R. F., Anderson (Co. D, 18th reg.)
Jamison, A. P., Pelzer (Co. E, 2d Rlfles).
James, Jesse, Pelzer (Co. F, 16th reg.) Dead; money refunded. McAllster, W. E., Central (Co. F, 2d Rifles).
Mattlson, A. E., Honea Path (Co. H, 1st State Troops).
Maddox, J. P., Anderson (Co. C, P. S. S.)
McConnell, Newton (Co. D, 1st). From Greenville.
McCoy, E. W., Anderson (Co. E, 20th S. C.)
Sadler, John H., Williamston (Co. F, 2d bat.)
Shaw, L. P., Iva (Co. E, 20th reg.)
Thompson, E. C. (Co. A, White's), from Greenville.
Yeargan, G. W., Starr (Co. G, 2d Reserves).
Class C, No. 8, 1905.
Alewine, J. A., Belton (Co. I, Hampton Legion).
Bannister, J. M., Belton (Co. E, 20th).
Berry, W. F., Anderson (Co. K, 18th S. C.)
Burgess, E. R., Williamston (Co. C, 25th Cav.)
Bowle, J. H., Williamston (Co. F, Holcomb Legion).
Buchanan, P. P., Anderson (Co. F, 29th N. C.)
Guyton, W. J., Anderson (Co. D, Orr's).
Henderson, D., Anderson (Co. K, 16th).
Jewell, W. A., Brushey Creek (Co. A, Whites).
Kay, J. B., Honea Path (Co. E, 20th S. C. V.)
Long, H. S., Pelzer (Co. G, 2d Cav.)
Lovland, J. H., Brushy Creek (Co. H, 1st S. C.)
Nelson, J. R., Pledmont (19th bat., Kltt's Cav.)
Nelson, J. B. (Co. E, 20th S. C.V.)
Stone, M. C., Pelzer (Co. C, 3d S. C.)
Sweat, D. M., Anderson (Co. H, 12th S. C.)
Thompson, J. T., Pelzer (Co. E, 16th S. C. V.)
Watson, Irvin, Pelzer (Co. M, Palmetto S. S.)
Class C, No. 2, 1900.
Ashley, Joe M., Honea Path (Co. H, 1st S. T.)
Banister, Thos., Martins (Co. E, 20th).

Brymon, C. N., Anderm (Co. B, 1st B. C.)
Bryan, J. L., Andermon (Co. B, 2d).
Broune, W. T. (Co. B, 4th).
Chestain, Garvin, Pendleton (Co. B, 1st).
Gordon, J. G., Anderson (Co. F, 24th).
Gordon, W. M., Storeville (Co. F, 24th.
Garrison, L. W., Anderson (Co. D, 2d S. C.)
Edwards, J. W., Anderson (Co. D, Sth Kentucky).
Hendrlx, John, Pelzer (Co. E, Orr's). Dead; money rafunded.
Eammond, W. T., Pledmont (Co. B, 1st).
Lindeay, W. B., Wllliamston (Co. E, Bth Cav.)
Lee, E. W., Pelzer (Co. K, Orr's).
Leavelle, E. T., Belton (Co. G, 2d B. C. R.)
McGregor, M. L., Auturn (Co. B, 15th Ga.)
Major, H. B., Belton (Co. E, 20th).
Maydeld, W. N., Anderson ${ }^{-}$(Co. D, Hampton).
Morrison, H. W., Annle (Co. H, 1st S. C. M.)
Newton, J. B. (Co. A, Orr's), from Oconee.
Poore, M. L., Belton (Co. A, Perryman's).
Rice, J. W., Pelser (Co. I, 26th N. C.)
Shaw, M. E., Kay (Co. C, 6th).
Btone, Robt., Auturn (Co. G, 1st Artil.)
Telford, M. E., Anderson (Co. L, P. S. S.)
Thomas, D. B., Belton (Co. K, 2d Art.)
White, W. G. W., Anderson (Co. C, 5th).
Wilsod, M. E., Kay (Co. C, 6th).
Clase $C$, No. 8, 1907.
Allen, Jas. M., Anderson (Co. D, 1st Ga. Reserves).
Bannister, J. W., Belton (Co. H, 1st S. C. T.).
Benton, M. J., Belton (Co. F, 20th N. C.).
Burden, Thomas J., Anderson (Co. G, 37 th Ga.).
Crawford, B. C., Pendieton (Co. B, 7th S. C. Cav.).
Cox, A. B., Andermon (Co. G, B. C. Reserves).
Cunningham, Samuel (2d S. C. Cav).
Davis, W. A. (Co. G, 2d).
Davis, S. J., Anderson (Co. B, 7th).
(Duplicate; money refunded.)
Fortine, S. B., Pelser (Co. D, 18th Battalion).
James, R. B., Williamston (Co. G, 27 th S. C. V.).
Mitchell, John G., Anderson (Co. E, 20th S. C. V.).
Mullken, A. D., Pelzer (Co. D, State Troops).
Power, W. K., Anderson (Co. I, P. S. S.).
Beed, J. B., Pelzer (Co. C, Orr's Rifles).
Bkelton, S. A., Anderson (Co. K, 1st S. C.).
Sorgee, W. B., Williamaton (Co. F, 7th S. C. V.).
Wllborne. W. M., Fair Play (Co. C, 4th S. C.).
Wyatt, J. R., Belton (Co. B, 1st S. C. Milltia).
Willson, W. H., Peudieton (Co. G, 22d Battallon).
Clase O, No. S. 1901.
Widosos of Boldiers Who Lost Their Livce in the Bervice of the Oonfederate States.
Barrett, Martha T. (Co. I, 1st S. C.)
Ballentine, Mallisa, Toney Creek (Co. G, 2d B. C. Rifes).
Burris, Jalle E., Anderson (Co. C, 4th reg.)
Cox, Flizabeth, Belton (Co. D, 2d Rifies).
Callahan, Sarah G., Anderson (Co. I, 19th reg.)
Dove, Betey (Co. I, 19th S. C.)
Fields, Sallie (Co. E, 20th reg.)
Fowler, Fetna, Anderson (Co. C, 10th Ga.)
Green, Mary, Pendleton (Co. I, ist S. C. A.)

Harris, M. R., Anderson (Co. F, 7th reg.)
Hays, P. L., Dean (Co. F, 1st Rlfles).
Hembree, Ellza, Anderson (Co. D, Ist Rifies).
McDowell, E. C., Belton (Co. L, 2d Rlfles).
Mays, Fannle M., Townville (Co. A, Rhett's).
Patterson, Sarah, Anderson (Co. F, 24th reg.)
Pritchard, J. S., Anderson (Co. G, 22d reg.)
Reese, C. C., Belton (Co. K, Orr's Rifles).
Rochester, Amanda, Autun (Co. H, 25th S. C. V.)
Shirley, L. E., Belton (Co. L, Orr's).
Smith, Jane C., Anderson (Co. I, 19th reg.)
Thomas, F. A., Anderson (Co. A, 1st S. C. A.)
Todd, Elizabeth, Anderson (Co. B, 2d bat.)
Class C, No. S, 1908.
Jefferson, Jane, Holland (Co. C, 4th reg.)
Sloan, S. T., Anderson (Co. E, 4th reg.)
Olass C, No. s, 1903.
Carter, E. F., Anderson (Co. G, 2d reg., S. C. V.)
Lindley, S. J., Anderson (Co. I, 14th S. C.)
McMurty, Sallie J., Septus (Co. G, 22d reg.)
Smith, Emmallne, Belton (Co. G, 2d Rifles).
Thompson, Ellen (Co. E, 16th S. C.)
Clas8 C, No. s, 1904.
Belotte, M. E., Anderson (Co. K, 4th reg.)
Bratcher, M. C., Plercetown (Co. D, 4 th reg.)
Glliam, Hattle (Co. B, 21st). Transferred from Darlington County.
Clark, H. N., Pelzer (Co. G, 22d reg.)
Hall, M. J., Allce (Co. G, 6th reg.)
Herron, B. J., Anderson (Co. F, 24th reg.)
Ingraham, Sophia, Anderson (Co. L, Orr's).
Johnston, M. C., Pendleton (Co. B, P. S. S.)
Mulliken, Elizabeth, Plercetown (Co. D, 1st S. C. V.)
Mitchell, S. J., Iva (Co. I, 1st reg.)
Nally, Rosannah, Autun (Co. K, 3d reg.)
Verdin, S. E. W., Equallty (Co. G, 29th Ala.)

## Class C, No. S, 1905.

Bradshaw, M. L., Anderson (Co. I, 14th S. C.)
Cochran, L. C., Anderson (Co. K, 1st Rifles).
Cooper, I. M., Anderson (Light Artll.)
Coker, Sarah A., Honea Path (Co. K. Orr's).
Kelth, Mary R., Anderson (Co. A, 2d Rifles).
King, H. E., Fair Play (Co. G, 2d Rifles).
Pack, Emmellne, Honea Path (Co. G, 2d).
Smith, Caroline (Co. E, 6th).
Class C, No. S, 1906.
Ficklin, Amanda (Co. G, Butler's).
Hiott, M. F., Anderson (Co. E, 16th).
Jones, M. E., Belton (Co. L, Orr's).
Lawson, Sarah E., Willamston (Co. H, 4th).

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\text { Class C, No. s, } 1907 .
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Coker, Margaret, Pelzer (Co. E, Hampton's Legion).
Dickerson, S. C., White Plains (Co. D, 18th).
Hinton, Mary M., Pelzer (Co. L, Orr's).
Owens, E. F., Pelzer (Co. B, 7th S. C. V.).

Smith, Nancy A., WIlliamston (Co. C, 16th).
Queen, Jane, Townville (Co. F, Orr's Rifles).

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\text { Olase } 0, \text { No. } 4,1901 .
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Blanchet, Rachel, Anderson (Co. G, Bacon's), age 71.
Bonds, Ellzabeth, Anderson (Co. B, 16th Ala.), age 63.
Breazel, Malinda, Belton (Co. G. 2d Rifles), age 71.
Brookshire, Eliza, Anderson (Co. G, 1st Ga.), ago 68.
Browning, Harriett, Pelzer (Co. E, 16th reg.), age 66.
Bryant. Charlty, Anderson (Co. D, 18th reg.), age 65.
Burkhelster, M. B., Anderson (Co. A. 20th reg.), age 66.
Caldwell, Nancy, Anderson (Co. C, 8. C. Reserves), age 67.
Campbell, Elizabeth, Honea Path (Co. K, Orr's Rifles), age 70.
Carbin, Sarah, Bushy Creek (Co. I, White's Bat.), age 65.
Cooper, D. A., Anderson (Co. C. Echols's Artll.), age 68.
Cothran, S. A., Equality (Co. F, Barnett's Bat.), age 68.
Conch, Martha, Pelzer (Co. A, 16th S. C. V.), age 68.
Conch, Sarah, Pledmont (Co. G, 16th reg.), age 69.
Craddock, Jane (Co. D, 3d reg.)
Davis. Nancy, $\Delta$ nderson (Co. B, 7th S. C.), age 67.
Dunn, Elizabeth, Anderson (Co. G, 1st S. C. Artll.), age 68.
Elgin, Mary Ann, Belfon (Co. I, 4th reg.), age 69.
Eliod, Joanna, Plercetown (Co. E, 6th S. C. C.), age 64
Elrod, Kisslah, McClure (Co. A, Barnett's Bat.), age 66.
Elrod. B. A., Pelzer (Co. F, 22d Ga. Bat.), age 69.
Epps, Elizabeth (Co. E, 8th reg.), age 60.
Evatt, Suean M., Hictory Flat (Co. E, 43d Ga.), age 68.
Fisher, Sarah, $\Delta$ nderson (Co. G. 1 st S. C. R. I.), age 61.
Fonter, Mahulda, Bushy Creek (Co. K, 6th D. C. V.), age 61.
Grant. M. E., Pelzer (Co. H, 6th Ga.), age 61.
Glaspy, Dicey J., Pendleton (Co. D, 18th S. C. V.), age 64.
Grimn, L. A.. Cely (36th Georgia Vol.), age 68.
Grabbs, Elizabeth, Belton (Co. B, Barnett's Bat.). age 86.
Hamilton. Elizabeth. Clayton (Co. D, Hampton Legion), age 67.
Harbin. M. A., Anderson (Co. B, 1st S. C. R. I.), age 65.
Hicks, Martha J. (Co. I, S. C. R.), age 73.
Holcomb, M. L. I'elzer (Co. F. 2d S. C. C.), age 65.
Holder, M. C., Willamston (Co. C, Hampton Legion), age e7.
Hughey. Barbary, Pelzer (Co. F, 22d S. C. V.), age 68.
Lancaster, M. A., Pelzer (Co. B, 2d S. C. C.), age 68.
MeClellan, R. A., Anderson (Co. B, 1st S. C. R. I.), age 67.
Major, 8. A. E., Antun (Robertg's Reserves), age 71.
Martin. O. Ll, Anderson (Co. E, 20th reg.), age 66.
Martln, P. A.. Marvin (Co. B, 2d S. C.), age 82.
Martin, Sarah, Anderson (Co. A, 1st Artil.), age 61.
Mattison, Flizabeth, Honea Path (Co. F. Hampton Legion), age 69.
Miller, F. J., Pelzer (Co. G. Orr's), age 62.
Moore. Charlotte, Pelzer (Co. I, 19th reg.), age 68.
Murdock, Eliza, Annie (Co. F, 20th reg.), age 61.
Marrah, A., Anderson (Trenholm's Squadron), age 64.
Nally. Mary P., Fasley (Co. G. 56th Ga.), age 68.
Owens, Elvira, Anderson (Co. B. 1st Rifles), age 82.
Peterson. Catherine E., Pelzer (Co. C. 5th N. C. C.). age 65.
Posey, Mary Ann, Belton (Co. F, 20th reg.), age 65.
Blee, Nancy H., Pelzer (Co. F, Hampton Legion), age 60.
Rivis, Catherine, Peluer (Co. K, 62d N. C.), age 81.
Rodgers, Sarah E., Williamston (Co. I, Hampton Legion), age 65.
Ross, Mary J., Pelzer (Co. F. 2d reg.), age 84.
Smith, Sarah (Co. C, 1st S. C. V.) Transferred from Abbevllie.
Shav, Rachel, Anderson (Co. F, 20th reg.), age 72.
Shelton, N. F., Belton (Co. I, White's), age 62.
Blmmoni, Earrlett E., Pelzer (Co. D, Orr's Rifies), age 60.

Spearman, B. A., Williamston (Co. F, 24th B. C. V.), age 62.
Spence, Matllda J., Pledmont (Co. D, 18th reg.), age 74.
Stacks, Sarah, Starr (Co. C, 4th reg.), age 62.
Stewart, Lucinda, Iva (Co. F, 24th reg.), age 72.
Suratt, Sarah W., Williamston (Co. D, P. 8. 8.), age 67.
Swords, Emily, Pendleton (Co. H, 7th reg.), age 64.
Taylor, Susan J., Belton (Co. L, 2d Rifles), age 63.
Thompson, Adaline, Pelzer (Co. E, Hampton Legion), age 67.
Taylor, Anna (Co. E, 3d reg.) Transferred from Laurens.
Traynum, Martha, Guyton (Co. G, 22d reg.), age 60.
Watt, Nancy M., Moffettsplle (Co. F. 24th reg.), age 68.
Weaver, M. A., Pendleton (Co. C, 26th Ala.), age 62.
White, M. A., Anderson (Co. K, 12th S. C. V.), age 63.
Whitlock, Nancy, Pledmont (Co. E, Hampton Legion), age 74.
Woodson, Salle C., Anderson (Co. L, 1st Rifles), age 64.
Williams, Lida (Co. D, 1st Reserves). Transferred from Plckens.
Olass U, No. \&, 1908.
Burton, Pollle, Pelzer (Co. G, 6th Cav.), age 60.
Clark, V. N. (Co. G, 22d), age 60.
Coker, Mahala C., Anderson (Co. E, KItt's), age 65.
Carpenter, M., Belton (Co. L, Orr's), age 61.
Campbell, J. F., Williamston (Co. D, Hampton Legion), age 60.
Fleming, S. A., Pledmont (Co. D, 18th S. C. V.), age 72.
Keys; Salle, Pendleton (Co. I, 1st reg.), age 60.
Moore, F. D., Anderson (McBeth's Art.), age 61.
Owens, Sarah A., Septus (Co. E, 2d reg.), age 76.
Patterson, M. J., Anderson (Co. D, Hampton's Legion), age 61.
Sheriff, Zilla, Brushy Creek (Co. D, 4th reg.), age 67.
Strickland, P. E., Pelzer (Co. I, 19th S. C. V.), age 60.
Snlpes, M. C., Anderson (Co. A, Trenholm's), age 61.
Williams, E. M. (Co. L, 4th reg.), age 73. Dead; money refunded.
Willamson, Minerva. Anderson (Co. E, 20th reg.), age 66.
Yeargan,. P. H., Belton (Co. F, Hampton's Legion), age 68.
Class C, No. 4, 1908.
Capps, Clarinda, Equality (Co. G, 16th S. C.), age 77. Campbell, Martha, Pelzer (Co. C, 16th S. C. V.), age 69. Cooper, N. E., Belton (Co. E, 20th reg.), age 61.
Hogan, Mallnda, Iva (Co. D, 18th S. C. V.), age 61.
Garrison, Emily, Pelzer (Co. B, Trenholm's Squadron), age 78.
Langston, Lucy J., Anderson (Co. B, 4th reg.), age 72.
McCueen, K. C., Anderson (Co. D, 6th S. C. C.), age 60.
McCulley, M. E., Anderson (Co. C, Palmetto Sharpshooters), age 61.
Stone, Mary A., Anderson (Co. A, Russell's), age 66.
Scalp, Margaret (Co. C, 16th), age 70. From Greenville.
Smlth, Emmaline, Anderson (Co. G, Orr's Rifics), age 62. Dead; money refunded.
Johnson, M. E., Belton (Co. G, 2d Rifles), age 62.
Class C, No. 4, 1904.
Adams, Harriett, Anderson (Co. D, 37th Ga.), age 61.
Ashley, M. C., Honea Path (Co. E, 20th reg.), age 60.
Cochran, Ellzabeth, Autun (Co. I, Beauregard's), age 68.
Haukins, Sallie (Co. A, 16th), age 63.
Morrison, N. J., Honea Path (Co. F, Griffn's).
Mitchell, Mary, Anderson (Co. L, Palmetto), age 60.
Manly, Nancy C., Williamston (Co. K, 1st Art.), age 60.
McMahan, M. J., Iva (Co. G, 19th reg.), age 65.
Powell, H. M., Anderson (Co. C, Orr's), age 60.
Pack, Hannah H. (Co. E, 1st S. C. I.), age 62.
Rodgers, Sarah C., Pelzer (Co. D, 6th reg.), age 65.

Woolbright, M. J., Townille (Co. D, 1et B. C.), age 76. Wright, B. C., Belton (Co. Lh, 20th reg.), age 68.

## Olass O, No. \& 2905.

Armstrong, Lizzle (Co. F, 81st Miss.), age 60.
Bowle, C. F., Anderson (Co. C, 52 d Ga.), age 61.
Balley, 8. E., Anderson (Co. C, 52d Ga.), age 60.
Cole, M. E., Andersion (Co. C, 2d S. C.), age 68.
Erskin, 8. J., Anderson (Co. I, 4th S. C.), age 78.
Greer, Elizabeth, Pledmont (Co. F, 6th), age 60.
Hand, Caroline. Anderson (Co. B, James's), age 65. Jones, E. M., Pelzer (Co. K, 62d N. C.), age 63.
Kay, 8. A., Belton (Co. L, 2d Rifles), age 68.
MeClain, Nancy, Anderson (Co. B, 4th S. C.), age 79.
Massey, Anna J., Anderson (Co. I, 8th S. C.), age 70.
Onkley, Martha, Anderson (Co. I, Orr's), age 62.
Outs, Nancy E., Pendleton (Co. C, 16th Ga.), age 70.
Patterson, M. A., Auturn (Co. B, P. S. S.), age 82.
Reeves, Lida, Pledmont (Co C. Hampton Legion), age 62.
Thompson, 8. C., Williamston (Co. E, Hampton Leglon), age 62.
Food, Emma, Pelser (Co. F, 16th), age 63.
Wood, Sarah S., Anderson (Co. K, b0th N. C.), age 69.

## Olass O, No. \& 1908.

Browne, Julia M., Equality (Co. Lh, Orr's), age 61. Dead; money refunded.
Bryant, Elizabeth, Anderson (Co. D, 18th), age 60.
Church, Marth Ann, Anderson (Co. H, 11th Ga.), age 73.
EIgin, Martha, Ira (Co. E, 20th), age 75.
Freeman, M. F., Anderson (Co. E, 20th), age 60.
Grant, Rose Ann, Townville (Light Artil.), age 62.
Boliday, Sallie A. Anderson (Co. E, 16th), age 70.
Gaddon, M. J., Anderson (1st S. C. Reserves), age 60.
Hannon, M. E., Pledmont (Co. F, 49th), age 62.
Hammond, Harriett E., Pelzer (Co. I, 1st), age 61.
Langston, Eliza C, Anderson (Co. B, 37th Va.), age 60.
Lively. Sarah (Co. I, 14th). From Abbeville.
Mauldin. Mary C, Ira (Co. I, 14th), age 60.
Martin, Martha P., Pendleton (Co. A, Orr's), age 81.
Martln, Grace G., Anderson (Co. L, Orr's), age 68.
Putaam, S. E., Belton (Co. E, 14th), age 60.
Stone, Ellzabeth, Ira (Co. E, 16th), age 73.
Smith, Carollne, Pendleton (Co. D, 22d), age 69. Dead; money refunded.
Watmon, M. E., Anderson (Co. D, 18th), age 61.
Whilams, Sarah A.. Anderson (Co. I, 1st Artil.), age 63.
Waddell, Nancy (Co. H, 22d), age 70.

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\text { Olass } C, \text { No. } 4,1907 .
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Alkens, Selena, Pledmont (Co. F, 22d B. C. V.), age 61.
Belcher, M. J., Iva (Co. D, 4th), age 60.
Campbell, Nancy, Anderson (Co. F, Orr's), age 69.
Gray, Mary A., Anderson (Co. C, 4th S. C. V.), age 60.
Erans, Nancy L., Anderson (Co. F. 2d), age 60.
Porrester, Sarah, Pelzer (Co. I, 1st S. C.), age 60.
Galesple, Dicey G., Pendleton (Co. B, 18th), age 85.
Harbin, B. W., Anderson (Co. L. B. S.), age 62.
Hembree, Amanda, Plercetown (Co. D, 4th), age 02.
Koight, Jane, Honea Path (Co. C, 14th), age 73.
Eing, Laura, Anderson (Co. F, 2d Rifes), age 81.

Kernels, Nancy, Pelzer (Co. B, 1st Art.), age 62.
McGee, M. F., Anderson (Co. B, 4th), age 64.
Moore, Mary, Pendleton (Co. D, Orr's), age 60.
Martin, Ellzabeth, Townville (Co. C, Orr's), age 65.
McLesky, Mary E., Anderson (Co. C, 4th), age 61.
Owens, Caroline, Plercetown (Co. L, P. S. S.), age 80.
Owens, P. C., Pelzer (Co. B, 7th), age 60.
Shaw, Francls E., Iva (Co. E, 20th), age 64.
White, Margaret (Hampton Legion), age 64.

## BAMBERG COUNTY. <br> CHANGES ix moll binci last patment.

Dead-C, No. 1: H. R. Pelham, Jamea Kirkland. C, No. 2: E. C. Behilng, William Bealnger, N. Crider, A. Kinard, J. A. Kirkland, A. P. Smoak, S. C. Williams. C. No. 8: Luena McKenzia Class C, No. 4: 8. E. Goran, Rachel Hutto, Amanda Gillam, Mary E. Chasserean, Sarah Blume.

Transferred to Other Counties-J. D. Sease to Barnwell. C. B. Eiking to Barnwell.

Transferred From Other Countlea-G. M. Cope from Barnwell County.
Olase B, 1901.
Zelgler, J. H., Bamberg (Co. H, 17th reg.). Lost one arm.
Olase $O, N O .1,1901$.
Besalnger, Calvin, Olar-Co. G, 1 st reg. (Shot in hand and shoulder.)
Copeland, W. R., Denmark-Co. A, 1st reg. (Wounded in head.)
Kinsall, Joseph, Olar-Co. D, 21st Mlss. reg. (Wounded in groin.)
Whison, H. E., Bamberg-Co. D, Bd Cav. (Use of leg from wound.)
Class C, No. 1, 1905.
Cox, L. L., Denmark-Co. B, 2 d Art. (Wounded in thigh.)
Clase $C$, No. $1,1904$.
Zeigler, J. J., Ehrhardt (Co. G, 1st reg.), wounded in leg.
Clase C, No. \&, 1901.
Glllam, A. M., Denmari (Co. A, 2d Art.), age 67.
Jones, J. F., Bamberg (Co. G, 17th reg.), age 70.
Clase C, No. 2, 1908.
Copeland, John S., Ehrhardt (Co. G, 17th reg.), age 65.
Brabhem, B. J., Olar (Co. A, 3d B. C. C.), age 67.
Carter, M. S., Bamberg (Co. B, Bd S. C.), age 62.
Gllam, J. B., Denmark (Hart's Battery), age 60.
McCormack, J. H., Govan (Hampton's Legion), age 68.
Nix, R. W., Bamberg (Co. B, 2d B. C.), age 60.
Wlimon, A., Vlola (Co. H, 17th S. C. V.), age 63.
Willams, W. W., Bamberg (Co. A, Manigault's reg.), age 61.
Olass C, No. 2, 1909.
Barbrldge, Siml, Bamberg (Co. A, 2d Cav.), age 74.
Bessinger, J. W., Bamberg (Co. G, 1st bat.), age 60.
Carter, C. K., Midway (Co. A, 1st reg.), age 60.
Garrett, J. A., Midway (Co. I, 11th reg.), age 66.
Nell, Louis, Viola (Co. K, 1st reg. Art.), age 71.
Sandifer, F. J., Denmart (Co. K, 2d reg.), age 66.
Olass C, NO. 2, 1904.
Brown, H. C., Bamberg (Co. B, 3 d reg.)
Dickinson, Joseph, Bamberg (Co. G, 17th reg.)
Dempsey, R. C., Bamberg (Co. A, 1st reg.)
Blchardson, J. T., Midway (Co. I, 5th Car.)
Cope, G. M. (Co. C, 1st), from Bamberg.
Olass C, NO. 2, 1905.
Beard, H. D., Colson (Co. H, 17 th).
Carter, Marlon, Bamberg (Co. B, 2d Art.)
Eartsog, D. S., Denmark (Co. A, 1嘼).

Jones, J. A., Bamberg (Co. I, 5th Cav.) Maln, J. E., Olar (Co. B, Magrath's).
Rowell, B. A. W., Bamberg (Co. I, 5th).
Rush, L. B., Govan (Co. G, 2d Art.)
Weeks, T. \&., Bamberg (Co. K, 2d).

## Olass C, No. 2, 1906.

Hadwin, H. N., Denmark (Co. B, Garlington).
Johnson, James, Bamberg (Co. C, 24th).
Sandifer, W. P., Bamberg (Co. G, 17th).
Snider, W. P., Bamberg (Co. G, 17th).
Stoudemlre, J. H., Denmark (Co. 1, DeSausseur's).

## Class C, No. 2, 1907.

Brickwadel, Nicholas, Ehrhardt (German Artillery).
Eaves, R. B., Denmark (Co. B, 2d Cav.).
Hanberry, G. D., Bamberg (Co. C, 8th).
McMillan, C. M., Bamberg (Co. I, 5th Cav.).

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\text { Olass C, No. \&, } 1901 .
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All, Eliza S., Olar '(Co. F, 3d Cav.), age 60.
Haging, Lavinla, Bamberg (Co. I, 5th reg.), age 69.
Johns, Mary, Midway (Co. 12, 11th reg.), age 60.
Kirkland, Harriett, Colston (Co. H, 3d Cav.), age 71.
McMillan, M. A.. Bamberg (Co. I, 11th reg.), age 61.
McPail, Sarah W., Midway (Co. D, 3d S. C. C.), age 70.
Morris, Elizabeth, Bamberg (Co. G, 1st S. C. V.), age 65.
Morris. Nelly, Bamberg (Co. C, 1st reg.), age 67.
Smoak, Rebecca, Bamberg (Co. A, 1st S. C. V.), age 61.
Class C, No. 4, 1908.
Drawdrey, Ellen, Hartzog (Co. H, 17th reg.), age 62. Grimes, Emma, Govan (Co. G, 5th Cav.), age 60.

Class C, No. 4, 1808.
Fall, Emily, Denmark (Co. H, 7 tir S. C. V.), age 63. Hutto, Jane E., Denmark (Co. H, 17th reg.), age 60. Hlers, M. A., Ehrhardt (Co. K, 11th reg.), age 66. Hadwin, Eliza, Bamberg (Co. C, 20th Art.), age 81. Inabinett, M. A., Colston (Black's Cav.), age 64. Tant, Sarah Ann (Co. I, 5th Cav.), age 60.

Class C, No. 4, 1904.
Boozer, Ellzabeth, Denmark (Co. C, 6th reg.), age 65.
Prescott, E. C. (Co. G, 17th).
Class C, No. $\ddagger, 1905$.
Morris, Eliza, Ehrhardt (Co. B, 10th Kirk's), age 61. Tant, M. F., Bamberg (Co. G, 2d Militia), age 20. Tant, Julia, Bamberg (Co. I, 11th), age 64.

Olass O, No. 4, 1906.
Gunnells, Kizziah, Govan (Ryan's Co.), age 86. Proveaux, Malinda, Hartzog (Co. D, 1st Artil.), age 60. Zeigler, J. A., Bamberg (Co. H, 17th), age 65.

Olass O, No. 4, 1907.
Carter, Mary 8., Bamberg (Co. C, 8d), age 69.
Smoak, Annle, Denmark (Co. G, 4th), age 60.
Techstone, Nora, Denmark (Co. A, 4th), age 66.

## BARNWELL COUNTY.

## cbanges in roll fince last payment.

Dead-Class A: Balley Benson. C, No. 1: George D. Kinard, Willam Busby, John Mooney, W. H. Roundtree, D. W. Wlllams, W. P. Yon. Class C, No. 8: Rebecca J. Brant, Susan Ussery, Julla Burk. C, No. 4: Ann Bates, L. Jane Blume, Harrlett Moody, Mary Porter, Ann Long, Harrlett Mlles, F. M. A. Baugham.

Transferred to Other Countles-G. M. Cope to Bamberg.
Left State-E. R. Dicks to Alabama.
Dropped-R. K. Garvin In asylum.
Transferred to Other Classeg-D. M. Hoover from C, No. 2, to C, No. 1. P. Jacobs from C, No. 4, to C, No. 8.

Transferted From Other Countles-J. E. Delk from Alken. C. B. Elkins and J. D. Sease from Barnwell.

Olase A, 1901.
Willams, G. P., Tuten-Co. G, 17th Reg. (Totally disabled by paralyis.)
Clase C, No. 1, 1901.
Barnes, Wiley, Blackville-Co. H, 2d Art. (Injury to splne.)
Creech, J. S., Barnwell-Co. H, 17th S. C. V. (Wounded In leg.)
Dlekinson, F. H., Allendale-Co. G, 17 th S. C. V. (Wounded in knee and ankle.)
Dyches, B. H., Blackville-Co. B, 2d B. C. A. (Wounded in hip.)
Hiers, J. C., Barnwell-Co. H, 17th S. C. V. (Wounded In left leg.)
Gutto, N. G., Blackville-Co. B, 2d S. C. A. (Splnal concussion.)
Ecott, W. T., Willeston-Co. G, 1st G. C. V. (Wonnded In right hand.)
Class C, No. 1, 1908.
Quattlebanm, J. D., Elko. (Wounded in wlndplpe.)
Clase C, No. 1, 1904.
Croft, H. J., Blackpllle (Co. H, 17th reg.) Wounded ln ahoulder.
Class C, No. 1, 1907.
Angley, G. H., Alleudale (Co. G, 17 th .S. C. V.). Wounded in legs. Hoover, D. M., Tutens (Co. G, 17th S. C. V.). Wounded in spine. Delk, J. E. (Co. B, 2d B. C. A.). Dlsabled from wound; from Alken. Lease, J. D. (Co. G, 1st S. C. V.). Wounded In leg; from Barawell.

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\text { Olase C, No. \&, } 1901 .
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Allen, John C., Allendale (Co. K, 8 d reg.), age 60. Panting, J. W., Sleglingaille (Co. G. 25th reg.), age 62. Bettison. P., Williston (Co. G, 2d art.), age 61. Black, F. J., Barnwell (Co. G, 2d S. C. A.), age 61. Beck. W. C. (Co. G, 2d reg.) Transferred from Alken. Carlton, James, Allendale (Co. K, 8d S. C. C.), age 68. Creech, S. J., Olar (Co. I, 2d S. C. A.), age 73. Elkins, C. B. (Co, A, 1st). From Bamberg. Gllam, Thomas, Bardwell (Co. C, 1st Art.), age 65. Grubbs, Samuel, Barnwell (Co. C, 1st Art.), age 63. Halr, Henry W., Blackville (Co. A, 22d S. C. A.), age 74. Kitchings. M. W., Willistoc (Co. H, 2d reg.), age 64.
Lancaster. J. M., Blackvilie (Co. B, 2d S. C. A.), age 72.
Lewle, William, White Pond (Co. B, 18th reg.), age 63.
Owens, Calvin, Williston (Co. A, 1g̨t B. C. V.), age 62.
Pender, E. (Co. K, 88 8. C. C.), age 68.
Willame, H. C., Duabarton (Co. D, 8d reg.), age 71.

Olase O, No. 2, 2902.
Bennett, W. H., Martin (Co. D, 8d S. C.), age 60.
Bowers, Edmond, Falrfax (Co. H, 1st S. C.), age 61.
Baxley, J. L., Elko (Co. A, 2d Art.), age 62.
Creech, L. B., Barawell (Co. H, 17th g. C.), age 60.
Fendell, G. M., Martin (Co. D, 5th reg.), age 62.
Grifin, O. P., Sleglingulle (Co. K, 3d S. C. C.), age 60.
Lazar, J. H., Allendale (Co. K, 8d S. C. C.), age 62.
Nunn, Hiram, Barnwell (Co. H, 8d Ga.), age 68.
Priester, W. S., Sycamore (Co. D, 24th Bat.), age 60.
Class C, No. 2, 1908.
Bonds, Wilson, Williston (Co. A, 1st reg.)
Baxley, J. S., Barnwell (Co. G, 1st S. C. V.), age 69.
Barnes, J. H., Appleton (Co. K, 3d S. C.), age 60.
Dickinson, H. C., Ulmers (Co. D, 8d reg.), age 66.
Johnson, R. H., WIlliston (Co. D, 2d S. C. Art.), age 63.
Rouse, M. D., Otranto (Co. D, 8d Cav.), age 84.
Woodmard, W. L., Snelling (Co. A, 2d S. C. Art.), age 64.
Class C, No. 2, 1904.
Carroll, W. B., Blackville (Co. B, 2d Art.)
Garvin, R. K., sllendale (Co. D, 3d S. C.). Money refunded ; in aaylum.
Moody, J. C., Weathersbee (Co. H, 2d S. C. Art.)
Sanders, W. R., Barnwell (Co. C, 8th reg.)
Weaver, W. G., Martin (Co. K, 3d S. C. C.)
Clas8 C, No. \&, 1905.
Lazar, J. G., Martins (Co. K. 3d S. C. C.)
Templeton, J. F., Blackrille (Co. B, 2d).
Odam, C. B. (Co. D). Transferred from Newberry County.
Sprauls, J. H., Williston.
Class C, No. 2, 1908.
Black, A., Olar (Co. H, 17th).
Harter, H. W., Ulmers (Co. F, 3d S. C. C.)
Martin, H. H., Blackville (Co. B, 2d S. C. V.)
Ray, Bart., Barnwell (Co. G, 2d Art.)
Still, C. M., Blackville (Co. B, 2d S. C.)
Sanders, J. J., Barnwell (Co. G, 2d).
Walker, A. M., Elko (Co. K, 11th).
Class C, No. \&, 1907.
Baxley, B. F., Weathersbee (Co. G, 2d S. C. Art.).
Creech, G. W., Kllne (Co. H, 17th S. C. V.).
Halfords, J. Staft, Barnwell (Co. G, 2d Art.).
Ifutto, W. M., Hilda (Co. H, 17th S. C. V.).
Morris, W. R., Barnwell (Co. H, 17th S. C.).
Pender, G. G., Pender, Blackville (Co. B, 2d S. C. C.).
Reddy, T. J., Barnwell (Co. A, 2d Art.).
Stlll, W. M., Barnwell (Co. H, 17th S. C. V.).
Still, R. F., Barawell (Co. G, 2d S. C. A.).
Still, Toblas, Barnwell (Co. G, 2d Art.).
Still, Starling, Barnwell (Co. G, 2d Art.).
Clase O, No. S, 1901.
Widows of Boldsers Who Lost Thodr Lives in the Serotec of the Oonfederate Btaten.
Augley, M. D. A., Sycamore (Co. G, 17th S. C. V.)
Blume, L. Jane, Blackville (Co. B, Garlington's).
Bolen, Ellen, Blackville (Co. B, 2d B. C. A.)

Coward, Mary C., Dunbarton (Allen's State Reserven). Drummond, Martha A., Meyers Mlll (Co. E, Hagood'a).

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\text { Olase } O, \text { No. s, ros. }
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Croft, Georgle Ann (Hagood's bat.)
Hickson, R. M., Barnwell (Co. H, 17th reg.), age 0.5.

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\text { Clase } O, \text { No. 3, } 1006 .
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Connelly, Julia B. (Co. C, Bd Cav.)
Duncan, F. V., Mlletts (Co. C, 3d S. C.)
Maln, Amanda, Jennys (Co. H, 17 th B. C. V.)

Class $O$, No. $s$.
Jacobe, J., Barnwell (Co. G, 2d Art.).

Olase $C$, No. f, 2901.
Arledge, Martha, Barnwell (Co. H, 17th reg.), age 68. Dead; money refunded.
Barker, Elaanor S., Sycamore (Co. D, sd reg.), age 64.
Baxley, Mary A., Barnwell (Co. B, 2d Artll.), age 60.
Benson, Martha, Robbing (Co. G, 2d Artil.); age 65.
Brant, Martha J., Sycamore (Co. A, 3d reg.), age 66.
Collins, Rachel, Blackville (Co. H. 17th S. C. V.), age. 69.
Dyches, F. A., Blackrille (Co. B, 2d S. C. A.), age 65.
Golden, M. V. (Co. G, 1st reg.), age 76.
Harden, Margaret, Martln (Co. B, Hagood's), age 60.
Huteon, Flvira, Blackville (Co. B, 2d S. C. Art.), age 68.
Johns. Rebecca C., Tuten (Co. G, 1st S. C. V.), age 62.
Johns. Sarah M., Olar (Co. K, 11th reg.), age 62.
McLendon, M. A., Blackville (Co. I, 5th Cav.), age 66.
Moody. Martha M., Kllne (Co. K. 3d Cav.), age 62.
Myrlck, Martha, Sycamore (Co. C, 1st S. C. V.), age 62.
Nevels, Mary, Blackville (Co. B, 2d Art.), age 61.
Roundtree, Elliza, Bennetts Spring (Co. E, Hagood's), age 68.
Sanders, Harriet, Barnwell (Co. B, 2d S. C. A.), age 66.
Shepperd. F. E., Barnwell (Co. E, 1st S. C. V.), age 72.
Still, Charlty, Barnwell (Co. A, 2d Art.), age 70.
Stlll, Mary Ann, Barnwell (Co. D. Reserves).
Tarrance, Sarah F., Snelling (Co. D, 8d S. C. reg.), age 64.
Wlison, Amanda, Barnwell (Co. H, 3d S. C. reg.), age 60.

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\text { Class } 0, \text { No. } 4,1908 .
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Colling, Carollne, Govan (Co. H, 17th reg.), age 62.
Hall, Martha, Appleton (Co. A, 1st S. C. reg.), age 60.
Haym, E. E., Slegllngville (Co. C, 1st S. C. V.), age 61.
Class O, NO. $\mathfrak{f}, 1903$.
Bennett, Martha A., Appleton (Co. K, Sd Cav.), age 60.
Brunson, Mary V., Thomas (Co. D. 3d S. C. Cav.), age 60.
Cloy, Sallle E., Allendale (Co. K, 8d S. C. Cav.), age 60.
Dawklns, M. C., Blackville (Co. G, Hampton's Legion), age 68.
Drawdrey, Josephlne, Appleton (Co. D, 1st art.), age 60.
Balr, Mary A., Appleton (Co. A, 19th reg.), age 64.
Holley, 8. 8., Morris (Co. K, 3d Cav.), age 70.
Owens, Eqgenla, Barnwell (Beaufort Art.), married at close of war.
8tlll, Ellen C., Handy (Co. G, 2d 8. C. Art.), age 75.
Turner, Mary C., Blackville (Co. H, 17th S. C.), age 64.
Whaley, Mllley, Blackrllle (Co. A, 2d S. C. Art.), age 83.

## Olass C, No. 4, 190ł.

Boylen, Laura A., Allendale (Co. C, 1st reg.), age 60. Benson, Elizabeth, Ellenton (Co. D, Holcomb Legion), age 60. Jaudon, Carrie A., Fairfax (Co. K, 3d reg.), age 61. Lancaster, Mary A., Blackville (Co. B, Reserves), age 60.
Sanders, M. A., Barnwell (Co. G, 2d Art.), age 61.
Youmans, L. J., Allendale (Co. D, 3d reg.), age 63.
Ferguson, Rebecca (Hood's Division), age 60.
Class C, No. 4, 1905.
Black, Caroline, Barnwell (Co. C, 1st Art.), nge 62.
Clary, Catherine, Martins (Canapoe's Art.), age 64.
Harley, Mary E., Irvinton (Co. K, 3d S. C. A.), age 65.
Miles, Catherine (Ashley Reserves), age 65.
Still, Jane, Barnwell (Co. C, Reserves), age 60.
Wood, Ellen, Blackville (Co. G, 3d), age 62.
Wooley, Mary, Barnwell (Co. K, 2d), age 67.
Olass C, No. 4, 1908.
Bennett, Laura E., Sycamore (3d S. C. C.), age 65.
Hay, M. H., Hayville (Hagood's Brigade), age 71.
Lard, Carrie, Blackville (Co. H, 17th), 'age 60.
Lawton, V. S., Kline (Co. A, 25th), age 60.
Odam, Ellen, Blackville (Co. H, 17th), age 65.
Patterson, Mary (S. C. Reserves), age 60.
Rhoden, Marcella, Blackville (Co. G, 17th), age 69.
StIll, E. (Co. H, 17th S. C. V.), age 60.
Williams, Eliza E., Kline, age 74.
Williams, H. C., Barnwell (Co. A, 2d), age 63.
Olase C, No. 4, 1907.
Anderson, C. A., Barnwell (Co. G, Hampton Legion), age 74. Burns, Mary T., Appleton (Co. K, 3d S. C.), age 60. Busby, Mary, Myers' Mill (Co. B, 4th Cav.), age 69. Kinard, Levica, Tutens (Co. G, 17 th), age 74.
Mooney, Kittie, Greenland (Co. G, 2d Cav.), age 60.
Sanders, N. C., Barnwell (Co. B, 2d S. C. A.), age 61.
Steed, M. J., Appleton (Co. K, 3d), age 60.
Wllliams, M. C., Ulmers (Co. F, 3d reg.), age 67.

## BEAOFORT COUNTY.

changes in roll sinct ladst paticent.
Dead-G. M. Harvey, W. B. Bennett.
Olase O, NO. 1, 2901.
Reynolds, R. O., Blaffton-Co. E, 11th reg. (Wonnded through thigh.)
O2ase O, No. 2, 1901.
Cooler, John D., Blaitton (Co. A, Kirk's Squad), age 62.
Hutson, W. M., Beabrook (Co. F, 11th reg.), age 68.
Catterson, A. V., Bluffton (Co. B, 3d reg.), age 63. Btone, A. B., Beaufort (Co. A, 3d B. C.), age 67. Walker, A. E., Bluftion (Co. K, 11th Inf.), age 61. Walls, Charlen, Hardeeville (Co. H, 8d B. C. V.), age 64.

Olase C, NO. 2, 2908.
Beverly, C. W., Bluffton (Co. K, 1st B. C. I.), age 60. Crosby, W. H., Bluffion (Co. B, 8d B. C. C.), age 80. Cooler, A. D., Oratie (Co. A, Klrk's Squad.), age 60. Davis, L. E., Blafiton (Co. A, 8d B. C. C.), age 67. Johnson, F. M., Okatie (Co. B, 5th Ga. Cav.), age 69. Walla, Bamuel, Hardeeville (Co. H, 8d reg.), age 67.

Olase $O$, NO. 8, 1903.
Pope, W. B., Okatie (Co. E, 8d Cer.), age 60. White, H., Port Royal (Co. K, lat Inf.), age. 61.

Olass C, No. 2, 1904.
Cooler, Washington, Grahamville (Co. E, 11th reg.)
Erarr, Thos. H., Beaufort (Co. C, 3d Cav.)
Hambert, Francis, Ridgeland (Co. C, 3d reg.)
Zealy, O. T., Grahampllle (Co. C, 8d Cav.)
Olass C, No. 2, 1908.
Buck, Joseph, Tracklin (Co. C, 3d Cav.)
Coburn, J. B., Hardeeville (Co. E, 3d B. C. C.)
Cooler, Joseph, Heyward (Co. C, 8d Cav.)
Hardee, J. H., Hardeeville (Co. A, 3d).
Class C, No. 2, 1907.
Blake, G. M., Hardeeville (Co. F', 6th S. C. Cav.).
Olasa O, No. \&, 1001.
Coe, (Mrs), Bluffton (Hamllton Guards), age 71.
Farr, Rosa, Grahampille (Co. C, 3d B. C.), age 60.
Hasell, Barah, Grahampllle (Co. H, 8d B. C. V.), age 60.
Hodge, Jane A., Beaufort (Co. I, Kirk's Squadron), age 60.
Kirk, Ella, Grahamvilie (Klrk's Battery), age 69.
Johnson, Amanda, Beaufort (Co. C. 1st B. C. C.), age 60.
Pritchard, E. M., St. Helena (St. Helena Mounted Riflea), age 65. Dead; monay refunded.
Wlgging, Marthe, Bluffton (Co. E, 11th B. C. I.), ege 62.
William, Elizabeth M., St. Helena (Hampton Leglon), age 67.
Olase O, No. f, 1908.
Drawdrey, Elvira, Dale (Co. B, 8d B. C. C.), age 67.
Ogleaby, Mary K., Okatie (Co. C. 3d B. C. C.), age 71.

Class C, No. f, 2908.
White, Rosa Ann, Beafort (Co. A, Kirk's Squadron).
Class C, No. 4, 1904.
Holman, Elizabeth L., HardeeviHe (Co. G, 25th reg.), age 60.
Law, Jane, Ridgeland (Co. B, 2d reg.), age 78. Dead; money refunded.
Class C, No. \&, 1906.
Chaplin, Marcelline, Beaufort (Artll.), age 61.
Halford, E. M., Blufiton (Home Guards), age 83.
Olass O, No. \&, 1906.
Tuten, Martha, Okatee (Co. C, 3d), age 86.
Verdier, Mary E., Port Royal (4th Bat.), age 73. Not called for; refunded.

## BERKELEY COUNTY.

## changer in roll since last payment.

Dead-C, No. 2: J. W. Bradham, A. J. Burbage, John Chubb, B. L. Deveaux, R. Jackson, Thos. Martin, M. D. Rush, R. C. Scott, J. M. Wren, James Johnson, R. W. Welch, W. M. Martin, William McDonald. C, No. 3: Mary J. DeHay, Rebeca Harmon. C, No. 4 : Catherine Taylor, E. J. Byrd, Mary A. Fort, M. E. G. Moore, A. E. Clark, 8. A. Clark, Eudora Lindsay,

Left State-D. W. Driggers, F. M. Droze, Fannle Driggers, Sarah Perry.
Transferred to Other Countiea-J. W. Grant to Colleton. S. L. Orrin to Charleston. Ullann Lamb to Dorchester.

Transferred to Other Classes-J. W. Peagler from C, No. 2, to A. Elimabeth DeHay from C, No. 4, to C, No. 3.

Class A, 1906.
Scott, E. M., Chlcora-Co. G, 5th. (Totally blind.)
Olass A, 1907.
Peagler, J. W., Legare-Co. C, 11th S. C. I. (Totally bllnd,)
Clas: C, No. 1, 1901.
Grimn, 8. H., Bonneau-Co. K, 16th N. C. (Shot through the hlps.)
Jackeon, E. L., Plnopolls-Co. G, 1st S. C. H. A. (Shell wound right groin.)
Law. Robert, Longridge-Co. D, Whlte's Bat. (Wounded in the head.)
Lockller, Willam, Oakley-Co. A, 24th reg. (Wounded ln the back.)
Palmer, H. C., Eadytown-Co. L, 1st S. C. I. (Wounded In right leg.)
Sutcilfe, W. H., Monks Corner-Co. B, 27th S. C. I. (Loss of one eye and denfrems.)
Weatherford, R. W., Holly Hill-Co. C, 11th S. C. V. (Wounded left thigh.)
Class C, No. \&, 1901.
Adring, J. B., Sandridge (Co. G, 5th S. C. C.), age 64.
Alezander, Bam'l, Summerville (Co. D, White's), age 66.
Chestnut, Cornellus, Sandridge (Co. F, Tucker's Cav.), age 66.
Chubb, C. L., Sandrldge (Co. G, 5th Cav.), age 71.
Driggers, W. H., Summerville (Co. D, White's Bat.), age 69.
Drose, Thos. N., Ladsons (Co, I, 1st 8. C. C.), age 66.
Eadie, J. J., St. Stepheds (Gallard's Battallon), age 78.
Glggleman, W. R., St. Stephens (Co. K, 10th reg.), age 84.
Gperry, W. B., St. Stephens (Gallard's Battallon), age 64.
Hayne, Henry A., Monks Corner (Co. D, 6th S. C. C.), age 64.
Hilton, J. C., Cross (Co. H, 1st S. C. C.), age 60.
Hilton, T. N., Bonneau (Co. H, 1st S. C. I.), age 61.
Jackeon, Capers C., Holly Hill (Gallard's Bat.), age 73.
Jackson, Morgan. Monks Corner (Co. D, White's), age 67.
Joyner, J. S., Holly Hill (Lafayette Lt. Artil.), age 78.
McMakin, R. C., St. Stephens (Co. E, Eth S. C. C.), age 60.
Murray, James W., Chicora (Co. I). 2d S. C. C.), age 86.
Owens, D. B., Bowyer (Co. G. 5th Cav.). age 67.
Shuler, T. E. E., Palmersville (Galllard's Bat.), age 75.
Simms, E. R., Strawberry (Co. D, 2 S S. C. V.), age 64.
Olass O, No. 2, 2908.
Cantley, W. D., Mixon (Co. D, 9th B. C. V.), age 60.
Drlggera, George, Oakley (Co. D. Whlte's), age 62.
Dangerfeld, W. R., Oakley (Co. F., 5th B. C. C.), age 60.
Harmon, S. 8., Summerville (Co. D, Lt. Art.), age 60.
Jones, F. F., sandridge (Co. F. White's bat.), age 60.
Jackeon, W. E., Efutawille (Galllard's Lt. Art.) age 60.
Litchfeld, A. J., Blake (Coast Guard), age 81.

Martin, Alfred, Entawville (Gaillard's Bat.), age 62.
Moore, Joseph, Chlcora (5th S. C. Cav.), age 61.
Moore, C. C., St. Stephens (Co. K, 10th S. C. I.), age 60.
Mitchell, Benj., Wren (Galllard's bat.), age 65.
Smith, John J., Longridge (Co. G, 5th S. C. C.), age 61.
Wilder, O. E., Berkeley (Co. C, Galllard'ı Bat.), age 60.
Class C, No. 2, 1908.
Anderson, J. T., Longridge (Co. M, 10th S. C. I.), age 60.
Mizell, M. W., Sandridge (Co. D, Palmetto reg.), age 63.
Murphey, W. L., Longridge (Co. H. 1st S. C. reg.), age 70.
Murray, F. M., Chicora (Co. A, 11th S. C. I.), age 60.
Weatherford, Lewls W., Eutawville (Schultz's bat.), age 60.
Ward, B. H., Longridge (Co. D, 20th N. C. I.)
Class C, No. 2, 1904.
Burbage, Danlel, Oakley (Co. C, 1st Regulars).
Ballentine, L. E., Longridge (Co. D, 2d Cav.)
Huff, Joel, Summerville (Co. C, 11th reg.)
Mims, J. O., Longridge (Co. D, I'almetto Battalion).
Mills, Nalsby, Monks Corner (Co. E., 5th S. C. C.)
Class C, No. 2, 1905.
Parker, Thomas S., Sand Ridge (Co. C, 11th S. C.)
Player, F. M. (Co. B, 1st). From Colleton.
Class C, No. 2, 1906.
Barker, H. L., Oakley (Marlon Artll.)
Hernandy, John W. (Brooks Guard).
Mizell, J. H., Ridgeville (Co. D, Palmetto).
Mitchun, Thodore, Hugers (Co. D, 4th S. C. C.)
Rouk, J. L., Cross (Co. D, Palmetto).
Class C, No. 2, 1907.
Carn, W. H., St. Stephens (Co. E, 1st S. C. C.).
Godfrey, T. P., Moncks Corner (27th S. C. I. reg.).
Martin, J. E., Eutawville (Gaillard's Battery).
Ponteaux, J. B. V., Blake (Co. F, 26th S. C. I.).
Welch, E. B., Miron (Co. G, 5th S. C. C.).
Class C, No. S, 1903.
Widows of Soldiers Who Lost Their Lives in the Servioc of the Oonfodorate Etatea
Murray, Mary J., Moncks Corner (Co. G, 5th S. C. C.).
Class C, No. S, 1907.
DeHay, Elizabeth, Chlcora (Co. D, White's).

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\text { Class C, No. 4. } 1901 .
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Bramsell, Elizabeth, Cordesville (Co. K. 10th reg.), age 65.
Cannon, Mary A., Summerville (Hart's Battery), age 60.
Carr, Ann P., St. Stephens (Co. E, Eth Reg.), age 65.
Dangerfield, Laura, Oakley (Ferguson B. A.), age 66.
Driggers, Love, Summerville (Co. F, P. L. A.), age 60.
Droze, Margaret, Summerville (Co. C, 11th S. C. V.), age G
Harria, Loulsa, St. Stephens (Co. K, 10th reg.), age 68.
Hood, E. J., St. Stephens (Co. F, 50th Cav.), age 70.
Humbert, M. E., St. Stephens (Co. K, 10th S. C.), age 60.
Keller, Lissie 8., St. Stephens (Co. K, 10th reg.), age 61.

Kline, Dddie, Oakley (Co. D, 2d B. C. C.), age 63.
Morray, Julle, Croes (Co. D, B. C. V. C.), age 67.
Myers, Elizabeth J., Summerville (Etlwan Rangers), ase 62.
Myera, N. V., Longridge (Co. D, 2d Cav.), age 67.
Parson, J. F., Hoger (Co. C, 25th S. C. V.), age 67.
Bmith, Harrlett, Sendridge (Co. G; 5th Cav.), age 77.
Bweatman, Susan R., Holly Hill (Lafayette; Light Artillery), ase 68.
Tylor, Barah A., Blake (Co. E, Eth S. C. C.), age 67.
Winningham, Emily, Monks Corner (Co. D, White's B. A.), age 78.
Wlnalngham, Nancy, Cross (Co. K, 10th S. C. V.), age 68.
Olas: C, No. 4, 180 s
Adilns, Jullann, Entawville (Co. K. 10th Infantry), age 60.
Brinmon, M. A., Blake (Co. D, 23d), age 60.
Cumbee, Theodosla, Blake (Gallard's Battery), age 60.
Driggera, Sarah, Summerville (Co. C, 11th reg.), age 64.
Hood, Susan, Blake (Co. E. Eth Cav.), age 63.
Johnson, Susan A., Wren (Galliard's Bat.), age 74.
Bingleterry, Mary A., Cross (Co. D, 2d S. C.), age 60.
Bingleterry, G. B., Bandridge (Gaillard's bat.), age 68.
Bweatman, C. D., Longridge (Lafagette's Art.), age 63.
White, Mary M., Honey Hill (Co. D, 4th reg.), age 76.

## OLass C, No. 4, 1905.

Burbage, Rebecca, Summerville (Co. C, 11th B. C. V.), age 65.
Driggers, Melissa, Summerville (Co. C, 11 th S. C. V.), age 60.
Grooms, L. C., Jedburg (Co. G, 5th S. C. C.), age 61.
Norton, Rachel Ann (Co. I, 4th S. C. C.), age 68.
Tayior, Susanna, Eutawville (Co. F, 25th B. C. I.), age 65.
Shirah, Sue Brooka, St. Stephens (Co. H, 2d S. C. C.), age 67.

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\text { Clase C, No. 4. } 1904 .
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Blanton, Jane, Longridge (Co. G, 5th B. C. C.), age 60.
Carson, H. A., Pinopolis (Co. H, Hampton Legion), age 60.
Hill, Martha, Longridge (Co. G, 5th reg.), age 61.
Murray, Susan, Chicora (Galllard's Bat.), age 61.
Sweatman, Susan A., Cross (Co. I, 1st B. C.), age 62.
Clase O, No. 4, 1906.
Godirey, B. D., Eutawville (Co. D, 2d B. C.), age 68.
Veno, Eletha A., Sand Ridge (Co. E, 2d Art.), age 61.
Olass O, No. 4, 1907.
Harrls, Caroline, St. Btephens (Galliard's Battery), age 65.
Martin, Catherine, Eutawille (Galliard's Battery), age 63.
(Lcott, Eliza, Cross (Co. G, 5th S. C. C.), age 73.

## CHARLESTON COUNTY. <br> CEANGES IN ROLL BINCE LABT PAYMENT.

Dead-Class A: James Croghan. Class C, No. 1: James C. Barr, G. S. Brown, J. B. Limbaker, J. B. Guerard. C, No. 4: Elizabeth Pinner, Mary J. Humphreys, Anna Oswald.

Transferred From Other Counties-W. B. Rigs from Dorchester. W. C. Meggett from Newberry. S. L. Orrin from Berkeley. F. L. Wilkerson from Colleton.

Class B, 1901.
McArdle, Peter, Charleston-Co. B, 1st H. Artll. (Lost left foot.) Mills, John F., Charleston-Co. E, 55th N. C. (Lost right arm.)

Class C, No. 1, 1901.
Brassell, W. H., Charleston-Co. E, 5th S. C. C. (Partlal paralysis arm.) Bruce, James P., Charleston-Co. G, 25th S. C. V. (Wounded left arm.) Weatherford, W. H.-Co. H, 1st S. C. V. I. (Shot through leg.)

Class C, No. 1, 1908.
Jackson, James, Charleston-Co. D, 23d S. C. (Wounded left arm.) Todd, P. P., Charleston-Co. B, 10th S. C. (Wounded In left ege.)

Class C, No. 1, 1908.
Beckman, J. F., Charleston-Co. A, 10th S. C. V. (Wounded in leg.)
Class C, No. 8, 1901.
Dodda, George, Charleston (Co. H, 27 th reg.), age 65.
Flatman, H. H., Charleaton (Co. G, 5th S. C. C.), age 78.
Lorimore, R. W., Charleston (Co. A, 26th reg.), age 64.
McClenahan, Charles L., Charleston (Washington Light Artillery), age 69. Dead; money refunded.
Meree, W. S., Charleston (Co. A, 24th S. C. V.), age 63.
Moore, T. H., McClellanville (Co. A, 26th S. C. V.), age 68. Moreland, Andrew M., Charleston (Co. H, 3d S. C. C.), age 65. Murrell, A. O., McClellanville (Co. D. 5th S. C. C.), age 62. Nettles, J. H., Charleston (Co. D, 2d S. C. C.), age 66. Riggs, W., B. (Co. H, 1st S. C.). From Dorchester.
Riggs, Isaac H., Charleston (Co. H, 1st S. C. V.), age 63. Balvo, P. A., Charleston (Washlngton Light Artillery), age 74. Scott, Joseph S., Charleston (Co. A. Ala. State Art.), age 65. Strobel, Charles, Charleston (Co. A, 24th reg.), age 70. Sweat, Capus, Charleston (Co. E, 1st 8. C.), age 63. Wilson, W. C., Charleston (Co. I, 8d \&. C. V.), age 60.

Class C, No. 2, 1908.
Dowd, Owen, Charleston (Co. D, 1st S. C. I.), age 61.
Gradick, E. W., Charleston (Co. I, 27th S. C. V.), age 64.
Johnson, P. T., Charleston (Co. B, 27th S. C. V.), age 62.
McBeth, Edward, Charleston (Co. A, 1st S. C. I.), age 60.
Phillips, J. B. W., Charleston (Co. A, B. C. Slege), age 65.
Bkrine, T. B., McClellanville (Co. A,, Hampton Legion) age 61.
Ventries, Leonard T., Charleston (Co. E, 10th S. C. V.), age 70.
Class C, No. \&, 1903.
Bliton, J. J., Charleston (Co. E, 25th S. C.), age 71.
Churchill, Kdward, Charleston (Co. H, 27th reg.), age 60. Cumbee, Joseph, McClellanville (Co. D, 23d reg.), age 60. Couturier, J. E. H., Charleaton (Co. A, Hampton's Legion), age 02. Hogg, H. D., Charleaton (Co. H, 2d 8. C. Art.), age 65.

Smith, J. H. L., Charjeaton (Glist Guards), age 61.
8mith, A. V., Charleston (Co. I, 1st Cav.), age 64.
Sweeney, J. N., Charleaton (Co. B, 27 th S. C. V.), age 61.
Varner, M. T., Charleston (Co. B, 11th S. C. V.), age 60.
Class O, No. 2, 1904.
Bold, H. E., Charleston (Beaufort Artll.)
Dutes, Elmore, Charleston (Co. C, 27th Ga.)
Devle, John J., Charleston (Whlte's Battallon).
Hilton, J. S., Charleston (Co. C, Eth Cav.)
Marcy, George W., Charleston (Co. I, 27th Inf.)
Patrick, J. B., Charleston (Co. G, 5th S. C.)
Rlvers, Ben (Co. B, 11th S. C. I.) From Charleston.
Selgnous, J. F., Charleston (Co. A, 23d reg.)
Taylor, W. J., Charleston. (Co. B, 27th Vol.)
Class C, No. 2, 1905.
Cook, H. A., Charleston (Co. C, 27 th S. C. V.)
Gadlere, Joseph (Co. D, 5th S. C. C.)
Ortman, C. L. (Co. B, 25th).
Martin, E. O. (Co. B, 11th). From Colleton.
Meggett, W. C. (Co. B, 11th). From Newberry.
Molse, H. C., Charleston (Co. F, 25th).
Class C, NO. 2, 1546.
Clemons, John, Charleston (23d reg.)
Eason, Fred W., Charleston (Washlngton Artll.)
Fenox, John E., Charleston (Co. C, 24th S. C. V.)
Reid, H. C., Charleston (Co. D, 27th).
Stokes, T. V., Charleston (Co. G, 11 th reg.) Dead; money refunded.
Wlikerson, F. L. (Co. A, 11th). From Colleton.
Winningham, Jas. R. (Co. G, 1st S. C. Art.)
Class C, No. 2, 1907.
Anderson, A. C., Charleston (Stono Scouts).
Balentlne, Thos. M., Charleston (Co. C, 5th B. C. C.).
Clement, A. W., Adams Run (Co. B, 11th S. C. I.).
Hatch, Wm. F., Charleston (C. S. Navy).
dervey, J. E. V., Charleston (Co. D, 23d).
Jarckes, J. H., Charleston (Co. I, 27th S. C. V.).
Ollver, John Henry, Charleston (3d Cav.).
Skinner, E., Charleston (Co. A, 3d Cav.).
Purcell, M., Charleston (Co. F, 1st reg.).
Suran. W. F., Charleaton (Co. F, 27 th S. C. V.).
Bchunacher, Ernest (German Volunteers).
Suran, Henry T., Charleston (Co. D, 27th S. C. V.).
Rufi, P. M., Charleston (Co. C. 1st S. C. I.).
Olass O, No. s. 1901.
Widones of Boldiers Who Lost Their Lives in the Berpies of the Oonfederate Statee.
Boyed, Susan, Charleston (Co. B, 27th S. C. V.)
Droze, Eugenia C., Charleaton (Co. A, 24th 8. C. V.)
Eads, Margaret, Charleston (Rhett's Artllery).
McManus. Bridget, Charleston (Co. A, $18 t$ \&. C. R. Infantry).
Slmons, Susan C., Charleston (Co. H, 3d S. C. C.)

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\text { Class O, No. s. } 1904 .
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8hlrer, A. F. (Co. A, 24th S. C. V.)
Miles, Fliza L., Charleston (Post Guard).

Olass O, No. 8, 1908.
Brown, Catherine, Charleston (Co. F, 1st S. C. V.) Dead; money refunded. Orvin, S. L. (Co. E, 5th). From Berkeley.
Rourke, Ellen E., Charleston (Co. G, 5th S. C.) Dead; money refunded.
Olass C, No. f, 1901.
Beck, Alice F., Charleston (Co. K, 4th S. C.), age 63.
Bland, E. A. K., Charleston (Co. G, 5th S. C. C.), age 60.
Butler, C. E., Charleston (Co. D, 4th reg.), age 66.
Butler, Janie F., Charleston (Co. D, 29th reg.), age 61.
Damon, Mary C., Charleston (Co. D, 27th reg.), age 65.
Danner, Sarah A., Charleston (Co. I, 27th S. C.), age 63.
Duc, F. H., Charleston (Co. D, 5th S. C. C.), age 65.
Edgerton, Mary C., Charleston (Co. D, 27th S. C. V.), age 64.
Johnson, Sarah A. (Co. B, 27th S. C. V.), age 61.
Legare, Claudia (Co. I, 3d), age 71. Transferred from Richland.
Maas, Theodora (Washington Light Artillery), age 61.
Manlan, Julla (Co. H, 27th S. C. V.), age 64.
Mulvaney, M. E. (Co. H, 27 th Reg.), age 64.
Owens, Julia A, (Co. K, 10th reg.), age 65.
Powers, Mary (Irish Volunteers, 27th S. C. V.), age 75.
Rennett. F. B., (Lafayette's Artillery), age 72.
Rlchbourg, Mary S. (Galllard's Bat.), age 63.
Rivers. Constantla B. (Colcock's Co., 3d S. C. V.), age 61.
Slmons, Sarah G. (Co. B, 11th reg.), age 60. Dead; money refunded.
Taylor. Mary J. (Co. D, 6th S. C. C.), age 60.
Walker, Mary E. (Co. E, 5th Cav.), age 70.
White, Mary F. (Co. D, 5th S. C. C.), age 61.

## Olass C, No. 4, 1908.

Burckhelster, M. E., Charleston (Co. B, 27th S. C. V.), age 68.
DeVeaux, M. A., Charleston (Co. D, 5th reg.), age 63. Frifr, 8. A., Charleston (Chaplain 6th S. C. C.), age 66. Greene, G. P., Charleston (Co. F, 27th S. C. V.), age 61. Kanapanx, Rosa, Charleston (Lafayette Art.), age 65.
Matthews, J. R., Charleston (Matthews' Battery), age 60.
Matthews, Agnes H., Charleston (Matthews' Art.), age 60.
Pritchard, Loulsa M. (Co. A, 1st Cav.), age 66.
Renter, anna L., Charleston (Co. G, 8d S. C. V.), age 69.
Class C, No. \&, 1908.
Baylor, L. C., Charleston (4th S. C. Cav.), age 60.
Balley, Margarita A., Edisto Island (Co. I, 3d S. C.), age 75.
Barranea, S. A., Charleston (Co. C, 25th reg.), age 65.
Ham. F. A., Charleston (27th S. C. V.), age 60.
Rivers, M. H., Charleston (Independent bat.), age 66.
Scyle, M. J., Charleston (7th Fla. Inf.), age 82.
Todd, M. E., Charleston (Co. D, 23d S. C. V.), age 61.
Clase C, No. 4, 1904.
Balley, C. P., Charleston (Stono Scouts), age 69.
Hurley, Margaret, Charleston (Co. H, 27th S. C.), age 68.
Heyward, Loulsa W., Charleston (Co. H, 3d reg.), age 60.
Lowndes, Celestine, Charleston (Co. C, 1st Art.), age 60.
Meree, Julle V., Charleston (Engineer Corps), age 65.
Mlles, Anna D., Charleston (Co. K, 4th S. C.), age 60.
Marlow, Mary M., Charleston (Co. A, ith reg.), age 60.
Meree, Annie C., Charleston (Co. E. Sth Cav.), age 61.
Pleper, Johanna, Charleston (German Artlllery), age 68.
Seabrook, Abble, Charleston (Stono Scouts), age 77. Dead; money refunded.

Riddock, Margaret, Charleston (Co. I, 1st reg.), age 62.
Terry, Catherine, Charlenton (Co. D, 27th reg.), age 60.
Willis, Caroline, Charleston (Co. D, 1st Art.), age 83.
Warlng. Rebecca H., Charleston (14th S. C. V.), age 60.
Wannamaker, Joanna, Charleston (Co. C, 11 th reg.), age 60.
Webb, S. W., Charleston (Palmetto Artll.), married at close of war.
Olase O, No. 4, 1905.
Brandt, C. A., Charlenton (Washington Artll.), age 68.
Calrns, M. A., Charieston (5th N. C. Cav.), age 62.
Deleslln, S. L., McClellanville (Co. D, 23d), age 60. Dead; money refunded.
Dolan, Janfe (Co. A, 24th), age 60.
Davia, Elizabeth, Charleston (Co. B, B. C. V.)
Frouche, Ellda C., Charleaton (Co. A, Selge Traln), age 70.
Lamb, Mary A., Charleston (Co. K, 25th), age 62.
Morrls, Rosala, Charieston (Co. H, 2d B. C.), age 86.
Miller, Jalla E., Charleston (Co. A, 25th), age 60.
Poteet, Mary E., Charleston (Co. F, 2d S. C. V.), age 60.
Stalves, E. G., Charleston (10th S. C. Cav.), age 60.
Sweatman, Rody, Charleston (Co. G, 1st S. C. V.), age 60.
Todd, Sarah J., McClellanville (Co. C, 10th S. C. V.), age 60.
Weaks, Susan J., Charleston (Co. D, White's), age 65.
Wood, Julia R., Charleston (Co. I, 28th Ala.), age 72.
Olase C, No. 4, 1906.
Branson, Mary J., Charleston (Co. F, 1st), age 69.
Campbell, R., Charleston (Palmetto G. A.), age 65.
Cox. G. W., Charleston (Co. B, 5th B. C. C.), age 65.
Flemming, Sophia, Charleston ( 25 th S. C. V.), age 60.
Farrell, Catherine, Charleston (Co. A, 1st S. C. A.), age 60.
Hendrlcks, H. W., Mt. Pleasant (Co. C, 1st S. C. V.), age 78.
Rourk, Frances, Charleston (Co. H, 1st S. C. V.) Married close of war.
Unfog, Catherlne (Glat Guards), age 60.
Quinby, Clara S. (Hart's Battery), age 60.
Class C, No. 4. 1907.
Abney, Martha, Charleston (Co. H, 6th), age 65.
Brown, Addle, Charleston (Marion's Artll.), age 60.
Barr, Agnes, Charleston (Co. B, 11th), age 60.
Dehls, V. M., Charleston (Co. A, German Art.), age 60.
Doar, Mary J., Charleston (Coast Guards), age 60.
Guerard, S. L., Charleston (Co. A, 5th Ga. reg.), age 70.
Gray, Loulsa, Charleston (Mounted Rifies), age 71.
Hills, M. W., Charleston (Co. I, 3d), age 64.
Kelly, Margaret C., Charleston (Co. H, 1st I.), age 60.
Maree, Salle, Charleston (Co. D, 6th S. C.), age 60.
McBride, R. A., Charleston (Washington Artil.), age 60.
Martin, Mary, Mt. Pleasant (Bantee Artil.), age 65.
Payne, Eliza A., Charleston (Pllot Gunboat), age 67.
Steadman, Emma J., Charleston (Co. B, 7th), age 68.
Smith, C., Charleaton (5th B. C. Cay.), age 70.
Seabrook, Catherine, Enterprise (3d S. C. Cav.), age 60.
Way, Mary J., Charleston (Co. C, 2d S. C. V.), age 60.

## CHEROKEE COUNTY.

## CFANGEB IN ROLL GINCE LAST PATMENT.

Dead-Class A: P. L. Plyler, J. P. Wright. C, No. 1: Bryant Fowler, Jeff Lavender, J. W. Martin, Posey Floyd, T. W. Hendricks. C, No. 3: Elvira Fowler. C, No. 4: Mary Gore, Sallie, Mary J. Scruggs, Mary Walker, Harriett, Susan Blanton, S. E. Thomas, Malissa Chalk.

Left State-E. R. Johnson, A. M. W. Bridges, Mary Walker, Addie Tllotson, Jane Cayle.

Not a Bona Flde Soldier-F. Reynolds.
Transferred to Other Classes-David Balley from C, No, 1, to B. Charlea Blanton from C, No. 2, to C, No. 1. From C, No. 4, to C, No. 4: Catherlne Clary, Mary Durham. M. Hullender from C, No. -, to C, No. 1.

Transferred From Other Counties-A. D. Lovelace from Spartanburg. Pollie Garner from Union. J. T. Warlick from Spartanburg. W. J. Stanford from Spartanburg.

Class A, 1905.
Cooper, N. C., Blacksburg (Co. D, 16th N. C.) Paralyzed.
Peterson, Robt., Mercer (Co. F, 18th). Bllnd.
Class B, 1901.
Pearson, James A., Webster-Co. F, 15th reg. (Lost one leg.)
Strain, J. L., Etta Jane-Co. C, 7th reg. (Lost one leg.)
Thompson, Wllliam, Lawn-Co. I, 13th S. C. V. (Shot In leg and foot.)
Class B, 1907.
Balley. David, Gaffney-Co. K, 18th. (Disabled right arm and leg.) Warllck, F. T.-Co. C, B5th N. C. (Lost left arm; from Epartanburg.)

Class C, No. 1, 1901.
Blanton, F. J., Frell-Co. C. 15th N. C. (Shot In arm, causing paralysis.)
Blackwood, J. T.-Co. K, Holcomb's Legion. (Wounded in leg.)
Chllders, Jacob, Gaffney-Co. K, 18th reg. (Wounded right hip.)
Fowler, C. J.-Co. M, Bth reg. (Wounded In arm.)
Guyton, Nathanlel. Kings Creek-Co. M, P. S. S. (Shot In left arm.)
Harrls, WIlllam, Mercer-Co. K, 18th reg. (Shot ln rlght shoulder.) Johnston, J. T., Fzell-Co. F, 13th S. C. V. (Wounded ln arm.) Murphey, Joseph, Gaffney-Co. B, Sth S. C. V. (Lost use of left eye.) Pinson, J., Gaffney-Co. Fr, 18th reg. (Shot through left knee.) Tate, O. F.-Co. C, 5th S. C. (Wounded in shoulder.)

Class C, No. 1, 1008.
Laftlejohn, H. H., Ravenna-Co. F, 15th bat. (Wounded In left foot.) Randall, M. L., Grover, N. C.-Co. F, 17th S. C. bat. (Wounded in arm and shoalder.)

Class C, No. 1, 1905.
Scruggs, Robert D., Ezell (Co. K, Holcomb Iegion). Wounded in head.
Class C, No. 1, 1906.
Haas, Adam. Blacksburg-Co. F. 13th. (Wounded in hlp.)
Kell. John D.-Co. B, 12th. (Wounded in thigh.)
Owen, D. W.-Co. D, 17th. (Wounded In wrists.)
Sprouse, Wm.-Co. F, 17th. (Wounded In back.)
Class C, No. 1, 1907.
Blanton, Charles (Co. I, Bth S. C.). Wounded in hlps.
Hullender, Madison, Grover (Co. B, 13th). Wounded In hlps and arms.

## Olass C, No. 2, 2001.

Adair, L. W., Elzell (Co. G, 50th N. C.), age 78.
Alerander, W. B., Cowpens (Co. G. 5th B. C. V.), age 61.
Blanton, W. J., Gallney (Co. I, 84th S. C. V.), age 60.
Byars, Nathanlel, Ezell (Co. G, 5th reg.), age 63.
Bridges, A. W. (Co. I, 36th N. C.)
Buice, W. A. (Co. I, 18th reg.), age 60.
Chiders, William, Gaifney (Co. K, 18th reg.), are 66.
Clary, Singleton, Mercer (Co. F, 15th B. C. V.), age 74.
Cook, F. B., Thickety (Co. C, 2d g. C.), age 70.
Davis, C. C., Ablingdon (Co. H, 5th S. C. V.), age 61.
Dicken, James A., Gafriey (Co. C, 17th reg.), age 65.
Downey, E. J., Grover (Co. F, 17 th \$. C. V.), age 66.
Foster, J. W., Blacksburg (Co. C, 17 th reg.), age 61.
Garner, James, Etta Jane (Co. H, 15 th 8. C. V.), age 62.
Gossett, Thomas, Grindall (Co. B, 1st Legion), age 68.
Harrls, Marion, Cherokee Falls (Co. F, Ist reg.), age 69.
Euftackler, A. C., Cherokee Falla (Co. G, 49th N. C. V.), age 70.
Jolly, J. C., Ezell (Co. I, 34th reg.), age 65.
Elrby, Abel, Goucher (Co. F, 18th S. C.), age 72.
Lee, R. W., Goucher (Co. B. FI. Legion), age 68.
Mace, J. A., Maud (Co. G, 6th N. C.), age 65.
Moore, Wm.. Cherokee Falls (Co. F, 32d N. C. V.), age 65.
Morris, R. T., Maud (Co. I, 5th S. C. V.), age 64.
Mullinax, A. J., Mercer (Co. F, 18th S. C. V.), age 69.
Peeler. J. R., Whkinaplle (Co. F. 18th S. C. V.), age 67.
Peterson, Robt., Mercer (Co. F. 18 th S. C. V.). age 80.
Peterson, Thos.. Cherokee Falls (Co. F, 18th reg.). age 65.
Plnson, Martin. Thickety (Co. B, Holcont's Legion), age 70.
Purseley, J. T.. KIngs Creek (Co. I, 5th S. C. V.), age 68.
Reynolds, John, Goucher (Co. M, P. S. S.), age 61. Dead; money refunded.
Self, Aaron, Lawn (Co. I, Bth reg.). age 75.
Self. J. W., Gaftney (Co. I, 5th S. C. V.). age 66.
Scruggs, J. F., Gafiney (Co. G. Sth S. C. V.), age 61.
Scruggs. R. A., Fizell (Co. K, Holcomb Legion), age 73.
Bherer, W. B., Blacksburg (Co. F. 17th reg.). age 65.
Sherer. J. M., Gaffiney (Co. A, 12th S. C. V.). age 60.
Smith, A. F.. Mercer (Co. F, 18th reg.). age 62.
Sprouse, J. R., Ablngdon (Co. C. 17th S. C.), age 61.
Starnes, John, Kings Creek (Co. A, 5th reg.), age 74.
Thomas. W. J.. Thlckety (Co. K, 07th reg.), age 67.
Thompson, J. C., Gaffney (Co. I, 13th reg.), age 61.
Tracy, W. W., Asbury (Co. A, 18th reg.), age 68.
Turner. H. M., Gaẗney (Co. F., 13th S. C. V.), age 68.
Fhlsonant, Jobn, Klngs Creek (Co. K. 8th Ark.), age 68.
White, W. W., Cowpens (Co. I, 34th N. C.), age 64.
Woolbright, James, Sunny Side (Co. B, 1st Ga. Bat.), age 61.

## Class C, No. 8, 1908.

Beheler, Henry, State LIne (Co. F. 17th S. C. V.), age 64.
Earl, W. M., Blacksburg (Co. H, 34th N. C.), age 63.
Kendett. E. C., Gaffiey (Co. B, Holcomb's Leglon), age 66.
Mulinax, G. W., Gatraey (Co. F, 18th reg.), age 70.
Bwofferd, D. N. (Co. C, B6th).
Thompeon, Cobb (Co. H. 28th N. C.), over 60 years.
White, J. T., Galiney (Co. B, 58d N. C.), age 65.
Wilie, Starnea, Gaifney (Co. C, 17th S. C.), age 60.
Olase $O$, No. 2, 1903.
Crisson, M. W., Gatfney (Co. D, 52d Ga.)
Darham, C. W., Gatriey (Co. E, 7th reg.), age 61.

Davis, Wylie S., Gariney (Co. K, 1st Rifes), age 62.
Moore, Jonathan, Gaffiney (Co. C, I7th reg.), age 83.
McArthur, T. R., Blacksburg (Co. C, 34th N. C. I.), age 80.
MartIn, John, Thickety (Co. B, 22d N. C.), age 60.
Mayberry, Robert, Grendall (Co. B, 4th S. C.), age 61.
Milwood, Morgan, Gaffney (Co. F, 15th reg.), age 60.
Owens, Edward, Cherokee Falls (Co. K, 17 th 'reg.), age 70.
White, W. H., Cherokee Falls (Co. B, 12th reg.), age 61.
Wllson, D. W. (Co. C, Orr's). From Spartanburg.

Olass O, No. 2, 1904.
Crocker, John, Blacksburg (Co. F, 18th reg.)
Bratton, James, Mercer (Co. K, 17 th reg.)
Dobbins, F. C., Gaffney (Co. B, 84th Bat.)
Lovelace, A. D. (Co. I, 5th). From Spartanburg.
Lovelace, John, Gaffney (Co. B, 9th Bat.)
Moss, Noah W., Blacksburg (Co. C, 17th Bat.)
Moore, Nathan, Cowpens (Co. K, 18th Bat.)
Phillips, P. D., Home (Co. F, 18th Bat.)
Patterson, Ben. F., Gaffney (Co. K, 18th Bat.)
Reynolds, Joseph, Gaffney (Co. M, P. S. S.)
Wylle, John (Co. K, 18th Bat.)
Class C, No. 2, 1905.
Broom, J. L., Blacksburg (Co. C, 19th Vol.)
Kyzer, R. G., Blacksburg (Co. H, 34th N. C.)
McSwain, George, Gaffney (Co. D, 55th N. C.)
Owensby, F. M., Draytonville (Co. G, N. C.)
Petty, Lee (Co. M, P. S. S.) From Spartanburg.
Rains, Newton (Co. I, 6th S. C. I.)
Scruggs, Drury, Ezell (Co. M, 5th S. C. V.)
Scruggs, R. P., Ezell (Co. K. Holcomb Legion).
Stanword, W. J. (Co. A, 60th N. C.). From Spartanburg.

Class O, No. 8, 1908.
Grifin, J. L., Gaffney (Co. C, 3d Reserves).
Hughey, T. B., Gaflney (Co. F, 15th S. C. A.)
Marshal, Wm. (8d N. C. V.)
Pridmore, J. C., Sarratt's (Co. F, 18th).
Phillips, Toliver (Co. I, 6th Batt.)
Morgan, Oney (Co. A, Carter's).
Northey, J. N., Gaffney (Co. D, 1st).

Olass C, No. 2, 1907.
Coyle, M. D., Gaffney (Co. K, 18 th S. C. A.).
Guthrie, M. L., Gaffney (Co. H, 31st Tennessee).
Hoffman, J. P., Cowpens (Co. I, 35th N. C.).
Hamrick, J. B., Gaflney (Co. H, 28th N. C. V.).
Roach, Newton, Gaffney (Co. C, 55th N. C. V.).
Class O, No. S, 1901.
Widons of Soldiers Who Lost Their Lives in the Servioc of the Oonfederate Btatee.
Gault, Lucinda (Co. C, 2d reg.)
Hawkins, Loulsa (Co. H, 28th N. C.)
Robertson, Ulllah, Grindall (Co. F, 18th S. C. V.)
Rupe, Sllvary, Maud (Co. -, Holcomb Legion).
Wllkins, C. P., Powells (Co. I, 5th S. C.)

Olass O, No. S, 1903.
Berden, C. A. (Boyces Artillery).
Hopper, J. C., Blacksburg (Co. G, 17 th.)
Bumphries, Mary A., Gariney (Co. K, 18th S. C.)
Powell, Mary A. (Co. H, 28th.)
Olass O, No. 8, 1903.
Bolen, Vicey, Kings Creek (Co. C, 17th S. C. V.)
Broom, Letitia, Blacksburg (Co. G, 5th reg.)
Barris, Mary L. (Co. M, 5th S. C. V.)
McGraw, Barbara, Gafiney (Co. I, 5th S. C. V.)
Barratt, Mallnda, Gariney (Co. E, 84th N. C.)
Class O, No. S, 1904.
Cole, Jane, Gaffney (Co. I, 6th S. C. V.)
Parris, Caroline, Gafiney (Co. I, 6th S. C. V.)
Pergumon, Mary (Co. B, 7th).
Sellers, Rebecca, Lawn (Co. M, P. S. S.)
Scates, Jane, Ablngdon (Co. F, 12th reg.)
Olass O, No. S, 1906.
Elll, Drucilla, Gariney (Co. I, 38th N. C. Vol.)
Harmon, Penelope, Lawn (Co. I, 13th S. C. Vol.)
Wilson, Carollna, Blacksburg (Co. F, 5th).
Class C, No. s, 1906.
Legg. Mary A., Gariney (Co. I, 9th).
Ramsey, Mallssa, Maud (Co. K, Holcomb).
Walker, Mary, Ezell's (Co. K, Holcomb).
Balley, Jane (Co. K, 18th). From Spartanburg.

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\text { Class C, No. S, } 1907 .
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Clary, Catherine, GaIfney (Co. 1, 6th S. C. V.). Galagher, Mary C., Blacksburg (Co. E, 5th S. C.). Jolley, Ann, Cherokee (Co. K, Hol. Legion).
Darhan, Mary, Ezells (Co. I, 5th S. C.).
Olass C, No. \&, 2901.
Allen, Susan, Cherokee Falls (Co. C, 15th N. C. V.), age 62.
Brown, Martha, Ravenna (Co. K, Pal. S. S.), age 63.
Byers, Nancy, Gaifney (Co. F, 18th reg.), age 65.
Calton, J. C., Blackaburg (Co. I, 56th N. C. V.), age 68.
Cole, M. E., Maud (Co. G, Holcomb Legion), age 62.
Fowler, Taylorann, Cowpens (Co. A, 18th reg.), age 60.
Grimn, Mintine, Gaifney (Co. B, Reserves), age 70.
George, Loulsa, Thlckety (15th S. C. reg.), age 63. Hammett, Lavicey, Maud (Co. C, 2d S. C.), age 64. Harris, Ellzabeth, Gafiney (Capt. LIghtsey's Co.), age 08. Hill, Frances, Gaifney (Co. A, Holcomb Legion), age 70. Holmes, B. M. (Co. B, Witherspoon's Reserves). Dead; money rafunded. Huskey, M. E., Gafrney (Co. F, 18th reg.), age 66. McDowell, Hettle, Gafney (Co. D, 1st S. C. C.), age 65. MeGuinn, C. L., Gaffney (Co. 1, 54th N. C.), age 69. Montgomery, Mary, Grove (Co. F, 17th reg.), age 61. Parris, M. E., Reell (Co. H, P. S. S.), age 70. Roberth, J. E., Exell (Co. A, Holcomb Legion), age 63. Welchel, Catherine, Gowdeyspille (Co. C, 5th S. C.), ase 60. White, Mary G., Blacksburg (Co. F, 17th g. C. V.), age 65. Willams, M. J., Eisell (Co. A, Holcomb's Legion), age 65.

Williams, Nancy, Esell (Co. A, Holcomb Legion), age 78.
Woody, E. P., Gafiney (Co. K, 6th reg.), age 65.
Olase O, NO. 4, 1908.
Alimon, J. C., Gaftney (Co. K, 18th reg.), age 70.
Allen, Harriett (Co. G. Wilson's), age 77.
Bridges, Cerena E., Blacksburg (Co. C, 17th reg.), age 60.
Eumphrles, R., Maud (Co. D, $2 d$ reg.), age 82.
Humphrjes, Arletissa. Cowpens (Co. H, 28th N. C. V.), ase 00.
Llpsey, Martha, Asbury (Co. B, 18th S. C. V.), age 60.
Wallace, Mary L., Gaffiey (Co. B, 12th reg.), age 68.
Clase C. No. 4. 1005.
Lee, Amanda, Etta Jane (Co. F, 23d reg.), age 61.
Spencer, F. A., Cowpens (Co. F, 15th reg.), age 60. Weathers, Zilphey, Abingdon (Co. C, 17th reg.), age 65.

Olase O, No. f. 1904.
Anthony, Mary Jane (Co. K; Бth reg.), age 60.
Crocker, Isabelle, Gafiney (Co. I, 13th reg.), age 68.
Cook, Sarah, Gafney (Co. M, P. S. S.), age 85.
Gaines, Nancy, Gaffney (Co. F, 56th N. C.), age 64.
Ray, Aurella, State Line (Co. C, Holcomb Legion), age 63.
Class C, No. \&. 2905.
Green, Charlotte, Blacksburg (Co. D, 55th N. C.), age 68.
Guin, Jane M., Blacksbarg (Co. I, 6tb), age 03.
Love, Julla, Gaffiney (Co. I, 16th), age 61.
Scates. Fannle, Cherokee (Co. F. 17th), age 60.
Upchurch, W., Mercer (Co. I, 5th), age 62.
Westbrooks, Mary, Gaffney (Co. I, 5th), age 72.
Class C, No. 4. 1906.
Garner, Pollle (Co. H, 4th), age 69. From Unlon. Klrby, Eatle (Co. F, 18th), age 73.
McDanlel, Filzabeth, Blacksburg (Co. F. 4th), age 09. McDaniel, Carollne, Wllkins (Co. C, 17th), age 73.

Class C, No. 4, 1907.
Towler, Elizabeth (Co. F, 18th), age 76.
Hinginger, Sarah, Gaftiney (Co. I, 50th N. C.), age 66.
Lewls, M. F., Gaffney (Co. C, Holcomb), age 69.
Lockhart, Mary, Gaftney (Co. G. Sth), age 61. Lavender, Christina, Gaflney (Co. F., 6th), age 82. McPherson, M. F., Gatriney (Co. D, 1st Cav.), age 60. Martin, Caroline J., Ezell (Co. H, Palmetto), age 64. Reynolds, Vesty Ann (Co. I, bth S. C. V.), age 62. Roundtree, Maria, Gaffney (Co. F. 18th)), age 81. Ramsey, Martba, Cberokee (Co. F, 18th), age 65. Wright, W. B., Gaffney (Co. F, 5th), age 74. Withrow, Permella (Co. B, 49th S. C. V.), age 62. Williamson, Hachel, Garney (Co. I, 38th N. C.), age 70.

## CEESTER COUNTTY.

## CEANGIS IN ROLL BINCE LAST PATMENT.

Dead-C, No. 2: James A. Turner, Robert Daster, Alex. Roseborough, R B. Bloan. C, No. 8: Dorothy Lock. C, No. 4: Jemima Cameron, Mary A. Reed, Nicey Corder, 8. E. Qunton.

Trangferred to Other Countles-T. J. Collng to Union. C. B. Smith to York. Hannah Carter to York.

Left State-Sylvester Aycock, James H. Jaggers, Happy Cameron.
Dropped; Not Worthy-Amyles McGarity.
Transferred to Other Classes-From C, No. 2, to A: W. J. Gladden. Josephas Smith from C, No. 1, to B.

Tranaferred From Other Countieg-J. W. Shedd from York, Fannle Bryant from York.

Olass 4, 1904.
McCarley, Hugh D., Chester (3d Cav.) Totally blind.
Class A, 1905.
Lindsay, James B., Chester (Co. B, 31st). Paralyzed.
Clase A, 1097.
Anderson W. A. T., Longville-Co. A, 6th S. C. V. (Blind.)
Gladden, H. J., Chester-Co. B, 6th S. C. V. (Paralyzed.)
Class B, 1901.
Kitchens, James, Haslewood-Co. A, 6th Inft. (Lost one eye; other Injured.)
Lipsey, John A., Chester-Co. I. 6th S. C. V. (Left arm entirely useless.)
Revels, T. A., Lowryville-Co. F, $28 d$ S. C. V. (Lost one arm.)
Parter. W. G.-Co. G, Cobb's. (Lost left leg.) Transferred irom York.
Farnadore, Bamucl, Lewleville-Co. F, 23d S. C. V. (Helpless from wounds.)
White, John C., Lando-Co. A, 17th reg. (Leg useless from wounds.)
Class B, 1907.
Smlth, Josephus, Blackstock -Co. H. 18th. (Left leg useless from wound.)

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\text { Olass C, No. 1, } 1901 .
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Davin, H. E., Chester-Co. I, 6th s. C. V. (Lost one eye.)
Lowry, Jomes, Chenter-Co. E, bth S. C. I. (Wounded In leg and hand.)
Wood. J. T., Chalkville-Co. F, 23d reg. (Wound. causlug hernla.)

> Olase O, No. 1, tras.

Beam, George, Clowney-Co. B, 17th S. C. V. (Wounded In arm and head.) Kligo, Samuel J., Robspille-Co. B, 5th reg. (Right hand useless.) Randall, B. J., Chester-Co. A, 6th S. C. V. (Wound in body.)

Clase C, No. 1, 1904.
McCIIntock, J. L., Lando (Co. F, 6th S. C. V.) Wounded in eyes. Yarborough, J. T., Lando (Co. E, 15th S. C. V.) Wounded right leg.

Class C, No. 1, 1905.
Glbmon, O., Heath (Co. H, 24th S. C. V.) Wounded in eye. Sanders, J. M., Lando (Co. B, 6th). Disabled from wounds.

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\text { OLass C, No. 1, } 1907 .
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Douglass, R. G., Chester-Co. F, 23d. (Wounded In right shoulder.) Turner, W. S., Edgemore-Co. F, 6th S. C. V. (Wounded In shoulder.) Bhedd, J. W.-Co. F, 28d. (Wounded left arm ; from York.)

B-R. $\pm \mathbf{R}-(500)$

## Class C, No. 2, 1901.

Allen, C. H. (Co. A, 17 th reg.), age 65.
Balley, T. J., Baton Rouge (Co. H, Huger Lt. Artil.), age 77.
Coln, Ira S., Lowryville (Co. D, 1st S. C. C.), age 75. Crocker, William, Cabal (Co. B, 4th S. C. C.), age 70.
Dove, John, Cornwell (Co. F, 23d S. C. V.), age 60.
Grant, Jaspar, Lowryville (Co. A, Lucas Bat.), age 70.
Henson, Tillman, Rossville (Co. A, 6th reg.), age 65.
Hodges, G. W., Fort Lawn (Co. H, 24th reg.), age 86.
Kee, J. H., Fort Lawn (Co. H, 25th S. C. V.), age 62.
Kee, W. L., Chester (Co. A, 17th S. C. V.), age 65.
Kirk, Y. F., Leeds (Co. F, 23d reg.), age 66.
Lee, E. V., Chester (Co. A, 6th reg.), age 66.
Ligon, J. N., Richburg (Co. E, 15th S. C. I.), age 72.
McElroy, Robert, Chester (Co. G, 6th S. C. V.), age 81.
Mayfleld, W. M., Chester (Co. F, 23d reg.), age 65.
Mize, Jerry, Chester (Co. B, 13th S. C.), age 68.
Proctor, John, Rlchburg (Co. A, 6th S. C. V.), age 73. Roberts, J. A., Fort Lawn (Co. C, 1st S. C. R. I.), age 61.
Roof, Zachariah, Scott (Co. B, 6th reg.), age 71.
Sloan, Robert, Chester (Co. A, Lucas's bat.), age 86.
Spence, John W., Chester (Co. D, 1st S. C. V.), age 61.
Thomas, R. B., Chester (Co. E, 5th S. C. V.), age 67.
Porter, James (Co. F, 6th). From York.

Class C, No. 2, 1908.
Barnes, A. J., Rodman (Co. A, 6th reg.), age 65.
Caskey, Thomas, Chester (Co. A, 5th S. C. V.), age 67.
Duffie, James F., Blackstock (Co. D, 4th reg.), age 67. Hall, J. A., Chester (Co. A, 12th S. C. V.), age 60.
Minter, Monro, Olive (Co. D, 1st C. C. C.), age 72. Miller, Joslah, Chester (Co. F, 6th reg.), age 60. McFadden, Isaac, Lewlsville (Co. B, 6th S. C.), age 69. McCluny, J. L., Chester (Co. E, 6th S. C. V.), age 66. Varnadore, A. P., Chester (Co. F, 6th reg.), age 63. Worthy, Wade, Wilksburg (Co. B, 4th S. C. C.), age 60.

Class C, No. 8, 1903.
Allen, F. L., Baton Rouge (McBeth's Artll.)
Bigham, D. G., Wellridge (Co. A, 17th Inf.), age 63. Caldwell, R. C., Denzil (Co. D, 1st S. C.), age 70. Glbson, C. H., Rossville (Co. B, 14th S. C. C.), age 68.
Fairley, B. F., Halsellville (Co. C, 7th La.), age 67. Hollis, J. J., Hollis (Co. H, 24th S. C. V.), age 68. McNinch, Robert, Chester (Co. F, 23d S. C. V.)
Wright, B. B., Cornwell (Co. H, 7th S. C. V.), age 67. Walker, Lawson, Chester (Co. F, 23d S. C. V.)

Class C, No. \&, 1904.
Brown, J. J., Cbester (Co. G, 6th S. C. V.)
Carter, J. Alex., Chester (Co. F. 23d reg.)
Street, W. A. (Co. F, 23d). From Lancaster.
Watts, Levi, Chester (Co. C, 6th S. C. V.)
Class C, No. 2, 1905.
Benson, John P., Chester (Co. A, 6th S. C. V.)
Campbell, J. J., Lando (Co. H, 16th S. C. V.)
Campbell, T. C., Lando (Co. E, 3d).
Jones, B. F., Rossville (Co. G, Palmetto).
Kitchens, Smlth (Co. A, 17th S. C. V.)

MeCorkle, R H., Lando (Co. F, 25th).
Thomas, J. A., Blackstock (Co. F, 23d).
Tomberlln, W. D., Lando (Co. D, 71st).

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\text { Class O, No. 2, } 1906 .
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Crawford, J. H., Chester (Co. A, 6th).
Dodds, R. M., Chester (Co. D, 1st).
Simpson, W. P., Wylle's MII (Co. H, 2d S. C. V.)
Wlison, J. K., Heath (Co. D, 1st S. C. C.)
Wylle, J. T., Chester (Co. E, 15th S. C. V.)
Wukerson, G. W. (Co. I, 17th). From York.

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\text { Olass C, No. R, } 1907 .
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Carter, W. E., Cheater (Co. E. 3d).
Estes, T. B., Lowryville (Co. E, 3d B. C. Reserves).
Ferguson, A., Fort Lawn (Co. H, 16th Va. Cav.).
Hanter, Miles H., Chester (Co. B, 57th N. C. T.).
Ort, W. M., Chester (Co. A, Lucas' Artillery).
McConnell, S. N., Chester (Co. F, 6th S. C. V.).
Btringfellow, Wm., Chester (Co. A, 6th S. C. V.).
Quuton, Wlllam, Chester (Co. E, 3d S. C. Reserves).
Wagener, J. W., Chester (Co. B, 1st N. C. V.).
Olass C, No. 3, 1901
Widoses of Boldiers Who Lost Their Liven in the Borotoe of the Gonfoderate Etatee.
Dram, Sarah, Wyllea Mull (Co. I, 24th S. C. V.)
Harvey, Rosanuah, Morgantown (Co. E, 7th S. C. C.)
McWalters, Emlly, Morgantown (Co. D, 17th reg.)
Sexton, Rebecca (Co. A, 17th S. C. V.)
Smith, Mary E., Landsford (Co. H, 12th reg.)
Vallandangham, M. R., Chester (Co. I, 12th S. C. V.)
Weir, Charlotte, Blackgtock (Co. F, 28d g. C.)
Olass C, No. S, 1904.
Taylor, Emmallne, Halsellville (Co. H, 58th N. C.)
Wlllame, Mary, Cheater (Co. K, 17th S. C. V.)
Class O, No. s, 1905.
Bigham, Mary G., Hazlewood (Co. H, Englneer Troops). Carroll, Frances J., Chester (Co. F, 23d S. C. V.)

Class O, No. 8, 1906.
Hamilton, S. A., Chester (Co. H, 24th 8. C. V.)
Class C, No. 4, 1901.
Barber, Amella, Rossville (Co. E, Gl:'s Bat.), age 69.
Carter, Carrle, Chester (Co. E, 6th B. C. V.), age 62.
Henson, Martha, J., Rossville (Co. F, 28d reg.), age 78.
Hoopangh, E. J., Rodman (Co. C, 2d Ala.), age 71.
Johnson, Jane, Landeford (Co. D, 17 th S. C. V.), age 68.
Love, Adallne, Chester (Co. B, GIII's Bat.), age 70.
Lowry, S. J., Bmlths Tarnout (Co. K, 17th s. C. V.), age 68.
Lee, Emily, Lowryville (Co. E, Chester Guards), age 60.
Moyer, Laura E., Chester (Co. E, MIms), age 60.
MeClintock, Cheater (Co. H, 24th S. C. V.), age 62.
Quinton, Theresa, Chenter (Co. F, 28d reg.), age 62.
Veno, M. J., Heath (Co. C, 10th N. C. T.), age 68.
Wade, Erancea, Wlikubarg (Co. D, 1st Cav.), age 61.

Cameron, Sarah A. (Co. F. 284 B. C. V.), age 71.
Grant, B. A., Chester (Co. B, 4th 8. C. C.), age 60. Hoophaugh, Loulsa J., Chester (Co. H, 6th S. C. V.), age 61.

Olass C, No. 4, 1908.
Melton, Mary Ann, Wilksburg (Co. H, Orr's), age 65. McCash, Jane Y., Chester (Co. K, 18th S. C. V.), age 69. McGarlty, Sophla, Rlchburg (Gill's Reserves), age 76. Peag, S. A., Chester (Co. F, 23d S. C. V.), age 64.
Sanders, Jane, Wellridge (Co. H, 24th S. C.), age 68.
Swan, Serena, Carters (Co. B, 4th S. C. C.), age 70. Wylle, Emmeline, Richburg (Co. L, 8d), age 71.

Class O, No. 4, 1904.
Dawking, Lottie, Chester (Co. D, 17th reg.), age 60. Roof, MInerva, Chester (Co. B, 4th reg.), age 68. McWharters, Emmeline, Strover (Co. D, 17th reg.), age 75.

Class C, No. \&, 1905.
Beam, Caroline (Co. E, 6th), age 69. Bryant, Fannie (Co. B, Lucas), age 60. From York. Bronson, Annie (Hutto's Reserves), age 60.
Murphy, M. E., Chester ( 15 th reg., S. C. V.), age 62.
Wise, Fannie H., Baton Rouge (Co. F, 23d), age 60.
Class C, No. 4, 1906.
Clack, Mary S., Carter's (Co. E., 6th), age 69.
Gibson, Mary E., Chester (Co. C, 7th), age 60. McFadden, Jane. Y., Edgemoore (Co. A, 17th), age 60. Simpson, Eliza, Rodman (Co. H, 24th), age 70.

Class C, No. $4,1907$.
Babcock, Eugenia C., Chester (Co. F, 6th Vol.), age 65. Simpson, Mary A., Chester (Co. B, 4th), age 65. Stokes, Lucy, Chester (Co. I, 7th), age 65. Wilson, Mary, Chester (Co. B, 7th), age 60.

## Chesterfield county.

## CEAKGES IM ROLJ BIMCE LABT PAFMTRY.

Dead-Class A: C. L. Campbell. Class B: W. H. McManus. C, No. 2: W. B. Brown, Warren Wilkerson, Joseph Sullivan, Aaron Sellers, W. B. Sellers, John Steen. C, No. 3: Phebra Johnson. C, No. 4: Matllda Starnes, Eliabeth Terry, Hannah sclper.
Left State-John H. Lang, Elizabeth Adams.
Transferred to Other Countieg-J. O. Carpenter to Marlboro. Martha Moore.
Transferred From Other Counties-M. E. Moore from York. J. E. Douglass to Kernhaw.

Cless 4, 1903.
Tarleton, A. J., Chesterfeld-Co. E, 21st reg. (Totally blind.)
Class A, 1906.
Brantley. W. P., Chesterteld-Co. A, 4th S. C. V. (Paralyzed.)
Ollver, J. J., Jefferson-Co. F, 26th. (Blind.)
Outen, S. J., Robeson-Co. A, 1st. (Blind.)
Clase A, 1907.
Outen, S. J.-Co. A, 1st. (Blind.)
Class B, 1901.
Boan, C. D., Cheraw-Co. IE, 21st S. C. V. (Lost one leg.)
Grant, T. P., Cheraw-Co. D, 21st S. C. V. (Lost one leg.)
Johneon, D. M., McBee-Colt's Bat. (Lost right arm.)
Class C, No. 1, 1901.
Basking, W. D., Cato-Co. G, 7th S. C. B. (Wounded left ankie and right leg.)
Jordan, Thomas M., Ousley-Co. E, 21st S. C. V. (Wounded In left leg.)
Polson, A. D., Patrick-Co. G, 23d reg. (Wounded, finger; shot in leg.)
Thompson, John, Cheraw-Co. 11, 14th S. C. V. (Wounded left arm, right thigh.)
Clase C, No. 1, 1908.
Burr, Jacob, Chestertield-Co. E. 21st S. C. V. (Shot In foot.)
McDugald, Elisha, Lavender-Co. K, 6th 8. C. C. (Shot In side and head.)
Class C, No. 1, 1904.
Robinson, L. D., Irvington (Co. G. 2d Bat.) Wounded in left thigh.
Smith, T. D., Patrick (Co. H, 49d N. C.) Wounded in face.
Class C, No. 1, 1905.
Axum, James, Finley (Co. C, 8th S. C. V.) Wounded in hip. Coker, Callph, Cheraw (Co. D, 21st S. C. V.) Wounded right alde. Jordan, W. M., Flaley (Co. E, 21st). Wounded In right shoulder.

Claes C, No. 1, 1906.
Dlion, Rlcard, Mendenhorf (Co. B, 8th).
Knight, Thomas, Jefferson (Colt's Battery).
Class C, No. 2, 1901.
Allen. J. F., Mt. Croghan (Co. B, 26th S. C. V.), age 67.
sllen, J. R., Holt (Colt's Battery), age 68.
Boan, R. J., Guln (Co. E, 21 вt S. C. V.), age 82.
Burr, A., Bay Spring (Lucas Battallon), age 74.
Cottage, James, Cheraw (Co. C. 8th S. C.), age 87.
Daridson, G. W., Chesterteld (Co. A, Haskell's), age 69.

Davis, Leonard, Cheaterfeld (Chesterfeld Art.), age 65. Dickson, James, Society Hill (Co. D, 21st S. C. V.), age 65. Dixon, Jesse, Ousley (Co. F, 7th Bat.), age 71.
Dixon, Thomas, Tlllers Ferry (Colt's, 3d S. C. V.), age 69.
Douglass, A. C., Bay Spring (Co. C, 8d reg.), age 67.
Edwards, I. O., Soclety Hill (Co. D, 21st 8. C. V.), age 61.
Grooms, J. E. (Co. A, 1st reg.), age 62.
Gainey, James, McBee (Co. A, 1st S. C. I.), age 74.
Grant, A. J., Cheraw (Co. F, 1st S. C. I.), age 65.
Grooms. Ruben, Ousley (Co. A, 1st Inf.), age 84.
Gulledge, G. D., Mt. Croghan (Marlon's Cav.), age 75.
Hall, William (Inglis's Artillery).
Hall, Wllliam (Inglls's Artillery). Transferred from Darllngton.
Hogg, W. H., Cheraw (Kelly's Battery Art.), age 64.
Horn, Thomas, Mt. Croghan (Co. F, 26th reg.), age 64.
Horn, W. H., Mt. Croghan (Co. F, 48th N. C.), age 72.
Howard, John, Middendorf (Co. F, 21 st reg.), age 63.
Huggins, Nathan, Ousley (Co. E, 21st S. C. V.), age 60.
Jordan, J. H., Ousley (Co. E, 21st S. C. V.), age 64.
Jordan, W. E., Ousley (Co. E, 21st reg.), age 62.
Liles, Thomas H., Cheraw (Co. B, 31st N. C.), age 60.
Lundy, A. A., Ousley (Co. G, 21st reg.), age 65.
McGhee, Wesley, Society Hill (Co. D, 26th S. C. V.), age 68.
Moore, E. B., Ruby (Co. B, 26th reg.), age 65.
Polk, James, Soclety Hill (Co. E, 21st S. C. V.), age 60.
Polk, Robert, Soclety Hill (Co. E, 21st reg.), age 65.
Poulson, William, Patrick (Co. L, 20th reg.), age 70.
Roller, W. H. P., Cheraw (Co. D, 21 st S. C. C.), age 67.
Sanders, A. A., Irvington (Co. B, 26th reg.), age 65.
Turnage, W. A., Cheraw (Co. D, 21st reg.), age 65.
Watts, Thomas, Manus (Co. G, 1st S. C. I.), age 66.
Class C, No. 2. 1908.
Adams, J. J., Plains (Co. D, 8th reg.), age 65.
Allen, W. D., Mt. Croghan (Colt's Battery), age 67.
Boan, Williams, Jefferson (Co. B, 1st S. C. Bat.), age 68.
Davis, Fred, Courthouse (Co. B, 8th S. C.), age 65.
Donegho, Morgan, McCaskill (Colt's Battery), age 65.
Funderburk, Sam, Soclety HIII (Co. E, 48th reg.), age 68.
Grooms, W. T., Middendorf (Co. C, 1st Inft.), age 63.
Hill, A.. Cheraw (Co. G, 1st S. C. Infantry), age 67.
Grant, William, Cheraw (Co. D, 21st S. C.), age 62.
Knight, Elijah, Dudley (Co. E, 22d S. C.), age 66.
McRae, Duncan, Chesterfield (Co. K, 11th Miss.), age 72.
McIntosh, D., Cheraw (Colt's Battery Artillery), age 78.
Odom, Gilliam C. (Co. E, 21st S. C. V.), age 60.
Rollings, H. Jackson, Dudley (Colt's Battery), age 62.
Sellers, Stephen D., Holt (Colt's Battery), age 67.
Watson, David, Soclety Fill (Co. D, 21st reg.), age 61.

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\text { Class C, No. 2, } 1908 .
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Adkinson, Isalah, Chesterfleld (Co. D, 21st bat.)
Boan, Charles. McBee (Coit's bat.), age 60.
Campbell, William, Chesterfield (Co. D, 6th bat.), age 72.
Crawley, A. J., Chesterfield (Co. E, 21st bat.), age 71.
Douglass, Wm., Chesterfeld (Co. A, 7th bat.), age 62.
Douglass, R. D., McBee (Co. A, 7th S. C. bat.), age 63.
Graham, Jno. E. Qulck, Chesterfleld (Colt's bat.), age 64.
Gee, W. N., Catarrh (Co. F, 7th S. C. bat.), age 67.
Hendricks, J. D., Patrick (Co. A, 23d N. C.)
Linton, Alex., Society Hill (Co. A, Cash's reg.), age 92. Dead; money refunded.

McLean, J. P., Cbetterfid (Co. E, 21st bat.), age 61. Ollver, A. C., Bay Spring (Co. F, 28th bat.), age 69.
Pressley, E. D., Courthouse (Co. C, 6th bat.), age 61.
Rascoe, W. R., Courthouse (Co. C, 1st S. C. I.), nge 76.
Rateld, John, Chesterfield (Co. B, 26th reg.), age 78.
Steen, F. P., Plae Tree (Co. F, 26th reg.), age 62.
Steen, James, McCaskill (Co. C, 1st S. C.), age 68.
Waldrup, F. L., Chesterfleid (Co. B, 39th N. C.)
Watkins, P. H., McBee (Co. A, 7th 8. C.), age 60.
Class C, No. 2, 1904.
Burr, Samuel, Chesterfield (Co. A, 4th reg.)
Campbell, Malcomb, Chesterfleld (Co. D, 6th Bat.)
Campbell, J. C., Patrick (Co. D, 21st reg.)
Dicker, Malcomb, Patrlck (Co. E, 1st reg.)
Hagging, S. H., Patrick (Co. D. 21st Bat.)
Horton, John L., Catarrh (Co. K, 6th reg.)
Hancock, R. F. M., Ruby (Co. B, 8 th reg.)
Jordan, J. M., Chesterfield (Co. B, 8th reg.)
Tucker, W. J., Chesterfleld (Co. A, 4th reg.)
Sellers, A. W., Chesterfield (Co. A, 4th reg.)
Woodward, H. N., Finley (Colt's bat.)
Willams, George W., Jefrerson (Co. C, 1st S. C.)
Walters, Moses, Middendorf (Co. A, Ist bat.)
Class C, No. 8, 1906.
Barfleld, James A., Oubley (Co. G, $21 \mathrm{st} \mathrm{8}. \mathrm{C}. \mathrm{V)}$.
Brock, J. P., Chesterfleld (Co. I, 1nt S. C. A.)
Cross, W. F., Patrick (Co. E, 21st S. C. V.)
Dickson, W. M., Oubley (Co. E, 21st).
Griggs. James M., Ousley (Co. G, 21st).
Miles, Wm., McKaskill (Co. C. Broun's).
Jenkins, W. W., Irvington (Co. H, 1st S. C. B.)
Harp. P. E., Middendorf (Co. C, 3d 8. C.)
Fall, Nathen G., Plalns (Co. I, 8d S. C.)
Lee, Henry, Cheraw (Co. C, 8th S. C. V.)
Outlaw, Edward W., Patrick (Co. D, 21st S. C. V.)
Hollings, Amos, Jefferson (Co. B, 1st 8. C. I.)
Class C, No. 8, 1906.
Bater, F. G., Jefferson (Co. C, Lucas').
Brown, John B., Mendenhorf (Co. E, 21st S. C. V.)
Gaskin, D. M.. Chesterfeld (Co. G, 1st S. C. T.)
Hammons, Stephen, Chesterfield (Co. 1, 26th).
Evans, H. H., Irvington (Co. D, Ist 8. C. I.)
Mangum, Thos. R, Irvlogton (Co. B, 26th).
Jordan, J. F., Raby (Co. F, 28th S. C. V.)
Threatt, J. W., Old Store (Co. D, 8th S. C.)
West. Britton, Jefferson (Co. B, 1st S. C.)
White, B. W., Laney's (Co. C, Brown's).
Class C, No. 2, 1907.
Colpepper, J. H., Soclety Hill (Co. F, 7th 8. C.).
Campbell, H. B. Patrick, Chesterfield (Co. D, 21st).
Douglass, Duncan D., Chesterfeld (Co. E, 21st 8. C. V.).
Glbson, N. W., Ruby, Chesterfield (Co. F, 7th S. C.).
Jenkins, D. B., Dudley, Chesterfield (Co. C, 30th S. C.).
Odam, J. W., Chesterield (Co. C, 2d Bat.).
Sullivan, James, Ruby (Co. F, 7th S. C.).
Rogers, J., Raby (Co. F, 26th 8. C.).

Teal, W. H., McFarlan (Co. I, 1st N. C. B.).
Threatt, Robert, Plains (Co. K, Ist S. C.).
Olass C, NO. 3, 1901.
Widows of Eoldiors Who Lost Their Lives in the Bervios of the Oonfederate Etates.
Campbell, Rachel, Chesterfeld (Co. B, 8th S. C. V.)
Coker, Sarah, Ousley (6th S. C. V.)
Douglans, Mary A., Bay Spring (Co. B, 8th S. C. V.)
Hall, Kiagle, Ousley (Co. G, 21st reg.)
McDuffie, Ellzabeth, Chesterfleld (Co. K, 6th S. C. C)
Rallings, Jane, Plains (Co. D, 8th S. C. Y.)
Sanders, E. J., Plaing (Co. F, 1at g. C. C.)
Sellers, H. E., Chesterdeld (Co. A, 4th Cav.)
Class C, No. S. 1908.
Crawford, Mary, Qulck (Co. D, 21st 8. C. V.)
Duncan, Sarah, Chesterfleld (Co. K, 6th Cav.)
Horn, Nancy, Hornsboro (Co. A, 4th N. C. C.)
Hancock, Joanna, Mt. Croghan (Co. F, 26th S. C. V.)
Huggins, Hannah, Middendorf (Co. A, 1st B. C.)
Laton, Mary, Ousley (Co. A, 1st Regulars).
lig. Fermetta, Pine Tree (23d B. C. V.)
Rlvers, Eliza A. (Co. B, 8th S. C.)
Clase O, No. S, 1903.
Buatwright, Sarah H., Courthouse (Co. D, 8th S. C. C.)
Grooms, Cynthla, Chesterfleld (Co. I. 22d N. C.)
Melton, Mary. Jefferson (Co. D, 37th N. C.)
Morle, Marrlett, Jefferson (Co. A, 26th reg.)
Class C, No. s, 1905.
Calder, Eliza, Chesterfield (Co. K, 6th).
Class C, No. s, 1906.
Jones, Ann, Patrlck.
Rye, Fmlly, Chesterfield (Co. D, 26th).
Tadlock, M. A., Jefferson (Co. E, 48th N. C.)
Class O, No. 4, 1901.
Atkinson, Rachel, Cash (Co. A, 1st Reserves), age 76. Berry, Mary, McBee (Co. E, 19th Reg.), age 69. Boan, E. R.. McBee (Co. E, 21st reg.), age 61.
Brown, Ellza Ann, Ousley (Co. Le, 21st reg.), nge 67. Brown, S. Louisa, Lavender (Co. B. 8th S. C. V.), age 66. Edwards, Rose, Soclety HIll (Co. B, 21st Virglnla), age 67. Freeman, leliza A., Society Hill (Co. D, 21st S. C. V.), age 65. Freeman, Martha, Soclety Hill (8th S. C. V.), age 60. Fort, Sarah A., Chesterfleld (Kennedy's Pal. Bat.), age 68. Gainey, Sarah. Ousley (Co. I. 1 st S. C.). age 67.
Galney, Ilarrlett. Cheraw (Co. C. 5th Battallon), age 77.
Gainey, Nancy, Ousley (Co. G, 21 st S. C. V.), age 68.
Glbson, Mary E., Mt. Croghan (Co. A, 23d reg.). age 78.
Grant, Hannah. Cheraw (Co. D, 1st S. C. V.), age 60
Gravis, Mary Ann (Keller's Bat. Art.). age 64.
Hope, Martha, Manus (Colt's Battery), age 83.
Hough, F. C., Hornsboro (Co. F, 26th reg.), age 60.
Huggins, Allce, Bay Spring (Coit's Battery), age 70.
Huntley, Rachel, Mt. Croghan (Co. A, 4th S. C. C.), age. 68.

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> Jordan, Rebecen J., Mt. Croghen (Co. E, 8th reg.), age 69. Kelth, Elisabeth, Bociety Hill (Co. E, 21st reg.), age 67.
> KIrkley, Ann, McCasill (Co. F, 28th S. C.), age 80.
> Kalghton, Mary, Jefferton (Co. D, 18th S. C. V.), age 70.
> Nicholson, Rebecea, Pine Tree (Colt's bat.), age 64.
> Ontlaw, Jane, McBee (Co. D, 6th 8. C. C.), age 62.
> Polson, Margaret, Patrick (Co. C, 1st S. C. R.), age 70.
> Polmon, Eliza Ann, Guin (Co. F, 21st S. C.), age 74.
> Rallingm, Adeline, Plains (Cash's Regiment), age 75.
> Sliges, Nancy, Hornsboro (6th Cav.), age 64.
> 8mith, Mary J., Cheraw (Co. A, 4th reg.), age 60.
> Steen, Elizabeth, Mt. Croghan (Co. B, 26th S. C.), age 74.
> Threatt, E. A. (Co. 1, 17th reg.), age 61.
> Watson, Sarah A., Mi. Croghan (Colt's Battery), 2 ge 65.
> Wilkerson, D. A., Guin (Co. C, 1st reg.), age 64.
> Wilta, Mary, Ousley (Co. H. 1st S. C. I.), age 68.

Clase O, No. 4 1902.
Alexander, Martha A., Middendorf (Co. E, 21 st S. C.), age 60.
Brown, Martha A., McBee (Co. A, 23d reg.), age 68.
Chapman. Eliza (Co. B, 8th reg.). age 60.
Deason, Lavinia, Plains (Co. F, 48th N. C.), age 68.
Davis, Filizabeth, Chester (Co. E, 21st S. C. V.), age 73.
FddIngz. Christina, Cheraw (Co. D. 21st S. C. V.), age 60.
Grady, Mary A., Conrthouse (Co. A, 23d N. C.), age 62.
Bill, Mary, Hornsboro (43th reg.), age 64.
Hancock, Emellne, Holt (Co. B, 26tb Bat.), age 62.
Ingraham, Nancy A., Ousley (Co. B, 8th reg.), age 63.
Johnson, M. J., Mt. Croghan (Co. A, 4th S. C. C.), age 68.
Jenkins, F. A., Chesterfleld (Co. B, 26th S. C.), age 67.
Kirkley, Ellshaba, Jefferson (Co. A. Cash's), age 60.
Powers, M. C., Cheraw (Co. A. 4th S. C. C:), age 65.
Strickland. Sarah. Bay Sprlng (Co. D, 8th S. C. V.), age 69.
Sullivan. Nancy, Jefferson (Co. F, 26th S. C.). age 84.
Talbert, Flizabeth, Chesterfield (Co. F, Home Guards), age 70.
Wallace, Jane R.. Patrick (Confederate Navy), age 67.
Wallace, Effie, Cheraw (Coit's Battery), age 81. Dead; money refunded.
Clase C, No. 4. 1903.
Adams. Sarah, Chesterfield (Co. D, 6th S. C. C.), age $i \mathbf{i b}$.
Knight. Miary Jane (26th bat.), age 60.
McQuaige. M. F., Chesterficid (Co. A. 4th S. C C.), age 62.
Sellers. Sarab. Courthouse (Co. D. 8th S. C. V.). age 72.
Tolston. Ierena, Patrick (Co. D. 21 st reg.), age 63.
Turnage, Elizabeth, Quick (Co. A, 23d N. C.), age 63.
Clase C, No. 4. 1904.
Brigman, Elizabeth, Dudley (Co. i3, 26th reg.). nge $\mathbf{i} 8$.
Braddock. Caroline. Society Hill (Co. D. 21st reg. I, age 66.
Catoe. Cynthla, Chesterfield (f'o. E. 7th S. C.), age 60.
Crawford. Sarah A., (hesterdeld (('o. A, 4th reg.), age 60.
Dees. Clara, Dudley (Co. B. 8th S. C. I.), nge 63.
Funderburk. Axie M., Dudley (Co. A. 1st reg.), age 63.
Horn, Mary E., McCaskill (Co. D. 8th S. C. V.). age 74.
Hicks. Dovey L... Piains (Co. D, Rih S C. V.) age 75.
Knight. Vina, Oldstore (Co. D. 8th reg.), ape 66.
Threatt. Permella (Co. K. 1st S. C. V.) From Lancaster.
Mangum, Catherlne. Irvington (Co. E. 48th N. C.), age 65.
Patrick. Caroline, Cheraw (Colt's bat.), age 65.
Pigg. Frankie, Plains (Chesterfield L. A.). age 60.
Rivers, Mary. Chesterfield (Co. B, 26th reg.), age 78.

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Sellers, A. J., Chesterfleld (Co. C, 5th reg.), age 78. Smith, Sarah E., Quick (Co. H, 1st reg.), age 63.

Class C, No. 4, 1905.
Goodale, Elizsbeth, Bay Spring (Co. G, 21st), age 65. Hursey, T. R., Chesterfld (Co. A, 4th S. C. C.), age 63. Jordan, D. A., Ruby (Co. A, Gardner'a), age 60. Maree, Mary E., Jefferson (Co. A, 1st Artil.), age 64. McPherson, J. J., McBee (Co. A, 7th S. C.), age 60. Pervis, H. R., Ruby (Coft's Battery), age 60. Wise, M. S., Plalns (Colt's Battery), age 64. Wilks, Mary J., Onsley (Co. D, 21st), age 68.

Class C, No. A, 1908.
Brock, Mary Janle, Chesterfleld (Co. I, 1st), age 62. Goodwin, Mary, Chesterfeld (Co. D), age 60. Hlnson, Martha. Chesterfield (Co. A, 4th), age 75. Huggins, Apsie, Mendenhorf (Co. I, 21st), age 60. Gardner, Larlca, Chesterfleld (Co. C. 8th), age 70. Lowry, M. A., Chesterfield (Co. K, 4th N. C.), age 73. Huggins, R. L., Patrlck (Co. C, 1st), age 61. McRae. Winnle Dudley (Co. E, 7th), age 75. Moore, M. F. (Co. A, 50th). From York.
Outlaw, Pherobla, Middenhorf (Co. G, 1st), age 70. Sullivan, Ann E., Jefferson (Co. C, Lucas), age 73. Vick, Sarah A., Hornsboro (Lt. Artll.), age 60.

Class C, No. 4, 1907.
Linton, Victoria, Society Hill (Co. A, 2d Reserves), age 65. MeManus, S. A., Middendorf (Co. H, 2d S. C. Vol.), age 68. Odam, Charlotte, Cheraw (Co. E, 21st S. C.), age 62. Jordan, Sarah, Jefferson (Co. C, 2d.), age 73. Sellers, Elizabeth, Chesterfleld (Co. D, 6th), age 78. Rodgers, Adeline, Plains (Co. B, 26th N. C.), age 62.

## CLABENDON COUNTY.

## CEANGES IN ROLL GINCE LAST PAYMENT.

Dead-Class A: Thomas A. Brandon. C, No. 1: M. A. Bell. C, No. 2: J. W. Bater, W. L. Green, G. W. Plowden, S. M. Plowden, J. W. Strange, J. B. White, J. W. Stokes, G. W. Grooms, J. M. Barwlek, W. L. Pack. C, No. 3 : A. E. Cantey, Sukan R. Gibbons. C, No. 4: M. C. Glbbons, Margaret M. Johnson, W. L. Pack, Ellen C. Sporta, M. M. Clouney.

Transferred to Other Countlea-A. C. Lee to Georgetown.
Transferred to Other Classen-From 4 to 3: Verline Burns.

Olass 4, 1906.
Cherining, J. D., Manning-Co. I, 27th. (Blind.)

## Class B, 1901.

Hobbs, W. H. H., New Zlon-Co. H, blst.N. C. T. (Lost right arm.)
Jeffords, J. J., Alcolu-Co. G, 20th reg. (Lost one leg.)
Roblnson, H. E., Beloc-Co. H, 26th 8. C. I. (Wounded right thigh and knee.)
Strange, John P., Mannlng-Co. C, Hampton Legion. (Wounded back and hand.)

Class C, No. 1, 1901.
Barnes, John H., Foreston-Co. E, 6th reg. (Wounded in left leg.)
Benbow, H. L., Davis Station-Co. I, 28d reg. (Shot In right thigh.)
Floyd, P. T., Turbeville-Co. H, 26th S. C. V. (Wounded in left leg.)
Eodge, J. C., Manning-Co. K, 25 th S. C. V. (Wounded in left thigh.)
KIrton, 8. W., Foreston-Co. F, Sth S. C. C. (Use of right arm.)
Ridgeway, Reuben, Manning-Co. I, 25th reg. (Wounded in right arm.)
Toblas, S. R., Foreston-Co. K, 6th reg. (Wounded In right thigh.)

Class C, No. 1. 1901.
Evans, S. W. D., New Zion (Co. H, 26th Inf.) Blind In left eye, deaf in left ear.
Class C, No. 2, 1901.
Baggott, B. H. (Co. I, 23d).
Bragdon, J. J., Mannling (Co. H, 8th reg.), age 63.
Brown. John A., Clarendon (Co. H, 5th Cav.), age 76.
Brunson, W. J., Manning (Co. D, 2d S. C. V.), age 61.
Bryant, B. R., Davis Station (Co. I,.25th S. C. V.), age 61.
Coker, W. N., Bethlehem (Co. H, 26th S. C.), age 63.
Driggers, P. B., Manning (Co. H, 5th S. C. V.), age 62.
DuBose, C. C., Manning (Co. E, 19th S. C.), age 68.
Geddings, W. W., Parville (Co. H, 5th S. C. C.), age 65.
Green, E. J., New Ziou (Co. H, 26th reg.), age 68.
Haley, Isare A., Foreston (Co. 1, 25th 8. C. V.), age 62.
Hickman, W. W., Turbeville (Co. H. 26th S. C. V.), age 60.
Johnson, Danlel, Foreston (Co. I, 25th S. C. V.), age 81.
Lowder, H. L., Manning (Co. I, 25th 8. C. V.), age 71.
Lowder, J. J., Foreston (Co. I, 25th reg.), age 61.
Morria, J. F., Foreston (Co. I, 25th S. C. V.), age 62.
Nelson, R. M., Mannlig (Co. C, Hampton Legion), age 67.
Reese, A. H., Alcolu (Co. B, Holcomb Leglon), age 75.
Rlehbonrg, R. N., Davis Station (Co. I, 23d B. C. V.), age 73.
Robertson, Ellerton. Seloc (Co. H, 26th reg.), age 66.
Robertson, Thomas R., Beloc (Co. H, 26 th 8. C. V.), age 71. Dead; money refunded.
Strange, Harvey A., Manning (Co. I. 7th S. C. V.), age 88.
Vick. William, Bliver (Co. G, 20th S. C. V.), age 66.
Welch, J. J., Turbevllie (Co. C, 7 th Bat.), age 65.

Olase 0, 270. 2, mint
Evany, B. H. D., New Zion (Co. H, 26th reg.), age 60. Dead; money refunded.
Floyd, J. F., Sardinia (Co. H, 26th reg.), age 60.
Bloyd, Jeptha, Sandy Grove (Co. I, 7th reg.), age 74.
Grimn, H. M., Manning (Co. I, 1st reg.), age 60.
Pack, R. R., Alcolu (Co. H, Eth S. C. V.), age 60.
Reardon, John J., Mourons (Co. C, Hampton's Legion), age 71.
Ward, John A., Mannlng (Co. I, 28d 8. C. V.), age 63.

Class O, No. 8, 1905.
Green, J. T., Turbevllle (Co. H, 26th bat.), age 60.

> Clase C, No. 8, 1904.

Brewer, J. F., Manning (Co. I, 21st Vol.)
Browder, J. W., Mauning (Co. C, 25 th Vol.)
Griffin, J. W., Peiville (Co. 1, 23d 8. C. V.)
Green, R. W., Turbeville (Co. K, 6th S. C. V.)
Hodge, J. W., Manning (Co. A, 2d S. C. I.)
Hodge, J. E., Mannling (Co. I, 23d Vol.)
MeQueen, T. S., Turbeville (Co. E. 1st 8. C. A.)
Parker, Samuel F., Jordan (Co. F, 10th S. C. V.)
Tindal, J. B., Davis Station (Co. K, 10th S. C. V.)
Welch, John, Seloc (Co. H, 26th S. C. V.)
Clase C, No. 2, 1905.
Bllups, Richard, Summerton (Co. I, 23d).
Bagnal, I. M., Manning (Co. I, 25th S. C. V.)
Dyson, D. C., Manning (Co. B, 3d S. C. V.)
Jones, T. W., Mannlng (Co. H, 5th S. C. C.)
Rhodus, G. W., Foreston (Co. A. Brown's).
Fennlag, W. P. (Co. C, 2d).
Walker, Jas. B. (Hart's Battery). From Darllngton.
Class C, No. 2, 1906.
Chandler, A. H. D., Mannlng (Co. A, llol. Legion). Dead; money refunded. Geddings, R. J., Plnewood (Co. B, Brown's).
West, W. H., Manning (Co. A, 10th S. C. V.)
Class C, No. 2. 1907.
Barrineau, Willam L., Lake City (Co. C, 25th S. C.),
June, T. G., Jordon (Co. G, 15th S. C.).
Roblngon, T. G., Lake City (Co. H, 26th S. C. V.).
Class C, No. s, 1901.
Widows of Soldiers Who Lost Their Lives in the Service of the Confederate states.
Burgess, M. E., Manning (Co. I. 25th S. C. V.). Dead; money refunded.
Frierson, Harrlett R., Mannlng (Co. I, 7tb S. C. V.)
Gardner, S. J., Jordan (Co. H, 8th S. C. V.)
Ridgeway, Emma E., Manning (Co. I. S. C. V.), age 60.
Stone, Dolly, I'axpllle (co. I, 23d S. C. V.)
Timmons, Rebecca, Manning (Co. I, 25th S. C. V.)
Wise, Mary E., Manning (Co. I, 23d reg.), age 61.,
Class C, No. s, 190 s .
Gowdey. Isabella A. (Co. F. 10th S. C. V.)
Nelson, S. A., Manning (Co. I, 4th S. C. C.)

Olate O, No. s, mor.
Fillame, B. C., Manning (Co. W, Bth 8. C. V.)
Olase O, No. 8, 1808.
Hodson, H. E., RemIn! (Co. E, 1st).
Stokeq, Frances' T., Jordan (Co. I, 25th),
Class. C, NO. S, 1907.
Brouder, Annle, St. Marks (Co. I, 23d).
Burns, Verline, Workman (Co. I, 25th S. C.).

OLass O, No. 4, 1901.

Ard, Leonora, Jordan (Co. $\mathrm{F}, 25 \mathrm{th}$ reg.), age 64.
Barraneau, S. L., Jordan (Co. C, 25th reg.), age 61. Beard, Emiley, Seloc (Co. H, 26th reg.), age 61. Belk, Malisea, Manning (Co. B, 6th S. C. C.), age 68. Chevinlng, F. E., Felder (Co. H, 5th S. C. C.), age 68. Dead ; money retunded. Coker, Margaret A., Seloc (Co. H, 26th reg.), age 62.
Evans, Dolly D., New Zion (Co. 1, 25th S. C. V.), age 67.
Geddings, T. A., Payville (Co. H, 5th reg.), age 6 U. Glbbons, Rebecca, New Zion (Co. H, 26th S. C.), age 70.
Hardy, R. M., New Zion (Co. H, 2 d reg.), age 65.
Hudson, Sarah R., New Zion (Co. E, Palmetto), age 06.
Johnson, S. E., Manning (Co. I, 23d reg.), age 65. Dead; money refunded.
Kolb, Kezlah, Paxville (Co. H, 5th S. C. C.), age 65.
Kolb, Mary, Paxville (Co. B, Reserves), age 66.
McCleod, Mary, Manning (Co. F, Beserves), age 70.
Osban, S. A., Seloc (Co. I, 26th reg.), age 64.
Pack, S. E., Alcolu (Co. H, 5th Cav.), age 60.
Richardson, M. A., Summerton (Co. H, 5th S. C. C.), age 78.
Richbourg, Ann, Plowdens Mlll (Co. F, 5th S. C. V.), age 77.
Richbourg, Carrie, Foreston (Co. D, Wltherspoon"s), age 78.
Roberton, Marla M., Turbeville (Co. H, 25 th.), age 06.
Timmons, H. T., Parvllle (Co. I, 23d S. C.), age 65.
Tindal, Carollne, Manding (Co. I, 27th reg.), age 66.
Welch, Isabella, Seloc (Co. H, 26th reg.), age 62.
WIlder, Margaret, Bethlehem (Co. H, 26th reg.), age 61.
Mlass O. No. 4, 1902.
Childers, E. V., Jordan (4th Cav.), age 64.
Clary, Mary J., Alcolu (Co. I, 28d 8. C. V.), age 60.
Corbette, M. R. F., St. Paul (Co. I, 23d S. C. V.), age 65.
Haggina, Eilen J., Manalng (Co. G, Hampton's Leglon), age 64.
OLass C, No. 4. 1903.
Barwlek, M. A., Jordan.(Co. I, 25th S. C. Y.), age 05.
Driggers, Trucy T., Alcolu (Co. H, 5th Cav.), age 64.
Kelly, Martha 8., Summerton (Co. H., 1st Art.), age 60.
Rhodes. Mary L., Manning (Co. L, 21st reg.), age 69.
Weich, Sarah A., Iurberllie (Co. K, 23d S. C. V.), age 60.
Olass $O$, No. 4, 1904.
Fann, Arena, Alcolu (Co. K, 5th reg. S. C. V.), age 80.
Harley, Charity A., Jordan (Co. I, 25th reg.), age 60.
Hodge, Alice (Co. H, 5th reg.), age 00.
Maliett, M. A. (Co. H, 26th reg.), age 65. Dead; money refunded.
Clase C, No. 4, 1805.
Corbeth, Margaret, Manning (Co. H, 5th S.C.), age 68.
Corbla, H. M. A., Mannlag (Co. C, Hampton Legion), age 60.

Holliday, Fannie, Manning (Co. H, Eth), age 68. DuBose, Mary Ann, New Zion (Co. E, 1st), age 65. Lewis, Mary J., Manning (Co. H, 26th), age 60.

Class C, No. 4, 1908.
Bochette, E. Ann, Manning (Co. I, 23d), age 60. Dead; money refunded.
Boyce, Sarah H., Seloc (Co. E, P. S. S.), age 77.
Emanuel, R. F., Mannlng (Co. B, Emanuel's), age 75.
Lowder, T. S., Wilsons (Co. I, 25th), age 60.
Tucker, D. E., Foreston (Co. C, Hampton L.)
Class C, No. 4, 1907.
Baker, E. V., New Zlon (Co. K, 23d), age 00.
Bell, A. I., Manning (Co. I, 25th), age 61.
Dubose, Jullana A., Seloc (Co. H, 26th), age 64.
Evans, Martha E., New Zion (Co. I, 25th), age 60.
Grooms, G. W., Lake City (Co. H, 26th), age 60.
Morris, L. A., Turberville (Co. H, 26th), age 62.
Goudey, Ellen J., Lake City (Co. E, P. S. S.), age 61.

## COLLETON COUNTY.

## CRANG日S IK ROLL GIRCE LABT PAYMENT.

Dead-C, No. 2: Sam Bennett, William Carter, W. D. Maxey, J. H. Sanders, James Smoak, J. W. Mears, David Ramsey, James Smoak, John P. Carter, J. G. Crowley. C, No. 8: Harrlett Thompson. C, No. 4: Harriett R. Balley, Jane Beach, Elisa Cannady, Nancy Drawdrey, Annle A. Jordan, Favey Lyons, M. A. MeTeer, Martha Smlth, Susan Varnadore, Cynthla Elizabeth Crosby, Nancy Padgett, Anna E. Warren, Susan E. Crosby, Ada Flsk, Jane A. Hlott, Eliza Beach, Mary Sarah Warren, Brothers Rebecca.

Left State-R. E. Lane.
Transferred to Other Countles-Robert Galloway to Alren. F. L. Wilkinson to Charleston.

In Asylum-Jane C. Padgett.
Transferred to Other Classes-From C, No. 1, to A: W. B. Gracen. From C, No. 2, to C, No. 1: P. W. C. Heradon, G. M. D. Hlers, H. F. Crosby, J. H. Bandera, David Ramsey, R. G. W. Bryan.

Transferred From Other Counties-J. W. Grant from Berkeley County.
Clase 4. 1901.
Benton, M. D., Walterboro-Co. E, 24th reg. (Totally blind from wounda.)
Class 4, 1909.
Dutte, W. W.-Co. A, 1st B. C. T. (Paralyzed.)
Clase A, 1906.
Bryan, P. W. A., Walterboro-Co. E, 24th. (Blind.)
Blocker, L. O., Saltkebatchle-Co. A, 3d. (Bllnd.)
Class $\overline{4}, 1907$.
Gracen, W. S., Getolnger-Co, E, 24th I. (Blind.)
Class B, 2901.
Adams, L. B., Inlandton-Co. K, 11th B. C. I. (Lost one arm.)
Buchanan, J. S., Walterboro-Co. K, 11th S. C. I. (Lost one leg.)

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\text { Class B, } 1900 .
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Elers, J. T., Round-Co. K, 11th S. C. I. (Lost right arm.)
Class C, No. 1, 1901.
Henderson, E. P., Welterboro-Co. B, 2d S. C. C. (Wounded in arm.)
Hudson, Isham, Salkehatchle-Co. B, 1st S. C. I. (Wounded in left leg.)
Martln, H. R., Omega-Co. 1, 11th S. C. I. (Wounded, 1808, Peteraburg, Va.)
Oquinn, J. H., Hendersonvlle-Co. K, 11th S. C. I. (Wounded at Sbielde Point.) Blrew, B. W., Pon Pon-Co. I, 27th S. C. I. (Wounded in foot.)

Olase C, No. 1, 1904.
Emlth, Henry, Walterboro-Co. E, 24th S. C. I. (Wounded In back.)
Class C, No. 1, 1908.
Doyle, M. J., Cottagevllle-Co. B, 11th S. C. I. (Wounded hand and leg.)

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\text { Class C, No. 1, } 1904 .
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Dopeon, J. W., Walterboro (Co. K, 11 th S. C.) Wounded in rlght leg. Fender, J. Lawrence, Smoaks (Co. I, Sth S. C.) Wounded in neck and shoulder.
Roberts, J. W., Walterboro (Co. K, 1st Regulars). Wounded in leg.
Webb, E. B., Walterboro (Marlon Artllery). Wounded in rlght leg.

## Olaes O, 2TO. 1, 2 Hos.

Breeland, J. W., Ruffin (Co. E1, 24th S. C. I.) Wounded cheat and leg. Hlott, Jomeph, Walterboro (Co. I, 11th). Wounded In right thigh.

Olass O, No. 1, 1906.
Bloomingburg, E. D., Delemars-Co. B, 11th. (Wounded in foot.) Carter, Joseph, Lodge-Co. E, 24th. (Wounded in arm.)

Class C, No. 1, 1907.
Bryan, R. G. W., Bryans-Co. E, 24th S. C. I. (Wounded head and leg.)
Crosby, Elias, Getsinger-Co. E, 24th S. C. I. (Wounded foot.)
Crosby, H. F., Ruffin-Co. G, 4th S. C. C. (Wounded in body.)
Hlers, G. M., Walterboro-Co. K, 11th S. C. I. (Wounded in side.)
Herndon, P. W. C., Walterboro-Co. I, 11th S. C. I. (Wounded In neck.)
O'Bryan, B. G., Walterboro-Co. A, 3d S. C. C. (Wounded foot.)
Pye, George, Walterboro-Co. B, 3d S. C. (Wounded In body.)
Saunders, J. H., Stokes-Co. I, 11th S. C. I. (Wounded In thigh.)
Class C, No. 2, 1901.
Adams, J. W., Walterboro (Co. I, 11th S. C. I.), age 60.
Anderson, I. S., Hendersonvilie (Co. I, 11th S. C. I.), age 68.
Barwick, A. J., Walterboro (Co. H, 5th S. C. C.), age 64.
Benton, W. G., Salkehatchle (Co. I, 3d S. C. C.), age 63.
Bessellin, John H., Stokes (Co. B, 2d S. C. C.), age 68.
Blocker, A. B., Hendersonville (Co. A, 3d S. C. C.), age 65.
Blocker, J. D., Salkehatchle (Co. A, 3d S. C. C.), age 66.
Blocker, Morgan A., Walterboro (Co. H, 1st S. C. A.), age 70.
Branch, Glles, Islandton (Co. K, 11th reg.), age 63.
Brant, A. W., Getainger (Co. A, 3d S. C. C.), age 73.
Bryan, E. H., Ruffin (Co. E, 24th S. C. I.), age 64.
Bunton, Jacob R., Hendersonville (Co. A, 3d S. C. C.), age 62.
Bunton, J. D., Hendersonville (Co. A, 3d S. C. C.), age 65.
Burbridge, John, Adams Run (Co. I, 1st S. C. C.), age 74.
Bazil, John (Co. I, 11th S. C. V.), age 66.
Carter, H. D., Ruffin (Co. E, 24th S. C.), age 74.
Carter, W. A., Preston (Co. E, 8th S. C. V.), age 60.
Clark, James, Ravenels (Co. B, 11th reg.), age 60.
Craven, James J., Walterboro (Co. I, 11th S. C. I.), age 60.
Craven, Morgan, Walterboro (Co. B, 1st S. C. Art.), age 77.
Crosby, H. E., Islandton (Co. F, 24th S. C. I.), age 61.
Crosby, J. C., Wlllams (Co. E, 24th S. C. V.), age 72.
Crosby, J. W., Walterboro (Co. I, 11th S. C. I.), age 68.
Davis, J. W., Ravenels (Co. C, 5th reg.), age 78.
DIx, J. W., Getsinger (Co. B, 8th S. C. I.), age 62.
Dubols, Elbert, Islandton (Co. A, 3d S. C. C.), age 61.
Edmonson, Ransome. Adams Run (Co. A, 8th Bat.), age 61.
Fender, J. J. L., Smoaks (Co. G, 4th S. C. C.), age 65.
Fender, J. M., Lodge (Co. H, 17 th S. C. I.), age 65.
Ferrell, G. B., Salkehatchle (Co. A, 3d S. C. C.), age 63.
Graves, D., Walterboro (Co. H, 1st S. C. I.), age 73.
Hagans, M. D., Smoaks (Co. I, 11th S. C. V.), age 74.
Hagans, W. B., Smoaks (Co. I, 11th reg.), age 61.
Herndon, Lawrence, Walterboro (Co. A, 3d S. C. C.), age 68.
Hickman, J. S., Green Pond (Co. G, 4th S. C. C.), age 60.
Hiers, Solomon, Walterboro (Co. A, 1st reg.), age 75.
Hiott, J. K., Walterboro (Co. C, 24th S. C. V.), age 61.
Hoats, W. M. P., Walterboro (Co. G, 4th S. C. C.), age 74.
Höward, Abraham, Adams Run (Co. C, 11th S. C. I.), age 66.
Howard, Gabriel, Adams Run (Co. C, 11th S. C. V.), age 74.
Howard, W. M., Adams Run (Co. B, 11th S. C. V.), age 60.

Hjatt, J. Wh, Boand (Co. B, 1st B. C. C.), age 60.
Imact, J. M., Walterboro (Co. A, 15th B. C.IV.), age 78.
Kinard, Lewin, Bmoake (Co. G, ith Cav.), age 06.
Elimey, A. B., Smoake (Co. G, 4th \&. C. C.), age 64.
Kineoy, James, Smoaks (Co. G, 1st S. C. C.), age 67.
Kimay, Thoman, Bmonk (Co. G, 4th S. C. C.), age 62.
Eoger, J. Engeing, Walterboro (Co. E., 1nt B. C. C.), age 60.
Larrincey, $\Delta$. B., Walterboro (Co. C, Bth S. C. C.), age 60.
Lintern, I. M., Smoaks (Co. G, th S. C. V.), age 63.
Martin, B. A., Smoake (Co. I, 11th S. C. V.), age 60.
Martin, Solomon, Omega (Co. I, 11th B. C. I.), age 66.
Martln, Willlam, Bells (Co. I, 11th S. C. I.), age 72.
OQuinn, Hardy, Iulandton (Co. K, 11th B. C. I.), age 84.
Padgett, Jacob, Islandton (Co. K, 11th S. C. I.), age 72.
Padgett, M. J., Walterboro (Co. A; 8d 8. C. C.), ase 60.
Prlester, Owen, Getalnger (Co. A, 1st Heserves), age 89.
Rameey, J. K., Hendermonville (Co. C, 11th S. C. V.), age 74.
Bobertmin. Colin. Walterboro (Co. I, 11th reg.), age 62.
Gavage, A. L., Walterboro (Co. B, 8d S. C. C.), age 64.
Slmmong, W. B., Walterboro (Co. I, 11th S. C. I.), age 61.
Slowman, W. P., Hendermontlle (Co. B, 19th Battery), age 74.
Bpell, E. T., Walterboro (Co. B, 8d S. C. C.), age 64.
Btutts, M. M., Ravenels (Co. B, 27 th S. C. V.), age 62.
Sulliven, George, Walterboro (C0. 1, 11th S. C. V.), age 63.
Bullivan, H. B., Walterboro (Co. I, B. C. C.), age 66.
Tant, H. H., Walterboro (Co. B, 8d S. C. C.), age 70.
Thames, Phillip. Walterboro (Co. D, 24th S. C. I.), age 72.
Ulmer, L. G., Haffin (Co. E, 24th B. C. I.), age 62.
Ware. G. H., Adame Run (Co. K, 20th reg.), age 69.
Warren, J. D. L., Rumn (1st Heavy Artlllery), age 61.
Warren, J. H., Smoaks (Co. I, 11tb S. C. V.), age 60.
Wamson, George, Sr., Walterboro (Co. I, 11th S. C. I.), age 66.
Wiggina, Ben, Walterboro (Co. I, 8d S. C. C.), age 74.
Willame. C. C., Walterboro (Co. B, 3d S. C. C.), age 73.
Wison, L., Stokes (Co. E, 24th B. C. I.), age 62.
Whenn, P. J., Smoaks (Co. B, 1 st S. C. V.), age 62.
Wood. A. Rhett, Adams Run (Co. I, 1st S. C. C.), age 63.
Wright, James, Hendersonville (Co. A, 3d s. C. C.), age 64.
Olass C, No. B, 1904.
Arant, M. L., Walterboro (Co. B, 8d S. C. C.), age 64.
Rentod. A. H. Getslnger (Co. E, 24th S. C. I.), age 60.
Blocker, F. F., Salkehatchle (Co. A, 3d Cav.), age 60.
Brabham, W. F. (Co. A, 3d). From Barnwell.
Bacbanan, J. D., HIII (Co. K, 11th Battallon), age 60.
Catterton, J. T., Rufln (Co. A, 1 st 8 . C. Reserves), age 61.
Carter. H. W., Honey Hill (Co. G, 4th Cav.), age 66.
Crosby, J. G., Omega.
Fraser. E. W.. Walterboro (Co. A, s. S.), age 63.
Hickman, W. R., Walterboro (Co. I, 11th S. C.), age 61.
Hott. B. (Co. I, 11th S. C.). age 63.
Johng, J. A., Lodge (Co. C, 3d Cav.), age 61.
Lariscey. J. B., Ravenels (Co. C, 5th S. C. C.), age 63.
Mcmillan. J. H., Islandion (Co. K, lith S. C. I.), age 68.
Munch. F. D., Salkehatchle (Co. A, 8d Cav.), age 60.
O'QuInn. W. R., Headersonville (Co. K, 11th reg.), age 60.
Prentise. W. F.. Adams Run (Co. C. 3d S. C.), age 66.
Rice, D. P., McPhersonville (Beauregard's Artlliery), age 74.
Tumbleston, W. M.. Pon Pon (Co. C, 5th S. C. C.), age 60.
Williams, B. M., Round (Co. B, 8d 8. C. C.), age 72.
Weeks, J. B., Round (Co. I, - B. C. I.), age 68.

Class C, No. 2, 1905.
Bunton, J. E., Carter (Co. A, 8d S. C. C.), age 60. Breeland, T. A. S., Omega (Co. E, 24th S. C. I.), age 64. Barnes, O. H., Smoaks (Co. E, 24th S. C. I.), age 63. Carter, John C., Smoaks (Co. B, 3d S. C. C.), age 63. Cook, J. E. (Co. E). Trangferred $\mathbf{t r o m}$ Bamberg. Cannon, A. L., Hendersonplle (Co. A, Bd B. C. C.), age 61. Grayson, A. B. (Co. E, 24th S. C. I.), age 61. Hudson, B. P., Getsinger (Co. B. 19th S. C. bat.), age 78. Johnson, Robert, Smoaks (Co. G, 4th reg.), age 66. Kinsey, J. S., Smoaks (Co. K, 1st Inf.), age 73.Kinsey, Henry, Getsinger (Co. B, 5th S. C. C.), age 71. Padgett, A. R., Smoaks (Co. F., 24th S. C.), age 68.
Pelham, James F., Willlame (Co. G, 17 th S. C. I.), age 64. Rlchardson, James R., Lodge (Co. K, 11th S. C. I.), age 67.
Rlsher, W. B., Sidney (Co. G, 4th S. C. C.), age 76.
Stutts, G. B., Weeks (Co. B, 11th S. C. I.), age 62. Spelgllts, K., Hendersonville (Co. A, 3d S. C. C.), age 60. Warren, G. L., Wlllams (Co. C, Bth S. C. C.), age 60 Warren, Eldred, Smoaks (Co. F, 24th S. C. I.), age 61.

Class C, No. 2, 1904.
Blocker, Augustus, Walterboro (Co. G, 4th S. C. C.)
Bridge, A. L. L., Cottagevllle (Co. 1, 1st reg.)
Bryan, R. E., Rufin (Co. E. 24th S. C.)
Bunton, A. W., Walterboro (Co. A, 3d S. C. C.)
Carter, J. L., Green Pond (Co. C, 5th S. C. C.)
Craven, Henry, Walterboro (Co. B, 1st Reserves).
Crosby, Lawrence, Walterboro (Co. B, 3d S. C. C.)
Campbell, W. B., Ravenels (Co. A, 1st bat.)
Grant, J. W. (Co. K, 1st reg.). From Berkeley.
Hlott, H. H., Jacksonboro (Co. B, 3d S. C. C.)
Epans, C. C., Stokes (Co. K, 1st Kegulars).
Lemacks, Middieton, Adams Hun (Co. G, 11th S. C. I.)
Lane, A. J., Walterboro (Co. K, 11 th S. C. I.)
McMillan, Wlllam, Adams Run (Co. C, Manlgault's).
Plnckney, Thomas M., Walterboro (Co. G, 4th S. C. C.)
Rlsher, I. L., Walterboro (Co. B, 3d S. C. C.)
Viard, B. F., Ravenels (Co. C, Eth reg.) 1

Class C, No. 2. 1905.
Breeland, S. L., Omega (Co. E. 24th S. C. Inf.)
Hlott, J. H., Walterboro (Co. I, 11th S. C. I.)
Nettles, J. C., Getslnger (Co. K, 11th S. C. I.)
Messevey. P. H., Osbon (Co. B, 7th S. C.)
Smoak, W. R., Getsinger (Co. A, 3d S. C. C.)
Simmons, J. W., Walterboro (Co. B, 3d S. C.)
Walker, Edwln, Salkehatchle (Co. B, Martin's).
Class C, No. 2, 1906.
Bryan, R. G. W., Hendersonville (Co. F, 24th S. C. I.)
Herndon, Stephen, Wlllams (Co. G. 1st S. C.)
Jones, Evan A., Hendersonville (Beaufort Artll.)
Linder, G. R. E., Stokes (Co. B. 3d S. C. C.)
Nettles, Wlllis B, Walterboro (Co. G, Reserves).
Robertson, J. L., Whliams (Co. D. 1st S. C. A.)

## Class C, No. 2, 1907.

Broxson, T. Q. W., McLaurln (Co. G, 3d S. C. C.).
Carroll, J. H., Smoake (Co. G, 4 th S. C. C.).

Hiott, L. J., Stokes (Co. B, 3A S. C. C.).
Hiott, I. R., Walterboro (Co. I, 11th S. C. I.).
Polt, F. M., Sr., Islington (Co. K, 11th S. C. I.).
Reeves, George M., Cottageville (Co. C, 24th S. C. I.).
Stanfield, C. H., Walterboro (Co. D, 1st S. C. Reserves).
Way, G. W., Stokes (Co. I, 11th S. C. I.).
Clase O, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Servioc of the Oonfederato Statee.
Dandridge, Adaline, Cottageville (Co. C, Sth S. C. C.)
Reddish, Mary, Williams (Co. E, 24th S. C. V.)
Rltter, Mary, Getslnger (Co. I, 11th reg.)
Seale, Rebecca, Bells (Co. D, 1st B. C. Reserves).
Clase C, No. S, 1909.
Nobles, Leonora, Smoaks (Co. E, 24th S. C. V.)
Warren, Ellzabeth, Walterboro (Co. I, S. C. I.)
Class C, No. 3, 1904.
Hill, Temperance, Hill (Co. C, 5th S. C. C.)
Kinsey, Caroline, Viola (Co. E, 24th S. C.)
Olase O, No. 4, 1901.
Addison, Annie N., Walterboro (Co. K, 1st S. C. C.), age 64. Addison, Julla H., Cottageville (Co. C, 5th S. C. C.), age 64. Attinson, Moriesy. Walterboro (Co. B, 3d S. C. C.), age 62.
Balley, J. E., Raysors (Co. I, 11th S. C. I.), age 65.
Barnes, Mary Ann, Lodge (Bryan's Reserves), age 73.
Beach, Elvira, Walterboro (Co. I, 11th S. C. I.), age 65.
Beach, Mary C., Walterboro (Co. B, Bd S. C. C.), age 72.
Benton, Ellzabeth, Hendersonville (Co. K, 11th S. C. I.), age 82,
Benton, Esther, Omega (Co. I, 11th reg.), age 68.
Blocker, Remmy, Walterboro (Co. B, 3d S. C. C.), age 04.
Brant, H. A., Hendersonville (Co. K, 11th S. C. I.), age 64.
Bridge, Naoml, Maple (Co. I, 2d S. C. Reserves), age 73.
Carter, F. R., Lodge (Co. E, 24th S. C. I.), age 63.
Carter, Sarah M., Walterboro (Co. B, 3d S. C. C.), age 60.
Cattles, Jane, Cottageville (Co. I, 1st S. C. C.), age 62.
Clark, M. L., Hendersonville (Co. A, 3d S. C. C.), age 64.
Cordry, Rebecca, Hendersonville (Co. A, 3d S. C. C.), age 64.
Colson, Tamer, Walterboro (Co. K, 9th S. C. I.), age 64.
Craven, N. E., Walterboro (Co. I, 11th S. C. I.), age 60.
Crosbs, H. C., Round (Co. B, S. C. C.), age 60.
Crosby, J. A., Ruffin (Co. B, 19th reg.), age 04.
Crosby, Margaret J., Walterboro (Co. B, 3d S. C. C.), age 68.
Crosby, R. C., Ruffn (Co. A, 24th S. C. V.), age 60.
Cummings, Jane M., Cottageville (Co. G, 6th S. C. C.), age 62.
Dandridge, Mary A., Cottageville (Backman's Artllery), age 69.
DeWltt, H. C., Hendersonville (Co. I, 11th S. C. I.), age 72.
Dodd, Rebecca, Round (Co. C, סth S. C. C.), age 71.
Drose, Cynthla, Adama Run (Kanapaux Cavalry), age 64.
Dubofs, Lena, Islandton (Co. A, 3d S. C. C.), age 66.
Emanuel, Isabella, McLaurin (Co. D, 24th S. C. V.), age 65.
Ferguson, Carollne, Cottagevllie (Co. I, 1st S. C. C.), age 01.
Fenox, Margaret E., Cottagevllle (Co. B, 2d S. C. Reserves), age 67.
Frallx, Harrlett, Frallx (Co. K, 11th Reserves), age 60.
Fraser, Maggle S., Walterboro (Co. I, 9th S. C. I.), age 02.
Gasque, Mary E., Green Pond (Co. A, 8d S. C. C.), age 66.
Graves, Julla, Walterboro (Co. A, 3d S. C. C.), age 67.
Harper, B. H., Salkehatchle (Co. E, 24th S. C. I.), age 66.
Hlott, Clara, Adame Run (Co. A, Bd B. C. C.), age 66.

Elott, F. C., Eendermonville (Co. I, 11th S. C. I.), age 60.
Hodgea, Sarah A., Hendersonville (Co. A, 24th Infantry), ase 60.
Hofi, L. M., Cottageville (Co. I, 1st S. C. C.), age 68.
Hudson, A. M., Colleton (Co. B, 19th Bat.), age 63.
Hyrne, E. E., Walterboro (Co. G, 45th S. C. C.), age 72.
Johnson, Jane E., Walterboro (Co. A, 5th S. C. C.), age 62.
Jones, Elizabeth, Smoaks (Co. G, 4th S. C. C.), age 63.
Jones, S. M., Bells (Co. K, 11th S. C. I.), age 70.
Kinsey, Mary, Smoaks (Co. D, 1st S. C. A.), are 70.
Eingey, Olive, Smoaks (Co. G, 4th B. C. C.), age 60.
Kizer, Rosannah, Cottageville (Co. D, 18th S. C. M.), age 78.
Lyons, Rilla, Getsinger (Co. G, 11th reg.), age 60.
Malone, Ollvia, Walterboro (Co. E, 1st S. C. C.), age 60.
Metts, Mary E., Cottageville (Co. A, 1st S. C. Reserves), age 68.
Muckenfugs, Susan, Cottageville (Co. E, 18th Milltia), age 75.
Murdaugh, Jane C., Islandton (Co. K, 11th S. C. I.), age 60.
Murray, Mary E., Hendersonville (Co. A, 3d S. C. C.), age 71.
Oquinn, S. A., Hendersonville (Co. A, 3d S. C. C.), age 65.
Padgett, Mary, Lodge (Co. C, 3d S. C. C.), age 60.
Reynolds, C. E., Jacksonboro (Co. A. 4th S. C. C.), age 64.
Reynolds, Martha Ann, Walterboro (Co. A, 4th S. C. C.), age 61.
Reddish, Laura (Co. E, Eth). Transferred from Richland.
Robinson, Charlty, Stokes (Co. D, 1st S. C. A.)
Roblnson, Harrlett, Stokes (Co. A, 3d reg.), age 76.
Ryan, Mary C., Ruffin (Co. A, 1st S. C. Reserves), age 76.
Sineath, Hannah, Islandton (Co. A, 1st S. C. Reserves,), age 60.
Smith, Jane, Cottageville (Co. C, 5th reg.), age 62.
Smoak, Emma, Walterboro (Co. I, 11th S. C. I.); age 60.
Stewart, Fllza, Walterboro (Co. F, 24th S. C. I.), age 60.
Taylor, M. L., Bells (Co. K, 11th reg.), age 61.
Tucker, Laura, Walterboro (Co. B, 3d S. C. C.), age 61..
Tumbleston, Fllzabeth, Round (Co. C, 5th S. C. C.), age 64.
Walling, Elizabeth, Islandton (Co. K, 11th S. C. I.), age 74.
Willis, Annle W., Cottageville (Co. C, 5th S. C. C.), age 65.
Wilson, O. E., Smoaks (Co. B, 1st Art.), age 61.
Winnlngham, Mary, Walterboro (Co. C, 14th S. C. I.), age 62.
Yarley, Sarah A., Red Bank (Co. I, 11th S. C. V.), age 67.
Class C, No. 4, 1902.
Adams, Margaret A., Cottageville (Co. C, 5th S. C. C.), age 60.
Balley, Maria, Ruffin (Co. F, 24th S. C.), age 70.
Craven, E. F., Walterboro (Co. I, 11 th S. C. A.), age 62.
Carter, Sarah Ann, Walterboro (Co. B, 3d S. C. C.), age 64.
Carter, Sallie. Islandton (Colcock's Bat.), age 70.
Driggers, Ellzabeth, Ravenels (Co. B. 11th S. C. V.), age 60.
Fender, S. A., Walterboro (Co. K, 11th S. C. I.), age 61.
Ihley, Cornella W., Hendersonville (Co. B, 1st Reserves), age 61.
Pellum, M. S., Walterboro (Co. I, 11th Infantry), age 61.
Pellum, L. M., Islandton (Co. K, 11th S. C.), age 60.
Polk, Ursula, Islandton (Co. K, 11th S. C.), age 78.
Rivers, Isabelle B., Marion (Artillery), age 68.
Smith, Rebecca, Willams (Co. A, 1st Reserves), age 71.
Sanders, L. T., Walterboro (Co. B, 3d S. C. C.), age 66.
Smoak, Mary J., Smoaks (Co. H. 17th reg.), age 61.
Wiggins, Mary, Islandton (Co. K, 11th S. C. I.), age 66.
Class C, No. \&. 1908.
Ackerman, E. A., (Co. I), age 60. Transferred from Dorchester. Chapiln, Annle O., Walterboro (Co. B, 3d S. C. C.), age 76.
Francls, Carollne J., Walterboro (Co. K, 1st S. C. I.), age 62.
Gregorle, Mary, Walterboro (Co. C, 3d S. C. C.), age 60.
Price, Harriett C., Walterboro (Co. B, 3d S. C. C.), age 60.

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Richardson, 8. E., Ehrhardts (Co. K, 11th reg.), age 63.
Lobertson, Mary J., Stokes (Co. D, 1st S. C. Art.), age 65. Zeigler, Sarah A., Walterboro (Co. B, 3d S. C. C.), age 62.

Clase C, No. 4. 1904.
Ackerman, Sarah E., Cottageville (Co. C, 5th reg.), age 70. Breeland, M. Lh (Co. E, 24th S. C. I.), age 65.
Connelly, Martha, Islandton (Co. G, 17 th S. C. I.), age 74. Crosby, Elizabeth, Walterboro (Co. E, 24th Inf.). age 69. Dease. Charlty, Smoaks (Co. G, 4th Cav.), age 75.
Drawdrey, Flien, Walterboro (Co. K, 1st reg.), age 61.
Givens, Laricey A., Getslnger (Co. K, 11th S. C. l.), age 60. Ferguson, M. Jane. Cottageville (Co. I, 1st S. C. C.), age 63. Langdale. Vletoria, Walterboro (Co. I, 11th lnf.), age 67. Martin, Mary M., Walterboro (Co. K, 1st S. C. C.), age 68. Padgett. M. A., Hendersonville (Co. A, 3d reg.), age 71. Polk, Elizabeth, Islandton (Co. K, 4th Reserves), age 67. Touchstone, Fannle, Cottagevile (Co. G, 4th reg.), age 63. Slowman, Fliza, Hendersonville (Co. A. 3d reg.), age 68.

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\text { Class C, No. \&. } 1905
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Bishop, Annie, Getsinger (Co. A. 15th reg.), age 89.
Carson, Amanda, Lodge (Co. I. 11th S. C. I.), age 62.
Connor, Elliza J., Walterboro (Co. D, 1st S. C. A.), age 62.
Carter, Malinda E., Walterboro (Co. I, 11th S. C. I.), age 72.
Carter, Luranla. Williams (Co. K. 11th S. C. J.), age 66.
Graves, Harriett A., Walterboro (Co. K, 1st I.), age 69.
Hudson, Rebecea A., Walterboro (Co. A. 8d), age 75.
Jackson, Martha, Islington (Co. H, 11th S. C. I.), age 60.
Jones. F. M., Saltkehatchie (Co. A, 3d S. C. C.), age 70. Lott, K. C., Walterboro (Co. E. 24th S. C. C.), age 65. Morrall, A. E., Walterboro (Co. A, 1st S. C. A.), age 66. Olmer, F. E., Getsinger (Co. A, 1st Reserves), age 61. Welling, Susannah, Walterboro (Co. A, 24th S. C. I.), age 64. Yon, Lucy. Walterboro (Co. A, 1st), age 68.

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\text { Closs C, No. 4, } 1906
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Bailey, Sophia, Getsinger (Co. A, 3d S. C.), age 60.
Benton. Mary Ann, Stokes (Co. K, 11th Inft.), age 62.
Branton, Ellzabeth. Hendersonville (Co. B. 11th I.), age 72.
Gooding. C. L., Ruffin (Co. D, 11th S. C. I.), age 61.
Grifin. H. D., Walterboro (Co. K, 11th), age 68.
Hiott. Flizabeth, Green Pond (Co. B, 3d), age 61.
Hictman, Eliza, Bltters (Co. G. 5th), age 73.
Johnson, Margaret S., Walterboro (Co. I, 11th). age 62.
Rusblag. Sallie O., Ravenel (Co. D, 11th S. C. I.), age 65. Bitter. Bettle, Henderbonville (Co. A, 3d), age 60.
Sanders, Laura, Stokes (Co. I, 11th Inft.), age 60.
Sanders. F.mily, Walterboro (Co. C, 5th). age 72.
Stone. Hariett, Islington (Co. A. 3d S. C.), age 06.
Warren, Barah V., Walterboro (Co. I, 11th S. C. I.), age 60.
Class C, No. \&. 1907.
Bennett, Sarah, Kalterboro (Co. G, 15 th S. C. A.), age 65.
Crosby. Fllzabeth, Islington (Co. K, 11th S. C. I.), age 80.
Crosby, Mary F., Isilngton (Co. K, 11th S. C. I.), age 81.
Gordon, Hettle, Walterboro (Co. B, 3d S. C. C.). age 65.
Herndon, Jane, Getsinger (Co. A, 3d S. C. C.), age 60.
Mardaugh, M. A., Islington (Co. K, 3d S. C. C.), age 60.
Maxey. Evan, Smoske (Co. G. 17 th S. C. V.), age 75.
MeMillan. Amanda, Lodge (Co. A, 3d), age 68.
Hears. L. E., Islington (Co. F, 11th S. C. I.), age 72.
Rhodes, Harriett E., Cottageville (Co. I. 1st), age 60.
Ramsey. Ablgail, Walterboro (Co. E, 24th I.), age 60.

## DARLINGTON COUNTY.

## CHANGES IN ROLL SINCE LAST PAYMENT.

Dead-Class B : W. J. Windham. C, No. 2: A. B. Galloway, J. W. Odam, G. W. Parnell, G. W. Hevell, E. C. Rejnolds, John J. Rhodes, W. F. Stewart, James Truitt, Thos. R. Brown, Samuel W. Baird, W. Z. Galloway. C, No. 4: M. L. Gatiln, Serena Treuett, Josephlae Smith.

Trangferred From Other Counties-W. H. B. Lemon from Sumter.

Class A, 1904.
Tedder, R. F., Green Plalns (Co. B, White's). Paralyzed.
Clas8 A, 1906.
Worr, A. J., Inglig-Lt. Artll. (Paralyzed.)
Clase B, 1901.
Hunter, John R., Leavenworth-Co. G, 21st B. C. I. (Wonnded right leg, rendering It useless.)
Odam, Peter, Darlington-Co. I, 18th S. C. V. (Skull fractured by a shell.) Sturgeon, J. W.-Co. 1, 18th. (Lost right arm.) Transferred from Rlchland.

Olass C, No. 1, 1901.
Anderson, S. P., Timmonsville-Co. K, 21 st S. C. V. (Wounded right side and head.) Bone, D. D., Darlington-Co. E. 21st S. C. V. (Wounded in arm.)
Bozeman, G. W., Darilington-Co. F, 8th S. C. V. (Wounded In head.)
Cross, Randal, Philadelphia-Co. D, 21st S. C. V. (Wounded In left arm.)
Edwards, J. F.-Co. D, 21st S. C. V. (Wounded In arm.) Trangferred from Marlboro County.
Gandy, John, Soclety HIll-Co. E, 6th reg. (Wounded In right thigh.)
Harrell, Robert, Hartsvllle-Co. H, 21st S. C. V. (Wounded in left shoulder.)
Jones, Harmon, Hartspille-Co. H, 1st 8. C. (Wounded In right leg.)
Jordan, J. A., Darlington-Co. I, 18th reg. (Shot through rlght hand.)
Polson, Thomas, Soclety Hill-Co. D, 2d S. C. V. (Wound In left hand.)
Reddic, J. J., Lamar-Co. E, 21st S. C. V. (Wounded rlght leg.)
Rodgers, W. J., Phlladelphia-Co. A, 7th S. C. V. (Wounded in left eje.)
Stokes, Isaac, Hartsville-Co. C, 6th S. C. V. (Wounded left arm.)
Watford, J. N., Cartersville-Co. A. 14th reg. (Wounded in left shoulder and arm.)
Whlliams, M. K., Darllngton-Co. H, 25th S. C. V. (Wounded In eye, causing it to to be paralyzed.)

Clase C, No. 1, 1908.
Freeman, J. F., Lydla-Co. D, 21 st S. C. (Wounded left arm.)
Class C, No. 1, 1905.
Cook, Thomas J., Darlington (Co. E, 8th). Paralyzed in left side.
Revil, J. C., Darllngton (Co. A, Holcomb Legion). Wounded ln shoulder.

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\text { Clase C, No. \&, } 1901 .
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Bacot, W. M., Riverdale (Co. B, 1st reg.), age 62.
Barfeld, W. H. (Co. G, White's), age 68. Transferred from Lee.
Braddock, R., Hartaville (Co. D, 21st S. C. V.), age 78.
Chapman, Calvin E., Society HIII (Co. D, 21st S. C. V.), age 72.
Coats, Henry. Hartspllle (Pee Dee Light Artlllery), age 62.
Cook, S. G., Montclare (Pee Dee Light Artillery), age 62.
Cox, T. R., Darlington (Co. H, Orr's Rifles), age 62.
Crowley, J. D., Hartsville (Garden's, Haskell's bat.), nge 67 ,
Carter, J. M. (Co. E, 1st reg.), age 63. Transferred from Florence.
DeFee, James W., Darllngton (Co. B. 1st R. I.), age 64.
Dorroty, James, Phlladelphia (Co. G, 26th reg.), age 64.
Edwards, Alez., Boclety Hill (Co. D, 21st B. C. V.), age 64.

Flowers, G. M., Riverdale (Co. F, 8th S. C. V.), age 68.
Flowers, W. E., Dovesville (Co. M, 8th S. C. V.), age 61.
Gainey, J. A., Green Plalns (Co. G, 21st S. C. V.), age 67.
Gelloway, J. E., Lemar (Co. G, 6th B. C. V.), age 66.
Galloway, T. P., Lydia (Co. H, 21 st 8. C. V.), age 74.
Garner, R. L., Dovespllie (Co. B, B. C. V.), age 63.
Greggs, Robert, Green Plalns (Co. G, 21st S. C. V.), age 62.
Baley, J. B., Eartsville (Co. E, 7th reg.), age 68.
Hogg, J. C., Green Plaing (Co. I, 18th S. C. V.), age 02.
Hoale, E., Soclety Hill (Co. G, 4th S. C. V.), age 65.
Howie, J. D., Green Plalng (Co. G, 21st B. C. V.), age 62.
Johnoon, Robert, Darlington (Co. I, 18th S. C. V.), age 65.
Elariah. W. M., Ashland (Colt's Battery), age 67 .
Lucas, Joseph, Darllngton (Co. A, 14th S. C. V.), age 02.
Lloyd, J. A., (Pee Dee Art.) Transferred from Lee.
Lynch, W. F., Hartsville (Co. B, 10th reg.), age 65.
Mims, R. M., Lydia (Co. A, 14th S. C. V.), age 61.
Moody, J. G., Dovesplle (Inglls's Light Artllery), age 73.
Moody, J. F., Darlliggton (Pee Dee Light Artllery), age 08.
Moody, Rlchard, Montclare (Co. I, 18th S. C. V.), age 65.
Morrell, Harmon, Soclety Hlll (Co. A, 8th S. C. V.), age 66.
Oakley, W. H., Darlington (Co. C, 26th B. C. V.), age 64.
Odam, J. A., HIgh HIll (Co. I, 18th S. C. V.), age 76. Dead; money refunded
Onalls, Peter, Green Plalns (Co. A, Ward's Bat.), age 80.
Penfeld, C. P., Gartiville (Co. H, 36th N. C.), age 60.
Plajer, Robert, Una (Co. G, 21st S. C. V.), age 62.
Stokes, R. K., Lydia (Co. C, 6th reg.), age 70.
Tedder, W. J., Darlington (Co. I, 18th S. C. V.), age 68.
Thomas, 8. P., Oats (Co. E), age 70.
Toler, I. S., Darlington (Co. K. 21st 8. C. V.), age 64.
Wadford, J. W., Philadelphia (Co. A, 14th S. C. V.), age 62.
Watford, W. H. Lamar, Cypress (Co. K, 21st reg.). age 66.
Windham, J. C., Timmonsvilie (Co. A, 8th 8. C. V.)
Clase O, No. 8, 1902.
Dutton, E. H., Darlington (Co. H, 43d N. C.), age 60.
Farmer, S. I., Darllngton (Co. A, 8th S. C. V.), age 61. Galney, A. L., Hartspllle (Co. C, 1st S. C.), age 61. Galloway. James E., Oats (Co. B, 21st reg.), age 60. Eouston, W. E., Darlington (Co. B, 10th N. C.), age 62. Eutchlnson, J. G., Darllngton (Co. I, 18th S. C. V.), age 65. Kenalngton, Abraham, Ashland (Co. G, Whlte's), age 61. Lyles, D. A., Darlington (Co. E, 22d S. C. V.), age 62. Moodey. A. L., Darlington (Pee Dee Lt. Artll.), age 60. Moody, J. A., Montclare (Inglis's Llght Art.), age 89. Newberry, A. M., Cartersville (Co. A, 27 th reg.), age 71. Pipkln, J. A., Philadelphla (Co. E, Palmetto Bat.), age 63. gexton, J. F., Darllngton (Co. K, 11th S. C. V.), age 68. Sansbury, E. F., Darlington (Co. G, 26th reg.), age 60.

Class C, No. 2, 1905.
Adams, A. S., Riverdale (Pee Dee bat.), age 63.
Beasley, D. H., Copeland (Co. B, 21st S. C. V.), age 60.
Byrd, J. Wesley, Hartspllle (Pee Dee Lt. Art.), age 61.
Hutson, Evan, Lamar (Co. A, 14th S. C.), age 70.
James, John L., Darllngton (Co. I, 53d N. C. T.), age 78.
Marco, M., Darlington (Co. F, 8th S. C.), age 60.
Rhodes. John F.. Darlington (Co. I, 18th S. C.). age 65.
Ruthven, C. G., Montclare (Charles's bat.), age 69.
Belf, G. W., Oats (Co. G, 7th S. C.), age 61.
Trull, T. S., Darllagton (Co. D, 37th N. C.), age 62.

Walters, J. P., Darllngton (Co. F, 22d bat.), age 63.
Woods, Benjamin, Hartsville (Co. A. Reserves), age 84.
Wallace, D. J., Hartsville (Colt's bat.), age 63.
Clase C, No. 8, 1904.
Elowers, Wesley, Darlington (Co. A, 21st 8. C. V.)
Harrell. W. T., Lydia (Co. E., 8th Vol.)
Klrby, J. M. P., Darlington (Co. C, P. L. A.)
Lloyd, Stephen, Darlington (Inglis's L. A.)
Stokeg, J. D., Darlington (Co. G, 26th S. C. V.)
Class C, No. 8. 1905.
Bowles, Peter, Darllngton (Co. G, 21st).
Bacot, M. 8. (Co. G, Oth).
Culpepper, G. W., Lamar (Charles's Battery).
Gilmore, J. F., Darlington (Co. H, 43d).
Lemmon, W. H. B. (Co. F, 27th): From Sumter.
Morrls, L. C. (Co. B, 18t).
O'Nalls, Wiley, Green Plalis (Cc. A, 21st).
Pate, B. K., Darlington (Co. C, 3d).
Parker, Samuel, Darlington (10th battallon).
Spires, S. G., Timmonsville (Co. F., 26th S. C. V.) Wlllamson, Thomas, Darllugton (Co. -, 8d S. C.)
Watford, D. C., Lamar (Co. G, 26th).
Class C, No. 2, 1906.
Boswell, E. W., Darlington (Co. E, 6th).
Mixon, F. W., RIver Dale (Culpepper's Bat.)
Murray, Albert (Co. K. 28th).
Parnell, S. G., Hartspllle (Finglis's Lt. Artll.)
Class C, No. 2, $190 \%$.
Clanton, Dove, Hartsville (Co. F, 7th).
Cannon, W. C., Lamar (Co. A, 13th N. C. A.).
HIII, Samnel, Darlington (Co. G, 3d S. C.).
Jackson, F. M., Darlington (Co. E, 23d S. C.).
Kelly, Rosler, Lydia (Inglls' L. A.).
Lambert, B. F., Darlington (Co. L. 10th S. C.).
McHodge, H., Darllngton (Co. I, 18th S. C.).
Parnell, R. G., Darllngton (Co. I, 18th S. C. V.).
Olass C, No. s, 1901.
Whows of Soldiers Who Lost Their Lives in the sorotoc of the Oonfoderate gtates.
Flowers, Marla, Darilngton (Co. B. 21st S. C.)
Hoole, Ellzabeth G., Darlington (Co. A, 8th B. C. I.)
Mims, E. G. (Co. A, 14th S. C. V.).
McLendon, Ellza, Stokes (Co. B, Cash's bat.)
Morrell, Loulsa, Darlington (Co. A, gth S. C. V.)
Powers, Hannab, Timmonsville (First Regulars).
Reddick, Suean, Darlington (Co. A. 8th S. C. V.)
Willamson. Mary, Riverdale (Co. B. 21st S. C. V.)
Olast C, No. s, 1903.
fill, C. A., Oats (Co. B. 21st reg.)
Melton, M. L. (Co. D. 21st reg.)
Smlth, Susannah, Copeland (Co. A, 14th S. C.)
Clase C, No. s, 1904.
Stokes, Sallle, Darlington (Co. F. 8th S. C. V. I.)
Poston, Sallie, Montclare (Inglis's L. A.)

OLass C, No. S, 1905.
Amerson, Ann, Lamar (Co. A, 14th).
Everlelgh, Hannah, Oats (Co. G, 26th B. C.)
Gainey, Emaline, Darlington (Co. M, 8th S. C. V.)
Class C, No. S, 1906.
Bozeman, M. E., Darllngton (Co. F, 8th).
Dampler, Annie, Hartsville (Co. G, 9th).
Class O. No. 4. 1901.
Bell, Mary J., Lamar (Co. A, 14th S. C. V.), age 63. Blackman, S. M., Darllngton (Co. H, 21st reg.), age 66. Bryant, M. E., Darilngton (Co. B, 21st reg.), age 65. Byrd, Margaret, Auburn (Co. M, 8th S. C. V.), age 60. Carter, Jenette, Lydia (Co. F., lst S. C. V.), age 67.
Carter, Mary, Darlington (Co. E, 21st S. C. Reserves), age 87. Dead; money refunded.
Cooper, Margaret, Darlington (Co. K, 21st reg.), age 62.
Davis, E. S. C., Ashland (Co. B, P. B. L. A.), age 80.
Dickson, Harriett C., Harteville (Cash's reg.), age 67.
Flowers, Barah, Harteville (Co. M, 8th S. C. V.), age 71.
Freeder, Elizabeth, Society Hill (Haskell's Battalion), age 68.
Gainey. Elizabeth, Green Plalns (Co. G, 21st S. C. V.), age 67.
Gainey, Mary, Antloch (Co. G, 21st reg.), age 70.
Gainey, Nancy, Soclety Hill (Co. G, 21st reg.), age 63.
Galloway. Jane. Philadelphia (Co. G, 21st reg.), age 69.
Gibson, M. A., Darlington (Co. D, 8th S. C. V.), age 65.
Goodson, Hannah, Hartsville (Co. E, 6th S. C. V.), age 60.
Hatchell, N. A., Darllington (Co. C, Culpepper's Bat.), age 60.
Hawkins. Mary, Green Plalns (Charleston Light Artillery), age 68.
Heath, Filzabeth, Darllngton (Co. A, 8th S. C. V.), age 67.
Hicks, Penelope, Darlington (Co. C. 8th reg.), age 62.
Isgate, Susannab, Darlington (Charleston Battery, 2d reg.), age 74.
Jones, Filzabeth, Darllagton (Co. F, 8th S. C.), age 68.
Lafrday, Cordella, Lamar (Co. A, Ward's Battallon), age 60.
Lewls, M. A. E., Auburn (Charles Battery), age 63.
Loyed, Adline, Ashland (Co. M, 1st reg.), age 63.
MeCown, S. E. S., Darlington (Inglis's Light $\Delta \mathrm{rt}$.), age 65.
McDonald, Caroline, Darlington (Co. B, 21st reg.), age 78.
Marshall. Iavinla, Dovesville (Co. G. Hampton Legion), age 64.
Morrell, Amanda, Hartaville (Charleston Ligbt Art.), age 63.
Nagle. Martha E.. Darlington (Co. C. 3d N. C. V.), age 71.
Odom, Martha F., Dovesville (Co. A, 8th S. C. V.), age 68.
Rodgera, Eliza (Co. H. 5th Cav.). age 68.
Rhodes. Sophronle. Darlington (Co. F. 8th S. C. V.), age 77.
Severance, M. A., Copeland (Co. A, 14th S. C. V.), age 62.
Thomas. Rachel, Pbiladelphia (Co. C, 26th reg.), age 74.
Tyner. Elizabeth, Hartgville (Co. G. 21st S. C. V.), age 67.
Weatherford, Jane, Montclare ( Pee Dee Jight Art.), age 85.
Willamson, M. A., Dovesville (Co. A, Ward's), age 64.
Wlison, M. A., Darlington ${ }^{-}$(Co. G. 21st S. C. V.), age 67.
Findham. Martha C., Lamar (Co. A. 14th S. C. V.), age 63.
Wilson. Hester, Lamar (Co. B, 1st reg.), age 65

## Clase C, No. f. 1902.

Chapman, Winnie F.. Hartaville (Co. A, Casb's reg.), age 71. Goodson. Nancy, Darlington (Co. B. 21st S. C. V.), age 65. Hall. Susan J., Hartaville (Co. A, Ist regulars). age 65.
Jagitt, Catherine, Darlington (Guard Duty), age 60.
Jacobs, Elizabeth, Society Hill (Co. B, 24th reg.), rge 70.

Class C, No. \&, 1908.
Hill, Maggle, Jasper (Co. A, Ward's), age 62.
Hatchell, Fannle S., Darlington (Culpepper'e), age 60.
James, Martha J., Darllngton (Co. F, 26th S. C.), age 64.
Loyd, Argent, Jasper (Charleston bat.), age 60.
Turnage, Mary A., Soclety Hill (Co. D, 21st reg.), age 66.
Class C, No. \&, 1904.
Blackwell, Ellzabeth C., Darlington (Co. A, 7th S. C.), age 70. Goodson, Elizabeth, Darlington (Co. A, 8th S. C. V.), age 75. Harrington, Anna, Hartsville (Co. A, 2d S. C. C.), age 64. Lucas, Mary Ann, Darlington (Co. B, German Art.), age 75.

Class C, No. 4, 1905.
Braddock, Julla, Green Plains (Co. D, 21st), age 60. Carter, Carrie, Darlington (Co. D, 6th Cav.), age 60. Campbell, Mary E., Darlington (Co. C, 1st regulars), age 61. Colln, Henrietta, Darlington (Inglis Lt. Artil.), age 60. Freeman, Mary J., Darlington (Co. E, 4th S. C.), age 60. Gainey, Mary Ann, Hartsville (Co. E, 21st), age 61. Howells, M. J., Darlington (Co. C, 5th S. C. V.), age 60. Johns, M. R., Lamar (Co. G, 9th), age 60. Mims, S. A., Lamar (Co. A, 14th), age 65.

Class C, No. 4, 1906.
Byrd, Sarah A., Hartsville (Co. G, 21st), age 67. Byrd, Elizabeth, Auburn (Co. G, 2d), age 75. Blackman, Minerva, Darlington (Co. B, 2d), age 67. Galloway, Jane, Lydia (Co. B, 21st S. C. V.), age 71. Lewis, Betty, Darlington (1st reg. artil.), age 63. O'Nails, Eliza, Hartsville (Co. G, 9th cav.), age 60. Truitt, Ellen, Darlington (Co. A, 14th), age 60.

Class C, No. 4, 1907.
James, A. E., Lydia (Co. I, 18th), age 60.
Parnell, Margaret M., Lamar (Co. A, 14th), age 76. Petty, Emily, Darlington (Co. G, 21st), age 90. Pearce, Amanda, Darlington (Co. E, 6th), age 66.

## DORCHESTER COUNTY.

## CEANGES IN ROLL BINCE LAET PAYMENT.

Dead-Class A: Lewis Knight. C, No. 2: Joslah Wimberly, A. E. Frallx. C. No. 4: Mary Martln, Ann Saulabury.

Dropped for Property-Emma F. Moorer.
Transterred to Other Countieg-W. B. Riggs to Charleston.
Transferred to Other Classeg-B. M. Johnston from C, No. 2, to A.
Transferred From Other Clasges-Ullann Lamb from Berkeley.
Olass 4, 1906.
Knight, Ells R., Summervile (Co. C, 11 th B. C. V.) Paralysed.
Olass A, 1907.
Johnston, B. M., Bt. Georgea-Co. C, 24th. (Totally disabled.)
Class C, No. 1, 1908.
Proctor, Morgan, gt. George-Co. C, 24th. (Wounded In mouth.)

Class C, No. 1, 1807.
Inflager, G. N., St. Georgeg-Co. H, 11th. (Severely wounded In leg.)
Olass C, No. 2, 1901.
Adams, W. T., Summerville (Co. D, 2d B. C. C.), age 60. Bunch, Wm. M., Summerville (Co. C, 11th B. C. V.), age 60. Cadden, W. R., Ravenela (Co. B, 11 th reg.), age 80. Davis, Jenkins, Bummerville (Co. C, 11th S. C. V.), age 64. Easterling, J. B., Ridgeville (Co. D, 18th reg.), age 80. Green, A. D., Summerville (Co. C, 5th B. C. C.), age 66. Grooms, R. E., Summerville (Co. C, 11th S. C. V.), age 65. Heape, A. M., Summerville (Co. F, 11 th B. C. V.), age 80. Infinger, L. G., St. George (Co. D, Palmetto bat.), age 66. Jennings, W. C., Rldgeville (Co. F, Light Artllery), age 68. Knight, David, Bummerville (Co. B, White's Artllery), age 71. Enight, B. P., Summerville (Co. G, B. C. A.), age 60. Mirell, Benj., Ridgeville (Co. B, Kanapaugh), age 60. Myers, T. A., Harleyville (Co. D, Pal. L. A.), age 65. Scarborough, H., Summerville (Co. 1, 23d reg.), age 71. Thompson, T. W., Summervllie (Co. B, 11 th B. C. V.), age 64. Touchstone, John, Bldgeville (Co. K, 1st reg.), age 66. Tumbleton. Irvin, Beach Hill (Co. C. 5th Cavalry), age 64. Tambleton, Charleß, Beach Hlll (Co. C, 5th Cay.), age 64. Tuten, J. A., Bavenels (Co. C. Bth reg.), age 65.

Olase $O$, No. 2, 1908.
Coteld, Thomas, Pregaalls (Co. D, 23d Bat.), age 80.
Grooms, James, Bummerville (Co. C, 11th reg.), age 62.
Murrey, E. D., Rosses (Co. H, 11th reg.), age 61.
Poser, J. M., Glvhans (Lamar's Battery), age 62.
Clase O, No. \&, 2903.
Buck, Auguatus, Summerville (Co. D, White's), age 68.
Davis, Alfred, Summerville (Co. C, 11th reg.), age 60. Enight, F. A., Summerville (Co. D, 15th reg.), age 60. Moorer, V. B. (Co. A, Whlte's).
Pendarvis, Joseph G., Rosses (Co. D, White's), age 72.
8weat. D. M., Snmmerville (Co. D, Whlte's), age 62.
Thomaston, John G., Summerville (Co. C, 11th reg.), age 76.
Thlee, Charles A., Summerville (Co. F, Palmetto reg.), age 71.

Walters, Phillp, St. George (Co. B, 3d 8. C. C.), age 74.
Way, B. B., Rosses (Co. G, 11th S. C. V.), age 63.
Walter, Rlchard, St. George (Co. C, 24th S. C. V.), age 64.
Class C, No. 2, 1905.
Brownlee, E. A., Harleyville (Co. G, 11th).
Creach, C., St. George (Co. L, 7th).
Davis, Hamilton, Summerville (Co. C, 11th).
Gasking, H. G., St. George (Co. D, Palmetto Art.)
Hinton, Robert, Givhens (Co. H, 18th S. C.)
Hurlenson, W. J., St. George (Co. B, 3d Cav.)
Judy, G. W., St. George (Co. C, 24th S. C. V.)
Lemack, J. H., Ridgeville (Co. D, White's).
Mims, J. T., Ridgeville (Co. H, 11 th S. C. V.)
Nettles, J. R. S., Summerville (Co. F, White's).
Taylor, A. A., Harleyville iCo. D, White's).
Wolfe, Wiley H. (Co. H, 11th S. C. V.)
Class C, No. 2, 1906.
Rumph, A. W., Grover (Co. I, 1st).
Water, S. D., Reevesville (Co. C, 24th).
Class C, No. 2, 1907.
Cummings, L. R., Summerville (Co. B, 2d Fla.).
Harmon, D. T., Summerville (Co. I, Palmetto).
Jackson, Durant, St. Georges (Co. D, Palmetto).
Scott, J. J. (Co. B, 5th S. C. Cav.).
Smith, A. G., Summerville (Co. C, 5th Cav.).
Westbury, T. H., Grover (Co. H, 11th).
Class C, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Bervioe of the Oonfederate Statce.
Easterling, Ellen E., Ridgeville (Co. G, Eth reg.)
Class C, No. \&, 1901.
Avant, Mildred, Reevesville (Co. C. 3d Inft.), age 66.
Berry, Mary, Reevesville (Co. E, 1st S. C.), age 60.
Bryant, Drucllla, Reevesville (Co. C, 18th Militla), age 65.
Dickinson, Gabrlella, Summerville (Co. G, 17th 8. C. V.), age 68.
Grassaway, Joanna, Ridgeville (Co. D, 11th reg.), age 60.
Hutto, Irean, Reevesville (Co. C, 24th reg.), age 67.
Infinger, M. C., St. George (Co. C, 24th S. C. V.), age io.
Jernigan, Martha, St. George (Co. K, 1st S. C. V.), age $\mathbf{6 2}$.
Johnston, Jemima, St. George (Co. D, 1st S. C. R.), age 66.
Knight, Alethea, Summerville (White's Light Artiliery), age 74.
Knight, Elize F., Summerville (Co. D, White's Bat.), age 68.
Kizer, Ellzabeth, St. George (Co. C. 24th reg.). age 68.
Kizer, Elizabeth S., St. George (Co. C, 24th reg.), age 73.
Parker, L. L., Harleyville (Co. B, 30th reg.), age 61.
Patrick, Harrlett, St. George (Co. A, 18th S. C. M.), age 65.
Reeves, Margaret, Reevesville (Co. A, 2d reg.), age 63.
Tuttle, Margaret. Ridgeville (Co. D, 11 th reg.), age 70.
Wages, Ann V., St. George (Co. B, 18th reg.), age 63.

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\text { Class C, No. 4. } 1902 .
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Green, A. C., Harleyville (Co. C, 5th S. C. C.), age 60.
Hazelbury, Fsther A., Summerville (Preston's Lt. Artlllery), age 75.
Millard, Martha, Harleyville (Co. D, Pal. Artll.), age 72.
Sweat, Carollne, Summerville (Co. B, Bth S. C.), age 68.
Waring, H. V., Summerville (2d S. C. Cavalry), age 61.

OLasa C, No. 4, 1008.
Davis, Catherine Elisabeth, Givhans (Co. D, Kanapaux Ast), ape 60. Dantsler, M. M. E., Earleyville (Co. C, 24th reg.), age 71.
Hill, Eanter (Co. Eg, 1st reg.), age 69.
Lamb, Uliann (Co. D, Palmetto). From Berzeley.
Mellard, Barbara, Earleyville (Co. H, 11th reg.), age 60.
Patrick, Dorcag, St. George (Co. C, 24th S. C. V.), age 61.
Weake, Mary, St. George (Co. C, 24th S. C. V.), age 65.
Olass $\sigma$, No. $4,1904$.
Risher, Julia, Harleypille (Co. D, 24 reg.), age 63.
Bigwald, Mary J. (Co. C, 4th), age 64. Transferred from Berteles
Wannamaker, T. L., St. George (Co. F, 2 d Art.), age 65.
Beacling, Georglana, St. George (Co. F. 11th), age 71.
Felder, F. C., Bt. George (Co. D, 26th S. C. Cav.), age 63.
Platt, Susan, Ravenel (Co. B, 11 th), age 67.
Winn, Elisabeth, Ravenel (Co. C, 11th), age 65.
Class C, No. 4, 1906.
Eralic, M. B., St. George (Co. K, 11th), age 60.
Headon, Salvia M., St. George (Co. C, 24th), age 73.
Olass C, No. 4, 1907.
Murray, E. H., Ridgeville (Co. G, 5th), age 61.
Wimberly. A., St. Georges (Co. I, S. C. C.), age 69.

## EDGEFIELD COUNTY.

## CFANGES IN ROLL SINCE LAST PAYMENT.

Dead-Class B: J. W. Eldson. C, No. 1: S. B. Ryan. C, No. 2: T. D. Chamberlin, W. J. Glover, W. P. Jones, Jesse Turner. C, No. 8 : Sarah Bolton, Martha Cartledge, Charlotte Salter.

## Class A, 1901.

Medlock, Samuel, Rehoboth-Co. K, 15th reg. (Totally paralyzed and wounded.) Thurmond, G. W.. Cleora (Co. K, 24th S. C. V.) Lost right arm and left hand.

Class B, 1901.
Corley, W. M., Cleora-Co. D, 14th reg. (Lost one arm.)
Lanler, T. B., Longmires-Co. K, 7th S. C. (Lost one arm.)
Prince, S. W., Modoc-Co. I, 24th reg. (Lost one leg.)
Class B, 1908.
Lott, G. W., Johnaton-Co. H, 7th S. C. V. (Lost right leg.)
Class O, No. 1, 1901.
Boone, L. P., Pleasant Lane-1st reg. (Wounded in hand and leg.)
Cosey, J. H., Colling-Co. D, 14th reg. (Wounded left foot.)
Covar, W. S., Edgefield-Co. D, 14th reg. (Shot in Instep and ankle.)
Murrell, F. A., Edgefleld-Co. D, 14th S. C. V. (Wounded in head and hip.)
Seigler, G. H., Longmire-Co. K, 24th reg. (Wounded in head.)
Whitlock, M. C., Johnston-Co. H, 14th reg. (Wounded in left leg.)
Class C, No. 1, 1906.
Ganzler, Whitteld, Meeting St.-Co. K, 14th S. C. V. (Wounded In leg.)
Moore, J. B., Modoc-Co. K, 15th S. C. V. (Wounded in arm.)
Stillwell, J. T., Johnston-Co. C, 3d S. C. (Almost bllnd.)

Class C, No. 1, 1907.
Miller, L. J., Collier-Co. I, 24th S. C. (Wounded in knee.)
Class C, No. 2, 1901.
Adams, J. T., Elmwood (Co. H, 7th reg.), age 66.
Adams, P. B., Meeting Street (Co. A, 22d reg.), age 73.
Boddle, J. R., Plum Branch (Co. K, 15th reg.), age 73.
Booth, M. B., Trenton (Co. E, 2d Artillery), age 62.
Carpenter, A. E., Trenton (Co. I, 24th reg.), age 66.
Christle, M. A., Cleora (Co. D, 14th reg.), age 64.
Crouch, T. B., Modoc (Co. E, 7th reg.), age 62.
Davis, Jacob, Trenton (Co. E, 7th 8. C، V.), age 69.
Dean, J. A., Edgefleld (Co. K, 2d reg.), age 76.
Devore, SImpson, Trenton (Co. K, 12th S. C. V.), age 61.
Doolittle, J. F., Rehoboth (Co. K, 15th S. C. V.), age 63.
Hamllton, G. W., Modoc (Co. G, 7th reg.), age 60.
Holly. John, Hamburg (Co. H, 1st S. C. V.), age 66.
Jamison, W. H. (Co. G, 6th).
Lanler, O. W., Rehoboth (Co. K, 7 th S. C. V.), age 62.
Miller, L. J., Collier (Co. I, 24th reg.), age 71. Not called for; money refunded.
Outz, Peter, MeetIng Street (Co. K, 24th S. C.), age 68.
Reynolds, J. W., Franklin (Co. K, 7th reg.), age 62.
Timmerman, W. E., Meeting Street (Co. K, 14th S. C. V.), age 62.
Wade, M. D., Edgefield (Co. F, 1st Artillery), age 68.
Walker, F. P., Pleasant Lane (Co. I, 2d Cavalry), age 65.
Workman, H. H., Johnston (Co. F, 14th reg.), age 68.

Timmerman, E. T. (Co. K, 14th reg.), age 72.
Whitlock, J. Chavia (Co. A, 7th reg.), age 69.
Wood, H., Edgefeld (Co. B, 6th S. C. C.), age 71.
Class O, No. 2, 1808.
Bryant, John R., Trenton (Co. A, 22d bat.), age 61.
Booth, T. J., Trenton (Co. E, 2d Art.), age 23.
Boyce, W. S., Ropers (Co. H, 7th S. C. V.), age 61.
Colling, J. W., Cold Spring (Co. K, 7th B. C. V.), age 59.
Bush, J. E., Edgefield (Co. I, 24 th reg.), age 58.
Glover, C. B., Edgefield (Co. I, Hampton Legion), age 05.
Holmes, J. E., Prescott (Co. K, 24th reg.), age 60.
Jackson, Hilliard, Red Hill (Co. F, 5th reg.), age 71.
8mith. Jacob, Edgefield (Co. K, 14th S. C. V.); age 60.
Rowe, Simpson, Trenton (Co. D, 14th S. C. V.), age 62.
Vance, G. W., Hed Hill (Co. I, 7th reg.), age 60.

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Olass C, NO: 2, }190
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Campbell, G. W., Edgebeld (Co. C, 28th Ga.)
Eqbanks, H. W., Franklin (Co. B, 6th S. C. C.)
Glover, D. M., Hardys (Co. B, 6th B. C. C.)
Eair, William, Johnston (Co. F, 20th S. C. V.)
Lanler, J. A., Franklin (Co. I, 7th S. C. V.)
Riddlehover, L. S., Plum Branch (Co. K, 2d Art.)
8harpton, B. F., Modoc (Co. I, 7th S. C. V.)
Snmmes, Jake, Frankiln (Co. K, 7th S. C. V.)
Shumate, J. W., Modoc (Co. D, 7th S. C. V.)
White, J. A., Edgefield (Co. K, 7th S. C. V.)
Class C, No. 2, 1905.
Holmes, E. M., Frescott (Co. K, 24th S. C.)
Rlkard, J. P., Wards (Co. D, 18th).
Olass C, No. \&, 1906.
Covar, J. L., Edgefield (Co. H, 7th).
Dobey. J. E., Ropers (Co. B, 19th S. C.)
Jennings, H. T., Modoc (Co. I, 24th).
Class C, No. 2, 1907.
Brooks, D. D., Rehoboth (Co. A, 1st B. C. C.).
Creed, B. O., Johnston (Co. I, 20th).
Collum, J. P., Trenton (Co. A, 19th).
Hitt, L. T., Parksville (Co. I, 24th).
Burrey, G. R., Ridge Spring (Co. B, 3d).
Clase C, No. S, 2901.
Buzzard, Balle, Meeting Street (Co. C, 19th reg.)
Johnson, C. C., Meriwether (Co. F., 1st S. C. I.)
Mojer, Mary J., Keno (Co. B, 10th S. C. V.)
Randall, Ann, Johnston (Co. A, 19th S. C. V.)
Rendall, Sarah, Timmerman (Co. A, 18th S. C. V.)

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\text { Class O, No. S, } 1905 .
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Euth, Elizabeth, Franklin (Co. I, 24th S. C. V.)
Tmmerman, Savannah P., Lane (Co. K, 14ch reg.)

## Olate O, No. B, 5ill

Collett, 8. H., Fdrefield (Co. K, 24th reg.)
Robertmon, Harriett (Co. G, 19th). From Greenwood.

Olaes O, No. 3, 1906.
Prlce, Frances, Rehoboth (Co. K, 24th S. C.)

Claes $O$, NO. S. 2007.
WIlle, Marthe, Cold Spring (Co. H, 15th).

$$
\text { Olaes C, No. \& } 1901 .
$$

Aughtry, Telltha, Edgefeld (Co. K, 2d 8. C. V.), ase 74. Corley, M. E., Cleor (Co. K, 7th Cav.), age 68. Cratford, Mary, Modoc (Co. B, 6th S. C. C.), age 64. Dike, Elisabeth, Loggmire (Co. F, Grifin's), age 82. Fallow; Mary, Johniton (Co. B, 15th reg.), age 76. Harris, Ann, Edgefield (Co. B, 6th B. C. C.), age 70. Holmes, Caroline J., Modoc (Co. I, 7th S. C.), age 62. Howard, Jane, Johngton (Co. B, Bth S. C.), age 69. Minor, Lucinda, Edgefeld (Co. G, 1st B. C.), age 82. Satcher, Sarah, Timmerman (Co. A, 19th reg.), age 70. Selgler, A. E., Rehoboth (Co. K, 24th S. C. V.), age 67. Timmerman, M. A., Lane (Co. K, 14th reg.), age 60. White, Ann J., Longmires (Co. K. 7th reg.), age 70. Wllliamg, M. A. H., Chavle (Co. I, 24th reg.), age 64.

$$
\text { Class C, No. 4, } 1908 .
$$

Carpenter, H. E., Trenton (Co. G, lat 8. C.), age 80.

$$
\text { Class C, No. f, } 1905 .
$$

Bussey, Ellza, Eflle (Co. 1, 24th B. C. V.), age 69.
Bunch, Salle V., Poverty Hill (Co. A, Hampton Legion), age 6 . Cartledge. Emmellne, Edgefleld (Co. B. Hampton Legion), age 87. Dean, Permella, Owdams (Co K, 15th S. C. V.), age 62. Freeland, Fdas, Plum Branch (Co. F, 6th S. C. Reserves). Mayson, M. L., Cleora (Co. K, 7th S. C. V.), age 81. McClendon, F. B., Chavis (Co. F, 12th Ga.), age 68. Outz, Elizabeth, Meeting Street (Co. K, 14th S. C. V.), age 67. Ripley, Emmellne, Johnston (Co. A, 1st S. C. V.), age 60.

$$
\text { Class C, No. t. } 1904 .
$$

Glover, Cornella F., Fdgefleld (Co. I, 2d Cav.), age 60.
Gray, Emily, Edgefleld (Bland's Bat.), age 60.
Wataon, Pauline, Johnston (Co. B. 6th reg.), age 68.

$$
\text { Class C, No. 4, } 1905 .
$$

Burton, M. J., Pleasant Lane (Co K, 24th), age 03.
Crouch, Kate, Trenton (Co. B, 6th), age 65.
Freeland, Mary, Plum Branch (Co. K), age 73.
Gllehrist, Virginia C., Rehoboth (Co. B, 6th), age 60.
Houston, M. A., Johnston (Co. C, 1st), age 65.
Morris, Epsey, Johnston (Co. A, 19th S. C. I.), age 81. Mays, Mary A., Edgefleld (Co. I, 2d S. C.), age 75.

$$
\text { Class C, No. \&, } 1906 .
$$

Brooks, Sarah, Cold Spring (Co. 19th), age 84.
Roper, J. E., Trenton (Co. D, 7th S. C. V.), age 62.

## OLass C, No. 4, 1907.

Bush, Mary D., Johnston (Co. B, 6th Cav.), age 72.
Chamberlain, Mary, Plum Branch (Co. B, Hampton's Legion), age 70.
Dorn, Vicey, Edgefeld (Co. K, 7 th 8. C. V.), age 60.
Eidson, Loaisa (Co. G, 7th), age 60.
Freeland, Carrie, Rehoboth (Co. K, 15th), age 62.
Gregory, Sarah, Edgefeld (Co. D, 19th), age 66.
Hughey, M. C., Rehoboth (Co. E, 16th), age 60.
Paul, Zella A., Edgefleld (Co. D, 14th), age 65.
Pardue, Mary G., Colliers (Co. K, 24th), age 66.
Torner, Sarah Ann, Johnston (Co. K, 2d Art.), age 68.

## FAIRFIELD COUNTY.

## CEANGES IN ROLL SINCE LAST PATMENT.

Dead-C, No. 2: J. A. Bookhart, G. W. Hathcock, David Peak, John C. Boulware, J. H., Stewart. C, No. 3: Rebecca Dunn. C, No. 4: Eliza Ann Cook, D. Crawford, Kate Davis, Josle B. Porter, G. H. Schautz.

Left County-J. D. Defee, Lessie Howell.
Transferred to Other Countles-John Dampler, Nicholas Gladden, D. H. Wilson, M. J. Sloan, to Richland. Arthur Baker to Lancaster.

On Account of Property-M. A. Dickerson.
Class A, 1905.
Hinnant, J. A., Winnsboro (Co. C, 12th S. C.) Totally helpless from wounds.
'Class B, 1901.
Blume, John, Blythewood-Co. C, 15th reg. (Lost right arm.)
Hinnant, G. S., Rion-Co. G, 12th reg. (Lost right arm.)
Walker, D. H., Blythewodd-Co. E, 15 th reg. (Lost one arm.)
Class B, 1905.
Richmond, J. L., Winnsboro (Co. K, 6th). Lost right leg.
Class B, 1906.
Harvey, J. R., Winnsboro-Co. F, 12th. (Leg useless from wound.) Keller, W. J., Wolling-Co. B, 3d. (Arm entirely useless from wound.) McCradey, H. M.-Co. G, 3d. (Lost right leg; from Richland.)

Class C, No. 1, 1901.
Fee, John, Buckhead-McBeth's Artlllery. (Wounded In elbow and knee.) Gibson, H. S. G., Blythewood-Co. G, 3d Bat. S. C. I. (Wounded In top of head.) Hornsby, J. D., Winnsboro-Co. G, 7th Bat. (Wounded In chest.)
Melton, L. H., Rockton-Co. B, 7th Bat. (Wounded In left shoulder.)
Nell, John H., Winnsboro-Co. B, 3d Bat. (Wounded In right leg.)
Proctor, R. W., Blythewood-Co. E, 2d reg. (Wounded in left leg.)
Robertson, Y. H., Winnsboro-Co. G, 6th S. C. V. (Wounded right arm.)
Rowe, J. W., Sharp-Co. G, 7th Bat. (Wounded head and leg.)
Class C, No. 1, 1908.
Crowder, T. A., Feasterville (Co. B, 17th S. C.) Wounded knee and head.
Class C, No. 1, 1904.
Henry, Elam T., Blackstock (Co. B, 4th N. C.) Wounded In hand.
Class C, No. 1, 1907.
Beckham, G. R., Blythewood-Co. G, 24th. (Wounded in hlp.)
Olass C, No. 2, 1901.
Abbot, John, Blythewood (Co. B, 7th Bat.), age 65. Bennett, Reuben, Filnt Hill (Co. F, 22d reg.), age 62.
Boyed, J. D., Rabb (Co. D, 17th reg.), age 70.
Davis, Powell, Ridgeway (Co. C, 12th reg.), age 63.
Dove, S. B., Longtown (Co. B, 17 th reg.), age 61.
Eastler, H. R., Sharp (Co. D, 12th reg.), age 60.
Fendly, W. P., Dawkins (Co. E, 15th reg.), age 76.
Freeman, James W., RIdgeway (Co. C, 12th reg.), age 64.
Hagood, J. A., Winnsboro (Co. B, 3d Bat.), age 68.
Hagood, L. J. (Co. B, 7th reg.), age 62.
Hinnant, H. M., Simpson (Co. C, 12th reg.), age 72. Dead; money refunded.

Hammond, John, Ridgeway (Co. C, 12th reg.), age 69. Dead; money refanded. Koon, J. W., Dawkins (Co. G, Hol. Legion), age 65.
Peake, Thomas, Winnsboro (Co. D, 8th reg.), age 86.
Reynolds, Thomas, Longtown (Co. C, 12th reg.), age 64.
Robinson, W. R., Ridgeway (Co. C, 12th reg.), age 71.
Shiriey, Richard, Crobbyville (Co. B, Lucas's bat.), age 68.
Bims, Thomas, Eidgeway (Co. B, 7th reg.), age 77.
Stuart, Willis, Sharp (Co. B, 7th bat.), age 62.
Whison, Judge, Longtown (Co. G, Palmetto), age 68.
Wooten, W. L., Blythewood (Co. C, 12th reg.), age 66.
Young, J. D., Winnsboro (Co. G, 6th S. C. V.), age 71.
Olass $O$, No. 2, 1908.
Branham, M. W., Ridgeway (Co. C, 6th reg.), age 62.
Dixon, S. La., Bryant (Co. G, 2d reg.), age 62.
Free, George, Mountville (Co. B, 17th 8. C. V.), age 71.
Massey, R. F., Winnsboro (Co. G, Cobb's Intantry), age 68.
Taylor, Edward, Ridgeway (Co. G, 6th Bat.), age 67.
Olass O, No. 2, 1905.
Black, Leroy D., Strother (Co. B, 7th S. C.), age 69.
Douglase, Charles, Wionsboro (Co. D, 17th reg.), age 74.
McDonald, J. M., Blackstock (Co. B, 7th reg.), age 66.
Olass C, No. 2, 2904
Brasiel, W. E., Blythewood (Co. C, 12th S. C.)
Carter, D. L., Ridgeway (Co. C, 12th B. C.)
Robinson, J. S. M., Winnsboro (Co. F, 23d reg.)
Olass C, No. 2, 1906.
Gantt, R. $\begin{aligned} & \text {., Winnsboro (Palmetto S. S.) }\end{aligned}$
Kenuedy, James A., Bldgewood (Co. C, 6th).
Smith, W. W., Blythewood (Co. B, 7th).
Smith, I. R., WInnsboro (Co. C, 12th S. C. V.)
Class O, No. 8, 1906.
Vaughn, W. J., Wlnnsboro (Co. L, 2d).
Class $\sigma$, No. \&, 1907.
Cooper, J. A., Rldgeway (Co. C, 12th Bat.).
Dunn, Alfred, Ridgeway (Co. C, 12th Bat.).
Gllbert, W. B., Winnsboro (Co. G, 6th S. C. V.).
McMaster, R. N., Winnsboro (Co. H, 2d S. C.).
Roberson, D. H., Winnsboro (Co. G, 6th S. C. Vol.).
Class $\sigma$, No. 3, 1901.
Widones of Boldiers Who Lost Their Lives in the Servioe of the Oonfederate States.
Bell, C. E., Mitford (Co. A, 5th reg.)
Easler, C. J., Feastervlle (Co. B, 7th B. C.)
Kllak, Henrietta A., Winnsboro (Co. A, 25 th S. C. V.)
Paul. Jane, Morgantown (Co. C, 12th reg.)
Sloan, Elizabeth, White Oak (Co. F, 12th S. C.)
Sloan, Sasan H., Winnsboro (Co. F, 12th reg.)
Class $\sigma$, No. s, 1908.
Kennedy, N. A., Ridgeway (Co. C, 6th reg.)
MeClellan, Martha, Blythewood (Co. B, 7th bat.)
Welr, Barah Jane, Winngboro (Co. G, 0th B. C.)

Olast O, No. s, 1904
Mlekle, Susan G., Ridgeway (Co. C, 19th reg.)
Class O, No. 8, 1905.
Gibson, M. A. (Co. H, 6th Battalion).

Olase O, No. \&. 1901.
Brown, Mary A., Simpson (Co. C, 12th reg.), age 60.
Dye, J. A., Crosbyville (Co. K, 1st S. C. C.), age 60.
Garrison, S. A., Winnsboro (Co. G, bth S. C. V.), age 68.
Gibson, Mary E., Bucklick (Co. C, 7th reg.), age 61. Dead; money refunded.
Hatcher, Hattie, Blythewood (Co. C, 12th reg.), age 64.
Hood, Adeline, Nelson (Co. K), age 73.
Hood, Fannle, Blythewood (Co. B, 7th Bat.), age 60.
Howell, Martha (Co. G, 20th reg.), age 65. Transferred from Lee.
Jobnson, W. F., Ridgeway (Co. B, 27th Mllitla), age 68.
Pope, Sarah M. (Co. F, 23d reg.), age 86.
Powell, M. A., Dawtins (Co. H, 7 th reg.), age 60.
Ralnes, M. E., Blythewood (Co. C, 12th S. C. V.), age 63.
Shannon, Laura, Blythewood (Co. C, 12th g. C. V.), age 60.
Wllson, Mary, Sharp (Co. D, 2d S. C.), age 62.
Wooten, Elizabeth T., Blythewood (Co. G, 6th reg.), age 60. Remarried ; money refunded.
Wooten, M. J., Blythewood (Co. G, 6th S. C. V.), age 60.

## - Olass C, No. f. 1904.

Branham, Nancy, Ridgeway (Co. C, 6th reg.), age 70.
Haynes, M. T., Longtown (Co. B, 7th reg.), age 72. Lewls, Sallie, Longtown (Co. F, 23d S. C. V.), age 60. McCrelght, Mary E., Winnsboro (1at S. C. reg.), age 60. Sitgreaves, M. E., Winnsboro (Co. K, 1st reg.), age 60.
Watt, Lucy C., Longtown (3d Reserves), age 77.
Class C, No. 4, 1903.
Cook, Sallle, Blythewood (Co. C, 7th reg.), age 60.
Dickey, Mary J., Wolling (Co. E, gd reg.), age 61.
Hood, Sarah, Blythewood (Co. B, 7th reg.), age 60.
Jeffers, Elizabeth, Rion (Co. B, 7th reg.), age 60.
Reynolds, Nancy, RIdgeway (Co. C, 12th reg.), age 65.
Wlison, R. A., Rldgeway (Co. C, 6th Cav.), age 65.
Class C, No. 4. 1904.
Hathcock, Reasle (Co. D, 22d reg.), age 62.
Scott, E. P., Longtown (Co. B, 7th reg.), age 74.
Class C, No. 4, 1905.
Brown, Eliza, WInnsboro (Co. G, 3d S. C.), age 60. Ford, Nancy C., Winnsboro (Co. F, Gill's), age 87. Roberta, Salle C., Woodwards (Co. I, 6th), age 65. Rlchardson, M. E. (Co. C, 12th S. C. V.), age 68. Sweatman, Bessle L., Ridgeway (Co. C, 12th), age 60.

Class C, No. 4. 1906.
Brazwell, M. L., Blythewood (Co. C, 12th), age 63.
Bankhead, M. H., Winnsboro (Co. G, Bth), age 62.
Trapp, Sarah E., Blair'a (Co. G, 6th), age 80.
Wilks, Julia, Blalr's (Co. C, 8 th cav.), age 61.
Wooten, M. A., Blythewood (7th S. C. V.), age 60.

Olass C, NO. \& 1900.
Bookhart, H. M., Blythewood (Co. B, 7th), age 73.
Dickey, W. A., Rion (Co. B, Nelson's), age 60.
Dunn, Emma, Rldgeway (Co. C, 12th), age 60.
Ederington, Ellzabeth, Blalrs (Co. C, 6th), age 78.
Peak, Lacy, Ridgeway (Co. B, 7th), age 60.
Roe, Mary, Winnsboro (Co. G, 12th), age 61.
Trapp, C. V., Jenninge (Co. G, 3d S. C.), age 67.

## FLORENCE COUNTY.

## changes in roll sinct last paymient.

Dead-C, No. 2: E. L. Collins, C. A. Gaskins, G. G. Johnson, W. E. Lynch, J. M. Poston, J. S. Powell, Wilson W. Powell, W. D. Purvis, J. R. Rogers, D. C. Smith, T. D. Howard. C, No. 4 : E. A. Courtney, Sarah A. Courtney, Mary Mlle, Cella Powers, Luvenia Scaff, Eady A. Vanse, T. J. Smith, E. A.

Transferred to Other Counties-S. M. Bryan to Georgetown.
Class A, 1906.
Brand, Wm., Tlmmonsville-Co. K, 21st. (Totally helpless.)
Hollls, J. L., Elorence-Co. B, 7th. (Paralyzed.)
Class A, 1907.
Dees, Simon, Mars Bluff-Co. H, 8th. (Paralyzed.)
Class B, 1901.
Hutchinson, L. N., Ernest-Co. B, 21st reg. (Lost right arm.) Myers, G. H., Forestrille-Co. F, 10th reg. (Lost one arm.)

Class B, 1908.
Kadell. George K., Florence-Co. K, 43d N. C. (Lost one arm.)
Thompson, Robert M., Sr., Bethlehem-Co. D, Kershaw's, 2d S. C. V. (Lost right arm.)

$$
\text { Class B, } 1908 .
$$

Morgan, M. H., Florence (1st N. C. Inf.) Lost right arm.
Class C, No. 1, 1901.
Miller, Peter D., Lynch-Co. I, 18th reg. (Left hand gone; wounded in foot.)
Class O, No. 1, 1908.
Collins, J. E., Savage-Co. F, 10th reg. (Wounded in hip.)
Class C, No. 2, 1901.
Blackwell, E. B., Florence (2d Co., S. C. C.), age 62.
Brown, William M., Bethlehem (Co. F, 27th S. C. V.), age 68.
Carraway, Isaac M., Wellbrldge (Co I, 26th reg.), age 64.
Chandler, D. I., Bethlehem (Co. E, White's Bat.), age 73.
Chllders, W. W., Florence (Co. D, 1st reg.), age 72.
Collins, Y. R.. Effingham (Co. B, 1st S. C. V.), age 70.
Connell, W. E., Effingham (Co. E, Pal. S. S.), age 63.
Coward, A. M., Florence (Co. H, 10th reg.), age 60.
Coward, Robert W., Bethlehem (Lee's Bat. of Artillery), age 60.
Davis, T. H., Timmonsville (Co. K, 21st S. C. V.), age 61.
DeBerry, E., Jeffreys Creek (Co. I, 6th S. C. C.), age 61.
Eagerton, E. F. M., Florence (Co. I, 6th S. C. C.), age 65.
Farmer, W. A., Penlel (Culpepper's Bat.), age 62.
Floyd, Jesse J., Bethlehem (Co. C, 9th S. C. V.), age 75.
Gregg, Thomas E., Mars Bluff (Pegram's Battery), age 65.
Hatchell, J. S., Effingham (Co. D, 1st S. C. A.), age 69.
Hatchell, Manly A., Ellm (Co. E, Whlte's), age 68.
Hatchell, R. M., Effingham (Co. C, Culpepper's Bat.), age 66.
Hays, John D., Hannah (Co. K, 1st reg.), age 68.
Hill, H., Timmonsville (Co. E. 8th S. C. V.), age 61.
Hudgens, C. W., Florence (Co. K, 18th N. C.), age 69.
Hunter, A. J., Florence (Pee Dee Artlllery), age 68.
Isgitt, R. D., Florence (Judge'e Co.; guard duty), age 79.
Jordan. Alford. Carteraville (Co. I, 18th S. C. V.), age 65.

Jordan, P. M., Bethlehem (Co. 1, 18th S. C. V.), age 66.
Langzton, John, Effingham (Pee Dee Artllery), age 68.
Locklier, Robert E., Penlel (Co. E, 4th reg.), age 68.
Lacas, J. R. (Inglis's bat.)
Matthews, Dunham, Coward (Co. I, 26th Vol.), age 60.
Morris, L., Eflligham (Co. C, 8th reg.), age 63.
Parter, R. R., Mars Bluff (Co. B. 10th 8. C. V.), age 60.
Phillipa, J. E., Florence (Co. I, Bth S. C. C.), age 69.
Pigate. J. N., Wellbridge (Co. B, Byrd's Bat.), age 67.
Powell, R. R., Hannah (Co. F, 10th reg.), age 61.
Powers, C., Mara Bluff (Pegram's Artillery), age 60.
Tedder, W. J., Florence (Co. I, 6th B. C. C.), age 63.
Turner, M. D., Savage (Co. F, 28th reg.), age 63.
Turner, P. O. C., Lucile (Co. E, White's), age 65.
Whitehead, W. H., Efingham (Palmetto Battery), age 66.
Wilson, J. H. (Co. M, 8th reg.), age 60.
White, H. E. (Co. I, Ist S. C. V.), age 63.
Worrell, James W., Mars Bluff (Co. L. 21st reg.), age 62.
Clase C, No. 8, 1908.
Bartell, H., Hannah (Co. F. 10th reg.), age 67.
Benton, Lewis L., Laclle (Co. C, Culpepper's), age 61.
Calcutt, d. T., Forestille (Co. I, 10 th reg.), age 64.
Colllas, Alfred, Enfingham (Co. A, 25 th reg.), age 72.
Dees, F., Florence (Co. L, 21st S. C. V.), over 60.
BHyan, J. C., Coward (Co. H, 10th reg.), age 79.
Floyd, M. N., Co. I, 7 th reg.), age 65. Transferred from Wlllamabury
Harrell, E. W., Florence (Co. E, 1st reg.), age 60.
Hagins, J. T., Ethngham (Co. F, 1st reg.), age 61.
Hatchell, McCree. Effigham (Co. E, White's), age 67.
Hutchlneon, E. B., Hyman (Co. I, 10th reg.), age 64.
Humphrey. 8. L., Cartergille (Co. E, 8th \&. C. V.), age 61.
Land. J. H., Carteraville (Co. A, 14th S. C.), age 69.
Lee, W. d., Tlmmonsville (Co. K, 21st reg.), age 70.
Lee, Shepperd, Lyach (Co. E, Whlte's), age 71.
Lockhart; A. K., Cartersville (Co. E, Bth), age 65.
Moore. John T., Bethlehem (Co. I, 18th S. C. V.), age 62.
Norton, FH, Effingham (Co. C, Pee Dee Art.), age 60.
Oaborn, E. C., Coward (Co. H, 10th reg.), age 61.
Ousley, J. R., Orum (2d Art.), age 67.
Powell, Wlison W., Hannah (Co. F, 10th reg.), age 80.
Rodgera, Anson. Savage (Co. H, 11th reg.), age 65.
Turner, B. L., Effingham (Co. D, Cash's reg.), age 82.
Turbevllle, C. M., Florence (Co. A, Ward's reg.), age 68.
White, Gideon L., Bethlehem (Co. E, White's reg.), age 70
Class C, No. 2, 1908.
Colling, C. E., Winona (Co. C, 26th S. C.), age 63. Caln, J. C., Hyman (Co. F, 8th S. C.), age 67. Hodge, J. C., Cartersville (Co. K, 21 st S. C. V.), age 60. Elrby. D. P., Fiflngham (Co. H, Boykin's), age 66. Leach, J. M., Luclie (Co. E, 1st S. C.), age 60.
Moore, C. C., Florence (Co. G, 7th B. C.), age 61.
Toleon, E. P., Cartergville (Co. A, Ward's), age 61.
Whlks, F. D., Lynch (Palmetto bat.), age 63.
Clase C, No. 8, 2004.
Banks, T. V., Florence (Co. D, 1st S. C. V.)
Balley. T. W.. Mara Bluff (Co. C, 2d B. C.)
Timmons, William, Florence (Co. D, Ward's).
White. E. W., Bealah (Co. C, Whlte's).

Clase O, No. 2, 1905.
Bullock, W. P., Bosticks (Co. F, 1st S. C.)
Davis, G. W., Timmonsville (Co. K, 21st S. C.)
Fountain, R. H., Eflingham (Co. B, 2d).
Hampton, Geo. C., Winona (Co. H, 8th S. C.)
Lee, Wm. C., Lynch (Co. C, White'b).
Posten, F. L., Blossom (Co. I, 10th S. C. V.)
Taylor, J. S., Effingham (Co. C, White's).
Bcarborough, W. H., Forestville (Co. A, 7th S. C. Cav.)

- Clase C, No. 2, 1906.

Brown, J. C., Efingham (Co. D, Ward's).
Hagans, John B, Winona (Co. I, 10th).
Lynch, J. E., Coward's (Co. I, 26th).
Class C, No. 2, 1907.
Anderson, W. H., Florence (Co. E, 8th).
Baggott, J. J., Florence (Co. I, 23d).
Balley, David, Florence (Co. F, 4th Cav.).
Cox, E. E., Mars Bluff (Co. G, 23d).
Mathews, W. B., Florence (Co. D, Ward's).
McElveen, John F., Lake City (Co. H, 26th S. C. Vol.).
Maree, Thomas, Boaticks (Co. I, 10th S. C.).
Purvis, G. M., Fiorence (Co. E, Palmetto).
Parrott, J. W., Cartersville (Co. E, 4th S. C. V.).
Clase C, NO. s, 1901.
Widows of Boldicre Who Lost Their Lives in the Sorvios of the Oomfoderate Atatee.
Helland, Laura E., Mart Blufi (Co. H, 8th reg.)
Clase C, No. S, 2901.
Shaw, Barah, Florence (Co. 1, 21at reg.)
Clase C, No. s, 1908.
Brown, Zelply A., Hannah (Co. F, 10th).
Class C, No. 4. 1901.
Bates, H. H., Florence (Co. E, 8th reg.), age 62.
Bronch, E. M., Florence (Co. G, 26th reg.), age 72.
Cole, Elilas (Mra.), Winona (Co. F, 4th reg.), age 78.
Coleman, Annie, Ernest (Co. F, fth Cav.), age 70.
Cone, Hannah, Effingham (Co. F, 8th reg.), age 100.
Curry, Elizabeth, Forestville (Co. F, 10th reg.), age 65.
Curry, Eunice, Blossom (Co. I, 10th reg.), age 73.
Fagin, Maggle, Bethlehem (Co. I, 26th reg.), age 61.
Goodwin, Frances, Bethlehem (Co. G, Gaillard's Artillery), age 65.
Harrell, Elizabeth, Blossom (Co. H, 8th S. C. V.), age 82.
Hill, M. L., Timmongville (Co. G, 26th reg.), age 67.
Kirby, Frances P., Iynch (Co. B, 19th Bat.), age 69.
Lee, Catherine, Lynch (Co. F. P. B. L. A.), age 68.
LeGette, Mary H., Forestville (Co. G, 33d reg.), age 76.
Matthews, Catherine, Fffingham (Co. B, 1st B. C. I.), age 66.
Miles, Frances R. (CO. G. 24th), age 65 Transferred from Richland.
Moore, Elizabeth, Claussen (Co. H, 8th 8. C. V.), age 68.
Morria, Caroline M., Timmonsville (Co. G, 26th reg.), age $\mathbf{8 2}$.
Myer, Mary Ann, Luclle (Co. F, 1st S. C. A.), age 68.
North, C., Florence (Co. E, 22d reg.), age 62.
Odem, M. A., Timmonaville (Co. B, 8th F. V.), age 61.

Otis, H. D., Timmonsville (Co. B, 21st S. C. V.), age 68.
Poston, H. L., Hyman (Co. I, Home Reserves), age 62.
Poston, Sarah, Hannah (Manigault's), age 64.
Powers, R. B., Tlmmonsville (Co. F, 26th reg.), age 65.
Prosser, A. J., Blossom (Co. I, Home Reserves), age 71.
Prosser, Martha, Hannah (Co. I, 10th reg.), age 70.
Purvis, Sarah A., Cartersville (Pee Dee Artillery), age 60.
Slmms, Adeline, Carteraville (Culpepper's Bat.), age 67.
Tayior, M. J., Luclle (Co. I, 6th S. C. C.), age 65.
Tarrh, Virginla C., Florence (Co. D, 21st reg.), age 74.
Tedder, Amanda, Lyra (Pegram's Artlliery), age 07.
Tedder, Harrlett F., Florence (Co. I, 18th Inft.), age 64.
Thomas, Fllzabeth, Bethlehem (Co: B, 19th reg.), age 70.
Taylor, Mary C., Elim (Co. C, Culpepper's), age 62.
Thornbrough, Sarah, Bethlehem (Co. C, Culpepper's), age 65.
Turbeville, Ellsa, Florence (Co. I, 10th reg.), age 60.
Turner, Ellzabeth J.. Penlel (Co. E, P. B. L. A.), age 69.
Waters, Jane, Bethlehem (White's Battallor), age 76.
Williamston, G. M., Mart Bluti (Co. A, 8th S. C.), age 60.
Clase C, No. 4. 1908.
Blake, Sarah A., Carteriville (Co. H, 67th reg.), age 62.
Cook, M. A., Florence (Co. I, 21st reg.), age 60.
Cook, Martha, Timmonaville (Co. 1, 6th S. C. C.), age 62.
Drigerers, Martha J., Bethlehem (Co. H, 26th S. C.), age 75.
Hagans, Ann E., Florence (Co. F, 8th B. C.), age 62.
Hagelden, Mary H., Mars Bluff (Co. C, 26th S. C.), age 62.
Kirby, Penelope, Timmonsville (Co. B, 1st 8. C.), age 74.
Kelly, Janet, Florence (Co. B, 2d reg.), age 62.
Lee, Jemlmy, Bethlehem (Rodgers's Co., Ward's reg.), age 11.
I ienhorn, Ann, Center (Co. E, White's Bat.), age 60.
Stokes, Mille, Florence (Co. F, 4th reg.), age 63.

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\text { Class C, No. f. } 1905
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Broach, A. C., Hyman (Co. D, 21st S. C. V.), age 62.
Caln, R. T., Orm (Co. H, 8th S. C. V.), 62.
Hutmon. Zylphla F. (Co. G, Hampton Legion), age 68.
Munn, Balle. Florence (Co. G, 26th reg.), age 62.
Powers, Fanale, Cartersville (Co. K, 26th 8. C. V.), age 60.
Summerford, Sarah, Mars Bluff (Co. L, 21st S. C.), age 68.
Wise, Mary, Hannah (Co. G, 18 th S. C.). age 69.
Willams, Mary A., Forestville (Co. F, 10th Vol.), age 68.
Class C, No. 4. 1904.
Buckies, Ollvia, Fefingham (Co. G, 15 th reg.), age 61.
Creel, B. W., Hannah (Co. C, Pegram's), age 69.
Hays, E. M., Hannah (Co. I, 10th reg.). age 64.
Hodge, Barah. Tlmmonsville (Co. I, 18th S. C.), age 65.
Jordan. Sarah, Coward (Boykln's), age 70.
Rogers, Low, Hyman (Co. D. Ward's), age 63.
Smith, Tabltha J., Coward (Co. 1, 26th reg.), age 70.
Class C, No. 4, 1805.
Carter, M. J.. Cartersvllle (Co. I. 6th), age 60. Carman, Piercle Lh, Motts Bridge (Co. H, 26th), age 66. Cook. Martha E.. Florence (21st S. C. V.), age 79. Gilbert. F. C.. Florence (Co. B, 2d B. C.). age 60. Kllpatrick, F. F., Cartersville (Co. A. 14th), age 78. Matthews. H. P., Coward (Co. D, 1st Art.). age 68. Pearce, P. E., Tlmmonsville (Co. F. 8th). age 6 .
Purvis, F. W., Efingham (Co. C, Whites), age 62.

Olass C, No. \& 1908.
Ard, William, Hannah (Co. C, Pegram's), age 61. King, Amanda, Florence (Co. C, 20th), age 60. Lynch, Nancy E., Coward (Co. H, 10th), age 78.
Langston, Margaret F., Coward's (Co. I, 26th), age 62.
Sansbury, T., Florence (Co. G, 26th S. C.), age 80.
Class C, No. 4, 1907.
Butler, Benj. G., Florence (Co. C, 23d), age 67.
Bell, Mary A., Cartersville (Co. A, 14th), age 60.
Collins, Adeline, Efingham (Co. F, 8th), age 60.
Langston, Sallie, Timmonsville (White's Bat.), age 62.
Lucas, Ellen, Florence (Englis' L. A.), age 62.
McKnight, Adeline, Scranton (Co. E, 10th), age 85.
Ollver, Lucy, Timmonsville (Co. C, Culpepper), age 63.
Oliver, Sarah, Sardis (Co. A, 8th), age 60.
Wills, G. W., Timmonsville (Co. F, 4th), age 60.

## GEORGETOWN COUNTY.

CHANGES IN ROLL SINCE IABT PATMENT.
Dead-E. R. Roberts.
Transferred to Other Classeg-E. B. Cooper from C, No. 2, to C. No. 1.
Transferred From Other Countlea-A. L. Lee from Clurendon. L. M. Brvan trom Florence.

Olase B, 1901.
Ford, John, Plantersville-Co. A, 21st 8. C. I. (Lost a leg.)
Ford, W. R., Planterspllle-Co. A, 21 st B. C. I. (Lost one arm.)
Clase O, No. 1, 1907.
Bragden, J. B., Georgetown-Co. I, 10th. (Wounded left.)
Cooper, E. B., Sampit-Co. A, 7th Cav.. (Wounded left arm.)
Clase C, No. 2, 1901.
Cribb, A. C., Planterstille (Co. A, 21st B. C. V.), age 60.
Cribb, A. F., Choppee (Co. A, 21st reg.), age 60.
Goude, John C., Petersfield (Co. A, 21 st reg.), age 63.
Goude, Btephen F., Petersfield (Co. A, 21st reg.), age 66.
KIng, Simeon, Samplt (Co. F, 4th S. C. C.), age 78.
Lambreth. B. J., Bamplt (Co. I, 4th B. C. C.), age 68.
Lorimore, J. M. (Co. F, 7 th reg.), age 68.
gkipper, G. W., Samplt (Co. E, 10th S. C. reg.), age 69.
Bmith, A. J., Georgetown (7th N. C. reg.), age 68.
Sullvan, R. W., Georgetown (Co. E, 5th B. C. C.), age 66.
Claes C, NO. 2, 190․
Beaty. Ben, Eddy (Co. E, 10th reg.), age 67 .
Hitrellson, James H., Samplt (Co. A, 4th Cav.), age 78.
Miller, Danlel T., Eddy (Co. A, 21 st S. C.), age 61.
Tlndell, J. M., Eddy (Co. E, Eth reg.), age 66.
Clase O, No. 2, 1908.
Avent, O. B., Bome (Co. I, 21 st reg.), age 70.
Baxlef. J. A., Eddy (Co. A, 4th bat.), age 75.
Howell, 8. A., Choppee (Co. A, 10th reg.), age 80. Metthers, G. R., Choppee (Co. H, 10th S. C.), age 61.
Miller, H. C., Georgetown (Co. A, 21st reg.), age 58.
Owens, John, Eddy (Co. A. 21st reg.), age 70. FIlliams, James R., Eddy (Co. A, 21gt reg.), age 60.

Glass C, No. 2, 1904.
Cumbee, L. C., Georgetown (Co. A, 2d S. C.)
Lee, A. C. (Co. F, 10th). From Clarendon.
Muler, E. John, Eddy (Co. A, 21st Inf.)
Posten, Wlllem, Georgetown (Co. B, German Artll.)
Sचails, W. F., Bamplt (Co. C, White's).
Watts, W. J., Samplt (Ward's Artllery).
Clase $C$, No. $2,1905$.
Cribb, John Wealey, Eddy (Co. E, 21st).
Fentere, John, Georgetown (Co. E, 10th).
Olase O, No. R, 1908.
Durent, Thomes (Co. E, Bth S. C.)
Newton, J. W. (Co. F, 4th). From Wlllameburg.

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OLase C, No. 2, 1907.
Hann, H. W., Sampit (Co. H, 3d N. C. C.).
Grier, H. I., Yauhanna (Co. A, 7 th S. C. C.).
Tompking, L. E., Carvers (Co. C, 10th S. C.).
Clase C, No. S, 1006.
Widows of Soldiers Who Lost ITheir Lives in the Service of the Oonfederate States. Bird, Martha L. A., Georgetown (Co. I, 21st).

Clane C, No. s, 1906.
Ray, Mary, Eddy (Co. E, 10th).
Cluse C, No. f, 1901.
Anderson, Sarah, Samplt (Co. M, 1st reg.), age 72. Bryan, S. M. (Co. A, 10th). From Florence; age 62. Barnes, Rosannah, Harper (Co. B, 50th N. C. I.), age 70 Glbson, Susan, Rome (Co. E, 10th S. C. reg.), age 62. Goude, Martha, I'etersfleld (Co. A, 21st reg.), age 60. Long, M. E., Georgetown (Co. F, 7th S. C. reg.), age 62. Powers, Susan, Choppee (Co. A. 21st reg.), age 60. Rowe, Loulsa, Choppee (Co. A, 7 th S. C. C.), age 76. Smith, Alfalr, Plantersville (Co. A, 21st S. C. I.), age 00. Tompkins, Margaret, Choppee (Co. C, 10th reg.). age 60. Verner, M. J., Yauhannah (Co. A, Hampton's Legion), age 70.

Class C, No. \$, 1902.
Glasa, Martha M., Harper (Co. D, 4th reg.), age 64.
Owens, Ellzabeth, Eddy (Co. A, 21st reg.), age 64.
Rowe, Kezziah, Choppee (Co. A, 21st reg.), age 60.
Smlth, Permella, Georgetown (Co. A, 7th S. C. C.), age 61.
Class C, No. 4, 1908.
Owens, Sarah M., Choppee (Co. A, 21 st reg.), age 60.
Class C, No. 4, 1904.
Grier, Sarah E., Georgetown (Co. A, 21gt reg.), age 68.
Bowe, Carollne, Georgetown (Co. A, 7th S. C.), age 70.
Class C, No 4, 1905.
Haddock, Sarah Jane, Georgetown (Co. A, 7th), age 71.
Moore, A. Jane, Plantergville (Co. K, 23d), age 63.
Class C, No. 4, 1907.
Moore, Martha, Eddy (Co. I, 4th), age 68.

## GREENVILLE COUNTY.

## CRANGES IN ROLL SINCE LAST PAYMRNT,

Dead-Class A: John H. Morgan. Class B: W. H. Hughes. C, No. 1: A. J. Blshop, W. R. Harrison, A. U. Smith, J. A. Sisson, Jefferson Pearson. C, No. 2: G. G. Gllreath, S. McAlister, John McNells, G. M. Robertson, J. B. Thurston, E. B. Barnett, W. H. Hawkins, W. J. Henderson, B. F. Trammel, Wm. Gosnell, John S. Harrison. J. W. Gault, John Rochester, J. P. Dill. C, No. 3: Lula T. Jenninga, Celista Rodgers, Zilla E. Hicks, Matilda McDougald. C, No. 4: Jane Chandler, Eliza Cook, Elizabeth Fowler, Caroline Stewart, Nancy Duncan, Elizabeth Harvey, Elizabeth Neely.

Transferred to Other Countics-C. E. Thompson to Anderson.
Transferred to Other Classes-From C, No. 2, to C, No. 1: James Evans, W. M. Bramlett.

Transferred From Other Countles-J. W. Friddell from Plckens. Octavia Crow from Spartanburg. Joama Sutton from Spartanburg.

Class A, 1907.
Estes, W. T., Princeton - Co. A, 6th. (Paralyzed.)
Class B, 1901.
Bates, Thomas, Marletta-Co. K, 16th S. C. V. (Lost left arm.) Brown, M., Travelers Rest-Co. F, 1st \&. C. reg. (Lost right arm.) Davidson, J. H., Sampoe-Co, E, 13th reg. (Lost right leg.)
Frans, W. O., Chlcks Springy-Co. E, 18th S. C. V. (Lost right leg.)
Hamby. J. W., Pledmont-Co. I, 3d reg. (Lost right arm.)
Maddox, W. W.-Co. I, 3d S. C. (Lost one arm.) Transferred from Laureng.
Odam, J. J., Cleveland-Co. F, 1st S. C. V. (Lost left leg.)
Searey, J. A., Greenville-Co. G, 1st S. C. H. A. (Lost right leg.)
Williams, J. H., Travelers Rest-Co. I, 25th S. C. V. (Lost right arm.)

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\text { Clase B, } 1908 .
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Burdette, J. J., Mauldin-Co. F, Hampton's Legion. (Lost one leg.)

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\text { Class B, } 1905 .
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Batson, Ervin, Taylors (Co. C, 16th vol.) Lost right leg.
Class O, No. 1, 1901.
Austin, W. N., Simpsonville-Co. F, Hampton Legion. (Wounded in left leg.)
Batison, M. G., Greenville-Co. C, 16th S. C. V. (Wounded in arm and hand.)
Black, I. B., Lenderman-Co. B, 16th reg. (Wounded In right side.)
Brisack, M. D., Oneal-Co. H, 22d reg. (Wounded in right leg.)
Brown, Terrell, Ben-Co. E, Phillips's Legion. (Wounded in right thigh.)
Barnett, J. D.. Greer-Co. B, 13th reg. (Left arm useless from wounds.)
Campbell, J. M.-Co. I, 14th. (Wounded in body.) Transferred from Abbeville.
Clark, J. H., Mauldin-Co. F. Hampton Legion. (Lost eye from wound.)
Davis, G. M., Greer Depot-Co. D, P. S. S. (Rlght foot off.)
Forest, James, Lima-Co. H, 16th reg. (Wounded in right side.)
Garrett, E. N., Falrview-Co. I, 16th S. C. V. (Dlsabled by wound.)
Kaykendal, Jacob-Co. F, 65th N. C. I. (Wounded eye and foot.)
Garrett, R. L., Simpsonville-Co. K, 7th S. C. V. (Wounded In the body.)
George. W. S., Bessie-Co. I, 5th S. C. reg. (Wounded in right leg.)
Hawkins, Williams, Marletta-Co. A, 6th S. C. reg. (Wounded right leg.)
Howard, James S., Greenville-Co. E, 3d S. C. V. (Wounded in left arm.)
Kirbs, B., Batesville-Co. B. Holcomb Leglon. (Wounded right thigh.)
Whdsay, George, Highland-Co. F, 3d reg. (Wounded in head.)
Middleton, Perry, Travelers Rest-Co. H, 16th S. C. reg. (Wounded in right arm.)
Pollard, W. A. Ansel-Co. B, 22d S. C. V. (Wounded in left shoulder.)
Risdon, Miles D., Greenville-Co. H, 2d S. C. V. (Wounded in arm and leg.)

Bingleton, W. H., Greenville-Co. C, 16 th S. C. V. (Wounded in side.)
Smith, E. M., Greenville-Co. F, Hampton Legion. (Wounded In arm and leg). Springfeld, L. M., Reid-Co. K, 16th S. C. V. (Wounded in left leg.)
Tollison, W. A., Woodville-Co. E, 16th S. C. reg. (Wounded in left shoulder.)
Wall, J. C., Greer-Co. C, $\delta$ th reg. (Wounded in left shoulder.)
White, J. J., Reedy River-Co. B, 16th S. C. V. (Arm useless Prom mounds.)
Wilson, M. A., Reedy River-Co. B, 13th reg. (Wounded in chest.)
Class O, No. 1, 190 .
Batmon, Jno. (Co. G, 16th S. C. V.) Wounded right foot. Hawkins, W. E., Falrview (Co. F, 18th reg.) Wounded In hack.

Olass C, No. 1, 1904.
Garrett, Z. V., Fountain Inn (Co. F, 14th S. C. V.) Wounded in right leg. Sudduth, George A., Batesville (Co. G, Cobb's Legion). Paralyzed.

Claba C, No. 1, 1905.
Babh, J. W., Greenville (Co. D, James's Bat.) Wounded left shoulder. Jones, Henry, Mauldin (Co. B, Lucas Artil.) Wounded in head. Kelly, Wm., Greenville (Co. B, 1st Vol.) Wounded in splne.

Class C, No. 1, 1906.
Goodlett, Tandy J., Greenville-Co. B, 22d S. C. V. (Suffering from paralyaie) King, David, Simpsonville-Co. E, Hol. Legion. (Wounded in leg.) Vermillion, T. C., Willamston-Co. F, Hagood's. (Wounded in leg.) West, W. S., Travelers' Rest-Co. H, 6th cav. (Wounded in arm.) Ogley, C. W. D., Greenvllle-Co. B, 2d. (Wounded shoulder.)

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\text { Class C, No. 1, } 1907 .
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Bramlett, W. M., Greenville-Co. A, 16th S. C. V. (Wounded leg.) Burrell, C. A., Greenville-Co. F, 18th S. C. V. (Wounded in leg.) Cole, W. M., Pledmont-Co. B, 13th. (Wounded in leg.) Evans, James, Marietta-Co. F, 1st. (Wounded left side.) Good, Valentine, Greenville-Hampton's Legion. (Wounded leg.) Griffth, B. T., Woodside Mill-Co. A, 1st. (Wounded side.) Trammel, W. C., Maritta-Co, F, 4th S. C. (Wounded shoulder.)

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\text { Class C, No. 2, } 1901 .
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Ashworth, Jessle, Knob (Co. H, 2d S. C. reg.), age 91.
Bagwell, H. R., Woodville (Co. C, 6th S. C. C.), age 65.
Balley, J. J., Oneal (Co. A, Palmetto Battery), age 87.
Baker, T. P., Graer (Co. F, Holcomb Legion), age 62.
Barnett, J. E., Merrittsville (Co. H, 16th reg.), age 89.
Bell. J. W.. Fairview (Co. G, 1st Artillery), age 65.
Bishop, Simpson. Simpsonville (Co. A, White's Battery), age 67.
Bowers, A. D., Highland (Co. H, 22d reg.), age 75.
Bradley, J. W.. Fountain (Co. A, 16th reg.), age 66.
Bramlett, T. M., Oneal (Co. E, 6th S. C. V.), age 69.
Brashier, L. J., Simpsonville (Co. F, 49th Ala. reg.), age 61.
Brookshire, David W., Merrittsville (Co. F, 1st reg.), age 68.
Bryant. H. M., Oneal (Co. B, 7th S. C. reg.), age 84.
Burrell, J. A., Merrittsville (Co. H, 16th S. C. V.), age 62.
Ballard, A. (Co. A. Lucas's), age 64. Transferred from Anderson.
Cartee, s. s., Greenvlle (Co. D, 18th reg.), age 68.
Chaplain, J. C. (Co. F, Hampton).
Childress, T. E. S., Fountain Inn (Co. A, 18th reg.), age 70.
Childs. L. L., Marydell (Co. B, 1st S. C. R. I.), age 64.
Cobb, W. H., Grove (Co. 1, 3d Ark. reg.), age 69.
Coker, W. B., Toney Creez (Co. E, Hampton Legion), age 67.

Coleman, H. D., Marietta (Co. G, 16th reg.), age 60.
Corley, J. W., Marydell (Co. B, S. C. R. I.), age 64.
Cox. George, Armatrong (Co. K, 16th S. C. reg.), age 61.
Cox, Henry, Fairview (Co. E. 4日th Ala. reg.), age 61.
Darby, 8. T. (Co. B, 22d), age 64. Tranaferred from Spartanburg.
Davis, W. M., Woodville (Co. E, Hampton Legion), age 62.
Dill, T. E., Taho (Co. D, 16th reg.), age 66.
Farmer, A. B., Sterling (Co. A, Whlte's bat.), age 62.
Farmer, F. M., Highland (Co. H, 6th S. C. C.), age 60.
Farmer, G. W., Llly (Co. E, Ist S. C. R. I.), age 64.
Farmer, R. F., Cleveland (Co. G, 8th S. C. V.), age 84.
Fuller, W. S. (Co. F, 14th). From Laurens.
Gordan, Anderson, Merrlttavlle (Co. H, 3d S. C. Reserves), age 80.
Grifin, John, Bellevue (Co. I., 13th S. C. V.), age 66.
Grainger, Thomas (Co. B, 10 th reg.)
Hancock, W. H. (Co. F, 2d). Transferred from Spartanburg.
Harden, James, Cleveland (Co. E, 69th N. C. reg.), age 64.
Hawking, Harvey, Nix (Co. H, White's Bat.), age 65.
HIll, D. S., Huntersville (Co. E, 14th reg.), age 64.
Holcomb, J. E., Greenville (Co. H, 16th S. C. V.), age 60.
Howard, Portman, Mitchell (Co. H, 6th S. C. V.), age 71.
Hunt, Fmezlah, Armstrong (Co. C, 16th S. C. V.), age 66.
Jackeon. J. M., Mltchell (Co. K, 6th S. C. V.), age 63.
Kelly, James, Marydell (Co. A, 20th reg.), age 73.
Knlght, Rlchard (Co. L, Moore's 2d Rifes). From Laurens.
Lark, Cbarley, Reld (Co. A, Pal. Bat.), age 67. •
Leopard. A. T., Huntersville (Co. E, 14th S. C. reg.), age 78.
Llndsay, W. J., Arden (Co. H, 22d S. C. V.), age 61.
Moody. F. N., (Co. G, 12th 8. C. V.) Transferred from Pickeng.
McCauley. M. C., Falrview (Co. D, 3d reg.), age 63.
McDonald, William, Toney Creek (Co. A, Perryman's reg.), age 71.
MeNeely, J. M., Fountaln Inn (Co. D, Hampton Legion), age 63.
Massingale, Ephralm, Greenville (Co. H, 4th reg.), age 78.
Murphey, H. G., Reedy River (Co. B, 6th reg.), age 60.
Neal, John B., Oneal (Co. G, 16th reg.), age 89.
Noblet, F. A. (Co. A, 2d). Transferred from Cherokee.
Nunnerly, F. F., Beasle (Co. F, Hampton's Legion), age 65.
Payne. Isaac, Gantt (Co. K, 6th S. C. V.), age 81.
Reaves, Dyer, Cleveland (Co. I, White's Bat.), age 67.
Rejnolds. M. J., Greenville (Co. H, 2d S. C. R.), age 70.
Robertson, J. Q., Princeton (Co. E, 6th S. C. V.), age 71.
Robinson, M. W., Metts (Co. K, 60th N. C. T.), age 78.
Selzemore. Ephralm, Chicks Springs (Co. C, Dunn's reg.), age 64.
Selsemore, Thomas, Greenvilie (Co. I, 1st S. C. V.), age 86.
Sherbert. W. S., Oneal (Co. I, Holcomb Legion), age 03.
Simmons, M. L., Slmpsonville (Co. B, 16th reg.), age 81.
Smith, W. H. (Co. C, 14th reg.)
Bingleton, J. R., Locust (Co. H, P. B. L. A.)., age 95.
Rmith, David, Greenville (Co. F, 2d S. C. C.), age 66.
Smith. J. C., Greenville (Co. K, 2d S. C.). age b0.
Stewart, D. C. (Co. B, 20th reg.) Transferred from Anderson.
Bwaynegame. John S. (Co. C, 6th N. C.) Transferred from Plckens.
Stalrly, B. F., Greenville (Co. K, 2d S. C. reg.), age 80.
Stove, F. M., Warthen (Co. C, 14th S. C. V.), age 70.
Suddith. John W., Neely (Co. B, 11th reg.), age 67.
Tate, 8. G., Armatrong (Co. C, 16th reg.), age 64.
Tragnham, Jasper, Chandler (Co. E, 16th S. C. V.), age 64.
Turner, Willam C., Rivervlew (Co. B, Reserves), age 72.
Waldrop, M. C., Pledmont (Co. G, 10th reg.), age 63.
Ward Henry, Greenville (Earle's Battery), age 81.
Ward, Jasper J., Tlgerville (Co. H, 16th reg.), age 67.

Willbanks, J. W., Taho (Co. A, Elford's reg.), age 85. Woods, Hasten, Danklin (Co. F, Hampton's Legion), age 64.

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\text { Olass O, No. \&, } 1908 .
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Allieon, A. E., Lenderman (Co. E, 25th N. C. reg.), age 68. Alexander, W. N., Gantt ( $\mathrm{Co} . \mathrm{B}, 16 \mathrm{th}$ reg.), age 68. Barberry, W. B., Powell (Co. B, 2d S. C. V.), age 81. Blateley, J. R., Greenville (Co. C, 20th reg.), age 75. Burgis, B. W., Greenville (Co. D, 4th S. C. V.), age 61. Drummond, John C., Batson (Co. F, Holcomb Legion), age 60. Garrett, J. G., Fountain Inn (Co. B, 1Bth reg.), age 61. Grainger, Spartan, Greenvilie (Co. A, 16th reg.), age 63. Glenn, P. A., Travelers Rest (Co. A, Earle's Artil.), age 60. Hampton, J. A., Gantt (Co. H, 22d S. C. V.), age 64. Hall, J. M., Greenville (Co. G, 4th S. C. V.), age 64. Hill, W. T., Greenville (Co. C, 3d reg.), age 66. Hutchiason, J. R., Pledmont (Co. H, 22d reg.), age 69. Johnson, W. P., Tigerville (Co. H, 22d S. C.), age 71. Johnaon, T. C., Greenville (Co. B, 16th S. C. V.), age 74. Johnson, J. A., Greer (Co. C, 1st S. C.), age 77. Keller, G. W., Greenville (Co. F, 4th S. C. V.), age 62. Latimer, J. R. (Co. E, 20th). From Anderson.
Lenderman, J. H., Reedy Rlver (Co. F, Hampton Legion), age 65.
Massey, M. H., Reedy River (Co. C, 4th reg.), age 70.
Meeks, J. S., Greenville (Co. F, Hampton's Legion), age 62.
Martin, John, White Horse (Co. F, Hampton Legion), age 62.
Nelson, J. M., Falryiew (Co. A, 3d Bat.), age 61.
Owing, David, Warthen (Co. F. 16th S. C. V.), age 60.
Pltman, Dennla, Highland (Co. D, 16th reg.), age 79.
Pruitt, John, Meriwether (Co. H, 16th), age 85.
Hayfield, Whllam, Greenville (Co. F, 63d reg.), age 76.
Sims, G. M. (Co. G, 12th). From Anderson.
Smith, W. M., Batesville (Co. F. 2d S. C.), age 65.
Wiggington, I. J., Meriwether (Co. K. 16 th S. C.), age 62.

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\text { Class O, No. 2, } 1908 .
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Alezander, Thomas, Simpsonville (Co. B, 16th bat.), age 64.
Batson, W. D., Travelers Rest (Co. G, 16th S. C.), age 78.
Biggs, J. W., Greenville (Jerf Davis Legion), age 87.
Brown, H. H., Walkersville (Co. D, P. S. S.), age 63.
Batson, Nathan, Travclers Rest (Co. H, 5th reg.), age 82.
Barker, D. C., Greenville (Co. I, P. S. S.), age 62.
Chapman, J. C., Reedy River (Co. F, Hampton Legion), age 69.
Chllds, W. T., Reedy River (P. B. L. A.), age 62.
Duncan. B. P., Batesville (Co. A, Lt. Art.), age 62.
Davenport, C. A., Simpsonville (Co. B, 16th reg.), age 64.
Forest, Willam, Tyger (Co. H, P. B. L. A.), age 75.
Fowler, J. J. (Co. B, 16th reg.), age 73.
Hall, W. W. (Thomas Legion). From Spartanburg.
Howard, B. F., Greenvlle (Co. K, 16th S. C. V.), age 77.
Henderson, J. T., Lenderman (Co. G, State Reserves), age 66.
McCoy, Ira, Greenville (Co. E, Hampton Legion), age 63.
Moon, James W., Greer (Co. D, 16th S. C. V.), age 67.
Nix, Henry, Niz (Co. C, 1st Art.), age 65.
Palmer, C. (Co. D, 6th). From Plckens.
Powell, Stephen, Greenville (Co. C, 16 th S. C. V.), age 63.
Putman, Cornellus, Fountaln Inn (Co. E, 8d reg.), age 61.
Quinn, L. B. (Co. A, 1st). From Spartanburg.
Shumate, R. Y. H., Pledmont (Co. B. 2d S. C. V.), age 66.
Tarrant, James (Co. E, Hampton Legion). Transterred from Anderson.

Taylor, R. W., Lenderman (Co. F, 14th reg.), age'62.
Watson, R. P., Travelers Rest (Co. G, 4th S. C.), age 62.
Class C, No. 2, 1904.
Adams, John, Greenville (Co. B, 16th S. C. V.)
Bishop. W. M. M., Sandy Flat (Co. A, Pal.)
Caldwell, S. A., Greer (Co. C, 27 th S. C.)
Duncan, A. J., Greer (Co. A, Whlte's).
Jenkins, W. F., Greer (Co. A, Llght Artillery).
Lemance. Jacob, Greenville (Co. H, 16th S. C.)
Mllier, R. A., Greenville (Co. F, 63d N. C. Vol.)
Middieton, B. E., Pelzer (Co. G, 16 th reg.)
Slmmons, Hiram A., Batesville (Co. A, 16th reg.)
Wood, T. J., Greenvllle (Co. A, Whlte's).
Wakefeld, W. L., Greenville (Co. F, 15th S. C.)
Fade, Robert J., Pledmont (Co. G, 16th S. C. V.)

## Clasa C, No. 2, 1905.

Butler, Balus A., Greenville (Co. I, 1st).
Bramlett, Wm. A., Slmpsonville (Co. F, Hampton Legion).
Bates, Jos. A., Pledmont (Co. E, 6th Cav.)
Dlllard, M. F., Greers (Co. F, 16th Vol.)
Friddell, K. D., Monaghan (Co. H, 2d Rifles).
Hunnlcutt, E. J., Greenville (Co. E, Orr's).
Lark, W. M., Pledmont (Co. G, 4th Vol.)
Llgon. J. T., Greenvllle (Co. K, 2d S. C. Cav.)
Levl, R. P., Greenville (Co. G, 35th N. C.)
Mller, Jacob, Greenville (Co. K, 4th S. C. V.)
Pollard, R. L., Fountaln Inn (Co. B, 16th).
Parton, J. A., Pledmont (Co. D, 6th N. C.)
Puckett, C. C., Simpson (Co. C, 1 st Art.) Roblnson, J. G., Greenvllle (Co. G, 1st Artil.) Thomason, J. H., Fountain Inn (Co. F., 2d S. C.) Faldrop, D. D., Marletta (Co. A, Whlte's). Wooten, J. W., Sampson (Co. D, 16th Vol.) Young, George (Co. A, Orr's Rifies).

Class C, No. 2, 1906.
Austin, J. M., Pledmont (Co. F, Hampton Legion).
Alverson, Mayberry. Greenville (Co. A, Anderson's).
Atklnson, Jas. H., Walkersville (Co. A, 16th S. C. V.)
Berry, W. A., Greenville (Co. K, 34th Miss.)
Blers, John B., Greenville (Co. I, Hampton).
Brown. J. W., Greer (Co. H, 16th S. C. V.)
Chandler, Wm., Monahan Mills (Ferguson).
Dean. J. L., Greenville (Co. G, Reserves).
Dobblng. D. S., Reedy River (Co. F, 16th).
Forrester, L. M., Poe Mill (Co. F. 22d S. C. V.)
Friddell, J. W. (Co. B, 2d). From Plekens.
Farmer. W. B. Greer (Co. F, 16th S. C. V.)
Glenn, T. W., Simpeonville (Co. A, 16th S. C. V.)
Gosnell. J. S., Taylors (Co. H, 22d S. C. V.)
Hood. R. D., Brandon Mlll (Co. B, 2d bat.)
Morgan, Jas., Poe Mill (Thomas Leglon).
Prince, W. M., Pledmont (Co. H, 4th S. C. V.)
Pltman, S. T., Tigerville (Co. H, 22d S. C. V.)
Pinson. W. V., Brandon Mills (Co. A, 3d).
Randall, B. P., Fountaln Inn (Co. F, 16th).
Riddle, F. B., Travelers (Co. C. 69th N. C. V.)
Sanders, Charles, Greenvlle (Co. G, 1st art.)
Bouthern, J. N., Greenville (Co. K, 8th).

Tripp, B. R., Greenville (Co. A, White's).
Waldrop, Jos., Brandon (Co. G, 16th).
Youngblood, J. C., Taylors (Co. A, 16th S. C. V.)
Class C, No. 2, 1907.
Adams, J. Simpson, Greenville (Co. F, 3d Cav.).
Allen, W. M., Slmpson Mills (Co. E, 2d S. C. V.).
Ballard, B. E., Reedy River (Co. A, 16th S. C. V.). Baker, Jno. M., Poe Mill (Co. G, 42d N. C.).
Beaver, G. L., Poe Mllls (Co. B, 29th N. C. V.).
Batson, B. E., Travelers (Co. G, 4th S. C. V.).
Duncan, J. F. Landrum (Co. K, 16th S. C. V.).
Dempsey, E. L., Greenville (Co. M, 1st S. C. C.).
Dill, Jos. P., Highland (Co. D, 16th S. C.).
Davis, G. W., Pelzer (Co. B, Hampton's Legion).
Hunt, Harvey C., Brandon (Co. F, 2d S. C. C.).
Hammett, B. A., Greenville (Co. I, Griffin's).
Langley, A. H., Greenville (Co. D, 16th).
Massey, B. F., Mills Mill (Heavy Art.).
Moore, George G., Greenville (Co. F, (Heavy Art.).
Neal, J. B., Greenville (Co. D, Orr's).
Parker, J. L., Greenville (Co. F, 17th).
Phllips, Wm. R., Slmpsonville (Earle's Battery).
Pearce, Lawrence, Greer (Co. F, 16th Vol.).
Pool, A. B., Greenville (Co. F, 4th S. C. V.).
Prewett, E. M., Slmpson Mill (Co. H, 16th S. C. V.).
Styles, Young P., O'Neal (Earle's Battery).
Simmons, Jno. H., Batesville (Co. I, 16th).
Stlles, Leander, Taylors (Co. D, 16th).
Shumate, Wm. T., Greenville (Co. B, 2d Vol.).
Southerlin, P. P., Greenville (Co. F, 4th S. C. V.).
Sullivan, John R., Pledmont (Co. F, 16th).
Tripp, J. B., Greenville (Earle's Battery).
Willis, G. T., Greenville (Co. E, Hampton's Legion).
Class C, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Service of the Oonfederate States
Ashmore, Annie E., Gowensville (Co. G, 16th reg.)
Ballew, Ellender, Arden (Palmetto Battalion).
Barton, Mary, Greenville (Co. H, 22d reg.)
Batson, Jane, Greenville (Co. G, 16th S. C. V.)
Bowers, Rebecca, Glassy (Co. H, 6th Cavalry.)
Bramlett, Rebecca, Locust (Co. H, P. B. L. A.)
Bridges, Francis, Locust (Co. F, 1st S. C. reg.)
Burch, Martha S., Sandy Flat (Co. F, 4th Ga.)
Burns, Margaret, Gantt (Co. E, 2d S. C. C.)
Burton, Nellie, Marietta (Co. G, 16th S. C. V.)
Cunningham, E. A., Greer (Co. B, 22d reg.)
Dean, Nancy E., Gantt (Co. I, James's bat.)
Duncan, Carollne, Pledmont (Co. C, 16th reg.)
Forrester, Serena, Greenville (Co. I, 16th S. C. V.)
Fuller, C. T., Locust (Co. F, 4th reg.)
Garrett, Rachel C., Lenderman (Co. B, 16th reg.)
Gosnell, Clary, Tigerville (Co. H, 22d S. C. V.)
Heatherly, Susan, Greenville (Co. H, 62d N. C.)
Henson, Nancy, Tyger (Co. D, 16th reg.)
Holly, Leah, Tigerville (Co. F, 4th S. C. V.)
Hopkins, Matilda, Cedrus (Co. E, 22d S. C. V.)
Huff, Mary A., Locust (Earle's bat.)
Johnson, Barah A., Highland (Co. F, 8d reg.)
Kemp, Sarah, Greenville (Co. C, 22d S. C. V.)

Knight, Mary, Fountaln Inn (Co. C, 8d reg.)
Leak, Mary, Fountaln Inn (Co. F, 22d reg.)
Marchbanks, Caroline, Travelers Rest (Co. H, White's Battalion.)
Neely, Ellzabeth (Co. C, 14th).
Scalp, Susan E., Greenville (Co. E, 1st S. C. I.)
Sims, Harriett, Taho (Co. D, 16th reg.)
Story, Mary C., Greenville (Co. K, 7th S. C. V.)
Thomason, Harrlett, Fairview (Co. E, Bd reg.)
Tarner, Carollne, Greenville (Co. H, 6th 8. C. C.)
Olass $C$, No. $3,1903$.
Armstrong, Hannah (7th S. C. I.) Transferred from Laurens.
Campbell, C. C., Oneal (Co. B, 22d 8. C.)
Spence, Katherine (Co. C, 16th 8. C. V.)
Turner, Mahala H. (Co. A, 8d reg.)
Olase O, No. 3, 1903.
Given, Adellne, Greer (Co. C, 13th reg.)
Jamea, Clarinda A., Greer (Co. F, 16th reg.)
Lister, Mary, Greer (Co. B, 22d 8. C. V.)
Nicoll, Eliza J., Marydell (Co. H, Pal. Lt. Art.)
Paris, Barah, Greenville (Co. A, 25th reg.)
Prince, Eleanor (Co. I, Elford's). Transferred from Anderson.
Ridgeway, L. C., Princeton (Co. D, 6th Cav.)
Clase O, No. 3, 1904.
Benson, Ellsabeth, Greenville (Co. H, 16th S. C. V.)
Clase O, No. S, 1008.
Ballenger, s. L., Greer (Co. I, 43d Ala.)
Campbell, Carollne, Landrum (Co. D, 16th S. C. V.)
Crow, Octavia (Co. K, 35th N. C.). From Spartanburg.
Pool, 8. R., Greer (Co. H, Orr's).
Olase C, No. s, 1907.
Ballew, Sarah, Tigerville (Co. G, 3d).

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\text { Olass O, No. 4, } 1901 .
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Austin, Susan E., Chicky Spring (Co. F, Hampton Legion), age 70.
Ballew, Margaret, Glassy Monntain (Co. H, 6th Cav.), age 60.
Barton, Patlence, Arden (Co. H, 22d S. C. V.), age 72.
Blahop, Fmily, Samptons Mill (Co. H, 16th S. C. V.), age 66.
Brown, Sarab E., Travelers Rent (Co. A, White's Bat.), age 64.
Burns, L. J., Travelers Rest (Co. G, 16th reg.), age 66.
Burton, Balle C., Greenville (Co. H, 22d S. C. V.), age 71.
Carlton, Susan, Bandy Flat (Co. H, P. B. L. A.), age 65.
Child, Martha, Tigerville (Co. B, 1st Inf.), age 64.
Coleman, Caroline L., Neely (Co. C, 16th S. C. reg.), age 79.
Davenport, Nancy, Fork Shoal: (Co. E, Hampton Legion), age 75.
Duncan, E. C., Sandy Flat (Co. H, White's Battalion), age 79. Dead; money refunded.
Duncan, Rosa, Greenville (Co. B, 16th S. C. V.), age 60.
Farmer, N. M., Ansel (Co. B, 27th reg.), age 61.
Ferguson, Allie A., Greenville (16th S. C. V.), age 64.
Ford, Bachel, Greer (Co. B, 13th S. C.), age 70.
Ponter, Clementine, Greenville (Co. B, 15th S. C. V.), age 71.
Glenn, M. C., Batemille (Co. C, 16th reg.), age 65.
Greer, Martha F., Bandy Fint (Co. C, 16th reg.), age 68.
Grifilh, Sarcharisea, Fonntaln Inn (Earle' Battallon), age 67.

Grifin, Sarah A., Lenderman (Co. G, 1st S. C. reg.), age 70.
Hall, Emily, Greenville (Co. F, 16th S. C. V.), age 60.
Hall, Mary, Piedmont (Co. G, 16th reg.), age 60.
Hamby, Mary J., Mitchell (Co. D, 16th reg.), age 66.
Hamby, Sallle, Batesville (Co. C, 14th reg.), age 67.
Hightower, Eliza, Merrittsville (Co. H, 16th S. C. reg.), age 68.
Hood, E. L., Greer (Co. H, 16th S. C. V.), age 64.
Huff, M. M. (Co. I, 16th reg.), age 62.
Jamison, M. W., Greenville (Co. A, Whlte's Battalion), age 68.
Jones, Easter, Pledmont (Co. E, Elford's Reserves), age 78.
Kimbrel, Margaret, Walkersville (Co. C, 22d reg.), age 65.
Lafoye, Sallie, Greenville (Co. G, 16th S. C. V.), age 60.
Lambrett, F. M. (Co. K, 6th reg.)
Lurania, Patton (Co. F, 3d), age 68. Transferred from Laurens.
McCormick, M. A., Greenville (Co. B, 4th S. C. V.), age 67.
Mahaffee, Sarah, Batesville (Co. B, 13th reg.), age 90.
Manly, Ellzabeth C., Reedy River (Co. F, 8d S. C. V.), age 64.
Martin, Edith A., Chicks Springs (Co. F, 16th S. C. V.), age 66.
Martin, Ellza, Greenville (Co. K, 16th reg.), age 70.
Meeks, Lucinda, Fork Shoals (Co. A, 20th S. C. V.), age 68.
Miller, Mary, Travelers Rest (Co. C, 16th reg.), age 60.
MIms, F. A. (4th Co. La. Battalion), age 72.
Neal, Sarah, Metts (Co. G, 10 th reg.), age 72.
Oxner, M. S., Greenville (Co. G, Holcomb Legion), age 65.
Olsen, E. (1st reg. State Troops). Transferred from Pickens. Dead; money refunded.
Plke, N. J. (Co. F, 2d reg.), age 65.
Pane, Matllda, Mitchell (Co. C, 22d reg.), age 61.
Pool, Mary, Bellevue (Co. H, White's Battalion), age 66.
Pritchett, Della A., Marietta (Co. G, 16th S. C. reg.), age 67.
Roberts, Della, Reid (Co. C, 16th S. C. V.), age 77.
Sloan, Margaret, Batesville (Co. C, 16th reg.), age 71.
Smith, Elizabeth E., Fork Shoals (Co. E. 20th S. C. V.), age 60.
Smith, L. A., Pledmont (Co. K, 12th reg.), age 62.
Smith, Mary D., Pledmont (Co. A, 16th S. C. V.), age 64.
Staggs, M., Batesville (Co. B, 13th reg.), age 75.
Stone, Sallie, Llly (Co. B, 11th reg.), age 61.
Sullivan, Sarah, Falrview (Co. F, 16th reg.), age 65.
Thompson, M. L., Falrview (Co. F. 16 th reg.), age 63.
Tinsley, Emlly, Cleveland (Co. H, White's bat.), age 66.
Wherle, Laura, Greenville (Co. A. 16th S. C. reg.). age 75.
Wlillams, Jane, Reedy River (Co. I, 20th reg.), age 64.
Class C, No. 4, 1908.
Boyce, Jane, Shoals (Orr's Rifles), age 61.
Bowen, Salle, Greenville (Co. H, S. C. Reserves), age 70.
Boyd, Elizabeth. Simpsonville (Co. F. S. C. V.), age 62.
Bridwell, Ellzabeth (Co. B, 13th S. C.), age 62.
Goodlet, Mary F., Greenville (Co. F, 3d reg.), age 60.
Hood, Katherine, Lima ( 25 th N. C. reg.), age 79.
Hawkins, Rebecca, Meriwether (Co. D, 16th S. C. V.), age 62.
Prewitt, Rhoda, Ben (Co. H, 16th reg.), age 78.
Reed, Elizabeth, Greenville (Co. F, 3d reg.), age 66.
Selzemore, L. E., Reedy River (Co. B, 13th reg.), age 64.
Smith, Sarah M., Simpsonville (Co. G. 1st Art.), age 66.
Waters, Sarah, Walkersville (Co. C, 22d reg.), age 75.
Class C, No. 4, 1908.
Fuller, Milly A., Greenville (Co. A, 16th S. C. Vol.), age 60. James, Sarah E., Cripple Creek (Co. B, 1st S. C. V.), age 61.
Mahaffy, Mary E., Fountain Inn (Co. G, 16th S. C. V.), age 70.

Peace, Judith P., Greenvlle (Co. F, 13th S. C. V.), age 65.
Pool, Carey, Greenville (Co. F. 4th S. C. V.), age 63.
Riddle, Mary, Fountaln Inn (Co. F, 3d reg.), age 61.
Smlth, Martha J., Reedy River (Co. F, Hampton Legion), age 78
Storey, Rebecca C., Greenville (Co. F, Hampton Legion), age 60
Stewart, Harriett, Arden (Co. D, 16th S. C. V.), age 71.
Tanner. Martha C., Greenville (Co. B, Elford's), age 70.
Fonng. Matllda, Greenville (Co. I, 25th Vol.), age 65.
Class C, No. 4. 1904.
Brown, Marinda (Co. F, lst S. C.), age 66.
Burgess, Minerva, Pledmont (Co. A. 6th Cav.), age 62.
Batea, Adeline R., Simpsonvilie (Co. G, 16th reg.), age 60.
Chapmen, Mary E., Simpsonville (Co. E, 16th S. C. V.), age 62.
Dorn, Jane, Pledmont (Co. D, 18th reg.), age 65.
Fleming, S. J., Greenville (Co. 1:, 2d reg.), age 78.
Goodlett, Emily, Greenville (Co. F, 4th reg.), age 68.
Henderson, Mary, Greenville (Co. K, 16th S. C. V.), age 65.
Hawking, Jane, Bates (Co. C, 16th S. C. V.), age 00.
Levi, Francis E., Greenville (Co. G, 35th reg.), age 60.
Ridgeway. Harriett, Princeton (Co. L, 16th reg.), age 67.
8hockley, C. A. (Co. G, 14th). Traneferred from Anderson.
Satherland. Jane, Greenville (Co. C), age 63.
Sadduth, Deborah, Greer (Co. D, 16th S. C. V.), age 60.
Willams, M. J. (Co. G, 14th), age 60.

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\text { Class C, No. 4, } 1905 .
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Balley, Theresa, Greenville (Co. I. 1st reg.), age 60.
Brookshire, M. C., Taylors (Co. C, 16th S. C. I.), age 60.
Chastain, Caroline, Greenville (Co. A, White's), age 70.
Davenport, Rebecca, Chandler (Co. E, Hampton), age 62.
Green, Eliza Ann, Taylors (Co. C, 16th). age 61.
Gaston, Mary A., Greenville (Co. D, P. S. S.), age 60.
Hammond, Julla T., Greenvlle (Co. A, 16th S. C.), age 61.
Howard, M. A., Fork 8hoals (Co. B, 16th), age 60.
Kellett, Barah A., Fork (Co. K, 7th), age 61.
Olson, Filzabeth, Greenville (Co. F, 16th), age 72.
Thompson, Ann, Tyger (Co. H. 16th), age 60.
Turner, Nancy K., Fort (Co. K. 16th S. C. V.), age 61.
Tate, Mary Ann, Greenville (Co. C, 16th), age 67.
Roberts, Lula, Greenville (Co. C. 16th), age 60.
Smith, Mary E., Woodville (Huger's), age 62.
Smith, Margaret (Co. H, 1st), age 62.
Class C, No. 4. 1906.
Adklns, Mary A., Greer (Co. A, 16th), age 60.
Davis, Rosa, Greenville (Co. F. Hampton Legion), age 60.
Dancan, Ellzabeth. Marietta (Co. F, Rhett's), age 64.
Epps, Mary, Marletta ( 27 th S. C. V.), age 75.
Green. Nancy J., Antel (Co. F, 3d Reserves), age 83.
Gllisple. Mary A., Brandon (Co. F, 1st art.), age 60.
Garrison, Mary M. (Co. B. 16th), age 60.
Hollingsworth, Greenville (3d Reserves). age 63.
Jones, E. M., Pelham (Co. D, 89th N. C.), age 60.
Kinard. Maggle, Pelzer (Co. G, 13th S. C. V.), age 61.
Mahaffey, Nancy C., Mills Mil (Co. I. 16th), age 68.
Neely, Laura, Greer (Co. C, 16th S. C. V.), age 60.
Sontheriln, Harrlett. Greer (Co. F. 4th 8. C. V.), age 62.
Sutton, Joama (Co. C, 16th). From Spartanburg.
Btanel, Martha A. Oak Lawn (Co. F, 18th), age 74.

Thompson, Adellne, Fountain Inn (Co. E, Hampton), age 66. Whiten, M. E., Fountain Inn (Co. A, 16th), age 61.

Class O, No. 4, 1907.
Adair, Sallle, Pelzer (Co. I, 16th), age 81.
Brom, Clara, Poe Mill (Co. G, 4th S. C. V.), age 61.
Baldwln, N. E., Greenville (Co. I, 16th S. C.), age 63.
Bishop, Malinda, Locust (Co. B, S. C. R.), age 62.
Crawford, Mary L., Greenville (Co. I, 10th), age 61.
Cisson, Genesia C., Greenville (Co. D, 65th), age 62.
Gosnell, Ellzabeth, Greenville (Co. F, 4th S. C. V.), age 62.
Garrett, Nannie, Brandon (Co. B, 16th S. C. V.), age 60.
Hawking, Mary J., Greer (Co. D, 1st), age 60.
Harrison, Greenville (Co. K, 16th S. C. V.), age 66.
Hawkins, Sarah M., Greenville Co. A, 16th), age 70.
Newman, Margaret, Greenville (Co. A, 6th), age 60.
McCallister (Mrs. B. A.) (Co. A, 2d), age 63.
Peden, N. Eliza, Fountain Inn (Co. I, 16th), age 67.
Peden, A. E., Simpsonville (Co. E, Hampton's Legion), age 62.
Rochester, Rebecca, Greenville (Co. H, White's), age 65.
Stegell, Sarah Jane, Pledmont (Co. F, 1st Art.), age 68.
Smith, Maria, Greenville (Co. L, Orr's), age 71.
Thackston, Margaret J., Brandon (Co. A.), age 62.
Trammell, Emily B., Piedmont (Co. F, 1st), age 65.
Wiggins, Malvina, Monaghan (Co. C, 4th Cav.), age 62.
Zorn, E. F., Monaghan (Co. H, 17th S. C. V.), age 61.

GREENWOOD COUNTY.
CHANGEA IN ROLL EINCE LABT PAYMBNT.
Dead-C, No. 2: Slmpson, Clem., Henry Waits, H. E. Jay.
Dropped-J. E. Harter.
Transferred From Other Countles-W. P. Hastingi from Aiken. D. Moore from Anderson. C. W. Shirley from Pickens.

Left State-J. J. Pounds.
Olase B, 1901.
Rampey, B. D., Phoenix-Co. F, 2d S. C. V. (Lost one arm.)
Clase C, No. 1, 1901.
Boyle, George, Greenwood-Co. A, 4th S. C. V. (Wounded In right leg.)
Duncan, J. W., Greenwood-Co. G, 13th S. C. V. (Wounded In leg.)
Galnes, J. F., Hodges-Co. F, Holcomb Legion. (Wounded in body.)
Goodman, N. B., Cokeabury-Co. E, 7 th reg. (Badiy ruptured while In mervice.)
Miller, J. M., Phoenix-Co. H, 7th reg. (Shot through both thighe.)
8lma, C. B., Ninety-Slx-Co. K, 16th N. C. (Wounded In arm.)

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\text { OLase C, No. 1, } 1904 .
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Bondell, J. S., Greenwood (Co. C, 7th S. C.)' Wounded In head.
Horn, Mattimon, Kirksey (Co. C, 19th reg.) Wounded in left arm.
Moore, T. A., Cokesbury (McBeth Artillery), Wounded in leg.

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\text { Class } O, \text { No. } 1,1905 .
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Calvert, F. M., Greenwood (Co. G, Orr's). Wounded In hip.
Campbell, J. M.-Co. G, 27th. (From Greenville.)
Evans, James, Troy (Co. H, 19th). Disabled by disease and wounds.
Holioway, W. H., Greewood (Butler's). Wounded and disease.
McKinney, W. Gaines (Co. B, Orr's). Dlashed from wounds.
Mette, T. H., Phoenix (Co. H, 8d). Wounded in hips.
Parkman, Jas.-Ce. G, 1st. (Shot in neck.)
Clase C, No. 1, 1906.
Culberson, M. M., Greenwood-Co. C, 3d. (Wounded hand.)
Class C, No. 1, 1907.
Buszard, J. C., Klrksey-Co. K, 14th. (Wounded hands).
Oles O, No. 2, 1801.
Adama, Frank, Greenwood (Co. C, 4th B. C. C.), age 71.
Allen, Andrew, Algary (Co. B, 7 th reg.), age 60.
Anderson, G. W., Coronaca (Co. D, 1at Ark. Inf.), age 68.
Anderson, John T., Newmartet (Co. A, 20th S. C. V.), age 67.
Arnold, F. P., Greenwood (Co. A, 6th S. C. C.), age 70.
Berry, Gorden (Co. B, 11th Ala.), age 66.
Blake, J. E. (Co. K, 7th reg.), age 63.
Bowle. E. B., Donalds (Co. B, 7 th reg.), age 63.
Batler, B. B., Cambridge (Co. B, 8d S. C. V.), age 61.
Connor, G. W., Cokesbury (Co. G, 6th Cav.), age 61.
Ellison, John, Ninetg-Six (Co. K, 16th N. C.), age 68.
Goldman, J. A., Verdery (Co. E, Lamar's Art.), age 75.
Hodsel, F. T., Hodgen (Co. F, Hol. Legion), age 68.
Hastliga, D. P. (Co. G, 1st). From Alken.
Bolly, C. P., Dorneville (Matthews'a Heavy Art.), age 66.
Irwin, James W., Bradlej (Co. G, 1st S. C. C.), age 70.
Jonea, D. S., Hodges (Co. F, Capt. Senn), age 67.
Martin, B. M., Greenwood (Co. G, 7th reg.), age 76.
Martin, H. D., Bradley (Co. K, 15th S. C.), age 63.
Martin, J. B., Bradley (Co. I, 24th reg.), age 74.
Miller, John M., Greenwood (Co. C, 14th S. C. V.), age 62.
Malone, W. S. (Co. A, 7th). Transferred from Oconee.
Moseley, Thomas, Hibler (Co. A, 1st S. C. C.), age 63.
Norwood, N. T., Quarry (Co. A, 2d S. C. R.), age 61.
Rambo, W. D., Greenwood (Co. H, 7th, Nelson's), age 68.
Rlddle, T. L., Phoenix (Co. K, 2d S. C. H. A.), age 63.
Roberts, T. J., Cheatham (Co. G, 14th reg.), age 61.
Russell, S. L., Greenwood (Co. A, 1st S. C. V.), age 62.
Slbert, J. H., Bradley (Co. G, 2d S. C. C.), age 64.
Smlth, L. B., Greenwood (Co G, 14th S. C.), age 64.
Turner, John, Greenwood (Co. A, 2d S. C. V.), age 79.

## Clas8 C, No. 2, 1902.

Goddard, W. E. (Co. A, James's bat.), age 60. Herring, Jonathan, Cambridge (Co. K, 2d reg.), age 70.
McConnels, W. H., Greenwood (Co. E, 2d Miss.), age 60.
Shadrack, W. S., Greenwood (Co. F, 2d S. C. V.), age 68.
Smith, I. S., Greenwood (Co. A, 2d S. C. Rifles), age 60.
Timmes, G. W., Hodges (Co. G, 21 st Ga.), age 68.
Young, J. V., Hodges (Co. B, 7th reg.), age 64.

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\text { Class C, No. \&, } 1908 .
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Kennedy, John, Cokesbury (Co. G, 6th bat.), age 63. Miller, S. E., Greenwood (Co. K, 2d Car.)
Stalnaker, J. R., Greenwood (Co. K, 7th reg.), age 64.
Walker, John C., Ninety-Six (Co. C, Lucas's), age 68.
Class C, No. 2, 1904.
Clark, H. A. (Co. B, 14th). From Saluda.
Crawford, J. R., Troy (Co. G, 1 st S. C.)
Shirley, C. W. (Co. G, 24th.), From Pickens.
Stevens, J. M., Ninety-Six (Co. A, 4th reg.)
Reaves, Jordan, Dyson (Co. K, 2d Artillery).
Class C, No. 2, 1905.
Ellenburg. J. H., Phoenix (Co. C, 19th Battalion).
Earnest, W. J., Ninety-Six (Co. G, 6th S. C. C.)
Goldman, John P., Ninety-Six (Co. C, 19th).
Hardy, J. M., Rehoboth (Co. G, 1st S. C. V.)
Owens, D. L., Greenwood (Co. F, Holcomb Legion).
Rodgers, Lewis, Greenwood (Co. D, Hampton Legion).
Russell, H. F., Troy (Co. H, 19th S. C. V.)
Rushton, Davis, Greenwood (Co. G, 7th S. C.)
Class C, No. 2, 1908.
Adams, Lafayette, Cambridge (Co. D, Merriwether).
Davis, R. M., Greenwood (Co. A, 4th battalion.)
Devore, J. K., Greenwood (Co. K, 7th S. C. I.)
Faulkner, John, Greenwood (Co. C, 19th).
Grubbs, C. C., Hodges (Co. E, 20th S. C.)
Henderson, T. S., Greenwood (Co. K, 7th).
Moore, D. (Co. A, Hampton's Legion). From Anderson.

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\text { Class C, No. 2, } 1907 .
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Garrett. M. R., Greenwood (Co. F, Orr's).
Hollingsworth, T. B., Callison (Co. K, 24th).
Lomax, Jesse, Cokesbury (Co. F, Hol. Legion).

Turner, John S., Greenwood (Co. G, 2d).
Wells, J. J., Greenwood (Co. G, 1st S. C.).
West, M. S., Greenwood (Co. K, 7th S. C. V.).
White, J. T., Greenwood (Co. G, 1st S. C.).
Clase C, No. S, 1901.
Whows of Soldiers Who Lost Thedr Lives in the gerviod of the Oonfoderate gitates.
Drennan, Mary, Troy (Co. G, 14th reg.)
Ellenburg, Mary Ann, Rambo (Co. H, 7th S. C.)
Freeman, Martha, Hodges (Co. G, Orr's).
Haverly, Sarah, Greenwood (Co. H, 7th S. C.)
McBride, Pegg. Troy (Co. G, 14th reg.)
McClendon, Susan A., Dyson (Co. A, 2d S. C. I.)
Mack, Ellen, Verdery (Co. I, 3d Ga. Vol.)
Walker, Eliza E., Troy (Co. H, 19th reg.)
Walker, Sarah C., Troy (Co. H, 19th reg.)
Wilson, Jane T., Ninety-Six (Co. D, 7th reg.)
Class O, No. S, 2908.
Dead, Mary, Rambo (Co. G, 7th reg.)
Olans C, No. 3, 1808.
Simpson, B. E., Greenwood (2d Rifles).
Olas8 C, No. S, 1900.
McManus, Rambo (Co. C, 19th).
Clase O, No. 4, 1001.
Corley, Lina, Greenwood (Co. D, 28th reg.), age 73.
Dukes, Nicey, Dyson (Co. G, 17th B. C. V.), age 60.
Donald, Ella, Greenwood (Co. F. 2d S. C. R.), age 65.
Holeomb, P. A., Greenwood (Co. D, 4th Reserves), age 71.
Jobuson, M. F., Algary (Mimms' 16th S. C. V.), age 66.
Kobn, M. A., Newmarket (Co. G, Orr's Rifies), age 65.
Miligan, A. A., Ninety-8ix (Co. B, 1st B. C. V.), age 64.
Stalnaker, E. L., Dyson (Co. A, 1st S. C. C.), age 68.
Stalnaker, S. M., Callison (Co. C, Bacon), age 72.
Waldrop, S. C., Greenwood (Co. B, 3d Battalion), age 89.
Wells, M. Filzabeth, Saluca (Co. F. 7th S. C. C.), age 78.
Zelgler, L. A., Greenwood (Co. F, Holcomb's Legion), age 68.
Class C, No. h, 1908.
Beugh, Fliza, Greenwood (Co. H, 25th S. C. V.), age 64. Blackman, Frances (Co. G, 6th), age 65.
Connor, C. L., Cokeabury (8d Bat. S. C. V.), age 84.
Eodses, M. T. Hodges (Co. B, 7th S. C. V.), age 60. Malone, Rebecca, Callison (Co. F, 2d S. C. V.), age 60. MeDowell, Fmily, Greenwood (Co. K, 24th reg.), age 64.

Clase O, No. S, 1908.
Boyce, Pamely, Greenwood (Co. F, 16th reg.), age 77.
Chaney, M. F., Ninety-81x (Co. F, 2d reg.), age 67.
McKinney, Mary. Greenwood (Co. C, 7th B. C. V.), age 60.
Marchant, Nannle L. (Co. E, 7th reg.) Transferred from Newberry.
William, Adeline, Greenwood (Co. B, 6th S. C. C.), age 78.
Clase C, No. 4. 1904.
Cooper, E. I., Nidety-S1工 (Co. A, 22d reg.), age 69.
Chrintian, M. Z., Cheatbam (Co. F, 7th reg.), age 78.

Olase C, No. 4, 2805.
Barnett, Eliza, Dyson (Co. B, 2d), age 66.
Bowle, Susan A., Hodges (Co. F, Holcomb), age 72. Cockrell, Josephine, Greenwood (Co. B, 36th), ige 67. Chaney, B. C., Ninety-Six (Co. F, 2d), age 69.
Canfield, M. E., Troy (Co. EE, 6th), age 65.
Hamilton, Charlotte, Greenwood (Co. D, 6th), age 68.
Rhodes, Ann R., Ninety-six (Co. F, 20th), age 60.
Weed, M. E., Tros (Co. A, 14th), age 60.
Clase O, No. \&, 1806.
Buarlck, Sallie E., Greenwood (Co. G, White's), age 65.
Goff, G. E., Kirksey's (Co. G, 14th), age 62.
Harling, M. G., Hibler (Co. C, 19th), age 78.
Kernels, Octavia; Greenwood (Co. D, S. C. T.), age 60.
Class C, No. h, 1907.
Clem, Martha, Greenwood (Co. G, 14th), age 60.
Etherldge, M. E., Coronaca (Co. G, 14th), age 60.
Lipford, M. E., Ninety-Six (Co. C, 19th), age 60.
Langley, M. A., Troy (Co. G, 6th), age 60.
Matthews, Martha A., Klrksey (Co. G, 1st), age 79.
McCrery, Selina T., Bradleys (Co. H, 19th), age 60.
Rlchey, Jane W., Greenwood (Co. F, Hol. Leglon), age 74.

HAMPTON COUNTY.
CHANGES IN ROLL BINCT LAET PATMENT.
Dead-C, No. 2: Owen Altman, R. J. Boyd, J. T. Crosby, Michael DeLoach, 8. N. Malphus. C, No. 8: Ellzabeth Sauls. C, No. 4: Carollne Boyles, Susan Cheseer, Sarah L. Clart, Mary H. Davidson, F. D. Dubols, Eleanor Hope, E. A. Mulligan, Lina A. Tuten, Sarah Brunson, H. M. Dubols, G. L. Middleton, J. A. Yourmans.
Tranaferred to Other Classeg-From C, No. 1, to A: Mark Nettles. From C, No, 2, to $A$ : Isham Crews. From C, No. 2, to C, No. 1 : G. E. Stanley H. C. McMillan, Thos. P. Miller.

Dropped for Property-J. H. Pope.
Left State-E. T. Jenkins to Georgla.
Reduced From 3 to 4-Mary Steed.
Chase A, 1807.
Crews, Isam, Grayb-Co. D, 11th. (Paralyzed.)
Nettlen, Mark, Early Branch-Co. K, 1st. (Blind,)

Clasa B, 1901.
Hatson, Berry, Early Branch-Co. F, 11th B. C. I. (Lost left arm.)
OLass O, No. 1, 1901.
Benton, J. A., Branson-Co. G, 14th S. C. (Wounded in head.)
Brown, Charlea, Varaville-Co. G, 17th reg. (Wounded left hand.)
Brown, J. J., Brunson-Co. D, 24th reg. (Wounded through leg.)
Cleland, D. B., Gray-Co. F, 11th reg. (Shot in right thigh.)
Folk, C. L., Varnville-Co. G, Hagood's. (Wounded in the head.)
Loper, A. C., Ridgeland-Co. B, 23d 8. C. I. (Wounded right ankle.)
Whiliams, T. B., Ridgeland-Co. D, 24th reg. (Wounded right hip and arm.)
Olase O, No. 1, 1002.
Mamon, David A., Hampton-Co. D, 11th B. C. V. (Wounded In right hip.)
Wlison, R. R., Lena-Co. B, lat S. C. C. (Wounded in arm.)
Olate Q, No. 1, was.
Enll, E. J., Etafiond (Co. E, 11th Inf.) Wounded shoulder. Thomea, J. M., Hormegall (Co. F, 11th B. C. V.) Wounded in leg.

Clase C, No. 1, 2904.
Barns, W. B., Hamptos (Co. D, 11th reg.) Wounded In right leg.
Hutson, M., Early Branch (Co. F, 11th reg.) Wounded in back.
Clase O, No. 1, 1906.
Snider, G. E., Brunson (Co. D, 24th). Shot in left wrist.
Olase O, No. 1, 1908.
Stanley, Ben, Varnville-Co. D, 11th. (Wounded in thigh.)
Scott. W. P., Gifford-Co. A, 1st Ga. (Wounded in leg.)
Miller, T. P., Varnville-Co. D, 2d Ga.
McMillan, B. E., Varnville-Co. A, 8d. (Wounded in back.)
Stanley, G. E., Hampton-Co. D, 11th. (Wounded thigh.)
Olate C, No. 8, 1001.
Atman, J., Varnville (Co. A, 19th Bat.), age 62.
Benton, Meahak, Crocketville (Co. D, Ist S. C. R. I.), age 62.
Brown, W. F., Almeda (Co. G, 17th S. C. V.), age 69.

Brunson, T. J., Hampton (Ço. D, 11th Infantry), age 61. Chassereau, M. E., Goethe (Co. A, 11th reg.), age 68. Cleland, R. J., Gray (Co. C, 3d S. C. C.), age 73. Crews, J. C., Peoples (Kitts's Squad.), age 62.
Dean, R. M., Ridgeland (Co. C, 11th S. C. I.), age 60. Dobson, W. F., Gifford (Co. E, 11th S. C. V.), age 81. Farris, B. E., Glllisonville (Beaufort Artillery), age 77. Fussell, Ben., Hampton (Co. D, 9 th reg.), age 65. Garvin, J. B. W., Hampton (Co. C, Hampton Legion), age 64. Guinn, W. R., Varnville (Co. F, 11th reg.), age 66. Hughey, W. R., Cummings (Co. D, 24th reg.), age 65. Langford, J. A., Gillisonville (Co. C, 3d S. C. C.), age 81.
Lowther, C. T., Daley (Co. E, 3d V. T.), age 68.
Pender, J. A., Scotia (Wheeler's Cavalry), age 68.
Roberts, N. R., Gray (Co. C, 3d S. C. C.), age 60.
Snider, J. E., Brannon (Co. D. 24th reg.), age 66.
Stone, W. T., Bonnet (Co. E, 24 th reg.), age 60.
Tuten, J. B., Tillman (Co. E, 3d S. C.), age 62.
Ulmer, Thomas M., Gillisonville (Co. F, 11th reg.), age 67.
Williams, S. W., Hampton (Co. D, 11th 8. C. I.), age 67.
Olass C, No. 2, 1908.
Altman, A. B., Varnville (Co. A, 19th reg.), age 63.
Breeland, W. B., Cummlngs (Co. B, Eth reg.), age 66.
Breeland, J. J., Fstill (Co. B, Eth reg.), age 60.
Carter, E. W., Varnville (Co. G, 4th Cav.), age 73.
Davis, W. J., Scotla (Co. E, sd S. C.), age 60.
Davis, B. F., Brunson (Co. A, 3d Cavalry), age 64.
Freeman, John N., Crocketville (Co. D, 24th reg.), age 68.
Freeman, W. D., Ridgeland (Co. D, 24th reg.), age 67.
Guinn, Amos, Lena (Co. F. 24th 8. C.), age 71.
Lawton, Judson, Estill (Co. K, 30th Car.), age 66.
Mock, J. D., Ridgeland (Co. D, 24th reg.), age 64.
Nettles, J. A., Ridgeland (Co. E, 3d S. C.), age 64.
Osteen, Henry, Barton Station (Co. D, 1at reg.), age 64.
Portress, G. W., Bonnet (Co. A, 19th reg.), age 70.
Phillips, J. B., Ridgeland (Co. F, 3d S. C. V.), age 61.
Rentr, W. A., Brunson (Co. G, 1st B. C.), age 64.
Stanly, J. S., Hampton (Co. D, 11th S. C.), age 60. Standley, D. Sr. (Co. B, 5th). Transferred from Colleton. Terry, David. Horgegall (Co. F, 3d s. C. C.), age 63.
Thomas, J. W., Cummings (Co. A, sd reg.), age 61.
Woods, Joshua, Ridgeland (Co. C, 8d S. C. C.), age 70. Woods, W. H., Ridgeland (Co. C. 3d S. C.), age 60.

## Clase O, No. 2, 1903.

Lightgey, Henry, Varnville (Co. F, 11th Inf.), age 61. Roberts. J. B., Hampton (Co. D. 11th reg.), age 61. Saula, J. M., Tlllman (Co. D, 24th S. C.), age 62. Smith, K. A., Gray (Co. F. 8d Cav.), age. 60. Simmons, W. S., Crocketville (Co. A, Kirk's), age 65. Vaigneur, Iewis, Coosawhatchie (Co. C. 3d reg.), age 60. Youmans, Bart. II. Hampton (Co. A, 4th Cav.), age 60. Woods, Miner, Ridgeland (Co. C, 3d S. C. C.), age 60. Winn, B. B., Horsegall (Co. F, 11th reg.), age 80.

Class C, No. 2. 1904.
Boyles. J. H., Tillman (Co. E, 3d S. C. C.)
Cook, Alfred, Cumminge (Co. A, Kirk's).
Cook, W. M., Varnville (Co. B, Kirk's).
Cook, F. A.. Farly Branch (Co. F, 11th S. C. I.)

Crews, J. J. W., Varnville (Co. D, 24th reg.)
MeFail, J. 8., Staflord (Co. E, 11th S. C. Vol.)
Mew, J. E., Brighton (Co. B, Hampton Legion).
Eushing, A. R., Seminole (Co. E. 11th 8. C.)
Spillarda, J. F., Gray (Co. C, 8d Cav.)
Stephens, M. M., Yemansee (Co. G, Bd Ga.)
Clase O, No. 8, 1905.
Boz, C. W., Hampton (Co. D, Phllips's Legion).
Cleland, Nozh, Stafford (Co. C, 8d S. C.)
Moore, John A., Gllisonville (Co. C, 3d Cav.)
Owen, Amos F., Yemassee (Co. F, 1st Ala.)
Price, W. A., Brunson (Co. K, 1st S. C.)
Phillips, Jacob, Gray (Lt. Artillery).
8mith, T. H., Luray (Co. F, 11th S, C.)
Varnadore, 8. E., Estlll (Co. D, 3d).
Class C, No. 2, 1906.
Gooding, W. L., Crocketville (Co. D, 11th).
Hodge, T. A., Tllman (Co. E, 3d S. C. cav.)
Oglesby, Willism, Gray (Co. B, 28d laft.)
Prlace, 8. P., Goethe (Co. G, 3d batt.)
Prince, J. E., Cummlngs (Co. G, 4th).
Mulligan, A. G., Ridgeland (Co. E, 11th S. C. I.)
Mole, J. A., Gllifonville (Lafayette Artll.)
Nettles, N. D., Ridgeland (Co. E, 3d S. C. C.)
Class C, No. 2, 1907.
Altman, J. H., Luray (Co. J, 21st).
Box, H. E., Semlnole (Co. A, Klrk's).
Mears, W. H., Tarboro (Co. K, 11th).
Prlester, Mlles, Grays (Co. F, 3d).
Stanley, Miles, Varnville (Co. B, Flshburne's).

Class O, No. 3, 1901.
Widows of Boldiers Who Lost Their Lives in the Sorvioe of the Confederate gtates.
Bowers. Permella J., Hampton (Co. B, 24th S. C. I.)
Crípae, Harrlet, Lena (Co. D, 24th reg.)
Zahler, A. E., Early Branch (Co. D, 4th S. C. C.)
Zahler, Ellzabeth E., Farly Branch (Co. D, 4th S. C. C.)

Class C, No. S, 1902.
Corbin, Amanda, Hampton (Co. D, 11th 8. C.)
Fitte, Jerusha, Brunson (Co. F, 11th reg.)
Class C, No. S, 1905.
Bostlck, M. M., Hampton (2Bth S. C. V.)
Olass C, No. $4,1901$.
Beapinger, 8. S., Giflord (Co. F, 3d S. C. C.), age 63.
Bowers, Martha, Gray (Co. C, 8d S. C. C.), age 67.
Backner, E. A., Varnville (Co. B, 5th S. C. C.), age 86. Corbett, M. E., Varnville (Co. K, 11th S. C. I.), age 62. Crapee, Harriet E., Estlll (Co. E, 11th reg.), age 60. Croeby. J. C., Gillisonvilie (Co. E. 11th S. C.), age 68. Davia, E. A., Gray (Co. B, 8d B. C.), age 66.
Dobeon, Sarah A., Gifiord (Co. I, 11th reg.), age 74. Beath, Biattie E., Yemasee (Co. D, 17th B. C. V.), age 60.

Herndon, L. F., Lena (Co. I, 11th reg.), age 67.
Hodges, Nancy R., Hodges (Co. C, 3d S. C. C.), age 60.
Horton, Sarah, Gray (Schultz's bat.), age 74.
Jarrell, Rachel, Luray (Co. E, 11th reg.), age 68.
Langford, E. A., Hampton (Co. B, 5th reg.), age 72.
Long, Laura, Bonnet (Kirk's Battery, S. C.), age 70.
Mason, Mary C., Hampton (Co. D, 11th reg.), age 68.
Miller, Sarah A., Gray (Co. C, 8d S. C. C.), age 70.
Nix, Elizabeth, Bonnet (Co. A, Kirk's Squadron), age 78.
Nix, S. E., Bonnet (Co. E, 11th S. C. V.), age 63.
Owens, Mary, Crocketville (Co. D, 11th S. C. I.), age 68.
Peeples, L. C., Horsegall (Co. A, 19th reg.), age 64.
Pelham, Mary E., Cummings (Co. K, 11th reg.), age 69.
Rushing, Ann L., Scotia (Co. E, 3d S. C.)
Sauls, Mary, Ridgeland (Co. C, 3d S. C. C.), age 69.
Savage, Elizabeth R., Tarboro (Co. C, 3d S. C. C.), age 74.
Shlpes, Nancy L., Brunson (Co. D, 11th S. C. I.), age 60.
Simmons, Lydia, Horsegall (Co. B, 5th reg.), age 60.
Smith, M. P., Luray (Co. E, 11th reg.), age 62.
Strickland, Rosa, Varnville (Co. D, 11th reg.), age 62.
Thames, Mary J., Crocketville (Co. D, 11th reg.), age 68.
Tuten, Sarah 8., Gray (Co. D, 24th reg.), age 65.
Wall, Mary, Ridgeland (Co. C, 3d S. C. C.), age 75.
West, Z. B., Gray (Co. A, 21st S. C.), age 67.
Woeds, Rachel, Tillman (Co. C, 8d reg.), age 64.

Class C, No. $4,1908$.
Anderson, Rebecca, Cummings (Co. F, 11th reg.), age 78.
Bryan, Mary J., Estlll (Co. C, 8d Cav.), age 75.
Benton, H. F. (Co. A, 8d reg.) Trunsferred from Colleton County.
Colcock, Eliza M., McPhersonville (Charleston L. D.), age 71.
Davis, A. L., Hampton (Co. F, 11th reg.), age 60.
Fennell, Rebecca, Early Branch (Co. F, 11th Infantry), age 60.
Fennell, Fannie, Crocketville (Co. A, Kirk's), age 70.
Green, E. B., Yemassee (Co. A, Hampton's Legion), age 63.
Gregorle, I. McP., Yemassee (4th S. C. Cav.), age 65.
Martin, M. A., McPhersonville (Co. K, 4th S. C. C.), age 69.
Matthews, E. A., Crocketville (Kirk's Squadron), age 60.
Long, Margaret, Goethe (Co. H, 3d S. C.), age 62.
Onell, Laura, Suebelle (Co. D, Colcock's), age 60.
Peeples, 8. C., Estill (Peeples's Co., 3d Cav.), age 63.
Woods, M. A., Gray (Co. C, 11th S. C. I.), age 63.
Weekly, Martha F., Hampton (Kirk's Battalion), age 61.
Youmans, M. E., Varnville (Co. B, 5th S. C.), age 61.

## Class C, No. 4, 1908.

Bowers, Eady C., Brunson (Co. F, 3d S. C.), age 62.
Beasely, S. A. M., Gifford (Co. G, 17 th reg.), age 71. Belzer, Mary, Crocketville (Co. A, Kirk's), age 68. Chisholm, Sarah A., Luray (Peeples's Co.), age 70. Deloach, P. A.,' Bonnet (Co. D, 24th reg.), age 60.
Davis, Jane E., Early Branch (Co. F, 11th Inf.), age 65.
Minch, Jane E. (Co. C, 8d Cav.), age 65.
Mixon, Susan H., Cummings (Co. F, 11 th S. C. I.), age 68.
Sanders, Susan (Co. G, 3d Cav.), age 71.
Smith, Delllah W., Gray (Co. D, 5th reg.), age 62.
Smith, Mary, Gray (Co. F, 11th reg.), age 60.
Steed, Mary (3d Cav.), age 65.

Olase O, No. 4, 1904.
Dowling, E. E., Branson (Colcock's Bat.), age 60. Owens, W. E., Gifford (Co. E, sd Cav.), age 60. Johnson, Efma, Rldgeland (Co. C, 3d Cav.), age 67. Peeplea, E. B., Estill (Klrk's Bquadron), age 80. Bobinmon, M. H., Gray (Co. C, $3 d$ 8. C. C.), age 60. Youmana, J. W., Goothe (Co. D, 4th Cav.), age 60.

Clase 0, No. 4, 1906.
Andermon, Mary P., Cummlns (Co. F, 8d), age 73. Preacher, C. 8., Branson (Co. C, 8d S. C. C.), age 79. Farnadore, Mary, Estlll (Co. B, 61at Ga.), age 65. Standley, M. E., Crocketville (Co. D, 11th 8. C. I.) Woode, Georgiana, Tillman (Co. E, Sd), age 68.

Clase C, No. 4, 2000.
Blount, Ellzabeth, Garnett (Hampton Brigade), age 60.
Bowers, C. E., Rowebud (Co. E, 11th), age 68.
Bowers, Rebecca, Crocketvilie (Co. A, Kirk's), age 68.
Chaplin, Suman C., Horse Gall (6th reg.), age 65. Colcock, C. J., Garnett (3d 8. C. C.), age 64. Davia, Georgia, Brunson (Co. A, Kirk's), age 78. Grimea, Mary C., Hampton (Co. F, 11th), age 67. Mathle, Minnle, Early Branch ( 8 d cav.), age 60. Bhaman, Roat C. Laray (Co. E, 11th), age 60.

Class O, No. \& 1907.
Cromby, Clem, Varnvilie (Co. D, 11th), age 60.
McElhaney, Elizabeth, Varnville (Co. G, 4th), age 75. Ruth, Addle, Varnville (Co. B, 5th), age 60.
WIIls, M. E., Varnvllie (Co. C, Hampton's Legion), age 60.

## HOREY COUNTY.

## CHANGES IN ROLL BINCB Last Patimet.

Dead-C, No. 2: W. D. Danlela, L. DeLory, Benj. J. Harrellson, F. A. Powell, R. W. Slng, E. T. Rlcks, W. P. Hardwick, A. C. Skipper. C, No. 4: Mary A. Elke, Amy L. Hardee, Elizabeth Martin, Elizabeth Merrett.

Dropped for Income-Jane Holt.
Transferred From Other Countles-J. T. Smith from Mariboro.
Olase B, 1901.
Brown, W. J., Haskell-Co. I, 21st S. C. I. (Lost left leg.)
Cox, B. B., Nixonville-Hart's Battery. (Lost right arm.)
Johnson, C. L., Shell-Co. L, 7th S. C. I. (Lost left leg.)
Bkipper, John B., Bisco-Co. D, 20th N. C. (Arm useless from wounda.)
Todd, W. F., Eldorado-Co. G, 10th reg. (Lost left leg.)
Class B, 1008.
Westmoreland, M. A.. Dalsy-Nelson's bat., N. C. Troops. (Lost right leg.)
Class C, No. 1, 1901.
Hardwick, Alex., Gallvants-Co. C, 15 th reg. (Wounded, head, leg and arm.)
James, William D., Jordanville-Co. C, 10th reg. (Wounded in leg.)
Johnson, John H., Jordanville-Co. B, 10th S. C. (Wounded In breast.)
Prlnce, D. F., Bayboro-Co. H, 51st N. C. (Wounded in head.)
Vaught, S. W., Farmer-Co. L, Tth S. C. (Wounded arm and thigh.)
Ward, R. C., Little River-Co. A, 10th reg. (Wounded right shoulder.)
Class C, No. 1, 1908.
Singleton, William F., Port Harrelsod-Co. L, 7th S. C. I. (Wounded In back.)
Class C, No. 2. 1901.
Alford, W. T., Bayboro (Co. B, Slege Traln), age 67.
Allen, W. F., Cool Spring (Co. F, 7th S. C. C.), age 69.
Barahill. H. J., Daisy (Co. L. 7th S. C. I.), age 63.
Barnhill, Isaac, Blanche (Co. N, 10th reg.), age 68.
Barnhil, Robert, Wampee (Ward's Battery), age 68. Beaty, W. S., Conway (Co. B, 10 th reg.), age 63. Boyd, George W., Daiby (Co. B, Manigault's), age 60.
Cade, G. Wash., Loris (10th S. C. C.), age 60.
Cannon, Henry, Haskell (Co. A, 26th S. C.), age 65.
Cannon, S. W., Dongola (Co. I, 21st reg.), age 75.
Chestnut, Danlel H., Conway (Co. G, 10th reg.), age 67.
Daniel, John, Cool Spring (Co. B, Allston's), age 70.
Dew, C. T., Conway (Co. H, 23d reg.), age 77.
Elllott, James, Zoan (Co. E, 26th reg.), age 76.
Foley, John, Norton (Co. A, 36th N. C.), age 65.
Fowler, A. J., Loris (Co. B, 10th reg.), age 67.
Gause, E. J., Michael (Co. G, 10th S. C.), age 63.
Gauge, R. W., Michael (Ward's Light Artillery), age 66.
Godbold, EII, Gideon (Co. B, 25th S. C. R.), age 69.
Harrellson, J. H., Powellville (Co. K, 26th S. C.), age 72.
Harrellson, Wilson, Powellville (Co. K, 26th reg.), age 71.
Hawes, Ezekiel, Hand (Co. G, 20th N. C.), age 70.
Hewett, H. H., Hammond (Co. K, 3Bth N. C.), age 66.
Holt, Thomas, Conway (Co. B, Manlgault's), age 78.
Johnson, Carml, Joppa (Co. C, 10th reg.), age 71.
Johnson, J. R. E., Jordanville (Co. M, 10th reg.), age 75.
Johnson, R. B., Forney (Co. C, 1st S. C. A.), age 69.
Jones, Joseph C., Gideon (Co. C, 10th S. C.), age 63.

Jordan, g. L., Jordanville (Co. B, 10th reg.), age 71.
McCracken, Peter, Conway (Co. D, 1st S. C.), age 62.
McDowell, M. C., Nixonvilie (Co. G, 10th S. C. V.), age 62.
Martin, W. R., Powellville (Co. H. 23d reg.), age 63.
Moore, Bryant, Conway (Co. B, Allston's Bat.), age 67.
Perritt, Jesse B., Gallyants Ferry (Tegram's Artillery), age 70.
Rabon, Duke, Bayboro (Co. C, 10th reg.), age 82.
Reynolds, Alex., Powellville (Co. C, 20th N. C. reg.). age 70.
Rhodes, John, Loris (Ward's Light Arthlery), age 63.
Rowe, T. N., Conway (Co. F. 26th reg.), age 71.
Russ, F. J., Ruth (Co. C, 8th N. C.), age over 60.
Sellers, S. S., Gideon (Co. E, 26th reg.), age 62.
Shelly, Mllbry, Withers (Co. C, 10th S. C. V.), age 64.
Stipper, Gabriel. Port Elarrelson (Co. A, 26th 8. C. V.), age 70.
Stevens, J. E., Farmer (Co. M, 10th reg.), age 60.
Thompling, John, Gideon (Co. E, 26th reg.), age 72.
Tindal, Benjamin M., Toddville (Co. C, Hampton Legion), age 82.
Todd, Jonathan E., Withers (Co. M, 10th B. C. V.), age 64.
Todd, W. H., Hammond (Ward's Light Artillery), age 68.
Tompking, R. M., Co. C, 10th reg.), age 67.
Tomptins, E. B., Grahampille (Co. B, Allston's bat.), age 66.
Woodle, E. W., Gallvantg Ferry (Co. B, 24th S. C. V.), age 61.
Clase O, No. 2, 1908.
Allen, John T., Bayboro (Co. B, Allston's), age 65.
Beaty. Thomas M., Conway (Harlee's Legion), age 70.
Brunson, R. L. H. (Ward's Artillery), age 70.
Causey, E. D., Toddsville (Co. B, Ward's Bat.), age 86.
Cook, J. J., Dongola (Co. A, 26th reg.), age 68.
Chestnut. J. C.. Blanche (Ward's Artlllery), age 69.
Fige, Wllson, Barnes (Co. L, 7th B. C.), age 62.
Gause, W. C., Michael (Co. A, 10th S. C.), age 68.
Gerald, L. C., Sanford (Co. K, 26th 8. C.), age 60.
Hewett, Thomas, Little River (Co. I, 21st S. C.), age 68.
Johnson, W. E., Powellville (Co. K, 26th reg.), age 70.
Jordan, Bryan, Adrian (Co. A, 26th reg.), age 63.
Jordan, WIllam T., Conway (Co. B, 10th S. C. V.), age 60.
Johnson, Henry L., Box (Co. C, 10th S. C.), age 61.
Jensitt, 8. T., Box (Co. B, Manlgault's), age 76.
Levis, W. H., Wampee (Co. M, 10th S. C.), age 64.
Ludlow, W. C., Convay (Co. B, 10th S. C.), age 60.
Martin, Dantel H., Jordanville (Co. E. 26th reg.), age 60.
McCaskill. W. S., Conway (Co. G, 10th reg.), age 68.
Pearce, J. N., Conwas (Co. F, 7th reg.), age 76.
Rodgern, John, Daisy (Co. C, 10th \&. C. V.), age 65.
Roberts, W. A., Bayboro (Co. E, 26th reg.), age 83.
Babon, Solomon, Cool Spring (Co. B, Allston's), age 65.
Smlth, J. T. (Co. F, 7th). From Marlboro.
Souls, Mark, Powellville (Co. A, 26th N. C.), age 69.
Sellers, T. B., Gldeon (Co. G, Hampton's Legion), age 60.
Stevent, Alez., Vardelle (Co. K, 26th reg.), age 65.
Thomplins, Cornellus, Jordanville (Co. G. 10th reg.), age 68.
Todd, Jomeph, Lorls (Co. K, 26th reg.), age 74.
Vereen, W. J., Hand (Co. M, 10th reg.), age 61.
Wllioughby, J. R., Zoan (Ward's Artillery), age 74.
Class C, No. 2, 1905.
Barnhill, J. M., Joppa (Co. C, 10th B. C.), age 61.
Cook, M. C., Port Harrelson (Co. L. 7th S. C.), sge 6.
Cartrell, Rlchard, Wanamaker (Co. K, 26th B. C.), age 6.5.
Fatrcloth. A. J., Hammond (Co. F, 1st G. C.), age 60.

Fowler, Joseph, Gurles (Co. C, 10th S. C.), age 61.
Gause, R. H., Hammond (Ward's Art.), age 85.
Lewis, J. S., Booth (Co. K, 26th S. C.), age 60.
Johnson, H. L. W., Box (Co. B, 18th reg.), age 66.
Martin, Ellas, Cool Spring (Co. B, Ward's), age 60.
Outlaw, John C. (Co. H, 64th reg.), Transferred from Marion.
Rabon, Isalah, Sr., Cool Spring (Co. F, 7th reg.), age 78.
Class C, No. 2, 1904.
Bryant, G. L., Adrian (Co. D, 1st S. C.)
Duncan, A. B., Adrian (Co. A, 26th reg.)
Faircloth, L. S., Daisy (Co. B, Manigault's).
Fisher, R. 8., Green Sea (Co. A, 10th N. C.)
Hux, James H., Dongola (Co. A, 26th reg.)
Spears, J. D., Justice (Co. C, 10th reg.)
Smith, James P., Conway (Co. B, 10th reg.)

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\text { Class C, No. 2, } 1905 .
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Anderson, W. J., Greenville (Co. B, Charleston Bat.)
Barnhill, W. T., Joppa (Co. B, Manigault's).
Elliott, L. S., Nichols (Co. K, 26th).
Elllott, C. W., Nichols (Co. K, Johnson's).
Gause, W. A., Shell (Ward's Artil.)
Goff, H. M., Loris (Co. H, Orr's Rifies).
Hardwlek, Sam P., Box (Co. A, 10th).
Lane, D. F., Gallivant's (Co. H, 23d).
Tyler, Ellsha, Bayboro (Selge Train).
Class C, No. 8, 1906.
Alford, L. S., Box (Co. C, 10th bat.)
Booth, N. J., Adrian (Co. B, 7th).
Cox, J. R., Lorls (Ward's L. A.)
Dorman, W. G. M., Adrian (Co. B, Ward's).
Lewis, Stephen S., Joppa (Co. K, 26th).
Price, J. C., Gallivant (Co. L, 10th).
McCumbee, Jacob, Barnes (Ward's L. A.)
Rhodes, Jonathan, Barnes (Ward's L. A.)
Thompson, H. G., Nixonville (Co. M, 10th).

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\text { Class C, No. 2, } 1907 .
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Cannon, Lewis, Gallivants (Co. E, 28th). Elliott, J. P., Nichols (Co. K, 26th).
Grainger, George, Zoan (Ward's Art.).
Holmes, H. H., Adrian (Ward's Art.).
Hodges, George, Haskill (Klrk's Bat.).
Hewltt, W. J., Little River (Co. F, 10th S. C.).
McDaniels, A., Nichols (Co. C, 10th Bat.).
Small, Henry, Paso (Co. K, 26th).
Sellers, J. P., Mary (Co. B, Ward's Art.).
Williams, D. A., Dalsy (Co. M, 10th S. C.).
Class C, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Service of the Oonfederate State
Barnhlll, Sarah A., Dalsy (Co. M, 10th reg.)
Jernigan, Sarah, Powellville (Co. H, Fla.)
Lewis, Winnle J., Bruce (Co. G, 10th reg.)
Smith, Charity, Bayboro (Co. G, 10th reg.)
Olass C, No. 4, 1901.
Anderson, Mary A., Conway (Waccamaw Light Art.), age 62. Cox, Sarah M., Dalsy (Ward's Artillery), age 72.

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Dorman, Barah, Adrlan (Ward's Artillery), age 67.
Elogd, Nancy, Exile (Co. C, 10th B. C. V.), age 65.
Fowler, Elisa, Lorls (Co. D, 8d Bat.), age 77.
Gause, M. J., Hammond (Ward's Artlliery), age 67.
Gilmore, E. A., Dainy (Ward's Artillery), age 76.
Hardee, Nancy J., Hammond (Ce. B, S. C. Slege), age 74.
Harrellson, E. J., Vardelle (Co. K, 日th reg.), age 83.
Herrin, Sally J., Blanche (Co. M, 10th reg.), age 70.
Hugglag, Suman E., Gallvants Ferry (Co. B, 7th reg.), age 71.
Johnson, Eliza, Blanche (Co. C, 10th reg.), age 65.
Johnson, Mary E., Jordanville (Co. M, 10th reg.), age 60.
Lewis, Rachel, Fardelie (Co. K, 26th reg.), age 68.
McDowell, Mary, Marlow (Co. A, 26th reg.), age 64.
McDowell, Elizabeth, Marlow (Co. A, 26th reg.), age 77.
MCQucen, E. C., Gallvants Ferry (Co. F, 7th reg.), age 78.
Moore, M. A., Dongola (Co. A, 26th S. C. V.), age 62.
Ollver, M. J., Bucksport (Co. F, 7th S. C.), age 62.
Patrick, Mary E., Hammond (Co. M, 10th reg.), age 72.
Eabon, Elisabeth, Cool Spring (Ward's Battery), age 74.
Eheuary, Catherine, Daisy (Co. M, 10th reg.), age 63.
Royals, Martha A., Socastee (Co. A, 26th S. C. V.), age 64.
Singleton, M. J., Conway (Co. A, 2d 8. C. C.), age 66.
8klpper, B. J., Blanche (Co. M, 10th reg.), age 63.
Small, Annis A., Vardelle (Co. K, 26th reg.), age 70.
Stalvey, E. C., Conway (Co. F, 7th S. C. C.), age 61.
Stalvey, Fannle A:; Stalvey (Co. E, 26th S. C. V.), age 70.
Stalvey, Naney, Marlow (Co. A, 26th reg.), age 68.
Staniey, Harriet L., Hammond (Co. B, S. C. Train), age 74.
Thompson, E. L., Bucksville (Co. A, 26th S. C. V.), age 64.
Clase C, No. 4, 1908.
Baker. Adeline, Cool Spring (Co. M, 10th reg.), age 60.
Cappa, Mary A., Gldeon (Co. M, 10th S. C.), age 66.
Cartrell, Martha A. (Co. B, 7th bat.), age 76.
Cartrell, Mary A., Adrlan (Co. B, Allston's reg.), age 66.
Floyd, A. C., Gallvants (Co. B, 7th reg.), age 76.
Gasque, Harriett, Cool Spring (Best's Co., 26th reg.), age 64.
Gayton, M. E., Conway (Ward's Artllery), age 62.
Hardee, Martha, Adrlan (Co. F, 1st S. C. V.), age 64.
Hax, Ollve, Cool Spring (Huger's Artllery), age 68.
Jones, N. A., Justice (Co. L, 7th B. C. I.), age 65.
Lingulth, R. A., Conway (Co. A, 26th S. C.), age 66.
Lewis, C. R., Conway (Co. A, 26th reg.), age 62.
Lewle, Luarki, Conway (Co. F, 7th Bat.), age 70.
Moore, Sarah P., Conway (Co. B, 10th reg.), age 65.
Moore, Julia A., Cool Spring (Co. B, 10th reg.), age 60.
McQueen, Molcey, Galivants (Co. B, Manigault's reg.), age 64.
Phlpps, Mary, Wanamaker (Co. F, 1st bat.), age 61.
Bichardmon, Angellne, Gideon (Co. H, 10th reg.), age 62.
Todd. N. J., Conway (Co. M, 10th reg.), age 60.
WIlliammon, Rebecca J., Hammond (Co. K, 26th reg.), age 65.
Clase C, No. 4, 1903.
Bellimy, 8. A., Hand (Ward's Art.), age 64.
Cartrelle, Semantha, Adrian (Ward's Art.), age 60.
Causey, Emily B., Conway (Co. A, 26th reg.), age 70.
Cook, E. C., Dongola (Co. A, 26th reg.), age 61.
Cox, Mary J., Daley (Coant Guard), age 65.
Daboice, A. J., Myrtie Beach (Co. M, 10th reg.), age 68.
Edge. L. A., Hammond (Co. G, 10th reg.), age 60.
Elppa, Margaret, Howard (Co. C, 10th S. C.), age 60.

Gore, Helen E., Longs (Co. K, 28th S. C. V.), age 78. Green, S. M., Conway (Co. B, 18ih reg.), age 68. Earrellson, Lula, Gershom (Co. K, 26th reg.), age 78. Hux, L. J., Adrlan (Co. B, 18th reg.), age 67.
Harden, Mary A., Dalsy (Co. D, 20th N. C.), age 60. Hillburn, Eliza, Marlow (Co. A. 10th S. C.), age 72. Jones, Mary, Justlce (Co. E, 26th reg.), age 75. Martln, Haraliah, Cool Spring (Co. G, 10th reg.), age 64. Nixon, H. A. R., Nlionvllle (Co. F, 7th S: C.), age 66. Murrell, F. A., Conway (Co. B, 10th reg.), age 63. Rabon, M. E., Cool Spring (Co. B, Ward's Art.), age 70. Sanders, Mary M., Conway (Co. B, 18th reg.), age 75. Stevens, M. A., Mlchael (Co. G, 10th S. C.), age 84. Wilson, M. A., Conway (Co. B, Art.), age 72. Wlison, Sarah A., Marlow (Co. M, 10th reg.), age 63. Watts, Mary, Adrlan (Co. C, lst N. C.), age 63.

Class C, No. 4. 1904.
Bellamy, Prudence A., Rex (Ward's Artillery), age 00.
Clardy, Martha, Socastee (Ward's Artlllery), age 79.
Gerald, Sarah M., Box (Co. K, 26th reg.), age 80.
Hardwick, Colln, Adrian (Co. F, 7th Cav.), age 66.
Holt, Martha J., Gershom (Co. B, 7th reg.), age 60.
Montgomery, Ruthllda A., Conway (Ward's), age 65. Noble, Frances, Singleton (Co. A, 26th reg.), age 68. Squires, Catherine, Cool Spring (Co. F, 7th Cav.) Royals, MInerva, Shell (Co. F, 7 th S. C.), age 79.

Class C, No. \&, 1905.
Alford, Corneila, Cebra (Co. B, 10th), age 62.
Graham, Edith, Blanch (Co. C, 10th), age 68.
Class C, No. 4. 1906.
Allen, Martha A., Cool Spring (Co. A, 26th), age 64. Booth, Martha C., Booths (Co. B, 10th), age 67. Baker, Jullan, Bayboro (Co. B), age 62.
Baker, Ellza, Bayboro (Co. B, Selge Traln), age 63.
Baker, F. H., Dongola (Co. G, 7th), age 63.
Harrellson, Patlence, Flnklea (Co. K, 26th), age 80.
Gause, Thursla, Hammond (Co. K, 10th), age 60.
Jeurett, Clardy, Adrlan (Co. 7th), age 62.
Moore, Havella I., Gallivants (Co. K, 26th S. C.), age 62.
Owens, Mary A. G., Marlow (Co. B, 7th), age 60.
Suggs, Loulsa, Sanford (Co. G, 10th), age 60.
Syneth, Lucy Ann, Dongola (Co. I, 26th), age 70.
Thompson, Margaret, Adrlan (Co. A, 26th), age 63.
Waid, S. M., Bardy (Manigault's), age 66.
Class C, No. 4, 1907.
Barnhlll, L. B., Gallvants (Co. C, 7th), age 74.
Bryant, Sarah M., Adrian (Co. B, Seige Traln), age 00.
Booth, Clarkey B., Adrian (Co. B, Selge Train), age 65.
Coats, Julian A., Box (Co. H, 23d), age 64.
Danlels, Fmma, Conway (Co. B, 10th), age 65.
Goff, Eliza, Nixonvlle (Co A, Cash), age 69.
Hardwick, M. E., Box (Co. B, Seige Traln), age 86.
Hux, Jullan, Lebenon (Co. F. 1st S. C.), age 80.
Powell, Prudence, Hammond (Co.. D, 36th N. C.), age 68.
Thompklng, Laura F., Jay (Co. B, Selge Traln), age 63.
Russ, Eliza Jane, Conway (Co. A, 26th), age 62.
Watta, Mary, Blanch (7th reg.), age 80.

## KERSHAW COUNTY.

CHANGES IN ROLL BINCE LAST PAYMENT.
Dead-C, No. 1: W. J. Boone, J. M. LeGrand. C, No. 2: John D. Crossland, R. J. Hyatt, George Jackson, Daniel Isenhour. C, No. 4: Estelle McQueen, Martha Spradley.
Transferred to Other Countlea-T. B. Denton and Benj. Higgins to Rlchland. W. H. Joyner to Orangeburg. Isaac Gardner to York. Wllson Yarborough to Lexington.

From Chesterfleld: J. E. Douglas.
Class A, 1901.
Hinson, Henry, Camden-Co. G, 7th reg. (Totally blind; result service.)
Clase C, No. 1, 1901.
Arranta, J. B., Camden-Co. C, 6th B. C. I. (Wounded In body.)
Bateman, W. J., Camden-Co. A, 7th S. C. I. (Wounded through hip.)
Freeman, Jacob-Co. E, 9th. (Wounded ln shoulder and thlgh.) From Falrfield. Satton, J. J., Camden-Co. G, 7th B. C. Bat. (Lost left hand.)
True, James H., Camden-Co. C, Ist reg. (Wounded ln body.)
Ward, Allen, Camden-Co. G, 7th reg. (Shot In breast.)
Clast C, No. 1, 1904.
Mackey, John, Heath Spring (Co. I. 12th S. C. V.) Wounded in body.
Class C, No. 2, 1901.
Anderaon, James, Camden (Co. A, 4th S. C. V. I.), age 67.
Basa, Bemuel, Camden (Co. D, 55th N. C. V.), age 73.
Boone, John, Westville (Co. G, 2d S. C. I.), age 65.
Catoe, James, Br., Kershaw (Co. D, 7th reg.), age 70.
Deas, F. N. (Co. I, 17th). Transferred from Lee.
Heath, B. D., Blaney (Co. E, 2d B. C. I.), age 66.
Horton, T. B., Flat Rock (Co. F, 7th reg.), age 64.
Hunter, T. H., Tlmrod (Co. G, lst B. C. I.), age 70.
MeMullen, A. In, Camden (Co. G, 7 th reg.), age 73.
Mann, A. J., Abney (Co. D, 15th S. C. I.), age 64.
Player, H. C., Camden (Co. C, 4th S. T.), age 70.
Portee, Rlchard, Camden (Co. G, Pal. Lt. Art.), age 61.
Raley, B. J., Abney (Co. G, 2d B. C. V. I.), age 68.
Ray, Neal, Camden (Co. D, 7th B. C.), age 72.
Robertson, Wlllam, Camden (Co. F., 12th S. C. I.), age 61.
Stewart, C. J., Camden (Co. C. 6th S. C. I.), age 61. Stokes, E. E., Camden (Co. A, 7th B. C.), age 60.
Tajlor, Jamen, Tlllera Ferry (Co. I, 1st S. C. V.), age 68. Williamson, J. H., Camden (Co. H, 2 d reg.), age 63.

Clase C, NO. 2, 1908.
Addison, E., Camden (Co. H. 7th reg.), age 67
Branham, S. A., Bellield (Co. C, 6th S. C.), age 68.
Brown, R. C., Camden (Co. A. 7th reg.), age 61.
Deas, Lewla, Abney (Co. I, 17th reg.), age 63.
Donglass, J. E. (Co. A, 7th). From Chesterfleld.
Gaskln. John D., Westille (Co. G. 7th Bat.). age 80.
Gay. Ibalac, Weatville (Co. A, Lacas's), age 62.
Hudson, J. W., Camden (Co. C, White's res.), age 64.
Eirby, A. P., Camden (Co. D, 15th reg.), age 62.
Langley, W. M., Bethane (Co. D, 6th reg.), age 62.
Neison, Columbus, Camden (Co. G.), age 71.
Outlaw, Romler, Camden (Co. G, 7th reg.), age 61.

Player, John, Camden (Co. H, 7th Cav.), age 63.
Rowell, J. G., Flat Rock (Co. K, 6th reg.), age 60.
Clase C, No. 2, 2908.
Alexander, J. C., Camden (Co. E, 2d reg.), age 61. Albert, John, Camden (Co. E, 9th reg.), age 64. Boone, J. W., Weatville (Co. G, 2d reg.)
Baker, D. A., Roland (Co. B, 26th reg.), age 75. Connell, S. J., Sharp (Co. E, 22d reg.), age 65. Moore, James, Bellifid (Co. C, 6th reg.), age 61. Sinclair, James, Blaney (Co. A, 7th reg.), age 61. Trimnal, R. J., Camden (Co. E, 18th reg.)
Spradley, W. J., Camden (Co. D, 15th reg.), age 65.
Clase C, No. 2, 1905.
Kinard, A. L. C., Lugoff (Co. H, 7th).
Mahatty, J. A., Bethune (Co. C, 6th S. C.)
Parker, John, Camden (Co. G, P. B. L. A.)
Class C, No. 2, 1906.
Hammond, F., Camden (Co. B, 2d).
Jackson, T. F., Lugotr (Co. C. 6th bat.)
Kirkland, D. P., Kirkwood (Rangers).
Truesdale, J. B., Kalb (Co. H, 1st).
Clase C, No. 2, 1907.
Gunter, A. E., Blaney (Co. I, 20th).
Pearson, J. A., Camden (Co. K, 15th).
Olase C, NO. S. 1901.
Widows of Soldiers Who Lost Their Lives in the Service of the Oonfederate States
Ammons, Mllie, Camden (Co. C, 6th reg.)
Baskins, M. C., Weatville (Co. G, 2d S. C. V.)
Hays, Sarah, Camden (Co. D, 15th reg.)
Kennlngton, Rebecca, Camden (Co. H, 2d B. C. V.)
Lee, Mary, Camden (Co. I. 48th N. C. T.)-
Moore, M. T., Camden (Co. E, 日th 8. C. V.). Dead; money refunded.
Nelson, Emma S., Camden (Hagood's brigade).
Nelson, R. G., Camden (Co. K, 7th Bat.)
Pye, Martha, Camden (Colcolough's Co., 13th 8. C. V.)
West, Nency J., Azmon (Co. F, 7th 8. C. I.)
Class C, No. S, 1908.
Bass, Mary, Cantey (Co. C, 6th 8. C.)
Class C, No. s, 1908.
Corder, Carolline (Co. C, 7th bat.)
Gainey, Henrietta, Bethune (Co. E, 21st reg.)
Munn, Mabala, Roland (Co. A, 7 th reg.)
Truesdale, Nancy M., Westville (Co. G, 2 d reg.)
Willams, Nancy J., Camden (Co. G, 7th reg.)
Clasa C, No. S, 1904.
Brewington, Barbary, Blaney (Co. B, 7th reg.)
Claes C, No. S. 1905.
Self, Nancy, Kalb (Co. C, 7th).
Class O, No. S. 190 E.
Cato, M. E., Camden (Co. G, 2d).

## Class C, No. \&, 1901.

Adkinmon, Sarah, Roland (Co. G, P. B. L. A.), age 70. Arrants, S. E., Camden (Co. E, 2d B. C. I.), age 63. Bowers, Nancy A., Flat Rock (Co. D, 18t S. C.), age 60. Bradiey, C. 8., Flat Roek (Co. G, 7th reg.), age 64. Brahaza, E. J., Camden (Co. D, 15 th S. C.), age 65. Brown, 8. P., Camden (Co. E, 2d reg.), age 63. Casady, Martha, Bethoine (Co. D, 2d S. C.), age 61. Craft, Mary, Camden (Co. C, 6th S. C.), age 78. Falkenberry, Margaret, Weatville (Co. C, 2d S. C. V.), age 67. Gerdner, Susan L., Blizzard (Co. A, Buford's Brigade); age 68. Gladden, Mary, Camden (Co. C, 6th 8. C.), age 68. Grigys, Dlcey, Camden (Co. E, 7th reg.), age 61. Hackabee, Rachel, Cantey (Co. C. 6th S. C. C.), age 69. Irwin, Nancy, Camden (Co. D, 15th reg.), age 67. MeDowell, Ann, Flat Reck (Co. G, 7th reg.), age 63. Mathis, M. M., Camden (Co. G, 20th reg.), age 69. Stokes, Mary A., Camden (Co. K, 7th S. C. C.), age 61. Truendale, Carrle, Weatville (Co. E, 7th S. C. V.), age 68. Wilson, Loulst, Camden (Co. D, 15th S. C. V.), age 61.

## Class O, No. $4,1908$.

Atkingon, Sarab A. (Co. D, 7th), age 81. Transferred from Lee. Fletcher, Susan A., Westville (Co. G, 2d reg.), age 64.
Hinson, Emma, Camden (Co. H, 43 d N. C.), age 62.
Mickle, Jane, Camden (Co. C, 4th Bat.), age 60.
Matthews, Loulsa, Cantey (Co. E, 12th S. C.), age 67.
Monroe, H. A., Camden (Co. E, 2d S. C. V.), age 60.
Outlaw, Charlotte, Camden (Co. E, 6th reg.), age 68.
Peach, Eliza, Bethane (Co. D. 7th S. C.), age 60.
Smith, Sallie J., Camden (Co. H, 7th S. C. V.), age 61.
Taylor, Ellzabeth, Camden (Co. F, 8d bat.)
Clase C, No. \&, 1903.
Goodale, C. M., Camden (Co. B, 7th reg.), age 60. Shriver, Martha, Camden (Co. G, 20th reg.), age 60. Workman, Mary R., Boykln (Co. H, 1st S. C.), age 68.

Class C, No. 4, 1904.
Evans, Elizabeth, Blaney (Co. K, 7th reg.), age 68.
Koon, Sarah, Blaney (Co. B, P. B. L. A.), age 68. Motley, Tabitha, Blaney (Co. G, 7th reg.), age 60. Niles, Martha A., Camden (Co. E, 2d reg.), age 60.
Ross, Mary A., Blaney (Co. C, 6th Cav.), age 60. Sinclalr, Rebecca, Camden (Co. A, 7th reg.), age 69.

Class C, NO. 4, 2906.
Kelley, Fllen C., Lagofi (Co. B, 7th), age 62.
Pendergrass, F. E., Camden (Co. C, 25th B. C. V.)
Clase O, NO. \&, 1908.
Ferrell. M. 8., Camden (Co. G, 2d), age 60.
Outlaw, A. I. Camden (Co. E, 6th), age 60.
Pace. H. C.. Cantup (Co. Wateree Rifles), age 68.
Wilson, A. 8. (Co. H, 21st), age 67.
Class C, No. 4. 1907.
Boone. Bertha J., Kershaw (Co. G, Rock Guards), age 68.
Belk. Cordle, Camden (Co. E, 7th), age 62.
Gofr. E. F., Camden (Co. G, 8th), age 60.
Knight, Elizabeth, Kersham (Co. F, 26tb), age 79.
Schrock, Mary E., Camden (Co. D. 15th S. C. V.), age 67.

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## LANCASTER COUNTY.

## CHANGEB IN ROLL SINCE LAST PAYMPNT.

Dead-W. H. Beckham, W. R. Bennett, Wesly Broom, Samuel Hinson, L. A. Parker, R. S. Perry, W. R. Reddish, S. M. Small, Robert Conyers. C, No. 3: M. C. Hair. C, No. 4: Nelle Gardner, Mary A. Hendrix, Nancy Kennington, Susanah Estridge, Catherlne Hunter, Fillen Watson, Jane F. Flynn, Mary L. Negbit, HenFietta Lowry, Ibble McGuirt, Elizabelh Sanders.

Transferred to Other Classea-From C, No. 2, to C, No. 1: Phillip Snipes. From C, No. 4, to C, No. 3 : Mary McGuirt, M. A. R. Small, E. J. Caskey.

Transferred From Other Countles-J. G. Cohen from York. S. H. Hargett from York. Arthur Baker from Fairfeld. T. C. Whitaker from Mariboro.

Class A, 1903.
Small, Annanlas, Prlmus (Co. D, 1st S. C. V.) Paralyzed.
Clase B, 1901.
Falle, G. W., Taxahaw-Co. I, 17th reg. (Lost left arm.)
Falle, Lewis, Taxahaw-Co. G, 13th Mist. (Lost left leg.)
Gardner, J. H., Taxahaw-Co. E, 12th S. C. V. (Lost left leg.)
McManus, Seabun, Taxahaw-Co. B, 26th S. C. V. (Lost rlght arm.)
Parker, Britton, Flatcreek-Co. G, 2d reg. (Lont right leg.)
Clase B, 1905.
Davidson, J. P. A., Fort MIII (Co. K, 45th N. C.) Lost right arm.

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\text { Clase C, No. 1, } 1901 .
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Barnhlil, G. W.-Co. H, 8d. Transferred from York. (Wounded hands.) Colling, H. J., Belair-Co. H, 12th S. C. (Wounded left leg.) Gordan, L. P., Belalr-Co. F, 22d S. C. (Wounded left leg.)
Gregory, Owen, Taxahaw-Co. D, 1st S. C. V. (Wounded left hand.) Hudson, J. C., Lindsay-Co. H, 4th S. C. C. (Wounded in the thigh.) Lucas, Frederick, Lancanter-Co. I, 17th reg. (Wounded in arm.) Lucan, J. R., Dwight-Co. H, 2d S. C. V. (Right arm and leg broken.) Malone, G. W., Lancanter-Co. G, P. B. L. A. (Lung disease from exponare.) Mlller, C. J., Flatcreek-Co. E, 22d S. C. V. (Wounded in arm.) Phlllps, W. T., Lancaater-Co. G, 2d S. C. V. (Wounded left ahoulder.) Steele, Alex., Creek-Co. I, 12th reg. (Wounded in leg.)
Wilson, Charley, Magill-Co. H, 12th S. C. V. (Wounded in body and leg.)
Whltaker, T. C.-Co. B, 20th. (Wounded left shoulder) ; from Marlboro.
Clase C, No. 1, 1908.
Btroud, L. F.-Co. F. 7th reg. (Wounded in thigh.)
Clase C, No. 1, 1905.
Huey, J. H., Lancanter (Co. A, 5th S. C. V.) Lont right hand. Eqnter, W. J., Fllntrldge (Co. G, 2d reg.) Wounded left bhoulder.

Clase O, No. 1, 1904.
Warwick, J. M., Lancaster (Co. F, 49th N. C. V.) Wounded in toot.
Class C, No. 1, 1907.
Solpes, Phlllp, Tradesville-Co. K, 6th. (Wounded left shoulder.)
Clase C, No. 2, 2901.
Adking, J. J., Magll (Co. I, 12th S. C. V.), age 64.
Anderson, T. W., Belalr (Co. I, 17th B. C. V.), age 64.
Beaver, A. (Co. C, 1st B. C. R.), age 68.

Broom, B. W., Osceola (Co. F, 35th N. C.), age 66.
Broughton, James M., Heath Spring (Co. D, 43d Ala.), age 66
Baker, Arthur (Co. I, 12th). From Fairfleld.
Carder, Harvey, Osceola (Co. H, 12th reg.), age 64.
Carter, J. F. G., Sincerity (Co. D, 7th S. C. V.), age 63.
Catoe, Amos, Taxahaw (Co. G, P. B. L. A.), age 93.
Cauthen, J. M., Heath Spring (Co. H, 2d S. C. I.), age 71.
Coffey, A. S., Belair (Co. K, 30th N. C.), age 82.
Craig, William, Taxabaw (Co. H, 2d S. C. I.), age 78.
Downs, W. C., Pleasant Hill (Co. K, 1st Art.), age 70.
Elils, F. M., Pleasant Hil (Co. E, 22d S. C. V.), age 60.
Ferrell, W. W., Lancaster (Co. A, 1st S. C. R.), age 68.
Fiynn, Thoman T.. Lancaster (Co. D. 1st Inft.), age 60.
Gardner, G. W., Kershaw (Co. F, 12th S. C. V.), sge 68.
Gardner, Lewis, Kershaw (Co. D, 15th reg.), age 64.
Gardiner. S. G., Kershaw (Co. F, 7th reg.), age 61.,
Gent, G. W., Craigsville (Co. I, 17 th S. C. V.), age 67.
Hammond, F. R., Heath Spring (Co. H. 4th S. C. C.), age 68.
Harper, Jobn M., Elgin (Co. A, 1st S. C. I.), age 74.
Hargett. S. H. (Co. E, 22d S. C. V. From York.
Holden, A., Kershaw (Co. E, 22d S. C. V.), age 67.
Horten, W. M. C., Kerahaw (Co. H, 2d reg.), age 67.
Humphrles, Sam, Lancaeter (Co. I, 17th S. C. V.), age 82.
Hamphrles, S. W., Lancaster (Co. E, 12th S. C. I.), age 63.
Hunter, W. F., Tarahaw (Co. B, 26th S. C. V.), age 60.
Johnson, H. T., Lancaster (Co. G, 1st reg.), age 73.
Jones, J. F., Kershaw (Co. G, 2d S. C. V.), age 73.
Knight, Levl, Lancaster (Colt's Battery), age 80.
Knight, W. M., Lancanter (Co. E. 22d S. C. V.), age 68.
Lemona, F. E., Belair (Co. A, 17th reg.), age 63.
Lowery, E. J., Kershaw (Co. H, 2d S. C. I.), age 63.
Lowery, J. R., Tarahaw (Co. K, 1st S. C. R.), age 65.
Lucas, Thomas, Longville (Co. B, Waite's Bat.), age 66.
McManus, A. L., Tarahaw (Co. A, 1st S. C. R.), age 60.
Mackey, L. P., Heath Spring (Co. G, Hampton Legion), age 66.
Mahaffy, O. C., Primue (Co. G, 2d S. C. V.), age 66.
Mattox, R. U., Tradervlle (Co. B, 2d S. C. V.), age 72.
Morgan, J. G., Lancaster (Co. F, 26th S. C. V.). age 63.
Morgan, W. R., Flat Creek (Co. F, 26th S. C. V.), age 61.
Marks, T. H. (Co. B, 18th N. C. V.), age 70.
McManos, A. C. (Co. A, Ist Regulars), age 68.
Neely. B. C., Lancaster (Co. H, 4th S. C. C.), age 68.
Nelson, J. N., Jacksonham (Co. B, 4th reg.), age 84.
Ormand, B. J., Pleamant Valley (Co. B, 17th S. C. V.), age 72.
Patterson, J. A., Barberville (Co. B, 6th S. C. T.), age 63.
Fhillips, G. W. (Co. A, th S. C. C.) Transferred from York County.
Pitman, A. T., Ladcaster (Co. I, 1st Ga. R.), age 00.
Pettus. W. T. (Co. B, 1at S. C. V.), age 64.
Rodgers, J. T., Van Wyck (Co. F. 22d S. C.), age 62.
Rodgers, M. D., Belalr (Co. H, 12th reg.). age 63.
Robinson. W. R., Lancaater (Co. A. סth S. C. V.), age 62.
Shehane. J. B., Primus (Co. I, 12th D. C. V.), age 63.
Stagle. William T., Belair (Co. A, 2d S. C.), age 61.
Stegall, W. H. (Co. I, 48th N. C.), nge 73.
Willams, J. B., Dirie (Co. F. 12th S. C. V.), age 69.
Wright, John. Tradenville (Co. B, 1st S. C. I.), age 63.
Wright. William, Lancaster (Co. B. 4th S. C. Reserves), age 75.
Wright. Wilson, Tradesville (Co. B. 1st S. C. I.). age 07.
Fandle, William A.. Belalr (Co. C, $18 t$ N. C. reg.). nge bt

## Class C, No. 2, 1908.

Adams, D. L., Lancaater (Co. I, 12th reg.), age 60.
Adams, Bynum, Heath Spring (Co. B, 2d bat.), age 84.
Bowers, M. H., Halle Gold Mine (Co. H, 2d S. C. V.), age 68.
Bell, D. P., Lancaster (Co. H, 4th Cav.), age 64.
Eubanks, Jackson, Flatcreek (Co. C, Butler's), age 60.
Gardner, J. W., Kershaw (Co. F, 12th S. C. V.), age 60.
Mittag, McK., Kershaw (Co. H, 34th N. C. V.), age 68.
Powers, J. W., Flintridge (Co. B, 7th reg.), age 60.
Roblnson, W. E., Primus (Co. A, 5th S. C. V.), age 60.
Steele, W. R., Lancaster (Co. K, 1st S. C. I.), age 63.
Starnes, C. S., Lancaster (DePass's Art.), age 74.
Williams, J. L. (Co. F, 17th), age 65.
Olass C, No. 2, 1905.
Hinson, A. C., Dixle (Co. H, 4th S. C. C.), age 63.
McManus, Richard, Kershaw (Co. A, 3d Ga.), age 62.
Class C, No. 2, 1904.
Hinson, J. S., Oakhurst (Co. F, 12th S. C. V.)
Horton, C. C., Kershaw (Co. C, Hampton Legion).
Nesblt, A. F. (Co. B, 4th reg.)
Terry, W. W., Lancaster (Coit's Artillery).
Class C, No. 2, 1905.
Belk, J. M.. Tarahaw (Co. F, 22d S. C. V.)
Caskey, John H., Lancaster (Co. I, 12th S. C. V.) Cohen, J. G. (Co. E, 12th. From York.
Caskey, M. M., Lancaster (Co. I, 12th S. C.)
Clark, Jas. A., Dry Creek (Co. H, 4th S. C. C.)
Deas, S. A., Taxahaw (Co. D, 1st S. C. reg.)
Davis, D. I., White Bluff (Co. G, 2d S. C. V.)
Bunlap, R. T., Lancaster (Co. H, 4th S. C. Cav.)
Griffin, J. J., O. K. (Co. E, 48th).
Mahaffey, W. W., Lancaster (Co. G, 2d S. C. Vol.)
Steele, R. J. M., Lancaster (Co. I, 12th S. C. V.)
Class C, No. 2, 1906.
Bowers, J. M., Kershaw (Co. G, 2d S. C. V.)
Cline, C. P., Halles Mine (Co. E, 17th).
Langley, J. R., Lancaster (Co. A, Butler's).
Neil, J. O. P., Lancaster (Co. A, 1st inft.)
Ormand, J. E., New Cut (Co. A, 11th N. C. V.)
Polk, H. M., Tradeville (Co. H, 7th N. C.)
Stroud, Jno. M., Lancaster (Co. F, 7th).
Wlllams, W. J., Halle (Co. E, 12th).
Walker, J. D., Lancaster (Co. H, 1st reg.)
Class C, No. 2, 1907.
Bell, J. L., Maglll (Co. I, 17th).
Ellis, A. J., Heath Springs (Co. F. 2d S. C.).
Class C, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Service of the Oomfederate Btates.
Balley, L. S., Elgin (Co. I, 12th S. C. V.)
Blackman, Sarah, Lancaster (Co. E, 22d Vol. Reg.)
Davis, R. C., Lancaster (Co. G, 49th N. C. S. T.)
Lindsay, S. L., Lancaster (Co. H, 4th S. C. C.)
Phillips, Hester, Flat Creek (Co. H, 2d S. C. reg.)

Boblnson, Mary L., Lamcanter (Co. I, 17th 8. C. V.)
Starnes, Nancy E., Lancaster (Co. H, 80th N. C. Meg.)
Wrisht, Nancy, Oakhuret (Co. E., 7th S. C. C.)

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\text { Class } C, \text { No. 8, }
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WInn, Balle C., O. K. (Co. G, 8d B. C. Infantry.)
Olase. C, No. s, 1903.
Baker, M. J., Flintridge (Co. H, 4th S. C. C.)
Balley, Margaret, Drycreek (Co. D, 17th S. C. V.)
Barton, E. M., Drycreek (Co. I, 12th S. C. V.)
Barton, E. J., Drycreek (Co. I, 17th S. C. V.)
Cato, Rachel (Co. H, 2d).
Donlap, Nancy, Lancaster (Co. E, 12th S. C. V.)
Gardner, Rebeces, Newcut (Co. D, 1st S. C. V.)
Horten, L. E., Kershaw (Co. A, 2d S. C.)
Eeagler, Elizabeth, Whitebluff (Co. E, 22d reg.)
Robinson, Martha (Co. A, 1st S. C. I.)
Bistare, Jane, Lancaster (Co. A, ©th reg.)
Stegall, Emmellne, Lancaster (CO. E. 12th S. C. V.)
Class $O$, No. s. 1905.
Phillips, Mary, Hailes (Co. C, 1st Regulars).
Montgomery, M. H., Lancaster (Co. I, 17th).
Class C, No. s, 1900.
Hendrix, M. A., Osceola (Co. C, 37th N. C.)

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\text { Class C, No. s, } 1907 .
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Caskey, E. J., Lancaster (Co. D, 1st).
MeGuirt, Mary, Van Wyck (Co. D, 1st S. C. V.). Small. M. A. R., Lencaster (Co. E, 22d S. C. V.). Sanders, Elizabeth (Co. I, 17th).

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\text { Clase O, No. 4, } 1901 .
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Addieon, B. B., Lancaster (Clauton's Brigade), age 64.
Balley. Susan A., Dry Creek (Co. H, B. C. I.), age 60. Baker, Margaret M.
Bell, R. M., Lancaster (Co. H, 4th S. C. C.), age 67.
Bennett, Efixabeth, Heath Spring (Co. H, 2d S. C. V.), age 86.
Brown, F. J., Lancaster (Co. B, Lucas's bat.), age 88.
Cook, Ellea E., Tarahaw (Co. K, 6th S. C. C.), age 62.
Crenshav, Hessle, Dry Creek (Co. I, 12th S. C. V.), age 62.
Crenshaw. M. C., Dry Creek (Co. I, 12th S. C. I.), age 67.
Danlap, Margaret J., Pleasant Hill (Co. H, 1 st S. C. C.), age 64.
Elils, Elizabeth, Halle Gold MIne (Co. E, 28th S. C. 1.), age 72.
Ellis, S. M., Oakhurst (Co. E, 12th S. C. reg.), age 73.
Falkenberry, J., Flatcreek (Lucas's bat.), age 68.
Ghent, Permella (Co. K, 1st S. C. V.), age 63.
Ghent, Annle, Dwight (Co. I, 17th S. C. V.), age 63: Dead; money refunded.
Graham, Carollne, Lancaster (Co. D, 1st S. C. R.), age 65.
Harmon, Martha, Cureton Store (Co. F, 35th N. C. reg.), age 78.
Hartla, Lacinda, Heath Spring (Co. B, 4th reg.), age 73.
Hitton, Queen, Dwight (Co. E, 1et S. C. R. I.), age 65.
Honter, Martha J., Lancaster (Co. B, 8th S. C. V.), age 69.
Jenkins, Molsey A., Tarahaw (Co. A, 1st S. C. R.), age 60.
Kaight, Jincey, Flat Creek (Co. I, 17 th reg.), age 71.
McManus, Frances, Tradebville (Co. H, 2d S. C. V.), age 64.

McMurray, Jane F., Lancaster (Co. B, 4th S. C. V.), age 70. Manus, Mary, Lancaster (Co. B, 6th S. C. V.), age 88. Nash, Sophronia, Riverside (Co. G, 1st Ark. Infantry), age 61.
Perry, N. J., Belair (Co. I, 17th S. C. V.), age 64.
Petty, E. C., Belair (Co. B, 2d Reserves), age 75.
l'hillips, Mary E., Flat Creek (Co. D, 1st reg.), age 64.
Pressley, Polly, Flint Ridge (Co. E, 48th N. C. reg.), age 69.
Price, E. J., Lancaster (Co. D, 7th S. C. reg.), age 64.
Quick, Nancy, Lancaster (Co. A, 1st S. C. I.), age 61.
Robingon, Elizabeth, Sincerity (Co. B, 4th S. C. Troops), age 62.
Small, E. A., Primus (Co. G, 2d S. C. I.), age 67.
Small, Martha A., Filnt Ridge (Co. B, 4th S. C. reg.), age 67.
Smith, Susan, Lancaster (Co. G, P. B. L. A.), age 63.
Snipes, Elizabeth, Lancaster (Co. A, 1st S. C. R. I.), age 61.
Sweat, Elizabeth, Dwight (Co. B, 8th S. C. V.), age 63.
Twitty, Jane, Oakhurst (Co. H, 2d S. C. reg.), age 60.
Walters, A. M., Dwight (Co. G, 1st S. C. I.), age 66.
Walters, Jane, Dwight (Co. B, 1st S. C. I.), age 62.
Watts, Jane, Heath Spring (Co. E, 1st S. C. I.), age 66.
Whitaker, Susan, Primus (Co. C, 1st S. C. R. I.), age 76.
White, E. E., Lancaster (Co. I, 17 th S. C. V.), age 66.
Williams, Martha, Flint Ridge (Co. E, 12th S. C. V.), age 62.
Wright, Sarah, Primus (Co. K, 1st S. C. R.), age 65.
Class C, No. 4, 190s.
Carnes, M. E., O. K. (Co. E, 22d S. C. V.), age 64.
Childers, Ellzabeth, Lancaster (Co. B, 5th S. C. V.), age 61.
Gordon, Hannah, Osceola (Co. I, 12th S. C.), age 74.
Hinson, Susan L., Primus (Co. H, 4th S. C. C.), age 61.
Hilton, Gracy, Tarahaw (Co. E, 22d reg.), age 64.
Knight, Millie, Lancaster (Co. C, 1st Reserves), age 62.
Pate, Gatsey, Lancaster (Co. F, 26th S. C. V.), age 62. Miller, Susannah M., Creek (Co. F, 48th N. C. V.), age 60.
Payne, Elizabeth, Flat Creek (Co. H, 4th Cav.), age 60.
Stagle, Mary L., Belair (Co. A, 1st 8. C. Reserves), age 79.
Sinclair, Flora Ann, Lancaster (Co. D, 1st S. C. V.), age 76.
Class C, No. 4, 1908.
Adams, Catherine, Lancaster (Co. A, 8th reg.), age 78.
Beckham, Matlida, Heath Spring (Co. G, P. L. A.), age 64.
Chambers, Martha S., Lancaster (Post Guards), age 71.
Fstridge, Rebecca, Lancaster (Co. E, 22d S. C. V.), age 62.
Elliott, M. J., Lancaster (Co. B, 22d reg.), age 61.
Gardner, J. W., Halle Gold Mine (Co. G), age 60.
Hudson, M. C., Lancaster (Co. D, 12th S. C. V.), age 60.
Ringstaff, Susan, Dwight (Co. B, 43d N. C.), age 62.
Strother, N., Lancanter (Co. K, 7th Cav.), age 60.
Thompson, Ellen, Jacksonham (Co. A, 1st Cav.), age 60.
Wilson, M. C., Lancaster (Co. I, 17th S. C. V.), age 60.
Class C, No. 4, 1904.
Caskey, Margaret. Newcut (Co. I, 1st reg.), age 68.
Hammond, Mary L., Primus (Co. H, 4th Cav.)
McManus, Eliza J., Tradesville (Co. K, 4th reg.), age 70.
Outen, Sarah A., Lancaster (Co. A, 1st reg.), age 60.
Robinson, M. F., Flatcreek (Co. G, 8th reg.), age 60.
Class C, No. 4. 1905.
Donaho, Mary E., Lancaster (Co. F, 26th), age 62.
Funderburk, Minerva, Tradesville (Co. G, 1st S. C.), age 72.

## I4I

Plyler, Jane, O. K. (Co. A, 1st), age 82.
Vaughn, Mary D., Pleasant Hill (Co. G, P. L. A.), age 62. Threatt, Mary, Lancaster (Hoyt's Artlllery), age 65. Whliams, Mrs. C. D. (Co. G, 2d), age 70.

Class C, No. i, 1908.
Carnes, Mary, New Cut (Co. E, 22d), age 81. Clyburn, A. T., Eershaw (Co. G, 7th), age 60.
Estridge, Z. I., Lancaster (Co. E, 22d S. C. V.), age 60. Kennington, Mehtable, Lancaster (Co. F, 7th), age 64. Langley, E. J., Lindsay (Co. I, 12th), age 60.
Lathan, Mary A., Lindaay (Co. G, 4th), age 70.
McManus, Elizabeth, Lancaster (Co. D, 1st), age 60. Mothershed, M. M., Lancaster (Co. G, P. L. A.), age 70. Phillips, B. H., Kershaw (Co. F, 7th), age 61. Reeves, B. C., Lancaster (Co. H, 2d S. C. V.), age 62. Stogner, M. J., Lancaster (Co. H, 4th cav.), age 63.
Small, Mary, Flint Ridge (Co. A, 8th), age 79.
Stover, B. R., Kershaw (Co. I, 12th S. C.), age 80.
Class C, No. $4,1097$.
Adams, Sarah A., Lancaster (Co. D, lst), age 61. Bennett. Mary E., Lancaster (Co. H, 4th), age 63. Broom, Mary M., Halle Gold Mine (Co. E, 12th). Funderbark, M. A.. Tradesville (Co. H, 2d), age 61. Hinmon, Caroline, Dirle (Co. E, 12th S. C.). age 64. Mathls, M. E., Lancaster (Co. A, 9th S. C.), age 66. Phillipa, Susan, Lancaster (Co. A, 4th S. C.), age 63. Beddish, Elisabeth, Flat Creek (Co. C, Lucas), age 65. Usher, E. J., Dwight, Lancaster (Co. B.), age 68.

## LAURENS COUNTY.

## CEANGRE IN ROLL GINCE LABT PATMENT.

Dead-Ciass A: M. D. Estees. C, No. 2: Jonathan Babb, J. M. Bishop, W. T. Compton, J. R. Godifrey, Henderson Lindley, R. G. Lone, N. Y. Manley, J. T. Skelton, John A. Mills, J. J. Boozer, L. M. Hendergon. C, No. B; E. E. Curry, N. E. Grant. C, No. 4: Mary E. Clark, Mary E. Hill, Agnen Leaman, Nancy Liles, M. F. Yeargan, Sarah Gray, Caroline Fuller.

Tranaferred to Other Classes-From C 2, to A: Isaac L. Fenning, M. L. Davis. From C, No. 2, to C, No. 1: T. H. Bobo, P. W. Burgess. From C, No. 4, to C. No. 3 : Mary J. Fowler.

Transferred From Other Countles-J. S. Harvey from Spartanburg. Sim Malone from Spartanburg. C. M. Bishop from Spartanburg. B. G. Gunmelle trom Plckens.

Clase A, 1801.
Culbertson, J. N., Laureng-Co. C, 8d S. C. I. (Totally dimabled by pertlyale)
Class A, 1908.
Davis, M. L., Tumbling Shoaly-Co. E, 16th. (Paralyzed.)
Goodman, B., Cross Elll-Co. B, 3d. (Totally disabled from wound.)
Clases A, 1907.
Davis, M. E., Fonntain Inn-Co. H, 22d S. C. I. (Paralyzed.)
Henning, Isaac, Laureng-Co. A, 16th S. C. V. (Paralyzed.)
Little, T. G., Laurens-Co. B, Hampton's Legion: (Paralysed.)
Class B, 1901.
Blakeney, H. P., Clinton-Co. F, 14th B. C. I. (Lost one leg.) Guinn, N. B., Rapley-Co. B, Bd S. C. V. (Lost one arm.) Hughes, C. H., Ora-Co. E, 14th S. C. I. (Lost one arm.)
Simpson, J. M., Clinton-Co. I, 5th 8. C. I. (Lost one leg.)
Wells, Benjamin M., Crosshill-Co. D, Gallard's. (Lost one arm.)
Williams, J. H., Goldville-Co. F, 14th S. C. I. (Lont one foot.)

Class B. 1905.
Baldwin, J. E., Mount Gallagher (Co. C, 3d bat.) Lost left arm.
Olass B, 1904.
King, A. A., Mount Gallagher (Co. A, 8 d reg.) Lost right arm.
Clase B, 1906.
Snow, Andrew J., Rapley-Co. B, S. C. I. (Lost right leg.)
Clase O, No. 1, 1901.
Armstrong, D. I., Laurens-Co. A, 6th S. C. C. (Wounded In body.) Elmore, Maston, Highpolnt-Co. A, James's bat. (Wounded in eye. Franks, T. B., Laurens-Co. A, 3d S. C. I. (Wounded right elbow.) Langgton, L. M., Laureng-Co. G, Orr's reg. (Wounded hand and leg.) Leopard, J. F., Centerville-Co. E, 14th reg. (Wounded in knee.)
Lowe. W. W., Cross HIII-Co. F, 8d S. C. reg. (Wounded arm and thlgh.)
Woods, Spencer, Eden-Co. E, 14th S. C. I. (Wounded in body.)
Workmen, 8. J., Clinton-Co. F, 14th S. C. I. (Wounded in right arm.)
Clase C, No. 1, 1908.
Owens, Mancel, Barksdale-Co. F. Bd S. C. (Wounded In head.) Phillips, H. A., Auntin-Co. C, 4th Infantry. (Wounded in arm.)
Bummerel, W. F.-Co. C, 8d 8. C. (Lost one eje result of service.)

Clase C, NO. 1, 1908.
Edwards, Manning, Lauren! (Co. G, 8d S. C. V.) Wounded thigh. Moore, George W., Clinton (Co. A, sd S. C. V.) Wounded in head.

Clase C, No. 1, 1905.
Culbertson, Andrew (Co. C, 14th). Wounded In arm. Wicks, B. F., Laurene (Co. K, 5th S. C. C.) Wounded In Fight arm.

Clase C, No. 1, 1906.
Dial, John, Gray Court-Co. G, 5th. (Wounded in cheet.)
Gray, J. H., Gray Court-Co. B, 1st cav. (Wounded in temple.)
Madden, John H., Laurens-Co. F, 3d. (Wounded right shoulder.)
Betzler, J. H., Laurens-Co. D, Williams. (Paralyzed left ide.)
Thomason, W. P.-Co. C, 14th. (Wounded in head.)
Barvey, J. F., Bapley-Co. B, 18th S. C. V. (Wounded left les; from spartanbure
Class C, No. 1, 1907.
Bobo, T. H., Laurens-Co. D, 3d. (Wounded left leg.)
Burgega, P. W., Alma-Co. C, 14th S. C. I. (Wounded left leg.)
Garrett, J. P., Young's Store-Co. E, 3d. (Wounded head.)
Class C, No. 2, 1901.
$\Delta$ bercromble, M. V., Merna (Co. B, 1st S. C. C.), age 61.
Adams, W. H., Laureng (Co. K, 14th S. C. V.), age 64.
Anderson, David, Laurens (Co. F, 14th S. C. I.), age 61.
Anderson, J. Ren (Co. F, 14th). From Union.
Bagwell, John B., Tumbling Shoals (Co. C, 14th S. C. I.), age 68.
Bragg. Miles, Jachin (Co. F. 2d Ga. reg.), age 60.
Bulloek, M. L., Klnard (Co. G, 2d 8. C. C.), age 73.
Barton, J. J., Laurens (Co. C, 3d S. C. Bat.), age 68.
Coker, Strawback, Alma (Co. A, 6th S. C. C.), age 72.
Curry, N. B., Cedar Grove (Co. A, 6th Cav.), age 65.
Curry, M. Y. (Co. H, 6th S. C. C.), age 61.
Dameron, A. B., Laurens (Co. H, 18th 8. C. I.), age 68.
Flmore, Madison, High Point (Co. A, 8d B. C. V.), age 78.
Franks, W. H., Laurens (Co. B, 1st S. C. I.), age 68.
Genolngs, F. M., Laurens (Co. E, 6th Cav.), age 74.
Greyllsh, Hugh, Laurens (Guess Guards), age 73.
Henderson, L. A., High Polnt (Co. A, 3d S. C. I.), age 65.
Hazel. G. II. (Co. B, 3d Bat.) Transferred from Spartanburg.
Hill, W. R., Waterloo (McBeth's Artlliery), age 64.
Holcomb, Ira, Young (1st B. C. I.), age 79.
Knlght, J. M., Babbtown (Co. E, 3d B. C. I.), age b3.
Enight, W. L., Alma (Co. C. 8d Battalion), age 60.
Lindley, Thoman, Tumbling Shoais (Co. C, 3d S. C. reg.), age 60.
Lawson, W. B. (Co. K, Bth reg.), age 60.
Madden, D. E., Waterloo (Co. D, 8d S. C. V.), age 64.
Malone, Sim (Co. C, 18th). From Spartanburg.
Martin, C. P., Laurens (Co. C, 14th 8. C. reg.), age 65.
Mitchel, Harrieon, Ekom (Co. C, 8d Bat.), age 60.
Moore, J. M., Simpson (Co. C, 8 d B. C. B.), age 62.
Motes, Allen, Madden (Co. D, 4th S. C. Bat.), age 88.
Nelson. H. Tiliman, High Point (McBetb's Light Artillery), age 62
Oneal, Jeme, Croas Hill (Co. B, \&d B. C. V. I.). age 77.
Owinga, M. B., Alma (Co. A, 6th S. C. C.), age 66.
Eiddle. T. R., Faterloo (Co. F, 3d S. C. I.), age 62.
Robertson, Barnett, Laureng (Co. E, 6th S. C. C.), age 65.
Saxon, J. H., Waterloo (Co. D, 27th \&. C. V.), age 88.
Sloan, J. R., Barksdale (Co. F, Hampton Legion), age 62.
Sommerel, J. H., Young (McBeth's Light Arthlery), age 67.

Buttle, James M., Babbtown (Co. C, 52d Ga.), age 67. Terry, W. H., Slmpaion (Co. C, 14th S. C. I.), age 62. Taylor, H. S. (Co. F, 14th reg.), age 66.
Vaughn, F. C., Laurens (Co. E, 6th reg.), age 64.
Watking, T. J., Alma (Co. C, 8d S. C. I.), age 66.
Watts, E. C., Crossblll (Co. B, James's bat.), age 61.
Woods, Harvey, Eden (Co. A, 6th S. C. C.), age 67.
Class C, No. 2. 1908.
Douglasa, W. J., Barkadale (Co. E, 4th reg.), age 64.
Klog, R. B., Boyce (McBeth's Artil.), age 67.
Nelson, Foster, Laurens (Co. E, 3d bat.), age 65.
Nelson, W. A., Waterloo (Co. F, 3d S. C.), age 60.
Owens, Jobn T., Cross Blll (Co. K, 25th Art.), age 67.
Sullivan, John M., Laurens (Co. A, 3d S. C. I.), age 64.
Snyder, A. J., Tumbllig Shoals (Earl's Battery), age 69.

Class C, No. 2, 2008.
Cooper, Whilam D., Cedargrove (Co. E, Holcomb Legion), age 61.
Dendy, E. G., Waterioo (Co. B, 8d s. C. V.), age 62.
Dendy, E. W. (Co. F, 14th). Transferred from Spartanburg.
Forshee, John H., Waterioo (Co. D. 27th S. C. V.), age 60.
Hellamg, W. M., Laurens (Co. D, 5th State 「roops), age 62.
Lynn, John K., Garlington (Co. I, 12th S. C. V.), age 68.
Montjoy, J. M., Clinton (Co. K, 5th S. C. C.)
Prlor, H. G., Woodruff (Co. E, 3d reg.), age 61. Redden, A. F., Brewerton (Co. C, 14th S. C. I.), age 60.
Satterfeld. J. K., Graycourt (Co. F, 2d bat.), age 62.
Tinsley, Pleasant, Tumbilng Shoals (Co. G, 16th reg.), age 62.
Wood, A. J., Laurens (Co. D, 5th Miss., age 60.

Class C, No. 2. 1904.
Abercromble, J. H., Laurens (Co. D, Whllams's).
Brown, H. B. (Dickinson's Force).
Davenport, W. P., Waterloo (Co. A, 6th Cav.)
Donnan, W. J., Laurens (Co. I, 3d S. C. V.)
Machray, W. L., Laurens (Co. F, 14th S. C. V.)
Nelson, M. L., Laurens (Co. B, 3d reg.)
Sherbert, A. M. (Co. E, 18th S. C. V.).
Senn, Thomas F., Laurens (Co. D, 13th S. C. I.)
Tumbling, S. W., Graycourt (Co. F, 3d S. C. I.)
Templeton, R. J., Laurens (Co. C, 27ih S. C. I.)
Woodruff, R. W., Lanford (Co. E, Holnomb Legion).
Willbanks, John S.. Lanford (Co. A, 3d S. C. V. I.)

Clase C, No. 2. 1905.
Bishop, C. M. (Co. D, 16th). From Spartanburg.
Cannon, Pink, Princeton (Co. E, Whllams's).
Curry, W. L., Gray Court (Co. G, 3d S. C. I.)
Cannon, Nathan M., Ware Shoals (Co. B).
Cundingham, W. F., Laurens (Co. A. 13th S. C. I.)
Dodson, W. M., Alma (Co. G, 4th Miss.)
Love, S. W., Cross H!ll (Co. E, 7th S. C. Car.)
Lanford, B. W., Laurens (Co. G. 3d S. C. V.)
Long. W. T., Rapley (Co. E, 8d S. C. I.)
Martin, Jno. A., Montville (Co. D. Williams's).
Putman, A., Fountalu Inn (Co. E., 6th Cav.)
Slmmons, Geo. M., Woodruff (Co. H, 4th).

## Class C, No. 2, 2906.

Anderson, G. F., Laurens (Co. A, 6th S. C. C.)
Finkler, T. J., Rapley (Co. A, P. S. S.)
Gunmells, B. G. (Co. E, 14th). From Plekens.
Owings, T. P., Gray Court (Co. E, S. C. V.)
Meadows, J. M., Goldville (Co. G, 27th).
Riddle, Geo. W., Laurens (Co. D, 4th S. Troops).
Tarner, Rhodes, Fountaln Inn (Co. H, 22d).
Class C, No. 2, 1907.
Allison, W. L., Lanrens ( $\mathrm{Co}_{\mathrm{i}}^{\mathrm{A}} \mathrm{A}, \mathrm{3d}$. Infantry).
McCoy, Alfred, Goldville (Co. E, 3d Infantry).
Mondy, J. A., Waterloo (Co. D, Wlliams').
Weeks, James M., Owings (Co. C, 18th G, Infantry).
Class C, No. S, 1901.
Widosos of Boldiers Who Lost Their Livea in the Servioe of the Confederate Statge.
Anderson, Nancy (Co. F, 14th reg.) Transferred from Greenwood County.
Abercromble, Mary, Alma (Co. C, 14th S. C. V.)
Ballentine, Margaret, Brewerton (Co. K. 1st S. C. I.)
Bradley, Sarah A., Alma (Co. D, Iampton Legion).
Bramlett, S. E., Laurens (Co. E, 3d S. C. I.)
Burns, R. C., Barksdale (Co. F, 14th reg.)
Burton, Elizabeth (husband died in prison at Polnt Lookont).
Chaney, M. F., Clinton (Co. A, 3d S. C. Bat.)
Chestine, Margaret, Alma (Co. H, 25th reg.)
Cook, Tempe, Ekom (Co. A, 3d Bat.)
Garrett, Isabella, Babbtown (Co. E, 2d S. C. Bat.)
Kennedy, Martha A., Youngs (Co. F, FIolcomb Legion).
Kernals, Sarab C. Owingsville (Co. B, Heavy Art.)
Lovering, Margaret M., Babbtown (Co. E, Holcomb Leglon).
McDaniel, M. A., Laurens (Co. F. 7th S. C. V.)
Madden. Fliza. Laurens (Co. H. 28th La. Reg.)
Moore, J. J., Laurens (Co. C, 14th S. C. I.)
Motes, C. H., Mountville (Co. B, James's bat.)
Bichards, Martha, Laurens (Co. F. 14th S. C. I.)
Hiddle. Ann, Laurens (Co. E, 3d S. C. reg.)
Riddle, Harrlet F., Hosea (Co. F, 3d S. C. I.)
Riddle, L. M., Youngs (Co. E, 3d S. C. I.)
Seyton, Sarab M., Laurens (Co. C, 18th S. C. reg.)
Sherard. A. F., Laurens (Co. F, 2d Rifles).
Spelts. Nancy, Jachln (Co. F, 3d bat.)
Summerall, Emeline, Laurens (Co. F, 14th S. C. I.)
Todd. Sarah F., Clinton (Co. F, 20th reg.)
Wolf, Fanale B., Laurens (Co. D, 3d S. C. I.)

Class O, No. S, 1908.
Culuertson, Mary, Waterloo (Co. C, 3d S. C. V.)
Clase C, No. S, 1904.
Batterwhite, Stacy, Belfast (Co. B, 1st reg.)

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\text { Class C, No. s. } 1906 .
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Bryson, M. E., Cross Hill (Co. B, 3d).
Query, Mary J. (Co. K, 7th N. C.)
Olass C, No. S, 1906.
Curry. M. L., Waterloo (Co. F, 3d I.)
10-R. \& R.-(500)

Clase O, No. s, 1907.
Dukes, Susanna, Lanford (Co. E, Hol. Legion).
Fowler, Mary J., Coal Point (Co. D, 27th Infantry).
Gunter, Mary A., Fountain (Co. I, Art.).
Thomas, Elizabeth, Princeton (Co. B, 7th).
Oless C, No. 4, 1901.
Adalr, F. A., Laurens (Co. A, McGowan's Brigade), age 68.
Boyd, E. A. J., Clinton (Co. E, 7 th B. C. bat.), age 75.
Copeland, Hester (Co. A, 7th). Transferred from Kershaw County.
Cooper, S. S. (Co. C', James's bat.), age 78.
Davis, Martha E, Youngs (Co. B, 1at 8. C. C.), age 70.
Dickert, Mary E., Belfast (Co. H, 13th reg.), age 60.
Davenport, Temperance (Co. A, D. W. Alken's reg.), age 78.
Entrekin, N. A., Laurens (Co. F, 8d S. C. I.), age 62.
Farrow, Charlotte, Clinton (Co. F, 14th S. C. V.), age 64.
Fowler, Nancy M, Barksdale (Co. E, 3d reg.), age 60.
Fuller, Isabella, Laurens (S. C. Regulars), age 65.
Fuller, Mary A., Waterioo (Co. E, 7th reg.), age 80.
Golding, Nancy, Cross Hill (Co. D, 3d State T.), age 63.
Gosnell, Pollie Ann, Laurens (Co. F, 1st S. C. I.), age 62.
Griffn, Cornelia, Mountville (Co. A, 6th S. C. C.), age 61.
Guinn, Sarah, Rapley (Co. E, 14th S. C. I.), age 66.
Hawback, Harrlet, Tumbling Shoals (Co. E, 3d S. C. I.), age 72.
Herbert, Martha (Co. F. 20th reg. Transferred from Newberry.
Hill, Minerva, Owingsvllle (McBeth's Artllery), age 65.
HIII, Lucy Jane (Co. C, 4th reg.) Transferred from Greenwood.
Hitch, Elizabeth, Laurens (Co. D, 27 th S. C. I.), age 65.
Hudson, Jane A., Cedar Grove (Co. F, 2d reg.), age 64.
Lawson, M. L., Laurens (Co. K, sth S. C. I.), age 63.
Lavin, Rebecca, Halrston (Co. F. 4th S. C. I.), age 66.
Ling, Patsy, Irby (Co. D, 26th reg.), age 79.
Lyon, M. C., Fountaln Inn (Co. F, 14th S. C. I.), age 63.
McAteer, Judle P., Laurens (Co. F, 14th S. C. V.), age 66.
Mađden, Mary E., Laurens (Co. F, 3d S. C. I.), age 69.
Nance. S. M., Waterloo (Co. E. 8d S. C. V.), age 60.
Nelson, Maggle W., High Polnt (Co. A, 3d S. C. Bat.), age 64.
Nelson, Carollne, Ora (Co. D. 3d S. C. Bat.). age 69.
Owlngs, Mahala, Babbtown (Co. A, 6th S. C. C.), age 65.
Owings, Caroline, Gray Court (Co. A, 6th S. C. C.), age 64.
Pitts, C. H., Brewerton (Co. D, 1st S. C. T.), age 78.
Pitts, Lou C., Cross Hill (Co. F. 3d S. C. V.), age 63.
Reeder, Hulda. Cross HIll (Co. F. 27 th S. C. V.), age 62,
Riddle, Guly F., Hosea (Co. E, 3d S. C. I.), age 68.
Saxon, Carollne, Owingsville (Co. C, 3d S. C. I.), age 72.
Sims. Martha C., Laurens (Co. A, 3d S. C. Bat.), age 61.
Bmith, Lucretla, Cross Fill (Co. R, 7th S. C. reg.), age 68.
South, Mary R., Sullivan (Co. A. 8th S. C. C.). age 83.
Swink, Carollne C.. Youngs (Co. B, 1 st S. C. S. T.), age 78.
Taylor, M. J., Laurens ( 27 th reg. S. C. Inf.). age 60.
Templeton, N. A., Laurens (Co. G, 3d S. C. R. I.). age 63.
Tumblin, Henrietta, Tumbling Shoals (Co. D, Williams's S. T.), age 76.
Whitley, Kittera, Waterloo (Co. D, 4th Bat. Reserves), age 75.
Word, Sallle A., Laurens (Co. C, 14th S. C. R. I.), age 75.

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\text { Class C, No. 4. } 1908 .
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Smith, E. Jane, Rapley (Co. F. 1st S. C. Art.), age 67.
Slme, Susan, Cllnton (Co. B. 1st S. C. Cav.), age 60.
Power, Mary A., Barksdale (Co. B, 1st reg.), age 65.
Palne, L. A., Whitmires (Co. F, 42d N. C.), age 62.
Walker, Lettle F., Waterloo (Co. A, 13th S. C. I.), age 60.

Class C, No. f. 1908.
Boit, M. A., Tumbling Shoals (Co. A, 3d S. C. I.), age 65. Benjamin, M. J., Laurens (Co. F, 22d S. C. V.), age 63. Puiler, Mille F., Highpoint (Co. D, Willams's), age 60. Rogers, Katherine, Jachin (Co. H, 5th reg.), age 60. Shockley, E. R., Barksdale (Co. G, 3d reg.), age 80.
Spoon, S. T., Waterloo (Co. K, 1st S. C. V.), age 70. Sloan, Othello, Fountain Inn (Co. B, Holcomb Legion), age 60.

Olase C, No. 4. 1904.
Cooper, Margaret (Co. E, Holcomb Legion), age 60.
Cornell, Ellza, Cedar Grove (Co. E, 3d reg.), age 72.
Colemsn, Matllda, Cross Hill (Co. D, B. C. Reserves), age 78.
Hellams, Laura T., Barksdale (Co. G, 3d reg.), age 61.
Todd, M. R., Clinton (Co. I, 8d S. C. V.), age 69.
Class C, No. $4,1905$.
Armold, Nancy J., Huntsville (Co. I, 3d Reserves), age 00.
Brown, Mary, Cedar Grove (Co. F, 3d), age 60.
Brownlee. Isabelle, Gray Court (Co. G, 3d S. C. I.), age 63.
Dunlap, Sarah E., Mountville (Co. C, 3d I.), age 64.
Davis, Amanda, Princeton (Co. E, 11th S. C. I.), age 85.
Garner, Theresa, Landford (Co E. 3d S. C. I.), age 60.
Jones, Mary A., Vaughnville (Co. F, 3d), age 60.
Knight, Jane M., Princeton (Co. A, 6th S. C.), age 75.
Class C, No. t. 1906.
Bolt, Mary Alma (Co. C, 11th), age 84.
Franks, Matllda, Lanford (Co. A, 3d), age 71.
Haghes, Mary, Laurens (Co. L, 2d Rifles), age 61.
Hili, L. V., Waterloo (Co. A, 3d I.), age 60.
Kight, Catherlne, Alma (Co. F, 3d), age 61.
Knight, Nancy D, Grays (Co. G, 3d), age 65.
Martin, Amanda, Laurens (Co. C, 14th I.), age 65.
Marler, Clarissa, Rapley (Co. E, 6th C.), age 67.
Monroe, L. V., Laurens (Co. A, 3d), age 66.
Pulley, Susan A., Lanford (Co. F, 7th), age 61.
Pollard, Lettle, Laurens (Co. K, 4th), age 63.
Reld, Mary 1., Laurens (Co. F, 20th), age 66.
Reynolds, Sarah, Clinton (Co. B, 3d), age 60.
Btallings, Catherine, Fountaln Inn (McBeth's), age 01.
Wells, Jane, Laurens (Co. D, 27 th inft.), age 84.
Class C, No. 4. 1907.
Adams, Emallne, Crosa Hill (Co. G, 2d), age 67.
Betay, E. Babb, Fountain Inn (Co. F, Hampton's), age 67.
Blshop, Eliza A., Fountain Inn (Co. B, 22d), age 65.
Grifin, Nannle, Laurens (Co. A, 3d S. C.), age 61.
Godifey, N. A., Clinton (Co. F, Hampton's), age 69.
Lindiey, Ruth, Tumbling Shoals (Co. C, Henderson's), age 88.
Hill, N. M., Laurens (Co. C. 18tb), age 70.
Power, Elliott, Alma (Co. E, 14th S. C. V.), age 67.

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## LEE COUNTY.

## CEANGRS IN ROLL BINCT LABT PAYYRENT

Dead-C, No. 1: A. Ammons. C, No. 2: Middleton Brown, W. F. Brown, Lh H. Hopkins, W. H. Strickland. C, No. 4, Elizabeth Hutson.

Class A, 1906.
Croft, Wesley, Antloch-Co. G, 20th. (Paralyzed.)
Class B, 1903.
Miller, John M., Magnolla (Co. G, 8th reg.) Lost one leg. Welch, R. W., Magnolia (Co. E, 2d reg.) Lost use one arm. Wilson, Willam, Lucknow (20th reg.) Lost right leg.

Class O, NO. 1, 1908.
Copeland, R. J., Blshopville (Co. K, 23d reg.) Wounded in arm.
Hancock, J. S., Lyachburg (P. B. L. A.) Wounded in knee.
Loyd, S. J. (Co. I, 25th S. C. V.) Wounded right arm.
Pigate, W. C., Lynchburg (Co. H, 26th S. C. V.) Wounded In arm.
Rogers, Pinckney, Atkins (Co. B. 8th S. C. R.) Wounded in thigh.
Scarborongh, H. A., St. Charles (Co. K, 23d reg.) Wounded left arm Walters, J. F. (Co. H, 21st reg.) Shot in knee and arm.

Class C, No. 1, 1906.
Bramlett, N., Manaville-Co. E, 19th S. C. V. (Wounded in leg.)
Class C, No. 2, 1909.
Baker, Alphens, Blshopville (Co. E, White's bat.), age 76.
Baker, H. W., Bishopville (Co. K, 23d Vol.), age 76.
Braddock, T. B., Ashland (Co. D, 21 st S. C. V.), age 60.
Briggs, Latayette, Smithville (Co. C, 7th reg.), age 70.
Brown, J. E., Blahopville (Co. E, Pal. Art.), age 62.
Brown, Ellas, Mannville (Co. E, 19th reg.), age 61.
Brown, J. A., Elliott (Co. D, 40th N. C.), age 68.
Brown, W. H., Mannville (Co. F. 10th S. C. V.). age 66.
Burkett, J. J., Blshoprllle (Co. D, 8th S. C. V.), age 77. Brown, F. M.. Mechanlcsville (Co. K, 23d reg.), age 68. Barfield, David (Co. A, 21st reg.). Dead; money refunded. Corbette, J. A., Smithville (Co. G, 20th B. C. V.), age 64. Corbette, W. S., Tlllers Ferry (Co. G, 19th Vol.), age 68. Dorn, James M., Mayesville (Co. K, 24th reg.), age 75.
Frazer, L. L., Mechanlcsville (Co. A, 5th reg.), age 73. Goff, John, Blshopville (Co. F., P. L. A.), age 60. Galney, C. L.' (Co. E, 6th reg.)
Graves, James A., Lynchburg (Co. I, 4th Reserves), age 78.
Grantham, Nathan (Pee Dee Lt. Artll.) Transferred from Darllngton. Gardner, T. J., Blshopville (Co. F, 7th reg.), age 60.
Hopzins, W. P., Ashland (Co. B, Whlte's bat.), age 61.
Isom. Spencer, Blshopville (52d N. C. Vol.)
Jones, G. W., Smithville (Co. G, 20th S. C. V.)
Jones, T. J. (Co. A, 日th S. C. V.), age 62.
Jones, L. M., Blshopville (Co. G, 20th reg.), age 73.
Kirby. W. M., Magnolla (Pal. S. S.), age 64.
Mixon, M. T. (Co. A, Harlee's). Transferred from Florence.
Logan, Joseph G., Majesville (Co. H, 21 st reg.), age 68.
Lyles, Joseph G., Blshopville (Co. E, 4th S. C. V.), age 62.
McManus. J., Smithville (Co. A, 1st Regulars), age 65.
McNeil, John, Wisacky (Co. C, 7th reg.), age 60.
Outlaw, J. A., St. Charles (Co. A, 1gt Regulars), age 68.

Prescott, J. S., St. Charlen (Co. C, 6th S. C. V.), age 61.
Parnell, Robert, Alcott (Co. B, 21st reg.), age 62.
Reeven, J. H., Bishopville (Co. M, 8th S. C. V.)
Rodgers, Shadrack, Springhill (Co. G, 20th B. C. V.), age 61.
Redick, E. H., Una (Co. E, 19th S. C. V.), age 61.
Richbourg. I. F. W., Smithville (Co. E. 19th reg.), age 61.
Skinner, Ben, Stokesbridge (Co. M, 8th reg.), age 62.
Stokes, J. J., Lucknow (4th State Troops), age 80.
Stokea, W. J., Lucknow (Co. D, 7th S. C.), age 81.
Slipper, T. J., Cypress (Co. G, 21st reg.), age 60.
Scott. Heary, Pisgah (Co. D, 12th Ga.), age 60.
Wilson, James M. (Co. H, 26th S. C. V.), age 77.
Welch, John F. (Co. G, 6th S. C. C.), age 64.
Class C, No. 2, 1905.
Atkinson, E. J., Mannville (Co. E, 19th S. C. V.)
Evans, T. P., Antloch (Co. A, 7th S. C.)
Hatteld, S. B., Sr., Smithville (Co. G, 20th).
Keels, B. A., Magnolla (Co. E, 1 st S. C. A.)
McDonald, T. W., Magnolla (Co. K, 3d).
Marshall. W. H., Bishopville (Co. H. 21st).
Surles, F. M., Elliotts (Co. L:, 1st S. C.)
Watt, W. L., Smithallle (Co. G, 20th).
Class C, No. 2, 1906.
Capell, M. A. (Co. B, Brown's).
Clas8 C, No. 2, 1907.
Davis, A. J., Ashland (Co. K, 7th Ga.).
Galloway, W. Z., Lucknow (Co. G, White's).
Hancock, George, Smithville (Co. G. 20th).
Seott, Henry, Plagah (Co. D, 12th Ga.).
Class C, No. s, 1905.
Andernon, E. J. (Co. I, B. C. V.)
Andermon, 8. C., Mayempllle (Co. A, Holcomb Legion).
Barnes, Fllza J., Mannville (Co. F, 19th reg.)
Belvin, Sarah, Smlthpllle (Co. G, 20th S. C. V.)
Benton, Sarah D., Bmithylle (Co. C, 7th S. C.)
Bryant, Balle (Co. A, Holcomb Legion).
Bradsham, Mlnerva, Ashland (Co. A, 8th S. C. V.)
Christmas, Maggle A., Cypress (Co. B, 21st S. C.)
Green, H. N., St. Charles (Haskell's bat.)
Minon, Jalla, Ashland (Co. A, 7th bat.)
Pertns, Agnea, Magnolla (Co. H, 26th S. C. V.)
Peebles. Alcott (Co. A, 7th S. C. C.)
Bearborough, Victoria, Bishopville (Co. A, 2d reg.)
Clast U, No. S, 1908.
Boykin, Mary J. (Co. G, 20th S. C. V.)
Olass C, No. 4, 1903.
Amerson, B., St. Charles (Co. E, 19th Inf.)
Atkingon, Hannah, St. Charle: (Co. G, P. B. L. A.), age 70.
Atklnmon, Harrtet, Antioch (Co. D, 1st 8. C.), age 61.
Bradley. Martha, Ionia (Co. G. 20th S. C. V.), age 65.
Barnea, Nancy, Blahoprille (Co. E, 19th reg.), age 67.
Brown, Susan M., Smithrille (Co. A, Hampton Legion), age 64.
Butler, A. C., Blshopville (Co. I, 25th S. C. V.), age 60.

Baker, Mary Jane, Atring (Co. K, 23d S. C. V.), ege 78. Byrd, Julla A., Roral (Co. G, 25th B. C. V.), age 66. Brown, Lacy, Blshoppllle (Co. E, 19th S. C. V.), age 60. Dorrity, Martha, Smithville (Co. G, 20th S. C. V.), age 88. Dubore, Loulsa, Stokesbridge (Co. A, 1st Art.), age 64. Danlels, Martha, Smithpllle (Co. G, 20th reg.), age 64.
Deas, Mary, Blshoppllle (Co. E, 7th reg.), age 62. Elmore, Harrlet, Ashland (Co. H, 21st reg.), age 70. Edwards, Ellen F., Blshopville (Co. D, 21st reg.), age 60.
Flelds, Mary A., Cypress (Co. A, 7th reg.), age 71. Galloway, Mahala, Blshopville (Jenklns's 8. 8.), age 62. Hugglns, M. A. E., Rural (Co. K, 23d S. C. V.), age 64. Hagood, M. E., Cypress (Co. A, 14th reg.), age 67. Hughes, Nlcey J., Ionla (Co. G, Lt. Art.), age 64.
Lacost, S. S., St. Charles (Co. K, 23d reg.), age 65.
Matuse, Anna (Co. M, 8th reg.), age 63.
Mathls, Martha E., Smlthville (State Troops), age 73.
Moore, H. E. W., Stokesbridge (Co. A, 14th reg.), age 62.
Outlaw, Mary, Blshopville (Co. C, 9th S. C. V.), age 74.
Parbam, Martha W., Cypress (Co. L, 20th reg.), age 61.
Parker, Jane, Cypress (Co. F, 7th reg.), age 71.
Pate, Dorcas, Stokesbrldge (Co. F, 7 th bat.), age 67.
Prescott, E. J., St. Charles (Co. K, 23d reg.), age 77.
Pate, Nancy, Stokesbrldge (Co. F, 7th bat.), age 65.
Revel, H. E. (Co, E, lst art.), age 88.
Shaw, Mary F., Mayeaville (Co. K, 23d reg.), age 63.
Shirley, M. M. (Co. A, 7th reg.), age 64.
Swalls, Loulsa, Alcott (Co. B, 21st S. C. V.), age 68.
Smlth, Mary A., St. Charles (Co. E, P. S. S.), age 68.
Sutton, Ann, Blshopville (Co. A, 2d reg.), age 63.
Weatherly, Frances, Stokesbridge (Co. C, 81st reg.), age 62.
Thornal, M. A. K., Lynchburg (Co. K, 21st S. C. V.), age 68.
Trlmal, Nancy, Ionla (Co. K, 7 th reg.), age 60.
Welch, F. E., Bishoppllle (Co. E. 2d reg.), age 64.
Wougham, M. E. (Co. H, 21st reg.), age 62.

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\text { Class O, No. 4. } 1905 .
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Brown, Cely C., Bishopville (Co. F, 19th), age 60.
Hall, Rebecca, Lucknow (Co. C, 7th), age 70.
Lyles, Elizabeth, Blshopville (Co. E, 4th), age 60.
Outlaw, Mahaley, Ashland (Brown's Battalion), age 72.
Class C, No. 中, 1906.
Huggins, Charlotte, Blshopville (7th reg.), age 68.
Outlaw, Mary. Lucknow (Co. F. 7th), age 68.
Simpson, Candls, Lynchburg (Co. B, 2d), age 67.
Class C, No. 4, 1907.
Ammons, Sarah L., Ionla (Co. E, 7th), age 60.
Brown, Sarah, Blshopville (Co. E, 10th S. C. V.), age 67.
Barteld, Roxey, Blshopville (Co. A, 20th), age 69.
Kelly, Mary G., Renno (Co. B, 2d S. C. V.), age 61.
Rembert, L. M., Lynchburg (Co. D, 2d), age 61.
Strother, Margaret, Elllott (Co. K, 23d), age 64.

## LEXINGTON COUNTY.

## CHAKGMS IN ROLL GINCY LAST PATMENT.

Dead-Class A: Wm. D. Wise. C, No. 1: James T. Mitchell, Ira Reynolds. C, No. 2: Bamuel W. Bookman, Joshua Gunter, I. J. Jones, James L. Kelley, Fred Rikard, H. E. Sox, James F. Taylor, J. C. Rankin, John Cook. C, No. 3 : B. J. Cook, A. V. Green. C, No. 4: Mary C. Balley, Barbary L. Corley, Maryla Harmon, Orrle Jeflcoat, Ada Poole.

Transferred to Other Classes-From C, No. 2, to Class A: James V. Hook. From C, No. 2, to C, No. 1: Wesley Alewine. From C, No. 4, to C, 3: Louisa Long, Mary A. Koon.

Transferred From Other Countles-Wilson Yarborough from Kershaw. Theresa Hutto from Alken.

Class A, 1906.
Selgler, Wim., Irmo-Co. C, 20th. (Totally blind.)
Splres, W. A., Gaston-Co. H, 20th. (Totally blind.)
Class A, 1907.
Hook, Jas. V., New Brookland—Co. H, 20th S. C. (Paralysis.)
Class B, 1901.
Banks, A. O., Lexington-Co. F, 5th reg. (Lost left arm.)
Busby, Thomas, Gaston-Co. F, 19th reg. (Lost left leg.)
Crim, V. V., 8wansea-Co. D, 20th reg. (Lost rlght leg.)
Gantt, Samuel C., Rightwell-Co. F, P. S. S. (Lost right arm.)
Haltlvanger, J. S., Lattakoo-Co. H, 8 d reg. (Lost one leg.)
Rister, W. T., Irmo-Co. H, 13th reg: (Lost left leg.)
sease, A. N., Chapin-Co. C, 8 d reg. (Lost left arm.)
Wison. A. O., Lexington-Co. H, 8d S. C. (Lost right arm.)
Class B, 1902.
Derrick, James A., Derrick-Co. I, 15 th 8. C. (Lost left foot.)
Class B, 1907.
Assman, W. J., Sandy Run-Co. A, 15th. (Lost one arm.)
Clase O, No. 1, 1901.
Lewis, Hogh E., Rishs Store-Co. F, P. B. S. (Wounded right leg.)
Lucas, James M., Rishton-Co. K, 13th reg. (Wounded ln Jaw.)
Rleh, John F., Edmund-Co. I, 20th S. C. V. (Wounded ln left arm.)
Fatta, Adam, Gaston-Co. C, 6th S. C. V. I. (Wounded shoulder and leg.)
Class C, No. 1, 1902.
Barr, D. T., Adair-Co. K, 9th reg. (Wounded left hlp.)
Olass O, No. 1, 1904.
Fiake, J. W., Thor (Co. K, 1st reg.) Wounded In hand.
Prlce, J. E., New Brookland-(Co. C). Wounded in hand.

Clase C, No. 1, 1905.
Craps, P. H., Gllbert (Co. C, 15th). Wounded in slde. Glll, W. D., Hllton (Co. C, 2d). Wounded ln shoulder. IIall, Gldeon. Leespllle (Co. I, 22d). Wounded ln arm. Koon, 1. Lather, Falrbanks (Co. H, 13th). Wounded left hand.

Class C, No. 1, 1906.
Hallman, D. J., Glbert-Co. F, P. S. S. (Wounded in bead. h

Clase C, NO. 1, 1907.
Alewlne, Wesley, Gllbert-Co. C, 15th. (Wounded In leg.)
Clase C, No. 2, 1901.
Addy, Jacob P., Lattakoo (Co. C, 20th reg.), age 74.
$\Delta m i c k$, J. W., Derrick (Co. I, 15th reg.), age 60.
Attaway, Whllam, Batesburg (Co. F, 12th Ga. Bat.), age 61.
Berry, George A., Woodford (Co. H, 2d reg.), age $U 3$.
Bictley, Joseph H., Calla (Co. I, 1 万th reg.), age 67.
Bloodsworth, B. A., Fredonia (Co. F, 19th S. C. V.), age 72.
Boyer, Moses, Brookland (Co. C, 7th S. C. reg.), age 62.
Derrick, Henry D., Savilla (Co. C, 20th reg.), age 70.
Farr, Benson, Little Mountain (Co. C, 20th reg.), age 74.
Fulmer, J. Hart, Brightswell (Co. F, White's Bat.), age 74.
Hall, Lemuel, Samarla (Armory Guards), age 70.
Hallman, F., Lexington (Co. K, 20th S. C. V.), age 82.
Harman, Joseph F., Lexington (Co. F, 5th reg.), age 65.
Hir, R. J. N., Lexington (Co. K. 20th S. C. V.), nge 60.
Hix, D. A., Calla (Co. K, 20th reg.), age 65.
Howell, J. P., Swansea (Co. K, 13th reg.), age 64.
Knlght, Joseph D., Bakersville (Co. B, 7th S. C. C.), age 75.
Leaphart, R. H., Pricevlle (Co. A, 23d reg.), age 77.
Milis, J. B., Ella (Co. K, 20th S. C. V.), age 65.
Poole, Fellx, Brookland (Co. H, 20th reg.), age 66.
Price, Jacob, Prlceville (Co. C, 15 th reg.). age 79.
Shealy, Isalah, Barrs Landing (Co. K, 20th S. C. V.), age 68.
Sox, D. M., Edmund (Co. H, 20th S. C. V.), age 78.
Taylor, J. D., Irene (Co. F, 3d S. C. reg.), age 73.
Warner, T. I., Bavilla (Co. C, 16th reg.), age 68.
Class C, NO. 2, 1902.
Bundrick, H. A., Lexington (Co. H, 13 th reg.), age 65.
Barrineau, E. G., New Brookland (Co. C, 25th S. C.), age 68.
Chapman. J. L., Llttle Mountain (Co. F , Whlte's), age 73.
Hook, James A., Gaston (Co. K, 18th reg.), age 66.
Hufistetler, James L., Rightwell (Co. C, 12th reg.), age 65.
Eall, Wayne, Batesbarg (Co. I, 20th reg.), age 62.
Kelly, John G. (Co. -, 1st S. C. V.)
Eyzer, M. L., Adalr (Co. F. 5th S. C.), age 70.
Lucas, Thomas W., Swansea (Co. K, 13th reg.), age 67.
Long, W. W., Priceville (Co. C, 20 h h reg.), age 67.
Milter, J. M., Barrs Station (Co. K, 13th reg.), age 68.
Perry, Sllas R., New Brookland (Co. C, 12th reg.), age 62.
Rad, Frank, Savilla (Co. C, 15th reg.), age 62
Starnes, J. W., Witts Mils (Co. D, 20th reg.). age 67.
Shealy, Anderson, Barrs Landing (Co. K, 20th reg.), age 76.
Taylor, Jacob E., Lewledale (Co. H, 5th Cav.), age 74.
Wells, William E., Ireesville (Co. I, 20th reg.), age 67.
Clasy $O$, No. 2, 1905.
Black. W. F., Lorena (Co. C. 20th bat.), age 68.
Dalley. J. T. (Co. C, 20th S. C. V.), age 60.
Gregory, John J., Lexington (Co. H, 20th reg.), age 72.
Gregory. John T.. Swansea (Co. K, 20th reg.), age 62.
Kyzer, J. S., Iewledale (Co. C, 15th bat.), age 70.
Miller, S. C. (Co. H. 20th). From Saluda.
Rivers. J. R., Batesburg (Co. B. 14th bat.), age 66 .
Shealy, Joshoa, Plneridge (Co. I, 15th bat.), age 72.
Bhaley. W. A. (Co. H. Holcomb Legion). Transferred from Newberry.
Smith, J. J. (Co. F, 5th). Transferred from Orangeburg.

Starnes, R., Witts Mills (Co. 1, 20th reg.), age 62.
Taylor, F. Z., Macedonia (Co. K, 20th reg.), age 72.
Waters, John, Samaria (Co. F, 19 th bat.), age 61.

Clase C, No. 2, 1904.

Kelly, G. W., Irene (Co. A, 46th Ala.)
Shealy, Daniel, Pineridge (Co. C, 20th reg.)
Smith, Thomas, Lewledale (Co. H, 20th reg.)
Wlac, John W.. Macedon (Co. I, 20th reg.)
Wood, G. W., Clarks Mills (Co. I, 22d reg.)
Wingard, George W., Lexington (Co. K, 20th reg.)

Class C, No. 2, 1906.

Gable, E. F., Irece (Co. H, 20th).
Kinkle, Henry, Lexington (Co. H, 3d S. C.),
Hays, F. J., Gilbert (Co. A, 2d State).
Klstler. Albert T., Adalr (Co. K, 20th).
Roof, S. W., New Brookland (Co. F, 5th Cav.)
Stack, William, Irmo (Co. C, 20th).
Sloan, W. H., Little Mountain (Co. F, 20th).
Sturkie, D. A., Gaston (Co. H, 20th).
Summer, Jaa., Peak (Co. H, 18th).
Bee. J. B., Lexington (Co. K, 20th).
Taylor, Jefferson, Leesville (Co. K, 20th).
Wise, J. W., Sandy Grove (Co. D, 20th).
Yarborough, Wlison (Co. A, 7th). From Kershaw County.
Clase C, No. 2, 1908.
Brown, F. E., New Brookland (Co. G, 3d).
Furtick, G. A., Swansea (Co. D, 20th).
Jeflcoat, Rufus J., Fdmond (Co. F, P. S. S.)
Gunter. Mascom, MIms (Co. F, P. S. S.)
King. W. H., Swansea (Co. D, 20th).
Kyzer, John T., Rishton (Co. C, 13th).
Mixon, L. J., New Brookland (Co. D. 20th).
Ranis, A. C., Selvern (Co. F, P. S. S.)
Shumpert, D. P.. Gaston (Co. H, 20th).
Sumner, Jacob, Chapin (Co. F, White's).
Shirey, M. W., Irene (Co. D, Ga. Riftes).
Taylor, Jos., Gilbert (Co. H, 25th).
Clase C, No. 2, 1907.
Amick, Walter, Pine Ridge (Co. B. Merrywether's).
Baughman. R. H., Gaston (Co. H, 20th S. C. V.).
Cook, Wilson T. (Co. D, 1st S. C.).
Dean. K. P.. Leesville (Co. B, 7th Bat.).
Koon. Jacob. Chapin (Co. H, 13th).
Metz, M. S., Ballentine (Co. C, 20th).
Lgbrand, D. Wade. New Brookland (Co. H, 20th).
Price, Jacob, Gilbert (Co. C, 15th).
Box. J. E., Brookland (Co. H, 20th).
Class C. No. S. 1901.
Widows of Soldiers Who Lost Their Lives in the Sorvice of the Gonfederate States.
Bundrlek. Erances, Peak (Co. C, 20th reg.)
Buaby, Nancy. Fdmunda (Co. H, 3d reg.)
Bundrick, Caroline (Co. H, 13th reg.)
Courtpey, Mittie F., Samaria (Co. H, 14th S. C. V.)
Frye. Anale, Barrs Landing (Co. C, 1st reg.)

Hay, Ellen M., Swansea (Co. B, 1st reg.)
Miller, Martha, Oakville (Co. I, 84 reg.)
Price, R. R., Priceville (Co. C, 15th reg.)
Son, Catherine, Leesville (Co. C, 15th S. C. V.)
Taylor, Jane A., Pellon (Co. K, 13th reg.)
Taylor, Mary, Barrs Landing (Co. K, 13th S. C. V.)
Clasa C, NO. S, 1908.
Welssinger, Loulsa, Wessinger (Co. I, 15th bat.)
Olass C, NO. S, 1903.
Dunbar, Julla C., Rishton (Co. K, 20th reg.)
Minick, Laura, Chapln (Co. H, 13th reg.)
Price, Carollne (Co. K, 20th reg.)
Shaffer, Marla, Steedman (Co. I, 22d reg.)
Weich, N. C., Irene (Co. H, 20th reg.)
Class C, No. s, 1904.
Taylor, Matllda, Lezlngton (Co. H, 20th reg.)
Class C, No. s, 1906.
Amick, Mary M., Plne Ridge (Co. I, 15th).
Baker, Annle E., New Brookland (Co. -, 15th).
Kyzer: Rodella, Glibert (Co. K, 20th).
Oswalt, Julla, Gllbert (3d B. C. V.)
Shealy, Loulsa C., Fredonia (Co. D, 2d).
Steele, Elizabeth, Lorena (Co. E, 7th).
Olase C, No. S, 1906.
Shealy, Polly, Leesville (Co. H, Hol. Legion).
Spires, Temperance, Edmund (Co. H, 20th).
Sumner, Mary M., Peak (Co. H, 3d).
Stuck, Tyrza, Peak (Co. H, 13th).

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\text { Class C, No. } 3,1907
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Bookman, Amanda S., Irmo (Co. C, 20th).
Koon, Mary A., Chapln (Co. H, 13th).
Mills, Polly, Gilbert (Co. F, Palmetto).
Long, Loulsa M., Gllbert (Co. C, 15th).

## Olass 0, NO. $4,1901$.

Alewine, Luclada, Leesville (Co. A, German Artillery), age 66. Alewine, Martha, Lattakoo (Co. L, Hampton Legion), age 65. Amick, M. C., Elle (Co. I, 15th reg.), age 64.
Boozer, Margaret C., Lexington (Co. K, 13th S. C. V.), age 66.
Bouknight, M. Ann, Irmo (Co. H, 13th reg.), age 70.
Cartln, Ann, Swansea (Co. D, 20th reg.), age 68.
Clark, Mary M., Clarks Mills (Co. C, Merrlwether's). age 80.
Clemons, Edna, Irene (Co. F, 57 th Ala. Inft.), age 63.
Clogus, Catherlne, Irmo (Co. C, 20th reg.), age 60.
Cumalander, Eliza C. (Co. H, 3 d reg.), age 69. Cockroft. Besheba (Co. A, 22d reg.), age 67.
Dickerson, Emellne, Irene (Co. K, 13th reg.), age 69.
Fallow, Maryं, Batesburg (Co. D. Merriwether's Bat.), age 88.
Franklow, H. M., Irene (Co. K, 13th reg.), age 64.
Gelger, Elizabeth, Lewledale (Co. C, 20th reg.), age 68.
Harmon, M. F., Lexington (Co. K, 20 th S. C. V.), age 71.
Hutto, Theresa (Co. D, 20th), age 62. From Alken.

Hayea, Martha L., Number (Co. K, 20th reg.), age 68.
Gunt, Harrlet, Calla, age 61.
Hutto, Rebecca, Macedon (Co. K, 13th S. ${ }^{\circ}$ C. V.), age 72.
Jacobs, Epsey, Selma (Co. C, 20th reg.), age 68.
Jefrcoat, Mary E., Witts Mllis (Co. D, 20th reg.), age 61.
Jumper, Margaret, Swansea (Co. B, 1st reg.), age 66.
Jones, Rena (Co. B, S. C. V.), age 63.
Koon, Rosanna, Derrick (Co. I, 15th S. C. V.), age 66.
Koon, Louisa F., Spring Hill (Co. I, 15th S. C. reg.), age 66.
Long, Polly, Chapin (Co. C. 20th reg.), age 60.
Miller, Carollne, Barrs Landing (Co. B, 6th reg.), age 60.
Mills, Jave, Irene (Co. H, 20th S. C. V.), age 88.
Monta, Julia, Hilton (Co. H, 3d S. C. reg.), age 65.
Oswalt, Elizabeth, Leesville (Co. R, Light Artllery), age 70.
Oswait, Mary Ann, Leesville (Co. C, Blodget's Artlliery), age 70.
Sharpe, Marcfla, Swansea (Co. D, 20th reg.), age 61.
Shealy, Ellzabeth, Fredonia (Co. K, 20th reg.), age 72.
Shealy, Eliza E., Lorena (Co. K, 20th S. C. V.), age 63.
Shealy, Pollle, Summit (Co. H, Holcomb Legion), age 76.
Steel, Jemlma, Summit (Co. C, 15th S. C. V.), age 78.
Sturkle, Ann, Woodford (Co. D, 20th reg.), age 62.
Wolf, Mary A., Sandy River (Co. B, 7th S. C. C.), age 66.
Class O, No. 4, 1908.
Bouknight, Sarah Ann, Lewiedale (Co. F, 5th Cav.), age 62.
Derrick, Martha, Lorena (Co. C, Rumph's), age 72.
Hallman, E. C., Prlcevllle (Co. F, Sth S. C.), age 63.
Eelsler, Eliza (Co. A, Bth), age 67.
JeIfcoat, Carollne. Edmond (Co. I, 6th reg.), age 70.
Mack. Mary M., Swansea (Co. D, 20th reg.), age 60.
Nates, Julia C., Hilton (Co. C, 20th Bat.), age 61.'
Class C, No. 4, 1908.
Addison, Martha Jane. Irmo (Co. C, 20th reg.), age 61.
Derrick, Happy C., Peak (Co. H, 13th reg.), age 60.
Gunter, Mary, Selvern (Co. I, 20th S. C. V.), age 60.
Hooper, A. Helen, Woodford (Co. D, 20th S. C.), age 61.
Hallman, C. L., Lewledale (Co. F, P. S. S.), age 61.
Jeficoat, Rachel E., Wltts Mills (Co. D, 20th reg.), age 62.
Lybrand, E. Carollne, Leilngton (Co. H, 20th reg.), age 64.
Myers, Nancy, New Brookland (Co. G, 14th S. C.), age 67.
Martin. Susan F., Swansea (Co. A, Holcomb Legion), age 60.
Risinger, Frances (Co. C. 15th S. C. V.), age 77.
Smith, Carrle F., Swansea (Co. B, 7th reg.), age 60.
Shealy. Mary L., Leesville (Co. C, 15th S. C. V.), age 63.
Yougnner, C. E., Clarks Mills (Co. K, 20th reg.), age 72.
Wlllams. Ninnette, Steedman (Co. I. 25th reg.), age 77.
Wlse, Sophla, Gaton (Co. H, 20th reg.), age 62.
Class C, No. 4, 1904.
Chapman, Martha, Chapln (Co. B, 14th reg.), age 61.
Flelds, Grassie A., Lexington (Co. F. 5th reg.), age 62.
Franklla, Mary Ann, Lexington (Co. K, 13th reg.), age 66.
Hyler, Ellzabeth, Adair (Co. C, 15th reg.). age 78.
Heudrix, F. D., Leilngton (Co. K, 13th reg.), age 75.
Hall. Martha, Selvern (Co. I, 22d reg.), age 76.
Price. Mary M., Lewledale (Co. C, 15 th reg.), age 62.
Taylor, Sarah Ann, Lewledale (Co. H, 20th reg.), age 69.
Olass O, No. 4, 1905.
Boatwright, Patsey, Gllbert (Co. C, Merriwether), age 70.
Dalley, A. M., Irmo (Co. C. 20th), age 62.

Ellisor, Ellen, Irmo (Co. H, 13th), age 62.
Gantt, Mary, Seivern (Co. C, 27th) age 75.
Hook, Harrlett, New Brookland (Co. H, 20th), age 78.
Monts, Rebecca, Lexington (Co. B, 5th), age 72.
Kaminer, Susan M., Lexington (Co. F, 5th), age 75.
Sox, S. E., New Brookland (Co. H, 20th), age 72.
Shealy, R. C., Pellon (Co. K, 1st), age 64.
Spires, Elizabeth, Pellon (Co. H, 20th), age 73.
Taylor, Mary M., Irene (Co. H, 20th), age 60.
Class C, No. 4, 1906.
Boatwright, Mary E., Leesville (Co. K, 13th), age 60. Coogler, Martha, Hilton (Co. B, Reserves), age 68. Canady, Martha A., Gilbert (Co. E, 1st S. C. I.), age 74.
Jones. Sallie, Batesburg (Co. I, 20th), age 72.
Redmond, Carrie, Swansea (Co. K, 1st), age 65.
Metz, Annle E., Ballentine (Co. C, 20th), age 64.
Long, Lavenla, Lexington (Co. B, 6th), age 63.
Wise, Frances, Chapin (Co. F, 5th cav.), age 60.
Class C, No. 4, 1907.
Banks, Addie, Leesville (Boykin's Rangers), age 60.
Cook, Sarah C., Gaston (Co. H, 20th), age 62. Chaney, Narcissus, Pellon (Co. K, 13th), age 60. Derrick, Luclnda, Leesville (Co. C, 15th), age 71. Fry, C. E., Lexington (Co. H, 20th), age 74. Fulmer, Elizabeth, Pine Ridge (Co. B, 1st), age 89. Harmon, Ann, Lexington (Co. F, 5th Cav.), age 79. Mitchell, Georgia, Batesburg (Co. F, 19th), age 61. Miles, Margaret, Gllbert (Co. C, 15th), age 60. Mathias, Maria L., New Brookland), age 60.
Reynolds, Salle, Batesburg (Co. F, 19th), age 69. Shealy, E. L., Summit (Co. H, 3d), age 60. Sox, Mary 8., New Brookland (Co. H, 20th), age 77. Stoudemeyer, Annie C., Peak (Co. H, 13th). Steadman, H. A., Batesburg (P. S. S.).

## MARION COUNTT.

## CEANGES IN ROLL SINCE LABT PATMENT.

Dead-Class A: Joshua Byrd. C, No. 1: P. A. Jordan. C, No. 2: A. L. Gasque, A. C. Lupo, W. H. Rogers.

Dropped on Account Property-Wilson Hays.
Transferred to Other Classes-Harmon Herring, W. T. McKenzie, Asa Turbeville, Edward B. Herring from C, No. 2, to C, No. 1.
'Class B, 1901.
Alford, D. W., Dillon-Co. H. Orr's reg. (Lost left arm.)
Boatwright, R. S., Tabernacle-Co. I, 21st 8. C. I. (Lost left leg.)
Deaver, Alex, Dillon-Co. L, 10th S. C. V. (Lost one leg.)
Gasque, W. B. R., Marion-Co. L, 21st reg. (Arm useless from wounds.)
Hodge, James A., Marion-Co. D, 10th S. C. reg. (Lost right arm.)
King, Alex, Zion-Co. C, 20th N. C. reg. (Use left hand, wounded shoulder and hip.)
Sanders, Peters, Centenary-Co. H, Orr's reg. (Entire use of arms from wounds.)

Olass O, No. 1, 1901.
Alford, J. W., Carolina-Co. H, Orr's Rifles. (Wounded arm and side.)
Brown, G. W., Mulling-Co. I, 18th S. C. reg. (Wounded in left shoulder.)
Carter, John W., Marion-Co. L, 31st S. C. V. (Wounded left thigh.)
Coleman. Daniel D., Marlon-Co. G, 20th N. C. I. (Wounded foot and hip.)
Edwards. Levl H., Mullins-Co. K, 1st S. C. V. (Wounded varlous parts body.)
Flowers, B. A., Nebo-Co. L, 10th S. C. reg. (Wounded left shoulder.)
Godbold, J. G., Marion-Co. E, 23d S. C. (Arm partlally paralyzed from wound.)
Harper, J. M., Marion-Co. F, 10th reg. (Wounded right leg.)
MrClellan, S. C., Marion-Pee Dee Light Artillery. (Wounded in thigh.)
Mciendon, Richard F., Bingham-Co. H, 21st reg. (Wounded through thigh.)
Roberts, R. R., Fork-Co. H. Orr's Rifles. (Wounded in body.)
Tarberville, Geo., Marion-Co. D, 25th's. C. V. (Wounded right knee.)

Class C, No. 1, 1902.
Gray, Richard F., Campbells Bridge-Co. I, 1st reg. (Wounded in hip.)
Class C, No. 1, 1909.
Gowde, C. B., Oakgrove (Co. F, 10th S. C.) Wounded in left side.
Gainey, Andrew J., Sellers (Co. G, 15th La.) Wounded in hip.
Hodgem, John H., Marion (Gregg's bat.) Wounded left leg.
Jackson, Willlam J., Latta (Co. H, 23d S. C.) Wounded in head.
Class C, No. 1, 1904.
Baxley, Levi, Latta (Co. D, 10th reg.) Wounded in left leg.
Perritt, Asa, Zion (Co. H. 23d reg.) Wounded in head.
Rogers, Allen (Co. E. 1st S. C. V.) Wounded in left foot.
Clas8 C, NO. 1, 1906.
Cribb, W. T., Mullins (Co. E, 1st S. C. V.) Wounded in arm.
Clase C, No. 1, 1907.
Herring, Fdmund B., Dillon-Co. C, 28th S. C. (Wounded in right leg.)
Herring, Harmon, Dillon-Co. I, 1st S. C. (Wounded in thigh.)
McDaniel, James A., Dillon-Co. H, Orr's Rifies. (Wounded In thigh.)
McKenzle, W. T., Dillon-Co. H, 23d B. C. V. (Wounded in arm.)
8weat, Noah, Dlllon-Co. E, 23d. (Wounded in shoulder.)
Turberville, Asa, Fork-Co. I, 21st. (Wounded in left arm.)

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Olass C, No. 2, 1901.
Baxley, Willis, Marion (Co. D, 10th S. C.), age 77.
Berry, Joseph A., Mullins (Co. C, 26th S. C. R.), age 62.
Boatwright, Eli, Marlon (Co. F, 27th reg.), age 67.
Boatwright, John J., Toby (1st Co. Fla. Cav.), age 61.
Brown, Stephen, Muling (Co. F, 4th S. C. C.), age 61.
Bryant, J. W., Marlon (Gregg's Battery), age 62.
Calder, James, Sellers (Co. F, 27th reg.), age 62.
Campbell, J. A., Car (Co. H, 1st S. C. A.), age 79.
Campbell, Simeon, Marion (Co. C, Alston's Artllery), age 71.
Collins, William, Marion (Co. D, 10th reg.), age 76.
Davls, B. F., Nebo (Co. A, 1st S. C. R.), age 64.
Dlliard, J. H., Mulling (Co. F, 4th S. C. C.), age 63.
Flowers, J. H., Marion (Co. F, 4th S. C. C.), age 64.
Flowers, Willamson, Tabernacle (Co. D, 10th S. C. V. I.), age 67.
Ford, H. P., Gaddy (Co. E, 1st reg.), age $B 0$.
Foxworth, A. J., Marion (Gregg's Artillery), age 67.
Hays, J. H., Oak Grove (Co. E, 25th S. C. V.), age 72.
Hays. Nicholas W., Oak Grove ( $\mathrm{Co} . \mathrm{H}, 23 \mathrm{~d}$ reg.), age 60.
Harrellson, Allen D., Nebo (Co. A, 1st S. C. reg.), age 65.
Hatchell, G. W. (Co. E, P. B. L. A.)
Hugging, Wlllam, Sellers (Co. L, 21st B. C. V.), age 67.
Hulett, Whilam D., Centenary (Co. C, 10th S. C. reg.), age 64.
Hulon, E., Mullins (Pegram's reg.), age 63.
Johnson, David, Brittons Neck (Co. I, 21st reg.), age 63.
Johnson, H. G., Temperance (Co. H. 23d reg.), age 63.
Jones, W. A., Oakton (Co. C, Pegram's reg.), age 67.
LeGette, Levl, Campbells Bridge (Co. L, 21st reg.), age 69.
Lee, Christopher, Dillon (Co. H, 23d reg.), age 88.
Lee, Richard, Dillon (Co. H, 2d S. C. V.), age 64.
Lowrlmore, M. M., Brittons Neck (Co. I, 21 st S. C. I.), age 74.
Miller, John. Temperance (Co. F. 1st S. C. reg.), age 64.
Phillips, Isaac, arlal (Co. C, 26th S. C. V.), age 60.
Port. Peter, Brittons Neck (Ward's Art.), age 66.
Raison, Joseph T., Latta (Co. B, 66th reg.), age 66.
Rogers, E. A., Fork (Co. F, 4th S. C. C.), age 72.
Rogers, Whils, Zion (Co. H, 23d reg.), age 61.
Rowell, David, DIllon (Co. H, 2d S. C. V.), age 70.
Rowell, Jesse, Fork (Co. H, 23d R. S. C. I.), age 64.
Rowell, John II., Dllion (Co. H, 2d S. C. V.), age 68.
Sawyer, Thomas, Tabernacle (Co. L, 10th S. C. V.), age 73.
Shaw, A. A., Marlon (Co. C. 8th S. C. A.), age 61.
Shaw, Danlel, Marion (Co. H. Orr's reg.), age 60.
Smith, F. D., Mallory (Co. E. 23d reg.), age 64.
Smith, J. R., Gallavon (Co. E, 4th S. C. C.), age 78.
Tanner, T. W., Oakton (Co. F, 4th S. C. reg.), age 74.
Turbeville, G. W.. Temperance (Co. H, 23d reg.), age 62.
Waller, J. M., Tabernacle (Co. L, 10th reg.), age 64.
Watson, J. E., Nebo (Co. B, 8th S. C. reg.), age 71.
Weatherford, J. L., Campbeils Bridge (Co. B, Pegram's bat.), age 69.
WhittIngdon. J. G., Oak Grove (Co. F. 23d S. C. V.), age 62.
Whlliams, C. W., Gallavon (Co. 1), 26th reg.), age 64.
Wright, D. C., Marion (Co. H, Orr's reg.), age 62.

Bethea, W. F., DIllon (Co. B, 1st Fla.), age 60.
Cribb. S. M., Nebo (Co. A. 21 st reg.), age 60.
Chrlstmas, J. C., Marion (Co. M, 8th reg.), age 67.
Davis. H. F., Brittons Neck (Co. K, 1st reg.), age 62.
Dozler, John F., Oakton (Co. I. 21st reg.), age 71.
Edwards, D. W., Mullins (Co. B, Pegram'g), age 68.

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Finklea, Alfred, Latta (Co. H, Orr's Rifles), age 62.
Flowers, Elly, Marion (Co. L, 10th reg.), age 61.
Herring. Samuel, Gaddy (Co. I, 8th reg.), age 67.
Hyatt, John D., Dillon (Co. I, 1st 8. C.), age 70.
Ivey, John Q., Smith (Co. A, 1st N. C.), age 62.
Jones, Nelson, Smith (Co. C, 10th S. C.), age 64.
Loyd, T. M., Nebo (Co. D, 10th reg.), age 60.
MeClellan, D. B., Nebo (Co. I, 4th reg.), age 60.
Rlchardson, A. J., Brittons Neck (Co. F, 10th bat.), age 60.
Blchardson, W. P., Nebo (Co. C, Pegram's), age 60.
Rlchardson, J. G., Denhams (Co. I, 21st S. C. V.), age 60. Turver, Joseph, Dllon (Co. H, 23d reg.), age 61.
Wiggins, John M., Marion (Co. C, 26th S. C.), age 66.
Watson, John, Latta (Roberts's Co., 28d S. C.), age 75.
Yarborough, A. (Co. E. 14th N. C.), age 60.

## Olass O, No. 2, 1903.

Atkinson, Jesse A., Mulling (Co. I, Bth Cav.), age 61. Berry, Jay, Oak Grove (Co. E, 23d reg.), age 62. Calder, Noah, Latta (Co. D, 25th reg.), age 67. Capps, Frank, Smlth (Alston': Lt. Art.), age 62. Collins, Owen R., Mallins (Co. C, Pegram's Art.), age 64. Fowler, James F., Mulling (Co. L, 21st S. C.), age 68. Herring, Arthur, Dillon (Co. C, 26th reg.), age 60. Hodges, R. C., Dillon (Co. B, 24th reg.), age 60. Jones, Chesley D., Mullus (Co. C, Alston's), age 60. Jackson, Labon E., Latta (Co. E, 4th Cav.), age 64. Martin, Robert C., Mullina (Co. H, 1st S. C.), age 60. Moodey, John Thomas, Fork (Alston's Lt. Art.), age 60. Eogers, R. C., Marion (Co. C, Gregg's Art.), age 64.

Class C, No. 2, 1904.
Abbott, Simeon, Pages Milis (Co. C, 26th S. C.)
Clark, W. P., Marlon ('しo. D, 10th S. C.)
Crawford, G. G., Latta (Co. B. 24th S. C. V.)
Godbold, Ilugh, Latta (Co. E. 23d reg.)
Hays, Alez. G., Latta (Co. H, 23d reg.)
Lane, George W., Mulling (Co. H, 23d reg.)
Meclellan, F. T., Dlllon (Co. I, 21st reg.)
Rogers, David, Mullins (Co. D, Manigault's).
Woodle, Jobn W., Latta (Co. E, 20th S. C.)
Class O, No. 2, 1905.
Brown, Dr. M. N., May (Co. K, 12th Miss.)
Gregg, Alex. M., Centenary (Co. K, 21st L. C.)
Hyatt, Peter P., Latta (Co. H, 23d).
Hulon, Wm. P., Fork (Co. E, 23d).
Hunt, Charles, Latta (Co. H, 2sd S. C.)
MeGill, D. D., Little Rock (Co. L, 8th).
MeCormac, Peter P., DHIon (Co. H. 25d).
McDaniel, G. A. M., Hamer (Co. H, Orr's).
Perritt, David, Zion (Co. H, 23d).
Feritt, Needham, Zion (Gregg's Artil.)
Class C, No. \&, 1906.
Drew, Thos. J., Marion (2d reg. State Troops).
Gllbert. J. F., Bingham (Co. D, 25th S. C.)
Lenter, Robt. H., Little Rock (Co. F, 23d).
Lupo, William, Mallins (Co. A, Gregg).
Lupo, John D., Marion (Co. C, 2d S. T.)

Miller, Z. H., Hamer (Co. E, 51st N. C.)
Miller, Henry W., Pages Mill (Co. C, 28th).
McKenrie, Ell, Dillon (Co. D, Ward's).
Perritt, Ferd P., Marion (Gregg's Battery).
Smith, James K., Latta (Co. E, 23d).
Turner, John C., Centenary (Co. I, Hagood's).
Thompson, J. W., Mullins (Co. C, 36th N. C.)
White, J. E., Centenary (Co. C, 2d S. T.)
Olass C, No. 2, 1097.
Drew, Nathan, Marion (Gregg's Battery).
Pace, W. J., Dlllon (Co. C, Pegrum's Bat.).
SkIpper, Nathan M., Mullins (Co. D, 20th.)
Class C, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Servioe of the Oonfoderate States.
Blue, Janet, Hamer (Co. I, 1st S. C. reg.)
Class C, No. S, 1908.
Balley, Martha A., Dillon (Co. E, 23d S. C. V.)
McDanlel, Abl, Car (Co. I, 1st S. C. Inf.)
Class C, No. S, 1904.
Richardson, Mary J., Centenary (Co. L, 10th reg.)
Class C, No. S, 1905.
Thomas, Mary, Marion (Co. L, 10th).
Class C, No. S, 1906.
Moody, Martha, Bermuda (Co. E, 1st S. C.)
McMillan, E. S. (L. M. Edmund's Co.).
Class C, No. 4, 1901.
Alford, Sarah J., Marion (Co. D, 25th reg.), age 78.
Altman, M. J., Mullins (Co. D, 10th reg.), age 63.
Ralley, Elizabeth, Dillon (Kilpatrick's 1st S. C. V.), age 66.
Bass, Ellzabeth, Gallavon (Co. E, 51st Bat.), age 76. Calder, Annle, Latta (27th S. C., Alston's reg.), age 65.
Collins, Jane, Tabernacle (Co. L, 21st reg.), age 63.
Davis, Mary J., Fulonia (Co. F, 4th S. C. C.), age 64.
Dozier, Ann, Marion (Co. 1, 21st reg.), age 60.
Deas, Laura, Sellers (Co. I, 6th S. C. C.), age 76.
Ewart, S. A., Marion (Co. K, P. S. S.), age 70.
Gaddy, Margaret, Dillon (Co. I, 1st S. C. V.), age 63.
Gasque, Ann E., Centenary (Co. I, 21st S. C. V.), age 72.
Goodman, E. J., Eulonla (Co. F, 19th Inf.), age 63.
Graham, Amanda, Latta (Co. I. 25th reg.), age 60.
Gray, Lita, Car (Co. H, Cash's reg.), age 74.
Hamer, Mary Ann, Oak Grove (Co. G. 23d reg.), age 65.
Hamilton, Mary A., Dillon (Co. I, 1st S. C. V.), age 68.
Hardee, L. E., Latta (Co. G, Hampton's Legion), age 73.
Harrellson, P. A., Marion (Co. F, 4th S. C. C.), age 64.
Hayes, Adaline, Gum Swamp (Co. K, 8th reg.), age 65.
Herring, Catherine, Latta (Co. I, 1st S. C. reg.), age 75.
Hucks, Ann R., Brittons Neck (Co. I, 21 st S. C. V.), age 70.
Huggins, Martha A., Mullins (Co. A, 1st reg.), age 60.
Kersey, Mary, Dillon (Co. H, 23d reg.), age 68.

Lane, Lillian, Latta (Co. E, 2bth reg.), age 70.
Lee, Flora Ann, Latta (Co. H, 28d reg.), age 64.
Love, Harriet, Oat Grove (Co. E, 23d), age 63.
Lundy, Margaret, Oak Grove (Co. D, 25th S. C. V.), age 65.
MeDanlel, A. E., Marion (Co. I, 21st reg.), age 60.
Martin, Mary E., Mullins (Falrles's, 1st S. C. R.), age 65.
Moore, Jane, Oak Grove (Co. D, 10th), age 64.
Porters, Elizabeth J., Oak Grove (Co. H, 33d S. C. V.), age 63.
Proctor, Emelline, Mullins (Co. E, 4th reg.), age 71,
Reagan. C. A., Centenary (Co. I, 2d S. C. C.), age 65.
Snlpes. Cbarity, Marlon (Co. E, 25th S. C. I.), age 63.
Taylor. Elizabeth J., Bethea (Co. F, White's P. B. L. A.), age 62.
Thomas, Eliza, Marion (Co. B. Gregg's Bat.), age 68.
Turner, Orpha (Co. C, 23d reg.), age 63
Walker, Julia, Car (Co. C, Harlee Legion), age 77.
Waller, Jane, Marion (Co. I, 21 st S. C. reg.), age 79.
Ward, Ellzabeth, Dillon (Co. H, 23d reg.), age 72.
Watson. Sarah A., Zion (Co. H, 23d reg.), age 68.
Weatherford, Mary, Oak Grove (Co. H. 8th S. C. reg.), age 68.
Whaley, Rebecca, Centenary (Co. I, 21st reg.), age 64.
Class G, No. 4, 1902.
Bonds, Sophia, Dillon (Co. B, 10th reg.), age 62.
Blrd, Sarah, Toby (Smlth's Art.), over 60.
Dew; A. E.. Vebo (Co. Li, Orr's reg.), age 68.
Flnklea, F. Jane, Latta (Co. H, Orr's Rifles), age 60.
Harrellson, Christine, Pages Mills (Co. F, 4th reg.), age 70
Hugging, Mary Ann, Fork (Co. A, Alston's), age 77.
Lewis, Temperance, Mullins (Co. B, Alston's), age 63.
Lester. Susan J., Oakton (Co. H, Orr's Rilles), age 70
Norton. Emmeline, Little Rock (Co. F, 23d), age 67.
Perritt, Rebecca Ann, Zion (Co. C.), age 61.
Page. Henrietta, York (Co. C, 26th S. C.), age 61.
Rogers, Amella J., Mullins (Co. L, 21st reg.), age 64
Richardsan, Rebecra, Nebo (Gregy's Artlllery), age 60.
Reares, Francenia, Mulling (Co. A, 18 th N. C. reg.), age 63.
Rogers, Julia Ann, Kentyre (Co. H, Orr's), age 70.
Shaw, Sarah E., Marion (Co. F, 1st S. C.), age 60.
Stalvey. dilla C., Bakers (Co. L, 7th S.C.), age 60.
Class C, No. 4, 1908.
Altman, A. K., Centenary (Co. I, 21st Inf.), age 60.
Bryant, Rose Ann, Mulling (Co. D, Gregg's bat.), age 72.
Briginan, A. E., Oat (Co. F, 23d reg.), age 01.
Clevis. Meivina b., Dillon (Co. B, 10th S. C.), age 65.
Calder. Margaret, Latta (Co. H, 23d S. C.), age 66.
Mckinley. Sarah E., Dillon (Co. B, 24th S. C. V.), age 64.
Martin. Treecy Caroline, Mullins (Co. I, 21 st reg.), age 63.
McDaniel, Mary A., Marion (20th B. C. C.), age 61.
Parrish, Nancy F., Mullins (Co. B, 10th N. C.), age 67.
Snead. Mary E., Hamer (Co. L, 8th S. C. V.), age 61.
Taglor, Mary, Dillon (Co. D, 7 th reg.), age 62.
Class C, No. 4, 1904.
Coleman, W. D., Marlon (Co. L, 10th reg.), age 60.
Holden, Rebecca, Mullins (Co. L. 10th reg.), age 72.
Perritt, Martha, Zion (Co. B, Gregg's), age 69.
Parham, Kachel R., Marion (4th s. C. C.), age 65.
Sawyer, Margaret A. (Co. D, 7th reg.). age 73.

Class C, No. 4, 1905.
Alford, Sarah E., Marion (Co. F, 4th S. C. C.), age 85.
Collins, Trecy, Mullins (Co. L, 10th S. C.), age 70.
Campbell, Eliza A., Dillon (Co. E, 1st), age 83.
Gasque, Virginia A., Mullins (Co. L, 21st), age 61. Jackson, Nancy, Dillon (Co. C. 26th), age 77.
Porter, Susannah, Oak Grove (Co. H, 22d), age 65.
Rogers, M. A., Mullins (Co. C, Gregg's), age 60.
Class C, No. f, 1906.
Blackman, Mag, Latta (Co. E, 23d), age 62.
Cribb, Seneath, Mullins (Co. E, 1st S. C.), age 64.
Evans, Tracie H., Marion (Co. K, 1st), age 60.
Johnson, Mary Jane, Marion (10th S. C.), age 66.
Rodgers, Caroline, Mullins (Co. 7th), age 77.
Smithy, Telatha, Marion (Co. D, 7th), age 76.
Class C, No. \&, 1907.
Atkinson, Elizabeth, Marion (Co. G, 6th Cav.), age 75.
Cook, Emily, Marion (Co. B, 50th N. C.), age 71.
Gasque, S. Elizabeth, Mullins (Co. I, 21st), age 65.
Hulon, Nancy, Dillon (Co. I, 1st), age 60.
Hayes, Elizabeth, Marion (Co. D, 25th), age 70.
Thomas, M. E. A., Centenary (Co. E, 1st), age 69.

## marlboro County.

## CHANGES IN ROLL BINCE LABT PATMERT.

Dead-C, No. 2: Josiah Gay, A. A. Graham, A. H. Kolght, James W. Stanton, James T. White, G. W. Wright, J. C. Brigman, John Gunter, J. L. Odam, Thos, Ammons. C, Ne. 4: Jane S. Knight, Sarah Quick, M. C. Rivers, Martha Hathcox, Garah S. Coxe, Rachel Pearson.

Transferred to Other Counties-T. C. Whitaker to Lancaster. J. F. Bmith to Horry.

Remarried-B. L. Hill C, No. 4.
Transferred to Other Clasnes-A. T. Qulck from C, No. 2, to $\Delta$.
Transferred From Other Countleg-J. O. Carpenter from Chesterfeld County.

## Class A.

Qulch, Aaron T., Kollock-Co. D, 26th 8. C. V. (Blind.)
Clase B, 1901.
Ammons, Silas, McColl-Co. G, 23d S. C. (Lost one leg.)
Cope. J. T., Bennettoville-Spark's Cavalry. (Lost one leg.)
Qulck, Nelmon, Kollock-Co. C, 5th reg. (Arm nseless from wounde)
Class C, No. 1. 1901.
Hargrove, D. T., Bennettaville-Co. K, 8th S. C. V. (Wounded left thigh.)
Irby. W. M., Kollock-Co. G, 8th S. C. (Wounded left arm.)
Class C, NO. 1, 1902.
Hubbard, Martin, Brightaville-Co. B, 24th reg. (Wounded In right hand.)
Clase C, No. 1, 1904.
Wleker, L., Bennettoville (Co. C, 1st Artll.) Wounded in leg.
Clase C, No. 2, 1901
Bristow, E. H., Tatum (Co. E, 23d reg.), age 63.
Bass, Wade H., Bennettisvlle (Co. E, 4th reg.), age 65.
Beasley, Nell, MCColl (Co. F, 18th N. C.), age 66.
Bristow, J. M., Bennettsville (Beauregard's Battery), age 65.
Calder, J. A., Newtonville (Co. F, 18th N. C.), age 68.
Carter, William, Key (Co. G, 23d reg.), age 64.
Chavis, Alex, Newtonville (Co. D, 26th reg.), age 67.
Chavis, Willis J., Ogborne (Co. D, 26th S. C. V.), age 61.
Clarke, Alex., Kollock (Co. H, Ist S. C. regulars), age 64.
Clark, W. R., Bennettaville (Co. L, 20th reg.), age 71.
Core, W. E., Bennettaville- (Co. G, 23d reg.), age 61.
Commlogs, Ellsha, Cllo (Co. F, 21st 8. C.), age 67.
Driggers, EII, Kollock (Co. D, 26th reg.), age 65.
Drggers, J. H., Bennettaville (Co. G, 23d reg.), age 65.
Earles, Elijah, Bennettspllle (Co. F, 4th reg.), age 60.
Gaddy, J. C., Bennettaville (Co. A, 4th Cav.), age 68.
Glibert, R. G., Bennettaville (Co. G, 23d reg.), age 68.
Grant, Peter, Kollock (Rhett's Regulars), age 73.
Grooms, J. C., Bennetteville (Co. C, 1st B. C. I.), age 72
Hinion, J. B. (Co. G, 8th reg.), age 60.
Hatheock, Samuel, Cllo (Co. G, 23d reg.), age 63.
Hinson, J. P., Bennettrvilie (Co. B, 24th S. C. I.), age 65.
Jacobe, A. B., McColl (Co. B, 24th reg.), age 62.
Jonea, D., MeColl (Co. F, 18th N. C.), age 61.
Lorkller, Wash., Cllo (Co. H, 23d reg.), age 66.
MeColl, Slles 8., Cllo (Co. D, 28d reg.), age 62.

McQueeñ, John, Bennettsville (Co. G, 8th S. C. I.), age 64.
Parker, Andermon, Kollock (Co. D, 26th S. C. V.), age 71.
Polson, Charles, Cllo (Spark's Cavalry), age 71.
Polson, Jerry, Clio (Spark's Cavalry), age 65.
Quick, Mardock, Bennettsville (Co. B, 24th S. C. I.), age 79.
Rascoe, A. H., Bennettspllle (Co. F, 21st reg.), age 63.
Roller, Benj., Bengettaville (Co. D, 26th reg.), age 88.
Roller, William, Kollock (Co. D, 26th reg.), age 60.
Smlth, J. D., Bennettsville (Co. G, 22d N. C.), age 64.
Strickland, Hardy, Kollock (Co. D, 23d N. C.), age 63.
Spears, H. N. (Co. D, 23 d reg.) Transferred from Sumter.
Turnage, P. A., Bennettavlile (Co. B, 8th reg.), age 61.
Wallace, James, Covington (Co. D. 46th N. C. reg.), age 72.
Wllkes, J. W., Blagham (Co. B, 25th reg.), age 73.
Whllams, David, Kollock (Co. G, 8th reg.), age 72.
Woodie, Harrls, Newtonvlle (Co. D, 46th N. C.), age 74.

## Class C, No. 8, 1902.

Calder, Alex., Cllo (Co. D, 18th S. C. B.), age 65.
Calder, Robert, McColl (Co. B, 24th S. C.), age 61.
Clarke, Hugh, McColl (Co. K, 8th S. C.), age 75.
Davis, J, P., Bennettsville (Co. I, 49th N. C.), age 72.
Driggers, Jesse G., Kollock (Co. G, Cash's reg.), age 73.
Graham. W. M., Red HIII (Co. B. 8th S. C.), age 66.
Grant, J. T., Kollock (Co. D, 20th reg.), age 61.
Lee, J. C., McColl (Co. G, 1st Infantry), age 65.
ONalls (Co. G, 9th).
Parham, Andrew, Brightaville (Co. B, 24th reg.), age 62.
Stone, J. T., Bennetteville (Co. H, 5th S. C. C.), age 62.
Sbarkle, J. A., McColl (Co. H, 14th N. C.), age 62.
Webster, G. F., McColl (Spark's Co., 20th reg.), age 60.
Wlllams, L. W., Bednettaville (Co. B, 24th S. C. V.), age 63.
Class C, No. E, 1005.
Ammons, J. T., Cllo (Co. H, Orr's Rifles).
Miller, Blaney, Bennettsville (Co. I, 18 th S. C. V.), age 61. McCall, J. D., Clio (Co. A, 23d S. C. V.), age 81.
Powers, J. F.. Bennettgille (Co. F, 21st S. C. V.), age 60. Rascoe, G. W., Brightsville (Co. G, 18th S. C. V.), age 63.
Sanders, J. O., Bennettsville (Co. A, 2d N. C.), age 61.
Wallace, T. G., Bengettsville (Co. F, 21 st S. C. V.), age 60.
Class C, No. 2. 1904.
Bullard, Wlllam, Newtonville (Co. C, 1st Inf.)
McDonald, N. N., Bennettspille (Co. A, Rhet'ts).
Class C, No. 2, 1905.
Bullard, E., McCall (Co. A, 46th N. C.)
Barber, James, Bennetisvllle (Co. E, 38th N. C.)
Clark, J. W., Bennettoville (Co. G, 2sd S. C. V.)
Carpenter, J. O. (Co. K, 26th). From Chesterfield.
Driggers, Wm., Kollock (Co. M, Palmetto).
Hammond, David, C:lo (Co. K, Inglis's).
Lavlner, Isanc. Bennettaville (Co. K, 2d Rifies).
McLemore, H. L., McCall (Co. C, 35th N. C.)

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\text { Class O, No. 2. } 1906
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Clark, Daniel, Clio (Co. G, 23d S. C. V.)
Parish, J. H., Bennettsville (Co. G, 23d B. C. V.)
Whlttingdon, W. G., Brownvllle (Co. D, 25th S. C. V.)

Widosos of Soldiers Who Lost Their Lives in the Service of the Oomfederate Alates.
Biddle, Mary, Kollock (Co. D, 26th reg.)
Bullard, Mariah A., Brownsville (Co. E. 23d reg.)
Bundy, Nancy (Co. F, 21st S. C. V.)
Carter, Amanda P., Bennettaville (Co. G, 28th reg.)
Crowles, Fllen, Bennettaville (Co. K, 8th reg.)
Dunn, Mary Ann, Brightsville (Co. B, 24th S. C. V.)
English, Nancy, Bingham (Co. D, 20th S. C. V.)
Hyatt, Jophena, Bennettsville (Co. H, 23d reg.)
Johnson, Martha, Brighteville (Co. B, 24th reg.)
Paul, Ellzabeth, Kollock (Co. I, 1st reg.)
Sweat, Sarah, Kollock (Co. D. 25 th reg.)
Quick, Venetta, Brightsville (Co. I), 28th reg.)
Class C, No. s, 1902.
Loctller, Feraby, McColl (Co. G, 23d S. C. V.)
Clas8 C, No. S, 1903.
Hatcher, Mary Jane (Co. D, 28th S. C. V.)
Class C, No. S, 1904.
Odam, Mary Jane, Bennettaville (Co. F., 4th S. C. C.)
Class C, No. \&. 1901.
Bennett, Ellen J., Kollock (Co. B, 24th reg), age 60.
Brigman, Sophia, Kollock (Co. D, 26th reg.), age 61.
Barrington, Carollne, Brightsville (Co. D, 26th reg.), age 75.
Caider, Caroline, Cllo (Co. C, Hampton Legion), age 68.
Chavia, Mary, Brightgville (Co. D, 26th reg.), age 60.
Chavis, Mary Anna, Kollock (Co. D, 26th reg.), age 67.
Driggers, Adeline, Clio (Co. E, 4th reg.), age 70 .
Gulnn, Fimma, Bennettsille (Co. D. 26th reg.), age 60.
Hogan, Amanda, Newtonville (Co. H, 44th N. C.), age 70.
Jackson, Clarlcy C., Bingham (Co. F., 4th S. C. V.), age 03.
Johnson, Martha, Bennettgyille (Co. B, 31st N. C.)
Kersey, Kitsey, Draka (Co. H, 23d reg.), age 66.
McQuage, Mary, Bennettaville (Co. D), 1st S. C. I.), age 02.
Miles, Emmeline, Brownsville (Spark's Regiment), age 63.
Norton, Elizabeth, Clio (Co. B. 24th reg.), age 60.
Norton, L. J., McColl (Co. F. 8th Bat.), age B0.
Parker, Flizabeth, Hennettsville (Co. C, 4th S. C. C.), age 65.
Rogers, M. A., Bennetisville (Co. D, 26 th reg.), age 82.
Rivers, M. C., Bennettsville (Co. B, 26 th reg.), age 64.
Stackbouse, M. F., Bennettsville (Co. F. 4th reg.), age 60.
Thomas, Mintle, Bennettaville (Co. E, 4th S. C. C.), age 62.
Class C, No. 4, 1902.
Ammong, Julla A.. Donaho (Co. B. 24th S. C. V.), age 68. Bottoms, Morning, Deake (Kelly's Co., Colt's bat.), age 72.
Chavis. Perry, Kollock (Co. D, 26th S. C. V.). age 63.
Summerford, Lessie And, Brownspllle (Co. G, 23d reg.), age 70.
Sweatt, Rebecca, Cllo (Co. F, 4th S. C. C.), age 65.
Turner. Sarah, Bennettaville (Co. B, 24th S. C.), age 62.
Trawick, Annie, Drake (Spark's Cav.), age 60.
Wynn, Nancy, Red Hill (Co. C, 22d S. C. V.), age 62.
Clase C, No. 4, 1903.
Calder, Annle Jane, McColl (Co. G, 23d 8. C.), age 60.
Fraser, Sarah Jane, Tatum (Co. C, 20th S. C. V.), age 64.

Hays, Rebecca, Jane, Blenhelm (Co. D, 26th reg.), age 60.
Harvel, Edy (Co. G, 8th S. C. V.), age 73.
McKenzie, Carollne, Newtonville (Co. F, 21st S. C. V.), age 60. Perkins, Patsey, Kollock (Co. D, 26th S. C. V.), age 60.
Ralnwater, Ellzabeth, Kollock (Co. D, 26th 8. C. V.), age 62.
Sweatt, Mary A., Bennettsville (Co. E, 4th reg.), age 61.
Tart, D. A., Bennettspllle (Co. D, 25th S. C. V.), age 60.
Class C, No. 4, 1904.
Brigman, Levey, Brlghtsville (Co. C. 4th reg.), age 62.
Gray, Maria, Brownsville (Co. G, 23d Vol.), age 77.
Hodge, H. C., Blenheim (Co. H, Orr's), age 62.
Melton, Martha, Kollock (Co. C, 8th S. C. V.), age 73.
Pearson, Sallie, Blenhelm (Co. L, 20th reg.), age 70.
Rainwater, Edith, Kollock (Co. D, 26th reg.), age 60.
Class C, No. 4, 1905.
Chavis, Lucy J., Kollock (Co. D, 26th), age 63.
Fowler, Mary E., Dyers Hill (Co. G, 20th), age 64.
Pearson, Rachel, Bennettsille (Co. H, Hampton Legion), age 84.
Wallace, Mary, Brownvlle (Co. G, 23d S. C. V.), age 69.
Class C, No. 4, 1906.
Murdoch, Josephine, Bennettsville (Co. G, 8th), age 65.
Stevens, Ann Eliza, Bennettsville (Co. F, 21st S. C.), age 64.
Quick, Lucy, Red Bluff (Co. F. 21st S. C. V.), age 70.
Bundy, Martha A, Cllo (Co. G, 8th S. C. V.), age 60.
Brigman, Laura, Kollocks (Co. D, 26th S. C. V.), age 60.
Knight, Mary J., Bennettsville (Co. H, 1st S. C. I.), age 69.
Johnson, 8. A., Brightspllle (Chesterfield L. A.), age 66.

## NEWBERRY COUNYY.

## CHANORS IN BOLL AINCE LAST PAYMENT.

Dead-C, No. 1: W. M. Shackleford. C, No. 2: W. J. Bedenbaugh, R. R. Devidson, J. H. Kibler, D. W. Livingston, R. B. Livingston, Y. C. Myers, J. W. Tolbert, J. T. Weed. C, No. 3: Rebecca J. Hendrlx, Sarah J. Blshop, S. E. Fellers, A. E. Crooks.

Dropped for Property-Belton Wicker.
Transferred to Other Countles-W. C. Meggett to Charleston. G. S. Noland to Union.

Tranaferred to Other Classeg-From C, No. 2, to C, No. 1: R. F. Boozer, B. F. Day.

Clase B, 1901.
Basa, J. N., Newberry-Co. A, 8d B. C. I. (Lost right leg.)
Jones, W. R., Newberry-Co. A, 13th S. C. V. (Lost left leg.)
Lester, George, Prosperity-Co. H, 3d S. C. (Lost left leg.)
Clase C, No. 1, 1901.
Hitt, Raney-Co. F', Williams's. (Wounded left leg.)
Klaard, J. Phillip, Sligho-Co. C, 13 th B. C. V. (Shot In arm and back.)
Kinard, J. Prea., Pomaria-Co. D, 13th reg. (Shot in rlght leg.)
Koon, William-Co. H, 13th reg. (Wounded in thlgh.) Transferred from Lanrent.
Lathrop, G. D., Newberry-Co. B, 1st E. C. (Shot in the body.)
Moats, F. D., Kinards-Co. B, 8d B. C. V. (Paralyzed in alde.)
Bmith, T. M., Blighs-Co. C, 1st reg. (Wounded In right hand.)
Williams, W. P.-Co. G, 7 th reg. (Shot in shoulder.)
Olass G, No. 1, 1908.
Cannon, H. D., Little Mountaln (Co. C, 3d bat.) Wounded In hip.
Class C, No. 1, 1904
McKulrick, James W., Newbēry (Co. B, 3d S. C. V.) Wounded in left glde.
Clases O, No. 1, 1905.
Frankiln, W. B., Newberry (Co. B, 1st S. C.) Wounded right hand.

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\text { Class C, No. 1, } 1906
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Britt, Levl, Newberry (Co. H, Hol. Leg'n). Wounded right shoulder.
Class C, No. 1, 1907.
Boozer, B. Frank, Prosperity-Co. H, 3d S. C. V. (Wounded In hip.)
Day, B. F., Newberry-Co. B, Orr's. (Wounded in leg.)
Oloses C, No. 2, 1901.
Booser, D. T., Prosperity (Co. H, 3d reg.), age 71.
Boozer, F. A., Prosperity (Co. H. Hol. Legion), age 68.
Calmes, J. T., Newberry (Co. C, 3d reg.), age 65.
Candon, J. D., Newberry (Co. H, 4th S. Militia), age 67.
Chambers, J. B., Newberry (Co. D, James' Bat.), age 60.
Crisp. Joel T., Gary (Co. G, 8d reg.), age 82.
Davenport, W. P., Longshore (Co. B, 3d S. C. V.), age 65.
Denols, W. T., Prosperity (Co. G, 13th reg.), age 65.
Dlekert, O. A., Pronperity (Hampton's Artillery), age 73.
Fislow, John A., Whitmires (Co. H. Hol. Legion), age 61.
Folmer, Levi J., Derricts (Co. I, 15th reg.), age 70.
Gallard. J. H., Newberry (Co. K. 2d S. C. C.), age 65.
Grink. W. W., Jalapa (Co. G, 13th reg.), age 65.
Graber, Levi, Pomaria (Co. C, 3d reg.), age 67.

Klbler, Levl, Proaperity (Co. C, 3 d reg.), age 62.
Livingston, D. T., Slighs (Co. B, 2d S. C. C.), age 70.
Livingston, M. H. (Co. F, 20th reg.)
Poague, Hackett. Kinards (Co. E. 17th reg.), age 64.
Quattiebaum, J. E., Silghs (Co. G, 13th reg.), age 02.
Reese. E. W., Reuben (Co. G, Hol. Legion), age 08.
Rutherford, W. E., Prosperity (Co. G, Hol. Legion), age 61.
Sease, D. E., Helena (Co. D, 1st S. C.), age 75.
Smith, F. M., Glymphville (Co. D, 41st Miss.), age 60.
Swindler, J. W., Newberry (Co. If, 3d reg.), age 74.
Thrift, G. W., Prosperity (Co. B, 3d reg.), age 63.
Clasy C. No. है, 190*.
Clopton, W. D., Whitmire.
Cromer, F. S., Newberry (Co. F, 20th reg.), age 60.
Livingston, G. B., Slighs (Co. H, 3d reg.), age 62.
Riser, James A., Pomnia (Co. F, Palmetto Art.), age 69.
Class C. No. 2, 1903.
Elmore, W. R., Whitmire (Co. I, 13th bat.), age 60.
Fulmer, W. P., Slighs (Co. I, 15th reg.), age 68.
Werts, Jonathan, Oldtown (Co. C, Holcomb Legion), age 77.
Willngham, W. W., Newberry (Co. G. Holcomb Legion), age 62.
Clase C, No. 2, 1904
Bradley, E. P., Newberry (Co. B, 3d Inf.)
Blair, J. P., Utopla (Co. C, 3d S. C. V.)
Elson, T. J., Mayblaton (Co. D, 7th Cav.)
Kinard, Andrew, Prosperity (Co. G, 13th reg.)
Wlison, John C., Sllghs (Co. F, 20th reg.)
Wesson, I. N., Newberry (Co. H, 9th Ga. Vol.)
Class C, No. 2, 1905.
Buzhard, Levi, Newberry (Co. D, 4th).
George, Adam, Slighs (Co. F. 3d).
Whlard, D. D., Whltmire (Co. A, P. S. S.)
Class C, No. 8, 1906.
Cromer, John F., Newberry (Co. G, Hiol. Leg'n).
Davenport, J. Pink, Chappells (Co. H, 4th S. C. R.)
Dennls, D. L., Newberry (Co. G. 13th S. C. V.)
Dowd, J. M., Slighs (Co. H, 13th).
Pearson, Geo. W., Newberry (Co. A, 12th S. C. V.)
Taylor, John F., Newberry (Co. G, 13th).
Quattlebam, Jefferson, Whitmire (Co. G, 13th).
Class C, No. 2, 1907.
Augastine, W. M., Newberry (Co. I, 24th S. C.).
Boland; R. D., Prosperity (Co. I, 15th).
Buzhardt, M. H., Newberry (Co. H, Hol. Legion).
Class C, No. S, 1901.
Widoves of Soldiers Who Lost Their Lives in the Service of the Confederate States.
Bright, Sarah H.. Newberry (Co. C. 22d reg.)
Cromer, Emmeline, Glymphrille (Co. G. IIol. I.egion.)
Thompson, Rebecca J., Utopia (Co. C. 3d S. C. V.)
Class C, No. s. 1908.
Bridges, Amanda. SHghs (Co. G. 13th reg.)
Brooks, Ellzabeth (Co. C. 3d S. C. I.)

Dlckert, Mary J., Pomaria (Co. H, 13th reg.)
Hunter, M. R., Newberry (Co. D, 13th reg.)
Kinard, Margaret, Pomarla (Co. F, 20th S. C. V.)
Wheeler, M. C. E., Klaards (Co. B, 3d S. C.)
Clase C, No. s, 1904.
Chapman, Caroline, Newberry (Co. C, 20th reg.)
Kelly, Elizabeth, Pomaria-Co. H, 3d S. C. V.)
Onner, Mary A., Newberry (Co. G, Holcomb Legion).
Class C, No. S, 1905.
Kibler, L. M., Pomarla (Co. I, 14th).
Neel, F. C., Newberry (Co. E, 27th S. C.)
Clase C, No. s, 1906.
Boozer, Rebecca C., Prosperity (Co. C, 3d S. C. V.)
Class C, NO. 4, 1901.
Brooka, F. C., Prosperity (Co. F. 2d reg.), age 80.
Brown, Loulsa, Craven Hill (Co. B, 1st Vol.), age 70.
Campbell, L. Frances, Whltmire (Co. F, 20th reg.), age 64.
Campsen, Ann 8., Newberry (Bachman's Bat., Hampton Leglon), age 65.
Cannon, T. C., Newberry (Co. F, 20th reg.), age 61.
Cromer, Margaret E., Reuben (Co. G, Hol. Legion), age 65.
Cromer, Mary, Newberry (Co. C, Hol. Legion), age 60.
Cromer, liebceca, Hayne (Co. F, 20th \&. C. V.), age 69.
Darenport Buttie I.., Belfast (Co. B, 3d reg.), age 62.
Dehart, Cntherlne, l'rosperity (Co. B, 20th reg.), age 75.
Dickert, Nancy C., Prosperity (Co. F, 20th reg.), age 66.
Fipps, Harriet R., Prosperity (Co. F, 20th reg.), age 72.
Epting. Margaret, Newberry (Co. G, 2d State T.), age 88.
Felker, Elizabeth, Reaben (Co. G, Hol. Legion), age 60.
Garlington, B. L., Newberry (Hampton's Legion), age 72.
Graham, Mary C., Reuben (Co. I, 3d S. C. V.), age 61.
Halface, B. C., Newberry (Co. C, 3d reg.), age 64.
Harris, Nancy C., Newberry (Co. B, Gregges). age 70
Hendrix, Jane, Silverstreet (Co. G. Hol. Legion), age 73.
Horton, Fimily, Jalapa ( 9 th reg. of Reserves), age 66.
Johnson, R. Jane, Independence (Co. A, 13th reg.), age 64.
Johnson, Sarah L., Newberry (Co. R, 1 st S. C.), age 63.
Klnard, B. C., Newberry (Co. D, 5th S. C.), age 60.
Koon. S. F., Pomaria (l'almetto Artillery), age 78.
long. Mary Ann, Prosperity (Co. F, 5th bat.), age 77.
McGowan. F. 8., Newberry (Co. G. Del'ass Art.), age 63.
Mann. M. M., Newberry (Co. G, 3d reg.), nge 78.
Martin, M. A. (Co. H, 3d). age 72. Transferred from Lexington.
Maser, Loulsa L., I'rosperity (Co. II, Hol. Iegion), age 82.
Metts, Filizabeth, Little Mountain (Senn's Artillery), age 78.
Montgomery. Jane A., Newberry (Co. F. :0th S. C. V.), age 01.
Korris, Ihully, I'rosperity (Co. H, IIol. I.egion), age 62.
Nesley, Mary, Newberry (Co. B, 1st reg.), age 82.
Rhodes, ('. L.. Prosperity (Co. F. 20th reg.), age 70.
Richardson, Nancy F., Slighs (Co. G. 2d S. Troops), age 73.
Rikard. Frances, Newberry (Co. H, 3d reg.), age 65.
Sanders, Julla, Oldtown (Co. F. 20th reg.). age 65.
Schawtz. Marcella (Co. H, 13th reg.), nge 70.
Senn. M. J., Newberry (Co. 1). 13th reg.), ago 74.
Sheely. Filzabeth. Slighs (15th reg.), age 73.
Sheely. R. Catherine. Prosperity (Co. F. Sbultz Bat.), age 62.
sligh, H. L., Newberry (Co. C, 3d S. (.), age 63.

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Sligh, Josephine, Slighs (Co. E, 3d reg.), age 62.
Stillwell, Mary F., Prosperity (Co. F, 20th reg.), 2 ge 68.
Stockman, Nancy (Co. G, Johnson's Brigade), age 82
Stuck, Mary M. (Co. F, Reserves), age 82.
Swittenberg, Nancy, Jalapa (4th State Reserves), age 75.
Todd, Sarah, Newberry (Co. B, 1st reg.), age 60.
Tygert, Drucllla, Pomarla (Co. B, 1st Militia), age 86.
Toblas, Jane (Co. I, 25th reg.), age 70.
Class C, No. 4, 1902.
Holt, Sallle, Newberry (Co. G, 7th reg.), age 63.
Henry, S. E., Newberry (Co. D, 13th reg.), age 65.
Moon, Catherine, Newberry (Co. C, 3d reg.), age 61.
Merchant, L. M., Prosperity (Co. H, Holcomb Legion), age 61. McCarley, Harriett F., Whitmire (Co. D, 13th S. C.), age 68. Reeder, Margaret, Independence (Co. B, 3d Battallon), age 60.
Reld, S. A., Newberry (Co. I, Holcomb's Legion), age 68.
Wertz, I. M., Slighs (Co. H, Holcomb Legion), age 60.
Class G, No. 4, 1905.
Clamp. Margaret C., Newberry (Co. B, 23d reg.), age 60. Havird, Jane, Sllverstreet (Co. K, 2d reg.), age 67. Klbler, Julla A., Newberry (Co. F, 20th reg.), age 71. Maffett, S. N., Newberry (Co. C, 3d reg.), age 60. Perry. M. S., Newberry (Co. K, 7th Art.), age 63. Waits, K. M., Prosperlty (Co. H, Holcomb Legion), age 61. Wilson, Martha (14th reg.), age 68.

Class C, No. 4, 1904.
Chalmers, F. V., Helena (Co. E, 7th Cav.), age 60. McDewitt, M. E., Newberry (Co. B, 19th S. C. C.)

Class C, No. 4, 1905.
Sanford, C., Sllver Street (Co. C, 20th).
Turner, L. E., Prosperity (Co. F), age 69.

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\text { Class C, No. 4, } 1906 .
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Clary, M. Helen, Newberry (Co. G, Hol. Leg'n), age 62. Hutchinson, Mary A., Newberry (Co. B, 1st), age 60. Metts, Mattle J., Slighs (Co. F, White's), age 60. Meggs, Mary L., Whitmire (Co. B, 31st N. C.), age 60. Nance, Dollle R., Newberry (Co. E, 3d S. C. V.), age 60. Odell, Sallie. Whitmire (Co. A, 13th S. C. V.), age 60. Singley, Margaret, Slighs (Co. F, 20th), age 69.

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\text { Class C, No. 4, } 1907 .
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Bedenbaugh, Martha, Newberry (Co. H, Hol. Legion), age 66. Davenport, Adella, Newberry (Co. G, 2d), age 60. Johnson, Miriam, Chappells (Co. B, 3d), age 65. Kibler, Elizabeth J., Newberry (Co. C, 3d), age 64. Livingston, Lucinda, Newberry (Co. E, S. C. R.), age 70. Parrott, Nancy, Newberry (Co. E, 15th), age 61. Tolbert, Nancy, Prosperlty (Co. I, 13th), age 72.

## OCONEE COUNTY.

CHANGRS IN ROLL BINCH LABT PATMENT.
Dead-Clame B: J. N. Morgan, F. A. Rlley. C, No. 1: Wllliam Dancan. C, No. 2: Neely V. Elrod, W. R. Gllstrop, A. Ridley, B. F. Davis, John G. Davis, R. O. Hopklne, John B. Morton, J. A. Elrod. C, No. 3: Barah H. Billingly. C, No. 4: Rachel White, R. Leopold, Mary E. Morris, Elizabeth Mickier.

Dropped for Income-R. S. Rutledge.
Tranglerred to Other Countleg-J. B. Newton to Anderson. Barah L. Kelly to Pickens.
Tranaferred From Other Conntles-From Plckens: F. A. Lewls, J. M. Llsles. Nancy Waddell from Anderson.

Clases A, 1904.
Davia, Jamea C. Westminster (Ferguson's Battery). Totally blind.
Moore, Enoch, Whetstone (Co. C, 6th Cav.) Totally blind.
Clase A, 1906.
Todd, T. M., Westminster (Co. I, 22d S. C.) Bllnd.
Clase B, 1901.
Byrd, 8. A., Walhalla-Co. G, 12th reg. (Lost right leg.)
Class B, 1808.
Uttleton, Thomas, Salem-Co. A, 20th reg. (Lost one arm.)
Clases B, 1908.
Graham, Frankifn (Co. A, 2 d g. C. V.) Lost left leg.
Jamison, J. J. (Co. E, 2 d 8. C.) Lost a leg.
Class B, 1907.
Taylor, Franklin-Co. A, 2d B. C. V. (Lost one arm.)
Class C, No. 1, 1901.
Clinkealen. A. F., Westminster-Co. F, Orr's Rlfes. (Right leg broken.) Cobb, Robert. Long Creek-Co. C, 2d Rides. (Left thigh broken.) Hughes Henry, Long Creek-Ferguson's Bat. (Wounded ln shoalder.) Lee. John. Falr Piay-Co. A, 20th S. C. V. (Shot in the shoulder.) Lank, W. J., Walhalia-Co. A, 20th S. C. V. (Wounded right ankle.) Nichols, James, Tamassee-Co. K, 12th S. C. V. (Right arm broken.) O'Leary, John, Tamassee-Co. C, Blanchet's. (Wounded by shell.) Owens, W. B., Weatminster-Co. G, 1st S. C. I. (Shot in back of head.) Roton, James. Salem-Co. M, 7th S. C. V. (Shot in neck.)
Rowland, C. A., Seneca-Co. F, Orr's Rifles. (Paralyzed while In army.)
Singleton, W. O., Walhalla-Co. B, P. I. S. (Wounded left leg.)
8alder. W. J., Whetstone-Co. C, Orr's Rifes. (Wounded in back of neck.)
Taylor, Samuel-Co. F, 22d reg. (Shot in back.)
Wilson, W. A., Tamassee-Co. K, 12th S. C. V. (Shot through lang.)
Clase C, No. 1, 1802.
Chapman, E. C., Salem-Co. G, 12tb g. C. (Wounded left arm.)
Hall, J. M., Ft. Madison-Co. C, Orr's. (Wonnded in breat.)
Littleton, Thomas M., Salem-Co. G. 12th B. C. (Wounded in right leg.)
Mongold, W. N.. Whetatone-Co. C, Orr's. (Wounded in hand.)
Reld, C. L., Walhalla-Co. C, P. 8. S. (Wounded In left shoulder.)
Rosers, J. W., Salem-Co. C, Orr'e Rities. (Wounded in arm.)

Lee, Joseph, Westminster (Co. K, 1st g. C. A.) Wounded in foot. Stone. J. B., Keowee (Co. B, 2d 8. C. Vol.) Wonnded left hand.

Class C, No. 1, 1904.
Johnson, J. H., Coneross (Co. D, 21 st Miss.) Wounded in left arm. King, John T', Seneca (Co. E, 2d Rifles), Wounded in left thigh. Lee, Hansom, Walhalla (Co. B, 22d S. C.) Wounded in body. McGII!, W. H., Whetstone (Co. C, Orr's). Wounded in leg.

Class C, No. 1, 1905.
Albertson, Elias F., Mt. Kest (Co. C, Orr's). Wounded In back.
Ramsey, David, Talley (Co. K, 12th S. C. V.) Wounued right hand.
Class C, No. 1, 1900.
Butler, E. C., Walhalla (Co. F, Orr's). Wounded in hand. Hoffman, Jullus, Walhalla (Co. A, Orr's). Wounded In thigh. Orr, T. C., West Linlon (Co. FF, 2d Rifles). Wounded in back.

## Class C, No. \&, 1001.

Adams, Thomas J., Fort Madison (Co. G, 12th S. C. V.), age 67. Bearden, W. J., Seneca (Co. D, 22d reg.), age 62.
Blackwell, Robert, Battle Creek (Co. G, 12th reg.), age 61.
Burdette, Z. W., Tugaloo (Co. G, 1st N. C. I.), age 64.
Burns. W. L., Oakway (Co. D, 27 th S. C. V.), age 65.
Burton, W. J. N., Westminster (Co. I. I. S. S.), age 60. Cain, Richard, Oakway (Co. K, 22d reg.), age 66.
Chambers, James W.. Walhalla (Co. C, Orr's reg.), age 66. Chastain, H. A., Walhalla (Co. K, 12th S. C. V.), age 66. Cole, Henry M., Fair Play (Co. G, 3d S. C. C.), age 73. Crooks, Thomas D., Seneca (Co. C, 4th S. C. C.), age 03. luckett, J. W., Westminster (Co. B, 4th S. C. V.), age 60. Durham, F. M., Walhalla (Co. B, 2d S. C. R.), age 06. Fendly, D. W.. Tugaloo (Co. A. Orr's Rifles), age 65. Floyd, H. T., Westminster (Co. G, 34th Ga.), gge 64. Fricks. S. H., Walhalla (Co. C. Orr's IIfes), age 65. Gibson, T. A., Tugaloo (Co. K, 12th S. C. V.), age 66. IIarbin, D. S. (Co. L, R. S. S.).
Ilolbrooks, James J., Retreat (Co. H, 10th Miss. Bat.), age 70.
Iluff. II. J., Seneca (Co. K, 2d reg.), age 63.
James, A. J., Weatminster (Co. C. 4th reg.), age 70.
James. T. 1'., Walhalla (Co. A, 27th S. C. V.), age 61.
Jones. L. L., Wallalla (Co. B. 2d S. C. V.), age 62.
Keaton, James, Beneca (Co. K, 12th S. C. V.), age 69.
Kenton. John. Seneca (Co. D, 22d S. C. V.), age 73.
Kelly. J. I. (Co. K, 2d Rifes), age 62.
Lemons, M. C., Oakwny (Co. K, 20th reg.), age 60.
Littleton, Danlel, Salem (Co. (3, 12th S. C. V.), age 63.
I.ogan. J. B., Walhalla (Co. C, Orr's RIfea), age 74.

Long. II. F., Fort Madison (Co. K, 12th S. C. V.), age 60.
Mrfinflin. J. H. Westminster (Co. D, 22d S. C. V.), age 66.
Mason, Jmmes. Oakwhy (Co. K. 22d reg.). age 69.
Moore, P. L... Fort Madison (Co. C. 2d Rifles), age 60.
Moore. Willis, West Union (Co. F. Orr's), age 65.
Nix. F. J., Salem (Co. B. 3d S. C. R.). age 66.
OKelly. R. F.. Westminster (Co. T. Rutledge's Cav.) age 78.
Reid. W. A.. Walhalla (Co. D, 22d S. C. V.), age 62.
Htchards, James. Westminster (Co. G, 12th S. C. V.), age 63.
Slonn. T. J., Salem (Co. A, 20th S. C.), age 69.
Snider. Isaac, Mountain Rest (Co. C, Orr's), age 68.
Stegall. Willtam, Westminster (Co. A, Aiken's Bat.), age 68.
Sweeny, John. Pendleton (Co. C, 4th S. C. C.), age 71.
Thomas. W. H., Newry (Co. G. 1st S. C. Regulars), age 68.
Todd, T. C., Walballa (Co. E, Orr's), age 63.

Class C, No. 2, 1902.
$\Delta$ dercromble, Orwell (Co. E, 2d). From Pickens.
Barrell. Jamea, Mayucha (Co. H, 1st reg.), age 63.
Blakeley, J. T., Tugaloo (Co. F, 16th S. C. V.), age 84.
Calhoun, Sllas, Mayucha (Co. I, Hampton'y Legion), age 70.
Campbell, J. L., Walhalla (Co. E, 4th reg.), age 65.
Childers, John T., Walhalla (Co. G, 1st S. C. I.), sge 62.
Cleland, E. A., Ft. Madison (Co. G, Holcomb's Legion), age 71.
Cox, W. E., Ft. Madieon (Co. G, 12th S. C.), age 68.
Crumpton, John T. (Co. L, P. S. S.), age 62.
Davis, John M., Tugaloo (Co. D, 22d reg.), age 68.
Dunn, N., Walhalla (Co. D, 22d S. C.), age 66.
Herbin, W. J., Fort Madison (Co. F. Orr's), age 62.
Hembree, John, Falr Play (Co. F, Navy), age 60.
Holliagsworth, W. F., Tugaloo (Co. I, 15th Ga.), age 60.
Hellams, D. L., Walballa (Co. G, 16tb S. C.), age 67.
Hudson, John M., Salem (Co. C, Orr's Rifles), age 85.
Hembree. J. A., Mount Tabor (Co. I, Hampton's Legion), age 70.
James, Whliam, Evatt (Co. C, 4th Cav.), age 60.
Lee, Alfred, Battle Creek (Co. K, 1 st Art.), age 68.
Lewls, F.A. (Co. A, 7th.) From Plckens.
Liles, J. M. (Co. B, P. S. S.). From Plickens.
Lee, Jobn, Loug Creek (Co. C, Orr's), age 71.
Lee, Whllam M.. Ft. Madison (Co. K, 12th S. C.), age 60.
McEiratb, M. M., West Union (Co. F, 2d Cav.), age 60.
McLeet, T. M., Seneca (Co. G, 1st reg. Inft.), age 62.
Martin, F. M., Walballa (Co. F. Orr's reg.), age 68.
Miller, W. C., Seneca (Co. G, 18th Miss.), age 05.
Ort, A. J., Mayucha (Co. I, 2d S. C.). age 60.
Phillips, Irvin, Whetstone (Co. F, Orr's), age 71.
Pickens, A. M., Westmlnster (Co. C. 5th reg.), age 86.
Roach. Baxter. Whetstone (Co. D, 22d reg.), age 60.
Richards. A. L., Westminster (Co. K, 12th reg.), age 64.
Sloan, A. B. (Co. A, 2d reg.)
Bima, John B., Mayucha (Co. D. 10th Texas), age 60.
Smith. M. S. (Co. F, Hagood's).
Tannery, S. P., Mt. Tabor (Co. F, Orr's), age 60.
Thompkins, J. W., Fair Play (Co. K, 18th Tenn.), age 61.
Whitman. David. Westminster (Co. F. Ist S. C.), age 80.
Wilbanks, Ben, Ft. Madison (Co. K, 12th reg.), age 68.
Wheon. W. H., Salem (Co. C, Orr's), age 61.
Clasa C, No. 2, 1905.
Alexander, W. H., Walhalla (Co. F, 22d reg.), age 62. Adame, J. N. (Co. C, 2d Rifles).
Byman, Andrew J., Russell (Co. H. Ist S. C. A.), age 13
Burton, P. M. J., Westminster (Ferguson's bat.), age 60.
Chastaln, F.. Walballa (Co. F, Barnett's), age 63.
Boyd. W. F., Walballa (Co. C, Orr's).
Cain, Momea, Oakway (Co. G, Ist S. C. C.), age 74.
Evatt. Adam (Co. D, 2d S. C.), age 66.
Galreath, M. D., West Union (Co. D, Dth Ga.), age 70.
Harris, Davey, Seneca (Co. G, Jenkins's), age 74.
Harins, James, Walhalla (Ferguson's bat.), age 79.
Lee, James C.. Long Creek (Co. C, 2d Rifes), age 82.
MeGaha, W. W., Salem (Co. K, Orr's), age 70.
Nicholson, M., Tamasbec (Co. F, Black's), age 73.
Pitts, W. R., Battle Creek (Co. A, 2d reg.), age 80.
Patterson, James, Salem (Co. D, 66th N. C.), age 64.
Powell, W. P.. Walballa (Co. D, 11th N. C.), age 60.
Roblnson, R. D., Newry (Co. C, Orr's), age 60.

Taylor, W. J., Newry (Co. F, 24th S. C.), age 68.
Woodall, John J., Long Creek (Co. E, Orr's), age 60. White, F., Westminster (Co. A, Orr's), age 60.
Whitehead, J. 8., Salem (Co. F, 1st Art.), age 62.
Whitield, Benjamin, Falr Play (Co. D, Moor's), age 68.
Class C, No. 2, 2904.
Harvey, W. J., Seneca (Co. B, 3d reg.)
Landreth, James, Seneca (Co. G, 16th reg.)
Class C, No. 2, 1905.
Bowles, H. N., Seneca (Co. C, 1st Art.)
Cox, Pinckney, Richland (Co. A, 20th).
Farrow, A. J., Westminster (Co. B. 1st Ga.)
Hays, D. T., Seneca (Co. A, 20th S. C. V.)
Owens, H. C., Westminster (Co. G, 1st).
Ramey, Albert, Westminster (Ferguson's).
Class C, NO. 2, 1908.
Hays, J. L., Seneca (Co. A, 20th).
Class O, No. 2, 1907.
Cooper, T. A., West Union (Co. G, 16th S. C.).
Campbell, B. D., Townville (Co. K, 5th Cav.).
Lee, Josiah, Tugaloo (Co. K, 1st Art.).
Schluter, C., Walhalla (Co. K, 12th S. C. V.).
Class C, No. S, 1901.
Widows of Soldiers Who Lost Their Lives in the Servioc of the Oomfoderate Btateh
Corn, Elizabeth, Seneca (Co. D, 22d S. C. V.)
Dodson, Mary, Newry (Co. C, Orr's Rifles.)
Hutchinson, M. E., West Unlon (Co. E, 12th S. C. V.)
Knecht, Fannie C., Walhalla (Co. K, Orr's Rifies.)
Leroy, Martha, Newry (Co. E, Orr's Rifies.)
Sanders, Mary E., Seneca (Co. D, 22d S. C. V.)
Slater, Sarah F., Walhalla (Co. C, Orr's RIfes.)
Smith, Sarah, Oakhurst (Co. K, 12th reg.)
Williams, Eliza, Walhalla (Co. K, 12th reg.)
Class C, No. S, 1902.
Bynum, Esther, Monntaln Rest (Co. K, 12th reg.)
beard, Fsther, Walhalla (Co. B, 25th reg.)
Nichols, Nancy, Walhalla (Co. K, 12th S. C.)
Class C, No. S, 1908.
Hughes, M. A., Senars :Co. H, Orr's Rifen).
King, M. A., Oakway (Co. C, 2d reg.).
McDonald, M. E. (Co. F, Orr's). Transferred from Anderson.
Pitts, Ibby, Fort Madison (Co. C, 2d S. C. Rifes). Slatton, Martha A., Walhalla (Co. B, 25th N. C.)

Class C, No. S. 1904.
Timmes, A. D., Walballa (Co. D, Hampton Legion).
Class C, No. 3, 1906.
Ables, Mary, Oakway (Co. F, Orr's).
Dills, Carollne, Newry (Co. A, Orr's).
Klng, Ellen C., Oakway (Co. D, 2d).
Wllson, Sarah Ann (Co. G, 25th N. C.)
-Class C, No. s, 1900.
Corbln, F. E., Tomassee (Co. A, Orr's).
Kelley, Alleey (Co. B, 2d S. C. V.)
Moodey, Martha A., Mararka (Co. E, Orr's).
Wison, Barah E., Seneca (Co. L, Orr's).

Clase O, No. 3, 1907.
Lavining, Catherine (35th N. C.).
Olass O, No. 4, 1901.
Broom, Elizabeth, Walhalla (Co. B, 2d S. C. R.), age 78. Busch, Rebecca, Walhalla (Co. C, Blanchett's), age 64. Caln, E. V., Oatway (Co. E, 1st 8. C. T.), age 67. Cothran, Sarah D., Seneca (Co. E, Orr's Rifles), age 65. Cruine, Kisry, Seneca (Co. A, Orr's Rifles), age 64. Graham, T. J., Seneca (Barnett's Battallon), age 70. Grant. T. R., Seneca (Co. E, 1st 8. C. T.), age 70. Bolden, Mary E., Salem (Co. A, Orr's Rilles), age 76. Boptins, Sallie, seneca (Co. C, Orr's Rifles), age 63. James, Margaret, West Union (Co. F, Orr's), age 66. Lanier, Nancy, Pendleton (Co. L, P. S. 8.), age 67. MeDonald, Agnie, Weatminster (Co. C, 2d Rides), age 72. Moore, Susan, Seneca (Co. G, 1st 8. C. V.), age 65. Nal, Isabella L., Festminster (Co. A, Orr's Rlfies), age 69. Nix, Mary C., Fair Play (Co. B, 8d reg.), age 64. Orr, Rether, Mountaln Rest (Co. I, 2d 8. C. V.), age 80. Pitte, Rachel C., Fort Madison (Co. G, 12th S. C. V.), age 66. Ree, Mary, Walhalla (Co. B, 20th 8. C. Ritis), age 68. Rona, R. E., Walhalla (Co. A, 20th 8. C. V.), age 67. 8mith, Barnetta, Long Creek (Co. C, Orr's Rifies), age 64. Sponaagle, Catherine, Walhalla (Co. A, Orr's Rilles), age 72. Sullivan, N. E. J., Walballa (Capt. Radcllfe's), age 68. Thomas, Arminda, Newry (Co. I, Elford's), age 70. Todd, Catherine, Salem (Co. C, Orr's Rides), age 70.

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\text { Clase O, No. h, } 1908 .
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Beaty, Sue H., Tamassee (Co. D, Orr's), age 62.
Blter, Mary, High Falls (Co. B, 22d S. C.), age 62.
Burns, Jane, Walhalla (Co. K, 2d Rides), age 70.
Brenneke, C. M., Walhalla (Co. C. Orr's), age 69.
Brleman, Catherine (Co. C, 20th 8. C.), age 63.
Cole, Ellzabeth R., Westminster (Co. C, 2d Rifies), age 65.
Collins, 8. F., salem (Co. F. 1st B. C.), over 60.
Cbastalu, Francis, Mayucha (Co. A, 2d reg.), age 62.
Dodd, S. J., Weat Unlon (Co. F, 1st Cav.), age 63.
Dodd, Imabella, Walhalla (Co. C, 4th 8. C.), age 68. Pisher, Elizabeth, Jocassee (Co. A, 20th S. C.), age 60. Glibert, Mallsee, Walhalla (Co. D, Orr's reg.), age 63.
Glang, Julla, West Union (Co. C, Orr's reg.), age 76.
Honter, Mary, Mountaln Rest (Co. B, 37th Va.), age 65.
Harria, Emily, Mountaln Rest (Co. F, Orr's reg.), age 64.
Holmes, Narcisan, Long Creek (Co. A, Hampton Leglon), age 64.
Reese, Frances, Walhalla (Co. B, 3d reg.), age 60.
Lylea, Ellatibeth, Whetstone (Co. F, Orr's), age 65.
Moore, Pollle, Westminster (Co. F, Provont Guards), age 71.
Morgan, Emily, Walhalla (Ferguson's Artllery), age 69.
Mortison, Mary, Walhalla (Co. D, 2d g. C. V.), age 68.
Minton, Malisea, Seneca (Co. F., 1st S. T.), age 80.
Kurphrey, A. H., Holden (Co. B, 2d 8. C. Rites), age 80.
Orr, Murth M., Westmingtor (Co. C, 4th reg.), age 60.

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Nicholson, Jane A., Walhalla (Co. A, Orr's), age 60.
Polnter, Elizabeth, Walballa (Co. G, 12th S. C. V.), age 77.
Quarles, Sarah A., Whetstone (Co. F, Orr's reg.), age 62.
Shuttleworth, 8. S., Westminster (Ferguson's Bat.), age 60.
Smith, M. A. (Co. L, Orr's). Transferred from Anderson County.
Stancel, Annie, Walhalla (Co. G, 12th S. C. V.), age 68.
Tollison, R. E., Seneca (Co. I, 3d 8. C.), age 74.
Vissage, Mallssa, Waiballa (Co. F, Orr's), age 60.
Ward, Harrlett, Mt. Tabor (Co. F, 1st Cav.), age 63.
Clase C, No. 4, 1905.
Blalr, Cassandra (Co. K, 4th Ga.), age 60.
Cobb, Loulsa, Walhalla (Co. A, State Reserves), age 77.
Huskamp, Mattle, West Union (Co. C, Orr's), age 64.
Knox, 8. L., Weat Union (Co. E, Orr's), age 61.
Long. Sarah M., Fort Madison (Co. D, 22d S. C. V.), age 60.
Moore, H. F.. Seneca (Co. D, Orr's), age 72.
Nicholson, Martha Ann (Russell's), age 62.
Powell, Angellne, West Union (Co. K), age 62.
Reese, Sarah, Evatt (4th S. C. Cav.), age 65.
Smlth, Rebecca, Salem (Co. B, 2d reg.), age 64.
Class C, No. 4. 1904.
Arye, Fredrlca, Longcreek (Co. A. Orr'si, age 68.
Balenger, Althea, Seneca ('o. G. $1 \geqslant$ th S. C. V.), age 62.
Carnea, Jane, Newry (Co. G, 12th S. C. V.), age 65.
Freeman, S. A. E., Weatminster (Co. F), age 63.
Gibson, Samantha, West Union (Ferguson's). Married close of war Itall, Frallne E.. West Unlon (C'o. C. Orr's), age 60.
Kelly. Sarah L., Weat Unlon (Co. A, 20th reg.), age 60.
Morgan, Elizabeth, Seneca (Co. F, Orr's), age 60.
Stevenson, EIVira, Townville (Co. F, 24th reg.), age 70.
Class C, No 4. 1905.
Burley. Sara F. (Co. B, 17 th S. C. V.), age 60.
Dodd, Laura, Westminster (Co. F, Orr's),
Hall, Fllen C., Seneca (Co. A, Perryman's), age 60.
Howard, L. F. (Co. D, Gist Rifles), age 65.
Mulkey, Licena, West Unlon (C'o. G, 12th), age 64.
Powell, Martha, Walhalla (Co. A, 20th), age 75.
Class C, No. \&. 1906.
Belotte, Sallie Fi., West Union (Cu. C. 4th Cav.), age 61.
Hawklns, Caroline. West Vion (Co. B. 2d Rifles), age 65. Madden, Nancy A., Salem (S. S.). age 62.
Nimmons, Narclisa, Rlchland (Co. D, 22d), age 68.
Ridley, Matllda. Mazurka (Co. K, 12th), age 63.
Wilson, Matilda, Seneca (Co. G, 16th S. C. V.), age 78.
Waddell, Nancy (Co. H. 22d), age 60. From Anderson.
Class C, No. 4, 1907.
Elrod, Susan F., Oakway (Trlbble's Co.), age 74.
Grahl, Emilly, Walhalla (Co. D, 62d N. C.), age 76.
Long, Sarah A., Westminster (Co. K, 12th S. C. V.), age 60.
Redley, Fllza, West Union (Co. K, 12th S. C. V.), age 60.
Rlley, J. A., Westmlnster (Co. B, 2d S. C.), age 70.
Slmmons. Martha C., Seneca (Co. L, Orr's), age 68.

## ORANGEBUBG COUNTY.

## CEAXGED IX ROLL RINCD LAET PAYMENT.

Dead-C, No. 1: L. P. Covar, B. R Johnson, R. A. Price. C, No. 2 : W. C. Chavia, E. H. Hutto, E. J. Barter, Ann Myers, E. C. Bozard, Ann Salley Corbett.

Transferred From Other Countles-W. H. Joyner from Kershaw.
Olass A, 1901.
Hutto, J. E., Norway-Co. D, 20th reg. (Left arm off; right hand: right eye blinded.)

Class B, 1901.
Ott, D. F., 8t. Matthewn-Co. F, 25th reg. (Lost use right arm.)
Meets, W. D.-Co. G, 25th reg. (1,ost left arm.) Transferred from Richland.
Bmith, Heary M., North-Co. K, 13th reg. (Lost ode leg.)
Class B, 1906.
Amaker, A. A., North-Co. K, 14th. (Right leg useless from wounds.)
Clase C, No. 1, 1901.
Craft, James, Raymond-Co. A, 1st s. S. (Wounded In left arm.)
Garrison, Z. A., Orangeburg-Co. D, 17th S. C. V. (Wounded in left shoulder.)
Entto, Mergan, Norway-Co. K, Hagood's (Wounded in hand.)
Myers, A. L., Cope-Co. C, 24th reg. (Wounded in side.)
Clase C, No. 1. 1002.
Bouk. J. T., Elloree (Ca. H, 1at reg.) Wounded in arm.

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\text { Clase C, No. 1, } 1905 .
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Fogle, W. D., Cardova (Co. H, Hampton L.egion). Wounded in hips.

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\text { Class C, No. 2, } 1901 .
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Arant, Alien A., North (Co. B, 5th S. C. C.), age 65.
Barber. John, Lone Star (Co. B, 27th S. C. V.), age 61.
Barre, J. W., Branchville (Co. C, 24th Infantry), age 66.
Bell, John B., Orangeburg (Co. H, 20th reg.), age 82.
Bradenburg. Lewlg, Lone Star (Co. F, 1st S. C. C.), age 63.
Carnegs. M., Cope (Co. B, 1st S. C. V.), age 78.
Charls, J. C.. Phillips (Co. I, 22d reg.), age 60.
Chavis, Pickens, Neeses (Co. D, 20th reg.), age 60.
Davis, Irwin. Norway (Co. I. 2d Artillery). age 60.
Driggers. Moses, St. Matthews (Co. F, Whiteis), age 68.
Fartick, J. H., Center Hill (Co. B, 1st S. C. V.), age 62.
Gantt, Caswell, Springfield (Co. D, 20th reg.), age 71.
Golston, Bamuel K. H., Advance (Co. C, 2d S. C.), age 65.
Goasett, Jamea, Springfleld (Co. K, 2d Artlllery), age 78.
Haddock, L. A., Orangebarg (Co. C, Ith Cav.), age 60.
Hoover, J. I., Witts Milis (Co. K, 13 th reg.), age 64.
Hugites, D., Cope (Co. D, 4th Ala.), age 87.
Hugbes, E., Phillipa (Co. H, Hampton Legion), age 61.
Bunt. W. M., Howesville (Co. F, 2 d S. C. V.), age 60.
Jamison. D. W., Norway (Co. F, 2d Art.), age 70.
Jefleant, E. D. A., North (Co. D, 20th reg.), age 60.
Jolner, D. R., Orangeburg (Co. C, 2d reg.), age 64.
Jedy, David. Cope (Co. C. 24th S. C. V.), age 89.
Elngey, G. W. (Co. B, 4th reg.) Transferred from Colleton.
Latre, J. A., Fort Motte (Frederlck's Cavalry), age 65.
Long. John F., Knott Mill (Co. G, 13th reg.), age 64.
Mims, J. C. (Co. G, 5th Cav.) Transferred from Dorchester County. Dead; money refunded.

Murray, M. S., St. Mathews (Co. I, 3d S. C. C.), age 60. Myers, J. F., Cope (Co. F, 2d S. C. V. A.), age 66. Patrick, D. E., Branchville (Co. G, Hampton Legion), age 64. Pearson, Jacob A., Phillps (Co. H, Hampton's), age 68. Pendarvls, D. A., Fort Mlll (Co. D, Pal. Bat. Lt. Art.), age 71.
Pool, Louis, Advance (Co. B, 27th reg.), age 63.
Powers, A. D. (Co. E, 8th reg.) 'Transferred from Colleton.
Rickenbacter, T. W., Goodbyes (Co. A, 5th Cavalry), age 70.
Roberts, F. W., Lone Star (Co. D, 2d S. C. H. A.), age 64.
Beawright, A. G., St. Matthews (Co. D, 20th reg.), age 78.
Shirer, George D., Orangeburg (Co. D, bth S. C. C.), age 69.
Shuler, D. G., Parler (Co. F, 25th S. C. V.), sge 64.
slice, David, North (Co. C. 20th reg.), age 65.
Stabler, M., Advance (Co. D, 20th reg.), age 66.
Waltx, J. J., Sr., Lone Star (Co. B, 20th S. C. V.), age 66.
Wingard, Danlel, Lone 8 tar (Co. K, 20th reg.), age 74. Dead; money refunded.
Wise, W. W., St. Mathews (Co. F, 25 th reg.), age 62.
Zekiel, Aaron, St. Matthews (Co. C, P. 8. S.), age 67.

## Clase C, No. 8, 1902.

Ashe, J. W., Orangeburg (Co. I, 22d B. C.), age 66. Godirey, H. B., Orangeburg (Co. H, 1st B. C.), age 67. Joyner, V. M., Orangebarg (Co. I, 2 d reg.), age 68. Kennedy, Lewin J., North (Co. A, 27th reg.), age 63. McIver, W. R., Worth (Co. K, 1st reg.), age 64. Porter, C. F., Orangeburg (Co. A. 1st reg.), age 00. Perkins, H. B., Elloree (Co. B, 3d B. C.), age 62. Phillips, George F., Livingston (Co. D, 20th reg.), age 60. Sauls, James, Orangeburg (Co. I, 11th reg.), age 60. Williams, D. L., Vance (Co. A, 5th S. C. Cav.), age 68.

Clase C, No. 2, 2908.
Black, D. W., Norway (Co. C, 1st Art.), age 62.
Bars, D. J. (Co. B, 20th S. C. V.), age 63.
Bull, John, Felderville (Co. H, 11th s. C.), age 63.
Chavis, John A., North (Co. D, 20th reg.), age 60.
Chartrand, J. M., St. Matthews (Co. C, 2d Art.)
Delk, R. T., Cope (Co. I, 5th B. C. C.), age 68.
Ellis, Hency, Orangeburg (Walter's bat.)
Furtick, George R., Witte Mills (Co. B. Hagood's), age 66.
Holman, P. R., Bpringteld (Co. K, Caughman's), age 67.
Joyner, W. H. (Co. D, 20th). From Kersham County.
Kimmey, F. M., Orangebarg (Co. B, 27th reg.)
Moody, E. T., Orangeburg (Co. F, 8th B. C.)
Robinson, A. I., Orangeburg (Co. I, 2d Art.), age 60.
Price, G. M., St. Matthews (Co. C, 7th S. C.), age 70.
Rutland, W. W., Orangeburg (Co. B, 20th reg.), age 61.
Sholer; D. J., Elloree (Co. A, Bth 8. C. C.), age 73.
Tager, J. A., Phillips (Co. E, 1st B. C.), age 61.
Wannamaker, A. H., Fort Motte (Co. A, 5th reg.), age 75.
Williams, W. M., Springtleld (Co. I, 22d reg.), age 62.
Wolfe, J. R., Neeses (Co. I, 2d Art.), age 71.
Clase C, No. 8, 1904.
Ayers, John J., Orangeburg (Co. A, 5th Cav.)
Chavis, W. L., Orangeburg (Co. I. 22d reg.)
Gates, E. W. L., Lone Star (Co. H, 6th S. C. C.)
Hooker, J. L. G., North (Co. D, 20th reg.)
Inablnet, J. D., Woodford (Co. D, 20th reg.)
Phillips, J. P., Springiteld (Co. I, 2d reg.)
Yon, M. J., Springfield (Co. I, 22d reg.)

## Class O, No. 2, 1906

Evans, Aaron, St. Matthews (Co. D, 20th). Glover, Wm., St. Mathews (Co. D, 1st B. C.) Patrick, G. V., Bowman (Co. A, 5th s. C.) Way, Benj., Vances (Gllliard's Battery).

Clase C, No. 8, 1906.

Avant, D. D., Elloree (Co. F, 2d Battery).
Brace, F. A., Branchville (Co. E, 1st S. C. V.)
Brown, J. E., Neeses (Co. K, 1st S. C.)
Connelly, W. L., Branchville (Co. C, 1st S. C. V.)
Clark, D. E., Vance (Gallard's Artil.)
Gleaton, M. W., Neeses (Co. F, 2d Troops).
Hutto, J. B., Cope (Co. C, Hagood's).
Jefrcoat, C. N., Orangeburg (Co. D, 20th).
Starile, D. G., Cope (Co. H, Hampton).
Bhuler, E. C., Ellioree (Co. G, 27th).
Thomas, J. W., Jamison (Co. A, 5th Cav.)
Wolfe, J. R. D., North (Co. I, 2d Art.)
Class C, No. 2, 1907.
Axson, W. A., North (Co. D, 20th).
Barsh, D. W., St. Matthews (Co. A, 2 d S. C.).
Edwards, W. A., Orangeburg (Lamar's).
Hoover, Henry E., North (Co. K, 13th).
Stillinger, Emanuel (Co. D, 7th).
Till, H. F., Elloree (Co. B, 20th).
Olass O, No. S, 1901.
Widows of Boldiers Who Lost Their Lives in the Servioe of the Confoderate Atates.
Brown, N. A., Norway (Co. H, Hampton Leglon.)
Crlder, Mary M., St. Matthews (Co. D, 20th reg.)
Dentaler, Matilda, Orangebarg (Co. G, 25th reg.)
Ifvens, Julla M., Elloree (Co. F, 25th reg.)
ulvingaton, C. F., Orangebarg (Co. D, 20th reg.)
Segrest, Jane, Dibble (Co. B, 13th reg.)
Shuler, E. A., Lone Star (Co. E, 25th reg.)
Splres, Mary Ann, Sllver Spring (Co. H, 20th reg.)
Whetsell, E. T., Bowman (Co. A, 20th reg.)
Williamt, Delilah, Springfleld (Co. B, 1st reg.)
Olas O, No. S, 1 Pas.
Copen, Jesile A., Orangeburt (Co. A, Hampton Legion).
Gibeon, M. R., Cordova (Co. I, 1st Art.)
Stabler, L. E., North (Co. D, 20th reg.)
Lane, Mary, Orangeburg (Co. A, 1et reg.)
Segreat. 8. A., Phillips (Co. I, Bth reg.)
Williammon, M. E., Springfleld (Co. D, 6th reg.). Dead; money refunded.
Olase O. No. S, 5004.
Metts, Mary, Branchville (Co. C, 24th S. C. V.)
Glase $O$, No. f, 1901.
Auatin, Elisabeth (Co. B, 20th reg.), age 65.
Aultman, Caroline, North (Co. F, Palmetto 8. C.), age 60.
Bolen, Mary, Bolen (Co. H, Hampton's Leglon), age 65.
Boyed, R. P., Branchville (Co. G, 4th 8. C. C.), age 74.
Bogard, E. A., Orangebarg (Co. B, 20th reg.), age 65.
Bomard, Elisabeth, Orangehurg (Co. A, 5th reg.), age 61.

Brandenburg, A. P., Orangeburg (Co. C, 23d Art.), age 70.
Brickle, Mary R., Cordova (Co. C, 2d res.), age 73.
Brickle, S. R., Orangeburg (Co. C, 2d S. C. V. A.), age 64.
Brown, B. E., Orangeburg (Co. K, 20th reg.), age 60.
Crook, Mary A., Fort Motte (Co. A, 5th reg.), age 70.
Dukes, Susan, Branchville (Co. E, 1st S. C. C.), age 70.
Gardner, M. C., North (Co. F, 3d S. C. I.), age 62.
Harley, Ellzabeth M., Woodford (Co. D, 20th reg.), age 74.
Hughes, Sarah S., Cope (Co. F, 2d S. C. V. A.), age 63.
Jacobs, Margaret, Orangeburg (Co. F, 2d Art.), age 70.
Jacoba, Peggy, Orangeburg (Co. F, 2d Art.), age 60.
Jernigan, N. A., Cordova (Co. D, 20th reg.), age 63.
Keller, Caroline W., Lone Star (Co. E, 5th S. C. C.), age 65.
McMichael, N. A., North (Co. D, 20th reg.), age 60.
Myers, Ann, Cope (25th reg.), age 63.
Morman, Mary, Norway (Co. I, 32d Ga.), dge 65.
Ott, Frances, Orangeburg (Co. B, Rion's), age 69.
Robinson, Mary E., North (Co. C, 5th Cav.), age 65.
Shirer, M. E. B., Lone Star (Co. K, 2d S. C. V.), age 67. Dead; money refunded.
Smoak, Elizabeth, Orangeburg (Co. D, Barton's), age 72.
Tyler, E. R., North (Co. I, 20th reg.), age 80.
Walling, Elizabeth, St. Matthews (Co. F, 25th Infantry), age 65. Dead; money refunded.
Williams, L. V., Norway (Co. H, Merriwether's), age 61.
Williamg, Mary Ann, Advance (Co. E, 27th S. C.), age 70.
Zelgler, Catherine, St. Mathews (Co. E, 21st S. C. C.), age 67.
Olases C, No. 4, 1908.
Avinger, Catherine, Orangeburg (Co. E, White's Battalion), age 60.
Berry, H. M., Branchville (Co. G, 4th S. C. C.), age 65.
Carter, J. H., Orangeburs (Co. I, 11th reg.), age 63.
Felkel, Ellen E., Lone Star (Co. D, 20th reg.), age 65. Dead; money refunded.
Jones, B. A., Vance (Co. F, 25th reg.), age 68.
Livingston, N. M. (Co. B, 1st S. C. V.), age 74.
Thels, Allice M., Elloree (Co. F, 2d reg.), age 60.
Whetstone, Catherine S., Advance (Co. I, 2d Art.), age 66.
Patterson, Henrietta E., Branchville (2d S. C. Art.), age 65.
Pearson, Marla, Orangeburg (Co. C, 2d reg.), age 66.
Shirer, Sallie F., Lone Star (Co. H, 6th S. C.), age 65. Dead ; money refunded.
Olass C, No. 4, 1908.
Antly, H. L., Orangeburg (Co. B, Frederick's), age 60.
Berry, Mary, Orangeburg (Co. I, 2d Art.), age 63.
Balr. M. E., Providence (Co. A, 5th reg.), age 64.
Dantzler, N. F., Elloree (Hagood's brigade), age 63.
Dempsey, Mary Jane, North (Co. C, 2d reg.), age 60.
Fulmer, Emily, North (Co. 1, 22d reg.), age 70.
Hunkepiller, Margaret A., Middle (Co. C, $2 d$ reg.), age 65.
Inablnett, E. B., Jamison (Co. A, 5th Cav.), age 64.
Lucas, Susan A., Cope (1st S. C. reg.), age 63.
Smoak, Mary E., Orangeburg (Co. A, 5th reg.), age 64.
Willamson, G. W., North (Co. D, 20th reg.), age 61.
Watt, O. C., Lone Star (Co. E, 4th reg.), age 62.
Olass C, No. 4, 1904.
Bozard, Elizabeth, Orangeburg (Co. A, Barton's), age 60.
Jeffcoat, Rachel J., Neeses (Co. I, 22d reg.), age 62.
Johnson, Ann S., Neeses (Co. D, 20th reg.), age 61.
Judy, Emma, Orangeburg (Co. C, 24th S. C. V.), age 61.
Neece, Nancy, Norway (Co. D, 20th reg.), age 75.
Rlley, Janle P., Orangeburs (Co. A, Hagood's), age 60.
Rlkenbaker, Mary Ann, Orangeburs (Co. H, Hampton Legion), age 60.

Olass C, No. 4. 1906.
Ayerm, Evan, Bowman (Co. H, Hampton), age 62. Avant, Emily C., Elloree (Co. H, Hampton), age 62. Cherry, Mary A., Orangeburg (Co. I, 2d), age 60. Fourer, Ann E., Middel (Frederick's), age 72.
Hooker, L. C., North (Co. D, 20th), age 72.
Hughes, M. E., Orangeburg (Co. D, 7th), age 62.
Hall, Julia, Elloree (Co. I, Humbert's), age 60.
Knight, D. R., Raymond (Co. I, 2d Art.), age 66.
Pbillips, Minerva, Springdeld (Co. I, 1st Art.), age 60.
Rush, Harrlett, Orangeburg (Co. A. 5th), age 63.
Thomas, S. E., St. Matthews (Co. A, 5th), age 65.
Thomas, Levinla, Orangeburg (Co. I, 2d Art.), age 80.
Whetimione, M. E., North (Co. I, 2d), age 63.
Olass O, Nu. t. 1906.
Byrd, H. F., Branchville (Co. G, 4th Cav.), age 79. Felder, F. N., St. Matthews (Co. A, 5th Cav.), age 62. Hargler, C. M., Elloree (Co. K, 26th), age 66.
Koger, Minerva, Norway (Co. C, 5th 8. C. V.), age 64. Irick, Sue, Elloree (Co. A, Eth), age 62.
Jeffcoat. Anna B., North (Co. B, 7th Cav.), age 70.
Reat, H. F., Elloree (Co. F, 2d), age 78.
Thomas, Frances E., Flloree (Co. F, P. L. A.), age 73.
Weeks, Katie, Orangeburg (Co. A, Hol. Leg'n), age 63.
OLass C, No. 4, 1907.
Johnson, J. A. E., Neece (Co. E, 13th), age 61.
Johnson, Frances, Neece (Co. B, Hagood's), age 61. Kittrell, L. C., Norway (Co. 1, 5th), age 67.
Moore, Emma V., Orangeburg (13th Ga. Vol.), age 70.
Rogers, Mary J., St. Matthews (Co. K, 14th), age 63.
Rlley, Sarah, Neece (Co. I, 2d Art.), age 62.
Stone, A. J., Cope (Co. D, 2d S. C.), age 60.
WIllams, Mary, Springfield (Co. I, 22d), age 75.

## PICEENS COUNTY.

## CHANGES IN ROLL GINCE LABT PATMENT.

Dead-C, No. 2: John F. Conley, George McAdams, Dadley Meredith, J. H. Mullinax, S. A. Swaynegame, Moses Smith, M. L. Blackwell, W. H. Berry. C, No. 8: Ellzabeth Cooper, Mary Roper. C, No. 4: Lavery Everett, Sarah Holcomb, Matilda Hughes, Ellzabeth Looper, Elizabeth Stansell, Milly Ann Yoweir.

Transferred to Other Countles-J. W. Friddell to Greenville. G. B. Gummella to Laurens. F. A. Lewls to Oconee. J. M. Liles to Oconee. C. W. Shirley to Greenwood.

Transferred to Other Classeg-George W. Roper from C, No. 2, to C, No. 1.
Transferred From Other Countles-F. S. J. James from Anderson. Sarah L Kelly from Oconee.

## Class B, 1900.

Cassel, F. M., Dalton-Co. B, 2d S. C. (Lost left arm.) Phllpot, J. H., Dacusville-Co. H, 2d Rifles. (Lost one arm.)

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\text { Olase C, No. 1, } 1901 .
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Bryant, A. W.-Co. K, 2d. (Wounded ln leg.)
Connelly, John W., Plckent-Co. F, 22d reg. (Wonnded in ankle.)
Ellenbarg, J. A., Knob-Co. F, 22d reg. (Wounded in shoulder.)
Frazler, R. A., Cateechee-Co. E, 4th reg. (Shot in right side.)
Gaines, W. B., Central-Co. B, 7th reg. (Shot In the arm.)
Hendricke, David, Loopera-Co. F, 4th Fla. (Shot in hand.)
Llgon, T. J., Sunnydale-Co. K, 16th reg. (Ruptured; result of aervice.)
Neison, T. F., Easley-Co. E, 1st reg. (Wounded In body.)
Smith, J. F., Table Mountain-Co. F, 2d S. C. C. (Wounded wrist and hand.)
Stevens, E. B., Central-Co. K, 4th reg. (Shot In the hlp.)
Thomas, Peter G., Mala-Co. A, P. S. S. (Shot in elbow.)
Turner, John T., Rock-Co. G, 6th reg. (Shot In the arm.)
Watson, J. T., Liberty-Co. G, 25th N. C. (Shot in hip.)
Cash, Marvel (Co. H, P. S. S.) Wounded in head.
Olase C, No. 1, 1905.
Kennemore, Jacob (Co. 1, 4th S. C.) Wounded in hands. Dead; money refunded.
Class C, No. 1, 1906.
G. W. Lesley (Co. E, 2d S. C. 1.) Wounded in left foot. Class C, No. 1, 1907.

Roper, S. W., Plekens-Co. A, Hampton's Legion. (Wounded in head.) Class C, No. 2, 1902.

Abercromble, J. H., Daiton (Co. C, 80th reg.), age 80.
Alken, Thomas, Sunnydale (Co. K, 6th N. C.), age 75.
Arnold, Jefferson, Easley (Co. F, Hampton Leglon), age 68.
Babb, Albert, Plckens (Co. B, 1st reg.), age 65.
Brock. A. W., Central (Co. I, 4th reg.), age 60.
Cassell, B. A., Redmond (Co. K. 62d N. C.), age 62.
Childers, John H., Maynard (Co. A, Eiford's), age 74. Dead: money refunded.
Collins, William A., Kings (Co. B, 2d Rifes), age 67.
Crane, F. P. (Co. C, 4th reg.)
Dickard, Willam, Easley (Co. F, 24th I.), age 73.
Durham, W. S., Cateechee (Co. C. 4th reg.), age 63.
Filenburg, J. B., Hazel (Co. E, 2d Rifles), age 62.
Entrekin, James M., Liberty (Co. A, 20th reg.), age 78.
Fennell, F. G., Calhoun (Co. I, 4th reg.), age 71.
Henderson, W. F. (Co. B, 27th reg.) Transferred from Anderson. .
Hammond, John, Briggs (Co. I, 1st S. C. Regulars), age 68.

Barden, J. Lh, Eaeley (Co. H, 17th reg.), age 63.
Hawkins, John, Briggs (Co. A, 16th S. C. I.), age 65.
Hendricks, George K., Porter (Co. H, $2 d$ S. C. Rifles), age 05.
Herd. Thomas J., Alerander (Co. B, Orr'si), age 63.
Hester, Thomas P., Meet (Brooks's Art.), age 66.
Holder, Martln, Knob (Co. H, Hampton's Cav.), age 82.
Holder, Tyree H., Table Monatain (Co. A, Bth reg.), ase 66.
Hopking, J. W., Central (Co. C, 4th reg.), age 70.
Howard, E. C., Maynard (Co. H, 2d Rifen), age 69.
Howard, Stephen W., Cateechee (Co. B, 2d reg.), age 68.
Hunter, John W., Pickens (Co. F, 22d reg.), age 71.
Jones, Harrimon (Co. D, 18th S. C. V.), age 78.
Kelly, Whlliam, Hazel (Co. A, 20th reg.)
Landreth, B. A., Easley (Co. G, 16th A. C. I.), age 65.
Lawson, A. J. (Co. H, 4th). Transferred from Anderson.
Lawrence, W. D., Calhoun (Co. A, 17 th Miss. V.), age 78.
Lawnon, E. A., Mica (Co. I, P. S. S.), age 61.
Lealey, David, Field (Co. I, Eiford's Reserves), age 75.
Lealle, Jno. P., LJberty (Co. K, 6th S. C. C.), age 78.
McCord, 8. F., Liberty (Co. A, lat S. C. C.), age 60.
McDonald. W. H., Easley (Co. C, 4th S. C. C.), age 78.
MeGill. Ansel, Knob (Co. B, Reserves), age 79.
McJunkin, J. Benton, Kasley (Co. H, 14th N. C.), age 68.
McJunkin, Joseph (Co. G, 1st S. C. V.)
McNeely, J. P., Central (Co. G, 22d S. C.), age 62.
Mahaffey, D. P., Central (Co. K, 12th reg.), age 63.
Morgan, R. P., Alexander (Co. H, Beauregard's), age 60.
Moss. D. N., Fasley (Co. C, 1st S. C. A.), age 67.
Murphree, John, Alexander (Co. F, 22d S. C. V.), age 66.
Nix. Whllam D., Hazel (Co. B, 2d Rifes), age 63.
Owens, G. W., Easley (Co. K, Hampton Leglon), age 62.
Pbillipt, R. W., Knob (Co. I, P. S. S.), age 63.
Pressley, B. M., Mala (Co. C, 4th S. C.), age 76. Dead; money refunded.
Heeres, Joseph, Praters (Co. A, Beauregard's!, age 64.
Sanders, James. Fastatoee (Co. H. 2d S. C. Rifles), age 78.
Skelton, Filsha, Pickens (Co. Fi, 21st reg.), age 72.
Smith. Stephen, Pickens (Co. I, I. S. S.), age 62.
Soipes, R. L. (2d Rifies).
Stansel, Thomas. Ambler (Co. A, 61st reg.), age 61.
Smith, John N. (Co. C. 4th reg.).
Stewart, W. K., Hasel (Co. F, 228 S. C. V.), age 63.
Tumblin, 8. J., Fagley (Co. F. 14th S. C. I.), age 63.
Turner. Anderson, Pickens (Co. F, 1st S. C. C.), age 66.
Vaughn, L. A.. Cateechee (Co. K, 3d 8. C.), age 69.
Wade. W. H., Iftkens (Co. G, 10th reg.), age 65.
White. Jobn, Fasley (Co. F, 2d S. C. C.), age 70.

Clars O. Na. 2. 1908.

[^1]Clase O, No. 2, 1908.
Barter, P. P., Field (Co. H, 22d S. C.), age 60.
Bridges, L. W., Loopers (Co. B, 16th S. C.), age 60.
Day, 8. R., Beverley (Co. E, 2d S. C.), age 60.
Dlllard, H., Calhoun (Co. A, Orr's), age 66.
Hamilton, R. P., Liberty (Co. C, 1st art.), age 63.
Jones, V. S., Knob. (Co. H, 22d S. C. Rifles), age 80.
Land, Thomas W., Klngs (Co. K, 22d S. C.), age 70.
James, Garrison, Cateechee (Co. K, 6th S. C.), age 68.
Townsend, J. H., Liberty (Co. I, 14th S. C.), age 61.

Class C, No. 2, 1904.
Boyd, Warren, Plckens (Co. -, 2d Rifles).
Deprlest, P. B. (Co. G, 1st Cav.)
Morrison, G. D., Central (Co. F, 20th reg.)
Roper, N. C., Pickens (Co. G, Butler's).
Simmons, Riley, Easley (Co. E, 2d S. C.)
Vaught, J. H., Dacusville (Co. F, 16th S. C.)
Watson, John, Fallow (Co. M, z'almetto S. S.)

Class C, No. \%, 1905.
Alken, W. T., Crow Creek (Co. H, 14th N. C.)
Brirrey, J. A., Liberty (Co. B, 16th S. C.)
Boggs, H. D., Pendleton (Co. D, Hampton Legion).
Blshop, Aaron, Looper (Co. F, 1st S. C.)
Bramlet, M. B. (Co. B, 16th). Dead; money refunded.
Conley, James F., Pickens (Co. H, 4th S. C.)
Childers, J. T., Maynard (Co. G, 1st Inft.)
Carman, J. F., Pickens (1st Art.)
Dodgens, A., Easley (Co. K, 62d N. C.)
Duncan, W. A., Easley (Co. A, 6th S. C. C.)
Garrett, T. P., Pickens (Co. I, Hampton Legion).
Granger, E. W., Easley (Co. B, 16th S. C.)
Nalley, John F., Easley (Co. K, 6th S. C.)
Hendricks, Jeptha, Crow Creek (Co. F, 22d).
Stephens, J. B., Calhoun (Co. I, 4th).
Tanner, W. T., Easley (Co. A, P. S. S.)
Whitmire, H. M., Easley (Co. B, 2d Rifles).

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\text { Class C, No. 2, } 1906 .
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Chapman, Phillp, Fastatoo (Co. H, 4th).
Chapman, Cyrus, Eastatoo (Co. G, 12th).
Edens, J. M., Norris (Co. F, 22d Inft.)
Fisher, Geo. W.. Pickens (Co. E, 25th N. C.)
Hunter, J. J., Beverly (Co. E, Orr's).
Holder, W. M., Alexander (Co. E, 1st).
Manning, C. M., Plckens (Co. H, 2d Rifles).
Morris, T. L., Liberty (Co. F, 22d).
Sherlif, F. P., Liberty (Co. H. 7th).

Class C, No. 2, 1907.
Chapman, George C., Sunny Dale (Co. K, 62d N. C.).
Davis, W. P., Turnkey (Co. D, 1st S. C.).
Danlels, Henry, Easley (Co. C, 2d S. C.).
Fowler, Thomas, Easley (Co. D, Hol. Legion).
Hendricks, W. A., Central (Co. K, 6th S. C. I.).
McGee, Abner, Easley (Co. B, 7th S. C. I.).

## Clase O, No. S. 1801

Widows of soldiers Who Lost Thetr Lives in the Bervice of the Oonfederate states.
Cater, Anna, Praters (Co. A, Ferguson's bat.)
Corbin, Nancy, Pickens (Co. K, 2d 8. C. Rifles).
Farmer, Suaan, Maynard (Co. E, Orr's)
Fortner, Arminda, Rock (Bearregard's bat.)
Fortner, Mallnda, Dacusville (Beauregard's Lt. Art.)
Freeman, H. A., Loopers (Co. F, 2d S. C. C.)
Garrett, Fllsabeth, Cateechee (Co. B, 2d S. C. Rifies).
Lathen, Ellza, Thomasplle (Co. F, 2d Cav.)
Riggens, Lleena, Crowcreek (Co. A. Orr's Rlfes).
Migging, G: A., Cateechee (Co. F, 22d reg.)
Slmmons, Margaret (Co. A, 7th reg.)
Strickland, Flisabeth (Co, G, 6th S. C. C.)
Summy, Frances, Central (Co. C, 4th reg.)
Whison, Marla, Meet (Co. G, 16th reg.)
Clase C, No. 3, 1900.
McJunkin, Rosa, Table Monntain (Co. H, 4th S. C.)
Clase C, No. S, $1903^{\circ}$
Turner, Susan (Co. F, 2d 8. C. C.)
Class C, No. 3, 1904.
Crain, Susan M., Dacuspllle (Co. H, 2d Rifles).
Hopking, Adellne (Co. K, Talbert's).
Class C, No. s, 1905.
Ellenbarg, Catherine, Mlmons (Co. E, Elford's).
Crow. Sarah E. (Co. F, Ist).
Class C, No. 3, 1906.
Dacus, Luvenia, Dacusville (Co. A, 20th).
Loe, Naoml, Cateechee (Co. K, 62d N. C.)
Hinkle, Mary. Eastatoo (Co. I, Hamp. Leg.)
Stephens, Margaret S., Stewart (Co. C, 4th S. C. C.)
Stephens, Sarah J., Dornville (Co. S, 7th S. C. I.)
Class C, No. S, 1907.
Alken. Nancy B., Summit (Co. H, 14th).
Chappeli, Lilli Ann, Dalton (Co. K, 62d N. C. I).
Clase C, No. 4, 1901.
Boggs. C. I.. Liberty (Co. K, Elford's reg.), age 85.
Boyd, Mary. Dacusville (Co. A, 22d S. C. V.), age 74. Campbell, M. S., Fort Hill (Co. C, 4th S. C. C.), age 7 . Chastaln. Sarah C., Majors (Co. B, Orr's), age 65. Childera, Fileabeth, Redmond (Co. A, Filford's reg.), age 76.
Chllders, Mary J., Maynard (Co. E, 2d Rlfles), age 65.
Clark, Clarinda, Fasley (Co. A. 16th S. C. V.), age 63.
Clark, Mily, Maynard (Co. E, 2d Rifles), age 73.
Crews Sarah (Co. F, 4th S. C.) Dead; money refunded.
Davis, Dinah, Easley (Co. D, 2d State Reserves), age 70. Dead; money refunded. Donwoody, Keslah, Central (Co. F, 20th reg), age 72. Ellenbarg, N. F. (Co. F, 22d). Trangferred from Anderbon.
Fimerson, Denlsa, Picken (4th reg.), age 60.
Freeman, Margaret F., Maynard (Co. F, 2d 8. C. C.), age 68.

Fridell, Sarah R., Loopers (Co. H, 2d S. C. Blfea), ase 60.
Galloway, Ellabeth, Murphy (Co. K, 62d N. C. reg.), age 60.
Gralnger, M. E., Briggs (Co. B, 16th S. C. V.), age 61.
Grant, D. Ellzabeth, Crow Creek (Co. B, 2d Blfes), age 68.
Grant, R. M., Crow Creek (Co. B, 2d Hifles), age 67.
Glasple, E. L., Majors (Allen's brigade), age 63). Dead; money refunded.
Harper, L. C., Easley (Co. H, Elford's reg.), age 69. Dead; money refunded.
Harris, Mary, Farr (Co. G, 16th S. C. V.), age 62.
Harrison, Emeline, Briggt (Co. A, 16th reg.), age 62.
Haynes, Mary, Briggs (Co. F, 2d 8. C. C.), age 65.
Holcomb, Narcissus, Loopers (Co. A, Earle's Art.), age 60.
Hoider, Elizabeth, Mca (Hart's Battery), age 61.
Holladay, Elizabeth, Plckens (Co. E, 16th reg.), age 69.
Hudson, Mary, Easley (Co. C, 4th S. C. C.), age 76.
Hunnleut, Mary H., Redmond (Co. I, Elford's reg.), age 65.
Lark, Clarinda, Briggs (Co. F, 2d S. C. C.), age 64.
Lealey, Frances (Co. C, 4th Cav.), age 62.
Mann, Mille A., Meet (Co. I, P. S. S.), age 64.
Mauldin, Mary, Elghteen MHe (Co. A, 2d B. C. I.), age 64.
Mauldin, Sarah F., Dalton (Co. E, 2d S. C. reg.), age 65.
Moody, Rhoda, Mayfleld (Co. G, 12th reg.), age 65.
Norrls, Lurinda, Farr (Co. K, 6th S. C. C.), age 68.
Prlce, Mary E., Meet (Co. A, 2d Rifles), age 68.
Roland, Mary (Co. D, 18ib S. C. V.). age 63.
Smith. Martha, liasley (Co. C, 4th Cavalry), age 60.
Stone, Susan (Elford's Reserves).
Sweet, Margaret, Easley (Co. B, 4tb S. C. C.), age 74.
Times, Harriet L., Majors (Co. D, Hampton Leglon), age 62.
'Protter, Susan, Dacusville (Co. H, 1st B. C. Reserves), age 74.
Waidrop, Martha A., Llberty (Co. B, 37th Va. Cav.), age 63.
Whlte, Minerva, Plckens (Co. L, Orr's Rldes), age 71.
Whltmire, Valenle J., Loopers (Co. K, 16th reg.), age 60.
Class C, No. 4, 1902.
('hapman, Filizabeth, Easley (Barnett's Battallon), age 65.
l:ills, Cyntbla, Lasley (Co. C, Fiford's), age 73.
Morgan, Margaret, Kings (Co. A, Orr's), age 64.
l'owell, Catherine, Sunny Dale (Co. I, Fiford's), age 68.
Smlth, Isabella. Central (Co. B, 16th S. C. V.), age 84.
Class C, No. t. 1904.
Hester, Harrlett, Dacusville (Co. B. 37 th Va.)
Volrath, Martha (Co. A, German Artil.)
Clas8 C, No. 4. 1905.
Bryant, Mary R., Liasley (Co. D, 18th S. C.), age 61.
Beasley, Malinda, Central (Co. A. Orr's), age 61.
Cureton, Kate L.. Pickeñs (Co. G. 6th S. C. Iuft.), age 60. Duncan. Llla, Plckens (Co. K. Fiford's), age 78.
Freeman, Mary J.. Pickens (Co. F, 1st), age 61.
Gossett, Fllen, Easley (Co. F, 2d S. C.), age 67.
Gllham, N. A., Pickens (Co. D, Hampton Leglon), age 60.
James, F. I.. J. (Co. E, 1st), age 64. From Anderson.
Kay, Flizabeth. Plckens (Co. E, Barnett's), age 60.
O'Bryant, Hannah, Plckets (Co. B, 2d Rifles).
Ralns. Rebecca. Dacus (Co. F. 62d), age 67.
Roper. Susan. Rock (Co. H, 2d S. C.), age 68.
Rowland, Caroline. Illekens (Orr's), age 71.
Whliams. Sarah E., Cateechee (Co. E, 2d Rlfles), age 67.

## Cluss C, No. 4, 1906.

Bradley, Mary A., Liberty (Co. D, Hamp.), age 60. Cooper, Sarah D., Dacuspille (Co. F, 2d Cav.) Smith, Rebecca, Cateechee (Co. I, P. S. S.), age 60. Earle, Rachel, Plckens (Co. B, 49th N. C.), age 62. Eades, Caroline, Norris (Co. I, Ferguson's), age 61. Gilstrop, Elizabeth J., Liberty (Co. C. 4th Cav.) Glistrop, Loulza, Maphree (Co. E. 6th Cav.) Kelly, Barah L. (Co. A, 20th). From Oconee County. Lewls, Sue T., Central (Co. K, P. 8. S.)

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\text { Class C, No. } 4,1907 .
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Childers, Sarah R., Easley (Co. A, Elford's), age 61. Hill, D. A., Easley (Co. F. 2d S. C. C.), age 65. Kennemer, Lurinda, Pickens (Co. I, 4th S. C.), age 71. Mullinax, Rachel C., Central (Co. C, 1st Art.), age 76. Looper, Clarissa E., Dacusville (Co. K, Eiford's), age 60. Meredith, Nancy, Central (Beauregard's Art.), age 75. Patterson, H. C., Liberty (Co. K, 62d), age 60.
Smith, Joama, Liberty (Co. F, Ist Infantry), age 64.
Wlrehester, Nancy J., Plckens (Cُo. D, 1st S. C. I.), age 61.

## RICHLAND COUNTY.

## CHANGRE IN ROLL SINCE LA8T PAYMENT.

Dead-Clase A: A. W. St. Amand. C, No. 2: Charles W. Gayle, J. Maner, C. D. Sharp, J. W. Means, James Harden, John W. Lambert. C, No. 8: M. J. Holloway, Mary M. Bowen. C, No. 4: Flender Aull, Charlotte Strange, Harrlett Lovett.

Transferred to Other Countles-W. M. McGrady to Fairfield.
Transferred From Other Counties-L. B. Denton from Kershaw. D. M. Felts from Spartanburg. Benj. Higgins from Kershaw. Judge Wilson from Fairfid. Nicholas Gladden from Fairfleld. M. J. Sloan from Falrfield, Mary 8. Elrby from Anderson. Robert Dampler from Fairfleld.

Class A, 1905.
Wright, J. H. (Co. F, 18th reg.) Totally blind.

Class $d, 1904$.
Casey, Hugh (Co. K, 3d S. C. S. 'T'.) Totally paralyzed.

Cla8s A, 1906.
Rlmer, P. A. (Co. B, 7th Bat.) Bllnd.
Class B, 1901.
Dampler, Robert-Co. B, 18t Ala. (Lost right arm) ; from Falrfield.
Fargie, G. W., Pleasant-Co. K, 20th reg. (Lost right arm.) Gelger, W. D., Columbla-Co. C, 20th reg. (Right leg velese from woundm.) Joyner, D. F,-Co. B, 20th. (Lost right arm.)

Class B, 1904.
Seay, 1. F., Columbla (Co. K, 13th reg.) Right leg totally useless from wounds

Clas8 B, 1905.
Bacon, A. Co. B, 2d). Lost left leg. Transferred from Charleston. Colcock, Chas. J., Columbla (Co. I, 2d S. C. V.) Lost one arm.

Class C, No. 1, 1901.
Medlin, Elljah, Columbla-Co. D, 12th reg. (Wounded In shoulder and face.)
Roberts, D. B., Columbla-Co. H, Tth S. C. reg. (Wounded in left arm.)
Thomas, Jesse, Columbla-Co. H, 7th reg. (Wounded in right shoulder.)
Cluss C, No. 1, 1902.
Bagley, W. W., Columbla-Co. II, Nelson's. (Wounded in band.) Clark, J. M., Columbla-Co. H, 13th S. C. V. (Wounded in arm.) Reaves, W. R.-(o. F, 11 th reg. (Wounded in head.)
I'atterson. R. A.-('o. K, 19th reg. (Shot through arm.)
Class C, Vo. $1,1904$.
Jones, Wesley (Co. C, 7th reg.) Wounded in head.
Locklier, L. T., Kllian (Co. D, 12th S. C. V.) Wounded in left hend.

Clase C, No. 1, 1905.
McClure, John M., Columbla (Co. G, 3d batt.) Vounded left knee. Bturgeon, J, O., Kingsville (Co. H, 3d). Wounded In body. Boyd, John (Co. G, 3d). Wounded rlght arm.

Class C, No. 1, 1906.
Joymer, J. F., Columbia (Co. H, 6th). Wounded left arm. Moore, B. J., Columbla (Co. D, 12th). Wounded right hand. Beott, T. A., Columbla (Co. H, 7th S. C.) Wounded right hip.

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\text { Clase } C, \text { No. } 1,1907 .
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Bdrards, Joel B., Colnmbla-Co. E, Sd. (Wounded In knee.)
Pouncey, J. M., Colmmbla-Co. G, 15th. (Wounded right leg.)
Shepperd, Jean M., Columbla-Co. C, 6th N. C. (Wounded In forehead.)

## Olase C, No. \&, 8901.

Blistard, J. W., Meseers (Co. B, White"s Bat.), age 64.
Brasell, L. P., Columbin (Co. B, White's bat.), age 62.
Braswell, W. B., Enon (Co. D. Whlte's Bat.), age 60.
Brown, W. G., Columbla (Co. A, 1st B. C. reg.), age 62.
Burtett, L. W., Columbin (Co. E, 1st Cav.), age 63.
Berng, J. C., Columbla (Co. D. Bth reg.), age 64.
Campbell, J. D., Columbin (Co. B, 9th reg.), age 62.
Campbell. T. J., Garrlck Ste. (Co. D, 12th reg.), age 68.
Coker, Reaben, Eastover (Co. E, 2d res.), age 62.
Connerly, John, Colmmbla"(Co. B, 4th Cavalry), age 73.
Cooper, J. B. Dead; money refunded.
Corder, James A., Colnmbla (Co. C, 7th S. C. reg.), age 78.
Denton, T. B. (Co. I, 2d 8. C.). From Kershaw.
Davis, J. A., Columbia (Co. C, 7th reg.), age 60.
Datis, R. A., Columbla (Co. C, 7 th reg.), age 65.
Dennis, Gabriel, Columbla (Co. C, 7 th reg.), age 66.
Dorrity, Benjamin A., Eastover (Co. H, Hagood's rey.), we 78.
Dencan, Herelah, Columbla (Co. A, 2d Cav.), age 71.
Donlevy, R. M., Colmmbla (Co. I, 6th S. C. V.), age 70.
Danning, J. M., Columbla (Co. D, 7th S. C. V.), age 72.
Raler, A. L., Columbla (Co. B, 7th S. C. reg.), age 62.
Elkin, James S., Columbia (Co. F. 3d reg.), age 62.
Fogg, T. P., Killian (Co. F, 6th reg.), age 64.
Pelts, D. M. (Co. F, 14th). From Spartanburg.
Geten, Jewee, Messers (Co. B, Whitc'g bit.), age 84.
Gaten, M. P., Columbla (Co. H, 6th Cav.), age 72.
Godbold, Zach, Columbla (Co. F, 4th reg.), age 65.
Golnse, Henry, Messers (Co. C, 8d 8. C. reg.), age 64.
Harrison, M. C. (Co. F. 12th reg.), age 61.
Hendricke, D. J., Columbla (Co. G, 24 th reg.), age 71.
Eutchlneon, 8., Columbla (Co. B, White's), age 70.
Hlctins, Benj. (Co. B, 7th). From Kershaw.
Jamen, John F., Columbia (Co. F, 26th S. C. V.), age 63.
Eelly, J. D., Columbla (Co. C, 2d S. C. V.), age 69.
Lovett, F., Columbla (Co. C, 7th reg.), age 60.
Martin, S. N., Columbla (Co. C, Kershaw's), age 64.
Mtchom, T. G., Colnmble (Co. K, 6th reg.), age 68.
Mood, T. Ln, Columbla (Co. B, White's Bat.), age 62.
Neely, R L, Columbla (Co. B, Pal. Bat.), age 70.
Neely, F., Mill Creek (Co. B, White's Bat.), age 68.
Outiav, John E. (Co. K, 6th reg.), age 65.
Padgett, B. D. D., Columbia (Co. E, 6th reg.), age 79.
Parker, John, Klllan (Co. G, P. B. L. A.), age 69.
Robertion, W. C. (Co. H, 7 th S. C. V.), age 66.
Boneborongh, Samuel, Horrell (Co. C. 6th reg.), age 69.
Box. J. D., Columbla (Co. H, 20th reg.), age 64.
Sharp, J. M. (Co. G, 24th).
Stacts, E. B., Columbla (Co. C, 20th reg.), age 63.
Striciland, J. F., Coimmbia (Co. C, 7th S. C. Bat.), se 61.

Suber, J. D., Kingsville (Co. H, Hampton Legion), age 67.
Taylor, George T., Columbla (Co. D, 1st reg.), age 69.
Thomas, John, Killian (Co. C, 2d S. C. C.), age 66.
Thomas, J. S., Mill Creek (Co. H, 7th reg.), age 72.
Thornton, M., Killian (Co. C, 2d B. C. C.), age 60.
Wallace, Peter, Columbla (Co. B, White's Bat.), age 61.
Williams, Dan, Columbla (Co. C, 7th Bat.), age 74.
Wileon, Nathaniel, Columbla (Co. D, 12th reg.), age 69.
Class C, NO. 2, 1902.
Campbell, John, Columbia (Co. C, 7th reg.), age 83.
Dent, James N., Columbla (Co. C, 2d S. C. C.), age 68.
Eaton, Ephralm B., Columbla (Co. K, 1st Cav.), age 64.
Griffin, W. G., Columbla (Co. B, 18th S. C. V.), age 79.
Hornsby, W. J., Columbia (Co. C, 7th Bat.), age 61.
Kazell, Jacob (Co. B, 11th reg.), age 69.
McGrady, John T., Pleasant (Co. D, 12th S. C. V.), age 60.
Mlles, Burrell, Columbla (Co. C, 15th S. C.), age 65. Dead; money refunded.
Stellinger, T. W., Columbla (Co. B, 20th reg.), age 67.
Thomas, S., Columbia (Co. D, 12th S. C.), age 66.
Wallace, John, Horrell (Co. B, White's), age 67.
Wages, John, English (Co. I, 1st S. C.), age 74.
Class C, No. 8, 1908.
Baker, H. W. (Co. I, 2d reg.) Transferred from Kershaw.
Brown, W. H., Columbia (Co. D, 12th S. C. C.), age 62.
Bryant, J. T. (Co. E, Palmetto).
Bryce, John Campbell, Columbla (Co. D, 7th reg.)
Carman, J. S., Columbla (Co. G, 3d S. C.), age 60.
Diseker, J. H., Columbia (Co. F, 3d S. C.), age 60.
Ellis, W. J., Columbia (Co. I, 1st Vol.), age 61.
Fripp, M. W., Columbia (Beaufort Art.), age 66.
Hollis, J. L., Columbia (Co. C, 12th S. C.), age 62.
Hogan, J.' S., Columbla (Co. K, 7th S. C.), age 60.
McCreight, J. W., Killian (Co. G, 6th reg.), age 60.
Price, T. N., Columbla (Co. C, 7th S. C. bat.), age 60.
Scott, J. Y., Columbla (Co. B, 7th bat.), age 60.
Whitmore, H. B., Wateree (Co. G, 1st S. C. T.), age 63.
Wilson, Thomas (Co. C, 7th).
Younginer, G. W. (Co. H, 3d reg.)
Class C, No. 2, 1904.
Atkerson, J. E., Messers (Co. G, 20th S. C.)
Brown, A. P., Columbla (Co. C, 1st Cav.)
Dennis, Robert H., Columbla (Co. F, 3d S. C.)
Gladden, Nicholas (Co. C, 6th). From Fairfield.
Havird, W. P., Pleasant (Co. B, 14th S. C. V.)
Hook, W. T., Edgewood (Co. G, 3d S. C.)
Hooper, James D., Columbla (Co. C, 2d reg.)
Land, W. L., Columbia (Co. B, 4th reg.)
LeGrand, Wade, Columbia (Co. F, 3d reg.)
Mook, Moses I., English (Co. B, Palmetto).
Martin, J. H., Denteville (Co. D, 12th S. C. V.)
McGrady, R. A., Pleasant (Co. B, 12th reg.)
Pirder, Thomas, Columbla (Co. H, 2d reg.)
Richter, J. J., Columbla (Co. B, 1st reg.)
Shannon, S. M., Columbla (Co. C, 7th reg.)
Smith, J. Frank, Horrell (Co. -, 1st reg.)
Thompkins, 8. S., Columbla (Co. K, 26th reg.)
Watts, J. T., Columbia (Co. B, 7th reg.) Dead; money refunded.
Workman, S. M., Columbla (Co. B, Palmetto). Dead; money refunded.
Williams, A. J., Columbla (Co. K, ©th S. C.)

Olase O, No. 2, 2006
Austin, F. B., Columble (Co. F, 12th B. C.)
Bush, G. B., Hoptins (Co. K, 3d Inft.)
Baft, H. J., Columbla (Co. D, 1st).
Gates, W. M., Messers (Co. A, 1st).
Huft W. B., Columbla (Co. B, 15th S. C.)
Medin, H., Spar (Co. C, 7th).
Marsh, T. C., Columbla (Co. A, 2d B. C.)
Neely, J. T., Columbla (Co. B, White's Battalion). Dead; money refunded.
Scely, W. F., Jacobs (co. F, 8d).
Wingard, J. T., Colambia (Co. A, 1st).
Wilson, Wim., Columbla (Co. C, 1st).

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\text { OLass C, No. 2, } 1906 .
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Cotton, Jacob, Eastover (Co. B, 2d).
Elder, John T., Colambla (Co. C, 7th).
Jones, N. N., Columbla (Co. A, 7th).
KeGuinnle, John, Columbla (Co. C, 2d Cav.)
Nelson, J. H., Columbla (Co. G, 24th).
Tharnton, P. H., Columbla (Co. C, 7 th).
Radcliffe, L J., Columbla (Co. C, 2d Inft.)

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\text { Class } C, \text { No. } 2,1907 .
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Costine, A. J., Columbla (Co. K, 3d N. C. I.).
Davis, W. D., Columbla (Co. C, 7th).
Driggers, J. P., Columbla (D, ist S. C. I.).
Dixon, J. H., Columbla (Co. I, 1st).
Hays, James, Columbia (Co. G, 7 th S. C.).
Jumper, H. F., Columbla (Co. C, 15th).
Kelly, L. W., Columbla (Co. C, 15th S. C.).
Keith, F. J., Columbla (Co. C. 7 th Cav.).
Leaphart, Henry, Columbla (Co. B, Rhett's).
Lever, J. J. Blythewood (Co. C, 2d S. C.).
Masjek, N. B., Columbia (Co. E, 25th).
Stratton, B. E., Colambla (Co. C, 1st S. C. V.).
Wingard, A. E., Columbla (Co. K, 9th B. C.).
Clase C, No. S, 1801.
Widows of Soldiers Who Lost Their Lives in the Bervioc of the Confederate Btatce.
Cloyd, S. C., Hopking (Co. A, 22d S. C. 1.)
Doby, F. K. (Co. E, 2d S. C.)
Edwards, Ellsabeth, Columbla (Co. G, 24th reg.)
Fetner, Flizabeth. Columbla (Co. F, 12th reg.)
Johnmon, Annia, 1 imbla (Co. K, 18th reg.)
Kenugh. Fis abeth, Columbla (Co. A, James's bat.)
Smitn. Susannah, Columbla (Co. D, 7th B. C. reg.)
Thornton, Catherine, Columbla (Co. B, 1st reg.)
Bogers, Amanda (Co. E, 22d reg.)

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\text { Olass C, No. s, } 1904 .
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Brazwell, Nancy, Columbla (Co. G, 23d Bat.)
Davis, Martha, Columbla (Co. F, 3d Bat.)

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\text { Class C, No. S, } 1905 .
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Dabbe, Amadda, Jacobe (Co. D, 12 th ref.)
Peak, Lavinia (Co. C, 24th reg.)
Rabon, Sugan R., Killian (Co. G, 24th B. C. I.)
Wagpatall. Annle, Jacobe (Co. D, 12th S. C.)

Olass C, No. s, 1904
Christmas, Mary L., Columbla (Co. B, 7th S. C. V.)
Hawkins, Eleanor, Elllian (Co. C, 2d reg.)
Kirkley, Nannle (Co. D, 1st S. C. V.)
Moore, O. M., Columbla (Co. D, 12th reg.)

Clas8 C, No. s, 1905.
Brown, Cynthla (Co. G, 3d). Transferred from Fairfield. Ferguson, Ellza (Co. D, 6th). Transferred from York. Goins, Pollie, Columbia (Co. C, 2d S. C.)
Oxendine, Abigall (Co. C, 6th). From Chester.

Clase C, No. s, 1907.
Roberts, Sarah E., Columbla (Co. B, 7th).
Class C, No. \&, 1901.
Bagley, R. J., Columbla (Co. E, 1st S. C. V.), age 67.
Baugh, Rachel, Columbia (Co. G. 3d S. C. I.), age 75.
Bauschell, M. E., Columbia (Columbia Fiying Artillery), age 64. Dead; money refunded.
Blizzard, Sarah J., Columpla (Co. C, 7th S. C. reg.), age 62.
Brown, Catherine, Pleasant (Co. A, Witherspoon's), age 61.
Cnmpbell, Mary J. T., Columbla (Co. C, 2d R. Cav.), age 61.
Chappell, L. C., Columbla (Co. F, 12th S. C. reg.), age 74.
Clark, Harriett, Killian (Co. K, Brown's bat.), age 66.
Cooper, M. A., Columbia (Co. A, 2d S. C. V.), age 60.
Drennan, A. D., Columbla (Boykin's Mounted Rangers), age 85. Dead; money refunded.
Dunning, A., Columbla (Co. A, 1st reg.), age 90.
Earhardt, J. M., Columbla (Co. K, 20th S. C. V.), age 63.
Edmunds, H. B., Columbia (Manigault's Battalion), age 68.
Farrow, M. A., Columbla (Co. B, 27th reg.), age 69.
Goff, R. E., Messers (Co. G, Witherspoon's), age 74.
Hamlter, S. A., Columbla (Co. G, 24th reg.), age 77.
Hammond, Susan, Columbla (Co. D, 12th reg.), age 62.
Harrison, Mary, Columbla (White's Battery), age 60.
Hay, Amy, Columbla (Co. A, 1st S. C. V.), age 66. Dead; money refunded.
Hipps, A. I., Columbla (Co. H, 3d reg.), age 61.
Hook, J. L., Columbla (Co. C, 2d reg.), age 67.
Jones, Caroline H., Messers (Co. H, 7th reg.), age 73.
Kelly, Sarah, Killian (Co. F, 2d reg.), age 67.
Kirk, M. M., Columbla (Co. D, 3d reg.), age 67.
Martin, Elizabeth, Messers (Co. K), age 79.
Medlin, Sarah Ann, Columbla (Co. D, 12th reg.), age 64.
Paul, Funice A., Kingsville (Co. C, 12th S. C. V.), age 60.
Parnell, Eliza, Columbla (Co. G, 3d S. C. reg.), age 68.
Price, Margaret E., Columbla (Co. C, 12th reg.), age 75.
Scott, S. A., Columbla (Co. G, 18th S. C. V.), age 71.
Self, Mary M., Columbla (White's Battery), age 65.
Smith, Mary A., Columbia (Co. H, 7th Cav.), age 62.
Stevenson, Adeline. Columbla (Co. C, 8th reg.), age 63.
Workman, Sarah, Columbla (Co. B, White's Bat.), age 62.
Clas8 C, No. 4, 1908.
Ellinger, Mary, Pleasant (Co. B, 15th La.), age 64.
Hornsby, Loulsa, Columbia (Co. C, 1st S. C.), age 63.
Hendrix, Anna, Pleasant (Co. C, 6th reg.), age 63.
Jones, Elizabeth, Congaree (Co. A, 7th reg.), age 69.
Knight, Elizabeth A., Columbla (Co. B. Holcomb's Legion), age 79.

Lacons, Rebecen (Co. H, 20th reg.), age 60.
Lafar, Kate 8 ., Columbia (Co. G, 2d Infantry), age 61.
Mediln, Martha, Columbia (Co. D, 12th reg.), age 69.
Mediln, Mary, Spear (Co. C, Nelson's Bat.), age 70.
MeCaln, E. S., Columbla (Co. C, 9th S. C.), age 60.
North, C. E., Columbla (Co. F, 3d S. C.), age 65.
Rome, Margaret E., Columbla (Co. A, 2d reg.), age 62.
Bloan, M. J. (Co. F, 12th). From Falfield.
Sease, J. C. (Co. H, 12th reg.), age 62.
Sartor, M. F. (Co. D, 5th reg.)
Taylor, Mary Ann (Co. K, 13th), age 69.

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\text { Clase O, No. \&, } 1903 .
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Davis, Sallie V., Columbla (Co. G, 20th reg.), age 60.
Farmer, Mary, English (Co. E, 14th S. C.), age 81.
Frankiln, 8. M. (Co. B, lst Cav.), age 60.
Grimsley, Josephine, Columbla (Co. G, 1st S. C.), age 64.
Hawking, M. A., Harmons (Co. C, 7th reg.), age 62.
Class C, No. 4. 1904.
Bowen, Emma, Columbla (Co. G, Palmetto), age 63.
Graj, Ann, Hopkins (Co. H, 7th reg.), age 60.
Gelger, Leonora, Columbla (Co. H, 3d S. C. V.), age 62.
Hodge. Martha L., Columbla (Co. H, 5th reg.), age 60.
Kennedy. Caron D., Horrell (Co. C. 6th S. C. V.), age 62.
Ljan, F. L. (Co. A, 5th). Transferred from Greenville.
Martin. Margaret, Einon (Co. G, 7th reg.), age 65.
MartIn. I'atlence, Columbla (Co. C, 7th reg.), age 64.
Nettles, Mary J. (Co. F, 2d). From Kershaw.
Strickiand, Dolly, Columbia (Co. B, Waites's Bat.)
Smith, Amelia, Columbia (Co. E, Pnimetto).
Watts, Elizabeth, Columbla (Co. C, 6th Vol.)
Class C, No. 4. 1905.
Cooper, Mary (Co. F. 3d), age 60.
Bowles, Bettle, Columbla (Co. G, Holcomb Legion), age 60.
Black, M. F., Colambla (Co. D, 7ih), age 60.
Blggs. M. V., Fastover, Columbla (Co. D, Whlte's), age 60.
Dinkins, Marthe (Co. A, 5th), age 64.
Dyson, Ann L., Columbla (Co. B, 20th), age 60.
Danlels, Mary, Edgewood (Co. A. Hampton Legion), age 60.
Geiger, Mary J., Rlchland (Co. C, 20th Inf.), age 61.
Gayle, Margaret, Columbla (Co. A), age 75.
Johnson, J. M., Columbla (Co. F, P. S. S.), age 60.
Jeferson, Mary, Columbla (Co. F, 1st), age 68.
Kirkland, Margaret, Columbla (Hagoous), age 61.
Powers. Elizabeth, Columbla (Co. B, 7th), age 60.
Roblnson, L. H., Columbla (Co. L. 20th), age 70.
Smith. Virginla. Columbla (Co. B, White's), age 60.
Setzler, Frances, Columbla (Co. H, 3d), age 61.
Thornton, Mary, Columbla (Co. C, 2d), age 82.
Class C, No. 4. 1906.
Adcork, Hattle F., Olympla (Co. C, 2d Tenn.), age 60.
Dent. Christine, Columbla (Co. C, 2d C.), age 72.
Gofr, M. M. (Co. A, 5th), age 79.
Green. Ioulsa H., Columbla (Co. C, 7th), age 65.
Gates, 8. P., Jacobs (Co. H, 7th), age 61.
Nates, Amanda, Denteville (Co. C, 20th), age 67.
Jacobs, C. F., Columbla (Co. G, 24th), age 60.

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Jones, Fhoda, Klllians (Co. D, 25th), age 60.
Kirby, Mary \&. (Co. E, Hampton's). From Anderson.
Shelly, M. E., Columbla (Co. I, 10th), age 61.
Rose, Eliza, Jacobs (Co. C, 2d), age 71.
Tucker, M. E., Horrell (Co. C, 2d Cav.), age 60.
Whison, Ellzabeth, Columbla (Co. C, 7th), age 75.
Clase C, No. $4,1907$.
Bllzzard, Ellzabeth, Columbla (Waltle's Battalion), age 81.
Davis, M. B., Waverly (Co. A, Benson), age 61.
Daniels, Matllda (Co. C, 7th), age 83.
Ford, Susannah, Columbla (Co. A, Benson's), age 61.
Howell, Malinda, Columbla (Co. 2d S. C. V.), age 60.
Marsh, Leonora, Killians (Co. C, 7th), age 66.
Mobley, Elizabeth, Columbla (Co. A), age 66.
McClellion, Ellzabeth, Columbla (Co. D, Hampton's), age 62.
Parker, Kate, Columbla (Waltes' Art.), age 63.
Ruff, M. V., Lykesiand (Co. F, 12th), age 63.
Sẅgert, M. M., Columbla (Co. H, 1st), age 64.
Suber, Martha, Kingsville (Co. H, 2d), age 65.
Smith, E. R., Columbla (Co. A, Sth), age 62.
Sharpe, Carrie E., Columbla (Co. C, Witherspoon's), age 76.
Stricklin, M. A., Columbla (Co. H, 7th), age 60.
Stork, M. E., Columbla (Co. C, 20th), age 66.
Whlson, Jane E., Dentville (Co. C. 2d), age 63.
Wllle, M. E., Columbla (Co. E, 15th), age 61.
Zobel, Harriett, Columbla (Co. E, 8d), age 62.

## 195

## SALUDA COUNTY.

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CHANGES IN ROLL BINCE LAST PATMENT.
Dead-C, No. 1: W. D. McGhee. C, No. 2: B. D. Youngblood, W. Kirkland, O. D. Rawl. C, No. 4: Matllda Padgett, Jane Bledsoe, Nancy Wright, Mary ang Havird.

Transferred to Other Classes-J. P. Bedenbaugh from C, No. 2, to C, No. 1. G. w. Harrls.

Dropped on Account of Property-M. A. Rogers.
Tranaferred From Other Countles-Hulda Padgett from Aiken.

## Olaes B, 1901.

Chapman, D. N., Saluda-Co. A, 27th reg. (Lost one foot.)
Corley. Thos. C., Etheridge-Co. K, 13th reg. (Lost one arm.)
Fidson, W. H., Johnston-Co. M, 7 th reg. (Partlally paralyzed in both arms.)
Gmith, L. L., Delmar-Co. E, 7 th reg. (Lost one leg.)

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\text { Clase } O, \text { No. 1, } 1901 .
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Bedenbaugh, J. T., Delmar-Co. M, 7th reg. (Wounded in knee.)
Cochrel, Weales, Saluda-Co. F, 27 th reg. (Injured In one ankle.)
Glpeon, Jacob, Saluda-Co. M, 7th reg. (Lost one arm.)
Jones, T. A., Saluda-Co. A, 7th reg. (Wounded in face.)
McGhee, W. D.-Co. B, 4th. (Wounded left arm.)
Riddlehoover, Willam, Derfy-Co. A, 7th reg. (Wounded in hand.)
Eushton, W. W.-Co. G, 7th Bat. (Blind in one eye.)
Stewart, W., Colemans-Beauregard's Bat. (Wounded in left knee.)
Btory, Willam, Blacks-Co. A, 19th S. C. V. (Wounded In arm.)
Clase C, No. 1, 1908.
Bhealy, Paul, Delmar-Co. F, Jenklne's S. S. (Woanded In right leg.)
Clase C, No. 1, 1909.
Johneton, R. G., Johngton (Co. K, 14th reg.) Wounded in right ankle.
Clase O, No. 1, 1904.
Towles, R. S., Cambridge-Co. K, 14th reg. (Wounded in leg.) Dead; money refunded.

Class O, No. 1, 1908.
Harris, Plnckney, Wards (Co. B, 14th). Wounded right side.
Galter, L. G., Wards (Co. D, 19th). Wounded ln thigh.
Clase O, No. 1, 1007.
Bedenbangh, J. P., Silver-Co. M, 7th. (Wounded in arm.)
Harris, G. W., Mt. Willing-Co. B. 14th S. C. (Wounded right leg.)
Rushton, W. W.-Co. G, 7th. (Wounded In eyes.)
Whittle, Thomas, Saluda-Co. B, 14th. (Wounded In left shoulder.)

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\text { Class C, No. \&, } 1901 .
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[^2]Crout, E., Dupler (Co. C, 15 th reg.), age 62.
Dean, Charles (Co. K, 14th S. C. V.)
DeLoache, Milledge, Saluda (Co. F, 27 th reg.), age 62.
Davis, G. W., Cloudscreek (Co. K, 2d reg.), age 64.
Durst, Whllam, Johnston (Co. K, 14th B. C. reg.), age 72.
Goff. Willam, Batesburg (Co. D, 19th reg.), age 60.
Griffth, C., Owdoms (Co. K, 2d reg.), age 65.
Griffth, Henry, Owdoms (Co. B, 2d reg.), age 75.
Hair, John, Ridge Spring (Co. A, 19th S. C. V.), age 60.
Harris, W. P., Saluda (Co. M, 7th reg.), age 61.
Henderson, J. C., Saluda (Co. H, 7 th S. C. reg.), age 64.
Jones. W. A., Saluda (Co. M. 7th reg.), age 63.
Kirkland, J. F., Mt. Willing (Co. B, 6th Cav.), age 62.
King, Henry (Co. G, 2d reg.) Transferred from Greenwood.
McCarty. J. AC., Denny (Co. K, $2 d$ reg.), age 60.
Mathews, John, Blacks (Co. B, 14th S. C. V.), age 60.
Miller, Garnett, Hibernia (Co. K, 13th reg.), age 73.
Miller, J. B. W., Mount Willing (Co. A, 2d Art.), age 73.
Orander, William, Ridge Spring (Co. K, 2d Art.), age 75.
Padgett, Henry, Ridge Spring (Co. E, 2d S. C. A.), age 64.
Rawl, J. M., Sexton (Co: E, 5th reg.), age 61.
Rawl. Lewls, Dupler (Co. C, 11th reg.), age 60.
Riddlehooper, Joseph, Colemans (Co. K, 2d reg.), age 68.
Salter, J. M., Johnston (Co. B, 2d S. C. A.), age 65.
Senterfeld, Isalab. Ridge Spring (Co. F, 19th S. C. V.), age 66.
Smith, W. S., Chestaut (Co. E, 7 th Cav.), age 70.
Snelgrove, L. W., Mount Whlling (Co. K, 2d reg.), age 68.
Sons, H. R., Wards (Co. G, 17 th reg.), age 70.
Walker, B. T., Ridge Spring (Co. F, 19th S. C. V.), age 66.

Clase C, No. E. 1902.
Butler, D. M., Mayson (Co. B. 3d S. C. V.), age 62.
Rodgers, James, Mine Creek (Co. B, 14th reg.), age 82.
Rodgers, J. Allen (Co. H, 14th reg.), age 60.
Class C, No. 2, 1904.
Chapman, L. W., Blacks (Co. K, 20th Bat.)
Holloway, Frank G., Payne (Co. F. 7th Cav.)
Ligon, J. H., Ungers (Co. A, 1st S. C. C.)
Morse, Simeon, Sexton (Co. K. 14th Bat.)
Rodgers, T. R., Wards (Co. B, 19th reg.)
Rushton, J. D., Saluda (Co. M, 7th Bat.)

Class C, No. 8, 1906.
Corley, Jack, Saluda (Co. B, 1st Reserves).
Duffie, H. P., Crouches (Co. M, 7th).
Roe, L. A. (Co. B, 7 th S. C.).
Faulkner, L. D., Saluda (Co. D, 6th).
Jay, John, Bancks (Co. G, 7th).
Smith, F. P., Chappels (Co. A, 2d).
Clasa C, No. 8, 1907.
Mack, J. Adam, BIg Creek-Co. C, 2d).
Smith, J. Wash., Leesville (Co. E, 7th).

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\text { Olase } O, \text { No. s, } 1902
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Widows of soldiers Who Lost Their Lives in the Servioe of the Oonfoderate stefee.
Adams, Elisabeth, Big Creek (Co. K, 14th 8. C. V.)
Bushardt, Mary, Saluda (Co. B, 14th 8. C. V.)

Johnson, A., Mine Creek (Co. D, 19th S. C. V.)
Jonee, Emmellne, Wards (Co. I, 20th S. C. V.)
Salter, Harrlett, Saluda (Co. D, 19th S. C. V.)
Shealy, Sarah, Monetta (Todd's Co., 3d reg.)
Sperry. Frances, Chestnut (Co. K, 15th S. C. V.)
Walton, Julla, Saluda (Co. H, 7 th reg.)

Class C, No. S. 1902.
Shealy, Nancy, Dupler (Co. C, 15 th reg.)
Clase C, No. S, 1905.
Crouch, Ann, Saluda (Co. D, 19th reg.)
Crout, Jane F., Delmar (Co. C, 7th S. C.)
Shealy. Mary R., Delmar (Co. M, 7th S. C.)
Shealy, Mary Levl, Etheridge (Co. H, Holcoinb Legion).
Shealy, Jemima, Delmar (Co. M, 7th S. C.)
Snelgrove, Rosanna, Etheridge (Co. H, Holcomb Legion).
Rodgers, Elizabeth, Minecreek (Co. D, 19th reg.)
Reynolds, Martha, Minecreet (Co. B, 14th Vol.)

Clase C, No. S, 1906.
Fowler, Amanda (Co. K, 14th).
Whittle, Ellaxbeth, Kidge Spring (Co. D, 19tb).

Class C, No. S, 1908.
Ueloach, Elizabeth (Co. F, 27th reg.)
Hill, Luclada, Fralt Hill (Co. K, 15th).
Forest, Jane, Wards (Co. D, 19th S. C. V.)

Closs C, No. 3, 1907.
Duffy, Nancy (Co, K, 2d).
Class O, No. \&, 1901.
Aughtry, Nancy, Batesburg (Co. F, 19th S. C. V.), age 69.
Berry, Mary, Bouknight (Co. B, 22d reg.), age 73.
Berry, Mary, Mine Creek (Co. M, 7th reg.), age 63.
Butler, Elsle, Blgcreet (Co. K, 2d Art.), age 93.
Burnett, Minale (Co. I, 2d). From Fdgetield.
Corley, Ellzabeth, Merchant (Co. B. 1st Englneer T.), age 62.
Davis, Nancy L., Fruit Hill (Co. C, 7th reg.), age 63.
Elmore, M. C., Fralt Hill (Co. C, 7th reg.), age 68.
Etheridge, Sophla, Merchant (Co. F, 7th reg.), age 03.
Force, Mary (Co. H, Holcomb's Legion), age 60.
Glllion, Mary, Saluda (Co. B, 14th reg.), age 67.
Glenn, Jane H., Saluda (Co. K, 2d reg.), age 66.
Goff, Francea, Ridge Spring (Co. D, 19th S. C. V.), age 60.
Harling, Luclnda, Frult Hill (Co. K. 1st reg.), age 63.
Martln, Florllla, Johnston (Co. F, 2d Art.), age 64.
Nelson, Mary F., Mine Creek (Co. A, 1st S. C. Reserves), age 77.
Padgett, Frances, RIdge Spring (Co. F. 19th S. C. V.), age 78.
Padgett, Hulda (Co. A, 19th), age 84. From Alken.
Palmer, Becky. Mount Wlling (Co. M, 7th reg.), age 67.
Pollard, M. F., Johnston (Co. A, Whlte's Bat.), age 60.
Powell, Dracllia, Frult Hill (Co. C. Merriwether's reg.), age 88.
Ramey, Harriett, Colemang (Co. D. 14th reg.), age 66.
Rowe. Sarah, Saluda (Co. D, 7th reg.), age 75.
Steveng, Josie, Chestnut (Co. N, 14th reg.), age 60.
Werren, Mary J., Huger (Co. F, 14th reg.), age 67.

Olaed C, No. it min
Cobler, Frances (Co. K, 2d S. C. Art.), age 61.
Carley, M. J., Matthews (Co. E, 7th bat.), age 66.
Dean, S. E., Mt. Willing (Co. D, 19th Bat.), age 78.
Feaster, Delilah, Rldgespring (Co. B, 2d S. C. R.), age 80.
Goff, Loulsa, Etheridge (Co. A, 17th reg.), age 67.
Horne, Martha E., Ridge Spring (Co. A, 19th S. C.), age 66.
McCary, Mary A., Sexton (Co. F, 2d Vol.), age.64.
Rhinehart, Susan (Co. E, 7th reg.)
Wood, Sarah $\Delta n n$, Rldge Spring (Co. D, 19th reg.), age 68.
Walton, Marthema, Saluda (Co. D, 14th reg.), age 60.
Willame, S. J., Rldge Spring (Co. A, 19th reg.), age 60.

## Cless O, No. 4, 1905.

Chapman, Ellen, Minecreek (Co. B, 14th reg.), age 65.
Keigler, Mary Ann, Dupler (Co. C. 6th reg.), age 76.
Martin, Eveline, Ridgespring (Co. K, 24th S. C.), age 65.
Rowe, Eliza. Ridgespring (Co. K, 19th reg.), age 60.
Oudam, Mary. Frulthill (Co. K, 2d reg.), age 67.
Wlllams, Sallle, Saluda (Co. D, 19th reg.), age 60.
Warren, Sarah, Batesburg (Co. B, 2d reg.), age 81.
Walker, Ellzabeth, RIdgespring (Co. B, 14th reg.), age 60.

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\text { Class C, No. \&, } 1904 .
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Leopard, Laura, Batesburg (Co. M), age 60.
Kneece, Amanda, Ridge Spring (Co. F, 19th reg.), age 60.
Winn, I. M., Wards (Co. D, 19th S. C. V.), age 64.

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\text { Class C, No. f, } 1905 .
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Bartley, Catherine, Mine Creek (Co. B, 14th), age 60.
Cromer, Ellen E., Saluda (Co. A, 22d), age 76.
Graddlek, Georgiana, Leesvllle (Co. H. Holcomb Leglon), age 62.
Magee, Vilizabeth, Rldge Spring (Co. D, 2d), age 71.
Smlth, Jane, Chestnut (Co. K, 2d), age 80.
Shaver, Eugenla, Saluda (Co. I, 37th), age 70.
Class C, No. 4, 1906.
Gentry, Louisa, Paynes (Co. G, 7th), age 72.
Holley, Mary A., Dupler (Hart's Battery).
Raul. Sarab, Dupler (Co. C, 15th).

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\text { Class C, No. f. } 1907 .
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Asbill. Hepsy E., Monetta (Co. F, 19th), age 61.
Bartley, Jane, Wards (Co. B, 14th), age 73.
Dunnovant, Emmellne, Wards (Co. D, 19th), age 71.
Klrisland, Pheby, Saluda (Co. A, 1et), age 69.
Mathews, Matllda, Saluda (Co. K, 14th), age 75.

## SPARTANBURG ÇOUNTY. <br> CHANGES IN ROLL SINCE LAST PAYMENT.


#### Abstract

Dead-C, No. 1: J. W. White. C, No. 2: M. B. Burrell, N. N. Byars, J. W. Caldwell, M. T. Davis, Dudley Hall, George Koon, J. D. Lewls, W. D. Marks, J. W. Mathls, G. B. Rook, E. M. Wlllams, M. W. Fllnn, J. T. Seay, J. J. Watson, Wlllam Reld, John W. Weaver, T. P. Waddell, L. P. Cantrell, H. L, Pedan. C, No. 3 : Eleanor Woodward, Catherlne Godfrey, Mahala Klmbrell, Emlly Wllard. C, No. 4: Dorothy Balenger, Lorena Coggins, Frances Gossett, Jane Roebuck, Arminda Smlth, Elender Belcher, M. C. Wlngo, M. A. Watklns, Catherlne Crocker.

Left State-William Massey, Alez. Shaft. Transferred to Other Counties-F. T. Warllck to Cherokee. C. M. Bishop to Laurens. Danlel M. Felts to Rlchland. J. F. Harvey to Laurens, Thomas Horn to Union. A. D. Lovelace to Cherokee. Lum Malone to Laurens. W. J. Stanford to Cherokee. Octavia R. Crow to Greenville. Joama Sutton to Greenville.

Transferred to Other Classes-From C, No. 2, to C, No. 1: P. C. McMakdn. From C, No. 1, to A: J. M. Rlddell.

Transferred From Other Countles-Ellzabeth Harvey from Greenvlle.


Class A, 1905.
Chamin, J. L. (Co. C, 22d Ga). Bllnd and paralyzed.
Class A, 1904.
Mahaftey, M. R., Gramllig (Co. I, 16th reg.) Paralyeed.
Raines, James, Cowpens (Co. D, 13th N. C.) Totally bllnd.

Clases A, 1907.
Crocker, Madlgon, Saxon Mill-Co. B, Hol. Ieglon. (Paralyzed.)
O'Shlelds, Wlllam P., Enoree-Co. K, Orr's. (Paralyzed.)
Riddle, James M., Paullne-Co. K, 3d. (Bllnd.)
Westmoreland, J. B., Woodruti-Co. E, Hol. Legion. (Bifnd.)

Class B, 1901.
Allen, G. W., Trough-Co. I, 13th S. C. V. (Lost left arm.)
Babb, W. M., Woodraff—Co. D, 3d S. C. reg. (Lost left arm.)
Bearden, S. S., Gienn Springo-Co. C, 27 th Infantry. (Lost left leg.)
Brown, J. A., Glendale-Co. G, 61st Va. Vol. (Lost left leg.)
Gowan, M. V., Inman-Co. I, Holccmb's Leglon. (Lost left leg.)
Hemmett. R. D., Trough—Co. B, Holcomb's Legion. (Lost left arm.)
Johnson, J. J., Clarence-Co. F, 13th S. C. reg. (Lost left arm.)
McCarter, J. M., Greer-Co. K, 5th reg. (Lost right arm.)
MeFlrath, W. A.-Co. B, 22d). (Lost left arm.)
Jolly, R. M. (Co. M, P. S. S.) Lost one leg. From Spartanburg.
Seay. J. M., Bolling Sprlngs-Co. C, Holcomb Legion. (Lost right arm.)
Selzemore, Wm., Spartanburg-Co. K, 5th reg. (Arm paralyzed.)
Smlth, M. B., Converse-Co. F, 2d S. C. Rifles. (Lost rlght leg.)
Willams, R. M., Harrelson-Co. K, Bd B. C. V. (Lost left leg.)

Class B, 1902.
Hunsinger, James, Bolling Springs-Co. F, 6th reg. (Lost left arm.)

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\text { Clase B, } 1908 .
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McDowell, W. J., Inman (Co. F, 5th reg.) Lost left arm.

## Olass C, No. 1, 1901.

Birch, H. V.. Ardella-Co. F' I. S. C. A. (Wounded in right foot.)
Bridres. W. M. Inman-Co. M, 5th reg. (Wounded in heel.)
Brown. B., Arllngton-Co. E, 2d B. C. C. (Wounded in ear.)
Boase, C. L., Spartanburg-Co. C, Hol. Leg'n. (Shot In foot.)

Camp, George H., Inman-Co. C, Holcomb's Leglon. (Woanded In right hand.) Cartee, J. B., Gramling-Co. K, 5th reg. (Shot in knee.)
Dillard, J. T., Reidvlle-Co. B, 13th reg. (Wounded In left ankle.)
Dobblns, W. A., Enoree-Co. B, 13th reg. (Wounded in right leg.)
Gowan, J. C., Parls-Co. K, Eth reg. (Wounded in rlght hand.)
Hendrlx, Wm., Reldvllle-Co. C, 23d S. C. V. (Wounded in leg.)
Harmon, E. R.-Co. I, 13th. (Wounded shoulder.) Transferred from Cherokee Co.
Jenkins, J. D., Brooklyn-Co. D, 5th S. C. reg. (Wounded in arm.)
Johnson, D. I., Spartanburg-Co. B, 18th S. C. reg. (I.eft eye shot out.)
Johnson, J. M., Moore-Co. I, 5th S. C. V. (Wounded In shoulder.)
Jolly, D. L., Fingerville-Co. K, Holcomb's Leglon. (Wounded in right thigh.)
Jolly, Stephen, Fingerville-Co. A, Holcomb's Legion. (Wounded In rlght ege.)
Lawrence, N. W., Friendship-Co. C, 13th B. C. V. (Wounded In left elbow.)
LInder, Lee, Cowpens-Co. H, I. S. S. (Wounded in back and hand.)
Long. I. P., Spartanburg-Co. B, 13th S. C. V. (Wounded In knee.)
McCarter, John, Frlendship-Co. H, 6th S. C. C. (Wounded In leg.)
Moss, F. B., Glendale-Co. G. 13th S. C. V. (Wounded ln left arm.)
Phillips, J. S., Spartanburg-Co. F, 18 th S. C. V. (Shot In right shoulder.)
Powell, James, Dexter-Co. A, P. S. S. (Wounded In forehead.)
Ramseur, P. A., Inman-Co. C, Holcomb's Leglon. (Wounded In chest.)
Sanders, W. E., Spartanburg-Co. K, 17th S. C. V. (Wounded In right knee.)
Scruggs, Lewls, Cowpens-Co. A, Holcomb's Leglon. (Wounded In left leg.)
Sexton, M. W., Llnwood-Co. C, 13th reg. (Wounded in head.)
Senn, J. L. G.-Co. F, 8th reg. (Wounded right leg.) Transferred from Laurens.
Turner, Jonathan, Campobello-Co. II, 22d reg. (Wounded In thigh.)
Vincent, Rlchard, Trough-Co. F, 15th S. C. V. (Lost use of right hand.)
West, W. P., Greer-Co. K, Orr's Rifles. (Shot In left elbow.)
Westmoreland, J. G., Creacent-Co. F, Holcomb's Legion. (Wounded In thlgh.)
Class C, No. 1, 1902.
Owens, J. E., Bolling Springs-Co. I, 1st S. C. Battallon. (Wonnded left hand.)
Class C, No. 1, 1908.
Byars, Robert, Martlnspille (Co. Fi, 13th reg.) Wounded left arm.
Hayes, John. Glenn Springs (McBeth's Art.) Lost right eye.
Rogers, W. B. (Co. E, 18th). Wounded in mouth. Transferred from Laurens.
Wall, J. M. (Co. K, 5th S. C.) Wounded In leg.
Clase C, No. 1, 1904.
Cathcart, H. P., Spartanburg (Co. D, 3d reg.) Wounded in left ege. Hardin, Wlllam, Fingerville (Co. F. 5th S. C.) Wounded in left hip. Henderson. Thomas, I'acolet (Co. K. I'. S. S.) Wounded In face. Waddell, Sam V., Reldville (Co. E, 14th reg.), Wounded In hlp. Waddell, T. P., Reldville (Co. F., 14th reg.) Wounded in head.

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\text { Class C, No. 1, } 1905 .
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Tinsley, H. L., Cufton (Co. C, 18th). Wounded in arm.
Roebuck, J. P., Woodruff (Co. K, 3d S. C. V.) Wounded in right leg.
Steadman, J. T., Brooklyn (Co. I, 34th, N. C. V.) Wounded in shoulder.
TInsley, Jerry, Spartanburg (Co. A. White's). Wounded In arm.
Clase C, No. 1. 1906.
Cooper, M. C.. Spartanburg (Co. A, I'at.) Lost right finger.
Ferguson, H. T., Spartanburg (Co. E, 6th). Wounded in left leg. Dead; money refunded.
Gentry, J. W., Converse (Co. D, 3d). Wounded In top of hend. Ferris, W. M., Cowpens (Co. K. Hol. Leg'n). Wounded in heel. Van Patten, A. E., Campbello (Co. E, 14th). Wounded in leg.

## Olase C, No. 1, 1907.

Jamen, P. B., Greers (Co. B, 13th). Wounded in arm. Johnson, J. M. (Co. E, 18th S. C.). Wounded In shoulder. McMakln. P. C., Greers (Co. B, 22d S. C.) Disabled. Shippey, J. J., Spartanburg (Co. G, 5th). Wounded in foot. Whllams, J. H., Glendale (Co. 15th). Wounded in elbow.

## Olaes C, No. \& 1901.

Adams, A. R., Arkwright (Co. H, 15th S. C. V.), age 61.
Bagwell, W. M. (Co. E, Holcomb Legion). Transferred from Greenville. Bagwell, J. M., Falr Forest (Co. C, 27th reg.), age 63.
Bailey. Jonathan L., Pacolet (Co. H, 15th reg.), age 60.
Ballenger, W. Y., Campton (Co. I, Holcomb's Legion), age 76.
Ballinger, F., Arlington (Co. B, 3d reg.), age 82.
Ballew, Isaac A.. Campobello (Co. D. 16th reg.), age 64.
Baea, John, Frlendship (Co. B, 1st S. C. reg.), age 61.
Bateg, E. H., Trough (Co. B, Holcomb's Legion), age 03.
Baten, J. H., Arkwright (Co. F, 8th reg.), age 70.
Bearden. Eber, Clarence (Co. C. Holcomb's Leglon), age 79.
Bennett, J. W., Spartanburg (McBeth's Light Art.), age 60.
Bishop, A. J., Inman. (Co. D, 16th reg.), age 62.
Blackwell, John, Obed (Co. I, Holcomb Legion), age 73.
Blactwell, W. S., Cowpens (Co. K, Flolcomb's Legion), age 61.
Boiter, PInkneg, Ardella (Co. C, 22d reg.), age 75.
Bolton, M. S., Cross Anchor (Co. E, Huger's reg.), age 70.
Brannon, J. J., Converse (Co. K, 27th reg.), age 78.
Brldgea, A., Cowpens (Co. A, Holcomb's Legion), age 67.
Bridges, Nick, Cowpens (Co. A, Holcomb's Legion), age 62.
Bright, A. J., Flngerville (Co. C, 22d reg.), age 62.
Bright, Culvin, Ardella (Co. D, P. S. S.), age 60.
Bright, J. M., Spartanburg (Co. H, 16th reg.), age 65.
Brite. T. B., Landrum (Co. C, Holcomb’s Legion), age 63.
Brock, J. B., Bolling Spring (Huger's Lat. of Art.), age 74.
Brown, E. L., Cllfton (Co. A, 18th reg.), age 66.
Brown. Joseph, Enoree (Co. B, 22d S. C. reg.), age 60.
Bruce, W. B., Lolo (Co. D, 16th reg.), age 64.
Brace, W. W., Norah (Co. C, 1st S. C. reg.), age 70.
Burte, Wllliam, Landrum (Co. C. Holcomb's Legion), age 05.
Burnett, D. R., 1’aris (Co. K, 5th reg.), age 61.
Buruett. I. M., Whitney (Co. LE, 13th reg.), age 62.
Burnett, Perry, Falrmount (Co. B, 13th reg.), age 60.
Burnett, Pinckney, Falrmount (Co. Is, 13th reg.), age 60.
Cannon, J. B., Cliftod (Co. C, 13 hth reg.). nge 64.
Cartee, P. D., Fingerville (Co. K, 5th reg.), age 64.
Lasey, Marion. Enoree (Gist's Guards), age 60.
Casey, Wllliam, Fnoree (Glat's Guards), age 81.
Catheart, James, Glenn Springs (Co. E, 181h reg.), age 78.
Chapman, G. W.. Clarence (Co. D. Oth reg.). age 62.
Chapman, J. M., Cashrllle (Co. E, 2d Cav.), age 65.
Chapman, W. A., I'ool (Co. C, Holcomb Legion), sge 68.
Christopher, M. B., Greer (Co. K, sth reg.), age 63.
Clark. J. C. (Co. F, 13th S. ('. V.), age Gf.
Colling, Joseph, Moore (Co. F., 22d S. C. C.), age 65.
(cok. Alfred C.. Glenn Springs (Co. K, 5th S. C. V.), age 68.
Cook, Calvin, Cherokee (Co. K, 5ith reg.), age 62.
Cook, M., Inman (Co. II, 6th 8. C. C.), age 78.
Cooper, N., Brooklyn (Co. C, 34th N. C. reg.), age 68.
Cox, C., Woodruf (Co. E. Holcomb's Legion), age 81.
Cox, J. C., Arkwright (Co. C, 22d S. C. rig.), age 65.
Learman, J. A., Spartanburg (Co. A, 16 th reg.), age 67.

Dlckson, W. B., Whltney (Co. B, P. S. S.), age 60.
Dillard, J. P., Arkwright (Co. F, 14th reg.), age 70.
Dobson, A. B., Inman (Co. B, 22d reg.), age 63.
Dobson, John, Greer (Co. B, 13th reg.), age 60.
Duncan, Berry, Greer (Co. E, 2d reg.), age 69.
Eubanks, T. (Co. A, Johnson's Rifles). From Cherokee.
Easters, Samuel, Cross Anchor (Co. C, 18th reg.), age 61.
Epton, G. M., Cherokee (Co. I, 5th reg.), age 61.
Erwin. T. G., Martinsville (Co. A, Holcomb's Legion), age 67.
Ewbanks, Enoch (McBeth's Artil.) Transferred from Laurens.
Farmer, Warren, Dutchman (Co. D, 8d S. C. reg.), age 63.
Flemlng, J. H., Duncans (Co. E, 2d S. C. C.), age 61.
Fowler, E. G., Enoree (Co. A, 18th S. C. reg.), age 64.
Fowler, I. 8., Clifton (Co. F, 18th reg.), age 64.
Garner, G. W., Cherokee (Co. H, 15th reg.), age 67.
Gaulden, J. G., Cross Anchor (Co. F, 17th S. C. V.), age 67.
George, A. P., Cowpens (Co. I, 6th S. C. V.), age 77.
Glbson, John, Spartanburg (Co. K, I'. S. S.), age 62.
Greer, B. G., Spartanburg (Co. A, 18th S. C. V.), age 77.
Greer, R. P., Spartanburg (Co. B, 3d S. C. reg.), age 66.
tregory. I. S., Greer (Co. F. 22d S. C. V.), ége 63.
Griffin, C. J., Enoree (Co. I, 7th Bat.), age 69.
Grubbs. J. M., Woodrutif (Co. E, Holcomb's Leglon), age 60.
Gwlnn. Mansel, Harrelson (Co. K, 3d S. C. V.), age 72.
Haramett, John J., New Prospect (Co. D, 5th S. C. V.), age 68.
Hammett, PInkney, Inman (Co. K, 13th reg.), age 80.
Harmon, Willam, Rlch (Co. K, 8d S. C.), age 71.
Harvey, J. C.. Pacolet (Co. B. Holcomb Leglon), age 77.
Haynes, T. J., Martinsville (Co. K, P. S. S.), age 64.
Heaton, J. C., Woodruff (Co. H, 4th S. C. V.), age 69.
Hembree, R. M. (Co. I, 13th). From Cherokee.
Hembree. Bird, Dexter (Co. A, Holcomb's Legion), age 75.
IIenderson, Jackson, Spartanburg (Co. F., 13th S. C. V.), age 70.
Hewltt, Fdwin. Walnut Grove (Co. E, Holcomb's Legion), age 66.
Hewitt, Ransome H., Trough (Co. I, 13th reg.), age 67.
High, F. M., Spartanburg (Co. C, 13th S. C. V.), age 60.
Hill, G. W., Landrum (Co. A, Holcomb's Legion), age 64.
Hines, Albert P., Brooklyn (Co. E, 15th reg.), age 88.
Hopkins, John M., Enoree (Co. F, 14th reg.), age 62.
Hughes, F., Cross Anchor (Co. B, 15th reg.), age 64.
Hughey. J. R., Cowpens (Co. F, 15th S. C. V.), age 62.
Hunslnger, John, Inman (Co. F. 6th N. C.), age 69.
Hunslager, T. H., Inman (Co. K. 50th N. C. reg.), age 68.
Hutchins, J. F., Rlch (Co. K, 3d S. C. reg.), age 68.
James, Felix, Crim (Co. G, 27 th reg.), age 60.
James, J. M., Spartanburg (Co. I, 5th S. C. V.), age 60.
Jenkins, Levl, Cowpens (Co. K, 50th reg.), age 66.
Johnson, W. M., Tucapau (Co. F, 26th reg.), age 69.
Kennett, J. A., Arkwright (Co. I. Sth S. C. reg.). age 68.
Knlght, M. M., Reidville (Co. B, 13th 8. C. V.), age 71.
Kalghton, M. O., Hobbysville (Co. F., 18th reg.), age 64.
Langston, F. M., Clifton (Co. C, 22d S. C. reg.), age 76.
Lamb. Francls M., Cross Anchor (Co. B, 15th S. C. reg.), age 66.
Laurence, W. M., New Prospect (Co. I, Holcomb's Legion), age 6 .
Lee, F. H., Dexter (Co. B, Holcomb Jegion), age 61.
Lewle, A., Glendale (Co. N, 13th S. C. V.). age 76.
Lynch, J. H., Spartanburg (Co. M, 16th N. C.), age 66.
McAbee, HIram, Jr., Roebuck (Co. C, 13th S. C. V.), age 62.
McAbee, James P., Roebuck (Co. C, 27 th reg.), age 65.
McClellan, David R., Spartanburg (Co. G, 24th S. C. V.), age 64.
McElrath M. S., Duncans (Co. C, 22d reg.), age 61.
McCravey, W. A. (McBeth's Art.)

McMeekIn, James, Enoree (Co. F, 13th S. C. V.), age 69.
McPherson, W. D., Clifton (Co. M, P. S. S.), age 67.
Mabry, D. Z., Pacolet (Co. M, Pal. S. A.), age 63.
Mahafty, J. K., Wellford (Co. B, 13th S. C.), age 70.
Manley, T. B., Falrmont (Co. C, 3d reg.), age 66.
Mathis, H. D., Spartanburg (Co. B, Holcomb's Legion), age 68.
Morrls, T. M., Reidville (Co. E, 16th reg.), age 87.
Nass, M. L., Campobello (Co. I, Heavy Artllery), age 60.
Marphy, T. J. H., Clifton (Co. B, 18th S. C. reg.), age 70.
Newton, Alfred, Inman (Co. F, 55th N. C.), age 65.
Nicholls, John H., Fingervilie (Co. I, Holcomb's Legion), age 68.
Parris, J. C., Spartanburg (Co. I, 5th S. C. V.), age 64.
Petlt, H. J., Clifton (Co. I, Eth S. C. reg.), age 65.
Phllips, G. M., Trough (Co. F. 15th S. C. V.), age 61.
Pinson, Eber, Nesbitt (Co. A, Holcomb's Legion), age 60.
Pollard, B. F., Crescent (Co. A, White's Bat.), age 63.
Poison, J. M. (Co. I, 1st S. C. Regulars), age 60.
Putman, R. K., Landrum (Co. C. 15th N. C. V.), age 62.
Quian, A. R., Glendale (Co. B, 27 th reg.), age 67.
Heaves, Ben, Fnoree (Co. F, Ist S. C. reg.), age 77.
Beed, J. B., Campobello (Co. H, 6th S. C. C.), age 67.
Reynolds, C. I', Duncans (Co. E, 2d S. C. Rifles), age 68.
Boddy, J. R., Campobello (Co. F, 13th S. C. reg.), age 76.
Seratt, John, Cavins (Co. D, P. S. S.), age 70.
Shehan, Burt, Landrum (Co. F, 58th N. C.), age 64.
Shehan, Pinkney, Landrum (Co. $\mathrm{F}, \mathrm{E8th} \mathrm{~N} . \mathrm{C}$ ), age 66.
Sherbert, S. Z., Hobbysville (Co. E, 18th S. C. reg.), age 67. Shippy, Dexter, Spartanburg (Co. F, 15th S. C. reg.), age 61. Smith, E. T., Spartanburg (Co. A, 15th Miss.), age 64.
Stalllngs, John, Spartanburg (Co. K, 3d S. C. reg.), age 62.
Steadman, W. J., Fingerville (Co. K, j0th N. C.), age 65.
Spencer, Filas, Cowpens (Co. A, Holcomb's Legion), age 63.
Sprouse, James, Beaumont (Co. I, 13th S. C. reg.), age 75.
Taylor, M., Cross Anchor (Co. F, 18th S. C. reg.). age 83.
Thomas, J. N., Dexter (Co. A, IIolcomb's Leglon), age 63.
Thornton, J. T., Derter (Co. B. Holcomb's Legion), age 75.
Tillotmon, F. L., Arlington (Co. B, 13th S. C. reg.), age 65.
Turner, F. S., Cowpens (Co. I, $\operatorname{\text {OthS.C.reg.),age}} 62$.
Vanhorn, Joseph F., Spartanburg (Co. I, 14th S. C. reg.), age 63.
Vandiver, Henry C., Pacolet (Co. B, Holcomb's Leglon), age 72.
Varner, Andrew. Montrose (Co. D, 3d S. C. reg.), age 62.
Farner, Hiram, Glendale (Co. H, 40th Ga. reg.), age 81.
Faddle, J. C., Fnoree (Co. F, White's Bat.), age 78.
Waddle, Noah. Hillsville (Co. E, Holcomb's LegIon), age 66.
Waddle, Sam V., Woodruf (Co. F., 14th S. C. V.), age 64.
Waddle. W. C., Woodruf (Co. E, Holcomb's Legion), age 65.
Warlick, Lafayette, Spartanburg (Co. L, 32d N. C. reg.), age 64.
Waters, George W., Converse (Co. G, 35th N. C. V.), age 62.
Wells, David, Falrmont (Co. L, P. S. S.), age 65.

- West, A. J., Tucapau (Co. C, 27th reg.), age 77.

Witte, G. W., Glendale (Co. C, 13th S. C. V.), age 64.
Willard, C. Y., Spartanburg (Co. A, P. S. S.), age 62.
Willard, John, Trongh (Co. B, 1 st S. C. reg.), age 66.
Whingham, J. M., Brooklyn ( $\operatorname{Cos}$. M, L, A, Holcomb's Leglon), age 61.
Willis, F. R., Whitney (Co. S, 18th reg.), age 66.
Wingo, T. A., Clifton (Co. F, Schultz's Art.), age 73.
Wooten, J. F., Spartanburg (Co. N, 5th S. C.), age 74. Dead; money refunded.

## Class C, No. 8, 1902.

Buiman, G. J., Spartanburg (Co. K, P. S. S.), age 64.
Burns, Thomes, Glendale (Co. B, 17 th B. C. reg.), age 66.
Brywn, J. H., Spartanbarg (Co. I, 16th res.), age 66.

Brady, John, Spartanburg (Co. C, N. C. V.), age 75. Brittain. J. L., Campton (Co. D, 6th reg.), age 61. Brannon, W. H., Inman (Co. K, 5th S. C. V.), age 66. Bullman, W. M., Roebuck (Co. K, P. S. S.), age 60. Bragg. W. P., Woodruff (Co. N, Holcomb Legion), age 65.
Bowling, C. B., Campobello (Co. F. 13th S. C. V.), age 63.
Brown, J. 'Tatum (Co. H, 4th reg.) Transferred from Anderson. Cannon, Jesse W. (Co. B, 22d S. C.), age 66.
Calvert, Robert, Gramling (Co. A. Lucas's), age 65.
Clayton, J. G., Clarence (Co. B. 22d reg.), age 63.
Cantrell, J. T., Bolilng Springs (Co. H, I'. S. S.), age 76.
Cook, J. B., Spartanburg (Co. K, P. S. S.), age 60.
Cook, J. N., Inman (Co. K, 5 th reg.), age 65.
Casey. Aaron, Spartanburg (Gist's Guard), age 68.
Connor, Robert; Spartanburg (Co. B, 4th reg.) age 67.
Dobbin. J. J., Wellford (Co. 1, 50th N. C.), age 62.
Fdge, J. C., Fairmont (Co. B, 13th reg.), age 60.
Fowler, F. M., Falrmont (Co. A, White's), age 77.
Fowler, J. W., Cashville (Co. F, 16th reg.), age 67.
Gossett, J. W., Glendale (Co. 1:, 13th reg.). age 60.
Garrett, J. W., Spartanburg (Co. C, Holcomb's Legion), age 66.
Gunthorp, O. R., Spartanburg (Co. F, 17 th reg.), age 68.
Gentry, I. A., Woodruff (Co. A, Holcomb Leglon), age 60.
Henderson, James, Cowpens (Co. A, $18 t \mathrm{~S}$. C.), age 60.
Hellams, William (Co. C, 18 th reg.) Transferred from Laurens.
Johnson. R., Blackwood (Co. G, 1st S. C. Art.), age 62.
Keller, T. W., Clarence (Co. B, 22d), age 60.
Kilgore, W., Campobello (Co. B, 12th Tenn.), age 62.
Ifttlefield. T. J., Enoree ( $\mathrm{Co} . \mathrm{E}, 18$ th reg.), age 64.
Morrts, Hayden, Spartanburg (Co. F, 13th reg.), age 60.
Manus, J. L., Campton (Co. 1, Holcomb's Leglon). age 60.
Morrow, W. D., Landrum, Co. K, 1st S. C. A.), age 61.
McKinney, G. W., Cowpens (Co. H, 15 th reg.), age 60.
Marler, Thomas J., Woodruff (Co. F, IIolcomb's Legion), age 60.
Mullinax, J. P., Spartanburg (Co. A, P. S. S.), age 61.
I'rice, S. P.. Converse (Co. C. 4th S. C. V.). age 60.
Powers, J. A., Crim (Co. B, Charleston bat.), age 72.
Quinn. Whiliam. Rich (Co. B, Holcomb Legion), age 63.
Roddy, W. P., Greer (Co. F, 16th S. C.), age 82.
Reares. Jesse. Glendale (Co. K. 2d S. C.), agz 73.
Robertson. B. W., Spartanburg (Co. I, 16tb reg.), age 81.
Smith. J. T., Duncrne (Co. C, 22d reg.), age 63.
Steadman. John. Spartamburg (Co. G. 16 th N. C.), age 76.
Tucker, W. P., Spartanburg (Co. F., 1st S. C. I.), age 69.
Thomas, P. M., Campobello (Co. K, 3d S. C. I.), age 65.
Vaughn, P. E., Greer (Co. C. 22d S. C.), age 62.
Varner. John. Cross Anchor (McBeth's Artlllery), age 62.
Wood. James, Clifton (Co. I, 34th N. C.), age 6 .
Waddle. J. R., Cowpens (Co. C, 13th S. C. V), age 61.
Willis. W. P., Spartanburg (Co. I, Holcomb's Leglon), age 62.
Wright, Danlel. Trough (Co. H. 22d reg.). age 72.
White. C. A., Holly Springs (CO. F. 13th S. C. I.), age 75.
Wood, R. M., Fairmont (Co. B. 22d reg.), age 60.
West. S. W.. Crim (Co. C. 22d S. C.), age 68.
Waddel, T. P., Reldville (Co. F., 14th reg.), age 62.
Class C, No. 2, 1908.
Beacham, F. F., Spartanburg (Co. B. 2d S. C. V.), age 68.
Bates. W. T., Spartanburg (Co. B, 11th S. C.), age 74.
Bullington, Jesse. Trough (Co. K. Pal. S. S.), age 64.
Burk, M., Brooklyn (Co. H, P. S. S.), age 68.

Crow, L. B., Hobbysville (Co. B, 1st S. C.), age 65.
Carmen, J. W., Tucapau (Co. B, 18th reg.), age 65.
Dodd, J. A., Spartanburg (Co. K, 5th reg.), age 67.
Davis, C. C., Cross Anchor (Co. C, 18th S. C.), age 62.
Ereeman, F. M., Wellford (Co. A, 1st reg.), age 60.
Fisher, Henry N., Campobello (Co. D, 16th reg.), age 69.
Giles, F. R., Spartanburg (Co. K, 5th reg.), age 61.
Gosnell, W. C., Spartanburg (Co. H, 22d reg.), age 60.
Hawling, J. W., Spartanburg (Co. I, White's Art.), age 6i).
Eughes, O. A., Clifton (Co. H, White's), age 78.
Holden, G. W., Inman (Co. 1, 25th reg.), age 80.
Hembree, C. B., Hobbysville (Co. D, 3d S. C. V.), age 67.
Bill, W. S., Tucapan (Co. G, 50th N. C.), age 61.
Johnson, W. F., Greer (Co. F, Holcomb bat.), age 66.
Johnson, W. R., Walnut Grove (Co. K, Gth reg.), age 65.
Lane, David A., Campobello (Co. B, 18th reg.)
MeElrath, Rlchard T., Greer (Co. Fi; 2d reg.), age 60.
Mcabee, T. J., Tucapau (Co. I, Eth S. C.), age 60.
Morgan, L. J., Spartanburg (Co. H, 16th S. C. V.), age 06.
Murtishaw. W. H., Spartanburg (Co. A, 18th S. C. V.), age 62.
Quinn, J. F., Spartanburg (Co. H. P. S. S.), age 64.
Quinn, J. W. (Co. B, Holcomb Legion), age 64.
Reaves. B. F., Glendale (Co. I, 13th reg.), age 61.
Swain. W. D., Campobello (Co. I, Holcomb Legion), age 75.
Smith, J. R., Arlington (Co. B, 22d reg.), age 60
Smith, Hiram (Co. I, Holcomb Legion).
Shehan, J. F., Spartanburg (Co. I, 34th N. C.), age 62.
Shoaf, H., Spartanburg (Co. A, 54th N. C.), age 70.
Shackieford. I. P., Pauline (Co. E, 18th S. C. V.), age 68.
Taylor. Robert, Woodruff (Co. F. 7th S. C. V.), age 89.
Wright, J. B., Switzer (Co. E, Holcomb Legion).
Waters. John A., Pelham (Co. C. 22d S. C.)
Westmoreland. S. P. (Co. K, 3d). Transferred from Cherokee. Whils, H. J., Dexter (Co. I, 18th S. C.), age 61.

Class C, NO. 2. 1904.
Blshop. L. G., Spartanburg (Co. D, 16th S. C. V.)
Bennett, Benj. W., Spartanburg (Boyce's Artil.)
Cook, W. J., Whitney (Co. K, 5th S. C.)
Crow, W. W., Glenn Springs (McBeth's Artil.)
Clary, John W., Spartanburg (Co. F, 1st S. C. V.)
Conch. T. R., Spartanburg (Co. E, 18th S. C. V.)
Casey, J. C., Woodruff (Gist Guards).
Cannon. George E., Spartanburg (Co. C. 13th reg.)
Emory, Bird, Cilfon (Co. A, Holcomb Legion).
Hajes, B. R. Woodrutr (Co. I, Ist S. C.)
Eenderson, William, Spartanburg (Co. K, 5th S. C.)
Jackson, W. P.. Tucapau (Co. C, 27th reg.)
Kirby, James T., Spartanburg (Co. K, 3d reg.)
Nichols, B. F., Spartanburg (Co. F, 1st S. C.)
Pearson, W. A. J., Reldsville (Co. B, 27th S. C.)
Shehan. W. M., Campobello (Co. E, 64th N. C.)
Steadman, Joseph, Glendale (Co. G. 16th N. C.)
Tarner, Lon, Tucapan (Co. C, 15 th N. C.).
Wyatt, James, Cowpens (Co. I, 34th N. C. V.)
Wolford, Enoch C., Saxon Mille (Co. F, 18th reg.)
Class C, No. 2, 1905.
Allen, J. M., Converse (Co. M, P. S. E.)
Byars, Joseph. Pacolet (Co. Fr, 18th 8. C. F.)
Bevill, W. H. H., Spartanburg (Co. H, 15th S. C. V.)

Beason, Wm., Holly Springs (McBeth's Artil.)
Caldwell, J. W. (Co. C, Hol. Leg'n.)
Christopher, L. N., Reldsville (Co. K, Hampton Legion).
Covington, W. D. H., Spartanburg (Co. I, 38th N. C.)
Cogdili, Robert M., Enoree (Co. H, 60th N. C.)
Cothran, Jos. E., Inman (Co. C, 13th).
Calcutt, A. C., Woodraff (Boyce's Artil.)
Fowler, Marion, Spartanburg (Co. K, Ploneer Corps).
Foster, R. M., Spartanburg (Co. B, 18th S. C. V.)
Gentry, Jonathan, Enoree (Co. E, 2d S. C.)
Gore, J. L., Cherokee (Co. B, Holcomb Legion).
Howard, A. J., Woodruff (Co. K, 6th).
Hollifeld, H. C., Bolling Springs (Co. I, 5th N. C.)
Harrlson, A. M., Falr Forest (Co. H, 1st reg.)
Jolley, M. M., Clifton (Co. H, 28th N. C.)
Lee, J. P., Spartanburg (Co. B, Holcomb Legion).
Lovelace, M. C., Cherokee (Co. 1, Sth).
Lemaster, J. R., Whitney (Co. D 1st S. C. V.)
Owens, Jas., Pauline (Co. B, Holcomb Legion).
Phillips, M. T., Martinsville (Co. A, Holcomb Legion).
Riddle, W. S., Falr Forest (Co. C).
Shields, T. M., Flngerville (Co. D, 3d).
Sparks, 8., Cowpens (Co. P, 15th S. C. V.)
Shields, C. A., Fingerville (Co. D, 3d).
Storey, J. S., Spartanburg (Co. K, 3d).
Turner, R. A., Inman (Co. K, Holcomb Legion).
Taylor, W. J., Spartanburg (Co. E, 4th).
Class O, No. 8, 1908.
Brown, Brantley, Arkwright (Co. A, 50th N. C.)
Barrett, W. P., Spartanburg (Co. H, 13th Miss.)
Case, C. C., Spartanburg (Co. G, 35th N. C.)
Chapman, J. H., Clifton (Co. K, 5th S. C.)
Davis, J. T., Moore (Co. I, Hol. Leg'n).
Emory, J. P., Pauline (Co. G, 27th).
Foster, David. Welford (Co. K, 16th N. C.)
Green, M. A., Falr Forest (Co. B, N. C.)
Lowery, J. S., Spartanburg (Co. A. 49th N. C.)
Sanders, J. F., Spartanburg (Co. I, 13th).
Sharp, H. P., Lendrum (Co. E, Black's).
Smith, Harmon, Arcade (Co. I, Hol. Leg'n).
Wadkins, A., Spartanburg (Co. B, 22d).
West, Alex, Clifton (Co. A, 49th).
Wingo, L. L., Welford (Co. E, S. C. C.)
West, P. M., Switzer (Co. H, 27 th).
Whllams, J. J., Pauline (Co. -, 18th S. C. V.)
Yarborough, H. P., Hobbysville (Co. A, 1st).
Walker, J. W., Cross Anchor (Co. F, 1st Art.)
Riddle, J. T., Pauline (CO. H, 4tb).
Class O, No. 2, 1907.
Alley, D. J., Spartanburg (Co. C, 13th S. C. V.). Brown, Calvin F., Spartanburg (Co. F, 18th). R.allard, W. R., Spartanburg (Co. H, 6th S. C. C.).

Case, W. L., Spartanburg (Co. I, 54th N. C.).
Condres, D. C., Campobello (Co. A, 49th N. C.).
Cantrell, J. C., Greers (Co. K, 16th N. C.).
Condres, J. S., Spartanburg (Co. I, 16th N. C.).
Dlekson, J. M., Spartanburg (Co. B, 22d).
Fleming, Jasper, Rich (Provost Guards).
Gore, D. Worman, Woodruf (Co. C, 18th S. C. V.).

Kilgore, W., Landrum (12th Tenn.).
Eunse, M. F., Spartanburg (Co. G, 56th N. C.),
Lendis, J. N. (Co. B, 11th N. C. V.).
Mcabee, Ellsha, Pacolet (Co. I, 13th S. C. V.).
Owens, W. R., Bishop (Co. E, 27 th) .
O'Shelde, W. D., Campobello (Co. F, 13th S. C. V.).
Pool, J. T., Pelham (Co. A, Earle's Battery).
Robblns, John, Spartanburg (Co. E, 39th N. C.).
Robblns, Obe, Cowpens (Cu. E, 13th 8. C.).
Reares, M., Glendale (Co. 1, 13th S. C.).
Settle, J. L., Campobello (Co. D, P. B. S.).
Seagle, Adam, Cowpens (Co. F, 23d).
Walker, J. O., Landrum (Co. G. 60th N. C.).
Wallace, C. A., Campobello (Co. F, 13th).
Clase C, No. S, 1901.
Whemes of Boldiers Who Lost Their Lives in the Sorotee of the Oonfederate States.
Best, Busana, Landrum (Co. B, 27th S. C. V.)
Bragge, A. M., Deater (Co. B, 27th S. C. reg.)
Burnett, Pollie A., Cherokee (Co. A, 1st reg.)
Chesney, Narclssa J., Cherokee (Co. C, 27th S. C. reg.)
Covil, $\Delta$ manda, Spartanburg (Co. H, 22d B. C. reg.)
Crocker, Nancy, Trough (Co. B, Holcomb's Legion.)
Crow. Mary, Walnut Grove (McBeth's Art.)
Donawey, Mary A., Cross Anchor (Co. A, 18th reg.)
Donean, Martha, Andover (Co. B, 22d reg.)
Easters, Caroline, Evinsville (Co. D, 5th S. C. reg.)
Erwin, Louisa, Martinsville (Co. K, Holcomb Legion).
Powler, Nancy, Clarence (Co. H, 1st S. C. V.)
George, Nancy, Cowpens (Co. I, 13th S. C. V.)
Gulna, Mary, Wellford (Co. D, 2d 8. C. reg.)
Hanback, Abigall, Woodrufl (Co. E, James's bat.)
Harmon, Amanda J., Rlch (Co. K, 3d S. C. reg.)
Harris, Elizabeth, Martinspllie (Co. I, 9th S. C. reg.)
Eendermon, E. P., WoodruII (Co. B, Black's reg.)
Holmes, M. M., Greer (Co. B, 13th S. C. reg.)
Littlejohn, Mary, Cowpens (Co. B, 27th S. C. V.)
Mayen, Amanda, Glenn Springs (Co. F, 18th S. C. V.)
Petty, Elmira, Pools (Co. B, Holcomb Legion).
Poole. Mary, Spartanburg (Co. K, 27th reg.)
Powers, N. C., Crim (Co. B, 13th B. C. V.)
Price, Mary K., Martinsville (Co. F, 13th S. C. V.)
Quinn, Elvira, Pauline (Co. B, Holcomb's Legion.)
Robbins, Ellza, New Prospect (Co. I, Holcomb Legion).
Sandinn, Martbs, Crim (Co. F, 16th S. C. reg.)
Scott, S. S., Dutchman (Co. B, 27 th S. C. reg.)
Smith, C. S., Spartanburg (Co. K, 5th reg.)
Stone, Dorcas, Cufton (Co. D, P. S. S.)
Thomas, A. S., Harrelson (Co. C, 22d S. C. V.)
Tucker, Ada M., Franke (Co. F, 18th S. C. V.)
Tucker, C. J.. Campobello (Co. I. 13th S. C. V.)
Waddle, Mary, Clifton (Co. K, Eth S. C. V.)
West, Malinda, Wellford (Co. I, Holcomb Legion). Williams, Nancy, Martingville (Co. K, Holcomb Legion).

Class C, No. s, 1908.
Koblns, Arphemia. Trough (Co. F, 18th reg.)
Beay, Carollae, Clifton (Co. K, 13th S. C.)

Clase O, No. S, 1903.
Cantrell, Mary, Berry (Co. K, 5th reg.)
Brock, F. J., Martinaville (Co. B, 16th reg.)
French, Nancy J., Fingerville (Co. P, 44th N. C. V.)
Farmer, Carollne, Wellford (Co. E, 5th B. C.)
Green, Sarah, Campobello (Co. H, 22d reg.)
Hawking, Rebecca S., McMillan (Co. K, Holcomb Legion).
Huff, E. J., Enoree (Co. B, 15th reg.)
Johnson, Pollie, Moore (Co. C, 22d B. C. V.)
Keller, M. C., Duncans (Co. B, 22d S. C. V.)
Klrby, Susan, Pacolet (Co. B, 27 th S. C.)
Vandiver, Harrlett. Spartanburg (Co. B, Holcomb Legion).
Class C, No. S, 1904.
Burnett, Harriett M. (Co. I, Holcomb Legion).
Cralg, Nancy E., Fioree (Co. H. 1st B. C. V.)
Cudd, Missouri (Co. I, 34th N. C.)
Farmer, Mary C., Campobello (Co. H, 6th S. C. C.)
Lovelace, Rebecca, Cowpens (Co. F. 18th S. C. V.)
McKelyy, P. M., Brooklyn (Co. H. Palmetto).
Pollard, Tabitha P., Campton (Co. F, White's).
Taylor, Rachel, Crescent (Co. B, 3d S. C.)
Woodward, Arilla, Glenn Springs (Co. II, 1st reg.)
Clas8 C, No. 3, 1905.
Atkins, Elizabeth (Co. B, 2d).
Fowler, Frances, Spartanburg (Co. HI, 5th).
Prather, Nancy, Cross (Co. H, 1st).
Page, Diana, Pauline (Co. F, Holcomb).
Nolen, Masey B.. Springs (Co. K, 5th).
Scott, Lucinda, Spartanburg (Co. F., Hampton).
Stevens, Malissa (Co. C, IIol. Leg'n).
Weir, Mary, Woodruff (Co. E, 18th).
Wolf, Carollne (Co. K, 5th S. C. V.)
Class C, No. S, 1906.
Hinkerson, Mattle (Co. G, 22d).
Class C, No. S, 1907.
Kirby, Jane L., Pacolet (Co. I, 13th).
Plehoof, Ramath, Inman (Co. K, 5th S. C. V.).
Reynolds. Margaret F. (Co. D, 16th).
Clase C, No. 4, 1901.
Alley, Talitha S., Spartanburg (Co. K, 5th S. C. V.), age 66. Bankham, Jane. Finoree (Co. F., Holcomb's Legion), age 65. Barnett, Phreba, Victor (Co. D, 16th reg.), age 70. Blshop, Mille, Inman (Co. C. Holcomb's Legion), age 60. Blackwell, Malissa, Dexter (Co. K, Holcomb's Leglon), age 73.
Blackwell, Nancy M., Brooklyn (Co. K. 1st H. Art.), age 77.
Brockman. M. F., Reldville (Co. F. 2d S. C. reg.), age 66.
Brown, Nancy F., Lolo (Co. F. 7th S. C. V.), age 60.
Buchanan, V. A., Enoree (Co. F, Holcomb's Legion), age 61.
Burk, Anna, Brooklyn (Co. H. P. S. S.), age 65.
Busbin, R. A., Derter (Troup's Art., A. N. Va.), age 68.
Byars, F. J., Spartanburg (Co. C. 13th S. C. V.), age 60.
Calvert, Lucinda, Dexter (Co. H, Palmetto reg.), age 65.
Crow, Eliza, Spartanbnrg (Co. D, 3d reg.), age 60.
Chliders, Martha, Trough (Co. B, 12th B. C. V.), age 67.

Campbell, Minerva, Enoree (Co. B, 14th S. C. reg.), age 84.
Cantrell, Frances, Spartanburg (Co. H, 1st B. C. V.), age 64.
Casey, E. E., Enoree (Co. F, 27 th S. C.), age 61.
Casey, Loulsa, Enoree (Glst's Guards), age 61.
Cash, K. H., Brooklyn (Co. E, 13th reg.), age 66.
Cole, Cassandra, Reldville (Co. B, 13th S. C. V.), age 77.
Cooksey, Nancy, Fools (Co. I, 5th S. C. V.), age 60.
Crocker, Martha C., Dexter (Co. B, 5th S. C. V.), age 66.
Devincon, Mary, New Prospect (Co. E, 13th S. C. V.), age 64.
Donahoo, Ann, Flngerville (Co. K, 16th N. C. V.), age 60.
Doncan, Susan (Co. I, 6th reg.), age 60.
Elder, Lucinda (Co. E, Bd bat.), age 60.
Finley, M. J., Spartanburg (Co. B. 13th S. C. reg.), age 65.
Floyd. N. A., Fairmont (Co. B, 13th B. C. V.), age 60.
Fowler, Flizabeth, Paullue (Co. H, 1st S. C. reg.), age 62.
Fowler, Mary E., Golightly (Co. H, 1st S. C. V.), age 64.
Gideon, Ann P., Cross Anchor (Co. F, 3d bat.), age 63.
Glbson, Rebecca, Norah (Co. B, 16th S. C. reg.), age 70.
Godires. P. A., Fnoree (Co. F, Holcomb's Leglon), age 60.
Green, Peggy, Clifton (Co. F, 17th S. C. V.), age 74.
Earrison. Fannie, Glenn Springs (Co. H, 1st S. C. V.), age 67.
Hazlewood, L. F. (Co. B, 15th S. C. reg.), age 70.
Butchlngs, Barbara, Berry (Co. E, 18th reg.), age 62.
Huckaby, Rebecca, Pauline (Co. 1, 3d 8. C. V.), age 65.
Jactaon, Cartle, Reidville (Co. C, 3d S. C. V.), age 61.
Johnson, Llzzle, Campobello (Co. F, 13th reg.), age 61.
Eirby, N. M., Trough (Co. 1, 6th S. C. C.), age 65.
Klmbrell, R. M., Arllagton (Co. B, 22d S. C. reg.), age 64.
Loftus, Emily (Co. I, White's), age 65.
LittleJohn, S. J., Converse (Co. M, 9th reg.), age 67.
Lowe, Judith, Spartanbarg (Co. C, Holcomb's Legion), age 66.
Mcabee, Denitns, Walnutgrove (Co. K, 3d S. C. reg.), age 65.
McAbee, Martha, Franks (Co. A, 3d State Reserves), age 66.
McCarter, M. J., Spartanburg (Co. I, Holcomb's Legion), age 65.
Mamon, Margaret, Greer (Co. C, Wllliams's reg.), age 75.
Mllwood, Matilda, Rlch (Co. B, 18th S. C. V.), age 61.
Mire, Nancy. Spartanburg (Co. B. 18th S. C. reg.), age 69.
Pearson, F. A., Duncans (Co. B, 13th S. C. reg.), age 67.
Pearson, M. J., Glendale (Co. M, 5th reg., P. S. S.)
Pearmon, Rachel, Crescent (Co. K, 3d S. C. V.), age 62.
Rakestrat, Carollne, Falr Forest (Co. B, Holcomb's Legion), age 70.
Bay, Betsey A., Reidville (Co. K, 27th S. C. V.), age 68.
Bay, Ellzabeth R., Reidvllle (Co. B, 13th S. C. V.), age 68.
Reagan, Fllza, Whltney (Co. H, Alken's reg.), age 65.
Reagan. Julla Ann, Landrum (Co. H, 6th S. C. reg.), age 75.
Reeder, M. F.. Spartanburg (Co. H, Holcomb's Legion). age 62.
Rlchards, Mary A., Cross Anchor (Co. E, 4th Bat.), age 70.
Eiddle, Ellza, Blshop (Co. G, 27th S. C. reg.), age 61.
Rodgera, Adelta, Moore (Co. E, bth S. C. V.), age 78.
Rush, Lou J., Cross Anchor (Co. B, Holcomb's Iegion), age 60.
Sattertield, Mary, Spartanburg (Co. I. 13th S. C. reg.), age 63.
Schmidt, Rhoda, Glenn Springs (Co. F., Holcomb Iegion), age 66.
Sherbert, M. M., Rich (Co. B, 27th reg.), age 70.
8math, Harrlet P., Spartanburg (Co. D, 16th S. C. B.). age 62.
Smith, M. M., Lenwood (Co. I, 2d reg.), age 68.
Stagge, Louvlnia, Andover (Co. F, 13th S. C. V.), age 61.
Stepheng, Frances, Cherokee (Co. K. P. S. S.), age 69.
Stephena, M. J., Spartanburg (Co. B, 27th reg.), age 70.
Thompan, Joans, Inman (Co. 1, Holcomb's Legion), age 65.
Thomas, Filzabeth, Woodrufl (Co. H, 1st S. C. V.), age 70.
Thompton, Kate, Cedar Springa (Co. F. 4th S. C. Milltla), age 60.

Tobln, W. J., Spartanburg (Co. A, 8d B. C. reg.), age 64. Vandiver, Susanna, Cowpens (Co. B, Holcomb's Legion), age 72. Varner, Catherine, Walnut Grove (Co. K, 3d reg.), age 82. Vinson, Mary, Pacolet (Co. B, 18th S. C. V.), age 76.
Vise, Elizabeth, Walnut Grove (Co. E, 18th 8. C. V.), age 73.
Wadklns, Martha A., Cross Anchor (Co. K; 18th S. C. V.), age 69.
Walden, Mary C., Cedar Springs (1st Palmetto S. S.), age 82.
Walker, Lucy M., Hobbysville (Co. F, 18th S. C. reg.), age 65.
Whitmore, Sabra, Enoree' (Co. B, 15th 8. C. reg.), age 65.
Wilson, Mary C., Greer (Willams's), age 67.
Wlago, Theresa, Skyland (Co. G, 20th reg.), age 61.
Wolf, Lucinda, Campobello (Co. A, 13th S. C. V.), age 70. Woodruff, Ellzabeth, Woodruff (Co. E, Holcomb's Leglon), age 88. Worley, M. L., Spartanburg (Chesterfeld Light Artllery), age 60.
Wood, B. E., Arllagton (Co. B, 3d reg.), age 84.

## Class C, No. 4, 1902.

Burnett, Mary, Duncans (Co. C, Holcomb's Legion), age 88.
Burnett, Margaret, Spartanburg (Co. B, 18th reg.), age 63.
Butler, Lauretta, Wellford (Co. K, 20th Bat.), age 72.
Bagwel, Ellen J., Clifton (Spark's Rangers), age 60.
Bragg, Polly Ann, Greer (Co. C, 5th reg.), age 63.
Burnett, Zllphy. Arlington (Co. E, 2d S. C.), age 72.
Barnett, E. J. F., Cedar Sprlngs (Co. I, 13th S. C. reg.), age 60.
Cromer, Sarab, Martlnsville (Co. F, 20th S. C.), age 60.
Colman, Mary A., Pelham (Co. -, 22d reg.), age 85.
Clark, R. F., Tucapau (Co. B, 1st B. C. reg.), age 63.
Coward, Malinda, Parls (Co. E, 64th N. C.), age 71.
Cooper, Cynthla, Walnut Grove (Co. K, 1st reg.), age 61.
Crocker, Ellen, Hllisville (Co. C, 18th reg.), age 60.
Donaway, Mary A., Cross Anchor (P. S. S.), age 84.
Fagan, Rachel, Campobello (Co. I, 54th N. C. V.), age 68.
Green, Ellzabeth, Farley (Co. B, 22d reg.), age 82.
Greer, M. A., Greer (Co. A, 13th reg.), age 61.
Green, Didemla, Beaumont (Co. H, 28th reg.), age 80.
Hugglns, Margaret, Spartanburg (Co. K. 5th reg.), age 77.
Harvey, F. A., Enoree (Co. B, 18th S. C. reg.), age 70.
Harvey, Elizabeth (Co. I, 50th). From Greenvllle County.
Hannon, Mary Ann, Hollls Spring (Co. K, 18th N. C.), age, 62.
Koon, Flvira, Spartanburg (Co. F, 18th reg.), age 77.
Loftus, Ellza, Spartanburg (Co. D, 16th S. C. V.), age 60.
Lawson, M. L., Spartanburg (Co. C, 18th reg.), age 61.
Lee, Amanda, Gollghtly (Co. F. Heavy Artllery), age 60.
Lawson, Ellzabeth, Cedar Sprlags (Co. A, 7 th reg.), age 70.
Lynch, Catherlne, Inman (Co. C, 27th reg.), age 72.
Motte, Sellna, Trough (Co. A, 6th S. C.), age 61.
Miller, E. A., Blackwood (Co. K, 50th N. C.), age 64.
Prldmore, Charlty M., Dexter (Co. F, 18th reg.), age 60.
Alchards, Emlly, Spartanburg (Co. K, 18 th N. C.), age 60.
Rodgers, D. A., Reldville (Co. C, 22d reg.), age 62.
Alchmond, Nancy (Co. A, 13th). Transferred from Richland.
Reynolds, Mary, Reldville (Co. E, 2d reg.), age 86.
Sanders, Martha, Pacolet (Co. F, 15th reg.), age 71.
Suddlth, Mary, Inman (Co. H, 6th reg.), age 70.
Wingo, Lucy Ann, Falrforest (Co. I, Holcomb Legion), age 72.
Wall, Catherlne, Whitney (Co. K, 5th reg.), age 62.
Williams, Caroline, Glendale (Co. D, 5th reg.), age 60.
Class C, No. 4, 1905.
Brown, Mary R., Clifton (Co. A, Holcomb Leglon), age 61.
Cantrell, Sarab, Parla (Co. A, 27th reg.), age 72.

Dobbing, M. L., Tucapau (Co. C, 2d reg.), age 70.
Rasler, Evina, Spartanburg (Co. C, 1st B. C.), age 64.
Greer, M. J., Pelham (Co. B, 13th reg.), age 66.
Harvey, J. C., Welliord (Co. B, 27 th reg.), age 60.
Holcomb, Sarah, McBeth's Artil.) Transferred from Oconee.
Mathls, Emily, Sloan (Co. B, Holcomb Legion), age 61.
McKindey, Sarah, Paris (Co. F, 7th S. C.), age 75.
MeCravey, Jane, Enoree (Huger's Art.), age 64.
Neel, Mattle B., Spartanburg (Co. G, 2d \&. C. C.), age 65.
Lamb, E. M., Trough (Co. H, P. S. S.), age 65.
Lemaster, Elmer, Tucapau (Co. C, 13th reg.), age 76.
Pettit,' Permella, Rockford (Co. K, 8d \&. C. V.), age 69.
Prewett. Marian, Campobello (Co. F, 5th reg.), age 78.
Rawline, P. L., Campobello (Co. K, Sth S. C.), age 72.
Reaves, S. M., Trough (Co. I, 18 th S. C. V.), age 60.
Ray, W. E., Moore (Co. E, Holcomb Legion), age 65.
Smith, Addie, Spartanburg (Co. F, 2d S. C. C.), age 60.
Tinsley, Mahala, Bolling Springs (McVeeter Art.), age 62.
Waldrop, M. A., Campobello (Co. K, 4th reg.), age 61.
Walker, M. E., Dutchman (Co. C, Holcomb Leglon), age 63.
Wooten, 8. C., Spartanburg (Co. C, Holcomb Legion), age 72.
Weat, Maria, Campobello (Co. I, Holcomb Legion), age 65.
Clase O, No. h, 1904
Boon, Mary, Woodruff (Co. K, 3d reg.), age 60.
Blahop, M. A., Inman (Co. Di 5th S. C. V.), age 65.
Brown, M. C., Landrum (Co. C, Holcomb Legion), age 62.
Barton, Emily C., Artwright (Earl's Bat.), age 02.
EIder, Elizabeth, Reldville (Co. B, Holcomb Legion), age 65.
Ferree, Mary M., Campobello (Co. C, 11th N. C.), age 60.
Ganey, Cornella (Co. H, 15th). Trangferred from Laurens.
Harvey, Angellne, Pacolet (Co. B, Holcomb Legion), age 60.
KIrby, Julia, Pacolet (Co. B, Holcomb Legion), age 64.
Kirby, Susan, Whitney (Co. C, 27 th reg.), age 68.
King, Lucinda, Campobello (Co. F, 16th reg.), age 61.
Lanford, E. A., Spartanburg (MeBeth's Artll.), age 62.
MeBee, Mary J., Brooklyn (Co. K, 5th S. C. V.), age 71.
Morrow, Ann, Landrum (Co. K, 16th reg.), age 62.
MeGill, Rachel E., Spartanburg (Co. F, 20th reg.), age 60.
Murphy, 8. L., Spartanburg (Co. K, 16th reg.), age 83.
Nelghbors, F. B. (Co. G, 20th reg.), age 60.
Patterson, Elisabeth, Fair Forest (Co. E, 18th reg.)
8heehan, Elizabeth, Landrum (Co. F, 61st N. C.), age 64.
Vanghn, Culphemla, Glendale (Co. I, 13th reg.), age 75.
Class C, No. 4, 1905.
Burng, Lirxie E., Inman (Co. B, 22d), age 60.
Bullington, H. A., Spartanburg (Co. F, 18th) age 64.
Brown, E. H., Clifton (Co. B, Holcomb Legion), age 68.
Bates, Elizabeth, Glendale (Co. K, 7th), age 60.
Burdett, Dosia, Spartanburg (Co. M. Burnett's).
Coleman, Jane, Spartanburg (Co. B, 18th), age 60.
Cormell, W. J., Woodraif (Co. E, Holcomb Legion), age 60.
Davis, Frances, Duncans (Co. B, 8d), age 68.
Evans, Hanns, Campobello (Elford's), age 76.
Bolder, Nancy A., Rich (Co. D, 7th), age 60.
Beneon, I. L., Spartanburg (Co. I, 84th N. C.), age 60.
Bughea Josephine, Moore (Co. G, 5th), age 68.
Holmet, Rachel, Enoree (Co. F, 12th), age 62.
Lanford, Margaret, Woodrufi (Co. K, 6th), age 60.
Lanford, Jane E. (Co. I, State Hegerves), age 82.

Morris, Malissa, Converse (Co. I, 13th), age 60.
Mayberry, E. J., Cowpens (Co. H, P. S. S.) age 60.
Morgan, E., Tucapaw (Co. E, 2d), age 61.
Marler, Virginia, Woodruif (Co. E, Holcomb Legion), age 67.
Moore, Mary, Pauline (Co. L, Orr's) age 60.
Pruitt 4. M., Spartanburg (McBeth's Artll.), age 61.
Poole, Kittle, Spartanburg (McBeth's Artll.), age 60.
Parris, Nancy, Cherokee (Co. E, 12th), age 66.
Pearson, lsa L., Wcodruff (Co. K, 27 th), age 60.
Robinson, Jane C., Spartanburg (Co. B, age 65.
Strlbling, Martha A., Lanham (Co. E, 18th S. C. V.)
Thomas, Janie, Enoree (Co. E, 18 th), age 62.
Tlmmons Mary A., Greer (Co. C, 22d), age 65.
Tapp, Mary, Tucapau (Co. A, 1st), age 61.
Wilson M. E., Greer (Co. F, 16th S. C. V.), age 60.
Class C, No. h, 1906.
Chapman, Lucy Ann, Artwright (Co. C, Hol. Leg'n), age 75.
Cox, Marla, Fairmount (Co. C, 22d), age 68.
Elders, Catherlne, Converse (Co. I, 13th), age 63.
Foster, Amanda E., Spartanburg (Co. K, P. S. S.), age 67.
Freeman, Margaret, Pacolet (Co. E, 21st), age 70.
Goodlet, Sallie A., Whitney (Co. K, 6th), age 65.
Hall, Adeline, Cilfton (Co. A, 3d), age 79.
Lanford, Nancy R., Woodruff (Co. A,), age 60.
Morgan, Rosanna, Trough (Co. I, 5th), age 63.
McAllister, Mollle A., Spartanburg (Co. D, 3d), aǵe 60.
O'Shlelds, N. J., Woodruff (Co. E, 6th), age 63.
Slmpson, M. A., Woodrufi (Co. E, Hol. Leg'n), age 78.
Seay, A. M., Bolilng Springs (Co. K, Бth), age 63.
Class C, No. れ, 1907.
Caldwell, 8. A., Fair Forest (Co. C, Hol. Leglon), age 63.
Crow, Nancy, Glenu Springs (McBeth's), age 60.
Cooley, M. M., Brooklyn (Co. C. 13th S. C. V.), age 66.
Casey, Martha Ann, Fnoree (Co. E, 18th), age 74.
Edwards, Elizabeth, Woodruff (Co. B, 27th), age 72.
Etters, S. D., Spartanburg (Co. D, 71st), age 62. Ferguson, E. C., Spartanburg (Co. D, 18th), age 61. Galnes, Lettle, Campobello (Co. K, 3d S. C. V.), age 76. Hall, Annle Eleanor, Cherotee (Co. F, 13th), age 77. Hewltt, Nancy L., Pauline (Co. B, 5th), age 63.
Eannett. S. A., Spartanburg (Co. K, 5th), age 60. Lanford, Lena, Woodruff (Co. G, 3d), age 69.
Lanford, N. A., Campobello (Co. I, Palmetto), age 64.
Morgan, C. R., Greers (Co. E, 2d), age 60.
Page, Pauline, Trough (Co. H, bth), age 67.
Peden, M. E., Spartanburg (Co. E, Hampton's Legion), age 67.
Ray, S. J., Spartanburg (Co. A, Ga. Vol.), age 62.
Reld, J. Fllzabeth, Campobello (Co. A, 26th), age 69.
Rook, Brecllla, Paullne (Co. F, 18th), age 61.
Slmmons, Susan, Enoree (Co. F. S. C. A.), age 61.
Slmpson, Mary, Switzer (Co. B, 13th), age 72.
Starnes, Elvira, Woodruff (Co. E, Hol. Legion), age 60.
Thomas, Mary L., Spartanburg (McBeth's), age 68.
Watson, M. L., Campobello (Co. I, 9th S. C. V.), age 61.
Weaver, M. E., Campobello (Co. H, 6th S. C.), age 6.
Wesson, R. E., Enoree (Co. D, 3d), age 60.
WIllams, L. Adellne, Clifton (Co. B, Holcomb's), age 67.
Wright, Lucy B., Pacolet (Co. A, 1st L. A.). age 60.

## SUMTER COUNTY

CHANGMB IN ROLL BINCE LABT PATMENT.
Dead-C, No. 2: Wiley Bradley, John J. Grooms, L. F. Jenking, Calvin Jordan, W. J. Pigford. C, No. 4 : Mahaley Kemp, M. S. Rigdell.

Transferred to Other Countleg-W. H. B. Lemmon to Darlington. W. P. Venaling to Clarendon.

Class 4, 2908.
Morris, Benry, Rembert (Co. E, 7th S. C.) Paralyzed.
Lewls, Joseph, Sumter (Co. K, 28d S. C.) Totally blind.

Clast A, 1904.
Baker, R. W., Bhlloh (Co. D, 2d S. C.) Paralyzed. Geddinge, T. G. W., Privateer (Co. C, P. B. L. A.) Blind.

Clase A, 1908.
Jenningw, Richard, Bumter (Co. C, White's). Paralysed. Norton, W. B., Tindal (Co. C, Whlte's). Paralyzed. Vanse, J. J. (Co. C, White's). Paralysed.

Clase A, 1907.
Tarner, W. J., Statesburg (Co. F, 3d). Blind.
Clasa B, 1901.
Buftett, T. B., Sumter (Co. D, 2d S. C. reg.) Lost right leg.
Graham, W. E., Taylor (Co. B, 25th S. C. V.) Half of arm and hand.
Banders, James A., Bembert (Co. E, 7th reg.) Lost right leg.
Clasa $O$, No. 1, 1001.
Coulter, W. A., Providence (Co. F, 27th S. C. V.) Wounded in body. Eudson, Thomas J. (Co. H, Eth reg.) Wounded in arm.

Class C, No. 2, 1901.
Ardia, J. L., Pinewood (Co. A, White's Bat.), age 65. Avin, James R., Privateer (Co. C, White's Bat.), age 69. Bartlett, R. B., Wedgefield (Co. G, Hampton's), age 65. Belf, James s., Rembert (Co. E, 7th reg.), age 63. Bradford, John N., Sumter (Co. E, White's Bat.), age 61. Bradley. John, Stateburg (Co. D, 15th reg.), age 62. Cooper, Robert D., Sumter (Co. H, 8th S. C. V.), age 60. Conyers, Jamer, Taylor (Co. E, 26th reg.), age 60. Devld, W. H., Sumter (Co. E, Whlte's Bat.), age 62. Garrett, H. T. (Co. H, 5th reg.) Transferred from Clarendon. Hodge, O. S., Sumter (Co. H, 28d reg.), age 68.
Holloday, L. J., Sumter (Co. D. 2d reg.), age 61.
Ivers, J. F., Catchall (Co. D, 2d reg.), age 67.
Jones, E. 8., Sumter (Co. G, Hampton Legion), age 71.
Jones, S. J., Mayespllle (Co. E, White's Bat.), age 69.
Lee. Hampton, Taylor (Co. H, 10th B. C. reg.), age 61.
Melntoah. J. B., Clarendon (Co. E, 7th reg.), age 71.
Nunnery, Anderson, Rembert (Co. E, 7th S. C. Bat.), age 66.
Partin, W. A., Sumter (Co. G, 20th S. C. V.), age 67.
Pritchard. T. W., Privateer (Co. H, Eth S. C. C.), age 62.
Quick, J. F., Sumter (Co. D, 8d B. C. V.), age 60.
8mith, John W., Sumter (Co. A, Holcomb Legion), age 71.
Spann, H. M., Sumter (Co. H, Hampton Legion), age 65.
Atrickland, James, Taylor (Co. C, 7 th B. C. V.), age 76.
Thames, R. R., Tindal (Co. D, 4th B. C. C.), age 64.

Turner, B. D., Bembert (Co. F, 7th B. C. bat.), age 68.
Welch, B. J., Taglor (Co. D, 0th S. C. V.), age 64.
Wells, Daniel, Sumter (Co. A, 4th S. C. reg.), age 64.
Wells, James S., Sumter (Co. F2, Whlte's Bat.), age 65.
Young, C. P., Sumter (Co. G, 2d reg.), age 66.
Wadford, C. M., Brogdon (Co. A, 14th S. C. V.), age 61.
Windham, Irby S., Oswego (Co. IU, 8th S. C. reg.), age 68.
WIndham, J. P., Wedgefid (Co. A, 14th S. C. reg.), age 61.
Class C, No. 2, 1902.
Bennehaly, Thomas, Catchall (Co. E, 7th reg.), age 64.
Joye, Charles J., Bumter (Co. K, 23d reg.), age 60.
Lockey, WIlliam R., Plnewood (Co. C, White's Art.), age 62.
Nesblt, S. E., Ramgey (Co. C, White's), age 65.
Rogers, R. M., Tindal (Co. H, 5th reg.), age 62.
Rivers, R. E. (Co. H, 5th S. C. C.), age 60.
Olass O, No. 8, 1905.
Allen, Washlngton, Catchall (Co. A, 29d reg.), age 81.
Burgess, Paul W., Rembert (Co. G, 9th Ky.), age 60.
Compton, J. C., Sumter (Co. F, 1 st S. C. I.), age 60.
Geddings, J. S., Privateer (Culpepper's bat.), age 63.
Hair, W. W., Stateburg (Co. E, P. S. S.). age 60.
Hodge, Whllam M., Sumter (Co. G, I'almetto bat.), age 60.
Mims, Tlmothy, Ashton (Co. E, 10th S. C. V.), age 85.
London, P. P., Bumter (Co. D, 2d B. C. V.), age 63.
Class C, No. 2. 1904.
Ardis, W. J., Plnewood (Co. C, I'almetio).
Dean, F. N., Mayerpllle (Co. E. 12th S. C. V.)
Dennls, J. A., Shiloh (Co. E, 1st Artil.)
Floyd, John M., Motbrldge (Co. H, 26th S. C.)
Gaylord, W. F. (Co. G, 20th). Transferred from Lee.
Lawrence, J. J. P., Sumter (Palmetto L. A.)
Lockey, Duke M., TIndal (Rlchardson's Bat.)
Wactor, R. C. Surater (Co. G, Hampton Legion).
Class C, No. 2, 1905.
Geddis, John M., Privateer (Co. C, P. B. I. A.)
Sauls, E. H. (Co. I, 26th S. C. V.)
Class C, No. 2. 1906.
Alsbrook, James, Privateer (Gardner's Battery).
Boykin, D. H., Shlioh (Co. A. Hol. Leg'n).
Boykin, Manley H., Sumter (Co. G. 20th).
Iludson, G. W. (Co. A, Thompson's Art.)
Hodge, Edward li., Tindal (Co. H, 5th).
Modlln, J. M., Shlloh (Co. E, 7th).
Class C, No. \&, 1907.
Ardis, Abraham, Sumter (Co. C, P. B. L. A.). Atkison, W. J., Statesburg (Co. K. 2d Cav.). Belk, Sumter, Hagood (Co. G, Hampton's Leglon). Burdell, Wlllam, Sumter (Co. A, 2d Car.). Idol, H. N., Sumter (Co. B, P. S. S.). Myers, J. C., Sumter (Co. F, 1st S. C.).
Morrls, M. J., Sumter ( 0 tb S. C. V.).
Scott, G. W., Sumter (Co. D, 1st S. C.).
Sanders, F. R., Statesburg (Co. K, 2d B. C. C.).
Spann, W. A., Providence (Co. A, 2d).

Ganders, Garner, Hagood (Co. G, 2d B. C. V.).
Wright, I. E., Sumter (Co. A, 14th S. C.).
Yoang, J. W., Eemberts (Co. I, 15th).
Olase $O$, No. 3, 1801.
Widonos of Soldiers Who Lost Thoir Livee in the Serotioe of the Oonfederate Etatee.
Barnes, Filiza J., Mannvlle (Co. E, 19th reg.)
Durant, B. A., Sumter (Co. K, 23d reg.)
Eidgeway, J. L., Brogdon (Co. K, 23d reg.)
Olase O, No. s, $\mathbf{B O O S}$
Carter, Amanda, Sumter (Co. E, 7th reg.)
Clase C, No. 3, 1905.
Keels, Ann Eliza. Bhlloh (Co. E, 19th).
Clase O, No. t, 201.
Ballard, M. L. (Co. A, Hampton's).
Brown. Mary J. (Co. C, 6th reg.), age 66.
Brunson, Mary S., Sumter (Co. A, Holcomb's Legion), age 78.
Dixon, Elisabeth, Rembert (Co. F, 7th reg.), age 70.
Durant. Rosa M., Dcarboro (Co. K, 28 th 8. C. V.), age 74.
Folk, J. S., Providence (Co. G, N. C. Cav.)
Harrington. Martha A.. Athins (Co. F. 14th S. C. V.), age 65.
Hatfeld, Jugertha, Sumter (Co. G, 20th B. C. V.), age 68.
Hodge, Ellza. Tindal (Co. H, Бth S. C. C.), age 62.
Jones. V. A., Providence (Co. D, 20th S. C. V.), age 70.
Kennedy, Emma L., Sumter (Co. C, 6th B. C. V.), age 64.
Lee, Martha L., Sumter (Co. K, 23d S. C. V.)
Lemmon, Penelope, Shlloh (Co. F, 27th S. C. reg.), age 72.
McLeod, Martha A., Clarendon (Co. B, S. C. Regerves), age 70.
Mott, Fisle, Tajlor (Pegram's bat.)
Plowden, Mary J., Brogdon (Co. A, Holcomb Legion), age 65.
Scarborough, Martha C., Scarboro (Co. E, P. B. L. A.), age 65.
Tidwell. M. K., Scarboro (Co. G, 20th reg.), age 65.
Tidwell, Sarah, Providence (Co. G, 20th reg.), age 72.
Tralock, Rebecca, Motbridge (Co. H, 26th S. C. V.)
Turner, Elizabeth, Tindal (Co. C, White's), age 65.

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\text { Class C, No. 4, } 190 \mathrm{e} .
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Belk, Martha, Catchall (Co. G, Hampton Legjon), age 78.
Coleman, E. H., Sumter (Co. F. 1st Art.), age 60.
Jackson, S. F., Stateburg (Co. K, 7th reg.), age 64.
Josey. Alfce J., Concord (Co. K, 23d S. C. V.), age 60.
Roblnson, A. F., Onwego (Co. H, 5th Car.), age 63.
Wilson, F. H., Mayesville (Co. K, 23d reg.), age 68.
Watts, Easter, Oswego (Co. I, 28d reg.), age 70.
Class C. No. 4, 1908.
China, R. J., Sumter (Co. I, 25th reg.), age 60.
Goodman, M. E., Shlloh (Co. K, 23d reg.), age 60.
McCleod. S. M., Onwego (Co. A, Brown's), age 63. Villenneave, B. J., Sumter (Co. D. 21 st reg.), age 65. Bartiette, Sarah, Sumter (Co. I, 23d reg.), age 65. Doby. M. M., Scarboro (Co. H. Tih S. C. E.), age 60. Howell, A. M., Sumter (Co. A, Holcomb Legion), age 60. Miller. Harriett J., Sumter (Co. D, 2d S. C.), age 73.
Mims, J. M., Sumter (Co. A, 14th reg.), age 60.

Class C, No. 4, 1905.
Joje, Martha T., Sumter (Co. F, 9th), age 60.
Jones, Mary A., Sumter (Co. A, Holcomb Legion), age 60.
Windham, Mary B., Durant (Co. K, 23d), age 62.
Webb, Mary J., Sumter (Co. I, 7th), age 63.
Class C, No. 4. 1906.
David, Sarah A., Sumter (Co. A, Cav.), age 63.
Geddings, Margaret H., Privateer (Co. H), age 65.
McKagen, E. C., Sumter (Co. K, 23d), age 61.
Logan; M. E., Shiloh (Co. F, 27 th S. C. V.), age 75.
Nettles, H. M., Luayesville (Co. F, 9th), age 66.
Trimnal, Anna E., Sumter (Co. G, 20th), age 72.
Class C, No. $\& 1907$.
Betts, Winnie, Tindal (Gardner's Battery), age 66. Clark, Clara, Oswego (Co. K, 23d), age 61.
Cato, Mary I., Borden (Co. E, 7th), age 60.
Dean, Hattie, Mayesville (Co. C, Hampton's), age 61.
Dennis, Ellzabeth, Shlloh (Co. E, 1st), age 67.
Deveaux, A. G., Sumter (Co. A, Palmetto), age 61.
Grooms, Ollvia, Sumter (Co. E, Palmetto), age 70.
Wells, Amanda M. (Co. E, Palmetto), age 60.

## UNION COUNTY.

## CHANGES IN ROLL BINCE LABT PAYMENT.

Dead-Class A: J. B. Lindsay. Class B: J. M. Dizon. C, No. $2:$ T. J. H. Bates, McG. Sparks, John Holcomb, G. W. Rochester, John C. James, W. J. Robbing. C. Na. 4: Jane Garner.

Trangterred to Other Countles-Polly Garner to Cherokee.
Left State-T. R. Leater.
Transferred to Other Classes-From C, No. 1, to B: E. B. Harfey. From C, No. 2, to C. No. 1: Thomes Burgess, R. U. Evans. From C, No. 2 to A: R. T. Parr. From C, No. 4, to C, No. 8: Charlotte Gregory.

Transferred From Other Countles-G. S. Noland from Newberry. T. J. Colling from Chester. Thomas Horn from Spartanburg.

Clase 4, 1901.
Kirby, W. D., Jonesville-Co. F, 15th S. C. V. (Yaralyzed in both legs.) Hollins, N. C., Jones rille-Gist Guards. (Helpless from paralygis.)

Class A, 1902.
Grady. H. P., Carlisle-Co. A, 5th S. C. V. (Totally paralyzed.)
MeDanleI, L., Union-Co. A, P. S. S. (Totally paralyzed.)
I'owell, John C., Unton-McBeth's Artllery. (Totally blind; reanlt of service.)
Smith, J. D., Union-Co. A. P. S. S. (Totally paralyzed.)
Class A, 1905.
Glenn, Barney T., Crosskeys (McBeth's Art.) Paralyzed.
Roundtree, F. M., Weat Sprlngs (Co. IA, 30th Ala.) Paralyzed.
Clas8 A, 1904.
Moore, L. J.. Union (Co. B, 18th S. C. V.) Paralyzed.
Class A, 1906.
McCormack, Lleut. W. R., Unlon (Co. A, 5th). Paralyzed.
Clas8 A, 1907.
Noland, G. S., Jonesville (Co. B, 18th S. C. V.). Maralyzed.
Parr, K. T., Union (Co. H, 15th). I'aralyqed.
Clase B, 1901.
Mardis, J. M., Ualon-Co. A, 18th B. C. V. (Lost one leg.)
Ward, J. N., Jonesvllle-Co. F, 15th S. C. V. (Left arm paralyzed; result wound.)
Class B, 1907.
Harvey. F. S., Union (Co. B, 18th S. C. V.). Arm entirely useless.
Olase C, No. 1, 1901.
Iarvey, G. W., Carlisle-Co. G, Holcomb's Legion. (Wounded hand and arm.) خhllwood, Wim., Unlon-Co. H, 15 th S. C. V. (Wounded arm and shoulder.)
Reares. 7ach, Jonesville-Co. F, 15th S. C. V. (Wounded In leg.)
Ward, W. T., Jonesvlle-_Co. F, 15th S. C. V. (Wounded in back.)
West. J. P., West Springs-Co. B, 15 th reg. (Wonnded In leg.)
Class C, No. 1, 1902.
Iancaster, 3. B., West Springs-Co. B, 15th S. C. V. (Wounded In leg.)

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\text { Class C, No. 1, } 1904
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Powler, J. R, Jonesville (Co. F, 15th reg.) Wounded In left hand.
ganders, W. H., Monntjoy (Co. A, 5th reg.) Wounded In right leg.
Wilking, W. D., UnIon (Co. F, 15th reg.) Wounded in shoulder.

Clase O, No. 1, 2906.
Shuttleworth, J. C., Unlon (Co. D). Wounded In ankle.

Class C, NO. 1, 1906.
Knox, Morgan, Union (Co. F, 15th). Wounded in hand. Moseley, S. J., Jonespille (Co. H, 5th). Wounded in back.

Olase C, No. 1, 5007.
Burgess, Thomas B., Jonesville (Co. F, 15th S. C. V.). Wounded In left arm. Evans, R. U., Union (Co. D, Eth S. C. V.). Wounded in hip. Gouddock, J. B., Butralo (Co. I, 6th S. C. V.). Wounded in arm. Lipsey, Ira, Union (Co. H, 5th). Wounded In leg.

Clasa C, No. 2, 1901.
Bailey, N. C., Mt. Tabor (Co. H, 5th S. C. V.), age 62.
Bailey, W. B., Union (Co. A, 9th S. C. Reserves), age 83. Dead; money refunded. Barnett, Warren, Unlon (Co. A, S. S.), age 65.
Hlaluck, J. A., Uulon (Co. C, 42d N. C. V.), age 65.
Hutts, Robert, Union (Co. A, 10th N. C. T.), age 66.
Carter, J. M., Santuck (Co. D, 1st Cav.), age 71.
Collins, T. J. (Co. H, 24th). From Chester.
Ducker. H. W., Crosskeys (Co. A, 3d S. C. V.), age 80.
Dunlap, L. H., Union (Co. D, 1st S. C. C.), age 65.
Fison, J. M., Union (Co. A, 18 th S. C. V.), age 80.
Fubanks, Shelton, Cross Keys (Co. B, 15 th S. C V.), age 68.
Farr, Jerry, Union ( $C_{0}$ C, 16 th $\left.S . C . V.\right)$, age 63. Fincher, C. P., Union (Co. A, P. S. S.), age 60. Garner, James J., Jonesville (MeBeth's L. A.), age 61. Garner, John, Kelton (McBeth's L. A.), age 60. George, Thomas, Union (Co. H, ©th S. C. V.), age 62. Greer. C. S., Union (Co. A, 18 th S. C. V.), age 64. Gregory, Isaac. Union (Co. II, 5th S. C. V.), age 64. Harris, George. Santuck (Co. C, 7th S. C. C.), age 62. Harrison. W. C., West Springs (Co. C. 6th S. C. V.), age 60. Horn, Thomas (Co. F, 15th). From Spartanburg. Harrison. W. H., Colerain (Co. II, 1st S. C. V.), age 60. Harvey, John, Carlisle (Co. B. 18th S. C. V.), age 60. Hughes, T. J., Jonesville (Co. A. 5th S. C. V.), age 63. MIllwood. J. M.. IInkney (Co. II. 15th S. C. V.), age 68. Mitchell, Lockhart, Mt. Tabor (Co. C, 7 th S. C. C.), age 75. Odell. J. J., Union (Co. C, 7 th S. C. C.), age 82. I'almer. J. P., Mit. Tabor (Co. H. 15 th S. C. V.), age 64. I'ark. W. J. Jonesville (Co. B. McKissick Rangers), age 60. St. John, Wlllam, Pacolet (Co. H, 5th S. C. V.), age 60. Thomas, James (Co. F, 6th S. C. V.) Transferred from Chester. Sims, F.. T., Union (Co. A, 18th S. C. V.), age 66. Smith, John W., Union (Co. G, DePass's L. A.), age 73. Sumner. Mlls, Gibbs (Co. H, 1st A. C. V.), age 67. West, John T.: West Springs (McReth's Artllery), age 62. Young, T. J., Union (Co. B, 15 th S. C. V.), age 65.

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\text { Class C. No. 8, } 1902 .
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Rearden, Fllphars, Unlon (Co. B. 18th S. C. V.). age 60. Caldwell, R. I. (Co. F, 17th).
('racker. W. J.. Union (Co. C. 7th Cav.), age 61.
Coleman, C. T., Carlisle (Co. D), 5th reg.), age 64.
Fowler. J. T.. Jonesville (Co. C. 7 th Cav.), age 62.
Garner, Daniel, Kelton (McBeth's Artillery), age 60.
Green, James, Jonesville (Co. H, 16th S. C. V.), age 60.
Killian, D. E., Union (Co. A, P. S. B.), age 63.

Kenter, Gldeon, Locizhert (Co. C, 7th Cav.), age 60.
Lawron, Wiley, Colerain (Co. C, 18th S. C. V.), age 65.
Latham, J. G., Lockhart (Co. F, 17th reg.), age 66.
Nelson, John, Adamsburg (MeBeth's Art.), age 79.
Stoken, E. A., Carisile (MeBeth's L. A.), age 60.
Clase O, No. 2, 1995.
Arnold, J. M., Union (Co. K, 18th S. C.), age 60.
Alezander, J. \&. R., Dalton (Co. E, 5th S. C. V.), age 61.
Dabbs, William, Kelton (Co. H, 15th reg.)
Fant, J. M., Unlon (Co. A, P. S. G.), age 60.
Hodge, Gassaway, Jonerville (Co. B, 18th reg.), age 61.
Horn, Elles (Co. F, 15th reg.), age 61.
Long, William F., Jonesville (Co. F, 6th S. C.), age 60.
Clase C, No. 2, 1904.
Blakeley, T. A., Crosskeys (Co. F, 1st S. B.)
Burgess, L. B., Monarch (Co. B, 18th reg.)
Cudd, F. R., Union (Co. H, 15th S. C. V.)
Eleon, J. C., Goshen Hill (Co. D, 5th reg.)
Gregory, Charles S., Unlon (Co. D, 5th reg.)
Hodge, Neeland, Jonesville (Co. B, 18 th reg.)
Hyatt, T. G., West Springs (Co. K, 3d reg.)
Harrie, A. K., Union (Co. A, 18th Bat.)
Jolly, John R., Unlon (McBeth's Artllery).
Murphy, W. R. (Co. F, 17th).
Peacock, Fidward. Union (Co. D. 27th Ga.)
Puckett, J. H., Buffalo (Co. F. 15th).
Fanderford, W. J., Kelton (Co. H, 1õth S. C. V.)
Vinson, Whllam G., Union (Co. K, 5th reg.)
Worthy, Sam F. (Co. B, 18th reg.)
Wright, W. T., Unlon (Co. F, 18th S. C. V.)

Cluss C, No. 2, 1906.

Yowler, Geo. W., Union (Co. C, 7th).
Hawting, T. E., Unlon (Co. K, 5th Cav.)
Jeter, C. W., Santuc (DePass's Artil.)
Long. R. S., Jonesville (Co. H, 5th S. C. V.)
MeGowan, J. W. (Co. G, DeBaumsure's).
Moseley, J. G., Kelton (Co. H, 3d).
McLemore, L. L., Jonesvllle (Co. B, 4th).
McNeel. J. G., Unlon (Co. B, 5th).
Mabry, J. J., Jonesville (Co. H, 3d battalion).
Sumner, John, Paulline (Co. K, 5th).
Blms. L. H., Whltmire (Boyce's battery).
Vanderford, Wm. (Co. H, 15th).
Willard, C. W., Unlon (Co. C, 18th S. C. V.)
Weathers, J. A., West Sprlags (Co. B, Holcomb).
Class C, No. 2, 1908.
(Gore, John W., Cross Keys (Co. F. 14th S. C. V.)
Johns, S. K., Sentuc (Co. B, 18th).
Tramell, Clt. Keys (Co. A, Glst's).
Class C, No, 2, 1907.
Austln. John W., Santuc (Co. C. 6th S. C. C.).
Blalr, Irwln, Monarch (Co. F. 6th S. C.).
Crawford, J. N., Unlon (Co. A. 18th S. C.).
Gonsett. H. W., Jonesville (Co. B, 16th S. C. V.).

Grlfln, N., Buffalo (Co. K, 27th S. C. V.).
Eison, T. F., Jeter (McBeth's Art.).
Stewart, John A., Union (Co. F, 22d S. C. V.).
Lake, M. C., Union (Co. A, 3d Bat.).
Smith, E. F., Jonesville (Co. K, 6th).
Sims, W. H., Sedalia (McBeth's Art.).
Turner, W. M., Union (Co. A, 3d).
Close O, No. S, 1801.
Widows of Soldsers Who Lost Their Lives in the Servioc of the Oomfoderate Eteten.
Bennett, Maria, Union (Co. F, 20th reg.)
Burnette, Pauline, Sedalia (Co. C, 18th S. C. V.)
Edwards, Ellen, Mt. Joy (Co. A, 18th S. C. V.)
Fam, Fannle, Union (Co. E, 43d Ga.)
Jolly, Naomi, Union (Co. A, 18th S. C. V.)
Lowe, Eliza, Union (Co. B, Holcomb Legion).
McDaniel, Rebecca, Union (Co. B, 18th S. C. V.)
Nir, Nancy, Union (Co. A, 1st reg.) Dead; money refunded.
Venderford, Rhoda, Unton (Co. H, 15th S. C. V.)
Vinson, Permelia, Kelton (Co. H, 5th S. C. V.)
Class C, No. 5, 1905.
Foster, Mary, Jonesville (Co. B, 18th S. C.)
Fowler, Caroline, Jonesville (Co. B, 18th).
Hames, Fady, Kelton (Co. H, 15th Ga.)
McDonald. Mary J., Jonesville (Co. K, 3d).
Mabry, Martha, Jonesville (Co. B, 18th).
Class C, No. S. 1906.
Vaughn, Hulda (Co. B, 27th S. C. V.)
Wix. Katle, Unlon (Co. B, 18th).
CLlass C, No. S, 2907.
Fowler, M. C., Jonespllle (Co. B, 18th S. C. V.).
Gregory, Charlotte, Buffalo (Co. F, 7th).
Class C, No. 4, 1901.
Allen, Jane, Jonespllle (Co. H, 18th S. C. reg.), age 65.
Balley. Salle, Union (Co. H, 15th S. C. V.), age 60.
Blenton, Mallnda, Union (Co. F, 15th reg.), age 75.
Clark, I. A., Santuck (M. L. A.), age 60.
Edwards, Mary E., Unlon (Co. A, 18th S. C. V.), age 61.
Fowler, Orpha, Jonesvllle (Co. B, 18th reg.), age 70.
Gregory, Ann, Union (Co. B, 18th S. C. V.), age 66.
Harrls, Nancy Ann, Jonesville (Co. A, 18th reg.), age 68.
Henderson, Harrlett, Santuck (Co. G, P. B. A.), age 62.
Jeter, H. C. Santuck (Co. F, 6th reg.), age 64.
Knox, Jane, Unlon (Co. H, 15th S. C. V.), age 64.
Lawson. Madeline. Unlon (Co. B. 15th S. C. V.), age 68.
Lee, Sallie, Jonespllle (Co. A, 18th S. C. V.), age 60.
Little, Frances, West Sprlngs (Co. H, 5th Cav.), age 78.
LIpseg, Mary, Jonesville (Co. H, 5th reg.), age 63.
Mabry, Frances, Unlon (Co. B, 18th S. C. V.), age 64.
Palmer, Filen C., Mt. Tabor (Co. H, 15th reg.), age 60.
Parr, Fliza, Unlon (Co. H. 15th reg.), age 64.
Sanders, B. A., Union (Co. H, 18th S. C. V.), age 64.
Sharp, Mary, Unlon (Co. A, Eth S. C. V.), age 63.
Yarborough, Mary, Glbbs (Co. H, 1st S. C. reg.), age 69. Dead; money refunded.

Olass O, No. \&. 1908.
Austh, Mre John, Crow Keys (Harbin's Cavairy), age over 60.
Adams, Mary, Adamsburg (Co. C, 2d Vol.), age 71.
Braton, Mra. Jeff, Cromsey (Co. B, 18th B. C. Vi), age 62.
Cartee, T. P., Keiton (Co. F, 15th reg.)
Eoster, S. E., Union (Co. I, 16th S. C. V.), age 60.
Johng, Mary, Union (Co. B, 18th), age 60.
Lee, Hannah, Weat Springs (Co. H, 9th 8. T.), age 73.
Bmith, Pernicig, Weat Springe (Co. B, 15th reg.), age 67.
Sparts, Sarah A., Union (Co. B, 27th reg.), age 64.
Willard, Elisabeth, Union (Co. D, 15th reg.), age 60.
Waldrop, Mary, Union (7th B. C. Cav.), age 65.

Olase O, No. \&, 1905.
Crawford, Jane, Union (Co. B, 18th B. C. V.), age 60.
Green, Matida, Union (Co. F, 18th B. C. V.), age 66. Howell, Eissle, Lockhart (Co. H, 15th 8. C. V.), age 60. Holcomb, Mary (Co. A, Gili's), age 82.
Johnmon, Barbara, Union (Co. B, 46th N. C. V.), age 68.
Montromery, Sarah (Co. D, 1gt S. C. V.), age 65.

Class C, No. 4. 1904.
Aycock, Maliesa, Kelton (Co. A, 18th reg.), age 60.
Barnes, Sarah B., Lockhart (Co. 1, 6th S. C. V.), age 60.
Balley, Busan, Crosskeys (Co. A, 9th rug.), age 60.
Baliey, Cynthia, Union (Co. C, 7th Cav.), age 77.
Bames, Lizzie, Union (Co. B, 18th reg.), age 60.
Jeter, Luellen, Union (Gist Guards), age 60.
MeCravey, E. T., Buffaio (McBeth's Artil.), age 60.
Morris, Loulza, Union (Co. A, 1st Regulars), age 60.
Ray, M. C., Crosskeys (Co. C, 18th S. C. V.), age 70.
Stoudemeyer, Jane, Union (Co. C, 5th reg.), age 60.
Smith, Martha, Union (Co. E, 15th S. C. V.), age 66.
Viason, Frances J., Union (Co. A, 7 th reg.), age 60.

Olass $O$, No. $4,1906$.
Bobo, Ann P., Crom Keys (Co. C, 18th), age 60.
Carter, M. A., Lockhart (Co. A, 6th), age 66.
Gentrie, Rachel P., Cross Keys (Co. D, 3d), age 82.
Lanson, Charlotte, West Springs (Co. H, 2d), age 60.
Nabors, Mary A., Union (Co. I, 13th), age 60.
Robingon, M. S., Union (Co. C, 7th), age 62.
Summer, Martha, Gibbs (Co. H, 1st), age 65.
Taylor, Frances, Union (Co. A, P. S. S.), age 69.
Worthy, Nancy, Union (Co. H, 6th S. C. V.), age 65.
Weat, Nancy, Union (Co. H, 1st S. C. V.), aged 70.
Sweat, Ranath. Jonegville (Co. E, $\delta$ th), age 60.
Went, Rachel, West Springs (Co. I, 3d), age 60.

Closs C, No. \&. 1908.
Addls, Julia Ann, Kelton (Co. H, 18th), age 74.
Beiue, N. C., Union (Co. F, 18th), age 67.
Boulware, S. L., Union (Co. B, 17th), age 78.
Jolly, N. A., Unlon (8th La. Vol.), age 60.
Sprouse, Mary El., Union (Co. I, 5th), age 60.

Class O, No. 4, 1907.
Briggs, Teranna, Union (Co. C, 18th S. C. V.), age 60.
Bates, Ramath, Elsie (McBeth's Art.), age 60.
Balley, E. F., Kelton (Co. H, 15th), age 60.
Hedgepeth, E. A., Jonesvllle (Co. G, 27th), age 60.
Koon, E. A., Union (Co. B, 18th), age 76.
Holcomb, Fannie, Elsie (McBeth's), age 65.
Robbins, M. E., Monarch (Co. E, 6th S. C. V.), age 60.
Summer, Rebecca, Buffalo (Co. D, 3d), age 60.
Vinson, Jane, Jonesville (Co. H, 5th), age 60.
Whitesides, Hester C., Unlon (Co. A, 18th), age 66.
White, Nancy, Jonesville (Co. H, 5th), age 80.

## WILLIAMSBURG COUNTY.

CHANOES in boll bince last patment.
Dead-Class A: R. B. Pope. C, No. 1: P. L. Coker. C, No. 2: James Ard, J. M. Kennedy, W. A. McKnight, J. T. Rodgers, R. A. Moore. C, No. 4: Sarah E. Britton.

Transferred to Other Classeg-From C, No. 2, to C, No. 1: 'N. T. Altman. From C, No. 4, to C, No. 8 : E. J. Keefee, Susan E. Brunson.

OLaes A, 1901.
Langston, J. W.-Co. H, 26th reg. (Lost one leg; paralyxed In one arm.) Trantferred from Florence County.

Cless A, 1904.
Coker, J. M., Hebron (Co. I, 4th Cav.) Totally bllnd.
Coker, J. S., Lake City (Co. 1, 26th reg.) Totally blind.
Olast B, 1901.
Ard, Elisha A., Bcranton-Co. K, 25th S. C. V. (Wounded right leg.) Hanna, Robt., Outland-Co. G, 15th Reg. (Lost one leg.)
Lamb, H. J., Suttong-Co. E, 10th Reg. (Lost one hand.)
Lindeay. H. M.-Co. F, 6th N. C. (Lost hand.) From Darilington.
Ogbarn, W. C., Sattong-Co. A, 10th Reg. (Partially paralyzed.)
Parker, A. P., Camp-Co. H, 10th Reg. (Lost one leg.)
Class B, 1905.
Bradham, J. A., Klaggtree (Co. C, 25th). Lost one arm.
Olass O, No. 1, 1901.
Dennis, J. W., Venters-Co. D, 2d S. C. (Wounded shoulder and leg.)
Olass C, No. 1, 1902.
Hatield, C. P.-Co. G, 20th. (Wounded ln ankle.)
Thornhli, James W., Lake Clty-Co. E, White's Light Art. (Wounded in thlgh.)
Clase C, No. 1, 1904.
Powell, John, Lake City (Co. I, 26th reg.), wounded In body.
Claes C, No. 1, 1906.
Constlne, C., Klngstree (Co. C, Haskell's Art.) Wounded in ankle.
Thlton, R. F., Scranton (Co. 1, 26th). Wounded In left arm.
Olase O, No. 1, 1907.
Altman, N. T., Suttons (Co. K, 25th). Wounded in leg.
Grayson, H. L., Benson (Co. C, 25th). Wounded in shoulder.
Lee, Isaac E., Lake Clty (Co. F, 7th). Wounded in face.
Olass 0, No. 2, 1901.
Bradham, J. H., Greelywille (Co. I, 26th reg.), age 71.
Brarton, J. W., Greelgille (Co. I., 25th S. C. V.), age 68.
Browder, A., Greelyville (Gordon's Co., 25th reg.), age 6.
Browder, William, Greelgville (Gordon's Co., 25th reg.), age 81.
Burkett, L. E., Greer (Co. H, 10th reg), age 64.
Bucklew, R. A. (Co. I, 4th reg.)
Carter, B. W., Eingatree (Harlee's Legion), age 72.
Chrintman, J. A., Cades (Co. K, 28 d reg.), age 64.
Coker, 8. J., Cadee (Co. I, 28th reg.), age 71.

Cook, A. L., geranton (Co. H, 25 th reg.), age 64.
Cortney, 8. B. W., Kingatree (Co. E, Frederick's), age 62.
Duke, T. F., Mouzons (Co. I, 4th reg.), age 80.
Egerton, H. G., Greer (Co. H, 8th reg.), age 71.
Fleming, W. E., Klagstree (Co. I, Butler's Cav.), gge 68.
Gamble, R. K., Kingstree (Co. E, 25 th reg.), age 65.
Gunter, D., Morrisville (Co. D, 10th Manigault's), age 65.
Hodges, W. J., Late Clty (Co. I, 25th S. C. V.), age 81.
Hughes, J. W., Jr., Lambert (Co. G, 15th S. C. V.), age 81.
McKay, \&. D., Salters (Co. E, 19th reg.), age 62.
Mims, J. D., Kingstree (Co. H, 26th S. C. V.), age 73.
Mitchum, W. T., Greelyville (Co. K, 25 th reg.), age 68.
Morris, W. J., Morrisville (Co. I, 4th S. C. V.), age 78.
Mouzon, D. K., Mouzons (Co. I, 26th reg.), age 63.
Parker, J. A., Cade\# (Co. I, 26th S. C. V.), age 73.
Parsons, W. D., Lambert (Co. F, 7th reg.), age 71.
Powell, Charles, Lake CIty (Co. H, 25th S. C. V.), age 62.
Rodgers, S. L., Cades (Co. A, 7 th S. C. C.), age 70.
Rowe, E. B., Suttons (Co. D, 4th reg.), age 80.
Terry, G. W., Trio (Co. K, 25th reg.), age 61.
Thompson, John, Vox (Co. G, 15th reg.), age 68.
Thorpe, 8. J., Benson (Co. I, 4th S. C. V.), age 67.
Tisdale, W. W., Morrisville (Co. C, 25 th reg.), age 61.
Wilson, F. W., Suttons (Co. I, 4th reg.), age 64.

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\text { Class C, No. 2, } 190 \mathrm{R} .
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Ammons, W. E., Lake CIty (Co. L, 21st S. C. V.), age 68.
Altman, Thomas, Morrisville (Co. E, 10th reg.), age 71.
Brockington, J. F., Morrisville (Co. F, 10th reg.), age 60.
Castleman, P. J., Lake City (Co. E. 9th reg.), age 71.
Chandler, J. F., Dock (Co. K, 6th reg.), age 62.
China, S. M., Greelyville (Co. C, 25 th reg.), age 64.
Danlely, C. W., Lake City (Co. H, 10th reg.), age 65.
Dennis, J. W. (Co. K, 25th reg.), age 61.
Dubose, C. W., Cades (Co. C. Oth reg.), age 62.
Floyd, G. E., Cades (Co. I, 15th Battallon), age 60.
Fltch, W. D., Lake City (Co. A, 7th reg.), age 61.
Grayson, John M., Indiantown (Co. C, 25th reg.), age 64.
Jordan, J. A., Lake City (Co. E, White's), age 72.
McKenzle, D. S., Cades (Co. I, 26th reg.), age 62.
Mitchum, W. E., Helnemann (Co. K, 25th reg.), age 68.
Morris, D. F., Lake City (Co. I, 25th reg.), age 62.
Morris, C. L., Rhems (Co. H, 26th Bat.), age 67.
Matthews, W. G., Scranton (Co. E, White's), age 78.
Phipps, W. M., Scranton (Co. C, 10th reg.), age 60.
Quimby, James R., Scranton (Marion Art.), age 64.
Sanders, J. C., Klngstree (Co. E, 1st reg.), age 66.
Thompson, D. W., Indiantown (Co. I, 4th 8. C. C.), age 65.
Tanner, James, Jay (Co. F, 27th S. C.), age 63.
Tanner, T. A., Vox (Co. G, 15th reg.), age 60.
Weaver, J. T., Single (Co. H, 26th reg.), age 63.
Young, W. A., Scranton (Co. I, 26th reg.), age 68.
Class C, No. e. 1908.
Calder, Daniel, Cades (Rhett's bat.), age 78.
Carter, J. T., Lambert (Co. G, 15th reg.), age 60.
Gray, D. H., Cades (Co. C, 9th B. C. V.), age 86.
Long, John, Morrisville (Co. F, 10th reg.), age 70.
Posten, John L. (Co. I, 10th). From Florence.
Miles, R. A., Scranton (Co. I, 26th reg.), age 66.
Mims, P. W., Leo (Co. E, 9th reg.), age 61.

Pack, J. F., Greelyoille (Co. D, Jackaon'f bat.)
Parnell, W. R. (Co. G). Trangferred from Lee.
8mith, F. N.; Trio (Co. K, 25th res.), ege 78.
Olass O, NO. 2, spel.
Braveboy, Mones (Co. H, 10th reg.)
Colling, Frank, Beranton (Co. I, 26th reg.).
Casselman, John, Scranton (Co. I, 26th reg.)
Powell, T. W., Beranton (Co. C, 26th reg.)
Rollins, G. T., Lake CIty (Co. G, 26th reg.)
Olase C, No. 8, 2 SOLS.
Baylor, L. E., Indlan (Co. D. Rutledge).
Erane, J. 8. 8., Lee (Co. D, 7th battalion).
Gee, J. A., Slagle (Co. B, 21st).
Hughes, D. B., Rome (Co. F, 10th).
Laey, J. M., Cades (Co. E, 7th).
McGee, P. (Co. H, 10th).
Parker, W. H., Cades (Co. I, 28th).
Saule, J. H., Cadea (Co. I, 26th).
Tallevast, H. P., Dock (Co. L, 8th).
8tewart, A. C., Lake City (Co. A, 8th).
Welah, Benj., Bcranton (Co. H, 26th S. C. V.)
OLase C, No. 2, 1908.
Ard, T. S., Greelyville (Co. C, 2d Ark.)
Barr, D. S., Lake Clty (Co. G, 26th).
Cannon, Cornellus, Harpers (Co. C, 10th).
Howard, J. E., Fowler (Co. B, Boykins).
MeKnight, J. L., Cades (Co. I, 26th).
MeCante, L. W., Indiantown (Co. A, 7th Cav.)
Olass 0, No. 2, 8907.
Caraway, J. C., Scranton (Co. H, 25th).
Ferdon, John, Morrisville (Co. F, 7th).
Lee, A. J., Scranton (Co. I, 26th).
Montgomery, E. P., Klngstree (Co. C, 25th).
Neamlth, J. L., Indlanton (Co. E, 10th).
Thompson, S. B., Church (Co. G, 15th).
Olass $O$, No. S, 1901.
Widows of Boldiers Who Lost Their Lives in the Bervice of the Oonfoderate Staten.
Ljoch, Hannab C., Scranton (Co. H, 25th S. C. V.)
McCallister, Catherine. Scranton (Co. H, 25th S. C. V.)
Thomas, Nancy, Vox (Co. C, 15th reg.)
WIIder, Margaret J., Scranton (Gordon's Co., 25th 8. C. V.)
Class O, No. 3, 1909.
Eaddy, Margaret H., Jay (Co. I, 25th reg.)
Class C, No. s, 1904.
P'pkin, Margaret, Barper (Co. E, 10th reg.)
Class C, No. S, 1900.
Floyd, Susen A., Lake Clty (Co. I, 7th).

Keefee, E. J., Fox (Pegram's Bat.).
Branson, Susan E., Greeleyville (Co. F, 1st).

Clase O, No. 4, 2901.
Adkinson, Elisabeth, Jay (Co. C, Pegram'e), age 71. Brockligton, M. G., Morrisville (Co. F, 7th S. C. C.), age 80.
Brown, Eliza, Cades (Co. A, Cagh's), age 78.
Burrows, Thermutus A., Fowler (Co. G, 15 th S. C. V.), ago 73.
Calder, Mary, Coward (Johnson's Art.), age 66.
Cameron, Martha, Lambert (Cash's), age 74.
Coker, Salle, Lake Clty (Co. I, 28th reg.), age 65.
Dennis, S. A., Johnsonville (Co. I, 4th reg.), age 61.
Douglass, Emily, Lambert (Co. E, 7th reg.), age 66.
Eaddy, Jane C., Vox (Co. I, 10th reg.), age 66.
Evans, M. A., Lake Clty (Co. I, 26th reg.), age 66.
Floyd, Hannah A., Lake Clty (Co. I, 26 th reg.), age 72.
Gamble, Mary Ann, Helnemann (Gordon's Co., 25th reg.), age 78.
Goodwln, Sarah E., Scranton (Co. I, 26th reg.), age 64.
Graham, M. Isabella, Indlantown (Ward's Battery), age 62.
Hamlln, Ann M., Harper (Co. A, 21st reg.), age 63.
Hanna, Cadness, Vox (Ward's Batrallon), age 64.
Kelly, Loulsa, Lake City (Co. H, 21st reg.), age 68.
Klrby, E. H., Scranton (Co. H, 10th S. C.), age 63.
Lewls, Mary, Greelyville (Snowden's Co., 5th S. C. V. C.), age 65.
Lynch, E., Scranton (Co. H, 10th reg.), age 64.
Mitchum, S. R. (Co. K, 25th S. C. V.), over 60.
McConnell, Nancy, Fowler (Butler's Co., 25th S. C. V.), age 76.
McDougle, M. E., Lambert (Co. A, 10th reg.), age 60.
McNell, Annle, Scranton (Co. F, 10th reg.), age 68.
Mller, Ellsa A., Jay (Co. I, 10th S. C. V.), age 88.
Mlles, Mossey, Lake Clty (Co. H, 10th S. C. V.), age 66.
Neal, Rachel (Co. A, 8th S. C. V.), age 60.
Pope, Jane, Kliggtree (Cash's), age 64.
Thompson, Mary E., Vox (Co. A, Wagener's Bat.), age 72.
Ventera, N. E., Johnsonville (Co. I, 4th reg.), age 63.
Wlse, Mary A., Klagstree (Thomas's Co., 21st S. C.), age 60.

Class C, No. 4, 1908.
Barnett, Rena (Co. F, 10th reg.), age 72.
Byrd, Matilda, Trio (Co. E. 5th Cav.), age 62.
Barfield, Dorothy, Lake Clty (Co. F, Brown's), age 72.
Davls, L. M., Gourdin (Co. K, 2бth S. C. V.), age 66.
Graham, M. E., Lake Clty (Co. I, 26th Bat.), age 60.
Graham, Mrs. Mary L. E., (Co. I, 26th S. C. V.), age 68.
Joje, Dora, Mouzons (Co. E, 6th reg.), age 62.
Mathews, H. B., Klngstree (Co. G, 15th reg.), age 60.
Miles, Ellza R., Lake Clty (Co. I, 26th reg.), age 68.
McCutchen, Mary J. (Co. B), age 69.
Parker, Mahaley, Cades (Co. I, 26th S. C. V.), age 62.
Smlth, E. L., Scranton (Co. I, 10th Vol.), age $7 \delta$.
Venters, Margaret, Venters (Co. G, 15th reg.), age 63.
Young, Jane E., Lake CIty (Co. F, 8th reg.), age 61.

Class O, No. 4, 2908.
Ard, P. T., Venters (Co. G, 15th S. C. V.), age 60.
Feagln, Margaret, Lake Clty (Co. I, 26th reg.), age 71.
Strong, Agnes Z., Benson (Charleston bat.), age 70.
Shaffer, W. W. C., Scranton (Co. B, 25th reg.), age 65.
Thompson, Sarah, Outland (Co. G, 26th reg.), age 62.
Wllder, Sarah, Gourdln (25th reg.), age 60.

Olase $O$, No. \& 1804
Cane, Harriett J., Lake Clty (Co. I, 10th reg.), age 78.
Gray, Nancy, Lake Clty (Co. I, 26th reg.), age 63.
Evana, Rebecta, Seranton (Co. I, 26th reg.), age 68.
Beott, Mary E., Lake City (Co. H, 10th reg.), age 60.
Class C, No. 4, 1906.
Branson, Frances E்., Gourdin (Co. K, 25th), age 64.
Cor, Batan, Vox (Co. B, 10th), age 67.
Bli, Ellrabeth, Trio (Co. I, 25th), age 65.
Martin, G. W. (Co. I, 25th), age 60.
Powell, Jane, Lake Clty (Co. C, 25th), age 71.
Sturkey, E. J., Cades (Co. A, 14th), age 60.
Olasis C, No. 4, 1906.
MeElvene, L. A. M., Spring Bank (Co. K, 6th), age 71. MeConnell, M. L., Taft (Co. K, 25th), age 69.

Olass C, No. $\$ 1907$.
Rodgers, MatIIda, Late Clty (Co. A, 7th), age 61.
Sanls, Pedriew, Scranton (Co. K.), age 65.
Saule, F. J., Lake CIty (Co. I, 26th), age 63.

## YORK COUNTY.

## CEANGIS IN BOLL BINCE IABT PATMENT.

Dead-Class A: Geo. W. Reed. C, No. 1 : W. A. Koonte, B. G. Bidir. C, Na. 2 : T. K. Bates, W. J. Bowen, M. O. Glles, A. L. Nunmery, W. E. Sutan, Alfred Walker, R. M. Wilson, John Ramgey, Samuel G. Blair, J. W. Felts. C. No. $3: \mathrm{E}$ J. Givens. C, No. 4 : D. N. Beard, A. M. Howe, Martha A. Irby, Martha Ratteree, Salle A. McFadden, M. A. Nichols, C'atherine Warren.

Transferred to Other Counties-J. W. Shedd to Chester. J. G. Coan to Lancaster. 8. H. Hargett to Lancaster. Fannle Bryant to Chester. M. E. Moore to Chesterfield.

Left State-R. P. Ralmey, A. L. Lay.
Transferred From Other Counties-H. J. Hullender from Cberokee. C. B. Smith from Chester. Isaac Gardner from Kershaw. Hannah Carter from Chester. Martha Moore from Chesterfid.

Class A, 1901.
Robinmon, John W., Catawha-Co. D, 17th S. C. V. (Completely disabled by paralysls ; result of pounds.)

Class A, 1904.
Clinton, W. J., Rock Hil (Co. A, 6tb S. C. V.) Bllnd.

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\text { Class B, } 1901 .
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Bell, J. A., Clover-Co. E, 5th S. C. (Lost left arm.)
Burns, Robert, Fort Mill-Co. H, 11th N. C. T. (Lost left leg.)
Merrett, A. H., Fort Mill-Co. B, 6th S. C. T. (Lost left arm.)
Perry, W. C., Fort Mll-Co. B, 6th S. C. T. (Lost left hand; wounded right hand.) Pettio, Jefferson, Bethany-Co. 1, 7th S. C. V. (Lost left arm.)
Price, W. H., Rock Hlll-Co. I, 43 d N. C. (Lost rlght arm.)
Class B, 1904.
Erwln, W. E., Yorkville (Co. H, 1st S. C. A.) Lost left leg.

## Class O, No. 1, 1901.

Adklng, Jackson, Tirzah-Co. H, ist B. C. C. (Wounded in left arm.) Beamguard, J. C., Yorkvllle_Co. G, 18th S. C. V. (Wounded in left les.)
Brown, Wm., Clover-Co. E, 5th reg. (Wounded in left thigh.)
Cook, J. M., Tlrzah-Co. H, 49th N. C. reg. (Wounded in the breast.)
Davidson, J. F., Yorlville-Co. H, 18th reg. (Wounded ln rlght arm.)
Dye, L. H., Newport-Co. A. 6th S. C. V. (Wounded foot and ankle.)
Glover, W. O. Point-Co. B, 6tb S. C. reg. (Wounded In left arm.)
Green, John, Sharon-Co. I, 66th N. C. reg. (Wounded In left arm.) Gulnn, T. M., Yorkflle-Co. A. 12th S. C. V. (Wounded In thighs. Hagang, R. A., Clover-Co. F, 5th S. C. V. (Wounded left arm.) Jackson, W. F., Tirzah-Co. G, 6th S. C. reg. (Wounded in knee.) Jones, John H., Hickory-Co. G, 18 th $S$. C. V. (Wounded left hand., Klger, Noah, Ramah-Co. M, 16 th N. C. reg. (Wounded rlght leg.) Lanler, C. C., Ifnergy-Co. H. 18th S. C. reg. (Wounded ln thlgh.) Mannlng, P. C., Clover-Co. G, P. S. S. (Wounded In left leg.) Massey, S. F., Fort Mll-Co. H, 4th S. C. C. (Wounded rlght arm.) Mullinaz, Lee, Hlckory-Co. A, 12th S. C. V. (Wounded In knee.)
'Peeler, D. S., Klngs Creek-Co. F, 1st S. C. H. A. (Wounded rlght hand.) Purseley, Jos.-Co. G. 18tb. (Wounded in left hand.)
Sherer, H. H., Blalrsville-Co. F, 17 th reg. (Wounded left arm.)
Sherer, W. A., Yorkville-Co. B, 12th S. C. reg. (Wounded left leg.) Starnes, Rufus P.. Newport-Co. G, 49 th reg. (Wounded left hand.) Btarnes, J. Y.-Co. B, 43d N. C. V. (Wounded ln leg; tranterred from Cheeter.) Taylor, J. W., Rock Hill-Co. B, 53d N. C. reg. (Wounded left arm.) Thomas, D. F., Sharon-Co. K, 17 th S. C. reg. (Wounded left leg.)

Thompeon, J. T., Clover-Co. H, 18th reg. (Wounded right thigh.)
Walker, Jerry, Clover-Co. A, 49 th N. C. reg. (Shot in left shoulder.)
Wray. John, Valdora-Co. K, 17th S. C. V. (Wounded right leg.)
Westbrooks, J. R.-Co. H, 12th reg. (Wounded In legs.) Transferred from Chester.
Olase C, No. 1, 1908.
Manter, J. G., Blairsville-Co. K, list Englneers. (Wounded right leg.)
Ctass C, No. I, 1904.
Harvey. 8. J., Clover (Co. F. 5th S. C. V.) Founded in neck.)
Clasa C, No. 1, 1908.
Boward, J. T., Fort Mill-Co. B, 16th B. C. V. (Wounded in eye.)
Shaw, J. J., Rock Hill-Co. H, 5th S. C. V. (Wounded in hlp.)
Clase C, No. 2, 1901.
dikine, J. J., Tirsah (Co. H, 1st B. C. C.), age 62.
Alderson, W. T., Fort Mill (Co. B, 6th reg.), ase 68.
Alexander, W. S., Rock Elll (Co. H, 85th N. C. reg.), age 69.
Armatrong. W. F., Clover (Co. G, 18th 8. C. V.), age 62.
Armatrong, W. H., Yorkville (Co. B, 6th S. C. V.), age 65.
Balley, R. T., Fort Mill (Co. B, 17 th reg.), age 78.
Bractrett, W. M., Clover (Co. A, 6th N. C. C.), age 64.
Broome, 8. A., Rock Hill (Co. H, 43d N. C. R.), age 67.
Bryant, Sidney, Rock Hill (Co. H, 11th N. C. R.), age 60.
Burns, Jamea, Hock Hill (Co. B, 6th reg.), age 65.
Childers, E. C. (Co. B, 12th). Transferred from Cherokee.
Clark, James A., Guthriesville (Co. B, 4th S. C. C.), age 70.
Dabbs, L. J., Rock BIII (Co. H, ठth S. ( $\therefore$ V.), age 69.
Davidson, J. A., Guthriesville (Co. K. 17 ih S. C. reg.), age 72.
Dowdle, John A., Yorkille (Co. B, 12th S. C. V.), age 66.
Ferguen, John, Rock Hill (Co. A, 17th S. C. V.), age 64.
Finley, W. G., Zeno (Co. H, 59th S. C. reg.), age 69.
Gartson, D. A., Rock Hill (Co. K, 18th S. C. I.), age 65.
Garvin, John W., Guthriesville (Co. K, bth reg.), age 68.
Golnga, J. R., Rock Hill (Co. A. Catawba Rangers), age 70.
Harper, Jno. C., Fodder (Co. E, 17th reg.), age 63.
Harris, George, Valdora (Co. D, 16 th N. C. reg.), age 67.
Hofiman. F. L., TIrzah (Co. H, 87th N. C. reg.), age 70.
Hogue. James A., Smyrna (Co. F, 17th S. C. V.), age 60.
Howe, S. B., Clover (Lafayette's Artlllery), age 62.
Howell, T. A., Rock Hill (Co. H, 84th N. C. reg.), age 61.
Hudeon, A., Yoriville (Co. F, 23 d reg.), age 63.
Htulender, H. J. (Hart's Battery). From Cherokee County.
Klmbrel. John R., Fort Mill (Co. B, 6th S. C. Troops), age 68.
Lanler, Lewis (Co. B, 12th). Transferred from Cherokee.
Lucas, J. B., Yortville (Co. K, 8th N. C. reg.), age 68.
MeCullough, M. F. S., Hoodtown (Co. G. 18th S. C.), age 65.
MeDantel, A., Hlckory (Co. H, 6th S. C. V.), age 63.
MeKnight. W. E., Olln (Co. F. 5th S. C. reg.), age 62.
MeMatin, J. T., Bethany (Co. G, 18th g. C. reg.), age 68.
Me8waln, Elijnh, Hoodtown (Co. G. 18th reg.), age 62.
Mangum, B. E, Bock Hill (Co. E, 48th N. C. reg.), age 69.
Miskelly, H. B., Yorkville (Co. K, Hampton Legion). age 68.
Morgan, Armon, Rock Hill (Co. I, 37 th. Ga.), age 60.
Oaburn, John H., Fort Mill (Co. F. 49th N. C. T.), age 78.
Parth, Jomeph, Fort Mill (Co. B, 6th reg.), age 77.
Pearmon, R. G.. Fort Mill (Co. D, 11th N. C. T.), age 75.
Paraley, P. L., Stamp (Co. G, 18th reg.), age 66.
Ramey, Jacioon, Yoriville (Co. F, Sth reg.), age 02.

Reeves, Henry, Tirzah (Co A, 47th Ark. reg.), age 77.
Rhea, William, Hictory Grove (Co. K, 17 th 8. C. res.), ago 68.
Russell, D. S., Yoriville (Co. I, 6th S. C. reg.), age 64.
Sanders, Pascal (Co. H, 43 d N. C.), age 67.
Sexton, C., Smyrna (Co. F, 17 th S. C. reg.), age 60.
Spencer, T. S., Hichory Grove (Co. B, 12th S. C. V.), age 74.
Stewart, D. M., Yortville (Co. G, 1st reg.), age 63.
Sweat, J. M. (Co. B, 53d N. C.), age 72.
Thompson, J. W., Fort Mill (Co. E, 22d S. C. Troops), age 78.
Wallace, Alex., Bethany (Co. G, 18th B. C. V.), age 66.
Wallace, Danlel, Smyrna (Co. A, 13th Art.), age 66.
Whitaker, W. B., Yoriville (Co. F, 5th S. C. V.), age 64.
White, A. J., Klags Creek (Co. G, 18th reg.), age 65.
White, J. J., Yoritille (Co. G, 18th reg.), age 65.
White, L. B., Clarks Fork (Co. G, 18th reg.), age 61.
White, Thomas, Zadok (Co. G, 18th reg.), age 68.
White, W. L., Filbert (Co. G, 18th reg.), age 69.
Whleon, Brown, Yortville (Co. F, 23d reg.), age 63.
Winkler, John, Balloon (Co. I, 26th N. C. reg.), age 65.
Wolf, W. M., Fort MIll (Co. E, 22d N, C. reg.), age 60.
Wood, A. F., Yorkvllle (Co. F, 15th Miss.), age 75.
Wright, D. D., Hichory Grove (Co. I, 38th N. C. V.), age 6.

Class C, No. 2, 1908.
Ashley, Wm., Yorkville (Co. H, 11th N. C.), age 62.
Bigham, J. T., Sharon (Co. B, 12th S. C.). age 67.
Childers, Sherod, Hickory Grove (Co. C, 17 th S. C. reg.), age 80.
Gardner, C., Rock Hill (Co. E, 12th reg.), age 62.
Moore, A. P., Rock HIII (Co. A. 9th S. C. V.), age 61.
Roblason, Frank, Clover (Co. G, 18th S. C.), age 60.

Class $\quad$ O, No. 2, 1908.
Ashe, J. J., Yortville (Co. K, 17th S. C.), age 64.
Bolin, Thomas, Hickory Grove (Co. K, 17 th S. C.), age 63.
Chambers, J. S., Yorkville (Co. K, 13th N. C.), age 67.
Hutchingon, J. P., Rockhili (Co. H, 18th S. C.), age 70.
Jackson, John C., Yorkville (Co. I, 5th S. C.), age 61.
Lemons, Harvey, Yorkville (Co. A, 17th S. C.), age 65.
Moore, A. W., Blairsville (Co. H, 6th S. C.), age 65.
McCarter, D. B., Yorlivlle (Co. G, 18th S. C.), age 70.
Orr, James M., Harmony (Co. A, 17 th 8. C. V.), age 78.
Simmons, C. H., Rockhill (Co. F, 5th S. C.), age 60.
Snead, J. S., Fort Mill (Co. K. 43d N. C.), age 66.
Smith, C. B. (Co. D, 1st S. C. C.). From Chester.
Smith, R. W., Smyrna (Co. B, 12th B. C.), age 64.
Wylle, W. P., Rockhill (Co. B, 12th S. C.), age 66.

Clase C, No. 2, 1904.
Bogus, B., Yorkville (Co. B, Hampton Legion).
Dunlap, D. F., Rock Hill (Co. A, 9th S. C. V.)
Denton, J. W. (Co. I, 12th). From Richland.
Givens, G. A., Rock Hill (Co. F, 48th N. C.)
Johnston, Samuel L., Rock Hill (Co. F, 17th S. C. V.)
Lazinby, J. M., Rock Hill (Co. A, 33d N. C.)
Meek, J. S., Clover (Co. K, 17 th reg.)
Plyer, Aaron, Rock Hill (Co. D, 8th 8. C.)
Roach, T. J., Bock Hill (Co. H, 12th S. C. V.)
Wood, R. L., Clover (Co. H, 18th S. C. V.)
Workman, R. R., Edgemore (Co. F, Bth B. C. V.)

Class C, No. 2, 1505.
Dunlap, S. N., Fort MIII (Co. C, 10th).
Gardner, Isaac (Co. E, 12th). From Kershaw County.
Gregory, W. M., Rock Bill (Co. I, 3d).
Hotchinson, S. J., Rock Hill (Co. C, 18th).
Hand, R. H., Clover (Co. C, 1st N. C.)
Howe, R. T. (Co. G, 18th S. C.)
Jones, W. B., Clover (Co. E, 17th).
King, G. W., Rock Hill (Co. 1. 37 th N. C.)
Kidd, M. C., Hock Hill (Co. E, Sth).
Logan, T. H., Bethany (Co. K, 1st Engineers).
Merritt, Robt. A. P., Fort Mill (Co. B, 6th).
Patterson, A., Jackson, Fort Mill (Co. H, 1st).
Pugh, Josiah, Yorkville (Co. D, 2d N. C.)
McConnell, T. P., McConnellsville (Co. F, 6th).
Class C, No. 2, 1906.
Clawson, T. W., Yorkvllle (Co. I, 1st).
Crook, J. T., Rock HIll (Co. H, 24th S. C.)
Gardner, J. L., Yorkvlle (Co. G, 18t S. C. A.)
MeCorkle, R. A., Leslles (Co. C, Poag's Art.)
Merritt. J. B., Yorkvlle (Co. B, 6tb).
Patterson, W. F., Fort MIli (Co. H, 1st Cav.)
Rayfield, R. L., Rock Hill (Co. G, 5th 8. C.)
Bmythe, J. G., Fort Mill (Charlottesville Artll.)
Btephens, Dallas, Rock Hill (Co. B, Anderson's).
Class C, No. 8, 1907.
Armatrong, James M., Ft. Mill (Co. B, 8th 8. C.).
Black, A. M., Tireah (Co. H, 12th S. C.).
Barnhlll, John W., Ft. Mill (Co. I, 37th N. C.).
Calp, R. N., Rock Hill (Co. B, 4th S. C. C.).
Comer, J. R., Yorkville (Co. H, 5th S. C.).
Fisher, Wm. A., Ft. Mill (Co. G, Orr's Rifles).
Henny, G. A., Rock Hill (Co. B, 6th S. C.).
Wherry, W. C., Rock Hill (Lafagette Art.).
Neely, J. H., Clover (Co. F, Bth S. C. V.).
Lucas, J. R., Yorkville (Co. I, 6th S. C.).
Plaxico, J. E., Sharon (Co. C, 1st S. C. C.).
Poag. G. S, Rock HIll (Co. B, 17th S. C.).
Westbrooks, Jno. W., Rock Hill (Co. H, 12th S. C.).
Williams, J. E., Rock Hill (Co. -, 1st S. C. Art.).
Class C, No. S, 1901
Widans of Soldters Who Lost Thelr Lives in the Serotoc of the Confederate Btatas.
Abernathy, Cynthla, Fort MIIr (Co. F, 18th S. C. V.)
Camp. 8. J., Yorkvilie (Co. A, 12th S. C. reg.)
Carothers, D. R., Newport (Co. H, 18th S. C. V.)
Carr, H. A., Yorkville (Glst Guards Art.)
Caton, M. E., Newport (Co. B, 58d N. C. V.)
Choet, Mary C., Tirah (Co. B, 3d N. C. reg.)
Gill, Jane, Blairgville (Co. E, 5th S. C. reg.)
McCollough, Margaret E., Leselle (Co. A, 17th S. C. V.)
Minter, M. F., Yorkville (Co. K, 17th reg.)
Qulnn, Naney, Clarks Fork (Co. B, 7th Reserves).
Smith. Margaret, Hickory (Co. C. 17th S. C. V.)
Stralt, Mary P., Ogden (Co. B, 17 th reg.)
Tomlinson, M. 8., Yorkville (Co. H, 18th S. C. reg.)
Whitner, M. E., Bethany (Co. G, 8d bat.)

Class C, No. s, 1902.
Falls, M. C., Clover (Co. F, 5th S. C. V.)
Lilley, H. C., Filbert (Co. G, b2d N. C.)
Lanler, Sarah, Clover (Co. K, 17th S. C.)
Lindsay, Mary R.
Class C, No. S, 1903.
Clark, A. F., Yorkville (Co. I, 6th S. C.
Ferguson, Jane A., Yorkville (Co. I, 6th S. C.)
Gettys, M. E., Lesslie (Co. H, 12th S. C.)
Purselay, E. M., Yorkvile (Co. G, 18th S. C.)
?isterson, F. C., Clover (Co. G, 18th S. C.)

Class C, No. S, 1904.
Hambrick, Mary Ann, Yorkville (Co. K, 18th S. C.)
Wallace, Martha L., Yorkvllle (18th S. C.)
Class C, No. s, 1905.
Youngblood, Mary O., Fort Mill (Co. B, 13th).
Class C, No. S, 1906.
Hayes, M. J., Yoriville (Co. E, $12 t \mathrm{~h}$ N. C.)
Lynn, Garah F., Fllbert (Co. G, 18th).
Moore, Martha (Co. E, 10th). From Cbesterfield.

$$
\text { Clas: } C, \text { No. } 4,1901 .
$$

Adking, N. J. (Kanapaux bat.), age 60.
Alken, F. F., Guthrienvllle (Co. K, 17 th S. C.), age 68.
Ayers, S. C., Rock Hill (Co. C, 12 th S. C. V.), age 60. Barnett, Sarah I.., Bethel (Co. B, 5th S C. V.), age 65. Blllue, Salle N., Fort Mill (Co. G, 2d Reserves), age 78 Boyd, Jane A., Balloon (Kavanaugh's Battery), age 68. Bunch, Flizabeth, Fort Mill (Cantapau's Artillery), age 65. Caton, Sarah L., Rock Hill (7th S. C. Reserves), age 65. Carter, Hannah F. (Co. E, 6th). From Chester. Chllders, Jemple, Bethany (Co. B, 12th reg.), age 72. Childers, Lutitla, Hlckory Grove (Co. C, 17 h S. C. V.), age 70. Clinton, Ann E., Yortville (Co. K, 17 th S. C. reg.), age 66. Craig. J. F., Yortville (Co. I, 17th reg.), age 62.
Doggert, M. R., Ramah (Co. B, 12th S. C. V.), age 63. Doster, I. J., Yottville (Co. B, 12th reg.), sge 68.
Fewell, F. A., Yorkville (Co. H, 18th S. C. reg.), age 75.
Ford. F. L.. Clover (Co. B, 28th reg.), age 71.
Gardener, F. N., Fowler (Co. F. 5th S. C. reg.), age 70. Gowdy, Lou C., Ramah (Co. K, 6th reg.), age 65. Hall, Martha J., Fort Mill (Co. B, $13 t h$ N. C. V.), age 60. Gardin, Clementine, Bmyrna (Co. D, 10th S. C. C.), age 70. Harris, Nancy (Co. H, 12th), age 70.
Harris, Sarah. Lesslie (Co. H, 12th S. C. V.), age 65. Garrison, B. S., Rockhill (Co. H, 12th S. C. V.), age 65. Howell, M. F., Bethel (Co. B, 37 th N. C. reg.), age 71. Latham, Catherine, Hoodtown (Co. G, 18th reg.), age 68. Lindsay, B. J., McConnellavilie (Co. F, 6ih S. C. V.), age 62. Moore, 8. E., Rock Hill (Co. H, 12th S. C. reg.), age 83. Neal, Ann E., Rockhlll (Co. H, 87th N. C. I.), age 68. Neely, Adeline, Ogden (Co. H, 1st S. C. C.), age 62. Partish, Mary. Rock Hlll (Co. H, 1st S. C. C.). age 71. Pearson, Mary A., Ogden (Co. H, 1st B. C. C.), age 64. Pope, Margaret, Rock Hill (Co. I, 49th N. C. reg.), age 60. Smith, Mary M., Yorkville (Co. F. 23d reg.), age 60.

Turner, Jane A., Clover (Co. K, 6th B. C. reg.), age 65.
Warmoth, Martha (Co. H, 12th reg.)
White, Fannle, Yorkville (Co. B, 24th N. C. reg.), age 79.
Williams, Ann E., Clover (Co. H, 34th N. C. T.), age 74.
Wood, Pauilne L., Rock Hill (Co. H, 1st S. C. C.), age 75.
Wylle, Mymle, Rock Hill (Co. K, 5th S. C. V.), age 78.
Class C, No. \&, 2 PO\&
Barnes, Sarah J., Sharon (Co. G, 18th S. C.), age 60.
Boyd, Nancy T., Clover (Co. G, Reserves), age 73.
Boyd. N. J., Clover ( $\mathrm{Co} . \mathrm{H}, 18 \mathrm{th}$ S. C.), age 63.
Clinton, Mary F., Guthrlesvllle (Co. K, 17th reg.), age 78.
Dounman, N. J.. Kockblll (Co. C, 33d reg.), age 61.
Downs, F. J., Ft. MIII (Co. G, 2d S. C. V.), age 64.
Lope, M. M, Sharon (Co. K, 17th S. C.), age 62
Jowers, M. E., Rock Hlll (Co. E, Cash's reg.), age 68.
Neal. Filiza, Hlekory Grove ( $\mathrm{P} . \mathrm{S}$. S.), age 60.
Outlaw, M. A., Rock Hill (Co. D, 15th reg.), age 60.
Price. Rebeca, Yorkflle (Co. B, Reserves), age 66.
Rigging, I. H., Bowlligg Green (Co. D, 5th S. C. V.), age 71.
Class O, No. \&, 1903.
Eailea, M. J., Carp (Co. K, 30th N. C.), age 60.
Carson, M. F., Yorkville (Co. F, 5th S. C.), age 60.
DuTI. M. M., Smlths Turnout (Co. H, 1st S. C. A.), age 60.
Drennan, M. J., Yorkvllle (Co. G, 18th reg.), age 63.
Howe, Jane F., McConnellsville (Co. F, Jth S. C. V.), age 64.
Lemon, Martha, Rockblll (Co. E, Gill bat.), age 76.
Lee. Martha, Rockhll! (Co. A, 8th S. C. V.), age 70.
Neely. Sarah E., Tirzah (Lafayette Art.), age 65.
Nichols, Mary S., Hlckory Grove (Co. B, 12th reg.), age 68.
Nivens, Betsey, Tirah (Co. H, 1st S. C. C.), age 67.
Erewart. Martha K., Bandana (Co. B. 6th S. C. V.), age 72.
Strickland. N. J., Rockhill (Co. F. 1st Ark.), age 60.
Turner. H. I_, Rockhlll (Co. B, 6th S. C.), age 62.
Wheon. M. A. Rockhill (Co. I, 17th reg.), age 60.
Class $\sigma$, NO. $4,2904$.
Barber. Sarah J., Yorkville (Co. F, 5th reg.), age 71. Black. Rebecca L., Rock HIll (Co. D, 17th reg.), age 67.
Bagne, 3. M., Fort Mill (Co. 13, 6th reg.), age 67.
Balles. Sarah E., Smyrna (Co. G. Glll's), age 63.
Childers. Drucy, Hickory Grove (Co. C, 17th reg.), age 61.
Gaulden. Dorcas L., Yorkville (Co. H. 18th reg.), age 78.
llendricks. Ellen, Rock Hill (Co. A, 4th Cav.), age 60.
Kodgers. N. Y.. Hock Hill (Co. A. 4th N. C.), age 61.
MrSwain. H. (... Yorkville (Co. K, 17th reg.), age 68.
Ritch, Fillzabeth, Fort MIll (Co. C, 10th Bat.), age 60.
Class O, No. $4,1905$.
Alley. Mary H., Rock Hill (Co. I, 7 th N. C.), age 60.
Black, M. R., Yorkville (40th N. C.), age 81.
Drafin. Fllzabeth (Co. I, 17th S. C.), age 61.
Firwin, S. C., Fllbert (Co. G, 18th S. C.), age 72.
Hood. S. F... Sharon (Co. K, 17th), age 62.
Killian, V. W., Rock Hill (Co. F. Ga.). age 76.
Lindsay, D. A., Yorkvlle (Co. K, bth S. C.), age 60.
Ramsey. Margaret, Yorkville (Co. F, 18th), age 67.
Sberer, I. A. I., Yorirville (Co. B. 12th), age 60.
Witson, Lucy Ann (Co. F, 17th), age 70.

Olass G, No. $h 1208$.
Aycock, S. E., Sharon (Hayden's Engineers), age 60. Allen, Ellzabeth J., Rock Blll (Co. E), age 67. Caverney, M. J., Rock Hill (Co. F, 5th S. C.), age 70. Davidson, M. C., Yoriville (Co. K, 19th), age 62. Gordon, Susen, Rock Hill (Co. H, 5th S. C.), age 75. Kimbrell, Harriett L., Fort MIII (Co. B, Bth), age 60. Moses, Nancy J., Clover (Co. B, 6th), age 70. Nevins, Margaret J., Fort Mill (18th S. C.), age 60. Wicklffe, E. A., Bock Hill (Co. G, 19th), age 66.

Clasm C, No. 4, 1907.
Adams, S. C., Clover (Co. A, 12th), age 62.
Ardrey, S. E., Rock HIll (Co. K, 1st Tezas), age 60.
Bolln, Sarah L., Tirzah (Co. B, 7th S. C.), age 88.
Davidson, V. E., Clover (Co. F, 5th), age 60.
Garvin, M. A., Sharon (Co. F, 7th), age 60. McGraw, Elizabeth, Rock Hill (Co. B, 7th), age 60. Roblnbon, S. M. Yorkville (Co. A, 12th S. C.), age 61. Sparks, Nanc- D., Rock HIll (Co. H, 12th), age 66. Turner, Salle C., Sharon (Co. A, 17 th S. C. V.), age 66. Timmey, M. J., Yorkville (Co. I, 12th), age 60.


## SERIES IV

## BULLETIN No. 2

## A CATALOGUE

OF THE

## Mineral Localities of South Carolina



BY

## EARLE SLOAN

State Geologist

## LETTER OF TRANSMITTAL

To His Excellency, Martin F. Ansel, Governor of the State of South Carolina:
Sir: I herewith present a report entitled "A Catalogue of the Mineral Localities of South Carolina."

Much of the included matter was submitted to his Excellency, Governor D. C. Heyward, but, as now tendered for publication, it has been supplemented with the results of more recent observations. Hoping that it will serve to advance the material and educational interests of this State, I have the honor to be,

Your very obedient servant, EARLE SLOAN,
June, 1907. State Geologist.

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## PREFACE

Accumulative demand for a concise outline of the geological formations, and a summary of their economic mineral deposits, imposes functions to which the incomplete character of the geological work in South Carolina cannot respond with full regard for scientific accuracy. Some of the involved territory, particularly in the Crystalline Region, has in the related respects been accorded hardly more than a geological reconnaissance. "A Catalogue of the Mineral Localities of South Carolina" should, therefore, be viewed simply as an outline of the results of work accomplished up to December, 1906, by the South Carolina Geological Survey. It is submitted without pretension to completeness or finality, considerations of which are suspended in the interest of economic expediency, which is eager for the advantage of such opportunities as the results of the survey might indicate. It should be observed, however, that the varied subject matters have been segregated into five appropriate groups, or parts, with a view to their ultimate publication under separate covers, after more exhaustive field observations and laboratory investigations shall have been executed, and the results incorporated; the present report leaves many voids.

A monograph entitled, "A Preliminary Report on the Clays of South Carolina," has already been issued by this survey; a report entitled "The Marls and Other Coastal Plain Formations of South Carolina," comprising economic, geognostic, and faunal conditions is being prepared; parts of both, appropriate to the present undertaking, have accordingly been adapted to or reproduced in "A Catalogue of the Mineral Localities of South Carolina."
Economy of space, facility of expression and precision of meaning exact the use of many scientific terms, without which an almost endless repetition of elaborated definitions would be necessary. Regard for the interest of those who are unaccustomed to scientific nomenclature has determined the preparation of a succinct glossary of such scientific terms as are employed in this report. In addition to the strictly economic features this report takes cognizance of the interests of the student-body, and, accordingly, incorporates the more prominent features of scientific interest, developed by the researches of this survey and its coopperators in relation to the geological forma-
tions of South Carolina. While the field observations have been conducted by the State Geologist in person, it affords pleasure to make cordial acknowledgment of deep obligations to cheerfully accorded coöperative services in the following connections:

The quantitative chemical analyses which are submitted have been made chiefly by Dr. M. B. Hardin, Dr. R. N. Brackett and Mr. B. F. Robertson, of Clemson College ; the pyrometric and physical tests, chemical investigations, and some chemical analyses having been made in my private laboratory.

The paleontological discriminations have been made or confirmed by Drs. Dall, Burns, Vaughan, Arnold, Bassler, and Stanton, of the Smithsonian Institution, and by Dr. T. H. Aldrich.

In the stratigraphic relations of the extreme upper portion of thee Crystalline Region the survey is in part indebted to the work of Dr. Arthur Keith, of the U. S. Geological Survey. The microlithological investigations have been made with the assistance of Prof. G. W. Corey.

EARLE SLOAN, State Geologist.

June, 1907.

## EXPLANATORY

In the conduct of the South Carolina Geological Survey each mineral or geological exposure of economic or scientific interest is accorded a number in accordance with the following summarized system :

| Drainage | Coastal <br> Area. | Crystalline <br> Region. |
| :--- | :---: | :---: |
| Pavannah, comprises numbers from.... | o to 250 | rooo to 2500 |
| Edisto, comprises numbers from....... | 250 to 500 | None |

Sub-Areas-The lesser streams draining the respective exposures afford names for the sub-areas; other distinctive names are applied to the latter in those cases where deposits occur immediately contiguous to the greater streams.

Distances-The distances indicated are approximate and along air lines.

Location-Localities are generally indicated by the distance, and the approximate azimuth of an air line, from the nearest point of transportation.

Subdivisions.-In view of the tentative character of the geological subdivisions submitted in this report a special system has been adopted. The subdivisions of the crystalline region are designated Zones, some of which comprise formations pertaining to more than one epoch. The subdivisions of the formations of the coastal plain of South Carolina are herein designated Phases, each of which not only represents a local formation or substage exposed in one or more areas, but expresses an epoch or minor subdivision of geological time.
Statistics Relating to the Mineral Production During the Year Ending December 3i, 1906.
Stone-Granite (Dimension, Jetty and Crushed) ..... - $\$ 258,398$
Lime, short tons ..... 34,719 ..... 7,134
Monazite, pounds ..... 43,000
$\dagger$ Mica ..... 1,000
$\dagger$ Feldspar
Gold, fine ounces 3,819.63 ..... 78,959
Silver, fine ounces 92.00 ..... 62
*Tin ..... 16,800
Marl, short tons 2,100 ..... 9,450
$\dagger$ Fullers Earth
Phosphate Rock, long tons ..... 223,675 ..... 1,118,375
Clay, short tons ..... 44,665 ..... 175,351
Mineral Waters, gallons sold 1,458,494 ..... 348,744
Phosphate Products ..... 7,945,955
Clay Products ..... $830,48 \mathrm{I}$
Gas Coke, Gas, Coal Tar ..... 228,817
\$11,090, 111
The S. C. Geological Survey is indebted to the U. S. Geological Survey for many items included in the above summary.

[^3]
## PART I.

## CRYSTALLINE REGION, ECONOMIC AND INDUSTRIAL METALLIC GROUP.

GOLD.
The gold formations in South Carolina pertain to three main types (with intergrading phases), to wit: The Tyger, the Lancaster and the York types. Each of these three types also affords placer or gravel deposits of gold.

Tyger Type of Gold Vein.-Gold veins of this type are chiefly observed in the Chatooga, Tunnel Hill, Saluda, Tyger, and Ander-son-Spartanburg zones, and in subordinate numbers in other zones. The Tyger type comprises veins, stringers, and stockwerke of goldbearing pyritic quartz, which ramifies the gneissoids and schists, or irregularly extends along their planes of contact, or planes of contact with rocks of pyroxene derivation. The country rocks are gneissoids and schists, of both mica and hornblende types; intrusive granite and basic igneous dikes are respectively observed in the proximity of some of the ore bodies. Some of these veins perhaps originated as the final gold-bearing pegmatite and quartz apophyses of granite intrusions, which were thus licked-out in narrow flameshaped tongues into the overlying or contiguous rocks, the inclosing walls of which in rare instances exhibit signs of igneous metamorphic action; but the predominant number of these veins appear to have been deposited from solution, and have in a measure impregnated the inclosing rock with portions of the mineral contents of the original solutions. Many of the pegmatite bodies appear to have resulted from the slow consolidation of pasty aqueo-igneous matter.

These veins, with possibly few exceptions, have shared with the schists in the contorting and foliating effects of such orographic movements and other dynamo-metamorphic forces as have prevailed since their formation; they are very old.

Type veins may be observed at the old Lawton (Sur. No. 1323) ; Lay (Sur. No. 1430) ; Cheohee (Sur. No. 1460); Cureton (Sur. No. 5710) ; McBee (Sur. No. 6716) ; Schlegel Milch (Sur. No. 648 I ) ; Magnolia (Sur. No. 6483) ; and the Brown (Sur. No. 6485) mines.

Lancaster Type of Gold Vein.-The existence of this class of vein deposits in South Carolina appears to have depended upon igneous
intrusions which did not necessarily contain within themselves the metalliferous vein stuff or gangue ; but which by virtue of contained and associate heat stimulated the deep circulation of the great solvent water, which highly heated ascended passages or trunks in the proximity of the dikes. These heated waters in passing through more or less deep-seated mineral beds disassociated and dissolved certain constituents such as the alkalies, sulphides, silica, gold, etc., according as they were present; upon ascending to the zone of fracture near the surface these solutions penetrated the fissures, the cracks, and the fine parting planes of schists (accentuated by surficial influences), and the interstitial spaces of porous rocks where the minerals in solution were variably deposited with the gradually changed rate of cooling, or where certain of the minerals in solution were precipitated either by gases, or by the chemical character of the invaded rocks. The rate of cooling probably constituted the most prolific factor in the deposition of the vein matter, but each of the other causes operated in relative degrees, varying with the individual conditions which prevailed at the respective localities.

These deposits having originated as late, perhaps, as the Jura Trias, have not been subjected to the protracted degrading action to which the older veins have been subjected, and therefore the younger deposits exhibit more of the original highly fractured and porous surficial rock which received the greater volume of the ore deposits; for it will be appreciated that with increased depth the schistose partings have been less accenţuated by weathering, and that the rocks are more dense and less permeable, and that apart from the fissures or cracks inclosed with sharply defined hard walls, and apart from such openings as occur along the contacts of the dike and the inclosing walls of rock, that the capacity of the deep-seated rocks for vein matter is much more limited.

The Haile (Sur. No. 7550) and the Dorn (Sur. No. 1885) Mines pertain to the Lancaster type, and have, with the Brewer (Sur. No. 7635), constituted the great gold producers of this State; the Lamar (Sur. No. 7295) also is of this type.

York Type of Gold Vein.-Veins of the York type occur principally in the Abbeville-York Zone, typically in York and Cherokee Counties. The inaccessible character of the underground aspects of many abandoned mines of this type greatly restricts the premises for an entirely satisfactory classification. Numerous microscopic investigations have been undertaken in connection with a detailed study of the geognosy of some of the more prominent ore-bodies of
this class, and whereas these investigations up to this time are not definitely conclusive the preponderance of evidence impresses the writer with the probability that these ore-bodies represent the aqueoigneous recrystallization of elements of a magma (afforded by igneous intrusions) into new forms, which appear to have segregated in successive and repeated irregular zones of more or less limited extent, and in irregularly intertwined clusters and numerous disconnected lentiform masses. In some cases the complete envelopment, or want of physical connection, of crystals of sulphides and other minute ore-bodies (encased in the core of huge metamorphosed igneous masses, of dense, hard, uninterrupted crystalline angular texture) precludes any reasonable theory of metasomatic replacement by extraneous solutions as insufficient. In other words, the York type of gold vein appears to be of the aqueo-igneous, or pneumatolitic, type, the principles of which have been elucidated by Daubrée, Arrhenius and others. Through these principles it might be conceived that the component and accessory minerals of heated igneous rocks, in the presence of super-heated aqueous vapors, far below the melting point of the rock body, partly resolve themselves into new combinations which were impossible at the point of fusion, and which more or less segregate in accordance with the strength of their respective affinities; and at the same time exude solutions taken into circulation by vein waters to be concentrated or precipitated in fissures, cracks, pores, parting planes, or other openings where conditions are favorable; or to enter the various forms of replacement.

Primarily this class of vein involves two or more kinds of associate intrusive rocks, in contiguous narrow bands, pitched at moderately steep angles and rarely aggregating more than 100 feet in thickness, but frequently of considerable lineal extent, although sometimes appearing as mere bosses. Pyroxene now altered to amphibolite appears essential; and diorite, varying to quartz-diorite, often forms part of the mass which is usually flanked by a quartzsericite schist, apparently derived from a porphyry, perhaps quartzmonzonite. Each of the three is impregnated with gold-bearing sulphides, but the amphibolite preponderantly so. Gold-bearing pyrite, some chalcopyrite, and rarely niccolite, in disseminated grains, crystals and masses, constitute the material of value; they are more or less associated with quartz, the latter frequently as a mere film, but occasionally in large sulphide-bearing bodies.
The ore-bodies in the amphibolite occur in irregularly distributed lenticular masses with their longer axes parallel to the line of out-
crop; these bodies vary in size from microscopic to 50 feet long, and as much as ten feet in width; successive bodies are often without apparent connection; they occur along diverse parallel planes, often without suggestion of sequence.
Distinctly isolated crystals of gold-bearing pyrite are observed, encased in dense masses of foliated amphibolite, without signs of strain in the surrounding particles: and without suggestion of channels for the circulation of a menstrum essential to provide, supply and eliminate waste in replacement processes (depending on extraneous solutions), for the amphibolite exhibits sharp, unrounded angles.

Some replacement has doubtless occurred; some co-ordinately with other features of aqueo-igneous action; but the more extensive changes. such as the alteration to calcite, etc., might have occurred much later. Ilmenite, magnetite and chlorite are observed as secondary minerals.

The ore-bodies in the diorite masses generally occur in the portion adjacent to the amphibolite; the ore consists of disseminated grains and small crystals of sulphides (pyrites), with but little quartz, and whereas gold values prevail they are not high.

The sulphides in some instances appear sparsely disseminated through a wider range in the diorite than in the amphibolite, the segregative action having apparently served to condense much of the ore matter in bunches in the altered pyroxene mass.

The quartz-sericite schist is often pyritic, but very low in gold values; if replacement were the determining principle in the genesis of the ore-body the essential character of this portion of the rock formation should incline us to expect more liberal action.

In thin section foliation is exhibited very strongly emphasized in both the amphibolite and the quartz-sericite schists, and subordinately in the diorite.

In some cases the diorite and altered pyroxene intergrade along a highly pyritic zone, in others there is a mere suggestion of a plane of division; but insufficiently conclusive evidence of requisite igneous metamorphic action along these planes has been observed to require the assumption that these igneous masses represent successive contiguous intrusions. The fact that the amphibolite is more foliated than the diorite docs not necessarily establish greater age, because the character of amplibolite probably yields more readily to such parallelism of arrangement, under both dynamo-metamorphic and aqueo-igneous forces.

In so much as igneous magmas have a well recognized original capacity for gold-bearing pyrite, chalcopyrite, niccolite, etc., it is conceivable that magmatic segregation, incident to the process of cooling, caused the original magma to resolve itself into rock zones varying from predominantly basic to acidic, with these sulphides diffused through the mass, but with a rude concentration in and adjacent to the more basic material; and that the ore-producing matter in the more susceptible pyroxenic material might in some cases have exercised new affinities in the incipient fluid state, produced in the magma by intense aque-igneous forces; in consequence of which the ore matter has accumulated in lenticular masses about the respective nuclei which dominated successive areas in the semi-fluid magma by virtue of the well-recognized tendency of like matter to assemble in such state. Corresponding principles of origin and concentration might, of course, apply with equal force if the igneous intrusions should represent successive events.
It might, of course, be assumed in either case that the mineralization subsequently proceeded from solutions from unseen or remote pre-Cambrian or later granites, which solutions have preferentially penetrated these hard, dense, tough igneous rocks (infolded by fissile gneissoid slates and schists) and permeated their interstitial pores to replace here and there particles of the igneous rock with a crystal of sulphide and quartz and at the same time eliminate the replaced matter.
The Haile is still continuously and extensively operated, and treats about 60,000 tons of ore each year. Other gold mines, some of which have been regular and others intermittent producers during the past two years of survey, are: Blackmon (Sur. No. 7527); Brown (Sur. No. 6485) ; Magnolia (Sur. No. 6483) ; Darwin (Sur. No. 6476) ; Brassington (Sur. No. 7547) : Gregory (Sur. No. 7360) ; Calais-Douglas (Sur. No. 1949) ; Schlegel Milch (Sur. No. 6481 ) ; Allison (Sur. No. 6610) ; Ferguson (Sur. No. 6450) ; Ophir (Sur. No. 5936).

## PLACER DEPOSITS.

All gold veins and stringers which have come to the surface have suffered more or less weathering, degradation and erosion, which has resulted in the accumulation of the disrupted particles and nuggets of native gold in the neighboring depressions, flats, and stream beds. The softer or more saprolitic rocks yield to a larger extent to these forces and consequently afford the greater placer beds.

The more prominent observed deposits of this type have been developed at the following properties: Lawton (Sur. No. 1323); Cheohee (Sur. Nos. I445, 1460 ) ; Westmoreland (Sur. No. 5610); Wolfe and Tyger (Sur. No. 5712) ; McBee (Sur. No. 5715) ; Martin (Sur. No. 6474) ; Haile (Sur. No. 7550) ; Gregory (Sur. No. 7630 ) ; Brewer (Sur. No. 7635).

Where the greater streams course through auriferous zones long continued erosion has scoured particles of gold into the stream channels, where they have accumulated in the deeper parts, at the foot of the successive rapids. This class of deposit appears somewhat prominent in the bed of the Catawba River where it crosses the Abbeville-York Zone. Dredges have been operated for these gold gravels with varying success on this river.

Another class of placer deposit was afforded during the Lafayette time by violent floods, which wore away the soft saprolitic goldbearing rocks and concentrated the included gold in part in depressions along the high plateaus. This character of deposit was worked in Chesterfield County, near Westfield Creek (Sur. No. 7700), where the gold was mingled with the Lafayette cobbles. The Tanyard placer deposit, high on the Brewer Mine ridge, possibly originated in somewhat similar causes (Sur. No. 7635).
Uses of Gold.
Pure Gold.-Fxtensively used for gilding, especially in the ceramic arts; Wagner states that the Staffordshire potteries alone consume $\$ 300,000$ worth annually. Also used in dentistry.

Alloys.-Most extensive consumption of gold is in the manufacture of alloys with copper or silver for coinage, for jewelry, and for other ornamental purposes.

Chenically-Cassius-purple employed for coloring; salts with soda and potash employed in photography, and in medicine.

MATERIAL: GOLD. SURVEY NO. IOI2.
Area: Savannah.
Sub-Area: Chatooga River. Location: Oconce County; Henckel Mine; 14 miles west of Walhalla : about I mile west of Rogues Ford, and 2 miles below Cannon's Store; on the eastern scarp of Chatooga River.
Address of Oimer or Representative (?) : James F. Neville, Walhalla, S. C.
obS-Chatooga Zone. The auriferous portion consists of stringers of quartz in mica slates. The dilapidated condition of the old development prevented examination Lelow the surface.

## MATERIAL: GOLD AND GRAPHITE. SURVEY NO. IO22.

Area: Savannah. Sub-Area: Tugaloo River; Brasstown Crk. Location: Oconee County; Cox property; 4 miles north of Pulaski; Io miles N. $40^{\circ} \mathrm{W}$. of Fort Madison.
Address of Owner or Representative (?): J. Cox, Estate, Battle Creek, S. C.
OBS—Chatooga Zone. An irregular bed of graphitic hydromica slate, exposed on hillside 600 feet north of the Cox house. A quartz vein, low in gold value, penetrates the slates 1 mile South of the $\dot{C}$ ox house.

## MATERIAL: GOLD. SURVEY NO. I220.

Area: Savannah. Sub-Area: Savannah River; Rosses Creck. Location: Abbeville County; Gook property; 3 miles S. $46^{\circ} \mathrm{W}$. of Lowndesville.
Address of Owner or Representative (?): J. Monroe Cook, Lowndesville, S. C.
OBS-Abbeville-York Zone. (Strike N. $62^{\circ}$ E., dip $80^{\circ}$ S. $28^{\circ} \mathrm{E}$.) A pyritic quartz, irregularly distributed in lenticles in hydromica slates. The hanging wall of the slate consists of a highly siliceous mica slate resembling itacolumite. Succceding the latter occurs a herring-bone quartzose slate, and then a sintery quartz. This property has been pittted in desultory exploration. The values are found chiefly in the pyrite, but the body of the ore heretofore exposed has not encouraged extensive development.

> MATERIAL: GOLD. SURVEY NO. I3IS.

Area: Savannah. Sub-Area: Sencea River; Coneross Crk. Location: Oconee County; Sitton property; 5.5 miles south of Seneca.
Address of Owner or Representatioc (?): Frank Sitton, Seneca, S. C.

OBS-Saluda Zone. Stringers of auriferous quartz, and occasional small nuggets of gold, distributed through a mass of partly decomposed hydromica slates. Insufficient exploration to prove possibilities.

MATERIAL: GOLD. SURVEY NO. 1323.
Area: Savannah.
Locatioin. Oconec County. Cochran Dine. 3 milec southwest of Adams Crossing.

Address of Oumer or Representative (?): Ernest Cochran, Anderson, S. C.
OBS-Saluda Zone. This property attained modest prominence by virtue of the good placer deposit derived from a series of stringers and small veins of auriferous quartz distributed through the associate country rock, along a zone conforming to the general strike.
The country rock consists chiefly of mica schists, and a decomposed granulite (or possibly a pegmatite). A pyroxenic rock, of obscure relations, occurs along the mineralized zone, which is traceable for 2,000 feet. The width of the zone through which the gold is irregularly disseminated exceeds 200 feet, but the pay rock heretofore mined rarely attained the thickness of six feet, in widely separated pockets. Two small open cuts are said to have afforded good ore to the depth of 25 feet, which is the approximate limit of the saprolites. A small stream of water crosses the vein about 40 feet below the general elevation of the outcrop. The property is well situated for hydrauliching.
material: gold. survey no. i33o.
Area: Savannah. Sub-Area: Seneca River Valley. Location: Oconee County ; Pickens Gold Mine; I. 5 miles southwest of Cherry.
Address of Owner or Representative (?): Mrs. Sally Stribling, Seneca, S. C.
OBS-Sallda Zone. Gold occurs to a very limited extent in the mica schists of this locality. Small auriferous quartz stringers occur in the decomposed schists. Limited exploration was undertaken during "the fifties" in the valley about 300 feet southwest of the old residence.

MATERIAL: GOLD. SURVEY NO. I430.
Area: Savannal. Sub-Area: Little River; Tomassee Creek. Location: Oconec County; Jesse Lay property ; II. 5 miles north of Walhalla.
Address of Ozencr or Representation (?): Jesse Lay, Tomassee Postoffice, S. C.
OBS-Chatooga Zone. The region of this property is characterized by gneissoid and mica slates which are in a highly decomposed state. At the Lay place numerous auriferous quartzose stringers occur in these slates, which afforded good contributions to placer deposits, now long since largely exhausted. A small vein of
auriferous pyrite in quartz was at one time worked to a limited extent; the dilapidated condition of these workings does not admit of any accurate expressions as to the probabilities of the vein in situ, which is apparently very small.
material: gold. survey no. 1460 .
Area: Savannah.
Sub-Area: Little River Location: Oconee County; Kuhtman property; 15 miles north of Walhalla; on the Middle Fork of Cheohee Creek.
Address of Owner or Representative (?): Miss Leonie Kuhtman, Walhalla, S. C.
OBS-Chatooga Zone. Several small quartz veins inclosing pyrite extend conformably between the mica and gneissoid slates near a ledge of highly foliated peridotite, the breaking down of which afforded a good placer deposit of auriferous gravels, vigorously worked during "the fifties." The pyritic quartz veins were developed on a good scale, and a reverberatory furnace was established to roast the ores preliminary to crushing and amalgamation. during the early "sixties," which period terminated operations.

## material: Silver-lead. Survey no. 1465.

Area: Savannah. Sub-Arca: Little River.
Location: Oconec County ; eastern prong of Cherokee Creek; i5.5 miles north of Walhalla.
Address of Owncr or Reprcsentative (?): F. L. Moodie, Mayucha Postoffice, S. C.
OBS-Chatooga Zone. A vein of quartz from 6 to 8 inches wide, inclosing some argentiferous galena, appears along the plane separating the gneissoid slates, which strike across the creck. Old shafts appear on the eastern scarp of the creek, and a drift on the western side; their dilapidated condition prevented a close inspection, and all surface traces of ore had been gouged out. A piece of ore representing the width of the vein was found on the dump and afforded modest encouragement.

MATERIAL: GOLD. SURVEY NO. 1504.
Area: Savannah.
Sub-Arca: Keowce River.
Location: Oconee County; between White Water and Toxaway Rivers.
OBS-Gold was found in this neighborhoord during "the fifties," principally in placer beds; it does not appear that any consistent veins have been explored.

$$
\text { MATERIAL: GOLD. SURVEY NO. I } 536 .
$$

Area: Savannah.
Sub-Arca: Keowee River.
Location: Oconee County; Sloan Mine; 0.2 mile north of Keowee Station.
Address of Ozoner or Represcntative (?) : Dr. Mazyck P. Ravenel, Philadelphia, Penn.
OBS-Saluda Zone. This property was worked for its placer accumulation to limited advantage with slave labor; the placer deposits were derived from auriferous quartz stringers ramifying the decomposed mica slates. Nothing has been revealed to encourage the extraction of gold directly from the inclosing slates.
material: gold. SURVEY no. I540.
Area: Savannah. Sub-Area: Seneca River; 12-Mile Creek. Location: Pickens County; Calhoun Mine; i mile north of Calhoun.
Address of Ouner or Representative (?): Aaron Boggs, Calhoun, S. C.

OBS-Saluda Zone. The branch bottoms adjacent to the creek on the south side, were worked for placer accumulations to limited advantage with slave labor; the placer deposits were derived from auriferous quartz stringers, ramifying the decomposed mica slates.

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\text { MAterial: gold. Survey no. } 1675 \text {. }
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Area: Savannah. Sub-Area: Seneca River; 23-Mile Crk. Br. Location: Anderson County; Henderson property; 6.4 miles S. $9^{\circ}$ E. of Easley.

Address of Owner or Representative (?) : J. R. Henderson, Easley, S. C.

OBS-Tyger Zone A quartzose vein with infiltered limonite aggregating about 2.5 feet in width (strike N. $47^{\circ}$ E.; dip $+80^{\circ} \mathrm{S}$. $43^{\circ} \mathrm{E}$.) ; the vein divides near the surface into several small stringers. The country rock consists principally of decomposed biotite and hornblende slates. One shallow pit affords the above exposure and furnishes a sample affording a value of $\$ 3.40$ in gold to the ton. The outcrop appears about 300 feet north of Three and Twenty Creek, and about 45 feet above the level of its bed.
material: gold. SURVEY no. i847.
Area: Savannah. Sub-Area: Little River; Long Cane Creek. Location: Abbeville County; Neill Mine; $1 / 2$ mile southeast of Beulah Cross Roads; 9 miles S. $2^{\circ}$ E. of Abbeville.
Address of Ouncr or Representative (?): Dr. Murray, Columbia, S. C.

OBS-Abreville-York Zone. Numerous quartz stringers (strike N. $80^{\circ} \mathrm{W}$.) occur in highly siliccous metamorphic rocks.「est pits and open cuts occupy the surface interruptedly along a zone about 800 feet long, and of variable width. The quartz carries good values in gold, but is irregularly distributed.
material: gold (lieber). . survey no. 1848 .
Area: Savannah. Sub-Area: Little River; Long Cane Creek. Location: Abbeville County; Link property; 2 miles south of Bettah Cross Roads.
Address of Ouner or Representative ( ?) : Mrs. Link, Troy, S. C.
OBS-Abbeville-York Zone. Mr. Lieber's report indicatés for this locality a quartz seam developed to a depth of 55 feet with an average width of 6 or 8 inches (strike N. $47^{\circ}$ W.) He further states that the abundant presence of pyrolusite prejudiced the amalgamation of the gold.
material: gold. survey no. 1885.
Area: Savannah. Sub-Area: Baker Creek. Location: Abbeville County; Dorn Mine; McCormick Station. Address of Ozoner or Representative (?): McCormick Land and Lumber Co., McCormick, S. C.
OBS-Arbeville-York Zone, along Edgefield-Chesterfield Zone. This property was first examined by the writer years ago, when its condition permitted fair observations. The country rock in which the Dorn veins occur is a very fine grained friable siliceous schist of various colors with which sericitic and other micaceous particles are interlaminated. Portions of these schists were probably derived from monzonite, the superficial slates were largely derived by intense metamorphism from porphyries and other igneous bodies; they probably constitute volcanic tuffs. The schists (strike about N. $72^{\circ}$ E., dip about $72^{\circ}$ to the N. W.)

The gold-bearing matter comprises portions of the schist impregnated in a series of lenticles from nil to 8 feet wide, and 40 to 50 feet
long. These lenticles are arranged in eschelon for a horizontal distance along the line of the strike of the slates of approximately $\mathrm{I}, 100$ feet, and vertically for about 100 feet; these lenticles mainly occur between 2 branches of a dike, probably altered amphibolite (designated by Mr. Lieber, serpentine dikes), some lenticles occur in contact with the northerly branch and some with the southerly branch of the dike, whereas others cross on an incline from one to the other; a transverse stringer of the dike extends across the mineralized zone at one point. The greatest observed thickness of these dikes was 3 feet. Within the above indicated limits practically all of the ore has been stoped out.

These lenticles of ore afford the following characteristics: The upper, 60 to 80 feet, which has been altered by the oxidation of surface waters is siliceous and laminated, but somewhat soft and more or less highly colored with the oxides of iron and manganese; numerous cavities in the brown ore, resulting from the alteration of the iron pyrites, show particles of iree gold. Mr. Lieber observes that but little gold is found in the parts compacted with manganese. This should probably suggest that the manganese was a subsequent product of infiltration which thus in occupying spaces increased the volume and decreased the percentage yield.

Below the 80 -foot level the iron oxides give place to iron pyrites and a little covelline; the gangue consists of a lively quartz interstratified with thin sericitic matter. The hard quartz is laminated in the direction of the strike. Mr. Lieber observes that below each narrowing of the veins the ore is always richest. The associate minerals in this deposit are covelline, copper pyrites, iron pyrites, pyrolusite, psilomelane and minute crystals of enargite.

The valuable parts of the impregnations slowly graduate to slates low in values.

The impregnating solutions appear to have been introduced coordinately with the cooling of the dikes, between which and the country rock these solutions ascended through spaces probably due to the irregularities incident to the consolidation and cooling of the dike. Upon approaching the surface where the schists were fractured, loose and porous, the gold solutions penetrated and impregnated the same. The characterizing difference distinguishing this deposit from the Haile deposit consists in the fact that at the Dorn the direction of the impregnating dike approximately conforms to the strike of the formation, whereas at the Haile deposit the dike is transverse to the strike of the country rock. Ores from the Dorn

Mine, affording $\$ 4.00$ to the ton, were worked, but considered low in grade. Up to 1859 the output of this mine aggregated approximately $\$ 900,000$. This property has not been systematically worked for many years.

The monzonite schist consists of narrow parallel bands of fine grained, compact gray quartz, separated by thin layers of scricite and knots of bluish-white vitreous quartz less than three-sixteenths of an inch in diameter. In thin section: Quartz, of somewhat cherty character, shows slight evidence of recrystallization. Chlorite appears with weak pleochroism in green tones. Sericite appears in the form of flakes on the cleavage faces.

The quartz knots exhibit decided strain effects with attendant granulation, which seens to have been the dominant process in the formation of this rock.
material: gold. SURVEy No. 1887.
Area: Savannah.
Sub-Area:
Location: Edgefield County; Self property; 2.5 miles south of McCormick.
OBS-Edgefield-Chesterfield Zone.
Country rock comprises fine grained friable siliceous slates. Apparently volcanic tuffs. (Strike N. $65^{\circ}$, dip $90^{\circ}$ ). Property not in shape for examination. Mr. Lieber reports vein 4 to 5 feet wide from which $\$ 2,000$ in gold values had been extracted.
material: gold. survey no. i888.
Area: Savannah. Sub-Area: Savanuah River Branch. Location: Edgefield County; Butler property; 3 miles south of McCormick.
ObS-Abbeville-York Zone, ncar line Edgefield-Chesterfield Zone.

Slates striking N. $58^{\circ}$ E. slightly impregnated with auriferous pyrite. No consistent vein observed.

> MATERIAL: GOLD. SURVEY NO. I889.

Area: Savannah. Sub-Area: Savannah River Branch. Location: Edgefield County; Jemings property; 3 miles southwest of McCormick.
OBS-Edgefield-Ciesterfieid Zone, along line AbbevilleYork Zone.

Extending along a northeast line a series of old pits and shafts appears for more than a quarter of a mile along the strike of very fine grained mica slates, which infold small pyritic veins of quartz with an approximately vertical dip. A very prominent diorite dike, which is traceable for several miles, passes immediately northwest of, and approximately parallel to, the Jennings veins.

MATERIAL: GOLD. SURVEY NO. I890.
Arca: Savannah. Sub-Area: Savannah River Branch. Location: Edgefield County; Searls property; 5.5 miles southwest of McCormick.
OBS-Edgefield-Chesterfield Zone. Meagre exposures exhibit impregnation of slates with pyrite.

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\text { MATERIAL: GOLD. SURVEY NO. } 1943 .
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Area: Savannah. Sub-Area: Little River; Long Cane Creek. Location: Abbeville County; Jones Gold Mine; 5.8 miles S. $20^{\circ} \mathrm{E}$. of Abbeville; west of Long Cane Creek.
Address of Owner or Representative (?) : Hampton Jones, Abbeville, S. C.
OBS-Abbeville-York Zone. The records indicate this deposit as a quartz vein, bearing auriferous-pyrite, with a thickness of 2.5 feet at a depth of 80 feet, but generally variable in thickness and extent. The pyrite concentrates afforded values exceeding $\$ 60$ to the ton. The quantity of ore which was obtainable discouraged continuance.

> MATERIAL: GOLD. SURVEY NO. I946.

Arca: Savannah. Sub-Area: Long Cane Creek Branch. Location: Abbeville County; Lyon property; 7.3 miles S. $5^{\circ}$ E. of Abbeville.
Address of Ozencr or Representative (?): John Lyon, Abbeville, S. C.

ObS-Abbeville-York Zone. This property comprises several segregated veins of gold-bearing quartz traversing the decomposed mica slates; but the dilapidated condition of the development precluded comprehensive examination.

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\text { MATERIAL: GOLD. SURVEY NO. I } 949 .
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Area: Savannah. Sub-Area: Little River; Anderson Creek. Location: Abbeville County; Calais \& Douglas Mine; 8 miles S. $10^{\circ} \mathrm{W}$. of Abbeville.

Address of Owner or Representative (?): Calais \& Douglas, Abbeville, S. C.
OBS-Abbeville-York Zone. This property comprises a goldbearing quartzose vein 6 feet wide (striking N. $49^{\circ}$ W.). Development to the depth of 27 feet indicates the dip as practically vertical. The lineal extent of the vein is obscured on the surface by the overlapping of the inclosing decomposed hydromica slates. The ore assays from 8 to 60 dollars to the ton. A five-stamp mill installed at this place afforded mill runs of $\$ 8$ to the ton. The plant consisted of one 25 horse power boiler; one 20 horse power Legerwood hoist; one 20 horse power engine and five " 550 pounds stamps." At the time when examined development had not proceeded sufficiently far to justify expression of opinion as to the permanence of this vein.

MATERIAL: GOLD. SURVEY NO. 2I25.
Area: Savannah.
Sub-Area: Sieepy Creek. Location: Edgefield County; Quattlebaum \& Landrum Mine; 12 miles N. $6^{\circ} \mathrm{W}$. of Edgefield; 2.5 miles north of Meeting Street; on east side of Sleepy Creek.
Address of Ouner or Representative (?): E. J. Mims (Landrum side), Edgefield, S. C.; W. B. Cogburn (Quattlebaum side), Edgefield, S. C.
OBS-Edgefield-Chesterfield Zone. The Quattlebaum and Landrum vein strikes across a precipitous valley, and is now divided by a branch into the two interests above indicated; the Landrum lying to the northeast and the Quattlebaum to the southwest. The intervening branch crosses northwesterly to Sleepy Creek, a few hundred feet distant.

Country Rock.-The creek separates pyroxenic rocks from the clay and mica slates, in which the vein occurs striking N. $49^{\circ} \mathrm{E}$. and dipping $65^{\circ} \mathrm{N} . \mathrm{W}$. On the Landrum side an open cut exposes a face 35 feet high, from the base of which a drift extends northeasterly along the vein.

Both the hanging and foot walls are constituted of highly pitched and somewhat buckled strata of mica slates (apparently derived from clay slates); slightly beyond the hanging wall there appears a silvery white mica slate of shagreen-like surface. The fissure filled with vein stuff does not uniformly conform to the plane of schistosity of the slates. A selvage of red clayey matter separates the hanging wall from very white quartz attaining in places the diameter of 20 inches, which locally is largely replaced by selvage.

This quartz appears in places in thin, approximately horizontal, layers (dip $9^{\circ}$ N. $49^{\circ}$ E.), and in places solid lumps of quartz apparently completely inclose red clayey matter; it might therefore appear that solfataric action played an important part. Next appears a variable layer of slaty matter, which separates the abovementioned vein matter from 22 inches of white quartz inclosing pyrite very high in gold values. Free gold in large particles appears in the weathered quartz. While some surface stripping has been done on both sides of the branch, such systematic exploration in depth as this property is entitled to has not been undertaken.

The pyroxenic rocks northwest of the slates afford interesting features: First a dark green massive diorite-porphyrite grading to a gneissoid structure ; in thin section hornblende prevails in irregular grains with a tendency to elongation parallel to the prismatic axis; subordinate labradorite (twinned after the Albite law and occasionally after the Carlsbad) exhibits marginal granulation. This rock represents the result of dynamo-metamorphism of an augitic rock.

Second, a porphyritic green-black diorite with yellow phenocrysts of feldspar. In thin section the ground mass is principally hornblende, with quartz and epidote as secondary products; hornblende, slightly pleochroic in yellow and blue-greenish tones. Quartz in closely fitting grains. Epidote in rounded grains is highly polarizing, strongly refracting and slightly pleochroic, in pale yellows. The feldspar phenocrysts are granulated and partly replaced by muscovite and quartz. A little chlorite and magnetite appear in the altered groundmass; accessory apatite occurs.

The original rock was presumably a basic igneous mass of the plagioclase-augite series.

MATERIAL: GOLD. SURVEY NO. 5I65.
Area: Santee.
Sub-Area: Saluda River; Mt. Creek.
Location: Greenville County; Desoto Mine; 3 miles northwest of Princeton.
Address of Owner or Representative (?) : J. L. French, Princeton, S. C.

OBS-Anderson-Spartanburg Zone. In a decomposed biotite mass numerous small veins of slightly gold-bearing quartz occur along the slope of a heavily wooded hill on the west side of Mountain Creek, about 0.4 mile below the Greenville Road bridge. Numerous shallow prospect pits on the hillside contribute to the neighbor-
hood's legendary lore of Desoto, but careful panning of the sands affords feeble encouragement for this property.
material: gold and quartz. survey no. 5190.
Area: Santee.
Location: Laurens County; Mt. Olive; high ridge between Saluda
River and Reedy River; 7 miles west of Waterloo; west side of highway.
OBS-The country rock of this very elevated knoll consists chiefly of hard mica slates interstratified with decomposed feldspathic material. The bold ledge of quartz which strikes northeasterly through this crest affords occasional colors of gold. No appreciable prospecting has been done on this ledge.

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\text { MATERIAL: GOLD. SURVEY NO. } 5262 .
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Area: Santee. Sub-Area: Reedy River; Reaburn Creek. Location: Laurens County; 8 miles S. $35^{\circ} \mathrm{W}$. of Laurens.

OBS-Linited surface vanning for gold has been done at this locality, where the gold occurs in quartz stockwerke, in chloritic rocks resulting from the decomposition of the biotite and hornblende slates.

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\text { MATERIAL: GOLD. SURVEY NO. } 5465
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Area: Santee.
Sub-Area: Saluda River; Big Creek.
Location: Saluda County; Yarborough Gold Mine; io miles southwest of Prosperity.
Address of Ozener or Representative (?) : Mrs. Elizabeth Plunkett, Denny, S. C.
ObS-Abbeville-York Zone. The wall rock consists of fine grained mica schists with silvery lustre, which vary in strike from N. $34^{\circ}$ to $55^{\circ}$ E., and in dip from $66^{\circ}$ to $78^{\circ} \mathrm{N}$. W.

A group of quartz veins appear infolded by the schists. The main development is at a point where two quartz veins appear within the width of the shaft, one 20 inches in diameter, and the second about 6 inches. Pyrite appears in both, but the smaller vein is said to be much higher in gold values. The wall rock has been impregnated to a limited extent with pyrite in cubes.
We were informed that explorations had not extended below 50 feet. at which good prospects yielded to difficulties with water.
Numerous superficial test pits are irregularly distributed over the area of several acres.

MATERIAL: GOLD. SURVEY NO. 5587.
Arca: Santee.
Sub-Area: Saluda River Branch.
Location: Newberry County; near Crofts Mill; 4 miles S. W. of Prosperity; adjacent Bush River.
Address of Owner or Representative (?): N. Lester, Prosperity, S. C.

OBS-Abbeville-York Zone. A shallow pit reveals a small irregular brown quartz vein. Ore assays $\$ 2.67$ in gold and trace of silver.
material: gold. survey no. 56io.
Area: Santee.
Sub-Area: Tyger River Branch. Location: Greenville County; Westmoreland Mine; i i miles north of Greenville; 0.6 mile south of Locust Hill.
Adress of Owner or Representative (?): Westmoreland Estate, Greenville, S. C.
OBS-Tyger Zone. An intrusion of igneous rock appears at this locality with gneiss on its west, and hydromica slates and hornblende slates on its east sides. Along the line of contact between the dike, and ramifying the hydromica slates, numerous small goldbearing quartz veins appear. The breaking down of these veinlets contributed a placer deposit to the immediately adjacent branch, which was formerly worked to advantage. Some effort was made to extract ore from the veins in situ, but it appears not to have met with encouragement for continuation ; the shallow shafts which were thus utilized have been filled, and substantial evidences of the extent of such deposits have been obliterated by protracted disuse.

## material: gold. Survey no. 5612.

Arca: Santee. Sub-Area: South Tyger River Branch. Location: Greenville County; Wild Cat Mine; 15 miles N. $15^{\circ}$ E. of Greenville.
OBS-Tyger Zone. An aphanitic dike cutting across Wild Cat Creek appears to have caused the impregnation of the slates with small quartzose stringers, which now include decomposed particles of pyrite and gold, which have broken down, to contribute to a limited placer deposit which was apparently exhausted during "the fifties."

> MATERIAL: GOLD. SURYEY NO. 5643-5645.

Arca: Santee.
Sub-Arca: Enoree Riv. Br. Location: Greenville and Laurens Counties; near Fountain Inn. Address of Ouncr or Representatize (?): Mr. Scruggs (S. J.) and others.

OBS-About 1898 several fair prospects were exlibited at this locality, which has not yet come under the observation of this survey.
material: gold. SURVEY No. 57io.
Area: Santee.
Sub-Area: Middle Tyger River.
Location: Greenville County; 8 miles northwest of Greers; about one mile above the McBee Mine, and on the opposite side of the river.
Address of Owner or Representative (?): Thomas Cureton, Greenville, S. C.
OBS-Tyger Zone. This property comprises 74 acres, situated on the east bank of Middle Tyger River. The country rock comprises a series of gneissoid and quartzose slates which strike northeasterly. The vein where prospected is on the hillside 200 feet northeast of the river and about 20 feet above assumed high-water mark. Two test shafts, respectively 12 and 14 feet in depth, have been connected by a tunnel along the strike of the vein. Vein stringers of quartz aggregating about 18 inches in thickness irregularly break across, and follow, the line of stratification near the surface; these veinlets are gradually converging towards the bottom of the test shaft. The quartz is more or less charged with iron pyrites, with which the gneissoid slates are also impregnated in the proximity of the veins. Selected samples afford irregularly high returns of gold. This property commends itself as entitled to deeper exploration than has yet been undertaken. It belongs to the McBee Mine group. This tract is exceptionally well wooded.

Material: gold. SURVEY No. 5712.
Arca: Santee. Sub-Area: Middle Tyger River. Location: Greenville County; Wolf and Tyger property; 7 miles north of Greers.
Address of Owner or Representative (?): Wolf \& Tyger Manufacturing Co.
OBS-Tyger Zone. This property comprises the flats of Middle Tyger River, where a placer deposit of gold of considerable area has been intermittently worked with variable success. The source of gold is probably to be found in the small quartz veins which ramify the decomposed hydromica slates, conspicuously exhibited at the McBee Mine on the opposite side of the river.

MATERIAL: GOLD. SURVEY NO. 57 I 5.
Area: Santee.
Sub-Area: Middle Tyger River. Location: Greenville County; McBee Mine; formerly designated Carson Mine; 7 miles north of Greers; on small branch 0.3 mile west of river bridge.

Address of Owner or Representative (?): W. E. Beatty, Greenville, S. C.
OBS-Tyger Zone. This property has been remarkable for producing more gold than any mine in the northwestern portion of the State. The metal was derived from a placer deposit along a small branch close by the Middle Tyger River, from which water was at one time conducted to the mine through a canal more than a mile in length. Along the north side of the valley of this little branch decomposed. gneissoids prevail, but the bed of the branch and its south side are characterized mainly by decomposed hydromica slates. These formations are ramified with a stockwerke of small auriferous quartz veins, many of which afford large particles of free gold. The quartz veinlets in many places are intercalated white and black. The breaking down of these slates by nature contributed the supply of gold to the placer deposit. Efforts to successfully treat the mother material have not been successful, excepting close to the banks of the swamp where softening of the slates has been accentuated. With a hydraulic head the results should have been different.


Address of Owner or Representative (?): H. Briggs, Greenville, S. C.

OBS-Tyger Zone. This tract is south of, and adjacent to, the McBee tract; it comprises about 1,600 acres along the west side of Middle Tyger River. A few test pits reveal quartz stringers and hydromica slates which assay about $\$ 8$ to the ton. Mr. Theis reports a matter of peculiar interest associated with this locality. Crystals of pyrite occurring in the slates are practically free from gold, whereas the oxidized pseudomorphs after pyrite show good values.

> MATERIAL: GOLD. SURVEY NO. 593I.

Area: Santee. Sub-Area: Fair Forest Creek Branch. Location: Union County; Mud Mine. (also designated the Harman Mine) ; 3.8 miles S. $77^{\circ}$ E. of Glenn Springs.
Address of Orener or Representative (?):
OBS-Abbeville-York Zone. The country rock consists of a highly altered mass, apparently of biotite and hornblende slates. The outcrop of a quartz vein is here observed ascending the hill
from the valley line (strike about N. $23^{\circ}$ E.; dip vertical with slight tendency to southeast). Old workings exposed an irregular vein consisting of from 1 to 2 feet of quartz inclosing pyrite and chalcopyrite, and assaying as high as $\$ 27$ to the ton. Limited exposure admitted of no average sample. The vein presents a distinct selvage on both sides of the quartz with laminations parallel to the walls.
material: gold. SURVEY No. 5932.
Area: Santee.
Sub-Area: Fair Forest Creek. Location: Union County; Nott Mine; 4 miles S. $85^{\circ}$ E. of Glenn Springs.
Address of Ouner or Representative (?): Capt. A. H. Foster, Union, S. C.
OBS-Abbeville-York Zone. The associate country rock pertains to the hornblende and to a chlorite and epidote series; the latter derived from the alteration of biotite and hornblende slates; strike N. $10^{\circ}$ E., dip southeasterly; is probably restricted to a depth of 82 feet where the surficial rocks are supported on a very hard quartz hornblende schist, which sharply delimits the ore-body. An obscurely defined igneous intrusion apparently occurs central to the developed part of the impregnated zone. The impregnation consists of white vitreous and cellular pyrite, and subordinately chalcopyrite. In the upper horizon the pyrite has weathered to an oxide, the chalcopyrite has partly altered and passed away in solution to reappear in the narrow cracks of the underlying shivered quartz hornblende schist, in the reduced form of native copper. The cellular quartz averages $\$ 15$ in gold to the ton. With a radius of about 140 feet, from the point of exposure of the igneous boss, the ore-body occupies the northeastern quadrant of the included circle; the outer 40 to 60 feet of this quadrant comprises the main ore-body, which has been mined through wide open-cuts. The inner portion of this quadrant has been explored through shafts, and drifts in the slates at the 80 -foot level; and through a shaft (Barrett Shaft), and two lines of drifts in the subjacent quartz hornblende schist at the 130 -foot level. The Barrett Shaft drifts extended respectively to points 108 feet N. $21^{\circ}$ W. and 86 feet N. $20^{\circ}$ E. of the said shaft centre. This lower work is said to have revealed the presence of native copper in thin sheets occupying narrow vertical cracks in the quartz hornblende schist. No veins were encountered along these drifts in the latter rock.

This property, which is now idle, afforded a good yield of gold. The ore-body probably represents a large bunch of ore formed incident to the assumed extrusion of an igneous boss.

The quartz hornblende schist is of a dove-gray color and faintly schistose structure. In thin section: granulation characterizes the formation of this rock; recrystallization subordinate. Quartz in closely fitting very small grains is the predominant material. Amphibole appears in dark bluish-green grains, with a distinct parallelism; no evidence of alteration; slightly pleochroic; includes some epidote, and a little magnetite and muscovite.

## Material: gold. SURVEy no. 5936.

Area: Santee. $\quad$ Sub-Area: Broad River; Fair Forest Crk. Br. Location: Union County; Ophir or Thompson Gold Mine; 5.8 miles S. $70^{\circ}$ E. of Glenn Springs; 1.2 miles Southeast of West Springs.
Address of Owner or Representative (?) : Ophir Gold Mining Co., West Springs, S. C. (also Indianapolis, Ind.).
OBS-Abbeville-York Zone. The immediate country rock consists of friable hydromica schists composed chiefly of extremely fine grained quartz and a little hydromica; the schists are white and unctuous, and split in thin sheets; some approximate itacolumite; biotite schists accur gray and brown; (strike of the slates N. $10^{\circ} \mathrm{E} .$, . dip $70^{\circ} \mathrm{N} .80^{\circ} \mathrm{W}$.). Two parallel branches of a diabase dike separated by 23 feet are prominently exposed, $\mathbf{1}, 200$ feet $\mathrm{S} .10^{\circ} \mathrm{W}$., at the West Mine, which is an extension of the Ophir ; at the Ophir Mine small stringers of this dike-body penetrate the slates along various lines.

The gold-bearing vein matter consists of white granular pyritic quartz, permeating the biotite slates and varying in volume from stringers to large lenticular masses; the associate schists and slates are impregnated with cubes of pyrite.

The main ore-bodies consist of three approximately parallel lentiform masses designated chutes, slightly in eschelon, striking northerly, dipping westerly and pitching southerly. Proceeding from the hanging wall easterly the surface exposes the "Pine Tree Vein," separated by 51 feet from the "Gully Vein," which is separated by 99 feet from the "Possum Tree Vein." The "Pine Tree Vein" and "Gully Vein" with intervening auriferous slates have been worked through a long open-cut, aggregating 65 feet wide, to a depth of 48 feet, where the free milling ore is largely replaced by unaltered
pyritic ore. The "Pine Tree Vein" has the cross section of a very flat ellipsoid with its major axis 60 feet, the minor axis or diameter being 7 feet; the ore-body (strikes N. $10^{\circ} \mathrm{E}$. , dips $70^{\circ} \mathrm{N} .80^{\circ} \mathrm{W}$. and pitches $43^{\circ}$ to the southwest) ; on the hanging wall side, 36 feet from the line of outcrop, a shaft has been sunk to a depth of 149 feet, passing through the lower edge of the vein at r30 feet; at the 140 -foot point a cross cut extending 8 feet $\mathrm{N} .80^{\circ} \mathrm{W}$. encounters the under pitch-line of the chute, from which point the 140 -foot level has been driven 34 feet N. $10^{\circ}$ E. through slates and thence through a small ore chute measuring 23 feet; from the same initial point the 140 -foot level has been extended in the opposite direction $\mathrm{S} .10^{\circ} \mathrm{W}$. through ore to the 88 -foot point, where the upper pitchline of the chute is passed by the 140 -foot level, which further encounters slates to its extreme point 102 feet. From the 88 -foot point a cross cut connects through 65 feet of slates with the bottom of an old inclined shaft; at the 45 -foot point of this cross-cut a meandering gallery extends first southerly and then easterly and thus intercepts, 5 I feet from the "Pine Tree Vein," the "Gully Vein" (strike N. $19^{\circ} \mathrm{E} ., \operatorname{dip} 70^{\circ} \mathrm{N} .71^{\circ} \mathrm{W} .$, pitch $43^{\circ} \mathrm{S}$.) with a thickness of 5 feet; 99 feet beyond which it intercepts the "Possum Tree Vein," 4 feet thick. It will therefore be observed that at the $140-$ foot level the relative positions of these chutes as exhibited at the surface continue unchanged.

This property is equipped with a 10 stamp mill and two Wilfley tables, located on a branch about 250 feet from the main shaft.

We were informed that the pyritic concentrates from this ore assay about $\$ 80$ to the ton.

Material: gold. Survey no. 5937.
Area: Santee.
Location: Union County; West Gold Mine; 6 miles S. $60^{\circ}$ E. of Glenn Springs.
OBS-Abbeville-York Zone. The southwesterly extension of the Ophir Mine, exposed along the opposite slope of the same hill, is known as the West Mine. At the surface a single dike 4 feet wide appears with a strike $\mathrm{N} .122^{\circ} \mathrm{E}$. and with a dip of I in 10 N . W.; at the 100 -foot level a second dike is observed 14 feet northwest of and approximately parallel to the aforementioned dike.

The ore body, consisting of pyritic quartz similar to that observed at the Ophir, occurs in chutes chiefly between the two dikes, but extending in a smaller degree along the outside of these dikes. An
open pit about 105 feet long and 20 feet wide is observed crossing the easterly dike at a slight angle. The principal underground work extends ino feet southerly from the old Byers shaft, and is confined to the mass between the two dikes.

Apart from limited desultory work on the placer accumulations on the neighboring branch there was no sign of recent activity. The values were said to be quite similar to those of the adjacent Ophir.

## MATERIAL: GOLD. SURVEY NO. 5939.

Area: Santee. Sub-Area: Fair Forest Creek Branch. Location: Union County; Bogan Mine; 7.3 miles N. $72^{\circ} \mathrm{W}$. of Union.
OBS-Abbeville-York Zone. The inclosing hydromica schists and slates are in extension $\mathrm{S} .10^{\circ} \mathrm{W}$. of the West Mine; they are fine grained and friable at the surface. The vein quartz appears to have been more saccharoidal than the West Springs group; all of the superficial ore having been gouged out, the vein itself could not be observed. Inextensive tributary placer beds appear to have been workd to a modest extent.

## MATERIAL: GOLD. SURVEY NO. 6065.

Arca: Santee.
Sub-Area: Pacolet River Branch. Location: Cherokee County; Hammet Gold Mine; 3.8 miles southeast of Cowpens.
Address of Owner or Representative (?):
OBS-Anderson-Spartanburg Zone. Of this property, which was worked during "the fifties," nothing more can be said than that afforded by meagre records, which indicate that it was a vein of highly crystallized quartz showing some free gold. The adjacent placer bed appears to have constituted the main source of metal at this locality. The country rock is mica slate. The strike of the vein is northwesterly and the dip northeasterly.

## material: gold. survey no. 6if5.

Area: Santee.
Sub-Area: Pacolet River Branch. Location: Cherokee County; Love Springs and Mine; Old Palmer Mine; 3 miles northeast of Cowpens.
Address of Ouner or Representative (?): W. P. Love, Cowpens, S. C.

OBS-Anderson-Spartanburg Zone. Starting I mile south of this property a geological section exhibits a capping of soft hydro-
mica slates through which the hematite ores are disseminated; the branch dividing this ridge from the Love property exposes hard biotite and hornblende slates, which include small particles of segregated quartz, amethysts, and a hard, green mineral perhaps pyrochlore; these rocks strike N. $51^{\circ}$ E., dip S. $39^{\circ}$ E. The succeeding ridge shows highly altered hydromica slates through which a diorite dike cuts in a northeasterly direction; 500 feet north of the dike there is a heavy placer deposit which has contributed valuable quantities of gold, derived principally from the broken-down quartz veinlets which ramify the hydromica slates and mica slates on the north side of the placer bed. Tourmaline, hornblende, monazite and corundrum particles appear as associate minerals in the slates. No systematic effort to extract the mother material has been attempted, although some modest work has been done in the attempt to follow the evasive quartz veinlets. No property of this type can be successfully mined without an appropriate hydraulic head. On the opposite or southern side of the branch a few prospect pits have been sunk on quartz veinlets, near the line of the dike. The alleged presence of platinum and mercury at this property has not been confirmed by careful chemical research.

> MATERIAL: GOLD. SURVEY NO. 6I3I.

Area: Santee.
Sub-Area: Limestone Creek.
Location: Cherokee County; Nott Mine; 2.5 miles southwest of Gaffney.
Address of Owner or Representative (?): Nott Corry, Gaffney, S. C.

OBS-Cherokee Zone. This property comprises 140 acres. It was worked during "the fifties" for the superficial placer gold.

MATERIAL: GOLD. SURVEY No. 6igo.
Area: Santee. Sub-Area: Broad River Branch. Location: Cherokee County; Old Darwin Mine; Flint Hill; near 12-Mile Post; in miles southeast of Gaffney; i mile west of Smith's Ford, Broad River.
Address of Ouner or Representative (?): L. U. Campbell, Gaffney, S. C.
OBS-Abbeville-York Zone. The title of the owners of the Flint Hill Mine is limited to the mineral rights in 288 acres. The - Flint Hill Mine has been the victim of repeated haphazard operations, and yet affords a worthy prospect for skilled exploration. The
country rock of this locality comprises a series of stratified metamorphics (striking northeasterly, dipping $44^{\circ}$ southeasterly).

Starting at the house 500 feet northwest of the vein and proceeding across the vein along a normal line, we observe as follows:

A large body of very red decomposed, hydromica slates, including a wide ledge of (superficially) barren quartz; green-gray hornblende and biotite slates; a decomposed unctuous slate; very friable light gray unctuous sericite schist ; moderately soft mica schist constituting the foot wall; vein of the mine consisting of 3 to 4 feet of lively quartz; the hanging wall comprising an extremely hard, grayblack amphibolite mass, slightly impregnated with pyrite and apparently igneous; 180 feet southeast of the vein, exposed at the main shaft, an altered pyroxenic dike nearly 100 feet wide at the surface, occurs; beyond which a series of altered slates is observed. The vein has been intermittently exposed on this property for a distance of 1,700 feet $\mathrm{N} .67^{\circ} \mathrm{E}$., in which distance it crosses two valleys and two ridges; the greater or southwest ridge attains about 50 feet above the valley line. Near the crest of the southwesterly ridge mining operations have been conducted with a resulting dilapidation which precludes an intimate examination.
The records indicate that the main shaft extended to a depth of 85 feet, above which the ore body was locally enlarged by reason of a telescopic slip and was highly impregnated with rich auriferous pyrite mixed with some chalcopyrite and occasional inclusions of damourite; proceeding northeasterly a series of gouge shafts disfigure the vein to the line of the adjacent valley.

As much as $\$ 30,000$ in gold is said to have been extracted from one of the lesser holes. The only workmanlike shaft on the premises has been atttempted in recent times in the very hard rock on the hanging wall side, with a view to intercepting the vein at a depth of 90 feet ; this was not accomplished because the available means were inadequate to sink through this viciously hard material, which should never have been attempted in view of the soft material on the foot wall side, through which an incline could inexpensively be sunk in contact with the vein as a temporary roof, and the hard, igneous mass as a permanent roof, and admit easy cross-cuts on the vein as frequently as might be required for either exploration or continuous development.
Two sets of random samples of the white quartz assayed respectively $\$ 4.03$ and $\$ 4.13$ in gold to the ton of ore; sample of the separ- ${ }^{-}$ ated sulphurets assayed $\$ 122.99$ per ton. The records indicate that
the run of ore mined yielded 0.04 ounces of gold per ton. This propefty, in view of its past output and its superficial indications, is entitled to reasonable exploration.
In character this deposit pertains to the Kings Mountain type of gold veins. In the opinion of the writer, these ore bodies represent the aqueo-igneous recombination of elements of an igneous magma (afforded by igneous intrusions) into new forms, which segregate in successive and repeated irregular zones of more or less limited extent, and in irregularly intertwined clusters and numerous disconnected lentiform masses. In some cases where the alteration has been slight, the complete envelopment or want of physical connection precludes any reasonable theory of infiltration; for frequently minute lenticles of ore are observed encased in the core of huge igneous masses of dense, hard, uninterrupted crystalline texture. In other words, the York type of gold vein is of the aqueo-igneous type, the principles of which have been elucidated by Daubree, Arrhenius and others. Through which principle it might be conceived that the component and accessory minerals of heated igneous rocks, in the presence of aqueous vapors, far below the melting point of the rock body, partly resolve themselves into new combinations, which were impossible at the point of fusion, and which more or less segregate in accordance with the strength of their respective affinities; and at the same time exude solutions taken into circulation by vein waters to be concentrated or precipitated in fissures, cracks, pores, parting planes or other openings where conditions are favorable, or to enter the various forms of replacement.

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\text { MATERIAL: GOLD. SURVEY NO. } 6193 .
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Area: Santee.
Sub-Area: Broad River.
Location: Cherokee County; Love Mine; 13 miles southeast of Gaffney; formerly known as the Wilkey Mine; about 2 miles south of Flint Hill, and southwest of Smith's Ford.
OBS-Abbeville-York Zone. A placer deposit of gold once gave prominence to this locality, where some effort to locate a consistent main parent vein does not appear to have been successful. (Worked prior to 1865 .)

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\text { material: gold. SURvey no. } 6450 .
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Area: Santee. Sub-Arca: Broad River; Bullock's Crk. Location: York County; Ferguson Gold Mine; 5.7 miles southeast of Grover.
Address of Owner or Representatize (?): Frank and Dover, Grover, N. C.

OBS-Abbeville-York Zone. This vein occurs about 2 miles southeast of the Kings Mountain battle ground, and near the line separating the chloritic series (decomposed biotite and hornblende) on the southeast from the mica schist and slate series on the northwest; the strike of the country rock near the vein varies from N. $22^{\circ}$ E. to N. $32^{\circ}$ E.; the latter with a dip of $63^{\circ}$ S., $58^{\circ}$ E., representing the fine grained quartz sericite schists which constitute the hanging wall of the diorite mass, which is associated with the gold ore. The diorite, about 60 feet thick, overlies a highly altered pyroxenic mass apparently hornblende-porphyry, in which more or less disconnected lenticular masses of gold-bearing quartz impregnated with pyrite occur, as a probable aqueo-igneous segregation from an original intrusive mass; now resolved into zones of hornblende-porphyry, diorite and fine grained monzonite schist, the three aggregating a thickness exceeding 100 feet.

The decomposed hornblende matter is about 46 feet thick; its included quartzose ore bodies vary in diameter from microscopic to 7.5 feet.

The mass of ore which was originally worked is exposed along its outcrop ( $\mathrm{N} .22^{\circ}$ E.) about 500 feet, within which distance it crosses a small ravine and branch; this ore body, which is 36 feet from the diorite, occurs in the decomposed hornblende mass and attains an occasional diameter of 4 feet; it has been worked to advantage to a depth of 34 feet; its dip is nearly vertical. A short cross-cut towards the diotite, (southeast) from the 34 -foot level, exposed a lenticular mass of short length and depth, 7.5 feet wide, without apparent connection with other masses of ore. On the hanging wall side 50 feet southeast of the projected plane of the diorite, a shaft has been sunk to a depth of 100 feet, which passes first through decomposed slates and then intercepts the layer of monzonite schists at a depth of 96 feet, below which the shaft penetrates the diorite. A cross-cut extends from the bottom of the 100 -foot shaft 60 feet northwest through diorite, and into a zone of pyritic quartz ore said to be 6 feet thick, which apparently constitutes an intermediate zone to the diorite and hornblende porphyry (this part of the work was obscured under water when visited).

The diorite is more or less impregnated with pyrite and contains $\$ 0.98$ value in gold. Of numerous assays, the lowest value was $\$ 2.48$; the highest, $\$ 155.23$; average sample from 40 tons of selected ore, \$18.18.

The Ferguson Mine is equipped with a modern 20-ton plant, comprising a crusher, Wilfley table, and a cyanide equipment to treat the tailings. The cyanide solution abstracts from each ton of tailings about $\$ 3.00$ in gold valures; the concentrates, assaying about $\$ 130.00$ per ton in gold value, are shipped to a smelter.

The want of. extensive continuity of the individual ore-masses generally characterizes these York gold ores, which originated in aqueo-igneous segregation, or through forces which, in producing mobility, have permitted the various minerals of the original mass to respectively aggregate and crystallize in sundry clusters and masses in an order of succession probably inverse to their relative solubilities ; widely separated nuclei determine widely separated ore-masses of irregular shape and variable extent; occasional masses are found highly profitable for mining.

The diorite is very dark, with a submetallic lustre, fine uniform texture and a variably schistose structure. In thin scetion the schistosity appears due to the dimensional arrangement of green hornblende and biotite which constitute the mass of the rock with the biotite predominating; both occur in irregular elongated grains. The latter with a brownish-green color affords the stronger pleochroism. The original feldspar has been completely altered. Small grains of secondary quartz are profusely distributed; abundant calcite and chlorite and a little magnetite occur as products of alteration.

Chemical Analysis Afforded-Lime, 7.48 per cent.; Magnesia, 4.74 per cent.; Alumina, 14.90 per cent.; Ferric Oxide, 2.97 per cent.; Ferrous Oxide,. 8.7 I per cent.; Titanic Oxide, 2.7 o per cent.; Manganese Oxide (MnO), trace; Soda (Na2O), 2.I3 per cent.; Potash ( K 2 O ), , .89 per cent.; Carbonic Acid (CO2), 3.60 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), o. o per cent.; Sulphuric radical, o. 66 per cent. ; Silica (and insoluble), 48.80 per cent.; Ignition, 0.87 per cent.; Moisture (at $100^{\circ} \mathrm{C}$ ), 0.02 per cent. Total, 99.57 per cent.

Monzonite Slate-Bands of gray cherty quartz separated by thin layers of puckered sericite of fish scale lustrè and color ; pyrite occurs chiefly in the sericite. Thin section exhibits small grains of quartz in very close contact; minute grains, crystals and strings of magnetite are included. Sericite is colorless and appears in thin shreds with weak absorption parallel to the cleavage.

The adjacent lands along which this outcrop is interruptedly exposed, and where desultory work has been done, are known as the Logan Mine, etc.

In South Carolina this prominent association of foliated diorite, amphibolite, and monzonite schists with deposits of gold and copper emphasizes a principle of pronounced application in the AbbevilleYork belt. (In addition to the Ferguson, observe the Flint Hill, Culbreath, and perhaps the Big Wilson as prominent examples.)

MATERIAL: GOLD. SURVEY NO. 6460.
Area: Santee.
Sub-Area: Broad River; Manning Creek. Location: Cherokee County; Love Gold Mine; o. 8 mile southeast of Kings Creek Station.
Address of Owner or Representative (?) : W. E. C. Eustis, Boston, Mass.
OBS-Abbeville-York Zone. In a mass of pink and red, decomposed, fine grained mica schists, which probably dip southeasterly, a quartz vein is exposed about $\mathrm{I}, \mathrm{I} 00$ feet along its outcrop, striking about N. $35^{\circ} \mathrm{E}$. with a steep dip to the northwest. The vein consists of about 3 feet of quartz variably impregnated with pyrite, some crystals of which attain large size. This property has been explored along inclined shafts to a depth of 50 feet. We were informed that the ore was being mined for use in the Norfolk smelter; the owners failed to respond to a request for data.

## MATERIAL: GOLD. SURVEY NO. 6465.

Area: Santee. Sub-Area: Broad River; Wolf Crk Br. Location: York and Cherokee Counties; McGill Gold Mine; 2.5 miles south of Kings Creek Station.
Address of Owner or Representative (?): John 'McGill, Kings Creek Station, S. C.
OBS-Abbeville-York Zone. This deposit appears on an elevated ridge gently declining to a neighboring branch. The country rock consists of more or less decomposed forms of various types of mica slates. Considerable underground work was done about 1895 . The main vein of quarte impregnated with pyrite and some chalcopyrite averages about 2 feet in width; numerous lateral offshoots of similar material occur; numerous cracks and seams appear in the quartz, lined with black matter on the surface of which free gold occurs in scales and very small nuggets. The ore above the water line affords much altered sulphurets thereby forming the brown ore. The mean of 31 assays afforded gold $\$ 31.80$ to the ton; with the minimum of 25 cents from milk-white quartz and the maximum of $\$ 148.82$ from the brown ore. The stulphurets concentrated from this
ore yielded $\$ 64$ in gold to the ton. All features which might indicate persistence with depth were obscured by water. A 20 -ton millrun afforded $\$$ ir 86 in gold to the ton. The amount of associate silver with a pennyweight of gold is about 0.5 ounces.
material: gold. survey no. 6467 .
Area: Santee. Sub-Area: Broad River; Wolf Creek Branch. Location: York County; Hardin Gold Mine; 2.7 miles southwest of Kings Creek Station.
Address of Owener or Representative (?): Ira Hardin, Kings Creek Station, S. C.
OBS-Abbeville-York Zone. Situated between the McGill Mine and the Carroll and Ross Mine. No available records. Vein obscured. Sample of pyrite concentrated from sample of ore assayed $\$ 78.54$ in gold to the ton of ore.

Material: gold. SURVEy no. 6469.
Area: Santee. Sub-Arca: Broad River; Wolf Creek.
Location: York County; Carroll \& Ross Mine; 3 miles southwest of Kings Creek.
Address of Owner or Representative (?) : Carroll \& Ross, Gaffney, S. C.

OBS-Abbeville-York Zone. In a flat on the north side of Wolf Creek a huge bass of igneous matter has been intruded between very hard mica and hornblende slates (strike about N. $12^{\circ}$ E.), affording extensive but irregular accumulations of associate vein quartz.

Southwesterly from the creek appears an abrupt hill, through which the main lead of the igneous boss extends. From a tributary valley on the south of this hill an adit, at the 125 -foot point, exposed the dike approximately 50 feet wide and with a vein of quartz, approximately conforming to its median plane, about 2.4 feet wide and with I to I .5 feet of selvage on the foot wall side of the quartz. This adit was extended more than 100 feet westerly without encountering other ore-bodies. Near the top of the hill close to the Quinn Road a shaft, 80 feet deep, in mica slate exposes an approximately vertical vein of quartz, 2.3 feet wide, including some pyrite and affording a gold value of $\$ 4$ to the ton of ore.

- Vein quartz varying from 4 to 6 feet in width in contact with the igneous boss was explored to a depth of 40 feet. It affords approximately $\$ 2$ in free gold from the ton of ore, which carries pyrite
varying in proportion from one in twenty to one in thirty of ore, as yielded by the concentrator. The pyrite near the surface has been partly oxidized to a brown cellular form of ore, in which free gold is occasionally observable. Assay values in gold:
Average of 3 assays of low grade white quartz. . .. .. .. $\$ 2.13$
Average of 5 assays of pyritic quartz. . . . . . . .. .. .. 19.63
Sample of brown ore.. .. .. .. .. .. .. .. .. .. .. .. .. 17.36
Concentrates ( 12 to 1). . . .. .. . . . . . . . . .. .. .. 112.44
The intricate and irregular admixture of the quartz vein stuff and the igneous matter strongly points to aqueo-igneous segregative action; but it also appears that short deparetral fissures were filled from solutions enriched from the same source.
; Inefficiency of concentration, and of an experimental process to recover gold from the sulphurets, combined to suspend the operations at this property during "the nineties."

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\text { material: gold. survey no. } 6470 \text {. }
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Area: Santee. Sub-Area: Broad River; Wolf Creek. Location: York County; McCaw Gold Mine; 1.5 miles south of New London Station.
Address of Ouner or Representative (?): Hon. Wm. B. McCaw (for R. Terry), Yorkville, S. C.
OBS-Abbeville-York Zone. This property comprises 127 acres. Situated about 0.3 mile east of the Carroll \& Ross dike. The country rock is largely obscured, but is apparently a soft decomposed biotite gneiss. The remains of three old shafts, respectively 40,30 and 24 feet in depth, disclose evidence of an irregular quartz vein alternately contracting and expanding from less than one to ten feet. Short drifts were extended from the bottom of the $40-$ foot shaft. The smelter returns on 22.5 tons of ore (as submitted to the survey), from Pit No. I, afforded $\$ 30.72$ to the ton in gold; on 4.77 tons of ore from Pit No. 2 the returns showed on the ton basis, gold I ounce, silver 0.9.ounce, copper 10.4 pounds. The gold values are said to have been irregularly distributed.

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\text { material: gold. Survey no. } 647 \text { I. }
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Area: Santee.
Sub-Area: Broad River; Bullocks Creek. Location: York County; Allison Mine; 0.7 mile north of Smyrna. Address of Owner or Representative (?): John Allen, Hickory Grove, S. C.
OBS-Abbeville-York Zone. Mica slates, altered to chloritic forms, constitute the prevailing country rock which incloses the

Allison vein. This vein striking N. $68^{\circ}$ E. consists of decomposed pyritic quartz about 1.2 feet thick. Exploration work to the depth of 20 feet afforded 10 tons of sorted ore; said to have yielded a smelter return of $\$ 34$ in gold values.

## material: gold. survey no. 6472.

Area: Santee. Sub-Area: Broad River; Bullocks Crk. Br. Location: York County; Horn Mine; Smyrna Station; o.I mile northeast of Smyrna.
Address of Owner or Representative (?) : W. L. Horn, Smyrna, S. C.

OBS-Abbeville-York Zone. This tract comprises about 30 acres. In the flat, adjacent to a branch, 3 parallel veins of quartz occur, varying from 6 to 15 inches in width (strike N. $32^{\circ}$ E., dip $45^{\circ}$ S. $58^{\circ}$ E.). These branch veins have not been followed to a sufficient depth to determine whether they converge to one vein with substantial thickness. A ton of ore shipped from a test pit afforded the following return by the smelter company: gold $\$ 43$; silver 25 ounces to-the ton of ore.

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\text { MATERIAL: GOLD. SURVEY No. } 6473 .
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Area: Santee.
Sub-Area: Bullocks Creek.
Location: York County; Bradley place; 0.5 mile southeast of London Station.
OBS-Abbeville-York Zone. A quartz vein about i.i feet wide has been exposed in a shallow shaft at a point of local enrichment in gold values; which, we were informed, afforded $\$ 38$ per ton from a small mill run.
. material: gold. survey no. 6474.
Arca: Santee. Sub-Area: Broad River Branch. Location: York County; Martin Mine; I mile west of Smyrna. Address of Owner or Representative (?) : J. W. Dover, Smyrna, S. C.

OBS-Abbeville-York Zone. This deposit derived its former prominence from the associate deposit of placer gold, covering several acres. It is somewhat superior to the level of the neighboring branch. The gravel is bedded in clay and comprises a few large water-worn pebbles of saccharoidal quartz, but the main portion, of the 5 to 6 feet of material worked, is a disintegrated residual material of auriferous quartz stringers, in a feldspathic matrix. The
immediate country rock is pegmatitic, with some greisen, but immediately north there is apparently a hornblende-porphyry and near the point of contact an irregular quartzose vein (strike N. $50^{\circ} \mathrm{E}$.) with an offshoot to the northwest. Attempts to explore these veins seem to have been characterized by great uncertainty of purpose.

The placer bed and immediate underlying disintegrated material have probably afforded the largest output of gold ever derived from a bed of this type in South Carolina.

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\text { MATERIAL: GOLD. SURVEY No. } 6476 \text {. }
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Area: Santee.
Sub-Area: Broad River; Wolf Crk. Br.
Location: York County ; Darwin Deposit; 5 miles south of Kings Creek Station; on Quinn Road.
Address of Owner or Representative (?) : J. T. Darwin, Gaffney, S. C.; E. D. Darwin, Smyrna, S. C., et al.

OBS-Abbeville-York Zone. This tract comprises about I,200 acres. In red highly decomposed hydromica slates there occur several lenticular quartzose veins, varying from stringers to 4 feet in thickness. Average assay $\$ 32.50$ in gold ; selected ore assayed $\$ 7745$ in gold per ton. This exposure is about 0.5 mile southwest of the "Carroll \& Ross," and associated with the same dioritic mass, of intrusive origin, which covers an extensive area between Wolf Creek and Smith's Ford, where its line of prolongation is observed at the Flint Hill Mine (6190). Between the Darwin and Smith's Ford there occur similar in type Bolin (No. 6478) and the Whisenant (No. 6479) properties.

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\text { Material: gold. Survey no. } 6478 \text {. }
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Area: Santee.
Sub-Area: Broad River Valley. Location: York County; Bolin property; 5 miles south of Kings Creek Station.
Address of Owner or Representative (?) : J. T. Bolin, and Robert Bolin, Smyrna, S. C.
OBS-Abbeville-York Zone. See description 6476. Irregular quartzose veins pertaining to the Darwin type; cobbed material afforded assay value in gold of $\$ 23.77$ to the ton.

MATERIAL: GOLD. SURVEY No. 6479.
Area: Santee.
Sub-Arca: Broad River Valley.
Location: York County; Whisenant property", 6 miles southwest of Kings Creek Station.
Address of Owner or Representative (?): W. P. Whisenant, Kings Creek, S. C.
OBS-Abbeville-York Zone. (See description 6476.)

MATERIAL: GOLD:
Area: Santee. Hickory Grove.
Address of Owner or Representative (?): Samuel Jeffries, Gaffney, S. C.
OBS-Abbeville-York Zone. A brook exposes a vein of quartz, inclosing pyrite, about 2 feet wide. Old adit and shaft. Mill-run of 22.3 tons recovered $\$ 2.78$ per ton in gold; ore assayed $\$ 6.13$ to the ton.

## material: gold. survey no. 648i.

Area: Santee.
Sub-Area: Broad River Valley. Location: York County; Schlegel Milch Gold Mine; 3.8 miles northwest of Hickory Grove; i mile N. $35^{\circ} \mathrm{W}$. of Magnolia Mine.
Address of Ozener or Representative (?) : W. E. C. Eustis, Boston, Mass.
OBS-Abbeville-York Zone. Country Rock.-Foot wall decomposed hornblende slates overlying silvery white hydromica slates; hanging wall massive amphibolitic. Vein exposed in shaft ( 88 feet deep) pyritic white quartz (strike N. 38 E.; dip $88.5^{\circ}$ S. 52 E.). Width of vein at surface, 5 feet; at bottom of shaft, pinched. Smelter returns indicate this ore as yielding $\$ 27$ in gold to the ton. Some of the very white quartz regarded as barren, carries as high as $\$ 8$ in gold to the ton.
material: gold. survey no. 6483.
Area: Santee. Sub-Area: Broad River Branch. Location: York County; Magnolia Mine ; referred to by Lieber as "Smith's Mine;" operated subsequently under the name of Magnolia by the "Louise Gold Mining Company;" 2.2 miles west of Hickory Grove; on Smith's Ford Road; at the head of a branch of Guin Moor's Creek, south of the road.
Address of Ower or Representative (?): Magnolia Mines Company, Hickory Grove, S. C. (Memphis, Tenn.)
OBS-Abbeville-York Zone. Proceeding southeasterly from the line of the mill across the strike of the strata, we observe white hydromica slates splitting in " 1 " to " 2 " slabs, then compact siliceous slates striking N. $55^{\circ}$ E.; then a mass of pyroxenic matter 285 feet wide extends to constitute the hanging wall of the vein; this mass

[^4]has been foliated, but appears to have been a porphyritic intrusion. Vein strike N. $30^{\circ}$ E., dip $80^{\circ} \mathrm{N}$. W. The foot wall of the vein exhibits some schists with sericitic tendencies succeeded by an extensive body of mica schist which is dark green on flat fracture, and which is greenish-gray on cross fracture; thin section exhibits: Quartz, colorless, finely granulated with irregular grains in close contact probably caused by enlargement of the grains after the crushing had taken place, includes short prismatic forms, in part apatite, also hair-like and needle-like forms. Biotite in thin, even bands, in closely packed bunches of flakes which are small and irregular; includes epidote in grains and prismatic forms, with pleochroism in pale yellows. This adjustment of the quartz to late physical conditions by recrystallization presumably accounts for the absence of strain phenomena; the late physical conditions were probably afforded by the granitic intrusions which gave origin to the vein. This vein probably pertains to the Tyger type. Mr. Tuomey (p. 123) suggests interesting relations between these veins and the intrusive granites against which the hornblendic rocks rest. These hornblendic rocks appear to have originally been massive pyroxenic porphyries metamorphosed and foliated to their present form.

Vein-The outcrop of the vein, beginning near the valley line, ascends a very abrupt ridge (strike approximately N. $30^{\circ}$ E., dip $80^{\circ} \mathrm{N} . \mathrm{W}$. ), and is prominently exhibited about 800 feet. It comprises a very white crystalline quartz containing gold-bearing pyrite, which varies in thickness from 2 to. II. 5 feet. A crystal of pyrite from this mine affords a 5 -inch cube with the edges truncated by planes. An adit has been driven from a point about 15 feet above the valley line to intercept the vein, along which a drift extends northeasterly to join the bottom of a shaft 75 feet deep; from this shaft lines of levels have been undertaken. Much of the surficial ore has been removed by open trenching, and the balance above the adit level by stopping. The values in this ore are highly variable, the white quartz being low, whereas the portions charged with pyrite are as high in gold value as $\$ 60.00$ to the ton. Separated from the main vein, on the hanging wall side, by 45 feet of mica schists, there occurs a parallel mass of quartz 21 feet in diameter, which is either a superficial gash vein, very limited in depth, or the upper portion of the main vein detached and fallen over to its present position. The adit is connected by a tram track with a "threestamp mill" about 400 feet distant on a branch of the Guin Moor

Creek. (In extension of this property, about 0.4 mile southeast, occurs a prospect designated the "Cal Parker.")
The mica schist adjacent to the vein containing quartz and biotite in parallel bands, exhibit in thin section finely granulated quartz with the grains in close contact ; probably recrystallized and enlarged as no strain effects are in evidence; it includes short, prismatic and needle-like forms, partly apatite. Biotite appears in bunches partly altered to epidote, with pleochroism colorless to pale yellow.

## MATERIAL: GOLD. SURVEY No. 6485.

Area: Santee.
Sub-Area: Broad River Branch. Location: York County; Brown Mine; 3.2 miles southwest of Hickory Grove.
Address of Owner or Representative (?) : Brown Bros., Hickory Grove, S. C.
OBS-Abbeville-York Zone. Country rock largely obscured, but apparently gneissed, with foliated hornblendic on the foot wall side.

Vein-The outcrop of the vein striking N. $44^{\circ}$ E. occurs along the northwest side of a ridge, with a dip of $68^{\circ} \mathrm{N} .46^{\circ} \mathrm{W}$. This property was in the earlier stages of its recent development when examined. The outcrop is traceable about 1,200 feet. Fifteen feet above the valley line an adit has been driven a distance of 140 feet, at which point it intercepts the vein. A level extending nearly 260 feet northeasterly afforded fine stopping; the workable portion of the vein is 4 feet thick, constituted of loose, mixed quartzose and earthy ferruginous matter, including about 18 inches of more compact quartz, which gradually shifts from wall to wall and is designated "the pay streak;" the quartz above the water-level is very porous by reason of the alteration of originally contained pyrite, with its residual brown product very rich in free gold; below the water-line unaltered pyrite more or less freely appears in the quartz. On the hanging wall side of the vein occurs a sienna-colored mass about 12 inches thick, which includes much manganiferous and some apparently graphitic matter, which averages about $\$ 1.80$ in gold; cobbed portions afford about $\$ 5.00$ in gold to the ton. The pay streak affords smelter returns of $\$ 19.00$ to $\$ 27.00$ to the ton; and a small percentage of copper in the form of chalcopyrite. It was stated that the smelter returns from nearly 1,500 tons of ore, selected above the water-line, afforded from $\$ 12.00$ to $\$ 25.00$ to the ton. This vein apparently pertains to the Tyger type. (See Tuomey, page 123.)
material: gold. survey no. 6610 .
Area: Santee. Sub-Area: Catawba River; Allison Creek. Location: York County; Allison Mine; 4 miles west of Clover. Address of Ozemer or Representative (?): Dr. Allison, Yorkville, S. C.

OBS-Abbeville-York Zone. Character of vein obscured. A sample of the ore representing quartz including chaicopyrite afforded of gold $\$ 10.33$ to the ton.

MATERIAL: GOLD. SURVEY NO. 6822.
Area: Santee. Sub-Area: Catawba River; Fishing Crk. Br. Location: York County; Wallace place; 3.7 miles northeast from Yorkville.
Address of Owner or Representative (?): G. R. Wallace, Yorkville, S. C.
ObS-Abbeville-York Zone. A bold dike of diabase cuts through the mica slates which include numerous veinlets of goldbearing quartz, which have been the objects of desultory mining operations. The superficial or placer accumulations have afforded fair returns. A Chilean mill was once operated on this property. Random samples of the white quartz assayed, gold $\$ 1.78$ to the ton, quartz highly impregnated with pyrite $\$ 28.93$ to the ton.

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\text { MATERIAL: GOLD. SURVEY NO. } 7050 .
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Area: Santee. Sub-Area: Catawba River; Steel Creek. Location: York County; Clawson Mine; 4.3 miles N. $30^{\circ} \mathrm{W}$. of Fort Mill (formerly designated "Sutton Mine").
Address of Owener or representative (?) : C. L. Clawson, Richburg, S. C.

OBS-Abbeville-York Zone. The Clawson ore body extends N. $48^{\circ} \mathrm{W}$. (dip $29^{\circ}$ N. $42^{\circ}$ E.) along a broad ridge east of the Catawba River; outcrop is observed for an approximate distance of $\mathrm{I}, 200$ feet. Hanging wall consists of decomposed mass of micaceous or gneissoid matter, in waving red and white bands resting against the irregular plane of the quartz vein. Towards the southerly exposure of the outcrop the vein splits. The foot wall, consisting of a decomposed gneissoid rock, is separated from the quartz vein by a selvage of metamorphosed pyroxenic matter decomposed near the surface to reddish ochre, with some chloritic inclusions. The upper portion of the vein is a lively white cellular quartz increasing with depth from 3 to 5 feet in width; near the surface this quartz is more
or less separated by and inclosed in a decomposed gneissoid matrix, but within 25 feet the quattz consolidates to a homogeneous mass inclosing iron pyrites. A carefully cut average sample across the entire thickness of the vein afforded an assay return (U. S. Mint, Charlotte, N. C.), of $\$ 27.00$ to the ton.
This vein has unusually strongly defined elements of persistency in depth.
A good deal of superficial gouging has been done, but no systematic exploration. The most promising section of the vein, from which the sample was taken, lies about 300 feet north of the public road which crosses the outcrop. About 800 feet west of the outcrop of the vein, and, therefore, relatively subjacent, a bold amphibolite dike traverses the ridge approximately parallel with the vein. A wide band on the opposite side of the dike presents a series of quartzose veins, which afford occasional pseudomorphs of iron oxide after pyrite.

MATERIAL: GOLD. SURVEY NO. 7295.
Area: Santee. Sub-Area: Wateree River; Sawney's Creek. Location: Kershaw County; Lamar Gold Mine; 9 miles northwest of Camden; i mile northwest of Getty's Bridge over Sawney's Creek.
Address of Owner or Representative (?) : Dr. G. F. Lee, Lugoff, S. C. (R. F. D. No. 2).

OBS-Edgefield-Chesterfield Zone. The area intervening from the Sawney's Creek bridge to and beyond the Lamar Mine has been the scene of great geological disturbance. Between the bridge and the mine the country rock consists of a light blue-gray, very hard "clay slate" in layers from I to 10 inches thick, inclosing grains of sub-transparent silicate of iron. The slates at the bridge strike east and west with a dip to the north; 0.4 mile northwest of the bridge on a tributary branch they veer to N. $64^{\circ} \mathrm{W}$.; o.I mile above which they strike N. $27^{\circ} \mathrm{E}$. and dip $29^{\circ} \mathrm{S} .63^{\circ} \mathrm{E}$. Veins of white crystalline quartz, in the included elbow, successively dip N . $78^{\circ}$ E. (with southeasterly dip) to N. $64^{\circ}$ (with a steep northeasterly dip). About 4,000 feet $\mathrm{N} .75^{\circ} \mathrm{W}$. of the bridge the slates appear with a northeasterly strike immediately southeast of the Lamar Mine, from which they are separated by a pyroxenic dike which strikes N . $29^{\circ}$ E., with a steep dip to the northwest ; on the latter, or hanging wall side, occurs a soft decomposed feldspathic porphyry. Adjacent to the decomposed porphyry, about 500 feet from the white oak
shaft, an altered quartz-monzonite schist appears; the quartz grains appear dead at surface, but lively at the core.
Northwest of the latter quartz sericite schists with the mica in a very greasy hydrous form prevail, with the planes of schistosity striking N. $62^{\circ} \mathrm{W}$. and dipping N. $28^{\circ} \mathrm{E}$. At the Lamar Mine these slates are variably impregnated along a zone $\mathrm{I}, 500$ feet northwest of the dike, and with a width of probably 300 feet. The gold-bearing material consists mainly of multiplied veinlets of pyritic quartz striking northwesterly; these quartz veins are free milling near the surface, but with depth unaltered pyrite freely occurs. Numerous shallow test shafts and open cuts appear scattered over this zone. No one continuous and consistently defined vein of quartz was observed, but there were no facilities for making an examination remote from the surface. Mill run concentrates from the pyritic ore returned from $\$ 20.00$ to $\$ 40.00$ to the ton under the treatment of Dr. Thies.

To properly explore this property the white oak shaft should be extended to a depth of 100 feet, and cross-cuts driven respectively N. $29^{\circ}$ E. and S. $29^{\circ} \mathrm{W}$., and a drift extended to the dike; and the balance of the impregnated zone should be freely explored with bore holes. The character of the quartz, as observed in thin section, ex- . hibits the arrangement of grains in close contact characteristic of vein quartz.

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\text { MATERIAL: GOLD AND COPPER. SURVEY NO. } 74 I 5 .
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Area: Santee. Sub-Area: Catawba River; 12-Mile Creek. Location: Lancaster County ; Izell Mine; 3 miles north of Osceola. OBS-Abbeville-York Zone. Worked for gold during "the fifties." Trap dike cutting sericite slates N. $28^{\circ}$ W., has probably determined impregnation of the slates with auriferous quartz along the planes of schistosity transverse to the dike. (Condensed from Lieber.)

MATERIAL: GOID. SURVEY NO. 7435.
Area: Santee. Sub-Area: Wateree River; Cane Crk. Br. Location: Lancaster County; Stevens Mine; 6 miles N. $79^{\circ}$ E. of Lancaster.
OBS-Abbeville-York Zone. Gold successfully mined for a short time during "the fifties." (Lieber.)

MATERIAL: GOLD.
SURVEY NO. 75 IQ
Area: Santee. Sub-Area: Lynches River; Wild Cat Crk. Br. Location: Lancaster County; Belk Mine; 9 miles N. $77^{\circ}$ E. of Lancaster.
OBS-Abbeville-York Zone. Gold successfully mined for a short time during "the fifties." (Lieber.)
material: gold. SURVEy no. 7515.
Area: Pee Dee. Sub-Area: Lynches River; Wild Cat Crk. Br. Location: Lancaster County; Stroud property; io miles east of Lancaster.
OBS-Abbeville-York Zone. A bold vein of quartz with its outcrop exposed along a line $\mathrm{N} .10^{\circ} \mathrm{W}$. more than a mile. Metasomatic action in the replacement of calcite by quartz is interestingly exhibited; no development affording any encouragement for metaliferous contents. This deposit occurs in the proximity of a coarse basaltic dike extending from the northern to the southern limits of the county with a general (strike about N. $30^{\circ}$ W.). (Condensed from Lieber.)

MATERIAL: GOLD. SURVEY NO. 7517.
Area: Pee Dee. Sub-Area: Lynches River; Flat Crk. Br. Location: Lancaster County; Johnson property; 9.5 miles east of Lancaster.
ObS-Abbeville-York Zone. This property was exploited to a depth of 70 feet and abandoned during "the fifties." Country rock consists of a sericitic slate (striking northeasterly with a northwesterly dip). The gold-bearing seam was a contact deposit on the hanging wall side of a quartz vein (striking about N. $75^{\circ} \mathrm{W}$., dip.ping southwest). (Condensed from Lieber.)
Material: gold. Survey no. 7519. dy mime

Area: Pee Dee. Sub-Area: Lynches River; Wild Caturirk. Bh?
Location: Lancaster County ; Knights property; 9 miled $\mathbb{N}!!6 \xi^{9}{ }^{1}$ Wm! of Jefferson.
OBS-Abbeville-York Zone. Operated to a firfifted extenidinda


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MATERIAL: GOLD.
Area: Pee Dee.
SURVEY NO. 752 I .
Sub-Area: Lynches River Branch. Location: Lancaster County; Funderburk property; 8 miles N. $49^{\circ}$ W. of Jefferson.

OBS-Abbeville-York Zone. Worked and abandoned during "the fifties." Country rock sericite slates inclosing a trachytic dike. (Lieber.)

MATERIAL: GOLD. SURVEY NO. 7526.
Sub-Area: Flat Creek.
Area: Pee Dee.
Location: Lancaster County; Ingram Mine; 4.5 miles S. $76^{\circ} \mathrm{W}$. of Jefferson.
OBS-AbBeville-York Zone. Lenticular masses of auriferous quartz in sericite slates. (Lieber.)
material: Gold. SURVEy no. 7527.
Area: Pee Dee. Sub-Area: Lynches River; Flat Creek. Location: Lancaster County; Blackmon Gold Mine; formerly Blackman; 8 miles N. $5^{\circ}$ E. of Kershaw.
Address of Owner or Representative (?): Piedmont Mining and Development Co.
OBS-Abbeville-York Zone, near line of Edgefield-Chesterfield Zone. This property comprises about 20 acres in the sericite and pyrophillite slate region; 700 feet east of the development an enormous diabase dike occurs associated on its southeast side with a vast quantity of white quartz exhibiting inclusions of limonitic material, which has not been explored in depth, assays of the superficial rock having afforded no encouragement. The intervening rock is obscured, save that the immediate vicinity of the vein exposes a quartz porphyry. The Blackmon Mine consists in the main of two irregular open pits, consecutive along the slightly curved line of strike, aggregating about 370 feet in length; with a surface width of about 60 feet, and with a depth of 80 feet to the bottom of the open work; below the open work this property has been partly mined to a depth of II3 feet through a shaft intermediate to the two pits, with connected levels, stopes, etc. The ore-body and its development are limited on the southwest by the associate diabase dike ( 20 feet) striking approximately north and south. The mineralized zone extends approximately N. 60 E . from this dike, and along the strike of the slates. The line of extension southwest of the dike has been explored and found not to have been materially impregnated. The solutions which found ascension on the east side of this dike gave
origin to this mine. The dip of the formation where exposed by open work is about $60^{\circ} \mathrm{N} .30^{\circ} \mathrm{W}$., but at the depth of 80 feet this dip gradually begins flattening to an ultimate $15^{\circ} \mathrm{N} .30^{\circ} \mathrm{W}$. At a depth of 113 feet the schistose footwall of the impregnated slates appears as quartz porphyry.

Beginning with the footwall, the following series is observed: (a) Quartz monzonite porphyry inclosing crystal pyrite without value in gold; (b) 0.5 feet, slate matter very highly impregnated with iron pyrites, without values; (c) 2 feet of green pyrophillitic slate slightly impregnated with pyrite, very low in values; (d) 1.5 feet white siliceous sericite slate of a variable value; (e) 0.5 to 4 feet of apple green and pearly sericite with free gold in such extremely thin scales or sheets along schistose planes that the gold should appear to have been deposited distinctly subsequent to the development of the schistosity; irregular thin deposits of silica also occur in the auriferous sericite, this material assays $+\$ 35$ per ton; it is translucent to subtransparent, with a delicate shade of apple green. Analysis of this sericite afforded: Lime, 0.96 per cent.; Magnesia, 1.13 per cent.; Alumina, 28.34 per cent. Ferric Oxide, I. 10 per cent.; Titanic Oxide 0.29 per cent.; Soda (Na2O), 0.49 per cent. ; Potash (K2O), 6.52 per cent. ; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Silica (and insoluble), 57.26 per cent.; Iron Disulphide, trace; Moisture, 3.54 per cent.; total, 99.63 per cent.

In thin section the sericite is observed in clear green flakes with some pyrite in minute crystals along the sericite bands. Minute quartz veins with the grains in close contact are shown in the sections.
(f) 2 to 10 feet green knotty slate low in values; ( $g$ ) 2 to 10 feet of a matted mass of sericite and cyanite; (h) the hanging wall of the gold-bearing material, consists of a thick bedded mass of crumbling matter, resulting from the decomposition of a slate originally rich in ferruginous minerals; beyond this a hard siliceous slate prevails. The portions of the above mass indicated, d, e, and f, constitute the ore of the mine; an excellent free milling ore which returns about $\$ 1.30$ to the ton, from a material assaying about $\$ 1.50$. Two successive impregnations appear to have occurred at this property; the one afforded pyrite and certain small quartz veins, both without values; and the other the free gold which permeates the slates, it being a matter worthy of note that the pyrite of this deposit is practically barren. This property is equipped with a 20 -stamp mill and appropriate steam hoists. The possibilities of the successful
handling of large masses of low milling ore under skilled management find a striking example at this mine.
material: gold. Survey no. 7528.
Area: Pee Dee. Sub-Area: Lynches River; Flat Creek. Location: Lancaster County; Phiffer Mine; 7 miles N. $4^{\circ} \mathrm{W}$. of Kershaw.
OBS-Abbeville-York Zone. Lentiform masses of quartz, with auriferous selvages separating the quartz from the inclosing sericitic slates. Mined and abandoned during "the fifties." (Lieber.)
material: gold. survey no. 7540 .
Arca: Pee Dee. Sub-Area: Lynches River; Lynches Crk. Br. Location: Lancaster County; Redding Mine; 3 miles N. $42^{\circ}$ E. of Heath Springs.
OIBS-Abbeville-York Zone. This property afforded a placer deposit which apparently required but a short while for exhaustion. (Lieber.)

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\text { material: Gold. SURvey No. } 7545 .
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Area: Pee Dee. Sub-Area: Lynches River; Lynches Crk. Br. Location: Lancaster County; Brassington Gold Mine; 3.6 miles northeast of Kershaw.
Address of Owner or Representative (?): Dr. E. C. Brassington, Kershaw, S. C.
OBS-Abbeville-York Zone. The immediate country rock consists of a friable, fine grained quartzose mica slate (strike N. $59^{\circ} \mathrm{E}$, $\operatorname{dip} 70^{\circ}$ N. $31^{\circ}$ W.), which has apparently resulted from the foliation and metachemic alteration of a porphyry. A test shaft and cross-cut reveal a dike decomposed to a clay-mass, which dips about $50^{\circ}$ northwesterly to the depth of 45 feet, where the dip distinctly flattens; about 42 feet northwest of the projected line of outcrop of the dike a new shaft is being sunk to intercept this dike at a depth of 70 feet. The hanging wall side of the new shaft consists of a very hard quartz porphyry against which on the northwest rests a hard, green chloritic rock. Between this rock and the dike on the southeast the fine grained quartzose mica schists have been indurated by an impregnation of auriferous quartz, which also appears in veinlets; this entire mass is gold-bearing and is milled as a whole; the upper portion affords a free mill return of about $\$ 4.60$ to the ton. The longitudinal extent of this enrichment has been explored for a
very short length. The slates northwest of the porphyry body are impregnated to a lesser degree. The material southeast of the "clay dike" is a hard, light gray slate, apparently an incipient cyanite impregnated with cubes of pyrite; this rock body is likewise gold-bearing. A ro-stamp mill has been recently established at this place and the work is being prosecuted with system and skill. About $\mathrm{I}, 000$ feet south of this mine a bold diabase dike occurs in apparent extension of the line of the Haile Mine dike, which is observable at several points of the intervening 3 miles along an azimuth approximately S. $50^{\circ} \mathrm{E}$.

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\text { MATERIAL: GOLD. SURVEY NO. } 7550 .
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Area: Pee Dee. Location: Lancaster County; Haile Gold Mine; 3.8 miles N. $51^{\circ}$ E. of Kershaw.

Address of Ozener or Reprcsentative (?) : Haile Gold Mining Company, Kershaw, S. C.
OBS-Edgefield-Chesterfield Zone. The Haile property (formerly designated Hale) was first worked for stream gold during 1829; the development of the placer beds soon led to the discovery of free gold in the soft schists. The surface of these schists was subdivided in a number of small lots, each of which was leased on the royalty system to various planters who, when their crops were "laid by," utilized their slaves to mine the free milling surface ore, which was hauled to their respective arastras or "long toms." located on the neighboring branches; at other periods it was irregularly worked by professional miners with varying success. The first systematic work was undertaken during 1880 ; incident to this effort an extensive assortment of experimental machinery was gradually accumulated, this effort resulted in financial loss. In 1888 Dr. A. Thies was placed in charge; under the genius of his educated inspiration and skilled management the "Thies Chlorination Process" was devised, and the Haile Mine emerged from disaster to become the most noted and successful gold mine east of the Mississippi River. Its output, thus mined and treated, has approximated 750,000 tons of ore, which has yielded from $\$ 2.60$ to $\$ 10.00$ to the ton, with a probable average exceeding $\$ 3.50$ in gole values. For many of the records on which this report is predicated the survey is indebted to the former manager, Dr. A. Thies, and to his son and successor, Mr. E. A. Thies, of the Colorado School of Mines.

The outcrops of the Haile Gold Mine ore-bodies are exposed in the crystalline rocks on both sides of the valley of Ledbetter Creek. The


encircling plateaus and ridges exhibit variable cappings of eolean sands and lower Cretaceous clays and sands, such as once constituted a general mantle to this area. The crystalline rocks comprise a varied series of schists, dipping about $60^{\circ}$ to the northwest, which are crossed by a series of approximately vertical dikes which course southeasterly, and by diagonal branches connecting these dikes, and by an older series of smaller dikes which strike northeasterly and dip northwesterly. The latter have been more or less altered to a clayey texture. The ore bodies consist of some of the inclined layers of these schists, less than 80 feet thick, which have been impregnated with gold and other minerals along zones extending a few hundred feet from the dikes, and to an extreme depth of 490 feet. Some of these ore bodies appear on but one side of the associate dike; others appear on both sides. It is probable that two distinct phases of impregnation occurred ; the one contributed extensive veins of barren white quartz and impregnations of drusy quartz and pyrite, with but little gold. Experience has impressed the principle that where drusy quartz appears gold values should not be expected. This character of deposit is observable at shaft No. 5, and at Red Hill, where considerable bodies of barren pyrite occur. The Chase Hill mineral body likewise inclines to this type.

The other phase contributed impregnations of pyrite, "lively" quartz and hornstone, all carrying good values, occasional bunches assaying as high as $\$ 200,000.00$, but the average value of the entire mass of ore treated would not exceed $\$ 4.00$ to the ton.

Gencral Conditions-Along the upper limit of the Edgefield-Chesterfield Zone, which extends successively by Ruby, the Brewer Mine, near the Blackmon Mine, the Haile Mine, north of the Lamar Mine, Blythewood, Little Mountain, the Dorn Mine, and thence to the Savannah River, below the mouth of Little River, a belt of former volcanic tuffs and porphyries interruptedly appears at the surface as quartz-scricite schists, sericite schists, pyrophillite schist. monzonite schist, etc.; their planes of schistosity dip northwesterly and overlie the Edgefield-Chesterfield "clay slates," which are largely constituted of altered and highly metamorphosed basic igneous rocks, with pronounced schistose structure, but still exhibiting traces of the original plagioclase feldspar. Along the southeasterly limit of these "clay slates" a corresponding but very much more limited belt of the sericite schists appears; a probable diversion extends southwesterly from Edgefield by reason of a granite anticlinal uplift which turns a sub-zone of these schists and a part of the slates towards Ham-
burg, with a southeasterly dip. The probable majority of the more prominent gold mines of South Carolina are found where basic igneous dikes have cut through these schists, and perhaps indirectly afforded the Lancaster class of gold deposit, of which the Haile is the type; or where post-Carboniferous granite dikes have been intruded to give origin to veins generically similar to the Tyger type.

The original character of these schists, which are impregnated with gold-bearing pyrite and quartz at the Haile mine, involves questions not yet satisfactorily solved. They have undergone profound changes resulting in various forms of schists with their planes striking N. $62^{\circ}$ E., and dipping about $60^{\circ}$ N. W., with variable prismatic cleavage. Although probably closely related in original composition, these schists now present a great variety of forms attributable to various meta-chemic changes and impregnations. In many of their aspects under the microscope they indicate ancient volcanic and igneous porphyries with the plagioclase feldspars attaining in places the prominence of phenocrysts.

Dr. Becker says (U. S. Geological Report, 94-95) : "At least a portion of the country rock is of volcanic origin, containing original crystals of labradorite and quartz grains, now showing undulous extinction in polarized light. Flow structure is still visible in the ground mass, and one of the quartzes contains an inclusion which seems to be glass."

The distribution of the quartz and feldspar is entirely too uniform to represent the immediate results of sedimentary action, and the extensive and delicate nicety of the parallelism of the thin layers is obviously attributable to foliating influences. And yet there are certain planes strikingly suggestive of bedding; if they should represent true bedding planes of volcanic sediments, successively deposited from water, their present lithological character would require the conclusion that they were subsequently subjected to such intense metamorphism as caused these sediments in a great measure to combine to form feldspars, and other minerals, indistinguishable from the igneous forms; and that succeeding dynamo-metamorphic action has imposed the foliated structure. This structure has been emphasized by the development of sericite along the schistose planes, which, in the upper zone of rock fracture, have been further accentuated by epigene forces.
Dikes-At the Haile Mine three main dikes of diabase, approximately parallel, and respectively 130 feet, 27 feet, and 192 feet wide, appear within 1,200 feet, and several small dikes of which some are
older, and differ in strike. About 700 feet southwest Ledbetter Creek exposes a fourth prominent parallel dike, the extension of which appears along a curved line south of the New Beguelin ore body. The 192 -foot, or northerly dike, was intruded with either a sharp local kink or split, to the north; it dips $72^{\circ}$, while the other main dikes are comparatively straight, dip approximately $90^{\circ}$, and strike N. $34^{\circ} \mathrm{W}$., or across the line of strike of the inclosing schists. Subsequent to the principal foliation, folding and general deformation of the schists, these parallel dikes were intruded, probably at the close of the Jura-Trias. The Jura-Trias sandstones, as exposed northeast of Hornsboro, include a large number of comparatively vertical dikes of diabase, the probable equivalents of which are observed interruptedly extending along the entire Edgefield-Chesterfield Zone in approximately vertical positions.

The comparatively flat superposition of the neighboring Cretaceous formations on the upturned edges of the Edgefield-Chesterfield slates indicates that orographic movements subsequent to the Jura-Trias have obtained on a general and gentle scale without sharp foldings or dislocations; another attestation of which is inferred from the continued vertical position of the dikes; and from the fact that the original corrugations impressed upon the sides of the solidifying dike by the sheared edges of inclined strata still correspond to the dip of the associate strata; these corrugations are very prominent.

An analysis of the 30 -foot dike afforded: Silica, 45.75 per cent.; Alumina, i3.97 per cent.; Ferrous Oxide, i6.23 per cent.; Manganous Oxide, o. 52 per cent.; Lime, 8.90 per cent.; Magnesia, 7.15 per cent.; Soda, 6.02 per cent.; Potash, r.o6 per cent.; Water, o. 30 per cent. Total, 99.90 per cent. (Blassingame Analyst.) (No gold.)

The gold-bcaring solutions appear to have ascended in the immediate proximity of the dikes to the upper zone of fracture, beginning about 480 feet below the present surface, where the rocks became progressively more shattered, the schistose planes more pronounced by hydro-chemical action, and the texture more porous as the surface was approached. Through these fissures, cracks, parting planes and pores the solutions circulated to supply an infinitude of minute veins with quartz, auriferous pyrite, chalcopyrite, rare zinc sulphide, etc., and to precipitate native gold in thin films along certain schistose planes in the clear, green sericites, and on the black molybdenite coated surfaces of certain quartzose schists, and to perform limited replacement functions. The impregnation extended along the schistose planes in varying degrees of concentration, depending perhaps
on the freedom of circulation, to distances of 600 or 800 feet from the dikes. The accentuated concentrations of ore represented by the Haile, the Bumalo and the Beguelin pits were probably due to more or less widely separated, but pronounced vertical channels, or trunks, between the country rock and the dikes adjacent and tributary to these ore-bodies. These former vertical trunks are now occupied by white aluminous matter, partly derived from the sericites; the observation of the incumbent manager, Mr. Thies, is that concentrations of ore extend from those dike-points where the greatest accumulations of this white clayey matter, designated binder, appear, and that the ore bodies shift to alternate sides of the dike in correspondence with the occurrence of these trunks. The section of the exhausted Bumalo pit, Fig. 4, derived from the records of the field of pay ore actually extracted, beautifully exemplifies the form which we should expect of a fluid ascending from a given point of the dike through material progressively more open; the enervated circulation beyond this field afforded poorer impregnations. This section also indicates that the highly auriferous solution ascended but one side of the dike at this point; if the dike were junior, and had, therefore, cut through the ore body, the extension of this body should be expected on the opposite side of the dike. Furthermore, the Haile and Flint pits, which represent quite different types of ore to a depth of 50 feet from the surface, are separated by a 27 -foot dike; is it conceivable that these pronounced differences obtained along an abrupt, vertical plane, along the precise lines of which a fissure cieveloped, to be occupied by a subsequent dike? Again, if the ore solutions were senior to the dikes and proceeded from a common granite magma, how should we account for the fact that, at the Beguelin pit, ore on the northwest side of the dike carries a high percentage of zinc sulphide, whereas on the opposite side no zinc has been observed? We might ascribe to coincidence a single event, but when in the three cases of the Haile, the Bumalo and the Beguclin, planes determining abrupt differences in the character of impregnation are represented by separating dikes, I submit that it is reasonably competent to consider the latter senior to the various main auriferous ore-bodies occurring along their opposite sides; especially in view of the accentuated auriferous zones contiguous to the said dikes. Thus the Bumalo, the Haile, and the Beguelin pits all exhibit intimate relations with diabase dikes, which apparently determined their field of impregnation; these dikes and the magma in which they originated probably provided the heat which stimulated the solution of gold and the other
vein minerals in hot water, by increased circulation through deepseated, gold-bearing and other metaliferous rocks of possible preCambrian antecedents, and these respective solutions were more or less constrained in their ascent to the occasional trunk channels on the corresponding sides of the dikes. The most extensive high-grade ore-bodies on both sides of Ledbetter Creek occur contiguous to the 27 -foot dike. The mineralizing matter might, of course, have ascended alongside the dike from several freshly intruded bodies of granite rocks of unobserved presence; but whereas the very extensive and significantly intimate relations of the ore-bodies with these dikes render this improbable, such origitı need not necessarily imply pre-Cambrian origin for the ores at the Haile, for the reason that certain Lancaster granites were apparently effused over the surface of the upturned edges of the sericite slates; which edges correspond to the surface, produced by the same base levelling, on which the Cretaccous is imposed; these granites are comparatively free from foliation and strain effects, they might be senior to the end of the Jura-Trias, although probably post-Carboniferous (vid 2 miles west of Heath Springs).

Orc-Bodies-Thus far three main ore-bodies have been developed, designated respectively the Haile, including the Flint, the Bumalo, and the Beguelin (formerly Blauvelt) ; the Cross comprises those lower levels of the Haile and Flint and Bumbalo which have not been exposed by open cuts, but developed through shafts No. 2 and No., 4. A newly discovered ore-body of considerable promise, designated the New Beguelin, substantially constitutes a solthwesterly extension of the Beguelin ; it is being explored through shaft No. 7.

From the 250 -foot point to the 500 -foot point of the northeasterly extension of belt ( E ), beyond the 192 -foot dike, a considerable body of pyrite extremely low in gold values has been explored through a 6o-foot shaft. It is designated Red Hill.

About 150 feet north of the 192 -foot dike, on the northeasterly extension of belt ( U ), the Chase Hill ore-body occurs. It constitutes a pyrite impregnation very low in gold values. It has been explored through 60 -foot and 120 -foot levels from a shaft 120 feet deep.

## THE BUMALO ORE BODY.

This ore-body is sharply confined to the southerly side of the 192foot dike against which it abruptly terminated, it has no counterpart on the opposite side. The strike of the inclosing schists varies from N. $45^{\circ}$ to $\mathrm{N} .65^{\circ} \mathrm{E}$., and their dip $60^{\circ} \mathrm{N} . \mathrm{W}$. ; the strike of the dike
at this point is about N. $21^{\circ} \mathrm{W}$., with a dip of $72^{\circ} \mathrm{N}$. E. The orebody presents the outline of a rude triangle, with its altitude extending 480 feet up the face of the dike (along the dip of the schists), and with its base extending from the dike 380 feet southwesterly along the outcrop of the schists; from the extremity of which the delimiting third side (or hypothenuse) returns to the foot of the 480 -foot altitude on the dike. The thickness of the schists impregnated with workable ore is about 40 feet. The impregnation extends to a considerable distance beyond the limits of the pay-ore, but rapidly decreases in values.
(C) The foot wall consists of glistening cream-colored.and extremely fine grained sericite schists in paper-thin laminæ. In thin section a very small amount of quartz is noted; the sericite in colorless flakes exhibit a strong parallelism; moderate abundance of opaque needle-like forms are observed, which are possibly iron, but are not positively determinable.
(D) Resting on the foot wall appears a quartz slate which consists of schistose layers of aphanitic gray quartz separated by thin layers of sericite, of pearly lustre, inclosing pyrite. Apparent bedding planes are discernible. The slaty cleavage makes large angles with the foliation. The sections exhibit colorless cherty quartz, in close' interlocked grains, which show a slight dimensional arrangement. This quartz includes numerous octahedra of magnetite, some of which are arranged in winding lines. Some very small grains of apatite are observed.

The hanging portion of (D), and a small portion of the body of gray sericite schist (E), aggregating about 40 feet in thickness, have been converted by impregnation to a pyritic hornstone assaying as high as $\$ 275.00$ per ton in gold values, although averaging not more than $\$ 3.00$. The inclined zone representing the best grade of ore occurred above the 300 -foot point of level, but workable ore extended to a depth of 380 feet along the dike where it tapered to a negligible bocdy.

The greater volume of the gold-bearing solutions appear to have ascended a trunk channel, contiguous to the dike, to the 300 -foot point, where they found easier vents along partings and fractures in the schistose planes of the slates through which they ascended within an angle of $60^{\circ}$ with the horizontal. The portion of this zone adjacent to the dike ( 300 -foot point of level) , is said to have been more heavily charged with high-grade auriferous pyrite than any other
portion of the Haile group, but the opposite side of the fissure occupied by the dike shows no ore.

Bumalo Development-The open cut extends 380 feet from the dike, with a width of 1 Io feet parallel to the dike, which width narrows to 40 feet at a depth of 85 feet, below which covered stopes gradually decreasing in length extend to the 350 -foot point. These stopes were worked from a 200 -foot level, a 270 -foot level and a $350-$ foot level ; below which the ore continues progressively constricted to the 480 -foot point. A winze extended from the 350 -foot level to the 480 -foot point. At the depths of 50 feet and 350 feet, the levels were driven through the 192 -foot dike and cross-cuts extended near the dike on the north side, but no ore of more than $\$ 1.00$ per ton in value was found.

## THE FLINT ORE BODY.

North of the 27 -foot dike, and abutting same, occurs the Flint, which to a depth of 50 feet comprises a large mass of very hard, milk-white quartz comparatively free from pyrite, and extremely low in gold values. The foot wall (E) is in extension of the foot wall of the Haile ore body ; the opposite extension constitutes the hanging wall of the Bumalo ore body.

Below the roo-foot level good ore appears, but this portion of the ore-body constitutes a part of the workings designated the Cross. The open work at the Flint pit was shallow, the depth to 100 feet having been explored by borings.

The highest grade ore in Flint pit portion of the Cross occurred just above the 200 -foot level, and between the 200 -foot and 270 -foot level, extending not more than 30 feet from the dike. This ore afforded values about the same as the best ore in Haile pit, but was more siliceous and contained much less pyrite.

## THE HAILE ORE BODY.

The Haile pit is directly opposite the Flint pit, with a 27 -foot dike of diabase intervening. The body of pay ore comprises a zone 30 to 80 feet thick constituted of an impregnated mass of inclined schists extending conformably to their strike ( $\mathrm{S} .6 \mathbf{2}^{\circ} \mathrm{W}$.), ino feet from the south side of the 27 -foot dike, and along their $\operatorname{dip}\left(59^{\circ} \mathrm{N}\right.$. W.) to a depth of 255 feet. The portion below the 100 -foot level is treated as a part of the Cross workings. Ore, of rapidly decreasing value, extends considerably beyond the limits of the body of pay ore. (E) The foot wall of the Haile, and of the Flint, which corresponds to
the hanging wall of the Bumalo ore-body consists of a compact gray quartz-sericite schist, with pronounced sericite partings, which are highly impregnated with pyrite, very low in gold values. An analysis of this schist afforded: Lime, o. 16 per cent; Magnesia, 1.15 per cent.; Alumina, 24.00 per cent.; Ferric Oxide, 1.3i per cent.; Manganese Oxide, trace; Soda (Na2O), 1. 32 per cent.; Potash (K2O), 5.40 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Iron Disulphide, 15.45 per cent.; Titanic Oxide, 0.33 per cent.; Siiica, 47.94 per cent.; Water, 2.40 per cent. Total, 99.46 per cent.; Gold, thirty ( 30 ) cents to the ton.


FIG. 6.-HAILE PIT.
(F) Reference to Fig. No. 5 will show that the foot wall makes a sharp reverse curve, about ioo feet from the surface, and that the associate strain probably produced a series of fractures and slaty partings diagonally traversing stratum ( $F$ ) from the foot to the hanging walls, as indicated by ooo (Fig. 5), which represents the zone 80 feet thick; it is exhibited below the 200 -foot level as a quartz porphyry with a greenish cast and pearly lustre. In texture the rock is porphyritic with a compact ground mass; abundant small phenocrysts appear as white feldspar and as light blue clear vitreous quartz.

Sericite appears as the result of dynamo-metamorphism. Abundant cubic and octahedral crystals of pyrite and a few small, irregular grains of chalcopyrite are noted. The microscope shows the quartz feldspar and sericite of the ground mass with a strong dimensional arrangement. Many of the quartz phenocrysts are drawn out into lenses and now form aggregotes of grains rather than individual crystals. The grains show strong undulatory extinction. Where not granulated throughout the quartz phenocrysts are traversed by cracks. The feldspar phenocrysts are opaque from kaolinization and are much granulated. The sericite is colorless and forms long, thin flakes evenly parallel.
The zone ( F ) in which the main body of ore occurs, is decidedly darker in color than either the foot or hanging wall schists. The
ore occurs in several forms; most prominent is a moderately dark gray quartz shown by the microscope, in form and in the close contact of the grains, to be vein quartz. This quartz contains an abundance of pyrite with hematite as an alteration product; this material mill runs as high as $\$ 30.00$ to the ton.

The diagonal area of the laminated quartz schist ( $F$ ) along the zone marked 000 (Fig. 5), exhibits a slaty cleavage about $50^{\circ}$ with the schistose plane. This zone, of greatest enrichment, comprises a clear apple-green sericite schist, and thin layers of black metallic molybdenite, which appears in part in the spaces afforded by the slaty cleavage.

In thin section the molybdenite and the sericite appear as minute flakes; the sericite carries minute crystals of pyrite, and its schistose planes exhibit extremely thin films of native. gold. In restricted areas the molybdenite predominates over the sericite and is similarly coated with thin scales of native gold, but in a more prominent degree. Alternating with these sericite bands are bands of clear cherty quartz. Minute quartz veins are beautifully exhibited throughout the sections. Throughout zone ( E ) appear occasional bunches of a lively quartz inclosing grains of native gold free from association with pyrite or other form of iron. At the bottom of the open pit (Haile) the ore on the hanging side assays $\$ 30.00$, while the ore on the foot side affords but $\$ 3.00$ to the ton.
(G) The hanging wall consists of a gray-green slate with sharp cleavage.

The greater volume of the hot gold-ibaring solutions appears to have ascended a trunk channel adjacent to the dike until a point of zone ( $E$ ) was encountered about the 255 -foot point of level, where surficial fractures and openings admitted the solutions mainly near the hanging wall from which they crossed towards the foot wall near the surface, and were more or less diffused through the entire mass Ioo fect wide. Silicification with its associate hardness was at one time regarded as the gauge of values, but more extended experience has taught that while the best ores are highly siliceous, they are often soft; again. the proportion of the gold in the free state, which in much of the ore amounts to 50 per cent., was formerly regarded as the criterion of value, but now some of the best ore shows no free gold.

Haile Development-The Haile cut approximates in shape a truncated wedge converging with depth. At the surface it measures 240 feet along the dike, by ino feet along the schistose planes; it is 200
feet deep. From the bottom a drift extends northeasterly through the 26 -ioot dike and thence connects with shaft No. 2, which is also connected with the stopes of the Cross and the Bumalo.

## THE CROSS ORE BODY.

The Cross, as previously indicated, is construed to comprise the underground workings of both the Haile, the Flint, and the Bumalo on the opposite sides of the 27 -foot dike, from which the outer lines of the ore body diverged upwards from the 255 -foot point. On both sides the solutions penetrated openings beyond the line delimiting this main core or ore, and afforded two small ore bodies. The ore in the Cross workings does not vary materially from the ore of the Haile pit; but with increased depth and density, below the upper zone of fracture, impregnation has naturally obtained to a more limited extent; and the probability is that below the depth of 500 feet the net-work of surficial cracks will have entirely disappeared and the possibility of ore-bodies will be confined to pronounced clearcut fissures.
Cross Development-The stopes tributary to the 200 -foot level have been worked in part through shaft No. 2; shaft No. 4, which extends to a depth of 350 feet, connects with the 200 -foot level, the 270 -foot level and the 350 -foot level; from the latter a winze has been sunk 130 feet. The cross-cuts, levels, and exploration drifts, in connection with the cross workings, extend under an area of approximately three acres.
The following schists were slightly impregnated by hot gold solutions; a few colors of gold are obtainable from the surface exposures, but no economic ore-bodies have yet been found inclosed. It appears that between the Haile and the Beguelin ore-bodies, the sides of the dike afforded no vertical trunk channels of appreciable size.
(H) Overlying the Haile foot wall (G) appears a zone of chemically fine quartz with thin partings of ferruginous matter in schistose planes about one-sixth of an inch apart; occasionally very thin veins of quartz occupy parting planes. The yellow-gray color is flecked with claret-colored spots.
(1) Shaft No. 5 penetrates this zone to a depth of ino feet; with short drifts extending from its 60 -foot and iod-foot points. Along the outcrop this material has been altered to a soft, mottled pink-andgray, fine grained fissile schist, inclosing occasional pseudomorphs after pyrite along the more prominent planes of schistosity.

The shaft exposed an irregular chimney of ore extending from the 20 -foot to the 50 -foot points of level, which was less than 20 feet in diameter, this ore yielded from $\$ 4.00$ to $\$ 5.00$ to the ton.

The material from the shaft below this chimney consists of a quartz schist which splits in thin plates, which are further subdivisible along more obscure planes of schistosity, lined with extremely thin sericite. The more prominent planes exhibit coatings of fine grained pyrite and drusy quartz, which also appear along cracks at right angles to the plane of schistosity. Although the pyrite is abundant, the gold values are extremely low (less than $\$ 1.00$ ), a condition which generally obtains where drusy quartz is present.

From the roo-foot point of level a cross-cut was driven N. $50^{\circ} \mathrm{W}$., or transverse to the schistose planes, for a distance of 130 feet, where the values practically ceased with a change in the character of the schist.

The material at the bottom of the shaft is more compact and exhibits occasional phenocrysts of feldspar.
(J) Very fine grained friable silica, inclosing lenticles of milkwhite quartz, dipping southeasterly or transverse to the schistose planes.
(K) Represents similar material to (J). This material pans a few colors of gold.
(L) Consists of a sintery brown mass, with minute quartz-vein intercalations along the planes of schistosity. At some points of its outcrop the white vein quartz largely predominates.
(M-R) Represent about io4o feet of more or less obscured schists extending from zone ( L ) to the Beguelin foot wall ( S ).

THE BEGUELIN ORE BODY.
This portion of the Haile Mine consists of three distinct ore bodies inclosed along a common schistose zone, and separated by the $130-$ foot and the 27 -foot dikes, which are transverse to the schistose planes. (S) The footwall consists of a slightly schistose compact quartz sericite.

The median or main ore body, which conforms to the schistose plane (striking northeast and dipping northwest), extends 198 feet between the two main dikes, and approximately along the zone occupied by a small dike which is senior to the main dikes, by which it is severed. A small branch dike, which connects the main dikes, also severs this older diabase dike, which is now altered to the form of wacke.

The maximum depth to which the pay ore extends is 195 feet; ;its greatest width is 80 feet.
The main ore body consists of a dark, compact, gray quartz, impregnated with gold-bearing pyrite. Portions of the ore mass exhibit a black lustrous coating of molybdenite on which native gold appears in exceedingly thin scales. The inclosing rock consists of a cream-colored, fine grained sericite schist with a satin lustre. The hanging wall ( C ) breaks in huge prisms of hard slate.


FIG. 7.-BEGUELIN PIT, HAILE GOLD MINE.
The northerly ore body is exposed for a length of 80 feet, at the end of which the ore mass is greatly constricted; at the depth of too feet a compact monzonite schist appears with the schistose planes marked with thin lines of sericite; this material is without appreciable values excepting along certain transverse planes of slaty cleavage, in which thin sheet-gold has been deposited. The northerly ore body further differs from the main body in the character of the sulphides, a part of which are high in zinc, and carry very low values in gold.

The southerly ore-body of the Beguelin is about i20 feet long, and is in its main aspects similar to the main ore-body. It narrows solthwesterly to a fissure connecting the newly explored New Beguelin ore body, which is about 300 feet southwest of the 130 -foot dike.

Similar solutions appear to have ascended both sides of the $130-$ foot dike and to have extended along a fissured opening to the southwest, but the northerly side of the 27 -foot dike received zinc impregnations which do not appear on the opposite side.

Drill holes show the ore extending 600 feet southwest of 130 -foot dike, with good gold values to the depth of 250 feet.
Deiclopment-Several minor exploration shafts were sunk, but the main development has been done through the 195 -foot inclined shaft (on the dip), and the 180 -foot shaft through the hanging wall; stoping was done from the 60 -foot and 180 -foot levels, which extend through the dikes; the 180 -foot level extended southwesterly to a distance of 600 feet from the shaft. Subsequently the development assumed the form of, an open cut to a depth of 160 feet.

Equipment-The various shafts are equipped with modern steam hoists, cages, skips and crushers. and are connected by a narrow gauge steam railway with the mill building. The latter includes additional crushers, 60 stamps, and 6 Wilfley tables. The roasting equipment comprises three reverberatory furnaces, with an aggregate capacity of 9 tons in 24 hours.

The Chlorination equipment comprises three chlorination barrels with appropriate filtering tanks, storage tanks, and precipitating vats. The ore is concentrated to a 75 per cent. pyrite, to exceed which involves loss of fine gold (the amalgamating plates have long since been abandoned). The precipitated gold reduced to bullion ordinarily tests 970 to 980 fine, the rare presence of arsenic is said to occasionally reduce the fineness to 950 .

$$
\text { MATERIAL: GOLD. SURVEY NO. } 7625 .
$$

Area: Pee Dee. Sub-Area: Lynches River; Little Rock Creek. Location: Chesterfield County; Leach Mine; 2 miles N. $54^{\circ}$ W. of Jefferson.
OBS-Edgefield-Chesterfieid. Auriferous quartzose lentiform masses occur in the sericitic slates at this locality to a limited extent. (Lieber.)

MATERIAL: GOLD. SURVEY No. 7630.
Area: Pee Dee. Sub-Area: Lynches River; Little Rock Creek. Location: Chesterfield County; Placer Mine; 2.3 miles N. $55^{\circ} \mathrm{W}$. of Jefferson.
Address of Owner or Representative (?): Dr. Gregory, Jefferson, S. C.

OBS-Edgefield-Chesterfield Zone. The placer gravels of this deposit are being actively and successfully worked for gold. The deposit is derived from the breaking down of numerous quartzose stringers and lenticular masses in the tributary sericitic slates.

## MATERIAL: GOLD. SURVEY NO. 7635.

Arca: Pee Dee.
Sub-Area: Lynches River. Location: Chesterfield County; Brewer Mine; 2.1 miles S. $77^{\circ} \mathrm{W}$. of Jefferson.
Address of Ozencr or Representative (?): DeSoto Mining Co., Jefferson, S. C.
OBS-Edgefield-Chesterfield Zone. The Brewer has as yet been accorded by this survey a very brief reconnaissance, incident to delimiting the neighboring Cretaceous formation; accordingly the description submitted is incomplete. Mr. Motz, the manager, submitted instructive records on which this report is largely predicated. Lieber indicates that the placer deposits and that the surficial slates of this property were first developed in 5828 . Since that period of "rockers" the equipment has evolved through the various phases of arrastras, Chilian mills, stamp mills, chlorination plant and cyanide plant.

As many as 200 hands were long employed on this property. Nitze says of the placer beds: "This deposit is an old river channel, and was extensively worked in former days, being, in fact, the site of the first discovery of gold on the property. The width of the channel is from 200 to 300 feet, and its length $1 / 2$ miles; it is now intersected by a large valley. The original overlay was about 6 feet, and the gravel from 3 to 6 feet in thickness, underlaid by a thin bed of compact conglomerate cemented by iron oxide ; the bed-rock is a siliceous sericite schist. The old miners in working this deposit did not wash the overlay, nor did they take up any part of the bed-rock. In reworking, the whole mass ( 5 to 20 feet in thickness) was hydraulicked, and as much as 4 or 5 feet of the loose bed-rock was also torn up. It is stated that a handsome profit was realized by this work."

The Brewer Hill, or "Blue Flint Hill," in which the main body of ore has been developed is about 1,400 feet west of Little Fork Creek, with a superior elevation of 185 feet (hypsometric). It constitutes a ridge separating this creek from Lynches River.

Between Brewer Hill and Lynches River several undulations appear parallel to the ridge; in one of these troughs the Tanyard deposit occurs; it was probably effected by the grinding forces of the Lafayette floods, which in part followed the valley of Lynches River.

The country rock consists of porphyritic rocks which have been in part foliated and altered to sericite schists, which have been greatly contorted and locally brecciated. These schists have been impregnated with auriferous pyrite and quartz; bismuthite, enargite, covellite, and cassiterite have been reported as associate minerals respectively by Tuomey, Lieber, Becker, and Chatard. Free gold appears in thin scales along the planes of slaty cleavage. Blue quartz constitutes a vast mass of the ore, which is extremely low-grade; it assays from 30 to 60 cents to the ton; the pyrite concentrates from this blue quartz afforded $\$ 4.60$ to the ton in gold values.

Although large bodies of pay ore have been extracted from lower levels, the best values heretofore explored are within 80 feet of the surface, and consist of fine grained, soft, siliceous matter, which is high in free gold; the large mass of ore extracted adjacent to the small stamp mill, near the comb of the ridge, afforded free-milling returns of $\$ 3.00$ to $\$ 4.00$ to the ton. The striking contrast in the values and character of these two classes of ore-bodies, which appear in closely interlocked zones, must be attributable to original differences in the character of the material, and perhaps successive phases of impregnation, as no alteration within reasonable contemplation could alone account for the conversion of one form to the other; the refined concentrates from the blue flint ore are lower in gold values than the gross mass of the friable siliceous ore; contraction incident to the assumption of such natural concentration by alteration, as would produce a corresponding result, would have been vast, and have involved extensive voids for some of these ore-masses are large.

Nitze reports the occurrence of a heavy diabase dike along the creek, with an intervening intrusive granite separating the impregnated schists. The schists slightly removed from this area of disturbance strike about N. $70^{\circ}$ E., and dip from $45^{\circ}$ to $70^{\circ} \mathrm{N}$. W.

The development consists of three open cuts and their underground cornections. The main equipment, located on Little Fork Creek, is connected by a 1,200 -foot adit with the lower part of the main

Brewer pit, which is about 150 feet deep, and which occupies an area of approximately 200 by 250 feet. A drift from the lower level was extended northerly 430 feet through pay ore.
Lieber reports the bullion from the Brewer as 986 fine.

$$
\text { MATERIAL: GOLD. SURVEY NO. } 7638 \text {. }
$$

Area: Pee Dee. Sub-Area: Lynches River; Rocky Creek. Location: Chesterfield County; Kirkley Mine; 2.3 miles S. $10^{\circ} \mathrm{E}$. of Jefferson.
OBS-Edgefield-Chesterfield Zone. The records indicate that this property was once operated to a limited extent; it has not yet come under the observation of the present survey. (Lieber.)

## MATERIAL: GOLD. SURVEY NO. 7655.

Area: Pee Dee. Sub-Area: Pee Dee River; Clay Creek Branch. Location: Chesterfield County; Edgworth and Brewer Mine; 7 miles N. $70^{\circ} \mathrm{W}$. of Ruby.
OBS-Edgefield-Chesterfield Zone. Mr. Lieber's report indicates this locality as highly interesting by reason of the suggestions afforded as to the age of the igneous intrusions and their associate veins, which are predominant in the sericite and clay slate regions of South Carolina; the dike (strike about N. $27^{\circ}$ W.) extends through both the clay slates and the partly overlying Jura-Trias formation, the quartzose veins likewise penetrate the latter. Nowhere in South Carolina have these dikes been observed by the present survey penetrating the Cretaceous or later formations; the inference is obvious that these intrusions originated in the highly disturbed conditions with which the Triassic period closed. The gold-bearing matter consists principally of numerous narrow quartz veinlets generally laminated parallel with and separating the strata of the "clay slates," whose average plane of schistosity is transverse to the strike of the dike.

MATERLAL: GOLD. SURVEY No. 7658.
Area: Pee Dee. Sub-Area: Pee Dee River; Thompson's Crk. Location: Chesterfield County; Hendrix Mine; 3.9 miles N. $87^{\circ} \mathrm{W}$. of Ruby.
OBS-Edgefield-Chesterfield Zone. This prospect, as described by Mr. Lieber, presented a zone of brown clay slates impregnated with iron oxide pseudomorphs after pyrite; one interbedded stratum of slate 4 feet thick afforded the limited amount of gold derived from very limited exploration at this place. The strike of the slates is north and south; dip approximately vertical, with a slight tendency to the east.

## NICKEL AND COBALT.

Nickel, associated with copper and gold, and enclosed by a prominent igneous intrusion, occurs at the Culbreath Mine, in Saluda County (Sur. No. 5470). Chalcopyrite, and perhaps niccolite with gold, are in a degree concentrated along a zone, which, in the igneous mass, affords a strong probable instance of magmatic segregation. Cobalt is also associated in very small quantities.

Dana ( 1878 ) reports the occurrence of cobalt mixed with manganese near Silver Bluff, in Aiken County, with the following composition: Cobalt Oxide, 24 per cent.; Manganese Oxide, 76 per cent. This, perhaps, represented a local aspect of the Barnwell phase of ferruginous sandstones, which were consolidated by cementing solutions and oozes of various composition, which also occasionally filled insignificant pockets in the sandstone. The locality indicated is confined to Cretaceous sands and clays, and to Eocene shales, sandstones and sands.

## Uses of Nickel.

Small coins ; nickel plating.
Alloys. German or nickel silver. Tiers-argent. Nickel steel, extensively used for armor plate, propeller shafts, connecting rods, etc. Cobalt is usually associated with nickel.

## Uses of Cobalt.

Pigment for blue paints, coloring porcelain wares and glazes, neutralizing yellow color in ceramic wares, various chemical reagents.

MATERIAL: NICKEL, COPPER, GOLD. SURVEY NO. 5470.
Area: Santee.
Sub-Area: Saluda River; Big Creek
Location: Saluda County; Culbreath Mine, 12 miles south of Newberry, 6 miles northeast of Saluda Courthouse, in the fork of Big Creek and Little Saluda River.
Culbreath Mining Co., Newberry, S. C.
OBS-Edgefield-Chesterfield Zone. This tract comprises 505 acres, located along the western side of Big Creek. The country rock consists chiefly of a dark green-gray compact fissile slate (strike N. $37^{\circ}$ to $54^{\circ}$ E., dip $48^{\circ}$ to $66^{\circ}$ N. W.). The plateau on which the Culbreath Mine is located is about 25 feet above the high-water mark of Big Creek, which is about 0.2 miles northeast. At the Culbreath Mine an igneous intrusion appears, locally greatly enlarged in width, and assumes the form of an altered diorite along the more westerly and southerly parts, and the form of a partly overlying and slightly foliated amphibolite along the southeasterly portion of the igneous area. Such information as was available as to the deep conditions, indicated that these rocks were not separated along a sharp plane, but merged into each other along the mineralized zone; this igneous enlargement appears to constitute a chute which pitches about $45^{\circ}$ northeasterly. The horizon, at which it assumes normal dimensions and definite direction, has not been revealed, although its average direction appears to be northeast. An inclined shaft with a slope of 1 in 2 has been driven in the amphibolite 185 feet N. $37^{\circ}$ E. From the 155 -foot point of this incline a level has been driven 85 feet N. $47^{\circ}$ W. About 20 feet from the mouth of this level a drift has been driven from said level, 35 feet northerly. Eighty-five feet north of the mouth of the incline a shaft has been sunk 55 feet. Information, confirmed by an inspection of the dump, indicates that all of the development work above mentioned has been in the igneous mass. The values appear best along an irregular zone through which the amphibolite and diorite are supposed to merge, which is said to vary from 4 to 12 feet in width. The sulphurets, however, are more or less disseminated through the entire igneous mass.

Prospecting in the contiguous slates has been confined to bore holes from 40 to 80 feet deep, and one shallow pit. The slates, within 40 feet of the intrusive mass, are more or less impregnated with goldbearing pyrite. The following returns were furnished from the records of the owners:

Ore from the 55 -foot shaft analyzed-Nickel, o. 82 per cent.; Copper, 0.77 per cent. Ore from the 185 -foot incline in amphibolite, ad-
jacent to diorite, afforded between $\$ 4.00$ and $\$ 5.00$ to the ton in nickel and copper. Level from. 185 -foot point of incline afforded ore yielding Nickel I.1 per cent; Copper, o.90 per cent. Concentrates from unknown quantity of amphibolite assayed Nickel, 2.1 per cent.; Copper, 4.0 per cent.; Gold $\$ 7.50$. From a 40 -foot zone of the adjacent slates 54 bore-holes assayed as high as $\$ 4.19$, with an average of $\$ 2.45$ to the ton in gold values.

The amphibolite is extremely tough, and, therefore, difficult to mine. Encouraging prospects for this property should be expected in impregnated zones of the slates contiguous to some parts of the igneous mass, which should be sought by systematic boring, accompanied by careful assays of the borings A simple oil well boring equipment is systematically employed for such purposes at the Haile Mine, and has afforded the means of locating and delimiting some of their most valuable bodies of auriferous impregnations. The amphibolite and diorite are presumed to have been of coördinate origin, although structurally the diorite appears younger; no evidence of igneous metamorphic action by the diorite was observed along their zone of intra-contact, in so far as could be judged by the material on the dump. The fact that the amphibolite in such associations nearly always exhibits greater foliation, is probably due to the greater susceptibility of the amphibole to dimensional arrangement when altered from the pyroxenic forms by aqueo-igneous or dynamo-metamorphic action. If the assumption of coördinate origin is correct, magmatic segregation on a vast scale preceded the aqueoigneous changes.

The Amphibolite is dark green and exhibits numerous small cleavage faces; inclosed pyrite abundant.

In thin section-Brownish-green hornblende predominates; structure somewhat fibrous like uralite; signs of slicing and breaking observed; good cleavage and strong pleochroism; green hornblende fragments appear enlarged by recrystallization with the increment in optical continuity with the fragment, but colorless. A considerable amount of talc has been formed, colorless and brilliantly polarizing. Small amount of chlorite appears with weak double refraction. Magnetite abundant in crystals and grains. Pyrite very abundant. The amphibolite is presumably an altered pyroxenite.

The Diorite is light gray; grades to quartz diorite; inclosed pyrite abundant.

In thin section-Texture that of diorite. Feldspars from crystal habit recognized as plagioclase with slight tabular development;
largely replaced by kaolin, calcite, epidote and a little secondary quartz; amount of calcite conspicuous. Original dark basic silicate altered beyond recognition. Apatite and magnetite form prominent accessories. Small amount of green weakly pleochroic chlorite uniformly disseminated.

## COPPER.

Copper appears in the Abbeville-York Zone more prominently than elsewhere in South Carolina. It occurs subordinately in various zones, more or less sparsely disseminated in the form of chalcopyrite (or its decomposition products), as an accessory mineral to many of the vein bodies of both replacement and fissure types. In quantities of economic promise it occurs in York and Saluda Counties. In the latter chalcopyrite and gold are associated with nickel (and described thereunder Sur. No. 5470) ; the ore body is apparently the result of magmatic segregation. In York County it occurs at the Mary Mine (Sur. No. 6820), the records of which indicate that the ore-body consists of a fissure filling; and at the Big Wilson (described under gold Sur. No. 68i8), where chalcopyrite of deep occurrence, associated with the supernatant pyrite and gold, are enveloped in a mass of altered pyroxenite; no final opinion was possible, as the deep artificial exposures were under water, but the quality of copper ore exhibited from the 102 -foot level was good.

No ores of copper are mined for copper in South Carolina.

## Uses of Copper.

Metal-Sheet copper ; sundry utensils; wire; conductors of electricity; copper plate engravings; tubes; nails; rivets.

Alloys-Bronze, comprising: bell-metal, gun-metal, statuary bronze. Aluminum bronze; brass; muntz-metal; German or nickel silver; Sheffield plate; copper-amalgum.

Chemical Compounds Comprise-Blue vitriol (or blue stone) employed as insecticide; germicide, notably in relation to the typhoid germ in water supplies; for pigments and in various dyeing and printing processes; as a cauterant in surgery; various laboratory reagents.

Copper Pigments-Brunswick green; Bremen green; Bremen blue; Casselman's green; Scheeles (or mineral) green; Schweinfurt (or emerald) green; oil blue; Genteles green; verdigris.

The natural carbonates of copper (Malachite and Azurite) extensively utilized in the manufacture of articles for ornamental purposes, such as vases, table slabs, etc., etc.

MATERIAL: GOLD-COPPER. SURVEY NO. 68i8.
Area: Santee.
Sub-Area: Allison Creek. Location: York County; Wilson Mine (Big and Little); 6.8 miles northeast of Yorkville.
Address of Owner or Representative (?): W. C. Latimer, Yorkville, S. C.
OBS-Abbeville-York Zone. This property is said to comprise the mineral rights in 149 acres. The country rocks are gneissoid, through which appears a bold intrusion of pyroxenite altered to amphibolite; strike N. $40^{\circ} \mathrm{E}$.; dip $+74^{\circ} \mathrm{S}$. E. The hanging wall consists alternately of quartz and very thin layers of sericite, which exhibit puckerings. The amphibolite incloses a zone of variable width which carries auriferous pyrite associated with quartz; copies of assay returns submitted by the owner indicate $\$ 32.00$ to the ton as the value of the concentrates in gold; some of the quartz is said to assay as high as $\$ \mathrm{r} .00$ to the ton. Above the 92 -foot level chalcopyrite is said to appear along the foot wall in a mixed body 5 feet wide. The deep exposures were obscured by water. The first substantial development work on this property was undertaken prior to 1850 to secure gold from the gossan ore; development work during 1885 and 1896 is said to have afforded about $\$ 37,000$ in gold values. Development work comprises three shafts 92 feet deep, spaced with 62 -foot intervals and connected at the bottom by a drift. The equipment comprises a ten stamp mill, with boiler, engine, pump ( 4 -inch) steam hoist, etc. It is estimated that with the available pumping equipment the water can be controlled within 12 days.

Intermediate to the Big Wilson Mine, and to the Mary Mine, the Little Wilson Mine is located. The ore body consists of a bold quartz vein striking about N. $43^{\circ}$ E. At the depth of 90 feet a shaft intercepts banded quartz carrying pyrite, which is said to afford good values in gold.

## MATERIAL: COPPER. <br> SURvey no. 6820.

Area: Santee.
Sub-Area: Allison Creek Branch.
Location: York County; Mary Mine; 4.5 miles northeast of Yorkville.
Address of Ozmer or Representative (?): Mrs. Mary Lynch estate.

OBS-Abbrville-York Zone Developed 1857. The report of Mr . Lieber, who examined the underground features of this mine, indicated that the country rock is a granite which at the mine incloses several "dikes of porphyroid and spheroidal minette;" that the vein stuff in a succession of layers parallel to the walls has filled a fissure which in places occurs approximately along the plane of contact of the porphyroid dikes (which appear to be metadiorite) and mica slate (a highly foliated gneissoid), the latter constituting the hanging wall; that the strike of the vein is $\mathrm{N} .35^{\circ} \mathrm{W}$.; that the vein proceeding from either wall to the centre consisted successively of "stratiform quartz with manganese," "fine lively quartz with iron pyrites" and "copper pyrites;" that where manganese is observed no copper ( supposedly sulphide) is found; that the width of the vein varies from 2 to 5 feet; that where good accumulations of copper were observed the superior zone of the vein had been evacuated by the original vein matter, and "had been taken in possession by breccia from the country."

It would appear that the manganese was deposited prior to the chalcopyrite, and that the vein along the 100 -foot level had been enriched by leachings from the upper part of the vein, where the weathering and surface influences oxidized and otherwise altered the sulphide of copper to more soluble forms, to be again precipitated by reducing and other chemical agencies occurring below the zone of oxidation.
material: COpper (hagin). survey no. 74 Io.
Area: Santee. Sub-Area: Catawba River Branch. Location: Lancaster County; 4 miles N. $50^{\circ} \mathrm{W}$. of Osceola.

OBS-Abbeville-York Zone. Mr. Lieber, who examined this property when operated, reported the country rock as talcose slate (probably sericitic or pyrophillitic). (Strike of quartz vein N. $28^{\circ}$ W., with a vertical dip). The vein matter included copper pyrites and pyrite ; this property was worked for gold.

## TIN.

Veins of tin ore occur near the Cherokee Zone on the line of the Anderson-Spartanburg Zone. At the locality prominently exploited the tin ore (Cassiterite) occurs in a mass of pegmatite (var. quartz and oligoclase), which has been introduced through pyroxenite (var.
augite) and along the contact plane of the latter with its foot wall (aplite gneiss). A fibrolite schist, resembling talc and inclosing cyanite and sillimanite, constitutes the matrix of the cassiterite near the surface; oligoclase is the matrix at greater depths, and occasionally quartz. 'The pegmatite mass, which incloses the tin ore, appears expanded in places to 9 feet, and constricted in others to less than a foot in diameter. The tin ore has irregularly assembled in clusters of individuals varying in size from grains to 3 inches in diameter, many of which present at least one crystal face; some single clusters yield as much as a half ton of ore each.

The cassiterite, as concentrated, yields about 70 per cent. of metallic tin singularly free from prejudicial associate metals. Approximately 130 tons of this ore have been mined from the Ross property, near Gaffney, in the process of exploration.

Amphibolite, hornblende, brown mica, muscovite, chlorite, calcite, fibrolite, cyanite, sillimanite, and garnets occur as associate products of metamorphic action. Magnetite, apatite and pyrrhotite occur as accessories in those portions of the pyroxenite which have been altered to amphibolite.

The tin-bearing pegmatites extend from Gaffney, interruptedhy exposed, to and beyond the North Carolina line (Sur. Nos. 6Io5, 6245 ), but the Ross Mine (6245) affords the only observed instance of tin-bearing pegmatite inclosed by pyroxene.

## Uses of Tin.

Block tin is used in the manufacture of pipe and other articles required in the laboratory, and in the chemical industries. Foil comprises both pure and alloyed tin.

Alloys-Bell-metal, gun-metal and statuary-metal constitute the bronzes, German silver (some forms) ; Britannia-metal, pewter, and anti-friction metals.

The most extensive use of tin is for "tin plate," or sheet iron, which has been immersed in molten tin.

The Salts of Tin-Mosaic gold, tinsalt, used in dyeing and calico printing; physic (or nitrate of tin), and pinksalt (or double chloride), used in the manufacture of dyes; stannate of soda, used for dyeing and calico printing.

The oxide of tin is used in the ceramic arts in producing white enamels, opaque glasses, etc.

Basis of some laboratory reagents.

## MATERIAL: TIN. SURVEY No. 6i 26.

Area: Santee.
Sub-Area: Thicketty Creek Branch.
Location: Cherokee County; Perry property; o. 6 miles northwest of Gaffney.
Address of Ozmer or Representative (?): N. C. Perry, Gaffney, S. C.

OBS-Anderson-Spartanburg Zone. This property, comprising about 50 acres, is situated about 1.5 miles southwest of the Ross Tin Mine on a coördinate line of strike. The country rock consists of soft mica slates, with numerous pegmatitic inclusions overlying homblende schists. The cassiterite (tin ore) is said to occur through the hydromica slates in some of the pegmatitic bodies. A few superficial test pits afforded no competent expression of the possibilities of this property. Samples of the cassiterite which were supplied by the owners afforded 75.2 per cent. metallic tin, free from prejudicial accessories. No consistent body of this ore has yet been explored at this point, but the surface indications entitle this property to reasonable exploration. The line of a bold diabase dike immediately south of this place proceeds northeasterly to the south of the Ross Mine, and exhibits a bold outcrop between Cherokee Creek and Broad River on the Kline place.

## MATERIAL: TIN. SURVEY NO. 6245.

Area: Santee.
Sub-Area: Cherokee Creek Branch.
Location: Cherokee County; Ross Mine; 1.25 miles northeast of Gaffney.
Address of Owner or Representative ( ?) : Capt. S. S. Ross, Gaffney, S. C.
OBS-Anderson-Spartanburg Zone. On line dividing Cherokee Zone from the Anderson-Spartanburg Zone. During the year 1902 tin ore, or cassiterite, was discovered in surficial clay by Capt. S. S. Ross, a gentleman of considerable mining experience, on his place in Cherokee County, one and one-quarter miles northeast of the Gaffney railway station (Southern R. R.). During the early part of the year 1903 Captain Ross began the exploration of this property, for which purpose there were installed the necessary concentrating troughs and three Joplin Jigs. With this equipment there has been tested the surface or placer material from a limited area, and the ore extracted from the parent vein incident to underground explorations.


CoOgle


Character of Surface Deposit-The area of the surface or placer deposit, resting on the upturned edges of the schists, has not been delimited by systematically located test pits ; in the absence of which, calculations as to area are merely conjectural, and quantities mere surmises; however, surface panning indicates the probability of a placer area extending from the mouth of the inclined shaft, 625 feet along a shallow valley which conforms to the line of outcrop (N. $48^{\circ}$ E.), to the branch, where the jigs are located (beyond which ore has not been found on this place). The width of this ore-covered valley is about 200 feet; the difference of elevation from the branch to the main shaft is approximately 67 feet. The surface matter may be regarded as of 3 layers: First, resting on the upturned edges of the schists, etc, occurs a layer, about 9 inches thick, of loose quartz fragments and decomposed feldspathic matter, carrying about 3 per cent. of cassiterite. Overlying this is about 3 feet of red clay, carrying about $1 / 2$ of 1 per cent. of cassiterite. Superimposed on this is similar clay of variable thickness, ordinarily from I to 3 feet, in which a trace of tin occurs.

The lower $33 / 4$ feet have afforded in values about $\$ 3$ to the square yard of area. All of this material is delivered on a water-fed screen, which eliminates coarse lumps of quartz, etc., the fine material passing thence to the sluice boxes where the current of water concentrates the particles of cassiterite by sweeping away the greater portion of the lighter material. This partly concentrated cassiterite is removed to the Joplin Jigs for final concentration, in which condition it represents about 7 I per cent. of metallic tin.

The strike of the associate rocks is N. $48^{\circ}$ E., and the dip from $30^{\circ}$ to $45^{\circ} \mathrm{S}$. E. Proceeding up a brook towards the mine, along the distance of about 500 feet, we successively observe a gneissoid rock with large porphyritic inclusions of feldspar, and then an extensive series of hornblende rocks intercalated with mica schists and inclosing narrow pegmatitic masses. They are very suggestive of the hornblende series with which the poorer limestones are associated at the mouth of Buffalo Creek, and at other points. On the hanging wall side an extensive hornblende series is observed for several hundred feet, beyond which appears the quartz-mica schist series, and then the hornblende and high-grade limestones are exposed within 0.6 of a mile south.

The tin ore-body consists of a cassiterite-bearing pegmatite body. which has penetrated a narrow zone of altered pyroxene near its contact with underlying aplite gneiss, which in turn overlies a body
of pyroxene (variety augite) which has been penetrated by numerous small pegmatite bodies, which thus far are barren of tin. The pyroxene is exposed in the main shaft underlying the aplite, from the depth of 85 feet, to the bottom of the shaft ( 121 feet).

The pegmatite body in which the tin occurs differs from the subjacent pegmatite dikes; for whereas it affords in places the characteristic interlocked structure of quartz and oligoclase, the quartz and feldspar have in other places formed along separate parallel zones, and the original feldspar largely appears as banded cyanite (or fibrolite) schist, peculiarly high in the content cassiterite, and suggestive of a deposit vein (see Plate VI). The quartz band is more or less impregnated with pyrrhotite which also impregnates the contiguous pyroxene. The amount of pyrrhotite becomes more prominent with increased depth while the cyanite feature is more pronounced near the surface.

The cassiterite bearing pegmatite, or tin vein, which varies from 2 to 9 feet in thickness, does not occupy the entire plane along the aplite gneiss (strike N. $48^{\circ}$ E., dip $45^{\circ}$ S. E.), but constitutes a chute which appears along the outcrop for 107 or more feet; the northeasterly end line of this chute pitches along the plane of the aplite gneiss about $45^{\circ}$ southwesterly; it is conceivable that the distance between the end lines might rapidly increase with depth, and that they might become coextensive with the plane of the aplite gneiss.
The cassiterite or tin ore occurs in the pegmatite chute in several relations. Near the outcrop, between saprolitic hornblende matter, the vein attains its maximum thickness of 9 feet, and the cassiterite occurs in a white decomposed aluminous matrix in sizes varying from microscopic to ro-pound lumps, and often with one or more crystal faces. In the upper zone individual pieces are in some instances covered with a weathered fibrolite with its fibrous grains bending conformably around the enclosed masses of cassiterite.
(This fibrolite analyses-Lime, 1.40 per cent.; Magnesia, 0.09 per cent.; Alumina, 60.21 per cent.; Ferric Oxide, o. 98 per cent.; Ferrous Oxide, none; Titanic Oxide, trace: Manganese Oxide ( MnO ), none; Soda ( Na 2 O ), 0.28 per cent.; Potash ( K 2 O ), 0.47 per cent.; Carbonic Acid ( CO 2 ), none: Phosphoric Acid ( P 2 O 5 ), 0.07 per cent.; Sulphuric Acid, none; Silica (and insoluble), 36.06 per cent.; Ignition, o. 78 per cent: Moisture. o.11 per cent. Total, 100.45 per cent.)

The tin ore is more or less irregularly distributed in this mass, of which good bodies have afforded as much as 30 per cent. of cassiterite. With increased depth the fibrolite in a large measure yields to the feldspar oligoclase.
(Analysis of Oligoclase-Lime, 7.00 per cent.; Magnesia, 0.85 per cent.; Alumina, 24.53 per cent.; Ferric Oxide, o.6I per cent.; Ferrous Oxide, 0.41 per cent.; Titanic Oxide, none; Manganese Oxide, none; Soda ( Na 2 O ), 6.io per cent.; Potash ( K 2 O ), 0.45 per cent.; Carbonic Acid (CO2), 0.50 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), o. 13 per cent.; Silica, 58.40 per cent.; Ignition, o. 44 per cent.; Iron Pyrites, 0.75 per cent. Total, 100.16 per cent.)

fig. 8.-Silaft house, ross tin mine.
At the 9 g -foot level the inclosing pyroxene assumes more definite form; io feet northeast of winze No. i, the following interesting section of the vein, dipping $45^{\circ}$ southeast, was observed when this level was being driven:

Adjacent to the aplite foot wall chestnut brown mica and altered pyroxene o to 3 fect thick; feldspar and some soft fibrolite abundantly impregnated with cassiterite io inches thick; watery quartz enclosing cassiterite near its contact line with the feldspar, and a little pyrrhotite near its upper surface, 2 to 11 inches thick; pyroxene enclosing pyrrhotite 13 inches. Thin quartz-mica slate and decomposed hornblende constitute the langing wall.

Careful analyses for tin from four portions of the amphibolite showed no trace of tin. An assay of the pyrrhotite revealed no gold.

At one point underground, southwest of the pegmatite chute, unaltered amphibole is observed about 5 feet thick enclosing a few whorls of barren pegmatite. (In thin section the hornblende forms irregular grains with slight prismatic elongation, and a crude parallelism. Very little quartz, chlorite and hematite are noted. Apatite and magnetite occur as accessories.)


FIG. 9.-MOUTH OF INCLINED SHAFT, ROSS TIN MINE.
At the point to which development had progressed on the 91 -foot level, when the writer was last underground, the vein showed 37 inches of good tin-bearing material. At many points the median portions of the vein exhibit a laminated structure where probable replacement of the feldspar has been effected. (Thin section exhibits some cyanite and sillimanite, and an abundance of talc-like flakes, which, perhaps, constitute the fibrolite mineral above noted. Cracks in the cyanite are filled. with this mineral.)

The development at this mine comprised primarily an inclined shaft, abandoned on account of soft ground. On the hanging wall side, 65 feet from the line of outcrop, a shaft has been extended to-
the depth of 121 feet; at the depth of 63 feet an angular cross-cut of 21 feet connects the shaft with the vein and establishes the line of the 63 -foot level, one end of which extends 22 feet northeast and the other 87 feet southwest ; at the 20 -foot point, of the latter, winze No. 1 extends 41 feet on the $\operatorname{dip}\left(45^{\circ}\right)$. From the foot of winze No. 1 , the 91 -foot level extends 50 feet southwest. From the $\sigma_{3}$-foot level, at the 55 -foot point, winze No. 2 connects with the 91 -foot level and extends about 30 feet below the latter on the dip of the vein. The development in pursuit of the chute thus constitutes a series of steps.

The total output of cassiterite up to December 1, igo6, incident to the work of exploration of both underground and placer bodies, amounted to approximately 130 tons.

Petrographic-The igneous intrusion underlying the foot wall of the tin vein is interesting in itself and by reason of the large number of included pegmatite bodies similar to the tin-bearing bodies, but so far without evidence of containing tin. This pyroxenic mass, itself an original intrusion, has been invaded by a large number of small, approximately parallel pegmatite dikes, in some places about 2 inches wide and not more than 6 inches apart.

Pyroxene varies from dull grayish to green color; good prismatic cleavages and basal parting. In thin section this mineral is strongly refracting, brilliantly polarizing; the pyroxene is of the augite variety, practically colorless, and with characteristic large extinction angles. Some specimens are crossed by a great number of cracks affording a granular appearance; secondary quartz, calcite and chlorite appearing in the cracks and cavities.

Along the zones of contact of the pyroxene with the pegmatite, a narrow band of green-black to bluish-green brilliantly cleavable hornblende occurs, with moderate pleochroism and small extinction angles. Some portions of the pyroxenite incloses abundant particles of pyrrhotite, also brownish-red garnets. The amphibolite enclosing the tin vein was presumably a similar mass of pyroxene, which now exhibits an increased amount of metamorphism proportioned to the increased size of the pegmatite mass by which it was invaded: the augite has largely altered to hornblende, and locally passed intn the chestilut-brown mica.

The aplite gneiss constituting the foot wall exhibits a granitic texture and gneissoid structure: in color it is banded light and dark gray. It infolds narrow tongues of intruded pegmatite. I.ayers similar to this foot wall occur separating the underlying pyroxenic
mass. The microscope shows the aplite to be composed chiefly of grains of feldspar and quartz which have been strongly stressed. They exhibit a good dimensional arrangement, thus accentuating the gneissoid structure.

The feldspar appears to comprise both orthoclase and plagioclase. The quartz is clear. Small amount of muscovite is noted. Biotite, altering to chlorite, appears to a very limited extent.

Pegmatitc-It should be noted that while the pegmatite in the cassiterite zone exhibits the intergrowth of quartz and feldspar, that the predominant material is feldspathic, the quartz appearing principally along the hanging wall. Below the foot wall the intrusions of pegmatite occur in the form of numerous thin masses of slightly granulated quartz grains of large size, inclosed by feldspar.

The feldspar, oligoclase, is white with a pearly lustre; exhibits good cleavage and fine striations, due to twinning after the Albite law; in thin section it appears slightly kaolinized, and includes a few flakes of brilliantly polarizing mica, also a little calcite.

The quartz is gray and vitreous; in thin section clear and colorless.

## LEAD.

This metal occurs in South Carolina as galena in small quantities in quartz veins cutting the gneissoids; and to a limited extent in Barytes at Kings Creek Station.

The Kuhtman vein( Survey No. 1465), located in Oconee County near the head of Cheohee Creek, was worked to a limited extent during the early "' 60 's;" it exhibited a small quartz vein carrying crystals of galena, the country rock being gneissoid.

The Cameron Mine (Survey No. ${ }^{6} 135$ ) situated in Cherokee County on Limestone Creek, was operated during the exigencies of the Civil War. It presented near the surface a carbonate of lead which graded with moderate depth to a galena; at a greater depth Siderite (carbonate of iron) predominated.
Uses of Lead.
Pipes and fittings for plumbing ; sheet lead for acid chambers, and for roofing; shot.

Alloys-Solder; type-metal; babbit-metal and other anti-friction alloys; pewter; organ-pipe metal. Compounds used in glass making, and in medicine.

Pigments-White lead, red lead, chrome yellow, Naples yellow, Patterson's white, and the white sulphate.
material: lead (silver). Survey no. 1465.
Area: Savannah.
Sub-Area: Cheohee Creek Branch.
Location: Oconee County; eastern prong of Cheohee Creek; 15.5 miles north of Walhalla.
Address of Owner or Representative ( ?): F. L. Moodie, Miucha, Postoffice, South Carolina.
.OBS-Chatooga Zone A vein of quartz from 6 to 8 inches wide inclosing some argentiferous galena appears along the plane separating the gneissoid slates, which strike across the creek. Old shafts appear on the eastern scarp of the creek, and a tunnel on the western side; their dilapidated condition prevented a close inspection, and all surface traces had been gouged out. A piece of ore representing the width of the vein was found on the dump and afforded very modest encouragement.

MATERIAL: LEAD. SURVEY NO. 6I 35.
Area: Santee. Sub-Area: Broad River; Limestone Creek. Location: Cherokee County; Cameron Mine (formerly designated Leitner or Morgan Mine), 2.8 miles southwest Gaffney. Address of Owner or Representative (?): R. H. Kirby, Gaffney, S. C.

OBS--The Cameron Mine was interesting as one of the ephemeral sources of supply of lead ore to the Confederate smelter at Norfolk. This mine was thus operated under Dr. A. Thies, to whose notes I am partly indebted for information relative to the underground conditions which are now largely obscured. The main outcrop occurs about Ioo feet south of Limestone Creek, and about 24 feet above the same (strike N. $35^{\circ} \mathrm{E}$., $\operatorname{dip} 65^{\circ} \mathrm{S} .55^{\circ} \mathrm{E}$.). The outcrop can be traced continuously for a short distance. The country rock consists of mica slates with pegmatitic inclusions adjacent to the vein, but apparently not incorporated in the vein mass. Extensive masses of pyroxene altered to schistose amphibolite occur on the hanging wall side. The vein varies in width from 2.5 feet at the surface to 4 feet at the depth of 140 fcet, and is included in sharply defined walls. The vein matter consisted as follows in descending order :
(a) Eight feet coarse grained argentiferous galena affording about 58 per cent. metallic lead, and 60 ounces of silver to the ton ot pig metal. The gangue consists of a well crystallized quartz. The associate minerals were chalcopyrite, pyromorphite and cerusite.
(b) Fifty-two feet of a ferruginous matrix mixed with carbonate of lead, scattered particles of galena and a small amount of malachite.
(c) Eighty-eight feet of compact highly crystallized siderite (carbonate of iron) with fine particles of iron pyrites disseminated through the same.

A considerable quantity of this siderite exposed on the ore dump appears, under the microscope, sufficiently free from sulphur to constitute a good iron ore.

## MANGANESE.

Manganese occurs in subordinate bodies in various zones; in deposits of economic promise it appears in the Abbeville-York Zone. It is observed intercalated with the slates extending along the northerly slope of the Kings Mt. ridge (Sur. No. 6434); immediately south of Smiths Mt. (Sur. No. 6285) ; near Drayton Mt., and near the Tyger River south of Glenn Springs (Sur. No. 5765).

Beginning west of New Market (Sur. No. 2005) a second belt extends southwesterly with exposures west of Breezewood (Sur. No. 2050), and immediately south of McCormick (Sur. No. 1886). The bed near McCormick is of excellent promise; the hard ore affords 53.60 per cent. of metallic manganese combined in part to form 71.56 per cent. of manganese dioxide; the soft ore contains 32.34 per cent. of manganese in part combined to form 31.78 per cent. of manganese dioxide, which is valuable in bleaching, to which purpose the monoxide is not adapted.

No manganese ores are mined in South Carolina.

## The Uses of Manganese.

In the manufacture of steel; "Spiegeleisen" contains manganese in varying proportions up to 30 per cent; "ferro-manganese" contains manganese in proportions varying from 30 to 92 per cent. In the manufacture of oxygen. Manufacture of bromine, iodine and chlorine (more recent method now prevails in the manufacture of chlorine). For coloring glass, pottery and enamels. In colors for calico printing. Preparation of permanganate of potash and other manganese salts. For making dryers for paints and varnishes. For variegating face bricks. As disinfectant. Leclanché battery.
The value of Manganese ores depends:
I. In the manufacture of steel, on the amount of metallic manganese contained and on its freedom from associate phosphorous, sulphur, and titanium.
2. In the manufacture of oxygen, chlorine, bromine, and iodine; the value depends on the percentage of combined oxygen in excess of the amount combined as mon-oxide ( MnO ) ; in other words, on the quantity of free oxygen it is capable of yielding (difference in amount of $\mathrm{MnO}_{2}$ and its equivalent amount of MnO ).

MATERIAL: MANGANESE. SURVEY NO. I880.
Area: Savannah. Sub-Area: Baker Creek.
Location: Abbeville County; o. 8 miles southwest McCormick.
Address of Oumer or Representative (?): McCormick Land Improvement Company, McCormick, S. C.
OBS--Line between Abbeville-York Zone and Edgefield-Chesterfield Zone. Limited exposures of manganese occur on this propcrty along the line of extension of the manganese described under Survey No. 1886.

## MATERIAL: MANGANESE. SURVEY NO. 1886.

Area: Savannah. Sub-Area: Savannah River; Rocky Creek. Location: Abbeville County, northeast of Dorn's Gold Mine; o. 5 mile north of McCormick.
Address of Ozener or Representative (?): McCormick Land and Improvement Company, McCormick, S. C.
OBS-Line between Abbeville-York and Edgefield-Chesterfield Zones. Slightly beyond, and in almost the immediate line of the northeasterly extension of the Dorn Gold vein, we observe along the Liberty Hill road ( 0.5 mile north of McCormick railway station) a series of white, gray, brown, red, yellow, and claret-colored fine grained mica and sericite quartz schists, which strike N. $72^{\circ} \mathrm{E}$. and $\operatorname{dip} 72^{\circ} \mathrm{N}$. W. About 86 feet southeast of the line of the gold veins manganese appears very irregularly distributed in the mica slates, and associated with quartz veins in a zone about i6o feet wide. Proceeding N. $72^{\circ}$ E., about 550 feet, the valley line exposes a bold ledge of hard siliceous manganese ore, including veinlets of pure white quartz. Ascending the opposite hill we observe, about 60 feet northwest of the projected line of the siliceous manganese vein, a stratum of hard red mica slate (dipping about $70^{\circ} \mathrm{N}$. $18^{\circ} \mathrm{W}$.), which constitutes the foot wall of a zone of soft gray sericite slates, which inclose extensive nodular concretions and fine grains of pyrolusite and psilomelane, the two oxide ores of manganese. A test pit 28 feet in depth exposes the impregnated zone ir feet wide; this zone can be traced for more than a thousand feet along its outcrop.

The hanging wall consists of a soft gray sericite mass with some pockets of kaolinized material.
The roughly rounded concretions vary from the size of a pea to 15 inches in diameter, and are imbedded in a soft brown mass of hydromica and finely subdivided manganese. Probably one-fifth, by weight, of the ore body, 7 feet wide, represents a superior hard ore which affords the following analysis: Manganous Oxide, 10.66 per cent.; Manganese Dioxide, 71.56 per cent.; Ferric Oxide, 2.07 per cent.; Phosphorus, 0.24 per cent.; Sulphur, 0.04 per cent.; Titanium, trace; Alumina, i. 76 per cent.; Silica, 2.59 per cent.; Equivalents Metallic Manganese, 53.50 per cent.; Metallic Iron, I. 45 per cent.
The soft brown mixed matrix, which probably represents onefourth of the mass, affords the following analysis. Manganous Oxide, 15.68 per cent.; Manganese Dioxide, 31.78 per cent.; Ferric Oxide, 6.22 per cent.; Phosphorus, 0.03 per cent.; Sulphur, trace; Titanium, trace; Alumina, 9.92 per cent.; Silica, 15.70 per cent.; Equivalents, Metallic Manganese, 32.24 per cent.; Metallic Iron, 4.35 per cent.

This affords an encouraging prospect for a good body of highgrade manganese ore, and it should be systematically explored in depth and along its lineal extent.
material: manganese. survey no. 2005.
Area: Savannah.
Sub-Area: Hard Labor Creek.
Location: Greenwood County; 4.7 miles south Greenwood.
OBS-Abbeville-York Zone. Several shallow pits exhibit a probable extension of the manganese vein described under Survey No. 2050.

MATERIAL: MANGANESE. SURVEY NO. 2050.
Area: Savannah. Sub-Area: Cuffey Town Creek Branch. Location: Greenwood County ; Burnet \& Devore place, 2 miles west Breezewood.
OBS-Abbeville-York Zone. The mica slates of this locality have been penetrated by a vein of manganese ore, which extends N . $19^{\circ}$ E. across numerous properties. Two shallow test pits on the Burnet property exhibit a vein between 5 and 6 feet wide, samples of which afford the following analysis: Manganous Oxide, 18.54 per cent.; Manganese Dioxide, 39.77 per cent.; Ferric Oxide, 4.63 per cent.; Phosphorus; o.07 per cent.; Sulphur, trace; Titanium, trace; Alumina, 10.84 per cent.; Silica, $\mathbf{1} 2.63$ per cent ; Equivalents, Metallic Manganese, 39.50 per cent.; Metallic Iron, 3.24 per cent.

[^5]MATERIAL: MANGANESE.
Area: Santee.
Location: Spartanburg County; Wofford Property, 8 miles south of Glenn Springs.
OBS-Anderson-Spartanburg Zone. The country rock here, consisting of highly decomposed gneissoids, hornblende, and biotite slates, exposes a stratum affording a highly siliceous ore of manganese (pyrolusite) portions of which have been leached out and deposited in limited pockets of a good grade of botryoidal manganese (psilomelane). Analysis of the pyrolusite: Manganous Oxide, 23.13 per cent.; Manganese Dioxide, 1.85 per cent.; Ferric Oxide, it. 06 per cent.; Phosphorus, 0.04 per cent.; Sulphur, trace; Titanium, 0.43 per cent.; Alumina, 13.42 per cent.; Silica, 45.70 per cent.; Equivalents, Metallic Manganese, 19.09 per cent.; Metallic Iron, 7.74 per cent. MATERIAL: MANGANESE. SURVEY NO. 6285.
Area: Santec.
Sub-Area: Broad River Branch. Location: Cherokee County; Smith Mt. manganese; I. 2 miles southwest of Branch Railway at Cherokee Ford.
OBS-Abbeville-York Zone. A highly siliceous band of manganese, about 8 feet wide, occurs about 0.5 miles east of Smith Mt. This manganese contains: Manganous Oxide, I4.II per cent.; Manganese Dioxide, 6.7 I per cènt.; Ferric Oxide, 13.88 per cent.; Phosphorus, o. 06 per cent.; Sulphur, o.06 per cent.; Titanium, trace; Alumina, 14.72 per cent.; Silica, 43.94 per cent.; Equivalents, Metallic Manganese, 15.17 per cent.; Metallic Iron, 9.71 per cent.
material: manganese slates. survey no. 6434.
Area: Santee. Sub-Area: Broad River; King's Creek. Location: York County; 3.8 miles east of Grover; 0.5 miles west of Hambright Gap.
OBS-Abbeville-York Zonf. The road exposes about 120 feet of slates impregnated and intercalated with manganese ores; selected specimens afford about 50 per cent. of metallic manganese.
material: manganese (bog ore). survey no. 7 l 80.
Area: Santee. Sub-Area: Catawba River Valley. Location: Fairfield County ; Davis place; 4 miles S. $27^{\circ} \mathrm{E}$. of Catawba Junction.
OBS-Abbeville-York Zone. The surface at this locality affords extensive exposures of a mixed bog ore, or "wad."

IRON.
Iron ores occur in bodies of subordinate importance irregularly distributed throughout the Crystalline Region, and to a limited extent in the Eocene formations of the Coastal Plain. The ore-bodies of economic susceptibilities occur principally in the Cherokee Zone, in the Anderson-Spartanburg Zone, and in the Abbeville-York Zone. Where the hematites prevail the dip of the strata varies from approximately flat to highly inclined; where the specular ore prevails the strata are pitched at high angles; where the principal magnetites prevailthe strata are greatly contorted.

Cherokee Zone-The principal iron ores in this zone are of three classes: Hematites; Specular Schists; Segregated Magnetites.

While numerous bodies of iron ore in this zone occur in sedimentary rocks, there are no iron ore beds of unquestioned sedimentary origin. Highly foliated rocks of probable sedimentary origin infold numerous beds of intercalated specular schists (including Lieber's itaberite), which were derived from pyrite of uncertain origin; many of these ore beds grade to pyrite, with perhaps some pyrrhotite below the valley lines. Lieber reports that at one of these localities (Sur. No. 6373 ) barytes is intercalated with the schists.
I. About one-half mile northwest of, and parallel to, the main limestone outcrop an irregular and interrupted belt of iron ore occurs which chiefly comprises hematites intercalated with fine grained mica schists. While observed at numerous points along this line the Hardin ore bank, which comprised red hematite, is the only observed ore bed of even modest prominence; it strikes N. $60^{\circ}$ E., and dips $40^{\circ} \mathrm{N}$. W.; it skirts the base of Whitaker's ridge and is included in the northwesterly monocline of the Kings Mt. uplift.
II. Specular Schists-Specular schists, infolded by mica schists, occur in several highly tilted zones, some of which attain the thickness of 40 feet along the strike of a series of rocks probably 1,500 feet wide. The associate rocks, in addition to the white, yellow, pink, and brown quartz-mica schists; which embody extremely fine grained quartz, and which weather slightly friable, comprise dark and disty green hard slates with strikes varying from N. $43^{\circ}$ to N. $63^{\circ}$ E., and dips ranging from $56^{\circ}$ to $70^{\circ} \mathrm{S}$. E. They are limited on the northwest by a foliated green gneissoid rock enclosing pyrite, etc.

The specular ore extends northeasterly about 7 miles along a zone parallel to, and east of the Catawberite belt ; the two being one-half mile apart. This zone crosses Broad River immediately south of the mouth of Doolittle Creek, and thence proceeds beyond People's

Creek, where the strike curves from southwest to northerly, which change in strike is maintained by the associate strata several miles along the western side of People's Creek, in a belt about i. 2 miles wide. This northerly curving of the strata appears to represent the terminal southwesterly expression of the Kings Mt. uplift, which was probably caused by a vast uplifting force, the more prominent effects of which extended from People's Creek northeasterly along the line of the Blacksburg valley.

The specular schist consists of scales of specular iron mixed with subordinate magnetite grains, and intercalated with a very fine grained mica schist, which becomes friable on exposure. When the scales of the iron ore are small the texture is granular and the color iron gray; it comprises a small amount of magnetite. Where the scales are large the gray becomes darker and assumes a silvery lustre. Very little magnetite is present in macroscopic form.

Lieber predicated a distinction on the relative amounts of specular iron and magnetite present in an ore; where the former prevailed he designated the ore-bodies specular schists, where magnetite prevailed he denominated the ore mass itaberite. The itaberite comprised mixtures of magnetite with subordinate specular iron, and a little quartzose matter; texturally it is granular, structurally schistose; it is decidedly magnetic. The color of a freshly fractured surface is gray, in the streak, red. The general color of the mass is brown and red above the valley line, and red below. Some of these beds have been observed grading to pyrite, with perhaps some pyrrhotite below the valley levels. Along the approximate line separating the magnetites from the specular schists, about 1.2 miles southwest of Blacksburg, a recently dug well exhibits the following gneissoid rock: - "Color, dull green-gray. Fine uniform grain with foliated structure; breaks with a flat fracture. Abundant inclusions of cubeoctahedrons of pyrite. In thin section: Quartz in angular grains. Abundant chlorite; apparent alteration product of biotite; in ragged, shredded flakes and aggregates wrapping around the harder minerals; green, weakly pleochroic ; contains extremely minute grains of magnetite in abundance. Feldspar constituent of this gneiss is a much granulated acid plagioclase, free from weathering; includes apatite."

Segregated Magnetite-The segregative beds appear to have been derived from the aqueo-igneous alteration of a vast intrusive mass of ferro-magnesian rock, possibly pyritic, the southerly exposure of which is approximately delimited by Pcople's Creek. From this
point it is traceable northeasterly about 5 miles, crossing the Broad River above Cherokee Ford, and about 3,500 feet south of and parallel to the line of outcrop of the principal limestone formation; northeast of Blacksburg this magnetite formation becomes obscure. It consists of lenticular bodies of magnetite crowded in chloritic schists, pitched at high angles, attaining in places the width of 30 feet and extending to depths as yet undetermined. The sorted ore in large lots exceeds 50 per cent. of metallic iron, and is free from objectionable association excepting in the matter of the magnesian gangue, which adds somewhat to the difficulties of fluxing. The exposures of this ore adjacent to the Broad River are the most prominent and most favorably situated for development.

The original basic ferro-magnesian rock and its inclusions have been resolved into three main forms, to wit:
(a) Greatly contorted dark gray-green schist, with submetallic lustre, (Silica, 30.56 per cent.; Alumina, 13.70 per cent.; Magnesia, 31.32 per cent.; Ferric Oxide, 3.48 per cent ; Ferrous Oxide, 3.98 per cent.; etc.). In some localities this chlorite schist consists of flakes of chlorite arranged with the parallelism affording fissility; in the other localities the chlorite appears under the microscope as a matted mass of parallel shreds, inclosing magnetite in irregular grains. Epidote, garnet, and limonite occasionally occur as accessories.
(b) The iron has been separated in clustered grains of magnetite segregated in large lenticular masses in eschelon, and in other forms of irregular distribution.
(c) Irregularly distributed bunches of asbestos (Silica, 56.62 per cent.; Magnesia, 23.37 per cent.; Lime, I3.16 per cent.; Ignition, i. 62 per cent.), attain the occasion diameter of 2 feet.

These magnetite ores aggregate large quantities of high-grade iron; the amount of gangue matter involved in the mining of these ores, and the necessity for sorting or other concentration, involve serious items of cost, as against which their otherwise very highgrade must perforce prevail upon the exhaustion of the high-grade steel ores in other sections.

The magnetic ore, or Catawberite, afforded a peculiarly superior iron, close grained and soft, yet tough, which was extensively employed in the manufacture of the Confederate ordnance. Furnaces and rolling mills were operated for this purpose adjacent to the Cherokee Ford on the Broad River. Specular ore was also employed in mixtures and alone for the production of superior pig metal for
castings. Itaberite, a low-grade arenaceous magnetite, also afforded good pig metal for castings.
Anderson-Spartanburg Zone.
Two miles north of Gaffney, beds of brown hematite ores occur in peckets in mica slates associated with much clayey matter. The available ore, which was quite shallow, was freely drawn upon by the old Cowpens and Pacolet furnaces. The mica slates strike northeast and dip southeast. These beds find their counterpart about 6 miles north of Gaffney, where slates with similar strike dip to the northwest, indicating a former intermediate anticline whose crest has been degraded, thereby exposing the upturned edges of the strata, consisting of hornblende and mica slates including much pegmatite. Monazite occurs between Gaffney and Thicketty Ridge in the pegmatites and fine mica schists, intermediate to the two zones which carry the hematite ores.

A promising prospect of hematite occurs in Anderson County 1 mile west of Starr (Sur. No. 1378).

## Abberille-York Zone.

Hematites and magnetites occur in this zone.
The principal bodies of magnetite represent extensive segregated deposits in the basic eruptives, notably in Abbeville (Sur. No. 1858). This magnetite contains too much titanium to be available as an iron ore in the present light of technical knowledge. Numerous narrow veins of magnetite occur, but they are generally high in titanium (Sur. Nos. 1720, 1765).

Hematite occurs in subordinate deposits at many localities. Nanny's Mt., in York, contributed its ores to small furnaces during the Eighteenth Century. The ore consists of the eisenhut of an extensive bed of pyrrhotite (Sur. No. 7030). Near Wolfe Creek the McCaw property exhibits a promising bed of compact crystalline hematite of an excellent grade (Sur. No. 6470).

## The Uses of Iron.

Many of the very extensive uses of iron are too generally known to require enumeration.

The pure red oxide has attained great prominence in its connection with "thermit." Pigments : Indian-red, Venetian- red, minimum, metallic paint and ochre grade from pure oxide of iron to mixtures containing as low as 33 per cent. Red ochre consists of red hematite mixed with clay. Yellow ochre consists of limonite (yellow oxide) mixed with clay. Umber and Sienna represent ochres with the natural or artificial mixture of oxides of manganese.

In various combinations iron affords numerous salts, which are used in dyeing and calico printing, such as Prussian blue, Antwerpblue, Leitchs-blue, Alexandria-blue.
The sulphate of iron, or copperas, is employed as a mordant in dyeing and calico printing; in the manufacture of ink; as a disinfectant; in the precipitation of gold.
Iron constitutes the base of various pharmaceutical compounds, and laboratory reagents.
Scrap metallic iron is used for precipitating metallic copper from its solutions.

The principal impurities which prejudice the value of some of the South Carolina iron ores are sulphur, phosphorous, and titanium.

$$
\text { MATERIAL: IRON. SURVEY NO. I } 378 .
$$

Area: Savannah. Sub-Area: Weem's Creek Branch.
Location: Anderson County; I mile west of Starr.
Address of Owner or Representative (?): W. A. Hewin, Starr, S. C.

OBS-Anderson-Spartanburg Zone. This body of iron ore is associated with gneissoid and micaceous slates overlying hard biotite slates; the hanging wall side of the iron body comprises a sintery quartz with much iron, and quartz in pink granules. The outcrop is traceable nearly 2 miles, varying in strike from N. $40^{\circ} \mathrm{W}$. to N. $15^{\circ}$ E. The ore body consists of slates infolding irregular nodules and masses of brown hematite mixed with some red hematite; it appears to be more than a hundred feet in width on the Hewin place, but pinches and enlarges in the manner characteristic of brown ore beds. The ore also shows in variable degrees across the respective properties of Wm. Hardin and John Brown, north of the Hewin property.

Chemical Analysis-Metallic Iron, 53.46 per cent.; Titanium, trace; Sulphur, o.06 per cent.; Phosphorus, o. 85 per cent.; Silica ( SiO 2 ), 5.95 per cent.
Excepting the iron ore beds in Cherokee and York Counties, this is the most prominent iron deposit observed in this State.

## material: iron. SURvey no. i633.

Area: Savannah. Sub-Area: Seneca Riv.; 18-Mile Crk. Br. Location: Pickens County; i mile north of Easley. Address of Owner or Representative (?) : W. A. Hamilton, Easley, S. C.

OBS-Float ore affords the following analysis-Metallic Iron, 67.82 per cent.; Metallic Manganese, 0.88 per cent.; Phosphorus, 0.06 per cent. ; Silica, i. 20 per cent. ; Titanium Dioxide (Ti O2), 2.80 per cent.

$$
\text { MATERIAL: IRON ORE (MAG). SURVEY NO. I } 720 .
$$

Area: Savannah. Sub-Area: Seneca River; 26 -Mile Crk. Location: Anderson County; Smith property; 3.2 miles N. $55^{\circ}$ E. of Denver.
Address of Owner or Representative (?) : Whit. Smith, Denver, S. C.

OBS--Tyger Zone. The mica slates of this locality afford sundry veins of magnetic iron; the widest observed did not exceed 18 inches in width, but was of persistent outcrop.

Analysis-Metallic Iron, 62.63 per cent.; Titanium, 4.74 per cent.; Phosphorus, 05 per cent.; Sulphur, . 05 per cent.; Silica, r. 69 per cent. Contains traces of manganese, calcium and magnesium.

> material: iron. SURVEY no. i728.

Area: Savannah. Sub-Area: Seneca Riv.; 26 -Mile Crk. Location: Anderson County; Centreville; 2.6 miles S. $50^{\circ} \mathrm{W}$. of Denver.
OBS-Tyger Zone. Brown ore in pockets enclosed by mica slate were mined here during very remote times for the primitive production of iron on a small scale. The deposits do not appear to have been extensive, but the old workings are in such shape as to preclude any competent opinion as to extent. which apparently was small.
MATERIAL: MAGNETIC IRON. SURVEY NO. I765.

Area: Savannah. Sub-Area: Rocky Riv.; Governor's Crk. Location: Anderson County; 5 miles south of Anderson; 0.5 miles west of "Generals" Road, on western scarp of Beaver Creek.
Address of Ower or Representatice (?): Thomas Drake, Anderson, S. C.
OBS-Anderson-Sp.artindurg Zone. This magnetic ore was formerly utilized at the Centreville Iron Mills. It appears in superficial hydromica slates in a vein about 2 feet thick. Psendomorphic forms suggest that this ore might pass into pyrite below the water line. Its outcrop is observable nearly 600 feet along the strike. Analysis of Surface ()re-Metallic Iron, 61.56 per cent.; Titanium, 5.70 per cent.; Phosphorus, o.o6 per cent.; Sulphur, 0.07 per cent.; Silica, 1.74 per cent.

MATERLAL: IRON AND COPPER. SURVEY NO. 1858.
Area: Savannah. Sub-Area: Little Riv.; Sawney Crk. Location: Abbeville County; i.1 miles N. $66^{\circ}$ E. of Calhoun Falls. Address of Owner or Representative (?): Calhoun Falls Land and Improvement Co., Anderson, S. C.
OBS-Abbeville-York Zone. This locality comprises highly metamorphosed igneous rocks characteristic of the "flat woods" section. These rocks afford bold and extensive veins of a lively quartz carrying in some places pyrite, and in others chalcopyrite. Analyses show the former to contain small values in gold, and selected samples of the chalcopyrite contain 4.32 per cent of copper. The igneous mass, rich in pyroxene, now altered to serpentine, appears to have undergone a magmatic segregation of the magnetite and ilmenite in grains and in limited individual masses along certain zones. This ore is very high in titanium, as is exhibited by the appended analysis.

This character of deposit interruptedly occurs along the Sawney Creek ridge. A sample of the iron ore afforded: Metallic Iron, 58.28 per cent.; Metallic Manganese, I.I8 per cent.; Titanic Acid, 11.57 per cent.; Silica 3.64 per cent.; Phophorus, 04 per cent.

## material: iron. Survey no. i860.

Area: Savannah.
Sub-Area: Sawney Creek.
Location: Abbeville County.
Extension of Norwood Iron (Sur. No. 1858).

$$
\text { MATERIAL: IRON. SURVEY NO. } 1905 .
$$

Area: Savannah. Sub-Area: Long Cane Crk.; Goose Crk. Location: Abbeville County.
Address of Ozencr or Representative (?): G. T. Smith, Donalds, S. C.

OBS-Limited exposure of float ore afforded the following analysis: Metallic Iron, 42.94 per cent.; Metallic Manganese, trace; Phosphorus, o.04 per cent.; Sulphur, trace; Silica and Insoluble matter, 23.76 per cent.; Water and Volatile matter (ignition), i3.60 per cent.

$$
\text { MATERIAL: IRON. SURVEY NO. } 5 \text { I4O. }
$$

Area: Santee
Sub-Arca: Saluda River.
Location: Greenville County; Gov. Mauldin place ; 2.5 miles west of Greenville.
Address of Ozener or Rcpresentative (?): Wash Roseman estate, Greenville, S. C.

OBS-Tyger Zone. This region of mica "slates affords a bold zone, about 80 feet wide, of arenaceous slates impregnated and intercalated with a red iron ore (hematite), which strikes N. $30^{\circ}$ E. along a continuous outcrop 800 feet. As exposed at the surface, this ore is highly siliceous. Mere superficial prospecting appears to have been done at this locality at some remote time. This ore analyzesMetallic Iron, 49.85 per cent.; Silica, 10.00 per cent.; Sulphur, o. 1 I per cent.; Phosphorus, 0.32 per cent.; Titanium (trace).

MATERIAL: IRON. SURVEY NO. 5143 .
Area: Santee.
Sub-Area: Reedy River.
Location: Greenville County; I.I miles southwest of Greenville Courthouse.
Address of Owier or Representative (?) : Mrs. Joseph M. Jenkins, Greenville, S. C.
OBS—Tyger Zone. Highly siliceous slates, approximately on end, expose pockets of a limonitic ore on the crest of a hill immediately adjacent to a branch, across which these rocks strike; the valley line affords no evidence that these pockets are other than purely superficial. Ore from this deposit was used at some remote period for the primitive manufacture of iron for neighborhood uses.

$$
\text { MATERIAL: IRON. SURVEY NO. } 5590 .
$$

Area: Santee.
Sub-Area: Saluda River Branch.
Location: Newberry County; 2 miles south of Columbia-Laurens Railway (A. C. L. R. R.) station, Prosperity.
Address of Owner or Representative (?): J. B. Dennis, Prosperity, S. C.

OBS-Float iron ore contains-Metallic Iron, 56.69 per cent.; Manganese, 0.58 per cent.; Phosphorus, 0.06 per cent.; Silica 10.60 per cent.

MATERIAL: IRON. SURVEY NO. 5915.
Area: Santee.
Sub-Area: Fair Forest Creek.
Location: Spartanburg County; Murphy place; 1.5 miles south Rich Hill.
OBS-Anderson-Spartanburg Zone. Hematite occurs in thin layers intercalated with mica slates. The zone extends from near Rich Hill to Fair Forest Creek, south of Foster's Mill. It attains the width of 500 feet ; but no concentrated bodies of ore have yet been observed.

MATERIAL: IRON. SURVEY NO. 6215.
Area: Santee.
Sub-Area: Cherokee Creek.
Location: Cherokee County ; North Thicketty Iron; 6 miles N. $35^{\circ}$ W. of Gaffney.

OBS-Anderson-Spartanburg Zone. The gnarled, shaggy mica slates which extend along the surface of the northerly side of Thicketty Ridge infold brown and red hematite ores imbedded in a clayey matrix. The ore is confined to a more or less interrupted series of pockets along the zone of outcrop of the mica slate ; the latter bears a northwesterly dip.
The individual ore-bodies were not extensive, and do not appear to have afforded a good grade of pig iron. The axis of the Thicketty anticline extends (N.E.x S. W.) along the southerly foot-line of the Thicketty Ridge; or about 5.2 miles north of Gaffney, within which area the dip is southeasterly.

The iron-bearing slates appear about 2 miles north of Gaffney. A shallow body of these slates form an unconformable syncline, the underlying schists and slates being on end; the occurrence is too limited to warrant generalization. The ore at Sur. No. 6217, which occurs near the old Cowpens battle ground, is a southwesterly extension of Sur. No. 6215 , and is similar in character. This iron-bearing formation is interruptedly traceable as far southwest as Fair Forest Creek (Sur. No. 5915).
material: iron.
SURVEY NO. 6235 .
Area: Santee.
Sub-Area: Cherokee Creek. Location: Cherokee County; Blockley Ore Bank; 3 miles N. $80^{\circ}$ E. of Gaffney.
obS-Cherokee Zone. A series of partly obscured pits extend over a half mile along the outcrop of gray-green mica schists altered to sericite forms. Instructive exposures are limited, therefore no opinion was formed as whether this ore represented a magnetic ore derived from pyrite, or a segregation form derived from the hornblendic rocks. The best ore is said to have appeared at a depth of 7 feet.

$$
\text { MATERIAL: IRON. SURVEY NO. } 6253 .
$$

Area: Santee.
Sub-Area: People's Creek.
Location: Cherokee County; Ellen Furnace Ore Bank; 800 feet west of People's Creek, and 300 feet north of Nesbitt Spring Creek; $3^{1 / 4}$ miles S. $87^{\circ}$ E. of Gaffney.

OBS-Cherokee Zone. While the specular schists west of People's Creek were somewhat lifted and rifted by the southwest shoulder of the Kings Mt. uplift, the displacement was not sufficient to rend them widely atwain, and consequently they do not expose the underlying magnesian magnetites which the anticlinal rupture and degradation northeast of People's Creek expose for several miles. The Ellen, Jackson and Critses Ore Banks, which extend along the ridge west of People's Creek, represent the line of outcrop of the specular schists with their strike, thus varying through a curve of approximately $180^{\circ}$.

At the Ellen Ore Bank the strike is approximately north, with a very flat dip, the hanging rock is convoluted with various strikes and dips. The ore consists of hematite mixed with a little magnetite in layers intercalated with siliceous slates, aggregating the thickness of 3 to 6 feet.

The ore has been rudely stopped to a limited extent. It does not average very high in iron, but the records indicate that it afforded a good grade of cast iron.
material: iron. survey no. 6257.
Area: Santee.
Sub-Area: People's Creek.
Location: Cherokee County; Critses Ore Bank; 0.5 miles southwest railway at Cherokee Ford.
OBS-Cherokee Zone. The mica schists infolding-specular ore, hematite and some magnetite occur irregularly intercalated with foreign matter at this locality. The outcrop exposes an aggregate of approximately 6 feet of these iron ores, which have been stripped through a trench about I 5 feet deep, for approximately $\mathrm{I}, 000$ feet along a northwesterly strike.

A shaft on the hanging wall side intercepted 6 feet of ore at a depth of 60 feet.
Lieber indicates that the ore-body at the Jackson Bank (now obscured). which was situated between the Ellen Furnace and the Critses Ore Banks, was highly pyritic and consequently abandoned.

$$
\text { material: iron. survey no. } 6280 \text {. }
$$

Area: Santee. Sub-Area: Western Scarp Broad River. Location: Cherokee County; River ()re Pank; o. 3 miles north of branch railway at Cherokee Ford.
OBS-Cherokee Zone An open cut, beginning about iso feet frorn the west bank of Broad River, extends for approximately

1,000 feet S. $55^{\circ}$ W., with its bottom about 20 feet above the zero water level of said river. The average depth is about 18 feet. It exposes disseminated grains and aggregations of grains of magnetite which assume a slightly purple tint where very compact. The matrix consists of an unctuous rock, the apparent equivalent of the magnesian form described under Sur. No. 6340.

The ore mass exposed is not exceeding 20 feet in width, of which the matrix constitutes a very largely preponderating part. This zone constitutes a pronounced ridge which extends southwesterly to People's Creek, along which line numerous pits have been sunk, and the surficial ore removed.
material: iron. survey no. 6340 .
Area: Santee.
Sub-Area: Eastern Scarp of Broad River. Location: Cherokee County; $11 / 4$ miles north of branch railway at Cherokee Ford; Black No. 2.
Address of Owner or Representative (?): John Black estate.
obs-Cherokee Zone. The prominent body of magnetic iron ore, designated by Mr. Lieber "Catawberite," occurs parallel to and about 3,500 feet southeast of the line of outcrop of the prominent limestone bed. The average strike of the magnetic ore-bodies, as exhibited east of the Broad River, in Cherokee County, is approximately N. $60^{\circ}$ E., with a very steep, variable dip. The magnetite, as exhibifed at Black No. i and No. 2, No. 3, No. 4, and No. 5, and at the Lee and Parker Iron Ore Banks, is associated with chlorite schists and talcose matter presumably derived in common with the magnetite from the aqueo-igneous metamorphism of a hold. igneous intrusion of a basic rock high in contents of iron and magnesia, and perhaps more or less pyritic.
At Black No. 2, about 0.2 miles southeast of the highway bridge over Broad River, and about 15 feet above the brook at the base of the adjacent steep hill, an open cut 30 feet wide has been driven into the hillside 50 feet ; the inner 40 feet has been excavated to feet below the level of the mouth of the cut, and exposes a 35 -foot face.
The formation at this place has been greatly disturbed, deformed and twisted southerly; in which direction the immediate inclosing country rock appears to converge, wedge-like. At the mouth of the pit occurs a mass of dirty gray siliceous rock against which rests a dark green chloritic schist about 14 feet thick, which carries some magnetite; the plane of schistosity strikes N. $66^{\circ} \mathrm{W}$., and dips $33^{\circ}$ N. $24^{\circ}$ E. This schist graduates through a less foliated form to a
mass of dark gray-green schist with submetallic lustre, which is 16 feet wide, and which incloses bodies of magnetite, some of large dimensions, but a great deal in the form of disseminated grains.

Analysis of selected iron ore from No. 2.

|  | (A) | (B) | (C) |
| :---: | :---: | :---: | :---: |
| Metallic Iron. | 6 r .86 | 65.82 | 65.89 |
| Manganese. | 0.16 | 0.72 |  |
| Sulphur. | 0.008 | trace |  |
| Phosphorus. | 0.026 | 0.007 |  |
| Titanium. | None | 0.392 |  |
| Silica. | 5.82 | 3.12 | 4.84 |
| Alumina. | 5.03 | 0.73 |  |
| Lime. | trace | 0.152 |  |
| Magnesia. | o. 373 | 3.15 |  |
| Loss on Ignition. | 0.231 | 0.13 | 0.00 |

Analyst (A), Pratt, J. H.; (B), Salom \& Westesson; (C), Froehling, Dr. H.

The inclosing schist, as viewed in thin section, consists of a matted mass of parallel chlorite shreds, light green in color, very weakly pleochroic, clear and weakly polarizing. Magnetite occurs in irregular grains. The corresponding material at the Lee \& Parker Ore Bank afforded by analysis:

Lime, o. 88 per cent.; Magnesia, 31.32 per cent.; Alumina, 13.70 per cent.; Ferric Oxide, 3.48 per cent.; Ferrous Oxide, 3.98 per cent.; Titanic Oxide, 1.96 per cent.; Manganese Oxide, trace; Soda ( $\mathrm{Na2O}$ ), 0.41 per cent.; Potash (K2O), 0.15 per cent; Carbonic Acid (Co2), o. 53 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 0.20 per cent.; Silica (and insoluble), 30.56 per cent.; Ignition, 1 I 30 per cent.; Iron pyrites, 1.09 per cent. Total, 99.56 per cent.

At many points the magnetite occurs in bodies with diverse alignments, to the shape of which the schistose planes of the chlorite roughly conform; intermingled along sundry lines with the magnetite and chlorite we observe bunches of asbestos with long white fibres. This asbestos often appears in bodies I to $\mathbf{2}$ feet in diameter and 2 or 3 feet long.

Afforded following analysis: Lime, 13.16 per cent.; Magnesia, 23.37 per cent.; Alumina, .02 per cent.; Ferric Oxide, o. 55 per cent.; Ferrous Oxide, I. 38 per cent.; Titanic Oxide, o. 12 per cent.; Manganese Oxide, trace; Soda (Na2O), 0.58 per cent.; Potash (K2O),
0.12 per cent.; Carbonic Acid (Co2), 0.14 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 0.12 per cent.; Silica (and insoluble), 56.62 per cent.; Ignition, 1.62 per cent.; Iron pyrites, 0.92 per cent. Total, 99.72 per cent.

The apparent hanging wall of this 32 -foot mass of magnetitebearing chloritic schists consists of much decomposed dirty yellow slates. About 120 feet southeast of the open cut of Black No. 2, an old shaft has admitted to the surface masses, about 1.2 feet thick, of a snow-white dolomite, very compact and of fine texture. It breaks with a distinct cleavage, which is shown in thin section to be due to the dimensional arrangement of the grains, the longer diameters being evenly parallel. This dolomite analyses-Lime, 31.10 per cent; Magnesia, 18.90 per cent.; Alumina, 0.86 per cent.; Ferric Oxide, none; Carbonic Acid (Coz), 45.00 per cent.; Silica (and insoluble), 3.95 per cent.; Ignition, o.or per cent.; Moisture, o. 05 per cent. Total, 99.87 per cent.
This magnesian series of magnetic iron ores extends from People's Creek northeasterly by the Black series of ore pits to the Lee \& Parker (No. 2) Ore Banks, beyond which it proceeds less prominently developed towards the North Carolina line. It represents an enormous mass of high-grade iron ore, which, when separated from the gangue stuff, affords an ore of great purity.
At Black No. 2, where the formation is greatly contorted with a tendency to wedge southerly, a competent expression of the possibilities of this ore is denied. This body of magnetites, in common with other prominent occurrences in this State, has most probably resulted, as previously indicated, from an original igneous intrusive mass of rock largely constituted of ferro-magnesian minerals, which aqueoigneous action has caused to enter new forms, some of which have segregated into grains and lenticular masses of magnetite, while others have been indirectly altered to chlorite, asbestos, tremolite, etc., and segregated in respective zones or bunches. Subsequent dynamic action has greatly foliated the chloritic matter, and probably influenced the crystallization of the asbestos.

$$
\text { MATERIAL: IRON. SURVEY NO. } 6342 .
$$

Area: Santee.
Sub-Area: Doolittle Creek.
Location: Cherokee County; 2 miles N. $20^{\circ}$ E. of branch railway at Cherokee Creek.
Address of Owner or Representative (?) : John Black estate.

OBS-Cherokee Zone. Black No. i, No. 3, and No. 4 reproduce the general conditions exhibited at Black No. 2 (Survey No. 4340), of which they constitute the northeasterly extension for more than a mile along the outcrop. At No. I a pit about 35 feet long, by 20 feet wide, by il feet deep, exposes characteristic conditions, with the asbestos feature prominently developed.

Analyses of Iron Ore:

|  | Black <br> No. 1 . | Black <br> No. 3. | $\begin{gathered} \text { Black } \\ \text { No. } 4 . \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| Metallic Iron. | 58.87 | 59.99 | 48.36 |
| Phosphorus. | 0.009 | trace | trace |
| Sulphur. | None | None | None |
| Titanic Oxide. |  | None |  |
| Silica (and insoluble). (Anal., N. P. Pratt.) | 6.42 | 6.47 | 4.90 |

$$
\text { material: iron. SURvey no. } 6345 \text {. }
$$

Area: Santee. Sub-Area: Broad River Valley. Location: Cherokee County; Silver Mt. Ore Bank; o. 3 miles south of Cherokee Ford Station; 3 miles south of Blacksburg.
Address of Ozener or Representative (?): Cherokee Cotton Mill Company, Gaffney, S. C.
OBS-Cherokee Zone. The ridge immediately south of Doolittle Creek, where the latter enters Broad River, consists of a series of white, pink, red, and brown mica schists and quartz-mica schists, which strike N. $41^{\circ}$ E. and dip $65^{\circ} \mathrm{S}$. E. They include interfoliated masses of specular iron which in places attain the thickness of 40 feet. These specular schists extend along Doolittle Ridge northeasterly, approximately to the North Carolina line. They comprise the Doolittle, the (No. i) Lee \& Parker, and the Bird Ore Banks.

At the Silver Mt. Bank the ore is iron-gray in color, and affords a crimson streak. It consists of small scales and grains more or less interlaminated with thin quartzose matter. Some particles exhibit slight magnetism. Below the water line the ore is highly pyritic. At the (No. I) Lee \& Parker Bank Lieber reported the presence of barytes.

Proceeding across the river southwesterly these ores have been twisted around to the north along People's Creek Valley, and appear in sundry modified forms at the Critses, Jackson and Ellen Furnace Ore Banks.

MATERIAL: IRON.
Area: Santee.
Location: Cherokee County ; Lee \& Parker Ore Bank (2) ; 0.8 miles south of Gaffney.
OBS-Cherokee Zone. The magnetic-bearing chloritic schists pass about 0.6 mile southeast of Blacksburg. The present condition of the old workings does not admit of comprehensive examinations. The character of this ore body is treated under the Black Ore Bank (Sur. No. 6340).
material: iron. survey no. 6373.
Area: Santee.
Sub-Area: Doolittle Creek.
Location: Cherokee County; Lee \& Parker Ore Bank (No. 1) ; 1.4 miles southeast of Gaffney.
OBS-Cherokee Zone Mica schists infolding specular iron occur at this locality, striking N. $47^{\circ}$ E. and dipping about $60^{\circ}$ S. E. Lieber reports that this ore assumes pyritic form at a depth superior to 60 feet, and that at this depth barytes appear intercalated with the schists. He also indicates the existence of a dike of diorite in the immediate vicinity.
material: iron. survey no. 6405 .
Area: Santee. Sub-Arca: Broad River; Kings Crk. Br. Location: Cherokee County; o.1 mile east of Atlanta-Charlotte railway (S. R. R.) ; 3.5 miles northeast of Blacksburg. Address of Owner or Representative (?): T. C. Hardin, Blacksburg, S. C.
OBS-Cherokee Zone. This tract comprises about 43 acres. Mica schists, impregnated with iron, now in the form of hematite, extend in prolongation of the Whitakers Ridge, N. $60^{\circ}$ E., with a $\operatorname{dip} 40^{\circ} \mathrm{N}$. W. The iron zone rests against a stratum of very hard mica slate; while the impregnation is continuous the degree of impregnation is very variable. A series of pits interruptedly extends along the outcrop exposing a width of approximately 18 feet.
The hanging wall consists of mica schists over which successively appear a quartz-mica schist and a highly feldspathic rock, which weathers to a fine clay. This clay is mined about 150 feet northwest of the outcrop of the ferruginous slates.

MATERIAL: IRON.
Area: Santee. Location: Cherokee County; Bird's Bank Iron Ore; 2.5 miles south of Grover:
OBS-Cherokee Zone Mica schists infolding specular iron ore were prominently exposed at this locality. At the depth of 20 feet the ore became highly pyritic. This ore body was worked through a series of large shallow pits.

## material: iron. survey no. $6470+$ A.

Area: Santee.
Sub-Area: Broad River; Wolf Crk. Location: Cherokee County; McCaw place; i. 5 miles south of New London Station.
Address of Owner or Representative (?) : Hon. W. B. McCaw (for R. Terry), Yorkville, S. C.

OBS-Abbeville-York Zone. The sericite schists of this locality, near the McCaw Gold Mine, inclose a vein of partly crystalline hematite mixed with a little magnetite. While the ore irregularly appears in the inclosing schists, the main ore-body is about 6 feet wide and of an excellent grade.

Average samples extracted from a number of test pits afforded the following analyses (by Dr. Froehling.) :

| Samples, | Width, <br> No. | Deet. <br> Fepth, | Silica | Metallic <br> Feet. |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| I | 6 | Pit | 15.94 | 59.10 | Phos- <br> phate. |
| 2 | 6 | Pit | 20.72 | 54.85 | 0.022 |
| 3 | I.3 | Pit | 20.68 | 54.05 | 0.035 |
| 4 | 11.0 | 7 | 23.16 | 50.79 | 0.031 |
| 7 | 10.0 |  | 10.64 | 64.00 | 0.055 |
| 9 | 6 | 30 | 5.80 | 65.64 | 0.015 |
| 10 | 6 | 30 | 4.94 | 67.71 | 0.012 |

Titanium none.

This ore is substantially in line with the neighboring Carroll \& Ross body of pyrite exposed in the bed of a branch of Wolf Creek. The ore was probably derived from the alteration of pyrite.

MATERIAL: IRON.
SURVEY NO. 7030.
Area: Santee.
Sub-Area: Allison's Creek.
Location: York County; Nanny's Mt.; 5.8 miles north of Southern Railway; I I miles northeast of Yorkville.
Address of Ouner or Representative (?): Johni R. Hart, attorney, Yorkville, S. C.
OBS-Abreville-York Zone This property comprises 120 acres, embracing the ridge of Nanny's Mt., along which extends, from the valley line to the crest, a comb of quartzitic mica slate (strike N. $19^{\circ}$ E., with a steep dip to the S. E.). From the northern valley line, in contact with this core of quartzite, a bold outcrop of gossan (iron ore derived from pyrrhotite), is intermittently exposed southwesterly for about 4,000 feet, in which distance the elevation increases 220 feet. The hanging wall side of the mountain inclines abruptly. A bold dike of diorite appears northeast of the mountain, separating the hard mica slates from the decomposed biotite and hornblende slates and gneissoid rocks, whose northeasterly extension comprises the corundum deposits, No. 7025 (I.5 miles distant).

Beginning on the ridge opposite Nanny's Mt., immediately northeast of the valley line, the iron makes its appearance as a brown ore in decomposed hydromica slates contiguous to and west of the dike. This ore was the main source of supply of two small furnaces from 1760 to 1820 . Proceeding towards Nanny's Mt., a ravine exposes, in a shallow pit, pyrrhotite in a vein varying from 3 to 6 feet in width; the enclosing quartzitic mica slates are impregnated with similar material. Ascending the Nanny's Mt. Ridge along a horizontal distance of about 3,400 feet, and 210 feet above the pit, a hard gossan appears with an average width of about 6 feet. It occurs between the hard quartzitic mica slates and has been mined and utilized for the manufacture of iron. From the eastern side of the mountain, near its base, 3 core holes were cut at an angle of about $45^{\circ}$. These revealed solid pyrrhotite from 40 to 50 feet thick. (For the latter information I am indebted to Mr. Fred Oliver, under whose direction these cores were extracted.) Analysis made by Messrs. Ricketts \& Banks afforded the following returns:

The brown ore imbedded in decomposed hydromica slates at the northerly extremity. Silica, 1.73 per cent.; Phosphorus, 0.006 per cent.; Sulphur, 0.045 per cent.; Iron, 68.24 per cent. Hard ore from crest of Nanny's Mt. Silica, 3.63 per cent.; Phosphorus, 0.30 per cent. ; Sulphur, I. 89 per cent. ; Iron, 68.24 per cent.

The disturbance occasioned at Nanny's Mt. has caused a local deflection of the strike; thus north of Nanny's Mt. the strike is N . $29^{\circ}$ E. ; along Nanny's Mt. it is N. $19^{\circ}$ E., and south of Nanny's Mt. the strike resumes N. $29^{\circ} \mathrm{E}$.

## PYRITE OR IRON PYRITES.

## Uses of Pyrite or Iron Pyrites.

Formerly pyrite was extensively used in the manufacture of sulphur, which was thus further used in the manufacture of gunpowder and matches, and as an insecticide.

Principal consumption now afforded in the manufacture of sulphuric acid. The residual cinder affords an acceptable iron ore when the sulphur is reduced to less than I per cent.; also ground to afford a crude pigment ; abusively used as a "filler" in the manufacture of commercial fertilizers.

$$
\text { MATERIAL: PYRITE. SURVEY No. } 6468 \text {. }
$$

Area: Santee. Sub-Area: Broad River; Wolf Crk. Location: York County ; Carroll \& Ross property; 1.75 miles southwest of New London.
Address of Ower or Representative ( ?) : Carroll \& Ross, Gaffney, S. C.

OBS-Abbeville-York Zone. In the bed of a branch, south of Wolf Creek, a vein of pyrite is exposed (strike northeasterly, dip $55^{\circ}$ southeasterly). A shallow pit reveals the width of the vein varying from 4 to iI feet. The ore is siliceous. An analysis afforded silica (and insoluble matter) 15.72 per cent.; Metallic Iron, 40.01 per cent.; Sulphur, 42.47 per cent.; Moisture at $100^{\circ} \mathrm{C}$., o. 13 per cent. This ore apparently represents the pyritic form into which many of the iron deposits of Cherokee County graduate with depth.

## PART II.

## CRYSTALLINE REGION, ECONOMIC AND INDUSTRIAL NON-METALLIC GROUP.

## SERPENTINE, SOAPSTONE (STEATITE).

These successive products of alteration of magnesian rocks occur variably distributed over the crystalline region from the fall line to the mountain-tops, wherever the magnesian eruptive rocks have been extruded, and exposed to appropriate metamorphic influences.
A great number of these bodies appear to have resulted from the alteration of pyroxenite. In the Chatooga and Saluda Zones alteration of the peridotes affords the main occurrences of soapstone, of which some masses have graded to chlorite schist. (Sur. No. 1517 and others).
The alteration of pyroxenite through amphibolite to serpentine and soapstone has afforded the prevailing number of bodies of soapstone, notably in the Abbeville-York zone, where extensive masses occur (Sur. No. 1856 and others). In many cases the alteration has been largely confined to the superficial parts of the rock body; in others the change has extended deep and over areas of several acres.
The quarrying of these materials in South Carolina has been confined to supplying neighborhood domestic uses.

Uses of Serpentine, Soapstone, Talc.
For decarative purposes; variety denominated "verde antique" is in good demand, especially for interior artistic purposes.
A gray variety is extensively worked into electric switchboards, wash tubs, sinks, table slabs, etc.
The bulk of this material is ground to a fine pulp and utilized as a sizing for wood-pulp papers; also used in the manufacture of wall papers; paint; and a special marine paint, for the hulls of vessels, for which it is said to afford excellent protection. The pulp is used as an adulterant in soap.
The commoner grades of soapstone are used for furnace and stove linings, bed-warmers, etc.
The fine white grades designated talc are used in the manufacture of toilet powders; shoe powders; slate pencils; crayons; tailor's chalk ; gas tips; and as a sizing for the finer grades of paper.

## Material: Steatite. SURVEY No. I440.

Area: Savannah.
Sub-Area: Little River Branch.
Location: Oconee County; Soapstone Hill; 4.2 miles northwest of Tomassee.
OBS-Chatooga Zone. Proceeding from the old Rowland place 0.8 miles southeasterly, along an abandoned trail, we observe a wide zone of very hard quartz-mica schists with additional mica developed in large lenticular patches parallel with the bedding (strike northerly with a dip about $60^{\circ}$ southeast). This mica attains the diameter of four inches.

Resting against these schists appears a dark green meta-trap rock, the southeasterly portion of which as exposed in an old pit has been altered to a green talc schist, locally designated soapstone; which consists of a coarse matted aggregate of talc, pearly-white to greenish-white, and lustrous, with massive structure. Near the plane of contact green mica and corundum appear; also tremolite in bunches. In thin section: Talc aggregates of colorless, brilliantly polarizing, plates and flakes; green mica, of muscovite variety, strongly refracting, brilliantly polarizing, and showing a weak pleochroism in thin section. Secondary tremolite occurs in bunches of long radiating needles terminating in sharp points; strongly polarizing with small extinction angles to the prismatic cleavage lines. Corundum appears a secondary mineral, but the amount present does not appear sufficiently large to encourage development.

The soapstone is comparatively free from grit and is susceptible of being easily shaped; the color of the powdered material does not commend it as a substitute for talc.

MATERIAL: STEATITE. SURVEY NO. I5I7.
Area: Savannah. Sub-Area: Little River; Cane Crk. Br. Location: Oconee County; Fair View Church; 6.5 miles northeast of Seneca.
Address of Ounter or Representative (?): S. O. Haynes, Seneca, S. C.
obS-Saluda Zone. This bed has been quarried to a limited extent for neighborhood uses; it affords a fair grade of "soapstone." It is a dark green chlorite schist derived from a basic igneous rock. It has a fine uniform grain. The cleavage fracture, which is parallel to the prevailing dip of the associate country rock, is lustrous, but the cross-fracture is dull. In thin section, the chlorite exhibits a pale green color with weak pleochroism and polarization. Numerons
grains of magnetite appear as an alteration product of olivine. A little olivine and serpentine are associated with the magnetite. Secondary tremolite, with brilliant polarization and strong refraction, occurs abundantly disseminated through the chlorite.

MATERIAL: STEATITE. SURVEY NO. I530.
Area: Savannah.
Sub-Area: 12-Mile Creek.
Location: Pickens County; two miles north, $7 \mathrm{I}^{\circ}$ west of Central; 12-Mile Creek, near Central.
obS-Saluda Zone. Prominent bed of soapstone appears at this point; it represents a fair grade.
material : soapstone. survey no. i645.
Area: Savannah.
Sub-Area: 18-Mile Creek. Location: Pickens County; one mile north of Norris Station, E. of R.R.

Address of Oumer or Representative (?) : Lither Hendrix, Norris, S. C.

OBS-Saluda Zone. A fair grade of soapstone is observed at this point.

MATERIAL: SOAPSTONE SURVEY NO. 1863.
Area: Savannah.
Sub-Area: Little River Branch. Location: Abbeville County ; two miles north of Mt. Carmel.
OBS-Abbeville-York Zone. An extensive body of gabbro partly serpentinized.

MATERIAL: STEATITE SURVEY NO. 2260.
Area: Savannah.
Sub-Area: Horns Creek. Location: Edgefield County; 8 miles south of Edgefield. OBS-Vaucluse Zone. Soapstone occurs at this locality.

## Material: steatite survey no. 5245.

Area: Santee.
Sub-Area: Rocky Fork Creek. Location: Laurens County ; 1.6 miles N. $70^{\circ}$ W. of Courthouse. Address of Owner or Representative (?): Col. H. Y. Simpson, Laurens, S. C.
OBS-Abbeville-York Zone. A bold dike of amphibolite traverses this section (N. $29^{\circ}$ E.). The outcrop, as exposed up a precipitous scarp, has been metamorphosed to a compact gray-green
steatite; occasionally observed stellated with tremolite, and with inclusions of crystalline grains of epidote. The grade does not commend it as a substitute for talc; it is, however, susceptible of being easily sawn for hearth stones, and other forms adapted to neighborhood uses.

MATERIAL: STEATITE. SURVEY NO. 5652.
Area: Santee. Sub-Area: Enoree River; Warrior Crk. Br. Location: Laurens County; 5.5 miles N. $15^{\circ} \mathrm{W}$. of Laurens. OBS-Anderson-Spartanburg Zone. An igneous dike, partly metamorphosed to steatite, occurs at this locality.

Material: steatite. SURVEy no. 5905.
Area: Santee.
Location: Spartanburg County; Cedar Springs.
OBS-Anderson-Spartanrurg Zone. A bold outcrop of green-ish-gray steatite is observed at this point. It is free from grit, and is easily susceptible of being cut with the saw. The depth to which the alteration has proceeded is conjectural.
material: steatite. Survey no. 5930.
Area: Santee. Sub-Area: Fair Forest Creek Branch. Location: Union County; 3.8 miles N. $75^{\circ} \mathrm{W}$. of Lockhart.

OBS-Abbeville-York Zone. An extensive exposure of coarse steatite derived from a metamorphosed dike.
material: soapstone. survey no. 6i4o.
Area: Santee. Sub-Area: Thicketty Creek.
Location: Cherokee County; 4.5 miles S. $52^{\circ} \mathrm{W}$. of Gaffney. Address of Owner or Representative (?) : Cliff Lipscomb, Gaffney, S. C.

OBS-Cherokee Zone A bold igneous dike, highly amphibolitic, crosses this property about N. $48^{\circ}$ E., cutting through quartzmica slates. The surface of the dike has been metamorphosed to steatite, which has extensively contributed to neighborhood uses.

$$
\text { material: steatite. survey no. } 6525 .
$$

Area: Santee. Sub-Area: Broad River Val.; Wateree Crk. Location: Lexington County; 4.5 miles southeast of Alston; near Wateree Creek.
OBS-Edgefield-Chesterfield Zone. Samples of a fair grade of soapstone noted from this locality.
material: steatite survey no. 6660.
Area: Santee. Sub-Area: Broad River; Sandy River Branch. Location: Chester County; near Halselville; 4.5 miles west of Blackstock.
OBS-Abbeville-York Zone. An exposure of a good grade of steatite occurs at this locality.
material: steatite survey no. 6875.
Area: Santee.
Location: Chester County; 2.5 miles west of Edgmoor.
OBS-Abbeville-York Zone. Steatite occurs at this locality as the product of alteration of igneous rocks.

MATERIAL: STEATITE SURVEY NO. G9I2.
Area: Santee.
Sub-Area: Rocky Creek Branch.
Location: Chester County; 4 miles southeast of Chester.
Address of Owner or Representative (?) : John Hamilton, Chester, S. C.

OBS-Abbeville-York Zone. An ordinary grade of steatite occurs at this locality.

MATERIAL: STEATITE. SURVEY NO. 7 IOO.
Area: Santee.
Sub-Area. Catawba River.
Location: York County; Nation Ford; 0.5 miles south ColumbiaCharlotte Railway (S. R. R.) Bridge.
ObS-Abbeville-York Zone. A precipitous bluff on the river's edge exposes the following series of rocks which have been subjected to intense metamorphism. (Strike N. $32^{\circ}$ E.; dip $80^{\circ}$ N. $58^{\circ}$ W.) Successive strata of gabbro which, above the water line of the immediately adjacent river, has been largely altered to steatite of very fair grade. The apparent alteration has been locally fractional, but complete along certain zones parallel to seeming bedding-planes. This material has been quarried to a limited extent for neighborhood uses.
The color is mottled gray-green. The green color is afforded by hornblende and chlorite.
In thin section "the marks of alteration and crushing are extensive. The feldspar is granulated to such an extellt that it now forms aggregated grains, the original outlines being entirely destroyed. Alteration has developed epidote and muscovite in the feldspars in
great abundance, with sometimes a very little secondary quartz. The hornblende is crushed and ragged. Its pleochroism is moderate in green to bluish-green where not altered. Extensive alteration, however, has taken place with magnetite and chlorite as the products. The rock is mineralogically a diorite, but was probably altered from a pyroxene-plagioclase rock of corresponding texture-a gabbro."

## material: steatite. survey no. 7I 55.

Area: Santee. Sub-Area: Catawba River; Fishing Creek. Location: York County ; 4 miles N. $82^{\circ} \mathrm{W}$. of Catawba Junction.
obS-Abbeville-York Zone. A bold outcrop of steatite occurs at this locality.

## ASBESTOS.

This mineral occurs at several localities in the Saluda, AndersonSpartanburg, and Abbeville-York Zones. It appears associated with chlorite schists, talc schists, steatite and serpentine, all of which represent alteration-products of the peridotes, pyroxenite and other magnesian silicates, both foliated and undeformed. The asbestos, frequently with the composition of crysotile, extends its bunches of crystal fibres from wall to wall of the numerous small fissures (rarely exceeding 8 inches in diameter) in the compact magnesian rocks, the separation of which in mining imposes burdensome cost. Intense metamorphism in some instances has resolved the original magnesian rock to chlorite schist, magnetite, and large clustered masses of true asbestos, with lustrous long white fibres. (See Iron, Sur. Nos. 6340-6342.) Asbestos (including false) occurs in Pickens, Spartanburg, Cherokee, Anderson and Newberry Counties. (Sur. Nos. 1368 (?), I522, I570, 1610, 5430, 5667, 5892.)

In some cases asbestos appears to have resulted from metasomatic action, in others from aqueo-igneous segregation. The metasomatic asbestos veins do not appear to extend to great depths. Asbestos is not mined in South Carolina.

In the undeformed rocks the asbestos is obviously the junior in origin; where the asbestos occurs undeformed in rocks that are deformed the asbestos is not necessarily junior to the period of deformation, because the forces which created foliation probably operated to irregularly crystallize the asbestos, which often appears in an intermediate uncrystallized form which grades to the fibrous crystal;
the intermediate amorphous condition of the asbestos probably represents the result of aqueo-igneous action prior to the exercise of the forces which deformed the associate rock.

## Uses of Asbestos.

Sectional covering for boilers, steam pipes, hot water pipes and gas-engine pipes; packing for steam and gas-engines; lining for furnaces and gas stoves; general heat and electric insulation; fireproof cloth ; fireproofing for buildings and safes; roofing. Improper sizing for silks. In the manufacture of asbestos leather, and asbestolith.

$$
\text { material: asbestos. Survey no. } 1368 .
$$

Area: Savannah.
Sub-Area: Beaverdam Creek. Location: Anderson County; 8 miles southwest of Anderson.

OBS-Anderson-Spartanburg Zone. Samples received from this locality represent an ordinary grade of asbestos.

## material: asbestos. SURVEY NO. 1522.

Area: Savannah.
Sub-Area: Keowee River. Location: Oconee County; Ramsay place; 1.5 miles south of Ramsay's Ford; 7 miles N. $40^{\circ}$ E. of Seneca; near head of small dry gulch; about 500 feet east of the river.
Address of Owner or Representative (?): Alexander Ramsay, Walhalla, S. C.
OBS-Saluda Zone. The amphibolite series of rocks which crosses the Keowee River at this point, with a highly inclined dip, has been partly metamorphosed to asbestos along a narrow belt; this material, however, does not appear to be sufficiently extensively developed to constitute an economic proposition, against which the extremely low grade also operates. The alteration is chiefly superficial ; rarely extends to a depth exceeding five feet. The rocks exposed are apparently an extension of the series exposed at Woodall Mountain, on the Hagood place (1570).

## material: asbestos. survey no. 1570 .

Area: Savannah. Sub-Area: Seneca River; 12-Mile Creek. Location: Pickens County; 0.8 miles south of Woodall Mt.; 6 miles west of Pickens.
Address of Ower or Representative (?) : B. A. Hagood, Charleston. S. C.

OBS-Saluda Zone. The highly pitched aphanitic hornblende slates include a narrow belt of material which has been partly metamorphosed to asbestos. The alteration has not been uniform, and, therefore, the asbestos in many instances presents an incipient form, yellow, soft and unctuous, but without definite macroscopic fibre. Further development might reveal portions of this bed altered to a degree affording a good commercial article. The grade now exposed is indifferent by reason of the shortness of fibre, high color, and imperfect crystallization. This locality is on the projected line of the chlorite schists derived from peridotite.

## MATERIAL: ASBESTOS. SURVEY NO. I6IO.

Area: Savannah. Sub-Area: Seneca River; 12-Mile Crk. Br. Location: Pickens County; r. 6 miles N. $6^{\circ}$ W. of Pickens. Address of Ozener or Representative (?) : B. A. Hagood, Charleston, S. C.
OBS-Saluda Zone. This locality affords an exposure of asbestos resulting from the alteration of a magnesian rock included by highly pitched aphanitic hornblende slates. A few shallow prospect pits have been sunk on this property, but no systematic exploration has yet been undertaken. The essential degree of alteration does not appear to have extended to any considerable depth ; nor does it occur uniformly along the outcrop of the upturned material; the metachemic change has been confined to pockets.

## MATERIAL: ASBESTOS. SURVEY NO. 5430.

Area: Santee.
Sub-Area: Saluda River Branch. Location: Newberry County; 2 miles north of Saluda Old Town. Address of Owner or Representative (?): J. L. Fellers, Silver Street, S. C.
OBS-Abbeville-York Zone. A basic rock, of igneous intrusion, has been partly altered to asbestos. This mass was quite recently discovered by the survey. The character of the exposed material entitles this body to reasonable exploration.
material: anbestos. survey No. 5667.
Arca: Santee.
Sub-Arca: Fnoree River Branch.
Location: Spartanburg County; 4 miles cast of Enoree; on west side of branch.
Adiress of Oiencr or Representatize ('): Frank Layton, Enoree, S.C.

OBS-Abbeville-York Zone. The magnesian rocks at this locality appear with occasional pockets of an ordinary grade of asbestos along their upturned edges.

MATERIAL: ASBESTOS.
Area: Santee. Location: Spartanburg County; near Landrum; 5 miles south of Spartanburg.
Address of Owner or Representative (?): G. C. Page, Spartanburg, S. C.
OBS-Anderson-Spartanburg Zone. A prominent dike of pyroxene, altered to amphibolite, is traceable northeasterly and southwesterly for several miles in this vicinity. In places this magnesian rock is altered to soapstone; at some localities asbestos occupies small fissures and cracks in the altered mass. An excellent grade of asbestos thus occurs at the Page place; the extremely limited character of the exploration revealed by the shallow test pits afforded no criterion of the value of this property.

## BARYTES.

The occurrence of this mineral appears along the Kings Mountain range in the Abbeville-York Zone, where the rock formations have been greatly foliated and more or less deformed. The barytes appears to have been deposited from solution in the fissures of hard míca schists, now weathered above the valley line to the unctuous hydro-mica form.

A sample of a good grade of barytes from the vicinity of Rossville, in Chester County, has been examined; but the character of the deposit is as yet unknown.

## Uses of Barytes.

Used as a substitute for white lead, or zinc oxide in paints; but frequently as an adulterant.

As a legitimate pigment the best form is "Blanc-fixe" (artificial barium sulphate).

Special pigment known as Lithophone, consisting of barium sulphate, $68 \%$; zinc sulphide, $24.85 \%$; zinc oxide, $7.28 \%$.

As an adulterant in putty. For sizing paper, and affording undue weight to same. Used as an enamel in the ceramic arts, especially
in connection with the "jasper-ware." To a limited extent in pyrotechny. Affords basis of several laboratory reagents.

MATERIAL: BARYTES. SURVEY NO. 6395.
Area Santee. Sub-Area: Broad River; Manning Creek. Location: Cherokee County; Kings Creek Station.
Address of Owerer or Representative (?): Miss F. Turnbull, Baltimore, Md.
OBS-Abbeville-York Zone. This deposit occurs about 500 feet southeast of King's Creek Station on the Blacksburg-Yorkville Railway (S. R. R.). The country rock consists largely of the itacolumitic type of quartz-mica schists (striking northeasterly, and dipping southeasterly at an angle of about $43^{\circ}$ ). The barytes outcrop occurs on the hillside adjacent to and on the north side of Manning Creek; the elevation of the outcrop above the bed of the creek varying from 20 to 35 feet. The barytes occurs in 2 main approximately parallel leads with numerous minor offshoots; the 2 main leads are separated at the surface by a damouritic quartz-schist. The outcrop is conspicuous for more than 500 feet (strike N. $34^{\circ}$ E.; dip $43^{\circ}$ S. $56^{\circ}$ E.). The width of the 2 leads varies, but in places attains io feet; the distance separating the 2 leads at the surface being about 60 feet, which will in all probability be overcome by convergence with depth. Some parts of the ore body are very pure, others carry fine grained quartz and some galena; occasional inclusions of pyrite cause local areas of stain. No systematic exploration has been done on this property; the surface ore, however, has been intermittently gouged out, where neither mining nor special expense were involved. The adjacent branch affords an abundant supply of water.

MATERIAL: BARYTA. SURVEY NO. 7190.
Area: Santee.
Sub-Area: Catawba River Branch.
Location: Chester County; near Rossville (locality indefinite).
OBS—Abbeville-York Zone. Sample of good grade received; locality not yet examined.

## GRAPHITE.

The hydromica slates of the Chatooga, Saluda, Tyger and Ander-son-Spartanburg Zones comprise occasional occurrences of graphite, interstratified with the foliated slate, and apparently connected with the original sedimentation to which the related slates owed origin.

The most persistent band of these graphite slates extends along the southerly part of the Anderson-Spartanburg Zone with exposures in Cherokee County along the Whitaker Mountain ridge. (Sur. Nos. $6332,6362,6403$ ).
These exposures are constituted of bands of highly pitched slates, variably interlaminated with graphite, in zones from 12 to 30 feet in width. An analysis of an average sample across the face of an exposure afforded 3 per cent. of carbon.
A consistent belt of these graphite slates extends along the Rocky River Valley in Anderson County, with exposures interruptedly extending to the Savannah River, near the old Craft's Ferry. One body of this material was worked to a limited extent during the eighties (Sur. Nos. 1185, 1761, 1780).

A subordinate belt of graphite slates extends along the Chauga Zone near the older limestone in Oconee County (Sur. Nos. 1020, 1022, 1065), the percentage of contained carbon in the slate mass rarely exceeds one per cent.

## Uses of Graphite.

Most extensive use is for the manufacture of refractory crucibles. Dynamo brushes; arc-light pencils; superior grades used for pencils and crayons.

Lubricants; steam packings; coating for insulated electric wires; stove polish; in electrolytic and electrotype processes; fire-proof paint.
The invention of artificial graphite has seriously affected the value of the natural article, for which it is a substitute in most of its uses.

The low-grade graphites are used in connection with foundry facings.

MATERIAL: GRAPHITE SURVEY NO. IO2I.
Area: Savannah. Sub-Area: Tugaloo Riv; Brasstown Crk. Location: Oconee County; Brasstown; thirteen miles northwest of Westminister.
Address of Owmer or Representative (?) : Jacob Butt, Battle Creek P. O., S. C.

OBS-Chauga Zone. An irregular bed of graphite micaceous slate exposed on hillside; contains 0.87 per cent. carbon. This belt extends southwesterly through the Cox place.

For description see Limestones, Survey No. 1065.
material: graphite. survey no. 1185 .
Area: Savannah. Sub-Area: Savannah River Scarp.
Location: Anderson County; near Craft's old ferry.
Address of Owner or Representative (?): Andrew Craft, Bames, S. C.

OBS-Anderson-Spartanburg Zone. The mica slates at this locality are intercalated with graphite of a good grade. The exploration has been insufficient to reveal the extent of the deposit.
material: graphite. survey no. i76i.
Area: Savannah. Location: Anderson County; four miles east of Anderson. Address of Onzicr or Representative (?) : James A. Keowan, Anderson, S. C.
OBS-Anderson-Spartanburg Zone. On the east side of Rocky River the surficial mica slates, which are much contorted, enclose graphite.

## material: graphite slates. survey no. 1780.

Area: Savannah. Sub-Area: Hen Coop Creek Branch. Location: Anderson County; 9 miles South of Belton. Address of Ouner or Representative (?):

OBS-Anderson-Spartanburg Zone. The bed of a branch which courses through a field exposes a series of soft mica slates variably intercalated with graphite. The width of the slates associated with graphite is approximately 300 feet; their strike is N. $15^{\circ}$ E., and dip about $60^{\circ} \mathrm{S}$. E. This body affords a fair prospect, but its development would require an extensive washing equipment.
material: graphite. survey no. 5200.
Area: Savannah.
Sub-Area: Reedy River. Location: Greenville County; seven miles north of Greenville, west of Paris Mountain.
OBS-Tyger Zone. A limited exposure of graphite occurs at this locality.
Area: Santee.
Sub-Area: Broad River; Buffalo Crk.
Location: Cherokee County; r. 2 miles west of Blacksburg.
Address of Ozener or Representative (?): Mr. Mintz.
OBS-Anderson-Spartanburg Zone. The mica slates at this locality expose a zone about fourteen feet wide through which graphite occurs to the extent of 3.02 per cent. (determined as carbon).
material: gkaphite slates. survey no. 6362.
Area: Santee.
Sub-Area: Buffalo Creek Branch. Location: Cherokee County; 0.8 miles north of Blacksburg, immediately west of Fertilizer Mill.
OBS-Anderson-Spartanburg Zone. Graphite schists appear at this point associated with hornblende schists and secondary chloritic rocks.

$$
\text { . material: graphite. Survey no. } 6403 .
$$

Area: Santee. Sub-Area: Broad Riv.; Buffalo Crk.
Location: Cherokee County. OBS-Anderson-Spartanburg Zone.

## material: graphite schists. survey no. 6407.

Area: Santee.
Sub-Area: Doolittle Creek. Location: Cherokee County; one mile north of Blacksburg; Grover Road; saddle of Whittaker's Ridge.
OBS-Anderson-Spartanburg Zone. The mica schists at this locality are highly inclined, and enclose approximately i per cent. of.graphitic matter.

## MONAZITE.

Geographic Limits: While some occurrences of monazite appear in the zones northwest and southeast of the Anderson-Spartanburg Zone the great economic monazite belt occurs in the latter.
The northwesterly limit of this belt extends southwesterly from a point on the North Carolina line near the Islandton Ford Road; with a highly irregular line it extends south of Greers, south of Roper Mountain, and proceeds thence near and beyond Piedmont southwesterly. The southeasterly limit begins at the North Carolina line, near Bowens River, and extends southwesterly along Bowens River Valley to Nesbitt's Island, and thence to a point three miles north of Gaffney, whence it proceeds successively by Spartanburg, Simpsonville, and south of Pelzer, to and along the headwaters of Rocky River; also in the vicinity of Honea Path.
A subordinate parallel belt is suggested by widely separated occurrences of monazite on the South Carolina branches of Crowder's Creek (York County), on Walnut Creek, near Wares Shoals (information), and one mile east of Donalds, on a branch flowing

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to the Saluda River. Sands containing a little monazite have also been received from the Saluda Zone.
Physiography and Geognosy: The extreme width of the main belt, viewed in the light of heretofore recognized deposits, varies from ten miles in Cherokee County, to five miles near the GreenvilleAnderson line; southwest of which it proceeds, diminishing in width and in the number of economic deposits. It must not be conceived that this extreme width represents an unbroken area of monazite formations.

The rocks in which the monazite and cerium minerals appear to have formed consist of groups or irregularly repeated series of pegmatite bodies (var. orthoclase quartz) with some mica intimately associated with dark graphite schists of extremely fine texture, mica schists, aplite gneiss, and other gneissoids, including in some localities hornblende slates; each group represents roughly a paralle series. These groups in South Carolina occupy remotely successive belts; thus one prominent group occurs southeast and another northwest of the Thicketty anticline. They represent the Carolina gneiss series.

The monazite occurs principally in the pegmatite mass as small crystals and grains imbedded in the clear feldspar and as intergrowths with the mica (both biotite and muscovite) ; the pegmatitic mass exhibits a distinct secondary development of crystalline graphite, and furthermore exhibits in some specimens an interbanded distribution of accessory minerals with thin pegmatite. The feldspar of the pegmatite is, in some cases, apparently the result of metasomatic action, bands of mica and graphite appear twisted to conform to the shape of the feldspar crystals. The more conspicuous primary minerals associated with monazite in this State are magnetite, ilmenite, tourmaline, zircon, corundum, rutile and beryl; the secondary minerals comprise an abundance of garnets and epidote and occasionally staurolite. Under the protracted process of weathering, degradation, and erosion, the monazite-bearing rocks have been disintegrated, and while the softer and lighter materials have been separated and removed in suspension by water, the harder and heavier minerals have been scoured into the beds of streams and into the neighboring valley depressions, and there accumulated as wide gravel beds. These gravel beds were subsequently covered with a variable overburden, portions of which irregularly contain small quantities of monazite. See Monazite, Sur No. 6228 for characteristic description.

When the monazite gravel beds were formed the conditions differed widely from such as now prevail; violent rain storms appear to have continuously denuded the rocks of their surficial, loose, and soil forming parts; and flowing water appears to have at least occasionally prevailed in wide sheets in each valley. By these joint agencies the lighter products of erosion were borne far away, while the gravels, monazite and dther heavy minerals accumulated to mark the former water beds.
With a full supply of water a placer deposit which will afford a pound of monazite from a barrow-load of gravel is considered a "good proposition"; provided the overburden is nominal. The depth of overburden permissible within the limits of profitable work varies with the thickness and richness of the underlying monazite gravels; the latter will rarely average 12 inches in thickness, ordinarily much less.

Monazite deposits are mined along the belt north of Gaffney; along the belt west of Thicketty Mountain; most actively along the belt in Greenville County extending from Gilder's Creek southwesterly by Mauldin to Anderson County. In this latter area a modified Wilfley table is utilized to great advantage in concentrating the monazite sands; in all other sections the primitive screened-head sluice box is still in use for this purpose. The product thus concentrated at the mine will vary in the content of monazite from twenty to eighty-five per cent. ; the impurities consist chiefly of mechanically admixed garnets and quartz sands, with one or more of the other accessory minerals enumerated above; all of which are separated by the magnetic concentrator.
The South Carolina monazite thus recovered contains from 3 to 7.25 per cent. of thoria (Th. O2) and exceeding 60 per cent. of the mixed oxides of cerium, lanthanum and didymium; all of which afford values to the industrial arts. Thoria is principally valuable for its incandescent properties, which are utilized in the Welsbach incandescent mantels. The cerium is likewise valuable for the purpose.
(Near Shelby, N. C., a "ledge" through which monazite is liberally disseminated, is quarried, crushed, and mechanically concentrated, and the resultant product subjected to the magnetic concentrator. Ledges admitting of this treatment aire not of frequent occurrence.)

## Uses of Monazite.

The contained thorium and cerium are separated in the form of nitrates and utilized for their incandescent properties; notably in the manufacture of Welsbach mantles.

## material: monazite. survey no. 5148.

Area: Santee.
Sub-Area: Saluda River Branch.
Location: Anderson County ; Robert Simpson place ; 1.5 miles southwest of Piedmont.
Address of Owner or Representative (?): Robert Simpson, Piedmont, S. C.
OBS-Anderson-Spartanburg Zone.
material: monazite. SURVEy no. 5155.
Area: Santee.
Sub-Area: Saluda River Branch.
Location: Anderson County; Smalls place; 1 mile south of Pelzer Address of Ozemer or Representative (?): J. G. S. Smalls, Pelzer, S. C.

OBS-Anderson-Spartanburg Zone.
material: monazite. Survey no. 5156.
Area: Santee.
Sub-Area: Saluda River Branch.
Location: Anderson County; Wideman place; I mile south of Pelzer. Address of Ozuner or Representative (?) : Dr. Charles Wideman, Pelzer, S. C.
OBS-Anderson-Spartanburg Zone.

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MATERIAL: MONAZITE. SURVEY NO. 52IO.
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Area: Santee. Sub-Area: Enoree Riv.; 5-Mile Branch. Location: Greenville County ; 6 miles east of Greenville; immediately south of Roper's Mt.
Address of Owner of Representative (?) : J. D. Green, Esq., Greenville, S. C.
OBS-Anderson-Spartanburg Zone. This precipitately eroded gulch at the head of "Five Mile Branch" of Gilder's Creek, affords the following series of rocks (strike N. $34^{\circ}$ E.; dip apparently vertical) ; Mica slates, pegmatites, decomposed feldspathic porphyries and chloritic residues, probably derived from biotite slates. These are covered with a thin, broken, ferruginous capping, and a variable, horizontal layer of gravel, with about 15 feet of overburden, composed of disintegrated material apparently drifted
in from the adjacent hills. Monazite is very sparsely disseminated through the matrix of pegmatite, the breaking down of which has contributed a variable placer deposit of monazite mixed with the gravel layer above indicated. Proceeding down this branch and thence down Gilder's Creek, we successively observe the bottom lands of Jackson Brown (estate), Thomas Bramlet, Louis Rector, A. Rothschild, and Wyatt Smith, affording gravel beds with included monazite of undetermined extent.

## Material: monazite. SURVEY no. 5217.

Area: Santee.
Sub-Area: Reedy River Branch. Location: Greenville County; 4 miles west of Mauldin.
Address of Owner or Representative (?): Alexander Bros., Mauldin, S. C.
OBS-Anderson-Spartanburg Zone. The branch at this locality exposes a good area of thick monazite gravels which are being successfully mined.
material: monazite. SURVEY no. 5220.
Area: Santee.
Location: Greenville County; Waldrop place; 5.5 miles S. $10^{\circ}$ E. of Piedmont.
Adress of Owner or Representative (?): Berry Waldrop, Greenville, S. C.
ObS-Anderson-Spartanburg Zone. The monazites along this creek have contributed very largely to the supply of monazite from this State. It is at this locality that a modified form of the Wilfley table has been successfully operated in the concentration of the monazite sands; the degree of concentration attained being an average of 32 per cent. pure monazite. The monazite from this locality is fine grained; it passes a 1.5 mm . screen.
material: monazite. scrvey no. 522 I.
Area: Santee. Sub-Area:
Location: Greenville County; Terry place; 6 miles S. $12^{\circ}$ E. of Piedmont.
Address of Owner or Representative (?): Dave Terry, Greenville, S. C.

OBS-Anderson-Spartanburg Zone.

## MATERIAL: MONAZITE SURVEY NO. 5230.

Area: Santee.
Sub-Area: Reedy River Branch. Location: Greenville County; 0.4 miles west of Mauldin.
Address of Ouner or Representative (?) : J. S. Hill, Jr., Mauldin, S. C.

OBS-Anderson-Spartanburg Zone. This tract comprises about 88 acres. The head of a branch at this locality affords good indications of monazite.

## MATERIAL: MONAZITE. SURVEY NO. 523 I .

Area: Santee. Sub-Area: Reedy River; Maple Crk. Location: Greenville County; i mile south of Mauldin. Address of Owner or Representative (?): Thomas Fowler, Mauldin, S. C.
OBS-Anderson-Spartanburg Zone. This tract comprises $\mathbf{1 6 0}$ acres on one edge of which Maple Creek courses with a limited exposure of meadow which affords monazite gtavels.

MATERIAL: MONAZITE. SURVEY NO. 5232.
Area: Santee. Sub-Area: Reedy River Branch.
Location: Greenville County; I mile south of Mauldin.
Address of Ouner or Representative (?): Dr. A. White, Mauldin, S. C.

OBS-Anderson-Spartanburg Zone.

## MATERIAL: MONAZITE SURVEY NO. 5233.

Area: Santee. Sub-Area: Saluda River; Maple Crk. Location: Greenville County; 1.2 miles south of Mauldin. Address of Owner or Representative (?): Miss Molly Garrett, Mauldin, S. C.
OBS-Anderson-Spartanburg Zone. This tract comprises 45 acres, and presents a narrow bottom along Maple Creek which affords a gravel bed containing good monazite sands.

$$
\text { MATERIAL: MONAZITE. SURVEY NO. } 5234 \text {. }
$$

Area: Santee. Sub-Area: Saluda River; Maple Crk. Location: Greenville County; Brooks Mine; I. 4 miles southwest of Mauldin.
Address of Ouner or Representative (?) : J. N. Ingliss, Shelby, N. C.

OBS-Anderson-Spartanburg Zone. Maple Creek Valley widens on this property and affords a meadow nearly 400 feet broad, under which occurs an extensive gravel deposit very rich in monazite sands, which are vigorously mined and which have afforded a large output.

$$
\text { MATERIAL: MONAZITE. SURVEY NO. } 5235 .
$$

Area: Santee. Sub-Area: Saluda River Branch. Location: Greenville County; 1.4 miles southwest of Mauldin. Address of Owner or Representative (?) : John R. Bramlet, Mauldin, S. C.
OBS-Anderson-Spartanburg Zone. The head of a branch at this locality exposes gravels affording a good grade of monazite.

## material: monaztite survey no. 5630 .

Area: Santee.
Sub-Area: Enoree River; Gilder Crk. Location: Greenville County; P. O. Mauldin; I. 2 miles northeast of Mauldin.
Address of Owner or Representative (?): Wyatt Smith, Mauldin, S. C.

OBS-Anderson-Spartanburg Zone. Feldspathic quartzose and biotite slates (strike N. $14^{\circ}$ E., dip $42^{\circ}$ S., $76^{\circ}$ E.), constitute the country rock, on the surface of which appears a gravel bed showing some monazite.

## material : monazite. survey no. 5635.

Area: Santee.
Sub-Area: Enoree River Branch.
Location: Greenville County; 3 miles southeast of Mauldin.
Address of Owner or Representative (?) : W. M. Burdin, Mauldin, S. C.

OBS-Anderson-Spartanburg Zone. The contiguous flats of a branch traversing this locality afford a good bed of monazite which is being successfully mined.

$$
\text { material: monazite. Survey no. } 5640 \text {. }
$$

Area: Santee.
Sub-Area: Enoree River Branch. Location: Greenville County; $\mathbf{2 . 5}$ miles southeast of Mauldin. Address of Owner or Representative (?): F. A. Alston, Mauldin, S. C.

OBS-Anderson-Spartanburg Zone. This tract comprises between 500 and 600 acres. A branch flowing north to Gilders' Creek
is associated with a fine deposit of monazite which is being successfully mined and shipped.

MATERIAL: MONAZITE. SURVEY NO. 5720.
Area: Santee. -
Sub-Area: Tyger River. Location: Spartanburg County; near Greers; 3 miles south of Greers.
Address of Owner or Representative (?) : Mr. Paine, Greers, S. C.
OBS-Anderson-Spartanburg Zone. A branch at this locality exposes highly altered feldspathic and hydromica series, the surface of which affords a gravel deposit with a fair prospect for monazite.

MATERIAL: MONAZITE. SURVEY NO. 5860.
Area: Santee.
Sub-Area: Pacolet River Branch.
Location: Spartanburg County; 2.5 miles east of Spartanburg.
OBS-Anderson-Spartanburg Zone. This locality exposes a placer bed of monazite derived from the breaking down of the tributary rocks. It is being mined to advantage.

MATERIAL: MONAZITE. SURVEY NO. 6008.
Area: Santee.
Sub-Area: Pacolet River Branch.
Location: Spartanburg County; near Martinsville; 8 miles north of Cowpens.
Address of Ower or Representative (?) : J. J. C. Ezell, Martinsville, S. C.
OBS-Anderson-Spartanburg Zone. This deposit occurs along a branch near Martinsville.

MATERIAL: MONAZITE. SURVEY NO. 6010.
Area: Santee.
Sub-Area: Pacolet River Branch.
Location: Spartanburg County; 5 miles northwest of Cowpens. Address of Owner or Representative (?): Dr. Martin, Pacolet, S. C.

ObS-Anderson-Spartanburg Zone. The placer deposit along the edges of the branch at this locality shows about 3 feet of overburden. Abundant water; a good grade and apparently fair quantity of monazite.

## MATERIAL: MONAZITE. SURVEY NO. GOI2.

Area: Santee. Sub-Area: Pacolet River Branch. Location: Spartanburg County; 2.5 miles north of Converse. Address of Owner or Representative (?): Conway Black, Converse, S. C.

OBS-Anderson-Spartanburg Zone. The branch at this locality affords a placer deposit probably covering 5 acres, with an overburden of 2 feet or more; water supply abundant. The grade of this sand is very fine and the quantity seemingly good.

## MATERIAL: MONAZITE. SURVEY NO. 6015.

Area: Santee.
Sub-Area: Pacolet River Branch. Location: Spartanburg County; 4 miles northwest of Cowpens. Address of Ower or Representative (?) : Charles Petty, Spartanburg, S. C.
OBS-Anderson-Spartanburg Zone. The branch at this locality affords probably 4 acres of available placer sands, covered with approximately 3 feet of overburden. The available water supply is light. The grade is good and the quantity probably fair.

$$
\text { MATERIAL: MONAZITE. SURVEY NO. } 6016 .
$$

Area: Santee. Sub-Area: Pacolet River Branch. Location: Spartanburg County; 4 miles northwest of Cowpens. Address of Ouner or Representative (?): J. Dewberry, Cowpens, S. C.

OBS-Anderson-Spartanburg Zone. The branch at this point affords from 6 to 8 acres of placer gravels, with an overburden ranging from 2 feet up. The water supply is abundant. The monazite sands here are extensively mixed with garnet, apart from which the grade is good, and the quantity very considerable.

## MATERIAL: MONAZITE. SURVEY NO. GOI7.

Arca: Santee.
Sub-Area: Pacolet River Branch.
Location: Spartanburg County; 0.5 miles northwest of Cowpens.
Address of Owner or Representatize (?) : Mr. W. E. Byrant, Cowpens, S. C.
OBS-Anderson-Spartanburg Zone. A gravel deposit about 30 feet wide incloses Beck's Branch and affords a fairly good grade of monazite in moderate quantities. The overburden is light, and the water supply abundant.

## MATERIAL: MONAZITE SURVEY NO. 6018.

Area: Santee. Sub-Area: Thicketty Creek Branch.
Location: Spartanburg County; 0.5 miles west of Cowpens.
Address of Owner or Representative (?): Dr. Charles Simms, Rufe Tanner, S. B. Wilkins, T. E. Wilkins.
OBS-Anderson-Spartanburg Zone. Beck's Branch courses through the lands of the above-named gentlemen and affords a deposit similar to the ore described under 6017 .

## MATERLAL: MONAZITE. SURVEY NO. 6025.

Area: Santee. Sub-Area: Thicketty Creek Branch.
Location: Cherokee County; 2.5 miles northeast of Cowpens.
Address of Owner or Representative (?): W. H. Weber, Cowpens, S. C.

OBS-Anderson-Spartanburg Zone. Apparently a small placer deposit occurs at this locality. It is of good grade. The water supply is good.

$$
\text { material: monazite } \quad \text { Survey no. } 6026 .
$$

Area: Santee. Sub-Area: Thicketty Creek Branch. Location: Cherokee County; 2.4 miles northeast of Cowpens. Address of Oumer or Representative (?): Mr. J. Caldwell and Mr. Romeo Martin, Cowpens, S. C.
OBS-Anderson-Spartanburg Zone. The branch coursing through these properties exposes a good grade of monazite in a placer bed, with moderate overburden. The water supply is abundant. This bed has been freely mined.

$$
\text { MATERIAL: MONAZITE. SURVEY NO. } 6027 .
$$

Area: Santee. Sub-Area: Pacolet River Branch. Location: Spartanburg County; 3 miles north of Cowpens. Address of Ozener or Representative (?): Mr. Robins, Cowpens, S. C.

OBS-Anderson-Spartanburg Zone.

MATERIAL: MONAZITE. SURVEY NO. 6028.
Area: Santee.
Sub-Area: Thicketty Creek Branch.
Location: Cherokee County; I mile northeast of Cowpens.
Address of Owner or Representative (?): Mr. James Oglesby. Cowpens, S. C.

OBS-Anderson-Spartanburg Zone. About 6 acres of meadow along a branch tributary to and on the east side of Thicketty Creek; overburden ranging from 3 feet up; abundant water supply; grade good.
material: monazite survey no. 6029.
Area: Santee. Sub-Area: Thicketty Creek Branch. Location: Cherokee County ; Potter's place; north of Thicketty Station; east side of Thicketty Creek.
Address of Owner or Representative (?) : Mr. R. Potter, Thicketty, S. C.

OBS-Anderson-Spartanburg Zone. Along the bottoms of a branch tributary to Thicketty Creek a placer bed of good grade with about 3 feet of overburden.

## MATERIAL: MONAZITE. SURVEY NO. 6 IO2.

Area: Santee.
Sub-Area: Little John Branch. Location: Cherokee County; 3 to 4 miles northwest of Gaffney. Address of Oumer or Representative (?) : Joe Husky, J. C. Blanton, J. C. Painter, T. T. McCraw, Gaffney, S. C. OBS-Anderson-Spartanburg Zone:

## MATERIAL: MONAZITE. SURVEY NO. 6210.

Area: Santee. Sub-Area: Broad River; Ashworth Crk. Location: Cherokee County; 8 miles north of Gaffney; 2 miles N. $10^{\circ}$ E. of Linder's Store.

Address of Owner or Representative (?): Frank Leadford, Gaffney, S. C.
OBS-Anderson-Spartanburg Zone. A gravel deposit along Ashworth Creek with very slight overburden affords a fine grade of monazite in good quantities.

## material: monazite. SURVEy no. 6226.

Area: Santee.
Sub-Area: East bank of Cherokee Creek. Location: Cherokee County; 3.5 miles north of Gaffney.
Address of Owner or Representative (?) : J. B. Jones, Mr. Serratt, Gaffney, S. C.
OBS-Anderson-Spartanburg Zone

MATERIAL: MONAZITE. SURVEY NO. 6227.
Area: Santee.
Sub-Area: East bank of Cherokee Creek.
Location: Cherokee County; 3.5 miles north of Gaffney. Address of Owner or Representative (?): J. J. Magnus, J. M. Swaford, Gaffney, S. C.
OBS-Anderson-Spartanburg Zone.

## MATERIAL: MONAZITE. SURVEY NO. 6228.

Area: Santee.
Sub-Area: Cherokee Creek Branch.
Location: Cherokee County; Lemon Mine; 3.3 miles north of Gaffney.
Address of Owner or Representative (?) : L. C. Lemon, Gaffney, S. C.

OBS-Anderson-Spartanburg Zone. About 2,500 feet northwest of Cherokee Creek on a small tributary branch. This property is especially noteworthy as one of the most continuous and prolific producers of monazite in South Carolina, and as affording one of the most instructive exposures of the associate rocks.

The upturned edges of the associate rocks (strike from N. $15^{\circ} \mathrm{E}$. to N. $25^{\circ}$ E., dip $34^{\circ}$ to $50^{\circ} \mathrm{S}$. E.) along the upper portion of the brook constitute a trough on which a layer of monazite gravels rest, from 150 to 300 feet in width.

The overburden, which adjacent to the brook is about 8 feet thick, increases with departure from the stream; it consists of loams and clays the lower portions of which were probably deposited during the Pleistocene time; the upper portion has sloughed in from the adjacent hillsides during more recent time.

On the adjacent property, 300 feet from Cherokee Creek, excavations along the banks of this same brook expose lignitized poplar stumps, in situ, overlying the monazite gravels, and immediately underlying 8 feet of black clay.
The monazite of the Lemon Mine had its origin in the following series of rocks which overlies a large body of weathered garnetiferous aplite gneiss ; decomposed biotite or hornblende slates. said to afford monazite ; white pegmatite inclosing small amount of monazite in grains: decomposed pegmatite inclosing lenticular masses of soft black and green matter (probably biotite) which contain numerous monazite grains and occasional softened particles of graphite: soft black graphite (?) schist: decomposed biotite and hornblende slates or schists.

The pegmatite bodies appear to be conformably interfolded masses, notwithstanding the interlocked structure afforded by some specimens. A question legitimately obtains as to whether this intergrowth might not in some instances have resulted from aqueoigneous action.

Along one portion of the Lemon branch thin layers of schistose material appear bedded in approximate horizontality, and, therefore, rest unconformably on the edges of the previously noted monazite series. Whether these represent a separate series, or a detached portion of the same series which has folded-over, does not clearly appear.

## material: monazite. survey no. 6815 .

Area: Santee. Sub-Area: Catawba Riv.; Allison's Crk. Br. Location: York County; north branch of Allison's Creek; 7 miles northeast of York.
Address of Owner or Representative (?): Jessie C. McKinzie, Yorkville, S. C.
OBS-Anderson-Spartanburg Zone. Some monazite appears in the gravels along a branch at this locality.
material: monazite. survey, no. 7008.
Sub-Area: Allen Creek.
Area: Santee.
Monazite ; 8 miles from Pacolet.
Address of Owner or Representative (?) : J. G. Martin, Pacolet, S. C.

OBS-Anderson-Spartanburg Zone A small creek courses over the upturned edges of decomposed feldspathic and pegmatitic strata, and decomposed hydromica slates, which are covered in the flats with a gravel bed; which underlies layers of white clay and soft fine biotitic matter resembling graphite. The formation (strikes approximately N. $20^{\circ} \mathrm{E}$. with a dip to the northwest), being on the upper side of the Thicketty anticline from which it is distant about 2.5 miles. The gravels afford good returns in monazite.

MATERIAL: MONAZITE. SURVEY NO. 7 IIO.
Area: Santee.
Location: Spartanburg County; 8 miles north of Pacolet ; branch of Allen's Creek.
Address of Oumer or Representatice (?) : J. M. Hays, Pacolet, S. C.

OBS-Anderson-Spartanburg Zone. The gravels along this branch of Allen's Creek afford encouraging prospects for monazite, the grade being good.
material: monazite. Survey no. 7 I il.
Area: Santee. Sub-Area: Pacolet River; Allen Crk. Br. Location: Spartanburg County; 0.7 miles (?) north of Cowpens. Address of Ouner or Representative (?) : J. V. Welchel, Pacolet, S. C.

OBS-Anderson-Spartanburg Zone. The gravels along Floods Branch produce good monazite.

Material: mónazite. SURVEy no. 7 II4.
Area: Santee.
Sub-Area: Pacolet River. Location: Spartanburg County; Duval property; Island Creek; - fork of Allen's Creek.

Address of Owner or Representative (?) : J. Duval, Pacolet, S. C. OBS-Anderson-Spartanburg Zone. The gravels along Island Creek afford good monazite returns.

## MICA AND FELDSPAR.

These minerals, in sizes available to the useful arts, occur as the determining constituents of pegmatite in the Chatooga Zone, the Saluda Zone, and the Anderson-Spartanburg Zone. They represent pegmatite masses included by mica schists and the gneissoid rocks. In the Chatooga Zone a fine body of feldspar in pegmatite extends from the Georgia side, (Sur. No. 1009).

In the Saluda Zone, west of Pickens, a good grade of feldspar appears in conjunction with a fairly good body of mica, (Sur. No. 1590).

In the Anderson-Spartanburg Zone, below Greenville, a fine boly of mica, feldspar and flint has recently been opened to a depth of sixty feet, (Sur. No. 5215). Peculiar interest attaches here to the associate occurrence of columbite. South of this locality a fine mica prospect occurs, (Sur. No. 5225). Southwest of Anderson several bodics of pegmatite have been mined for the contained mica, (Sur. Nos. II40, 1173,1175 ). The work has been essentially sufficial and without system, but excellent material has been obtained and
marketed. In the Saluda Zone a good mica prospect occurs in Oconee County, (Sur. No. 1527).

Numerous prospects of subordinate promise occur in the Saluda and Anderson-Spartanburg Zones.

The Miller-Teague Mine (Sur. No. 5215) is the only active producer of mica; this mica is of good dimensions and is associated with a fine grade of feldspar.

## Uses of Feldspar.

In the manufacture of pottery and glass; glazing ceramic wares; soap manufacture; dentistry.

## Uses of Mica.

Finest sheets required for covers for compasses and other mathematical instruments.
Sheet mica is used to afford translucent spaces in furnaces and stoves; also for insulation of electric machines; also for lamp shades. Scrap mica is extensively used in electric insulation; also as a lubricant; fireproof coating; sizing for wall paper; bronze powder; in the manufacture of "Micanite," or scrap sheets cemented by a flux under high temperature and pressure. Used in the manufacture of sectional coverings for steam pipes, coverings for boilers, etc.

## MATERIAL: FELDSPAR. SURVEY NO. IOOG.

Sub-Area: Chatooga River.
Area: Savannah.
Location: Oconee County; Feldspar Bed; 12.5 miles northwest of Walhalla; 2.3 miles north of Cannon's Store.
OBS-Chatooga Zone. A highly feldspathic ledge of gigantic pegmatite crosses the Chatooga River about two miles north of Rogues' Ford. This deposit has not been opened on the Carolina side; an adit on the Georgia side reveals a feldspathic ledge about nine feet wide, which affords a good grade of feldspar susceptible of easy separation from associate matter. This feldspar affords the following analysis:

Silica, 62.26 per cent.; Alumina, 20.41 per cent.; Ferric Oxide 0.31 per cent.; Titantic Oxide, trace; Lime, 0.19 per cent ; Magnesia, 0.78 per cent.; Soda, I. 41 per cent.; Potash, 12.71 per cent. ; Moisture $\left(100^{\circ} \mathrm{C}\right.$ ), o. 11 per cent.; Ignition, 1.43 per cent. Total, 99.61 per cent.

MATERIAL: MICA.
Area: Savannah. Location: Anderson County; 10.9 miles southwest of Anderson. Address of Owner or Representative (?): Jos. I. Fretwell. Anderson, S. C.
OBS-Anderson-Spartanburg Zone. Between black aphanitic hornblende schists and a coarse grained decomposed gneissoid mass, a vein of pegmatite extends with a strike N. $19^{\circ} \mathrm{E}$. This vein varies from three to seven feet in width, and consists of mica intercrystallized with quartz. Some of the mica affords sheets squaring ten by ten inches; it has a slight wine color, but is tough and highly elastic. A series of shallow pits have been dug along the outcrop for a distance of 430 feet. None of these pits exceeds 22 feet in depth. This property has supplied good grades of mica to the market.

## MATERIAL: MICA. SURVEY NO. II73.

Area: Savannah. Sub-Area: Savannah River Branch. Location: Anderson County; 4 miles southwest of Iva.
Address of Ozener or Representative (?): Vandiver Sherard, Iva, S. C.

ObS-Anderson-Spartanburg Zone. (See description Sur. No. 1175.)

## MATERIAL: MICA. SURVEY NO. II75.

Area: Savannah. Sub-Area: Savannah River Branch. Location: Anderson County; $3^{1 / 4}$ miles S. $77^{\circ} \mathrm{W}$. of Iva. Address of Owiner or Representatize (?) : Sam Wharton, Iva, S. C.

OBS-Anderson-Spartanburg Zone. About 250 feet north of a diabase dike a prominent pegmatite dike 15 feet wide courses N . $34^{\circ}$ E., with a steep $\operatorname{dip}$ S. E. The foot wall consists of a glistening mica slate resting against decomposed gneissoid slates. The hanging wall consists of hard biotite slate underlying a slate consisting of an aggregate of mica scales. The portion of the vein on the hanging wall side comprises large masses of feldspar, inclosing some mica; on the foot wall side quartz prevails with large included bunches of mica, some of which afford plates ten inches square.

Some of the mica is tough, elastic, and colorless; some is badly "Aed," and wine colored. The development of the mica is irregular, both with respect to perseverance in depth and along the surface line. The outcrop is interruptedly exhibited more than a half mile northeasterly. Southwesterly it extends to the Vandiver Sherard
property, where the conditions are similar. Both of these properties have been operated in a desultory way, but have contributed good mica to the market.

$$
\text { MATERIAL: MICA. SURVEY NO. } 1390 .
$$

Area: Savannah. Sub-Area: Little Generostee Creek. Location: Anderson County; i mile west Barnes. Address of Owner or Representative (?): W. A. Hall, Barnes, S. C.

OBS-Anderson-Spartanburg Zone. A contact zone between gneiss and a dirty brown mica slate, striking N. $80^{\circ}$ E., affords irregular accumulations of quartz, feldspar, and mica; the latter affords sheets as large as six inches square, with a slight wine color. This zone along which the mica appears developed is traceable sereral miles northeasterly; it passes about 0.3 miles north of Barnes Station.

## MATERIAL: FELDSPAR. SURVEY NO. I520.

Area: Savannah. Sub-Area: Keowee River; 6-Mile Crk. Location: Oconee County; Old Powder Mill; 6 miles N. $55^{\circ}$ W. of Central.
OBS-Saluda Zone. A ledge of pegmatite crosses Six-Mile Creek and is exposed in the road about 160 feet east of the Old Powder Mill site; it affords large blocks of feldspar. No development has been made to test the extent of this deposit.
Analysis of Feldspar-Lime, 0.14 per cent.; Magnesia, o. 14 per cent.; Alumina, 18.21 per cent.; Ferric Oxide, o.79 per cent.; Soda ( $\mathrm{Na2O}$ ), 2.41 per cent.; Potash (K2O), II.14 per cent.; Silica, 67.30 per cent.; Ignition, 0.06 per cent. Total, 10.19 per cent.

## material: feldspar and mica. SUrvey no. 1527.

Area: Savannah.
Sub-Area: Keowee River. Location: Oconee County; 4.7 miles N. $42^{\circ}$ E. of Seneca. Address of Ower or Representative (?): Thad. Leroy, Seneca, S. C.

OBS-Saluda Zone. A bold ledge of gigantic granjte, consisting of large individuals of (muscovite) mica, feldspar and quartz, crosses Little River along the strike N. $30^{\circ} \mathrm{W}$., and affords fine sheets of an excellent grade of mica, very irregularly distributed.

Material: feldspar. SURVEY No. 1590.
Area: Savannah. Sub-Area: Seneca River; i2-Mile Crk. Location: Pickens County; 3.7 miles N. $71^{\circ} \mathrm{W}$. of Pickens.
Address of Owner or Representative (?) : B. A. Hagood, Charleston, S. C.
OBS-Saluda Zone This ledge of gigantic granite, on the east side of a small branch, has been opened to a limited extent, and affords a good output of fair sizes of low grade mica, and large masses of a very high-grade feldspar. Hornblende slates and schists constitute the predominating country rock of this area. This deposit is topographically well adapted to economic development, the chief exposure ascending an abrupt hill.

Analysis of Feldspar-Lime, o. 18 per cent.; Magnesia, 0.13 per cent.; Alumina, 19.45 per cent.; Ferric Oxide, o.71 per cent.; Soda ( $\mathrm{Na2O}$ ), 2.02 per cent.; Potash (K2O), 11. 34 per cent.; Silica, 65.60 per cent.; Ignition, 0.63 per cent. Total, 100.19 per cent.

MATERIAL: MICA. SURVEY NO. I7I5.
Area: Savannah. Sub-Area: Seneca River; 26-Mile Crk. Location: Anderson County; Five Forks; 4.1 miles N. $51^{\circ}$ E. of Denver.
Address of Owner or Representative (?): O. W. Casey, Denver, S. C.

OBS-Tyger Zone A pegmatitic ledge, interruptedly exposed for nearly one mile, reveals at this locality a pocket of mica. A small pit exposes this material in small sheets, stained, and much "Aed;" the quality is adapted to the manufacture of lubricants, and for electrical insulation.

## MATERIAL: FELDSPAR. SURVEY NO. I 790.

Area: Savannah.
Sub-Area: Rocky River Branch. Location: Abbeville County; Tillman McMahan Place; 6.5 miles S. E. of Iva.

Address of Owner or Representative (?): Tillman McMahan, Iva, S. C.

OBS-Anderson-Spartanburg Zone On a branch about 800 feet east of Rocky River a pegmatite occurs, consisting of pink feldspar inclosing particles of quartz and scattered bunches of mica. The mica exposed afforded sheets squaring about five inches, but is somewhat marred with the "A" crystal lines. The inclosing material is hard and difficult to separate.

## MATERIAL: FELDSPAR AND KAOLIN. • SURVEY NO. 1925.

Area: Savannah. Swb-Area: Long Cane Crk., Norris Crk. Br. Location: Abbeville County; o. 7 miles S. $22^{\circ} \mathrm{W}$. of Abbeville. Address of Owner or Representative (?): Mr. Wilson, Abbeville, S. C.

OBS-Abbeville-York Zone. Underlying fifteen feet of decomposed hydromica slates a considerable deposit of residual kaolin occurs, largely mixed with extremely fine white feldspathic matter; the whole should constitute a good substitute for "spar" for bonding the more refractory clays of the coastal plain. A twenty-foot test shaft penetrated this matter five feet, and borings show the bed to be approximately twenty feet thick. Analysis of an average sample, washed, afforded the following results:
Silica, ${ }^{72.81}$ per cent.; Alumina, 14.90 per cent.; Ferric Oxide, 1.93 per cent.; Lime, 0.56 per cent.; Magnesia, o. 36 per cent.; Soda, 3.2I per cent.; Potash, 4.16 per cent.; Ignition, i. 99 per cent. Total, 99.92 per cent.

Rational Analysis-Clay substance, 19.65 per cent; Quartz, 33.17 per cent.; Feldspar, 47.10 per cent.

See Preliminary Report on the Clays of South Carolina, page 129.
MATERIAL: FELDSPAR. SURVEY NO. 5040.
Area: Santee.
Sub-Area: Saluda River Branch.
Location: Anderson County; 5 miles southeast of Easley; 0.3 mile east of the highway to Belton.
Address of Owner or Representative (?) : J. B. Nally and A. Ellison, Easley, S. C.
OBS-Tyger Zone Contiguous to a bold intruded amphibolite dike, through feldspathic and mica slates, there occurs an associate ledge composed of feldspar (orthoclase) and quartz, and a limited amount of dark green mica. A small test pit reveals the feldspar in lumps rarely exceeding six inches in diameter, and as enclosing occasional grains of quartz and occasional patches of mica. This pit was sunk in the search for gold-bearing material; gold being disseminated in quartzose stringers distributed through the mica slates, which, in breaking down, have afforded modest placer deposits. Previous surveys have cited this property with special reference to the feldspar, but the present evidences do not encourage the hope that this will become a feldspar proposition.

## MATERIAL: MICA-FELDSPAR. SURVEY NO. 5215.

Area: Santee.
Sub-Area: Reedy River Branch. Location: Greenville County; W. T. Miller Place, 8.5 miles S. $23^{\circ}$ E. of Greenville.

Address of Owner or Representative (?) : Miller \& Teague, Greenville, S. C.
OBS-Anderson-Spartanburg Zone. The prevailing country rock is a porphyritic gneiss with large feldspar phenocrysts; the immediate wall rock, both hanging and foot, consists of a decomposed fine grained mica schist, passing outward to gneissoids. The vein of gigantic granite or pegmatite is fourteen feet wide, strikes N. $65^{\circ}$ E., with a steep dip to the N. W.

The vein comprises three zones.
(a) Next to foot wall, two feet of large units of feldspar with very small pieces of quartz and some good mica.

Feldspar Analyses-Lime, 0.24 per cent.; Magnesia, 0.23 per cent. ; Alumina, 22.57 per cent.; Ferric Oxide, o. 18 per cent.; Soda, 2.72 per cent.; Potash, 11.01 per cent.; Phosphoric Acid (P2O5), 0.09 per cent.; Sulphuric Radical, trace; Silica (and insoluble), 60.79 per cent.; Ignition, I. 90 per cent. Total, 99.73 per cent.
(b) Intermediate zone, nine feet wide, comprising crystalline quartz aggregated in huge blocks; includes very limited tufts of mica, and in the seams drusy pyrite; includes imperfect crystals of columbite, some weighing approximately eight ounces.
(c) Three feet, feldspathic matrix inclosing small pieces of quartz and thickly aggregated clusters of mica attaining large sizes; the mica is colorless, clear and tough.

Development comprises one shaft fifty-one feet deep; about 100 feet northeast of shaft No. i a second shaft is being sunk; a level is being extended from the bottom of shaft No. I towards shaft No. 2. A good proportion of the mica is of superior grade, and the balance adapted to purposes of insulation. The feldspar, as will be observed from the analysis, is of excellent grade for potters' uses.

## material: mica. SURVEY No. 5225.

Area: Santee.
Sub-Area: Mountain Creek. Location: Greenville County; Old Darby Place; 8 miles S. E. of Pelzer.
Address of Ozener or Representative ( ?): G. W. Chapman, Belton, S. C.

OBS-Anderson-Spartanburg Zone. An extensive pegmatite dike locally assumes a predominant micaceous form. Some of the mica individuals square nine by sixteen inches. This mica is tough, elastic and generally clear. This body constitutes a very promising prospect, the immediate development of which is under arrangement.

Material: mica. . Survey no. 5830 .
Area: Santee.
Sub-Area: Saluda River.
Location: Spartanburg County, near Campobello.
Address of Oumer or Representative (?) : I. W. Wingo, Campobello, S . C .
OBS-Tyger Zone. Samples of mica were received from this locality which were small in size and much stained from surficial waters. The grade is otherwise good and should probably be well adapted to purposes of electrical insulation.

## CORUNDUM.

Corundum occurs in the Chatooga Zone, the Saluda Zone, the Anderson-Spartanburg Zone, and in the Abbeville-York Zone.

In the Chatooga Zone it occurs in chlorite schists, which appear to have resulted from the alteration of peridote along the zone of contact with the gneissoid rocks. The corundum, in grains and small crystals, often appears as nuclei to small indurated masses of chlorite schist, but ordinarily the corundum and chlorite, without parallelism of arrangement, occur in distinct layers. Actinolite, as a secondary mineral in acicular crystals, is associated with the corundum in the Chatooga Zone. The bodies of corundum observed in this zone are not extensive (Sur. Nos. 1090, 1407, 1460 .)

In the Anderson-Spartanburg Zone corundum appears largely confined to the thin surface beds of hydromica slates, the degradation of which has left the hard material scattered over the surface in the form of grains, tabular pieces, and modified prisms attaining as much as three and a half inches in length.

Such occurrences are conspicuous in Laurens County, but they rarely present economic quantities of corundum. (Illustrative localities Sur. Nos. ${ }^{1776}$, 5250, 6300.)

In the Abbeville-York Zone (near Nanny's Mt., Sur. No. 7025) corundum occurs along the contacts of gneissoids and mica slates, pitched at high angles, in close proximity to a prominent dike of plagioclase porphyrite, which, at the distance of 1.5 miles (S. W.), appears in contact with an extensive body of limonite and pyrrhotite.

## Uses of Corundum.

For abrasive purposes, emery wheels; to limited extent in the manufacture of aluminum.

Comprises valuable gems: Sapphire (blue), oriental emerald (green), oriental ruby (red), oriental amethyst (purple), topaz (yellow).

MATERIAL: CORUNDUM. SURVEY NO. IOgO.
Area: Savannah.
Sub-Area: Chauga River.
Location: Oconee County; 4 miles N. $40^{\circ} \mathrm{W}$. of Westminster. Address of Owner or Representative (?): William Anderson, Westminster, S. C.
ObS-Oconee Creek Zone Limited superficial exposure of corundum, residual to surface of decomposed hydromica slates, occurs near Chauga Falls.

MATERIAL: CORUNDUM. SURVEY NO. 1407.
Area: Savannah. Sub-Area:. Little River; Cane Crk. Location: Oconee County; 4 miles N. of Walhalla. OBS-Oconee Creek Zone.

MATERIAL: CORUNDUM.
Area: Savannah.

SURVEY NO. 1460.
Sub-Area: Little River.

Location: Oconee County; 15 miles north of Walhalla; on the Middle Fork of Cheohee Creek.
Address of Owner or Representative (?): Miss Leonie Kuhtman, Walhalla, S. C.
OBS-Chatooga Zone. Slightly northwest of the zone of auriferous pyrite constituting the old Cheohee Gold Mine, a pronounced outcrop of peridotite occurs. Corundum occurs in minute and large particles in the peridotite. The quantity revealed by very limited development does not appear to have encouraged perseverance.
material: zircons and corundum. survey no. if75.
Area: Savannah. . Sub-Area: Rocky River. Location: Anderson County; 6 miles N. $50^{\circ}$ E. of Cooks; in miles S. $20^{\circ}$ E. of Anderson.

Address of Owner or Representative (?): Dr. Augustus Thompson, Anderson, S. C.
OBS-Anderson-Spartanburg Zone. Zircon and corundum occur irregularly distributed through the hydromica slates and feldspathic rocks of this locality. Disintegration, which has removed the softer material, has left considerable accumulations of these minerals along the gully lines. The corundum is crystallized in a tabular form and comprises delicate shades of pink and blue. The zircons occur in short prisms with pyramidal terminations, and also as geniculated twins. This property is entitled to systematic exploration for economic quantities of these minerals and for associate gems.

MATERIAL: ZIRCONS AND CORUNDUM. SURVEY NO. I777.
Area: Savannah.
Sub-Area: Rocky River.
Location: Anderson County; ir. 5 miles S. $20^{\circ}$ E. of Anderson. Address of Owner or Representative (?): James Jackson, Anderson, S. C.

OBS-Anderson-Spartanburg Zone. This property represents an extension of the property described under No. 1775, which description equally applies to 1777 .
material: Corundum. survey no. 5igi.
Area: Santee. Sub-Area: Reedy River; Walnut Crk. Location: Laurens County; 6.5_miles S. W. of Waterloo. Address of Owner or Representative (?): G. F. Anderson, Waterloo, S. C.
OBS-Abbeville-York Zone. Surface of the decomposed hydromica slates affords scattered hexagonal prisms of corundum.

MATERIAL: CORUNDUM. SURVEY NO. 5250.
Sub-Area: Little River.
Area: Santee. Location: Laurens County ; Dead Man's Cut ; 0.7 miles N. $70^{\circ}$ E. of Courthouse.
Address of Owiner or Representative (?): Laurens Cotton Mill Company, Laurens, S. C.
OBS-Abbeville-York Zone. A sharp anticline conforming to an intrusive elongated boss of granite, coursing approximately N . $45^{\circ}$ E., includes the following section:
(a) Hydromica slates enclosing numerous prisms of corundum irregularly distributed; the degradation of this upper formation has left a large accumulation of corundum on the surface.
(b) Gneissoid slates bulged in conformity with (d).
(c) An irregular contact zone, between (b) and (d), varying from three to five feet in thickness and comprising damourite, actinolite, hornblende, and crypto-crystalline pink garnet.
(d) Very hard, intrusive boss of granite, with phenocrysts of pink feldspar; the included mica is biotite.
material: Corundum. survey no. 5654 .
Area: Santee. Sub-Area: Enoree River; Duncan's Crk. Location: Laurens County; 4 miles N. $10^{\circ}$ E. of Laurens.

OBS-Abbeville-York Zone. The disintegration and erosion of the hydromica slates has left prisms of formerly included corundum scattered over the surface.
material: corundum. survey no. 5658 .
Area: Santee.
Sub-Area: Enoree River; Duncan's Crk. Location: Laurens County; 5.5 miles N. $72^{\circ}$ E. of Laurens.

OBS-Abbeville-York Zone. The disintegration and erosion of the hydromica slates has left prisms of formerly included corundum scattered over the surface.
material: corundum. survey no. 6005.
Area: Santee. Sub-Area: Pacolet River Branch. Location: Spartanburg County, east of Fingerville.

OBS-Anderson-Spartanburg Zone. Samples of fine corundum thave been received from this region of hydromica slates.

MATERIAL: CORUNDUM. SURVEY NO. 6300.
Area: Santee.
Sub-Area: Broad River Branch.
Location: Cherokee County; 0.7 miles west of Buffalo Church; 4.5 miles northwest of Blacksburg.
Address of Owner or Representative (?): W. T. Gibbons, Blacksburg, S. C.
OBS-Anderson-Spartanburg Zone. The valley lines of this section expose hard beds of the following formations: Coarse feldspathic porphyry, gneissoid slates, biotite and hornblende slates, garnetiferous slates (strike N. $29^{\circ} \mathrm{E}$., dip $37^{\circ} \mathrm{S} .61^{\circ} \mathrm{E}$.) ; overlying these we observe beds of decomposed feldspathic matter, the crest of the ridges being capped with hydromica slates and some pegmatitic matter with comparatively flat dip. Irregularly distributed through this hydromica slate, etc., there occurs corundum occasionally associated with high-grade sapphires (rare) ; in some portions of this formation, where the pegmatitic feature is in evidence, fine clusters of the amethyst are found.
material: corundum, zircon and gems. survey no. 6316 . Area: Santee. Sub-Area: Broad River. Location: Cherokee County; Andrew Moore Place (and vicinity); 2.5 miles N. $45^{\circ}$ W. of Blacksburg; adjacent to Buffalo Church Road.
Address of Owner or Representative (?): Andrew Moore et al., Gaffney, S. C.
OBS-Anderson-Spartanburg Zone. Hornblende slates, mica slates, feldspathic and pegmatitic strata, hydromica slates, quartzitic schists, and varous highly feldspathic formations, all in a greater or less degree of alteration (strike N. $30^{\circ} \mathrm{E}$.. dip $20^{\circ} \mathrm{S} .60^{\circ} \mathrm{E}$ ). A bold igneous dike, striking N. $53^{\circ}$ E., cuts through at a point between the hydromica slates and hornblende slates. The hydromica
slates in this vicinity expose, where disintegrated, scattered zircons. The feldspathic or pegmatitic series has afforded several good sapphires and one fine emerald (?).

Many of the branches, tributary to Bowen's River, which originate in this section, afford deposits of monazite of variable extent. Scattered particles of corundum are likewise observed in this formation.

## MATERIAL: CORUNDUM. SURVEY NO. 7025.

Area: Santee. Sub-Area: Catawba Riv.; Beaverdam Crk. Br. Location: York County, 12 miles northeast of Yorkville, I mile northeast of Nanny's Mt.
Address of Owner or Rcpresentative (?): John R. Hart, Agt., Yorkville, S. C.; A. Rickard, Dr. T. W. Campbell, John McLane, J. B. Smith.
OBS-Abbeville-York Zone. The country rock of this locality strikes about N. $29^{\circ}$ E., dips from $45^{\circ}$ to $85^{\circ}$ S. $6 \mathrm{I}^{\circ}$ E., and comprises the following interstratified rocks, in order proceeding easterly from the valley of Beaverdam Branch :
(a) Hornblendic rock partly metamorphosed to talc.
(b) Diabase dike.
(c) Highly decomposed biotite and hornblende slates.
(d) Decomposed gray gneiss.
(e) Quartz-mica schist.
(f) Gneissoids.

In the hydromica schists and gneissoids the corundum occurs disseminated in crystals, and segregated in veins. The surface of the ground is strewn with crystals of corundum residual to the degraded schists. A shaft sunk on the gneissoids disclosed a vein about thirty inches wide, largely consisting of matted corundum, of a steel gray lustre when freshly broken. Some of the lumps of corundum thus obtained weigh exceeding 260 pounds. The extreme width of the zone ( $d, e$ and $f$ ) in which the corundum occurs is about 570 feet; the greatest concentration of corundum occurs between (d) and ( $f$ ).

The associate formation, with a slightly curved strike (S. $19{ }^{\circ} \mathrm{W}$.), extends close to the northern side of Nanny's Mt., where it approaches close to the iron zone, from which it is separated by a bold plagioclase porphyrite dike. The corundum occurs on the property of four parties, the land corner being near the most prominent exposure, which is on the Rickard property.

## GEMS AND GEM STONES.

The gems and gem stones of South Carolina occur chiefly in the Anderson-Spartanburg Zone, along which they extend from the North Carolina line to the Savannah River, notably in association with the rocks of the monazite belt. These rocks comprise hydromica slates, mica schists, graphite slates, aplite, granulite, greisen, and pegmatite.

## GARNETS.

Garnets occur disseminated through mica schists, aplite gneiss, and other gneissoids, chiefly as isolated crystals and grains of common almandine, which occasionally appears in the precious form. While it is of very wide distribution, no bodies of garnet of economic importance have yet been observed.

Lieber (III 63) reports massive garnet in lower Pickens, and submits the following analysis by Dr. Genth: Silica, 37.62 per cent.; Alumina, 19.19 per cent.; Ferric Oxide, 2.66 per cent.; Ferrous Oxide, 19.95 per cent.; Manganous Oxide, 9.89 per cent.; Magnesia, 3.50 per cent.; Lime, 7.01 per cent. Total, 100.82 per cent.
(Sur. No. 1775), Lee Shoals, Anderson County. A deep red massive garnet is irregularly distributed in a feldspathic matrix, associated with pegmatite, and enclosed by mica slates.

An appreciable quantity of garnet, chiefly in fragments, is separated from the monazite sands partly on the screens, and partly by the magnets, at the concentrating plants ; this by-product has not yet been utilized.

## BERYL, EMERALDS, ETC.

While specimens of beryl are rarely found in the northeastern half of the Anderson-Spartanburg Zone, good crystals occur in the pegmatites in the southwestern portion, notably in Anderson County, where high-grade gems have been obtained. The fine grained mica slates and pegmatites associated with the beryl are indistinguishable from the rocks in which the monazite occurs. Beryl has been noted' at the following localities: Alexander (J. B.), place (Sur. No. 1176), 3.2 miles southwest of Iva; McConnell (J. M.), place (Sur. No. 1755), east of Anderson ; Anderson City, near Harrison Springs. (Sur. No. 1758). (Sur. Nos. 5148 to 5155.) The monazite section adjacent to Pelzer, in Greenville and Anderson Counties, has fur-nished some fine specimens of aquamarine, beryl (and tourmaline).
(Sur. Nos. 6300 to 6315 ). Occasional specimens of beryl are found in the monazite sands in Cherokee County.

MATERIAL: EMERALD (AND TOPAZ?). . SURVEY NO. I755.
Area: Savannah. Sub-Area: Rocky Riv.; Beaverdam Crk. Br. Location: Anderson County; McConnel place; 3.5 miles N. $26^{\circ} \mathrm{E}$. of Anderson.
Address of Owner or Representative (?) : J. M. McConnel, Anderson, S .C.
OBS-Anderson-Spartanburg Zone. The country rock consists essentially of mica slates of extremely fine texture, the biotite in some instances is so fine that in softened masses it affords the appearance of graphite. Numerous masses of pegmatite are infolded by the mica schists. The formation is very similar to the monazitebearing formation near Gaffney.

The pegmatites include some mica of fair grade, and crystals of beryl, and, it is said, occasionally topaz. The beryl crystals are very clear, and of an excellent shade of green. Stones cut from these crystals can, with difficulty, be distinguished from the oriental emerald. The beryl chiefly occurs in prisms penetrating the feldspar.

## CORUNDUM SERIES OF GEMS (AND ZIRCON).

Crystals of the corundum series occur along the monazite belt sparsely disseminated in widely separated patches of mica slates. At the two most promising localities the corundum is associated with zircon.

> MATERIAL: CORUNDUM, GEMS (AND ZIRCON). SURVEY NOS. 6300 and 6320.

Area: Santee.
Sub-Area: Broad River; Bowen River. Location: Cherokee County. Address of Owner or Representative (?): Andrew Moore et al., Gaffney, S. C.
OBS-Anderson-Spartanburg Zone. Hornblende slates, mica slates, and pegmatite formations, hydromica slates, quartzitic slates. and various highly feldspathic rocks (average strike N. $30^{\circ}$ E., dip $20^{\circ}$ S. E.). (Sur. No. 6316 .) A bold igneous dike, striking N. $53^{\circ}$ E., cuts between the hydromica slates and hornblende slates. The hydromica slates in this vicinity expose, where disintegrated, scattered zircons.
(Sur. Nos. 6300 to 6320 ). The feldspathic or pegmatite series has afforded several good sapphires, and, it is stated, one fine oriental emerald from the vicinity of Porter's Hill ( 6309 ).

Many of the branches tributary to Bowen's River, which originate in this section, afford deposits of monazite of variable extent. Scat-
tered specimens of corundum appear. While no systematic exploration for gems has been undertaken, a number of small sapphires, some of which came under the observation of this survey, have been found in the Bowen River section (one sapphire sold for $\$ 75.00$ ). A valuable oriental emerald is said to have been found here (and sold in Charlotte, N. C.) ; numerous small oriental (?) topaz crystals are said to have been found (Sur. Nos. 1776-1777).

The Thompson and Jackson places (see Corundum 1776-1777) in Anderson County afford some fine crystals of corundum in delicate shades of pink and blue, associated with zircon, but no pronounced gems have yet been observed.

Numerous localities in Laurens County afford scattered crystals of corundum (see Corundum), but none have been observed suitable for gems.

## AMETHYST.

North of the Abbeville-York Zone veins of quartz assume in spots the amethystine type. Superior grades of crystals are found in Cherokee, Anderson, and Abbeville Counties.
(Sur. No. 1225). McCalla place, Abbeville County, east of Lowndesville. Specimens of superior amethyst were received from this locality.
(Sur. No. 1380 ), Sherard (W. T. A.) place, Anderson County, near Moffettsville, south of Iva. Amethyst of exquisitely clear color occurs in crystals, both individual and clustered. The Smithsonian Institution purchased some fine specimens from this locality. It occurs in narrow and apparently disconnected pockets in the mica slates.
(Sur. No. 1395), Barnes place, Abbeville County, 1.8 miles north of Lowndesville. Specimens of superior amethyst.
(Sur. No. 6301), Bowen River basin, Cherokee County. Fine crystals of amethyst occur in small veins in the mica slates.

## SUNDRY GEM FORMS.

Rutile occurs chiefly in the Anderson-Spartanburg Zone in connection with the monazite belt. Fléches d'amour is the characteristic form. Specimens of crystal masses have been received from the vicinity of Prosperity.

Tourmaline appears in sundry localities north of the AbbevilleYork Zone. It occurs disseminated through the gneissoids and mica schists, and in quartz veins. A few crystals with a fairly clear bluegreen color have been found near Pelzer.

Cyanite. This mineral occurs very extensively distributed in the metamorphosed rocks, but none suited for gems has been observed. An interesting type occurs in Greenville County. It consists of a coarse granular aggregation of white crystals with a faint tint of green due to minute flakes of a material resembling talc, which is probably fibrolite colored with a trace of some silicate of iron. The cyanite individuals have a brilliant, pearly pinacoidal cleavage with transverse parting.

Thin section reveals the presence of both sillimanite and cyanite. Both are colorless; they display brilliant interference tints. The cyanite, which predominates in quantity, extinguishes at considerable angles to the cleavages, while the sillimanite extinguishes parallel to the cleavages in the principal zones. The brilliantly polarizing matted aggregate, resembling talc, is probably fibrolite.

Chemical Analysis Shows-Silica, 39.23 per cent.; Alumina, 58.74 per cent. ; Ferric Oxide, i. 04 per cent.; Lime, trace; Magnesia, trace; Water at $120^{\circ} \mathrm{C}$., 0.24 per cent.; Water at red heat, 0.17 per cent. Total, 99.42 per cent.

## FROM THE COASTAL PLAIN.

Amber. Occasional rounded lumps of crude amber appear immediately superimposed on the phosphate rock. The quantity is too small to be of economic importance.

Chalcedony. The King's Creek silex (oligocene) includes nodular masses of chalcedony ranging through dull white, pink and blue colors. Some specimens exhibit fossil coral.

Formerly extensively utilized by the aborigines in the manufacture of arrow and spear heads; the former "chipping-ground," near King's Creek landing on the Savannah River, comprises more than an acre, the soil of which abounds in chips of this material, and numerous fragments of arrow heads.

## CRYSTALLINE SFRIES-ANALYSES OF FELDSPARS.

Tablin No. 1.

| 1 2 8 4 | County <br> Locallty <br> Stream. <br> Owner <br> ( ${ }^{2}$ ) | Oconex.. . . .. 12.5M NW Wal. Chatooga R. | Oconem. . .. .. <br> Powder Mlll <br> 6 Mlle Crk. | PICKENS .. .. <br> 3.7M N71*W Ple <br> 12 Mile Crk. .. <br> B. A. Hagood. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Ayca . . . | Savannah | Savannah | Savanuah .. .. |
| 6 | Surter No. | 1009 | 1520 | 1590 |
| 7 | AMALYEIS : |  |  |  |
| 8 | Lime . . | . 19 | . 14 | . 18 |
| 9 | Magnesia .. . . . . . . . . . | . 78 | . 14 | . 13 |
| 10 | Alumina . . | 20.41 | 18.21 | 19.45 |
| 11 | Ferric Oxide .. . . . . . . . | . 31 | . 79 | . 71 |
| 12 | Ferrous Oxide . . . . . . . . |  | ... .. .. .. . | ... .. .. .. .. |
| 13 | Titanic Oxide. . . . . . . . . | trace | trace | trace |
| 14 | Manganese Oxide (MnO)... | . . |  | ... .. .. .. .- |
| 15 | Boda (NazO). . . . . . .. .. | 1.41 | 2.41 | 2.02 |
| 16 | Potash (KaO) . . . . . . . . | 12.71 | 11.14 | 11.34 |
| 17 | Cartonle Acld ( $\mathrm{CO}_{2}$ ) . . . . . |  | . . . . |  |
| 18 | Phosphoric Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ).... |  |  |  |
| 19 | Iron Sulphide. . |  |  |  |
| 20 | Sulpharic radical ... . . . . |  |  | trace |
| 21 | Sllica (and Insoloble)... .. | 62.26 | 67.30 | 65.60 |
| 22 | Ignition . . . . . . . . . . . . . | - 1.43 | . 08 | . 63 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . . . | . 11 |  | ... .. .. - |
| 24 | . . . . . . . . . . . . . |  | . . . . | $\cdots$ |
| 25 | Total | 99.61 | 100.19 | 100.06 |
| 28 | Gmolorical Horizon. |  |  |  |
| 27 | Lithological Zoxi. . | Chatooga | Saluda. . | Saluda. . |
| 28 | Groanostic |  |  |  |

## CRY8TALLINE SERIES-ANALYBES OF FELDSPARS. <br> Tablif No. 1.

| 1 2 8 4 | Countr. <br> Locality <br> Stream <br> Owner <br> ( 9 ) | Abrevillis. <br> W. Abbeville <br> Norris Cri. Br. <br> Wilson. | Granavilhm. . . . . . . <br> 8.5M 828* E Greenv. <br> Reedy River Br... . <br> Miller \& Teague. . |
| :---: | :---: | :---: | :---: |
| 5 | AgEa. . | Savannat . . . . |  |
| 6 | Suriey No. . .. . . . . . . . . . | 1925 | 5215 |
| 7 | Anatybig. . |  |  |
| 8 | Lime. . .. . . .. .. .. .. .. | 0.68 | 0.24 |
| 9 | Magnesla. . . . .. .. .. .. .. | 0.86 | 0.23 |
| 10 | Alumina.. .. .. .. .. .. .. | 14.90 | 22.57 |
| 11 | Ferrlc Oxide. . | 1.08 | 0.18 |
| 12 | Ferrous Oxide.. . . . . . .. .. | - .. .. .. .. .. .. .. | - .. .. .. .. .. .. . |
| 18 | Titanlc Oxlde. . . . . . . .. .. | - .. .. .. . . . . . . | - .. .. .. .. .. .. .. |
| 14 | Manganese Oxdde (MnO).. .. | - . . . . . . . . . . . |  |
| 15 | Soda (Na2O).. | 8.21 | 2.72 |
| 18 | Potash (K2O).. .. . . . . . | 4.16 | 11.01 |
| 17 | Carbonlc Acld (CO2) . . . . . | - .. . . . . . . . . . |  |
| 18 | Phosphoric Acld (P2O5).. .. | . | 0.09 |
| 19 | Iron Sulphide. . . . . . . .. .. | - . . . . . . . . | . . . . . . .. . |
| 20 | Sulphuric radical. . . . . . . | . | trece |
| 21 | Slica (and insoluble) | 72.81 | 60.70 |
| 22 | Ignitlon. . . . . . . . . . . . . | - 1.89 | 1.80 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ )... .. | . .. .. .. . . ${ }^{\text {a }}$ | - .. .. .. .. .- .. . |
| 24 | .. . . .. . . . .. .. .. .. .. | - . . . . . . . . . . | . . . . . . . . . . . . . |
| 28 | Total.. . $\quad$. . . . . . . | 99.82 | 99.73 |
| 26 | Gmological Horizon... .. | - .. .. . . . . . . . |  |
| 27 | Lithological Zonz.. .. .. .. | Ab-York. . . . . . . . . | An-Bpart. . . . . . . |
| 28 | Grognostic. . . . . . . . . | - .. . . . . . . . . . |  |


THE ANDERSON QUARRY-BLUE GRANITE.

## PART III. <br> CRYSTALLINE REGION, ECONOMIC AND INDUSTRIAL STRUCTURAL MATERIALS

## STRUCTURAL AND MONUMENTAL STONES.

The stones in South Carolina, which are susceptible of structural and monumental uses, comprise:

| Granite | Syenite | Shale | Sandstone | Marl |
| :--- | :--- | :--- | :--- | :--- |
| Porphyry | Trap | Argillite | Quartzite | Limestone |
| Gneiss | Serpéntine | Schist | Buhrstone | Marble |

The economic values of the respective deposits of these stones, as conventionally appraised for structural or monumental purposes, depend in varying degrees upon the following properties and conditions:
A. Locality.
B. Geognosy and Topography.
C. Rift and Grain; and Related Structure and Texture
D. Working Qualities; Finish.
E. Color; Aggregate Color Effect; Permanence of Color.
F. Strength and Durability (Structure, Texture, Hardness, Chemical and Mineral Composition; Compressive Strength).
G. Resistance to the effects of Extreme Cold and to High Heat.
A. Locality-Involves an important consideration in relation to the possible transportation facilities to the points of consumption or rock marts.
B. Geognosy and Topography-Geognosy relates to the extent and to the character of the occurrence of the bed of stone, and of its associate formations; it is of importance with relation to the amount of sap and overburden which impose "dead work."

Topographic considerations affect the drainage possibilities of a quarry, as well as the conditions of the handling and of the transportation of the quarried products.
C. Rift and Grain involve structural and textural qualities which determine the respective ease with which a stone can be "lifted," or "rifted" along planes parallel to its bedding, or to its schistosity and
split along planes normal to the same. To determine these qualities experimental quarrying below the zone of sap-rock is required.
D. Working Qualities; Finish-The working quality of a stone depends on the fineness of the texture of the stone, and on the manner of aggregation of its component minerals.

Susceptibility to refined finish depends in a measure on the hardness and on the capacity of the individual constituents of a stone to yield fine amorphous particles without tearing under the polishing tool ; the constituent minerals must not yield with reference to macroscopic lines of crystal cleavage. These qualities are determined by practical tests under the hammer and polishing tools.
E. Color, Aggregate Color Effect, Permanence of Color-For all masonry above the foundations these constitute important conditions, especially where architectural and ornamental effects, and monumental uses are required. Color effect depends on the individual colors of the component minerals, their relative proportions, and on the relative size of the individuals.

Permanence of color depends on freedom from those highly alterable forms of "essential" and "accessory" minerals which weather to produce unsightly stains; it therefore depends on chemical or mineral composition.
F. Strength and Durability (Structure, Texture, Hardness, Chemical and Mineral Composition; Compressive Strength).

Structure-Indicated by schistosity and parting planes, or by homogeneity and massiveness; determined by field inspection and by the microscopic examination of samples submitted.

Stones are constructively weakened by all planes of separation or fracture, even though such partings shall have been closed by infiltered or segregated quartz, feldspar, or other independent matter. Schistosity and parting planes not only serve to decrease the shearing strength, but through the involved increase of porosity and consequent susceptibility to weathering influences, diminish the durability. In masonry, to be constructed of schistose rocks, the plane of schistosity, or foliation, should be placed normal to the line of greatest strain to avoid shearing in the projecting members, in the arches, and in the wall body, where inequality in possible settling requires the stone in a position combining the greatest resistance to both compression and shearing strains.
Texture is expressed as "aphanitic," "fine grained," "medium grained," "coarse grained" and "porphyritic." This property relates to the size of the component particles and to their manner of aggre-
gation which determine in a measure their interstitial spaces through which the weathering or disintegrating agencies of nature enter to perform their destructive, physical and chemical functions.

The aggregation of the component particles occurs either in parallel planes or interlocked. Compactness of aggregation of the component particles of stone of a given type is, in an approximate measure, indicated by the specific gravity, but it is more definitely expressed, in inverse ratio, by the percentage of moisture absorbed.

A porous stone not only admits moisture and increases the susceptibility to freezing, but introduces oxygen to oxidize the ferrous compounds and accessory sulphides, carbonic acid with moisture to decompose the alkali compounds, and such other active gases as may prevail in the atmosphere to attack such particles of the rock as offer the greatest affinity, all of which actions tend to disintegrate the stone and prejudice its strength and durability. The effects of porosity are influenced by the nature of the pores, because the freedom of ingress and circulation of prejudicial matter depends more on the size of the pores than on their multiplicity, in which respect the fine grained stone is generally superior for durability.

The pores also influence the "crushing strength" of a stone of a given kind because a reduction of the area of contact between the component particles naturally increases the tendency of the particles to yield under pressure. The crushing strength of a given stone is approximately represented by the aggregate crushing strength of its component particles along any plane normal to the strain; and the crushing strength of each component particle of a given kind is proportional to its smallest sectional area of support in opposition to the line of strain. Therefore the manner of the distribution of the pores, with reference to the bedding plane, may account for the fact that fineness of grain, and greater average density, do not necessarily establish superior compressive strength for stones of a given kind.

Hardress-The relative proportions of the component minerals, multiplied by their respective degrees of hardness, afford an equation reducible to a mere approximate expression of aggregate hardness, because the manner of aggregation, and character of the matrix which determine adhesion, largely enter to determine the resistance to wear. Where severe duty is required, the hardness is conventionally determined in terms of percentage of loss by wear and tear, as indicated by the "rattling test," this provides for a weighed quantity of blocks of the stone to be rolled in a barrel, revolving at
a given rate during a given period of time, and then reweighed, which determines the percentage loss by chipping and abrasion, and affords expressions of relative hardness.

In the case of paving blocks subject to the duty of severe traffic, the toughness or combined tensile and shearing strength, and modulus of elasticity, contribute to resist such pounding and tearing of the edges as is imposed by animal feet and vehicle tires.

Chemical and Mineral Composition afford expressions respectively of the ultimate elements contained, and the proximate constituents of individual minerals into which they have been formed. Important in determining greater or less susceptibility of a stone to chemical alteration, disintegration and change of color.

The character and relative proportions of the essential and accessory minerals exercise important influences on the strength and durability of the containing stones. Component minerals are often so intimately blended as to defy accurate discrimination. Chemical analysis reveals the ultimate constituents and helps to differentiate the proximate constituents or mineral forms which determine the type of the stone, and its probable susceptibilities to physical and chemical changes. A given chemical element affords very different affinities, or susceptibilities to change, in different combinations of minerals. Thus as in the case of granite, chemical analysis determines whether the stone is acidic (highly siliceous), or basic, the former being pari-passu the more inalterable; it determines whether soda is present which facilitates the determination of the character and related amount of the feldspar, important because the basic or soda feldspars are much more subject to weathering influences than the potash feldspars; it reveals alumina and iron to suggest muscovite (mica), or iron, alumina and magnesia to indicate biotite (mica), or iron magnesia and lime to suggest the presence of pyroxene or amphibole (hornblende) minerals; analysis discloses, if present, iron sulphide and other objectionable accessories; all important in determining the comparative stability of the including stones.

Cracking and Compressive Strengths are expressed in the pounds of pressure to the square inch respectively necessary to first crack and to ultimately crush a block of stone with a thickness not less than its diameter; tests are ordinarily applied to blocks measuring three inches cube, which should be sawed to the desired size; shocks to small blocks, in being shaped with hammer and chisel, sometimes prejudice tests for strength, and impose widely discordant results.

The extreme loads permitted on stones in New York are (according to Kidder) as follows :

Granite, $\mathrm{I}, 100$ pounds to the square inch.
Limestone, 694 pounds to the square inch.
Sandstone, 390 pounds to the square inch.
The severest loads imposed in engineering practice are on the abutments of arches, aqueducts and bridges. The spring stones of a masonry bridge with a 200 -foot arch span, and with a one-fourth rise, designed according to accepted practice, are required to sustain about 738 pounds of compressive strain to the square inch of sectional area. Trautwine gives the loads supported by certain notable structures as follows:

Rocquefavour stone aqueduct (Marseilles) sustains at base of pier 210 pounds to the square inch, the Saltash bridge (Brunel) pier supporting the ends of two iron spans of 455 feet, sustains a strain of 148 pounds to the square inch, the Merchants Shot Tower (Baltimore) sustains on its base iol pounds to the square inch. The Washington Monument ( 555.4 feet high) sustains on its base 56 pounds to the square inch. It is improbable that any masonry structure in South Carolina sustains more than 50 pounds to the square inch on its foundation course, and not many exceed 25 pounds. Conservative practice provides a safety factor of I , or, that the compressive strength of a stone must be io times greater than the actual requirements of the load to be supported.

Trautwine gives the following range of crushing loads for stones, etc. :

|  | Lbs. Per Sq. Inch. | Average Lbs. |
| :---: | :---: | :---: |
| Granites and Syenites. | 4,665 to 18,660 | 11,662 |
| Basalt. |  | 10,885 |
| Limestone and Marble. | 3,887 to 15,550 | 9,718 |
| Oolites. | 1,555 to 3,887 | 2,721 |
| Sandstone. | 2,332 to 8,552 | 5,442 |
| Portland Cement (Neat) | 1,166 to 2,332 | 1,749 |
| Ice. | 250 to 995 | 622 |

The Granitoid series of stones of South Carolina thus far tested for compressive strength, range from 12,000 to 33,000 pounds to the square inch. Contrast, in the light of the above data, the excessive strength afforded by stones with the maximum duty imposed on masonry and the remarks of Prof. George P. Merrill (Report.
Md. Geological Survey 1898) will stand attested in relation to the superfluity of tests for compressive strength. Dr. Merrill says:
"It is doubtful if in any but the most extreme cases it is necessary to continue this line of investigation. The results thus far obtained are sufficient for us to formulate general rules, and the average results obtained are so vastly in excess of all ordinary requirements that they may safely be ignored. A stone so weak as to be likely to crush in the walls of a building, or even in a window stool, cap or pillar, bears so visible marks of its unfitness as to deceive no one with more than extremely rudimentary knowledge on the subject. It is rare to find a stone that will not show, under the methods of testing now in vogue, a crushing strength of at least 6,000 pounds to the square inch, while many stones, particularly those of the granite group, will range as high as 20,000 to 30,000 pounds to the square inch. Since the first named amount is ten-fold more than is likely to be required of it, in any but the most extreme cases, the absurdity of making further tests is manifest."

## GRANITOID ROCKS.

The term granite is employed to designate a holo-crystalline granular rock of igneous or aqueo-igneous origin, and is composed essentally of interlocked crystals of quartz and feldspar (orthoclase) with its principal accessory minerals from one or more of the mica, amphibole or pyroxene groups.

## Granite Ground-Mass or Body. .

Quartz and feldspar constitute the granitic "ground-mass," the color and character of which are modified by the principal accessory minerals, and to a limited extent by the minor accessory minerals when present in appreciable proportions.
In the granites of South Carolina the following ground-mass conditions are observed:
Quartz is generally white, but ranges through the smoky to approximately black varieties, in rare cases. The quartz occurs as primary grains in forms generally constrained to the spaces left by the other minerals which were first formed and with which it is thus interlocked, but it also occurs in part incorporated in the feldspar crystals. It represents the excess of silica, or the amount not required in the composition of the other component minerals to which its consolidation, as quartz from the original granitic magma, was posterior.

While the silica thus, both combined and frec; is the predominant component of granite, the amount of uncombined silica crystallized in quartz grains is subordinate to the amount of the feldspar minerals present in granite. Quartz is the most stable mineral constituent of granite.

In the ground-mass three forms of feldspar prominently occur individually and jointly; other forms occur subordinately; orthoclase is generally the predominant form; microcline, however, occasionally, exceeds in amount the orthoclase present; plagioclase is an important constituent in many cases, especially those which exhibit the greatest disintegration; individualized albite, oligoclase or labradorite are occasionally discriminated.

The orthoclase (feldspar) ordinarily presents a dull, though sometimes lustrous, milk white color; but in some cases affords a decided. pink. It occurs in the ground-mass crystallized in small grains interlocked with the quartz, etc., but frequently appears in large distinct crystals, thereby affording the form of structure designated "porphyritic." The individual crystals or grains vary in form from perfect to imperfect, including many gradations. The feldspar crystals in many cases include small masses of quartz, mica and other minerals from both the essential and accessory classes.

Orthoclase is the predominant mineral in South Carolina granites. Its chemical relations render it far less stable than quartz, but far more so than the soda feldspars and the hornblende series of associate minerals.

Microcline (feldspar) represents the elements of orthoclase in similar proportions crystallized under a different system in accordance with two laws, which result in fine cross striations, affording thereby its "characteristic grating-structure viewed in polarized light. This structure may be in part secondary." (Dana.)

This form is frequently observed in the South Carolina granites sometimes predominating in mass over the orthoclase.

The general physical and chemical conditions indicated for orthoclase apply equally to microcline, especially with reference to stability.

Plagioclase is a term applied in general to combinations of the members of albite-anorthite, or soda-lime, feldspars which afford cleavages oblique to each other along certain planes. It occurs in short prismatic forms.

Individualized minerals of the albite-anorthite group are frequently observed. The chemical relations of the minerals of this group
are much less stable than those of the orthoclase feldspar; therefore granites into which albite-anorthite feldspars enter disintegrate more readily.
Granites-With the ground-mass as indicated above, and with characterizing accessories from the mica group.


The quartz and feldspar afford a white or pink ground-mass, which is modified with shades ranging through grays to black in proportion to the amount of black mica present. The biotite occurs in the form of foils, scales, and shreds interlocked with the other component minerals and in part occasionally inclosed by the feldspar crystals. Biotite decreases the stability of the ground-mass by reason of the susceptibility of the contained iron to chemical change through chloritic form to ultimate elimination, when exposed to weathering influences. Biotite granite or Granitite is the granite of greatest economic importance in South Carolina, where it generally offers a superior rift, with excellent grain, is susceptible of a fine polish and refined detail, and is highly durable, thus combining qualities unsurpassed for monumental and structural work.

Ground Mass
$\left.\left.\begin{array}{l}\text { Quartz and } \\ \text { Feldspar }\end{array}\right\} \begin{array}{l}\text { With Muscovite } \\ \text { (White Mica) }\end{array}\right\} \quad=\{$ Muscovite Granite
The quartz, generally white but occasionally dark, and feldspar, varying from white to pink, afford the ground-mass of this granite, which is usually white in color and, therefore, not materially affected by the muscovite (white mica). Whereas, a portion of the muscovite may be regarded as primary, or an original constituent of the granite as first resolved from the parent magma, it is regarded as highly probable that it is principally secondary, or the result of subsequent metamorphic action or alteration of the original feldspar; when occurring as a supposed original or primary constituent it occurs in stout plates and as filaments and foils; as such it occurs more frequently in the granitoids of upper South Carolina. As a secondary mineral, it appears as shreds, scales and plates included
in the more or less altered feldspar. Its chemical relations render it much less alterable than biotite.

This form of granite may be regarded as a mixture of the biotite granite and muscovite granite, respectively outlined above; its properties may, therefore, be regarded as being represented by such mean of the two as their relative proportions might reasonably indicate. It occurs more characteristically developed in the upper part of South Carolina.

Granites-With the Ground-Mass as indicated above, and with characterizing accessories from the Pyroxene and Amphibole groups.
$\left.\begin{array}{l}\text { Ground-Mass } \\ \text { Quartz and } \\ \text { Feldspar }\end{array}\right\}$ with $\quad\left\{\begin{array}{l}\text { Accessory } \\ \text { Augite }\end{array} \quad=\right.$ Augite Granite

The augite occurs as short, stout, and tabular crystals of a green-ish-black color. It occurs in some of the intrusions of the AbbevilleYork belt, but has not been yet observed in South Carolina in amounts affecting economic considerations. The augite is comparatively unstable, and in many instances has probably been metamorphosed to amphibole, and altered to other forms, but the fact that a good portion of the iron is in the ferric form renders it more stable than the amount of iron present might otherwise suggest.
$\left.\begin{array}{l}\text { Ground-Mass } \\ \text { Quartz and } \\ \text { Feldspar }\end{array}\right\}$ with $\left\{\begin{array}{c}\text { Talc } \\ \text { or } \\ \text { Steatite }\end{array}\right\}$ Protogene Granite
The talc ordinarily occurs in a foliated massive form; the steatite amorphous or as pseudomorphs after pyroxene and other minerals; talc and steatite are similar in composition and are accepted as representing altered forms of pyroxene and other ferro-magnesian minerals through the elimination of iron, lime, etc., with the retention of the silica and magnesia and the acquisition of water of crystallization. In South Carolina this form of granite represents, so far as.
observed, superficial and very limited localized occurrences in the Abbeville-York belt, and is without importance.
$\left.\begin{array}{l}\text { Ground-Mass } \\ \text { Quartz and } \\ \text { Feldspar }\end{array}\right\}$ with $\left\{\begin{array}{l}\text { Hornblende } \\ \text { Amphibole }\end{array}=\right.$ Hornblende Granite
The hornblende occurs in the South Carolina rocks as clark green and brown modified prisms and grains and as black plates, the latter usually affording a striated surface. It appears in the Waxhaw hornblende granites. Its most frequent occurrence is observed in the hornblende gneisses, slates, and schists of the mountain region. The large amount of lime and iron present in some forms of hornblende render this mineral highly susceptible to weathering influences. Its presence in granite is to a corresponding extent objectionable.

In the early geological survey reports of South Carolina, the granitic rocks with hornblende wholly or in part replacing the mica were respectively designated syenite and syenitic granite regardless of the presence of quartz; a usage which still obtains to a limited extent. VonCotta, Zirkel, and others eminent in lithology, restrict the term syenite to its original definition, which embraced a granular aggregation of hornblende and orthoclase; the Waxhaw syenites of Tuomey and Lieber are in the main hornblende granites; however, occasional small dikes of true syenite occur in the Waxhaw belt and elsewhere in the State.

The granites, granite-gneisses, gneisses and gneissoid slates, in addition to the essential and characterizing accessory minerals, inclose in varying degrees minor accessory minerals of primary and secondary character, which vary in sizes from microscopic to distinctly macroscopic.

The following list, derived from the joint work of Drs. G. W. Hawes and George P. Merrill, includes the essential and accessory minerals ordinarily observed in various forms of granite and gneiss:

Constituents of Granites.
Essential Minerals.

Quartz
Orthoclase
Microcline Albite
Oligoclase Labradorite

## Accessory Minerals.

Characterizing Accessories.
Muscovite

Biotite
Phlogopite Lepidolite
Hornblende
Pyroxene
Epidote
Tourmaline
Acmite

Microscopic Accessories. Sphene
Zircon
Garnet
Danalite
Rutile
Apatite
Pyrite
Pyrrhotite
Magnetite
Hematite
Ilmenite

Secondary Minerals Due to Weathering and Alteration.

Chlorite
Epidote
Uralite
Kaolin

Calcite Muscovite
Limonite
Hematite

Magnetite.
GRANITES.

## Granitoid Rocks.

Granite
Granite-Gneiss

Gneiss
Gneissoid Slates

South Carolina exhibits bodies of granitoid rocks respectively comprising Biotite Granite, Muscovite Granite, Augite Granite, Protogene Granite, Hornblende Granite, Syenite and the various intermediate forms which depend upon various combinations of the characterizing accessory minerals above indicated.

The prevailing prejudice against the term gneiss exacts brief notice in connection with the usage of the word in this report. The gneisses in the respect of both chemical and essential mineral composition are similar to the granites, and they are similarly qualified, in part, by the corresponding characterizing accessory minerals; thus we may have Biotite Gneiss, Muscovite Gneiss, Muscovite-bearing Biotite Gneiss, Hornblende Gneiss, Protogene Gneiss, etc. The distinction between gneiss and granite is in the main structural or petrographic: the minerals in the gneissoid rocks exhibit a parallel or
dimensional arrangement, frequently so obscured as to require the miscroscope for discrimination. In many instances the distinction, otherwise obscure, may be afforded by the bedded character which distinguishes gneissoids of sedimentary origin which occur in stratified layers. But, while the granites of intrusive origin were all massive and unstratified, metamorphic action has long affected portions of the older granites and thereby caused a parallelism in the arrangement of the component minerals, which gives origin to the term granite-gneiss, as employed in this report. Frequently the same bed will exhibit both granite-gneiss and typical granite structure by reason of differential metamorphic action.

In South Carolina the granites rank first, the granite-gneisses second, and the stratified gneisses third, in the scale of superiority exacted by the industrial arts; in estimating the worth of a bed of stone the fact that granite-gneiss constitutes the surface rock does not necessarily imply that other available parts of the same bed may not represent a superior granite.

The oldest granitoid rocks of prominence are successively exhibited in the Anderson-Spartanburg, Tyger, Chatooga, Tunnel Hill, and Saluda Zones. Enormous bodies of granite-gneisses and granites occur in the Saluda Zone.

The younger granites, which were extruded from the earth's interior, and in some instances apparently effused over the previously prevailing rock of the country, have not been subjected to the metamorphosing influences which affected the older granites. They comprise the great commercial beds of South Carolina granite which are so conspicuously developed in the Abbeville-York Zone, notably near Winnsboro. The granitic texture, however, is generally considered inconsistent with effusive masses; but the latter may have been so thick as to have imposed on its lower part the pressure essential to the granitic texture, the upper portion having been subsequently degraded.

List of granite quarries regularly operated:

| Surv |  |  |
| :---: | :---: | :---: |
| No. | Quarry. | Address. |
| 1635 | Beverly Quarry. | C. |
| 2250 | Edgefield Quarry. | Edgefield, S. C. |
| 5265 | High Point Quarry. | High Point, S. C. |
| 5574 | Leitzsey Quarry. | . Newberry, S. C. |
| 5650 | Entrekin Quarry | .Graycourt, S. C. |
| 6597 | Lipscomb Quarry.. | Columbia, S. C. |
| 6688 | Winnshoro Granite Co. Quarry. | Rockton, S. C. |
| 6740 | Winnsboro Granite Co. Quarry | Rockton, S. C. |
|  | Excelsior Granite Co. Quarry. | Heath Springs, S. C |

List of granite quarries intermittently operated:

## Survey

No. Quarry. Address.
1096 Westminster Quarry. . .. .. . . .. .. Westminster, S. C.
I306 Shelor Quarry.. .. .. . . .. .. . . . .Walhalla, S. C.
I335 Pendleton Quarry. . .. .. . . . . . . . Pendleton, S. C.
1872 Bordeaux Quarry. . .. .. .. .. .. .. Bordeaux, S. C.
5195 Benjamin Quarry. . .. .. . . .. .. . .Quarry, S. C.
5203 Bauman Quarry. . .. . . . . . . . . . . . Greenville, S. C.
5482 Bates Quarry. . . . . . . . . . . . . . . . . Batesburg, S. C.
6075 Keystone Quarry. . .. .. .. .. .. . .Spartanburg, S. C
6078 Johnson Quarry. . . . . . . . . . . . . . . . Pacolet, S. C.
6520 Blairs Quarry. . . . . . . . . . . . . . . . . Blairs, S. C.
6530 Strothers Quarry. . .. .. .. .. . . . .Strothers, S. C.
6605 Bowling Green Quarry. . .. .. .. . . Bowling Green, S. C.
6615 Whitesides Quarry. . . . . . . . . . . . .Yorkville, S. C.
6626 Happerfield Quarry. . . . . . . . . . . . . . Yorkville, S. C.
6690 Leiper Davis Quarry. . .. .. .. .. . .Columbia, S. C.
7645 Oro Quarry. . . . . . . . . .. .. .. . .Chesterfield, S. C.

MATERIAL: GRANITE-GNEISS. SURVEY NO. IOg6.
Area: Savannah. Sub-Area: Tugaloo River Branch.
Location: Oconee County; southwest of Westminster.
obS-Saluda Zone. Quarried for neighborhood uses.


MATERIAL: GRANITE-GNEISS. SURVEY NO. I IOO.
Area: Savannah.
Sub-Area: Tugaloo River.
Location: Oconee County; at the Tugaloo River Bridge of the At-lanta-Charlotte Railway (S. R. R.)
OBS-Saluda Zone. An outcrop of gneissoid rocks, quarried for construction of the neighboring railway piers, abutments and culverts.
material: granite survey no. ilgo.
Area: Savannah. Sub-Area: West Scarp Savannah River. Location: Anderson County; Greggs Shoals; 5 miles west of Barnes.
OBS-Anderson-Spartanburg Zone
Type.-Granite-Porphyry; Biotite Gneiss. Exposed on the steep eastern scarp of the Savannah River a very composite mass results from the probable intrusion of a granitic mass tlirough mica schists and gneissoids in which pegmatization has been effected.

Biotite and quartz afford fine grained aggregates, with gneissoid planes occasionally wavy.

The intruded porphyry incloses bosses of the disrupted biotite gneiss ; it is a mottled pink and gray medium coarse-grained granite. The pink feldspars appear with brilliant cleavage facets of irregular outline and occasionally inclose small tufts of biotite. A subordinate feldspar is gray with brilliant pearly cleavage. Gray vitreous quartz is a prominent constituent. Biotite forms moderately abundant small black lustrous plates and flakes. The rock is massive with a distinct gneissoid structure.

Microscopic-"Under the microscope the rock appears fresh and free from alteration. The feldspar is microcline with characteristic grating structure. It contains just the smallest amount of kaolin from weathering. A little, slightly kaolinized, orthoclase is present. Quartz forms irregular grains. A little micropegmatite is associated with the feldspars. Biotite occurs in greenish intensely pleochroic flakes and plates, the absorption being stronger for vibrations parallel to the basal cleavage. A very small amount of plagioclase is noted. The feldspars and quartz show slight strain effects. Apatite occurs as accessory in brilliant minute colorless crystals. In one section the quartz is traversed by fractures containing magnetite. A little muscovite is noted in close association with the biotite."

MATERIAL: GRANITE-GNEISS. SURVEY NO. I3O6.
Area: Savannah. Sub-Area: Conneross Creek Branch. Location: Oconee County; Shelor Granite; i mile west of Walhalla. Address of Owner or Representative (?) John Shelor, Walhalla, S. C.

OBS-Saluda Zone. Quarried for neighborhood uses.

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\text { MATERIAL: GRANITE. SURVEY NO. I } 335 \text {. }
$$

Area: Savannah.
Sub-Area: Eighteen-Mile Creek.
Location: Anderson County; Pendleton Quarry; 1.7 miles S. $46^{\circ}$ W. of Pendleton; formerly connected by an excellently graded spur track with the Blue Ridge R. R.
Address of Owner or Representative (?) : C. Hanckel, Pendleton, S. C., and A. J. Sitton, Pendleton, S. C.

OBS-Saluda Zone. Type: Biotite Granite-Gneiss, Granite Porphyry. This granite boss emerges with a sharp curve from the bed of a branch above which it attains an elevation of about 18 feet; nearly two acres are practically free from overburden. This stone was extensively quarried and used in connection with the construction of the culverts, abutments, piers, etc., of the old Blue Ridge Railway, and has long contributed to neighborhood uses. It apparently represents an igneous boss with portions metamorphosed to the gneissoid character: A noteworthy feature consists in the repeated gentle gradation of the distinctly gneissoid to the characteristic granitic and porphyritic structure; a somewhat similar characterization is observed at the Beverley Quarry (No. 1635) ; the respective zones occur along highly inclined planes.

Rift and Grain, both good; splits readily along "feather and wedge "holes' with six'inch centres.

Structure-Parting planes of rare occurrence, schistosity confined to the irregularly distributed gneissoid areas which predominate near surface.

Texture-One variety medium coarse grained to porphyritic ; compact. Specific gravity, 2.68 ; absorption ratio, 0.288 .

One variety. banded mica-gneiss with fine granitic texture. Absorption ratio, 0.448 .

Color-Porphyritic variety, moderate dark gray with reddish cast; gneissoid variety, bright gray.

Working Qualities-Good under chisel and chipping hammer; porphyritic variety susceptible of fine polish with attractive effects; gneissoid variety takes fairly good polish.

Chemical Analysis-Lime, 3.28 per cent.; Magnesia, 1. 30 per cent.; Alumina, 17.22 per cent.; Ferric Oxide, 1.75 per cent.; Ferrous Oxide, 2.49 per cent.; Titanic Oxide, 0.60 per cent.; Manganese Oxide (MnO), trace; Soda (Na2O), 5.28 per cent.; Potash ( $\mathrm{K}_{2} \mathrm{O}$ ), 5.14 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 62.34 per cent.; Ignition, 0.28 per cent. Total, 99.68 per cent.

Mineralogical and Petrographic-The porphyritic variety consists of a crystalline aggregate of vitreous gray quartz and red-gray feldspar, with green-black biotite as an accessory. Phenocrysts of the red-gray feldspar afford brilliant cleavage planes; predominantly twinned after the Carlsbad law with basal cleavages of a twin at the angle of approximately $52^{\circ}$. The gneissoid variety consists of a gray vitreous quartz and brilliant white to pearly feldspar, in layers, interlaminated with biotite, which occurs in black flakes.

Microscopic-The porphyritic variety in thin section afforded the following observations:
"The feldspar proves under the microscope to be an orthoclase, a feldspar in which soda replaces a part of the potash of orthoclase. It shows obscure triclinic characteristics in the thin section. This feldspar has a very weak gray tint, due to the presence of an abundance of minute indeterminable inclusions. Quartz appears as irregular grains. At places it contains lines of inclusions which would point to slight strain further indicated by weak, wavy extinction between crossed nicols. Biotite is brown, intensely pleochroic, and shows idiomorphism with respect to the feldspar and quartz. Plagioclase feldspar, variety oligoclase, is present in small amount. It is twinned after the Albite law, the twinning lamellæ tapering to thin edges and frequently wedging out entirely without crossing the grain. Titanite occurs in irregular small masses in the biotite. It is highly refracting and displays characteristic remarkable dispersion in convergent light. Apatite is an abundant accessory. Magnetite is present in very small amount as accessory."

The gneissoid variety afforded the following observations:
"In thin section marked strain effects are widespread. The quartz and feldspar show strain lines and undulous extinction. Both minerals are clear and fresh. The feldspar is microcline chiefly-plagioclase subordinate. Biotite is brown, the flakes irregular but not ragged, strongly pleochroic and having a slight tasal extension. Muscovite is present in small amount, and is brilliantly polarizing. Apatite and titanite appear as accessories."

MATERIAL: GRANITE-GNEISS.
Area: Savannah.
Location: Oconee County; Tunnel Hill; 5.6 miles $\mathrm{N} 45^{\circ} \mathrm{W}$. of Walhalla; Blue Ridge R. R.
OBS-Tunnel Hill Zone Type: Muscovite-bearing biotite and granite-gneiss. Underlying a dark gray, fine grained quartz schist, which shimmers with muscovite flakes on the cleavage surface (Poor Mt. schist striking N. $80^{\circ}$ E. with a dip N. $10^{\circ}$ W.), the following gneiss is observed constituting the walls and base of the tunnel at its mouth.
Gneiss-Medium gray color moderately fine texture; structure gneissoid, constituted of thin quartzose bands slightly corrugated to accommodate between the bands series of small rounded eyes ot gray-pink feldspar, arranged with "staggered effect" (Kleine Augen Gneiss).
"In thin section the feldspar forming the eyes proves to be microcline. It is much sliced and granulated and slightly kaolinized. Quartz makes up a large part of the rock in the form of clear, colorless grains. It shows intense strain effects and abundant evidence of recrystallization. Muscovite and biotite are the chief constituents of the dark bands. The former is colorless, the latter a deep brown. These minerals have a strong parallel arrangement, to which is due the cleavage of the rock. Epidote is abundant in irregular granules with yellowish pleochroism and brilliant polarization. It is closely associated with the ferro-magnesian constituents of the rock. Accessory apatite and magnetite are noted. The rock is texturally and structurally the result of the processes of granulation and recrystallization, acting on a porphyritic granite."

## MATERIAL: GRANITE-GNEISS.

Area: Savannah.
Location: Oconee County; Lays Mill; 7 miles northeast of Walhalla.
OBS-Oconee Creer Zone. Type: Kleine Augen Gneiss. Immediately below the Lays Mill dam, Oconee Creek cascades over a bold outcrop of this gneiss (strike N. $39^{\circ}$ E.; dip $33^{\circ}$, S. $51^{\circ}$ E.) This rock exhibits a thinly banded gneissoid structure with crystal eyes of pink feldspar between the undulating bands.
Color-Color effect is gray.
Texture-Extremely fine crystalline. In thin section the feldspar forming the eyes proves to be microcline. It is granulated, sliced and
slightly kaolinized. Quartz is a predominant constituent, forming colorless grains. It exhibits intense strain effects and abundant evidence of recrystallization. Colorless muscovite and brown biotite constitute dark bands, which exhibit a strong parallel arrangement along which the cleavage of the rock is determined. Apatite and magnetite appear as accessory minerals. Both in texture and structure this rock is the result of granulation and recrystallization of an original porphyritic granite.

## material: granite-gneiss. survey no. i625.

Area: Savannah. Sub-Area: Seneca River; 12-Mile Crk. Br. Location: Pickens County; Glassy Mt.; head of 12-Mile Creek; 3 miles N. $20^{\circ}$ E. of Pickens.
Address of Ozener or Representative (?): Col. John Fergerson, Pickens, S. C.
OBS-Saluda Zone. Type: Granite-Gneiss. This represents a huge boss of gneiss which ascends at a high angle nearly 500 feet above the valleys which cut close to the massive scarp. By constructing a branch railway line $11 / 4$ miles long, the base of this bed could be connected by easy grades with the Pickens-Easley Railway, and thus enable this bed to contribute an unlimited supply of superior road metal, etc.
material: granite-gneiss. survey no. 1635 .
Area: Savannah. Sub-Area: Seneca River; 18-Mile Creek. Location: Pickens County; Beverly Quarry; Beverly Station (Southern Road) ; Atlanta-Charlotte Railway; head 18-Mile Creek.
Address of Owner or Representative (?): Beverly Bros., Beverly Station, S. C.
OBS-Saluda Zone. Type: Granite-Gneiss, including granite porphyry. This gneissoid semi-oval ridge is exposed parallel with the Atlanta-Charlotte Railway (S. R. R.), which skirts its southeasterly base at Beverly Station. It is an extension of the bed of gneiss extending from the northeast. The quarry beginning at the elevation of the railway, has been extended about 500 feet N. $60^{\circ}$ W., where the breast measures 45 feet vertical, and 506 feet wide. Drainage is entirely by gravity flow. The ridge is practically bare of overburden along its southeasterly slope, which measures about 900 feet across the incline.

Rift and Grain irregular, but with holes 4 inches apart good results are obtainable.

Structure-Upon entering the quarry ino feet of the southwest wall exposes a decidedly porphyritic type of granite, which dips under the main body, which is distinctly gneissoid, the schistose planes being highly curled and gnarled. The porphyritic material exposes numerous parting planes and strain effects, (roughly radial to the axis of the ridge), many of which have been filled with feldspar and quartz; and some of which extend across the zone dividing the porphyritic from the gneissoid forms, which zone strikes N. $39^{\circ}$ E., and dips about $50^{\circ} \mathrm{N} .51^{\circ} \mathrm{W}$.
The corresponding porphyritic area along the northeast wall is in part replaced by gneiss with straight schistose planes roughly radial to the axis of the ridge. The zone of separation on this wall is, however, lost in the gigantic dove-tailed blending of the porphyritic, curled gneissoid, and straight line gneissoid types.

Texture-The porphyritic type is medium coarse grained, with some pronounced phenocrysts of feldspar.

The gneissoid type is medium fine grained in bands of typical granitic texture, interlaminated with quartz and feldspar bands.

Specific gravity, 2.66; absorption ratio, o.398.
Color-The gneissoid type is of an attractive gray color.
Working Qualities-The gneissoid type, despite its gnarled structure, works with moderate ease under the stone cutters' tools, and is susceptible of a good polish; the curled lines produce attractive effects. Rough dimension stone of this precise type of rock is freely supplied from the vicinity of Lithonia, Ga., for architectural purposes; its attractive effects may be observed in the stone work of the union passenger station at Spartanburg.

Chemical Analysis-Lime, 2.80 per cent.; Magnesia, 1.04 per cent.; Alumina, 14.30 per cent.; Ferric Oxide, 2.44 per cent.; Ferrous Oxide, 2.49 per cent.; Titanic Oxide, 0.60 per cent.; Manganese Oxide, o.II per cent.; Soda ( $\mathrm{Na2O}$ ), 3.80 per cent.; Potash ( K 2 O ), 3.84 per cent.; Phosphoric Acid ( P 2 O 5 ), trace; Sulphuric radical, trace ; Silica (and insoluble), 68.15 per cent.; Ignition, 0.28 per cent. Total, 99.85 per cent.

Mineralogical and Petrographic-Predominantly the gneissoid rock is constituted of quartz with biotite and microcline mixed in various proportions in irregularly alternating bands. Some bands consist chiefly of feldspar, with quartz and biotite as accessories,
affording a light gray color and granitic texture; other bands comprise quartz and biotite including but little feldspar; the preponderance of biotite produces a brown-gray color, and its distribution in planes determines in the main the line along which the rock cleaves.

As accessories small garnets and chlorite are observed near the surface, yellow grains of titanite prevail in the biotite bands. Small patches of hornblende are occasionally observed.

Microscopic-"Under the microscope microcline and plagioclase, variety oligoclase, are determined as the feldspars in order of importance. Both feldspars are remarkably free from weathering effects, and both show a wavy extinction indicative of rather extreme. straining. Actual granulation of the feldspars is rare. Micropegmatite is developed to a small extent. The abundant quartz has the form of irregular grains and is strained as is indicated by lines of inclusions, cracks without displacement, and undulatory extinction. Muscovite is noted in very small amount. It is colorless and forms ragged flakes. The biotite is ragged, the flakes small and abundant. Accessory apatite and a few minute zircons are noted."

Industrial-This bed of gneiss is most favorably situated for economic quarrying. Its output of 5,000 cubic yards monthly, is confined to supplying metal for railway ballast.

The Beverly quarry is actively operated, the mechanical equipment comprising boiler, engine, crusher bins, and five steam drills.

MATERIAL: GRANITE-GNEISS. SURVEY NO. 1870 .

## Area: Savannah.

Location: Abbeville County; Bordeaux. Address of Owner or Representative (?): O. G. Calhoun, Bordeaux, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite-Gneiss. About 500 feet north of the railway station and 100 feet west of the railway occurs a bed of granite-gneiss. Parts of this body constitute a good grade of granite, but, as a whole, it is mixed in character. Seams appear striking N. $20^{\circ}$ W., and dipping $52^{\circ}$ N. E., which are accentuated with linings of coarse crystals of quartz and mica. One zone incloses whorls of white feldspar with fine particles of biotite; another zone involves, in general parallelism, curved vertical lines of biotite; again, separable lenticles constituted of quartz and biotite, appear along a narrow vertical zone. Starting from the level of the adjacent railway track a quarry 58 feet wide enters the hillside and
within 35 feet exhibits a 28 -foot face, beyond which the ascending surface is lined with large bowlders.

A fair proportion of the quarry face represents a good granite of light gray color, and of fine uniform grain. The structure is massive and the rock breaks without distinct rift. Texturally it is fine granitoid, the grains being sharply defined. Feldspar appears in well defined grains with brilliant pearly cleavage. Quartz grains are gray, vitreous, and somewhat indistinctly outlined. Black biotite patches are somewhat uniformly disseminated.
"In thin section the texture is rather fine granitoid with the feature of a parallel arrangement of part of the biotite. The quartz forms irregular grains, clear and colorless with undulatory extinction. The feldspars are orthoclase and microcline, the former kaolinized, the latter clear. Both form irregular grains. In thin section the biotite is strongly pleochroic in brown. Some of the biotite plates are chloritic from alteration, and take a greenish cast. Muscovite is brilliantly polarizing, forms extremely irregular ragged flakes and is moderately abundant. Apatite and magnetite appear as accessories in minute idiomorphic crystals. Plagioclase is noted in extremely small amount."
material: granite-gneiss. survey no. 2230.
Area: Savannah.
Sub-Area: Beaverdam Creek. Location: Edgefield County; town of Edgefield.

OBS-Vaucluse Zone. Type: Muscovite-bearing Biotite Gran-ite-Gneiss. About 600 feet west of the public square a body of granite-gneiss has been quarried and now presents a face 22 feet vertical. It comprises a series of zones, striking N. $59^{\circ}$ E., dipping $88^{\circ} \mathrm{S}$. E., as indicated by separating planes from 8 inches to 10 feet apart. Joint planes strike N. $22^{\circ} \mathrm{W}$., and dip $68^{\circ} \mathrm{N} .68^{\circ} \mathrm{E}$ The southerly portion inclosed vertical zones emphasized with abundant black biotite. This rock is of a dark gray color; granite-porphyritic texture and gneissoid structure. Ground-mass is finely crystalline. Phenocrysts are pink feldspars with good cleavage, but without distinct crystal boundaries.
"In thin section the ground-mass has quartz as its most prominent constituent. It is clear, colorless and shows decided strain effects. The feldspar of the ground-mass is finely granulated and kaolinized. Muscovite is abundant in minute flakes. Strongly pleochroic biotite also forms abundant flakes. The feldspars of the phenocrysts are marginally granulated, have undergone considerable alteration to
kaolin, and show no crystal boundaries. Microcline is present in small amount. It is colorless and free from weathering products. The gneissoid structure is very prominent in the ground-mass and is seen to be chiefly due to a parallel arrangement of the micas and the recrystallized quartz grains."

## MATERIAL: GRANITE SURVEY NO. 2250.

Area: Savannah.
Sub-Area: Horns Creek.
Location: Edgefield County; Edgefield Quarry; 0.5 miles from Edgefield-Trenton R. R.; connected by spur track.
Address of Owner or Representative (?): R. G. Ross, Jacksonville, Fla.
OBS-Intrusive in Vaucluse Zone. Type: Biotite Granite. The surface of this granite has been exposed by a small brook along a broad, flat area. The granite body is without definite rift or grain excepting in limited areas. The prominence of the crystal features frequently varies along the quarry face. The length of the quarry is approximately 700 feet along a north and south line; the width 100 feet; the depth 50 feet. It is equipped with 5 steam derricks, crushers, bins, etc. This stone has been extensively used in the construction of the Charleston and of the Georgetown jetties. A sample of the stone representing the preponderant character is light pinkgray in color, with medium grain, granitic texture, and massive structure. Feldspar, quartz and biotite are its chief constituents. The feldspar is pink with pearly lustre, and has good cleavage. Quartz is vitreous gray. Subordinate black, lustrous biotite shows rude parallel arrangements.
"In thin section the feldspar is microcline, slightly weathered with the formation of kaolin. It forms irregular grains showing no crystal boundaries. A little oligoclase is present. It is clear and colorless, twinned after the Albite law, and forms irregular grains, showing no crystal boundaries. A little oligoclase is present in colorless grains, twinned after the Albite law. The quartz forms irregular grains. Biotite is greenish-brown, ragged and weathered. The feldspars and quartz show decided strain effects without granulation. Apatite is noted as accessory. The parallelism of the biotite noted in the hand specimen is not observable in the section. Accessory garnets are noted."

Material: granite survey no. 5012.
Arca: Santee.
Sub-Area: Saluda River.
Location: Pickens County ; Table Rock ; 1 I. 5 miles north of Pickens.

ObS-Saluda Zone. Table Rock (type locality of the Table Rock granite). Table Rock Mountain presents a precipitous scarp of rock, the southerly side of which ascends nearly vertical to an clevation of 1,000 feet above the adjacent valley.

Rift and Grain-Fair.
Structure-Schistosity slightly developed locally.
Texture-Massive, granitic.
Color-Light gray.
Working Qualities-Good under chisel and hammer; susceptible of good polish.

Mineral Composition-The predominant mineral is feldspar of the orthoclase and plagioclase varieties; quartz is second in importance, muscovite and biotite maintain variable relative proportions. Gar'net, ilmenite, magnetite and pyrite are occasionally observed as accessories.

MATERIAL: GRANITE-GNEISS. SURVEY NO. 5175.
Area: Santee.
Sub-Area: Saluda River.
Location: Laurens and Abbeville Counties; Ware Shoals; 5.8 miles
N. $50^{\circ} \mathrm{E}$. of Donalds; connected by spur track with the Columbia-Greenville Railway (S. R. R.)
Address of Owmer or Representative (?) : Ware Shoals Mfg. Co., Ware Shoals, S. C.
OBS-Anderson-Spartanburg Zone. Type: Biotite GraniteGneiss. Tract comprises 350 acres in Laurens and 950 acres in Abbeville Counties. For 0.8 miles below the dam the upturned edges of a varied gneissoid series is exposed by the stream in its swift descent of 45 feet across the outcrop. The strike and dip are much obscured, but apparently an anticlinal axis crosses below the power house, approximately northeast and southwest. The stone quarried adjacent to the power house is herewith described.

Rift and Grain-Fair.
Structure-Gneissoid; individual belts, respectively homogeneous; apparent schistose planes separate different types.

Textures-Fine grained to porphyritic ; compact.
Specific gravity, 2.68; absorption ratio, 0.321 .
Color-Gray.
Working Qualitics-Fair polish.
Chemical Analysis-Lime, 2.80 per cent.; Magnesia, 1.45 per cent.; Alumina, 17.22 per cent.; Ferric Oxide, 1.70 per cent.; Ferrous Oxide, 2.67 per cent.; Titanic Oxide, o. 72 per cent.; Manganese Oxide, trace; Soda ( $\mathrm{Na2O}$ ), 3.68 per cent.; Potash ( K 2 O ),
3.80 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, 0.08 per cent.; Silica (and insoluble), 65.72 per cent.; Ignition, 0.35 per cent. Total, ioo. 19 per cent.

Mineralogical and Petrographic-Gray vitreous quartz with some biotite comprise bands interlaminated with bands of white feldspar. Biotite arranged parallel to schistose planes. Feldspar occurring with distinct cleavage faces is often porphyritic and twinned after the Carlsbad law.

Microscopic-"The chief feldspar proves under the microscope to be microcline. It is well characterized by its grating structure. It is practically free from alteration, and shows but slight strain effects. A very little oligoclase is present. It shows albite twinning with small extinction angles measured to the twinning lines. Quartz is abundant in small irregular grains. Biotite, which is so prominent ${ }^{\circ}$ in this rock, presents the usual features, strong pleochroism in brown tones, excellent cleavage in one direction and development of plane faces parallel to the cleavage. It shows no sign of alteration. Apatite is abundant as accessory in minute colorless prisms. Zircon in minute brown prisms is rare. A very little magnetite is noted."

## MATERIAL: GRANITE SURVEY NO. 5195.

Area: Santee.
Sub-Area: Black Rock Creek. Location: Greenwood County; Benjamin Quarry; 4 miles E. of Greenwood; o.3 miles N. of Greenwood-Laurens Railway (A. C. L. R. R.)

Address of Owner or Representative (?) : S. H. Benjamin, Quarry, S. C.

OBS-Abbeville-York Zone. Type: Biotite Granite-porphyry. Around the scarp of a hill, about 30 feet below the level of Quarry Station, a series of granitic exposures occurs and has been interruptedly quarried. The granitic mass is covered by 14 feet of feldspathic matter; the upper portion is soft and decomposed, the intermediate portion horizontally laminated in partial decomposition, and the lower 2 feet undecomposed and resting on the upper surface of the granite, which exhibits 8 inches of sap.

One locality, 0.4 miles northwest of Quarry, where bared by a small stream, appears with nominal overburden, but being unopened, the character of the rock could not be determined.

Intermediate localities afford random blocks of surface-strewn granite bowlders.

The granite from the scarp exposures is herewith described.
Rift and Grain-Rift fairly good; grain good.
Structure-Free from schistose planes; very occasional random cracks.
Texture-Medium, coarse grained; compact.
Specific gravity, 2.65.
Color-Excellent shade of pink and gray slightly mottled.
Working Qualities-Works easily under the hammer and affords a highly lustrous polish.

Chemical Analysis-Lime, 1.28 per cent.; Magnesia, o. 78 per cent.; Alumina, 14.56 per cent.; Ferric Oxide, I.O6 per cent.; Ferrous Oxide, r. 62 per cent.; Titanic Oxide, 0.60 per cent.; Manganese Oxide, trace ; Soda ( $\mathrm{Na2O}$ ), , 3.97 per cent.; Potash (K2O), 5.37 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace ; Sulphuric radical, o.06 per cent.; Silica (and insoluble)), 70.54 per cent.; Ignition, 0.27 per cent. Total, 100.1 I per cent.
Mineralogical and Petrographe-The predominant mineral is a pink feldspar with a sub-vitreous lustre, the cleavage faces being pearly; gray quartz occurs in irregular grains with a greasy lustre.
Biotite, which is quite subordinate in quantity, is irregularly distributed in the form of flakes and ragged plates of brown-black color. Magnetite and titanite occur as accessories.
Microscopic-"The flesh-colored feldspar of the hand specimen proves, under the microscope, to be microcline microperthite, the plagioclase of the intergrowth being slightly dull from weathering, whereas the microcline, which forms the greater part of the intergrowth, is quite fresh. Oligoclase is present in considerable amount with fine, abundant albite twinning. Zonal structure is common in this mineral. The oligoclase contains irregular masses of kaolin as the chief weathering product. Subordinate microcline is present. It displays the usual grating structure and is altered rather less than the oligoclase. Quartz takes a position next to the microperthite ins abundance. It appears, under the low power, as clear, irregular grains. Under the high power it is seen to be traversed by innumerable threads of some mineral. These are usually credited to rutile though practically not determinable on account of their small dimensions. Biotite occurs subordinately as grains and plates, usually irregular in outline in all directions except that of the basal plane. This mineral is not visibly weathered. A very subordinate amount of colorless ragged muscovite is present. The titanite forms a prominent accessory mineral. Its occurrence is usually in acute-angled
crystals, less commonly in irregular grains. The color is yellowishbrown, pleochroism weak. Apatite forms clear minute prisms, and grains included by the quartz and feldspars chiefly. The rock is but slightly weathered. An entire absence of strain effects is noteworthy."

MATERIAL: GRANITE-GNEISS.
Area: Santee.

SURVEY NO. 5203.
Sub-Area: Reedy River.

Location: Greenville County; 5.5 miles north of Greenville; 2.5 miles from the Atlanta-Charlotte Railway (S. R. R.); west of highway to hotel.
Address of Owner or Representative (?) : Paris Mt. Granite Co., Greenville, S. C.
OBS--Intrusive in Tyger Zone. Type: Biotite Granite-Gneiss. At the head of a gulch on the western slope of Paris Mountain, about one-half the elevation from base to crest, a ledge of granitoid rock occurs, trending N. $49^{\circ} \mathrm{E}$. The ravine has laid bare a limited area of this stone, which has been quarried to a limited extent in an injudicious manner.
Rift and Grain-The grain is fairly good along holes 4 inches apart ; the rift is such as should exact great care in quarrying. It appears that the natural rift is about $9^{\circ}$ with the horizon, whereas the work executed has been undertaken on the level.
Structure-Indistinctly gneissoid in parallelism of included biotite, but enjoys freedom from banded structure. A parting plane, striking $\mathrm{N} .80^{\circ} \mathrm{E}$., with a dip of $59^{\circ}$, reveals a face of the granitic surface with an extensive series of reticulated lines ( $+1 / 2$ inch diameter) in mezzo-relief, presenting rhombohedral figures about one and a third inches long, and with included angles of $74^{\circ}$ and $106^{\circ}$. One series of these lines makes an angle of $9^{\circ}$ with the horizon.

Texture-Medium fine grained and very uniform.
Specific gravity, 2.72 ; absorption ratio, 0.304 .
Color-Attractive gray.
Working Qualitics-Works very weil under hammer and chisel and is susceptible of good finish; affords good quality of material for structural purposes, and with reasonably careful selection, fine blocks for monumental work are obtainable.

Mineralogical and Pctrographic-Consists of grains of gray quartz and whitish feldspar irregularly granulated, and numerons black biotite flakes and plates in parallel arrangement. Minute particles of dark yellow titanite occur as accessories.

Microscopic-"Under the microscope the feldspathic constituents are seen to be in but slight excess over the quartz. The microcline is the most prominent feldspar with a plagioclase giving small extinction angles quite subordinate. The latter is assigned to the variety oligoclase. The feldspars are fresh and clear, with but slight strain effects. Micropegmatite is present in small amount. Quartz is abundant in clear, irregular grains with weak undulatory extinctions. The biotite presents a less ragged appearance than in many of these granites, and forms plates and irregular grains, fresh and free from weathering products. Titanite appears as noted with a brown color and weak pleochroism. It is fairly abundant. Muscovite is quite abundant in this rock in colorless small ragged flakes. Accessory apatite is abundant, magnetite less so." MATERIAL: GRANITE-GNEISS. SURVEY NO. 5205.
Area: Santee. Sub-Area: Reedy River Branch. Location: Greenville County; Piny Mt.; 2 miles northeast of Greenville Courthouse; 700 feet from Atlanta-Charlotte Railway (S. R. R.)

Address of Owner or Representative (?): H. K. Townes, J. R. Ware et al., Greenville, S. C.
OBS-Tyger Zone. Type: Granite-Gneiss; Granite-Porphyry. The southerly flank of Piny Mt. affords a bold exposure of granitic rock within 700 feet of the railway. From the base of the exposure, which is 360 feet wide, the surface of the rock, practically free from overburden, ascends 38 feet in the first 100 feet, and thence more gradually to the top of the mountain. Beyond the limited effects of a random shot this rock has not been opened; some of the fragments present a gneissoid structure, others granitic to porphyritic. The texture is of medium grain and very compact. Without some more substantial development no competent opinion as to the possibilities of this rock can be ventured in other expression than that it should unquestionably afford a fine road metal, and that the location, topography, and available water afford many natural advantages for economic quarrying.

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\text { MATERIAL: GRANITE SURVEY NO. } 5265 .
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Area: Santee.
Sub-Area: Saluda River Tributaries. Location: Laurens County; High Point Station.
Address of Owner or Representative (?): W. Y. Fair et al., Newberry, S. C.

OBS-Abbeville-York Zone. Type: Biotite Granite-Gneiss. The ridge, which extends from the mouth of Reedy River towards Laurens Courthouse, is largely constituted of a mass of granite decomposed to an undetermined depth; excepting that from Waterloo to within 3 miles of Laurens Courthouse, the upper 20 feet includes trequent huge residual blocks of granite with their upper parts projecting above the general surface. The portions imbedded in the decomposed granitic matrix are still undergoing slow alteration, as is indicated by the concentric layers of exfoliating material which are progressively softer as the distance from the granitic nucleus increases. These "bowlders" represent a fine grained biotite granite, which is extensively quarried for curbstones, lintels, hearthstones, etc. The limited quantity of granite in any one block necessarily involves frequent transfers of the derrick and equipment from block to block, as successively exhausted.

Rift and Grain-Excellent.
Structure-Parallelism of the biotite flakes and plates produce a distinct foliated structure, but distinct banding.is not observable.

Texture-Medium; fine grained.
Specific gravity, 2.65 ; absorption ratio, o.344-
Color-Light gray.
Working Qualities-This stone works with ease and is susceptible of a good polish. It is chiefly utilized for curbstones, lintels and similar structural uses.

Chemical Analysis-Lime, i. 64 per cent.; Magnesia, i.16 per cent.; Alumina, 15.73 per cent.; Ferric Oxide, 2.14 per cent.; Ferrous Oxide, I. 57 per cent.; Titanic Oxide, 0.45 per cent.; Manganese Oxide, trace ; Soda (Na2O), 3.45 per cent.; Potash (K2O), 4.54 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 68.80 per cent.; Ignition, o. 33 per cent. Total, 99.8 r per cent.

Mineralogical and Petrographic-Consists of small grains of white feldspar, gray quartz and subordinately brown-black mica. Some enclosures of feldspar of increased size tend towards idiomorphism; the cleavage facets present a pearly lustre; minute particles of titanite occur as limited accessories.

Microscopic-"Under the microscope the chief feldspar is seen to be microcline. In addition there are present some microperthite and oligoclase. The plagioclase is quite fresh and clear, while the other feldspars are a little kaolinized. Among the feldspars the plagioclase only tends towards idiomorphism. Micropegmatite is noted. Quartz
is prominent in clear, irregular grains. The flakes of biotite are smiall and extremely ragged, color dark brown, pleochroism strong, absorption strongest for vibrations parallel to the cleavage. Ragged muscovite occurs in small amount. It is colorless and brilliantly polarizing. Titanite is present in small moderately abundant brown crystals. It is strongly refractive and weakly pleochroic. Apatite, in minute colorless short prisms, and magnetite appear as accessories."

MATERIAL: GRANITE. SURVEY NO. 5410.
Area: Santee.
Sub-Area: Saluda River Ridge.
Location: Greenwood County; Swanceys Fy. Granite.
OBS-Abbeville-York Zone. Huge granitic blocks appear scattered through the upper portion of the decomposed granitic matrix, which extends along the neighboring ridge west of the Saluda River, from Swanceys Ferry to Maysons Creek. Apparently similar to the rock described under No. 5265.
material: granite porphyry. survey no. 5480 .
Area: Santee. Sub-Area: Saluda River; Clouds Creek.
Location: Saluda County; Clouds Creek granite; 4.7 miles north of Batesburg.
Address of Ozener or Representative (?): Milton Prater, Batesburg, S. C.
OBS-Intrusive in Vaucluse Zone Type: Biotite Graniteporphyry of the Taxehaw variety. Along the south side of Clouds Creek a granitic belt extends northeast and southwest. The width of this belt is approximately 3.5 miles. The zone of granite adjacent to Clouds Creek is coarsely porphyritic, whereas the zone along the lower half of the belt is medium fine grained, but distinctly gneissoid. The Prater bed comprises nearly 2 acres, free from overburden. Most of the granite, however, along this zone of coarse material appears in scattered, rounded blocks supported on decomposed granite. This rock was formerly utilized for millstones, to which purpose it is excellently adapted.
Rift and Grain, good in view of the coarseness of texture.
Structure-Indistinctly gneissoid; random parting planes of occasional occurrence.

Texture-Granito-porphyritic, with large phenocrysts in pronounced contrast with the ground-mass.

Specific gravity, 2.73; absorption ratio, 3.41.
Color-Dark, coarsely mottled.

Working Qualities-Fair.
Chemical Analysis-Lime, 1. 70 per cent.; Magnesia, 0.86 per cent.; Alumina, 15.49 per cent.; Ferric Oxide, I.Io per cent.; Ferrous Oxide, 3.73 per cent.; Manganese Oxide, trace; Titanic Oxide, 0.84 per cent.; Soda (Na2O), 3.09 per cent.; Potash (K2O), 3.36 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, o.I3 per cent.; Silica (and insoluble), 68.70 per cent.; Ignition, 0.81 per cent. Total, 99.5 I per cent.

Mineralogical and Petrographic-Grains of gray quartz and brown-black biotite constitute a dark ground-mass inclosing highly contrasting phenocrysts of white feldspar whose cleavage planes exhibit a pearly lustre. Apatite and magnetite occur as accessory minerals in minute particles.
Microscopic—"Under the microscope the feldspar-microcline of the phenocrysts is seen to be very slightly weathered, in fact, it is nearly as clear in thin section as the quartz. A little fracturing and puckering is noted, indicating a slight movement within the mass of the rock, also indicated by an undulatory extinction of the feldspar. Micropegmatite is noted bordering the puckered feldspars. The quartz occurs as clear, colorless irregular grains, showing strain effects. The straining of the quartz is indicated chiefly by lines of inclusions, more rarely by wavy extinction. Biotite occurs in irregular plates and flakes. They show plane faces parallel to the basal cleavage, with ragged ends. The biotite is of a dark brown tint with the characteristic intense pleochroism. It is free from indications of weathering. A very little muscovite is closely associated with the biotite. A very small amount of plagioclase is present. Apatite as accessory is abundant in short prisms and grains, colorless and strongly refracting. Magnetite occurs in widely scattered grains. Altogether the rock shows a remarkable freedom from weathering."

MATERIAL: GRANITE-GNEISS.
Area: Santee.
survey no. 5482.
Sub-Area: Saluda RiverLocation: Lexington County; Bates Quarry; near Batesburg. Address of Owerer or Representative (?): A. Bates, Batesburgr S. C.

OBS-Vaucluse Zone. Type: Biotite Granite-Gneiss. This exposure occurs along the lower limit of the medium grained granitegneiss referred to in the description under No. 5480 . This locality affords several beds of fair extent.

Rift and Grain-Lifts and splits with moderate ease.
Structure-Highly gneissoid along schistose planes, striking N . $68^{\circ} \mathrm{E}$. Occasional parting planes and some bands of quartz "bone" appear.

Texture-Medium, coarse grained, granito-porphyritic, to medium fine grained.

Specific gravity, 2.64 ; absorption ratio, o.202.
Color-Brown-gray.
Chemical Analysis-Lime, 1.72 per cent.; Magnesia, 0.51 per cent.; Alumina, 13.82 per cent.; Ferric Oxide, 0.93 per cent.; Ferrous Oxide, 1.43 per cent.; Titanic Oxide, o.24 per cent.; Manganese Oxide, trace; Soda ( Na 2 O ), 3.04 per cent. ; Potash ( K 2 O ), 5.06 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 73.10 per cent.; Ignition, 0.23 per cent. Total, 100.08 per cent.

Mineralogical and Petrographic-Gray quartz, black biotite; some muscovite and gray feldspar are aggregated in bands. Cleavage faces of the feldspar exhibit a vitreous lustre. Pyrite occurs as an occasional accessory, but is chiefly found in the included quartzose veins.

Microscopic-"Microscopically the gneissoid structure is very conspicuous. Considerable granulation of the quartz and feldspars has taken place, and the remaining portions of these minerals display strong undulatory extinction and other signs of great strain. A parallel arrangement has been induced in the biotite. This mineral is also reduced to shreds and fragments by the shearing within the rock. The feldspars are orthoclase chiefly, microcline second in abundance, and oligoclase very subordinate. The kaolinization of the orthoclase is slight, of the other feldspars still less. The quartz is clear and granulated as above mentioned. The biotite is free from any weathering alteration, and strongly pleochroic. Muscovite occurs as ragged shreds in small amount. Magnetite, apatite and zircon are recorded as accessories."

MATERIAL: GRANITE SURVEY NO. 5572.
Area: Santee. Sub-Area: Broad River; Cannons Creek. Location: Newberry County; Poor House tract; 4.1 miles northeast of Newberry.
Address of Owner or Representative (?) : Edward Schultz, Newberry, S. C.

OBS-Abbeville-York Zone. Type: Biotite Granite. This tract comprises huge detached blocks of a fine grained granitite supported on decomposed granitic material. The character and composition of this granite conform to the type exhibited under No. 5574.

## MATERIAL: GRANITE SURVEY NO. 5573 .

Area: Santee. Sub-Area: Bush River Branch. Location: Newberry County; Brown Quarry. Address of Owner or Representative (?) : J. J. H. Brown, Newberry, S. C.
OBS—Abbeville-York Zone. Type: Biotite Granite. This tract comprises about 57 acres, which afford several exposures of large bowlder-granite in patches, some of which cover approximately an acre each.

Rift and Grain-Good.
Structure-Massive.
Texture-Fine grained, crystalline with grains of uniform size.
Specific gravity, 2.64 ; absorption ratio, 0.405 .
Color-Pink-gray; weathers to yellow-gray.
Working Qualities-Excellent; takes a fine finish.
Mineralogical and Petrographic-Consists of uniform grains of gray quartz, white feldspar and black biotite, which is subordinate in quantity.

Microscopic-"The feldspar of this rock is microcline with characteristic grating structure somewhat modified by stresses causing strong, undulatory extinction. The strain has not been sufficient to shear and break the feldspar grains. Oligoclase occurs subordinately. The microcline is practically free from weathering, but the oligoclase shows some kaolinization. The latter mineral appears in many of these granites to be more susceptible to alteration than the former. The weathering, however, even of the plagioclase, is not enough to mar the value of the rock in the slightest degree practically. The abundant quartz shows strong, wavy extinctions, and is considerably sheared and fractured. The lines of inclusions so common in strained quartz are abundantly seen. Biotite is idiomorphic and has the form of plates of moderate thickness. It is strongly pleochroic in brown and visibly weathered. Magnetite and apatite with good crystal outlines occur as accessories. The apatite forms clear, colorless prisms with rounded ends."

MATERIAL: GRANITE. SURVEY NO. 5574.
Area: Santee.
Sub-Area: Cannon's Creek Branch.
Location: Newberry County; Leitzsey Quarry; 5 miles northeast of Newberry.
Address of Owner or Representative (?): B. B. Leitzsey, Newberry, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite. Detached granite blocks strew the crests of occasional hills as surviving representatives of a one-time vast granitic area now reduced to ruins as far down as the valley lines. Many of these blocks, which in some localities are closely grouped, represent several thousand cubic feet each. This granitic area included many tracts along a belt extending northeasterly and southwesterly from Newberry.

Rift and Grain-Easy possibilities in these respects are only limited by the size of the mass.
Structure-Free from schistosity, but some bowlders are affected by random cracks.

Texture-Fine grained; compact; uniform.
Specific gravity, 2.65 ; absorption ratio, 0.57 .
Color-Light gray.
Working Qualities-This stone works with great ease under the hammer, and is susceptible of a very high polish. It has been extensively utilized for monumental work and for the commoner uses in the form of posts, curbstones, lintels, and other neighborhood purposes.

Chemical Analysis-Lime, 1.82 per cent; Magnesia, 0.75 per cent.; Alumina, 16.77 per cent.; Ferric Oxide, 0.95 per cent.; Ferrous Oxide, 1.56 per cent.; Titanic Oxide, 0.36 per cent.; Manganese Oxide, trace; Soda ( $\mathrm{Na2O}$ ), 3.43 per cent.; Potash ( K 2 O ), 4.10 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 69.52 per cent.; Ignition, 1.43 per cent. Total, 99.69 per cent.
Mineralogical and Petrographic-Principally consists of gray vitreous quartz and grains of dull white feldspar with crystal boundaries, and with brilliant cleavage faces. Brown-black biotite flakes afford a minor constituent.

Microscopic-"Microcline and oligoclase are the feldspars of this rock. The microcline is quite clear and fresh in thin section, while the oligoclase is partially kaolinized. All of the feldspars show strain effects without granulation. Quantitatively the microcline is of first importance. Both feldspars frequently include little blebs of
quartz. The oligoclase gives weak zonal extinction between crossed nicols, the variation in angle being small. The center of the feldspar is more basic than the periphery. Quartz forms irregular clear grains with but slight strain effects. Several grains of the quartz will commonly extinguish together in pegmatite fashion, though this does not become prominent enough to be considered a textural feature. Micropegmatite appears bordering the quartz and feldspar grains. Strongly pleochroic greenish-brown biotite in ragged grains, flakes, and less irregular plates is widespread. It shows no sign of alteration. Muscovite is present in small amount. Epidote occurs in minute irregular grains with pleochroism colorless to yellow, and a brilliant polarization. Apatite is noted as an accessory."

MATERIAL: GRANITE. SURVEY NO. 5576.
Area: Santee.
Sub-Area: Bush River.
Location: Newberry County; 3 miles northwest of Newberry.
Address of Owner or Representative (?) : C. J. Purcell, Newberry, S. C.

OBS-Abbeville-York Zone. A pink granite occurs at this locality.

MATERIAL: GRANITE SURVEY NO. 5583.
Area: Santee. Sub-Area: Saluda River; Bush River. Location: Newberry County; Burton place; adjacent to Bush River along branch from the west ; 1.5 miles from ColumbiaGreenville Railway (S. R. R.) ; 4 miles N. $87^{\circ} \mathrm{W}$. of Newberry.
Address of Owner or Representative (?) : J. A. Burton, Newberry, S. C.

OBS-Abbeville-York Zone. This tract comprises about 700 acres. This bed constitutes the most extensive exposure of granite observed in Newberry County; it is practically free from overburden, and thus traceable along the valley for a distance of about 1,200 feet in length, and 360 feet in width. It emerges from the bed of the branch about 20 feet on both sides.

Systems of parting planes appear at surface coursing N. $73^{\circ} \mathrm{W}$., and northeasterly. Absolutely no development has been done, and whereas superficial fragments are of an encouraging character, no fresh stone was available, and, therefore, no competent expression of opinion is possible in relation to this property.

MATERIAL: GRANITE SURVEY NO. 5592.
Area: Santee. Sub-Area: Saluda River Branch. Location: Newberry County; 5.5 miles southwest of Little Mt. Station; Columbia-Newberry Railway (C., N. \& S. R. R.)
OBS-Abbeville-York Zone. Huge blocks of fine grained granite cap the ridge of decomposed granitic matter; this intrusive mass has occasioned a pronounced anticline in the associate formations.

MATERIAL: GNEISS.
Area: Santee. Location: Greenville County ; Batesville ; 6 miles northeast of Mauldin.
OBS-Anderson-Spartanburg Zone. A bold exposure of gneissoid rock (strike N. $28^{\circ}$ E.; dip $39^{\circ} \mathrm{N} .62^{\circ} \mathrm{W}$.), with schistosity parallel to the bedding planes, is exposed adjacent to the bridge.

## MATERIAL: GRANITE-GNEISS. SURVEY NO. 5650.

Area: Santee.
Sup-Area: Head of Warrior Creek. Location: Laurens County; Entrekin Quarry; 0.7 miles east of Graycourt.
Address of Oumer or Representative (?) : Entrekin Quarry Company, Graycourt, S. C.
obs-Anderson-Spartanburg Zone. The granite on this property is exposed as a huge boss with its surface sharply curving upward to an elevation of about 40 feet above the adjacent valley line. Approximately 9 acres are comparatively free from overburden. When examined the quarrying had been confined to a comparatively shallow surface lift, which afforded a good grade for the required purposes, but which probably does not afford a fair expression of the possibilities of the main body of the rock.
The surface lift exhibits stone of coarse grained texture, and with the structure, is slightly foliated. Searis of feldspar and whorls of biotite are prominently developed. The color is a pronounced gray. It lifts and splits with comparative ease, and has been largely utilized in supplying curbing, lintels, etc. The output is said to be about 50 carloads the year.

## Material: Granite-porphyry. SURVEY No. 5952.

Area: Santee. Sub-Area: Fair Forest Creek Branch. Location: Union County; City Granite Bed; 1.5 miles south of Union.
Address of Owner or Representative (?): City of Union.

OBS-Abbeville-York Zone This bed appears on an abrupt scarp adjacent to a branch affording good gravity drainage. The quarry is extensively utilized to furnish road metal for macadamizing the streets of Union. It affords a tough, durable metal.
material: granite. survey no. 6000.
Area: Santee.
Sub-Area: Pacolet River.
Location: Union County; 3.9 miles west of Union.
Address of Ozener or Representative (?) : County of Union.
OBS-Abbeville-York Zone This quarry is utilized by the county as source of supply for road metal.

MATERIAL: GRANITE. SURVEY NO. 6075.
Area: Santee.
Sub-Area: Pacolet River Branch. Location: Spartanburg County ; Keystone Quarry on Pacolet River; west bank of Pacolet River; 2.5 miles north of Pacolet.
Address of Ozener or Representafive (?): Keystone Granite Company, Spartanburg, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite. This property comprises 255 acres, of which 100 acres are said to represent available rock. At one point the breast is bared 65 feet high.

Rift and Grain-Good.
Structure-Medium grained granite ; indistinctly gneissoid; occasional parting planes.

Texture-Medium fine grained granitic.
Color-Gray.
Working Qualities-Excellent ; susceptible of high polish; formerly extensively used for monumental work.

Chemical Analysis-Silica, 71.20 per cent.; Alumina, 17.04 per cent.; Oxide of Iron, 3.48 per cent. ; Magnesia, o. II per cent. ; Soda, 2.32 per cent. ; Potash, 4.70 per cent.; Water or Organic Matter, 0.63 per cent.
(Analyst Pittsburg Testing Laboratory, Pittsburg, Pa.)
Compressive or Crushing Strength-Twenty-one thousand four hundred and twenty pounds per square inch. This property has been idle for several years by reason of litigation.

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\text { Material: granite. survey no. } 6077 .
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Area: Santee. Sub-Area: Pacolet River Branch. Location: Spartanburg County; Brown Granite Bed; I mile north of Pacolet Station.
Address of Owner or Representative (?): W. F. Brown, Pacolet, S. C.

OBS-Abeeville-York Zone. Type: Biotite Granite. Indications of an extensive bed of granite occur at this place.
material: granite. survey no. 6078.
Area: Santee. Sub-Area: Pacolet River Branch.
Location: Spartanburg County; 0.6 miles north of Pacolet Station. Address of Ouner or Representative (?) : Pacolet Granite Company, Pacolet, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite. This tract comprises 65 acres, the owners estimate 10 acres of this tract as representing available rock. The quarry is located on the gently sloping side of a broad ridge; with acquired depth power drainage will be required. The rift is fairly good and the grain good. About 3 feet of sap caps this deposit. No true schistose planes are observable; occasional clusters of thin radiating veins of crystallized quartz, mica and feldspar converge with increased depth, and partly disappear. In texture this rock is medium-grained and compact.

MATERIAL: GRANITE. SURVEY NO. 6500.
Area: Santee.
Location: Union County; Flat Rock Quarry; 2 miles north of Carlisle; 1.2 miles north of railroad, along the line sarveyed for contemplated location.
Address of Owner or Representative (?): Buffalo Lick Mineral Water Company, Carlisle, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite. At this locality occurs a granitic boss with 2.5 acres bared of overburden, ascending with a gentle curve from the valley line to an elevation of 35 feet above same. It is free from schistose or parting planes, apart from occasional bands of feldspathic and quartzose ribbons. The texture is medium, fine grained, highly compact; i foot of hard sap and 3 feet of loosely aggregated sap surmount this rock.

Rift and Grain-Grain is good, but the quarry has been operated in such reckless manner as to afford no fair expression of the rift.
Structure-Massive with localized areas with faint gneissoid features.

Texture-Medium fine granitic to slightly porphyritic.
Specific gravity, 2.63 ; absorption ratio, 0.389 .
Color-Grayish-white.
Working Qualities-Good; susceptible of fine polish.
Chemical Analysis-Lime, 2.14 per cent.; Magnesia, 0.48 per
cent.; Alumina, 14.22 per cent.; Ferric Oxide, I.I4 per cent.; Ferrous Oxide, I. 24 per cent.; Titanic Oxide, 0.24 per cent.; Magnesia, trace; Soda (Na2O), 5.39 per cent.; Potash ( K 2 O ), 4.82 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 70.20 per cent.; Ignition, 0.33 per cent. Total, Io0.20 per cent.
Mineralogical and Petrographic-White feldspar is the predominant mineral, the larger crystals exhibit brilliant cleavage faces. Quartz occurs in gray grains of vitreous lustre. Biotite in shreds and irregular particles appears with indistinct parallelism. The preponderating minerals are obscurely banded.

Microscopic-"Under the microscope the chief feldspar proves to be a fresh, clear microcline. It occurs as large allotriomorphic grains. Oligoclase appears in small irregular grains somewhat kaolinized, and having an indefinite zonal structure indicative of but slight variation in chemical composition. The oligoclase shows some strain effects. The kaolinization of the plagioclase is usually central. Quartz forms abundant, clear, irregular grains closely filling all interspaces. It displays decided undulatory extinction, this being the most prominent strain effect seen in the thin section.

Micropegmatite has developed to a small extent in the feldspar grains bordering the strained quartz grains. Biotite is abundant and is characterized by the usual strong pleochroism. It occasionally contains a little epidote. Muscovite occurs in ragged grains and flakes, strongly polarizing and colorless. Accessory magnetite occurs in minute quantities. Apatite forms a prominent accessory, some of the crystals of this mineral being large enough to study with a medium power. The double refraction is weak, refractive index high."

MATERIAL: GRANITE SURVEY NO. 6510.
Area: Santee.
Sub-Area: Broad River.
Location: Fairfield; 1.5 miles north of Blairs; Lyles' Ford.
Address of Ower or Representative (?) : T. W. Traylor, Blairs, S. C.

OBS-Abbeville-York Zone. A bold granitic outcrop is exposed in bed of Broad River at this ford.
material: granite. survey no. 6520.
Area: Santee. Sub-Area: Broad River; Rock Creek.
Location: Fairfield County; 0.4 miles east of Blairs (S. R. R.)
Address of Owner or Representative (?): G. W. Ragsdale, Winnsboro, S. C., Fairfield Granite Company, Wm. Lyles et al.

OBS-Abbeville-York Zone. Type: Muscovite-bearing Biotite Granite. This bed of granite, over the bare face of which Rock Creek courses 360 feet, belongs to two tracts divided by said creek, and separately owned. On the south side of the creek the granite exposed along 360 feet varies from 225 to 30 feet in exposed width, while on the north side it varies from 30 to 100 feet in width. Beyond the inscribing contour on the north and south, the overburden rapidly increases in steep hillsides. The elevation of the creek bed at the lower end of the 360 feet is 12 feet below that at the upper end. An easy location is available for a spur track connecting with the Alston-Asheville Railway (S. R. R.)

Rift and Grain-The rift of this rock, as exhibited by shallow work, is good and the grain excellent.

Structure-Superficially the rock is almost indistinguishably gneissoid in structure. Exhibits tendency to massive exfoliation. Ribbon veins of quartz and tufted biotite are of occasional occurrence.

Texture-Fine grained; compact.
Specific gravity, 2.66; absorption ratio, 0.314.
Color-Light gray.
Working Qualities-Excellent; susceptible of fine finish.
Chemical Analysis-Lime, 2.40 per cent.; Magnesia, 0.63 per cent.; Alumina, 15.25 per cent.; Ferric Oxide, i. 52 per cent.; Ferrous Oxide, 1.53 per cent.; Titanic Oxide, 0.42 per cent.; Manganese, trace; Soda ( Na 2 O ), 4.32 per cent.; Potash (K2O), 2.85 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 70.90 per cent.; Ignition, 0.17 per cent. Total, 99.99.

Mineralogical and Petrographic-The most abundant constituent consists of the feldspars which are occasionally porphyritic, with occasional crystal boundaries; second is the gray vitreous quartz; then black biotite and white muscovite.

Microscopic-"Microscopically the granite is seen to contain microcline and oligoclase in order of relative abundance. The microcline is clear and fresh, while the oligoclase is slightly kaolinized. The oligoclase shows a slight zonal variation in its optical properties from which a corresponding slight variation in its chemical properties is probable. The quartz and feldspars all have irregular boundaries, the grains of the former mineral being somewhat smaller than the average grain of the feldspars. Neither feldspars nor quartz show strain effects. A little micropegmatite is noted. Biotite
is greenish-brown, strongly pleochroic and moderately abundant. The white muscovite is much less prominent, and shows just the weakest absorption parallel to the cleavage. Both form irregular plates and flakes. The biotite has been very slightly altered to chlorite and magnetite. A little epidote is noted. Apatite is a prominent accessory as minute prisms and rounded grains."

Blairs upper bed (Survey No. 6521).
In connection with the above it is of great interest to note the variations exhibited by this granite at a superior elevation of about 60 feet, and at a distance of about 750 feet northwest, where it is exposed high on the hillside overlooking Blairs.

Texture-Fine grained to slightly porphyritic.
Structure-Distinctly gneissoid; distinct exfoliated layers, with minimum thickness of 6 feet; very little "bone." This granite is a light gray, fine grained, and slightly porphyritic. It exhibits distinct gneissoid structure. Feldspar, the principal mineral constituent, is milk white with pearly to vitreous lustre; the quartz is gray with decided vitreous lustre, while the minute biotites are black. The last mineral appears as dots and specks in the hand specimen, the flakes small but abundant. Tiny specks of silvery muscovite are noted.
"Microscopically, the chief feldspar is seen to be microcline. It is clear in thin section. Between crossed nicols the grating structure, due to twinning, affords ready identification. The oligoclase is subordinate to the microcline in abundance. It is somewhat kaolinized and twinned after the Albite law. Zonal structure is noted, not prominent, however. The feldspars and the quartz present irregular outlines. The quartz is slightly shattered and strain effects are to be seen in the mineral, also less distinctly in the feldspars. Micropegmatite is noted. Biotite and muscovite occur together in small platy masses. The biotite is brown and strongly pleochroic, while the muscovite is colorless and has but a very weak absorption. They are free from alteration. Apatite prisms are present in abundance as accessories. Some magnetite is noted."

## material: granite. <br> SURVEY No. 6522.

Area: Santee.
Sub-Area: Rock Creek. Location: Fairfield County; Fraser Bed; 2.5 miles east of Blairs.

OBS-Abbeville-York Zone. The valley of Rocky Creek presents weathered surface of a considerable body of granite at this point. Insufficiently opened to exhibit characteristics.

MATERIAL: GRANITE SURVEY No. 6530.
Area: Santee.
Sub-Area: Broad River Valley.
Location: Fairfield County; Strothers Quarry; 0.5 miles south of Strothers; connnected by spur track with the Alston-Asheville Railway (S. R. R.).
Address of Owner or Representative (?): N. Y. Continental Jewel Filt. Co., Charleston, S. C.
.OBS-Abbeville-York Zone Muscovite-bearing Biotite Granite. Near the mouth of a tributary valley to Broad River storm waters have exposed in the bed of a valley a large body of granitoid rock extensively quarried for rubble masonry, which is utilized at the Charleston Navy Yard.

Rift and Grain-Character of quarrying gives no expression to these features.

Structure-Exhibits massive exfoliating tendency.
Texture-Varies from fine, and even, to coarse grained and irregular ; granitic.

Specific gravity, 2.66; absorption ratio, 0.247 -
Color-Light gray.
Working Qualities-Untried.
Mineralogical and Petrographic-Milk white feldspar and gray quaitz (grains) constitute the body of the rock, which also comprises delicately distributed black biotite flakes and shreds with the occasional presence of silver white muscovite.

Microscopic-"Microscopically the feldspars prove to be microcline and oligoclase in order of their importance. The feldspars are rather free from indications of alterations, but all show strain effects. The grating structure of the microcline is beautifully shown between crossed nicols. The oligoclase is zonal, the peripheral portion being slightly more acid than the center. The quartz grains are very small as compared with the feldspars. They are clear and strongly stressed. The biotite is the chief mica with very subordinate muscovite in close association. Both minerals are ragged in outline and quite free from any indication of decomposition by weathering agencies. Accessory apatite and magnetite are noted. The magnetite appears to associate rather closely with the biotite, but is not regarded as resulting from the alteration of the latter."

## MATERIAL: GRANITE SURVEY NO. 6535.

Area: Santee.
Sub-Area: Broad River Valley.
Location: Newberry County; Dickert Quarry; west side of Broad River; I. 3 miles southwest of Strothers; I mile from AlstonAsheville Railway (S. R. R.)
Address of Owner or Representative (?) : Col. D. A. Dickert, Newberry, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite-Gneiss. A huge granitic boss ascends with a moderate curve to an elevation of about 50 feet above the valley line which delimits its exposure; it exhibits approximately 2 acres of bald rock and probably 3 acres with slight overburden. Insufficient development has been made at this quarry to afford competent ideas of the rift and grain. The surface is somewhat disfigured with a series of parallel parting planes striking N. $56^{\circ} \mathrm{E}$. and dipping $46^{\circ} \mathrm{N} .34^{\circ} \mathrm{W}$.

Rift and Grain-Insufficient development to afford accurate expression, but apparently good.

Structure-Exfoliating and distinctly gneissoid. Pronounced parting planes strike N. $56^{\circ} \mathrm{E}$. and $\operatorname{dip} 46^{\circ} \mathrm{N}$., $34^{\circ} \mathrm{W}$.

Texture-Medium fine grained.
Specific gravity and absorption ratio not properly represented by the rock exposed on account of weathered condition of surface rock.

Color-Gray.
Mineralogical and Petrographic-Feldspar occurs in grains with a pearly lustre on cleavage faces; quartz is gray with vitreous lustre; biotite abundantly occurs in black flakes with resinous lustre.

Microscopic-"Microscopically the abundant presence of fresh, clear microcline is noted. It often holds little blebs of quartz. Oligoclase is present in very small amount. It is weakly zonal and but little weathered. The maximum variation in the extinction of the zones measured from the Albite twinning lines amounted in one case to $12^{\circ}$, but for the most part the variation is less than this. Clear colorless quartz is abundant, filling all the interspaces between the other constituents. It is traversed by cracks and shows other signs of strain and slight crushing. The biotite is brown, strongly pleochroic and presents crystal planes parallel to the basal cleavage. Otherwise it forms irregular grains and plates. Apatite, zircon and magnetite occur as accessories. The zircons have an exceedingly high refractive index and strong, double refraction."

Material: granite. Survey no. 6597.
Arca: Santee.
Sub-Arca: Congaree River. Location: Richland County; Lipscomb Granite; near southerly outskirts of Columbia and adjacent to Granby ; immediately south of Columbia-Fairfax Railway (S. A. L. R. R.)
Address of Owner or Representative (?) : James Lipscomb, Est.
OBS-Vaucluse Zone. Occurs near the east bank of the Congaree River approximately opposite to the granite described under No. 6599, to which it is assumedly approximately similar. When visited for inspection quarry was idle and partly obscured by water. Understand that it is now being worked.


FIG. IO.-GRANITE QUARRY NEAR COLUMBJA.
material: granite. survey no. 6599.
Sub-Area: Congaree River.
Area: Santee.
Quarry ; Opposite Columbia; Columbia-Augusta (S. R. R.), and Columbia-Fairfax Railway (S. A. I. R. R.)

Address of Owner or Representative (?): R. G. Ross, Jacksonville, Fla.
OBS-Vaucluse Zone. This quarry has been worked chiefly to supply massive units of shapeless stone for United States jetty work. The upper surface of the stone adjacent to the river appears about 22 feet above zero water level, and increases its elevation with departure from the river.

Rift and Grain-Having been unessential to character of product, these features are without expression in else than an apparent tendency to cleave along planes N. $30^{\circ} \mathrm{W}$.

Structure-This rock apparently is resolved into a series of wide zones slightly differing in texture and separated by planes, which (strike N. $27^{\circ}$ E. and dip $77^{\circ} \mathrm{N} .63^{\circ} \mathrm{W}$.)

Texture-Varies from fine to coarse granitic.
Specific gravity, 2.68 ; absorption ratio -
Chemical Analysis-Lime, 1.88 per cent.; Magnesia; 0.84 per cent.; Alumina, 14.06 per cent.; Ferric Oxide, 0.70 per cent.; Ferrous Oxide, i. 80 per cent.; Titanic Oxide, 0.48 per cent.; Manganese Oxide, o.16 per cent.; Soda ( Na 2 O ), 3.46 per cent.; Potash ( K 2 O ), 3.94 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 72.19 per cent.; Ignition, 0.18 per cent. Total, 99.69 per cent.
material: granite. survey no. 6605.
Area: Santee.
Sub-Area: Beaverdam Creek. Location: York County ; Ford Granite ; 0.6 miles southwest of Bowling Green; 200 feet west of Yorkville-Gastonia Railway (C. \& L. Ry.)
Address of Owner or Representative (?): D. N. Ford, Bowling Green, S. C.
OBS-Abbeville-York Zone. A large boss of granitoid rock, with limited overburden, occurs at this point, but the amount of development has been too limited to admit of any expression of opinion as to its qualities. Somewhat similar granite exposures occur along Beaverdam Creek above Bowling Green, on the respective places of J. M. Adams and J. B. H. Jackson.

> MATERIAL: GRANITE. SURVEY NO. 66I5.

Area: Santee. Sub-Araa: Bullocks Creek Branch. Location: York County; Whitesides Quarry; 3 miles west of Filbert Station; $11 / 4$ miles from nearest railway point.
Address of Oiverer or Representative (?) : T. P. Whitesides, Yorkville, S. C.

OBS-Abbeville-York Zone. Type: Muscovite-bearing Biotite Granite. A branch at this point cascades over granite, falling 32 feet within 200 feet, and exposes a width of 250 feet free from overburden. Whereas some fine blocks of stone have been quarried from this locality, no systematic work has been done. The main body of the stone has not yet been fully exposed.

Rift and Grain-Both excellent.
Structure-The monocline of a vast granite boss with its upper structure almost indistinguishably metamorphosed to a gneissoid structure. Very occasional "ribbons" of feldspar and quartz are observed; practically free from parting planes.

Texture-Uniform fine grain; compact.
Specific gravity, 2.65 ; absorption ratio, 0.292 .
Color-Gray.
Working Qualities-Excellent; susceptible of fine finish. Effect may be observed in the W. L. I. "Confederate Monument," Washington Square, Charleston, S. C.

Chemical Analysis-Lime, 2.08 per cent.; Magnesia, 0.43 per cent.; Alumina, 14.89 per cent.; Ferric Oxide, 0.75 per cent.; Ferrous Oxide, 1.24 per cent.; Titanic Oxide, 0.36 per cent.; Manganese Oxide, trace ; Soda (Na2O), 4.47 per cent.; Potash (K2O), 4.70 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 70.77 per cent.; Ignition, 0.19 per cent. Total, 99.88 per cent.
Mineralogical and Petrographic-Light blue-gray quartz with vitreous lustre, and white feldspar (rarely porphyritic) with vitreous to pearly lustre comprise the main constituents, through which minute specks of biotite are uniformly distributed; muscovite sparsely appears.

Microscopic-"The feldspars are microcline and plagioclase, the former rather in excess. Both are remarkably fresh and clear, being quite free from the common products of even slight alteration. The plagioclase is weakly zonal. Neither feldspar appears with good crystal boundaries. Quartz is abundant in clear grains with undulatory extinction due to strain. It contains abundant inclusions in the form of long, thin needles such as are usually credited to rutile. Biotite occurs in dark green flakes and plates, and presents rather irregular outlines, the basal plane only being prominent. It is not visibly weathered. Muscovite is more ragged than the biotite. It is clear and colorless, more prominent in the thin section than in the
hand specimen. Accessory apatite is abundant. A very little epidote is noted."
material: granite survey no. 66 i6.
Area: Santee. Sub-Area: Broad River; Bullocks Crk. Br. Location: York County; Caldwell property; 4.2 miles west of Filbert Station; 1.2 miles west of Whiteside Quarry.
Address of Owner or Representative (?) : John Caldwell, Yorkville, S. C.
OBS-Abbeville-York Zone. Type: Muscovite-bearing Biòtite Granite. The ridge extending southwesternly from the Whitesides Quarry has been denuded of overburden at this point, where about 5 acres are entirely bare, and probably io acres are covered with mere nominal overburden. This exposure presents a portion of one side of a huge granitic boss, which curves down ino feet, within 900 feet. As no real quarrying has been done at this point, the character of the body of the rock has not been exposed.
material: granite survey no. 6626.
Area: Santee. Sub-Area: Catawba River; Fishing Crk. Location: York County; Happerfield Quarry; I. 5 miles southeast of Yorkville.
Address of Ower or Representative (?) : E. R. McFarland, Yorkville, S. C.

OBS-Abbeville-York Zone. Ledge of blue granite. (Not yet investigated.)
material: granite-gneiss. survey no. 6640.
Area: Santee. Sub-Area: Broad River; Turkey Crk Br. Location: Chester County; Ensley property; 7 miles northwest of Chester.
OBS-Abbeville-York Zone. Type: (Not yet investigated.)

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\text { material: granite. survey no. } 6685 \text {. }
$$

Area: Santee. Sub-Area: Broad River; Little River. Location: Fairfield County; Brick Church Granite; 6 miles northeast of Alston.
OBS-Abbeville-York Zone. The south side of the road immediately west of Little River affords a very fair exposure of granite, which does not appear to have been quarried, but which apparently represents a bed of excellent stone.

MATERIAL: GRANITE.
Area: Santee.
Location: Fairfield County; Anderson Quarry; West of Columbia and Charlotte Railway (S. R. R.)
Address of Owner or Representative (?): Winnsboro Granite Company, Rockton, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite.
Transportation-Railway Station, Rockton; connected by standard gauge spur track as follows: Rockton to Rion, 4.5 miles; Rion to Anderson Quarry, 8.5 miles. Total, Anderson to Rockton Quarry, 13 miles.
Area of Tract-Fifty acres.
This property is situated in a section with rolling topographic features. This territory is fairly well watered. The amount of neighborhood timber available is quite limited. The Anderson bed comprises a huge elongated boss of granitite ascending within 600 feet, in a succession of curves, to an elevation of 94 feet above Mill Creek, which skirts its base; there are thus exposed between five and six acres of bald rock, superbly situated for gravity drainage and economic quarrying; the owners estimate the area of available rock at 10 acres ; 600 feet from the creek this rock continues rising, but is obscured by an overburden of wooded and cultivated soil. The railway track follows a contour of this rock about 60 feet above the creek, and is provided with appropriate steam derricks alongside. One face developed on this quarry is 60 feet in length and 14 feet in depth. At the time when examined another lift was in process which will greatly extend the working face and increase the capacity.
Rift and Grain-The rift is excellent, admitting of very extensive lifts, and the grain is quite true to a line of holes, with 8 -inch centres, for lengths equal to any customary demand.
Structure-This rock is substantially homogeneous, free from schistosity and affords very rare parting planes; one limited zone departs from the typical form in color rather than structure or texture, this variation affording a bluish cast. The sap on the bald rock rarely attains as much as I inch in thickness. Very occasional veins of "ribbon" or "bone" of feldspar and tufted mica require exclusion from the product.

Texture-Medium, fine grained, compact and hard. Excellent resistance to wear is demonstrated by the rattling test and by long service in structure and in paving.

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Specific gravity, 2.64; absorption ratio, average, o.44; maximum, 0.53 .

Color-Light gray; also a zone of blue-gray.
Working Qualities-This stone splits true and works excellently under the hammer and chisel. The Anderson granite is susceptible of a high polish, the resultant effect yielding a medium fine grained, dark gray product, which is eminently adapted to monumental or other ornate work, especially where relief effects are desired. The following structures derived their granite from the Anderson Quarry: Part of Florence (S. C.) postoffce, part Charlottesville (Va.) postoffice, part of Chillicothe (O.) postoffice, part of Traverse City (Mich.) postoffice.

Compressive or Crushing Strength-Four tests by United States Ordnance Department afforded for ultimate strength:

Minimum, 24,700 pounds per square inch.
Average, 25,585 pounds per square inch.
Maximum, 26,080 pounds per square inch.
Pyramidal fractures; cracking strength, 90 per cent. of ultimate strength.

Chemical Analysis-Lime, 1. 54 per cent.; Magnesia, o. 22 per cent.; Alumina, 13.72 per cent.; Soda 5.39 per cent.; Potash, 4.98 per cent. ; Silica, 69.74 per cent.; Oxide of Iron, 3.64 per cent. Total, 99.23 per cent. (G. B. and Blair analysts.)

Mineralogical and Petrographic-This granite is a medium fine grained crystalline rock constituted chiefly of quartz with highly vitreous lustre and colorless to slightly pink with occasional particles of pale brown (polishes to smoky hue) ; gray-white feldspar with a vitreous lustre, occasionally assumes dimensions of phenocrysts with iustrous crystal facets (the feldspar polishes milk white with lively lustre). Dark biotite, in small grains of aggregated scales and occasional short prisms occurs as characterizing mineral (polishes to a highly contrasting black). Pyrite very rarely observed but appears confined to the former parting planes now filled with vein matter.

Microscopic-"Microscopically the larger crystals are seen to be microcline with characteristic grating structure. They are slightly kaolinized, and quite irregular in outline. Just a little oligoclase is present. It is twinned and has a weak zonal structure. This mineral has kaolinized very slightly. It is idiomorphic to some extent. Quartz forms irregular areas in the thin section, a number of these areas frequently extinguishing simultaneously, thus approaching a pegmatite structure. Micropegmatite is present. The biotite is dark
greenish-brown and strongly pleochroic. The plates of this mineral are small and commonly have plane surfaces parallel to the cleavage. Muscovite is noted in colorless plates, more ragged in outline than the biotite. Apatite is abundant in minute prisms and grains. Magnetite as accessory is noted."

Mechanical Equipment Consists of-Forty pneumatic drills, five steam drills, six derricks, thirty tons capacity each, one crusher, one elevator to crusher, three crushed-stone bins ( 200 tons capacity each). The finishing plant comprises five pneumatic dressing machines. Annual tonnage of Anderson Quarry ; rough and dressed and rubbles.

Annual tonnage 1904 Anderson Quarry :

|  |  |  |  | 1904. | 1905. | 1906. |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Rough Dimension . . . . . . . . . . . . . . . . | I,800 | 3,500 | 5,200 |  |  |  |
| Rubble (one-half) . . . . . . . . . . . . . . . . | 5,000 | 700 | $\ldots .$. |  |  |  |
| Dressed. . . . . . . . . . . . . . . . . . . . . | 400 | 8,500 | 1,400 |  |  |  |
| Total tons . . . . . . . . . . . . . . . . . . . . | 7,200 | 12,700 | 6,600 |  |  |  |

MATERIAL: GRANITE. SURVEY NO. 6690.
Area: Santee.
Sub-Area: Little River.
Location: Fairfield County ; Leiper-Davis Quarry; 5.5 miles northeast of Alston; I. 2 miles south of Brick Church; transportation by highway.
Address of Owner or Representative (?): Leiper-Davis, Winnsboro, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite. This property comprises two sets of quarries about 500 feet apart and on opposite sides of a branch close to Little River. The area entirely free from overburden is limited; but the gentle ascension in the topography ( 18 in 100) indicates the depth of overburden as probably slight. The easterly quarry shows a developed face 75 feet long by a depth of 10 feet, which, within the limits of gravity drainage could be increased to 25 feet. Skilful work has not entirely characterized the maintenance of the face of this quarry. The rock at this quarry is apparently extensive. The westerly quarry shows a developed face 50 feet long by 12 fcet deep. Vertical parting planes have induced weathering, which has resolved this bed into very large, independent masses. Considerable weathering along westerly limit of quarry.

Rift and Grain-Lifts and splits well with reasonable care. No schistose planes; vertical parting planes pronounced, but infrequent; homogeneous structure excepting occasional "ribbons" of feldspar and quartz.

Texture-Medium fine grained; compact and hard.
Specific gracity, o.000; absorption ratio, 0.338 .
Color-Light to medium gray.
Working Qualities-Works well under the hammer and chisel, takes a high polish. At one time extensively utilized for monumental work.

Mineralogical and Petrographic-Quartz gray, with vitreous lustre; feldspar is white, with bright pearly cleavage, and with good crystal boundaries. Biotite in small black flakes.

MATERIAL: GRANITE SURVEY NO. 6732.
Area: Santee. Sub-Area: Broad River; Little Cedar Crk. Location: Fairfield County; Stewart Granite Quarry; 2.5 miles west of Rockton.
Address of Ouner or Representative (?): Stewart Stone Co., Columbia, S. C.
OBS-Abbeville-York Zone. Type: Muscovite-bearing Biotite Granite. This deposit is apparently an intrusive boss of granite with exfoliations accentuated by weathering along concentric planes; accordingly there appears a peripheral layer of firm, compact granite separated from the rounded mass by a layer of sap rock; outside of the firm layer soft concentric layers of highly altered granitic material appear. The quarry is located at the apex of the boss from which the soft material has worn; the outer firm layer and the mass being worked in two tiers or "benches." Approximately 0.8 acre free from overburn; tract comprises from io to 15 acres.
Rift and Grain-Lifts and splits fairly well.
Structure-Free from schistose planes; includes spheroidal and lentiform segregations prejudicial to general homogeneity, but good intermediate areas prevail. The included spheroidal and lentiform masses consist respectively of quartz and biotite. One mass approximately, a hexagonal column, resembles diorite.

Texture-Medium, fine grained; compact.
Color-Light gray.
Working Qualities-Splits well and works well under chipping hammer, and takes a good polish.
material: granite. survey no. $6735 \cdot$
Area: Santee. Sub-Area: Broad River; Little River.
Location: Fairfield County; Bundrick Quarry; 5 miles west of Rion.
Address of Ouner or Representative (?): Winnsboro Granite Co., Rockton, S. C.
OBS-Abbeville-York Zone: Type: Biotite Granite-Porphyry. Abandoned quarry. A massive granite of the type designated "Scotch." Moderately coarse texture.

Color-Gray-red.
Mineralogical and Petrographic-Constituted of gray vitreous quartz and red feldspar, which present brilliant cleavage faces. Small flakes of biotite are sparsely distributed.

Microscopic-"In the thin section fresh unweathered microcline is seen to be the chief feldspar. It is characterized by the typical grating structure beautifully displayed. Its outlines are quite irregular. Oligoclase is fairly prominent. It is slightly kaolinized and shows some imperfect crystal boundaries. Quartz forms abundant, irregular, colorless grains, containing strain lines of inclusions. The biotite is of deep brown color, strongly pleochroic and slightly altered with the formation of a minute amount of chlorite and iron ore. The plates and flakes of biotite are small and irregular, frequently ragged in outline. Apatite is noted as accessory in very small amount. A litttle micropegmatite is recorded."

MATERIAL: GRANITE SURVEY NO. 6740.
Area: Santee.
Sub-Area: Broad River. Location: Fairfield County; Rion Quarry; west of Columbia and Charlotte Railway (S. R. R.)
Address of Owner or Representative ( ?) : Winnsboro Granite Company, Rockton, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite.
Area of Tract-Fifty acres.
Transportation-Railway station, Rockton; connected by standard gauge spur track as follows: Rockton to Rion, 4.5 miles; Rion to Anderson Quarry, 8.5 miles. Total, 13 miles of railway. Situated in a section characterized by rolling topography. This body of granite occurs in the form of a granitic ridge with about 4 acres exposed free from overburden; it appears to belong to the exfoliating type and is apparently of intrusive origin. The crest of the ridge is about 40 feet above the railway track which skirts the lower
contour of the granite as exposed by nature. The north side of the ridge is obscured by overburden. The quarry face developed is 300 feet long and 20 feet deep; the possibilities of economic gravity drainage will probably be limited to 35 feet below the present bed of the quarry. The workable bed has been limited on the east by a diorite dike intruded nearly vertically through the granite, which is badly weathered along the foot wall of the dike (east side).
Rift and Grait-Both of these features are very good; extensive lifts are made from single wells.

Structure-This granite is homogeneous and free from schistosity but has a few parting planes incident to the diorite intrusion on the east, along a line N. $27^{\circ} \mathrm{W}$., with a dip of $80^{\circ} \mathrm{S} .63^{\circ} \mathrm{W}$.; dike divided by a granite horse. This intrusion has stimulated weathering of the granite on the foot wall and has induced a few parting planes filled with infiltered quartz, feldspar, tufted biotite, and occasionally pyrite.

Texture-Medium coarse grained to porphyritic; compact and hard; affords excellent wearing qualities.

Specific gravity, 2.62 ; absorption ratio, average, 0.36 ; maximum, 0.55 .

Color-Light gray with slightly yellowish cast.
Working Qualities-This stone takes a good polish, but is best adapted to architectural work, affording fine effects with a hackled finish, relieved by an eight cut draft. The following prominent buildings have been constructed of granite from the Rion Quarry: Charleston Postoffice, Land Title Building, Philadelphia (Pa.), part of Baltimore Courthouse, part of Stock Exchange, Baltimore; part of Durham (N. C.) Postoffice.
.. Compressive and Crushing Strength-Four tests by the United States Ordnance Department afforded for ultimate strength :

Minimum, 25,940 pounds per square inch.
Average, 30,295 pounds per square inch.
Maximum, 33,740 pounds per square inch.
Pyramidial fractures, cracking strength 88 per cent. of ultimate strengths.

Chemical Analysis-Lime, 1:36 per cent.; Magnesia, 0.38 per cent.: Aluminum, 15.39 per cent.; Oxide of Iron, 1.24 per cent.; Soda (Na2O), o. 55 per cent.; Potash, 6.89 per cent.; Silica, 73.26 per cent. Total, 99.07 per cent.

Mineralogical and Petrographic-Quartz occurs in dark gray grains with vitreous lustre. Feldspar white with pearly cleavage
faces, and with distinct crystal boundaries. Biotite in small, black flakes. Muscovite occurs to limited extent.

Microscopic-"The feldspar of first importance is microcline. It is beautifully twinned in characteristic fashion and is but slightly kaolinized. It shows distinct idiomorphic tendencies, but the crystals are not perfect in outline. Oligoclase is the subordinate feldspar. It is better crystallized and slightly more kaolinized than is the microcline. The biotite is dark greenish-brown, and contains some magnetite. The flakes of biotite are small, not abundant, and of irregular forms. The usual strong pleochroism is noted. Muscovite, in close association with the biotite, occurs in small flakes quite irregular in form. It is brilliantly polarizing and nearly colorless, with very weak absorption parallel to the cleavage plane. Quartz in clear, irregular grains fills all interspaces between the other constituents of the rock. Accessory apatite and magnetite are present. The apatite occurs as minute needles, colorless and strongly refractive."

Mechanical Equipment-(See Anderson Quarry, Survey No. 6688.)

Annual Tonnage:

material: granite ciquey no. 68io.
Area: Santee. Sub-Area: Catawda River; Allison's Crk. Br. Location: York County; Jackson's Granite Quarry; 0.5 mile north of Clover; spur track location will cover about 2,600 lineal feet.
Address of Ouner or Representative (?): W. T. Jackson, Clover, S. C.

OBS-Abbeville-York Zone. Type: Biotite Granite-Porphyry. A huge rounded mass of granitoid rock ascends from the bed of the skirting branch to an elevation of 30 feet above the same, and exposes an area of about 8 acres free from overburden. It belongs to the exfoliating type; limited quarrying has been confined to the superficial layer.

Rift and Grain-Splits well, but the rift of the mass is as yet indeterminable.

Texture-Coarse grained to porphyritic.
Specific gravity, 2.66; absorption ratio, 0.468 .
Color-Cream-gray.
Working Qualities-No opportunities for judging.
Chemical Analysis-Lime, 2.66 per cent.; Magnesia, 0.74 per cent.; Alumina, 15.75 per cent.; Ferric Oxide, I.16 per cent.; Ferrous Oxide, I. 49 per cent.; Titanic Oxide, 0.36 per cent.; Manganese Oxide, trace; Soda (Na2O), 4.76 per cent.; Potash (K2O), 3-49 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 68.90 per cent.; Ignition, o. 18 per cent. Total, 99.49 per cent.
material: Granite. survey no. 6812-13-14.
Area: Santee. Sub-Area: Catawba River; Allison's Creek. Location: York County; Clover Granites; 0.5 to 1.5 miles southwest of Clover.
Address of Owner or Representative (?): Mat. Turner, Sam Turner, Gaines Matthews, Clover, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite-Gneiss. Exposures of bold granitoid bosses appear on hillsides in the area indicated. Apparently coarsely porphyritic, but no development has been done to reveal the true character of this stone, which is obscured by "sap."

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\text { MATERIAL: GNEISS. SURVEY NO. } 7 \text { IIO. }
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Area: Santee.
Sub-Area: Half-Mile Creek.
Location: York County; Rock Hill; o. 6 mile northeast of Rock Hill.
Address of Owner or Representative (?) : Mrs. Hattie White, Rock Hill, S. C.
OBS-Abbeville-York Zone. A confused gneissoid mass occurs at this locality with an apparent northeasterly strike. The rock is essentially a coarse grained biotite granite with a ground mass of white quartz and pink feldspar, including tufts of black mica. It has been much disturbed, as is evidenced by numerous small fissures, some of which have been filled with apparently igneous intrusions. This deposit has been quarried to a limited extent for neighborhood uses.

MATERIAL: GRANITE. SURVEY NO. 7340.
Area: Santee. Sub-Area: Wateree River Branch. Location: Kershaw County; Perry Granite; 4 miles north of Liberty Hill.
Address of Owner or Representative (?):
OBS-Edgefield-Ceesterfield Zone. Type: Granite. An abandance of large "bowlders" of fine grained granite occurs distributed over the hillsides of this locality.

## MATERIAL: GRANITE. SURVEY NO. 7345.

Area: Santee.
Sub-Area: Singleton Creek.
Location: Kershaw County ; Perry Granite; 0.8 mile northeast of Liberty Hill Postoffice.
Address of Owner or Representative (?) : Mr. Perry, Liberty Hill, S. C.

OBS-Type: Granitite. A knoll comprising about 6 acres at this locality is intermittently capped with huge blocks of granite resting on a decomposed granitic matrix. This stone is apparently of an excellent grade. It pertains to the type described under (Sur. No. 7355).

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\text { MATERIAL: GRANITE. SURVEY NO. } 7346 .
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Area: Santee. Sub-Area: Broad River; Singleton Creek. Location: Kershaw County; 0.4 mile north of Liberty Hill Postoffice.
Address of Owner or Representative (i): Mrs. C. E. Richards, Liberty Hill, S. C.
OBS-Type: Muscovite Granite. On the northerly scarp of the Liberty Hill ridge an outcrop of granite occurs about 250 feet from the adjacent valley line, and about 45 feet superior in elevation. The topographic and geognostic features are highly favorable for economic quarrying.

Rift and Grain-Sufficient test work has not been done to afford a competent expression of the lifting and splitting qualities.

Structure-The structure is absolutely free from gneissoid characters, parting planes are very rarely in evidence. The rock superficially exposed shows 8 inches of sap.

Texture-Medium, fine grained; very uniformly compact.
Specific gravity, 2.62 ; absorption ratio, 0.43 .
Color-Gray-red.
Mineralogical and Petrographic-Flesh-colored feldspar is conspicuously the predominant mineral. Gray quartz with vitreous
lustre obtains subordinate to the feldspar. Minute specks of silvery muscovite are sparsely disseminated. Pyrite is occasionally observed in the surficial rock.
Microscopic-"The feldspar is chiefly oligoclase with very small extinction angles. It is much kaolinized, hence its dull lustre in the hand specimen. It shows a tendency to form distinct crystals. Both Albite and Carlsbad twinning are noted. Microcline is present in but small amount. It is kaolinized, apparently as much as the oligoclase. Muscovite is quite conspicuous. The plates are ragged, rather abundant in thin section, colorless and brilliantly polarizing. Many very small flakes of muscovite are included by the oligoclase, but these are not considered as alteration products of the latter. Quartz fills all interspaces between the other constituents with its clear, irregular forms. A very little dark green biotite is noted. Apatite occurs as accessory."
material: granite. survey no. 7350.
Area: Santee. Sub-Area: Wateree River Branch. Location: Kershaw County; 6.8 miles S. $45^{\circ} \mathrm{W}$. of the CamdenBlacksburg Railway (S. R. R.) at Heath Springs; connected with Heath Springs by highway and by a spur track (in process of construction to a point within one and a half miles of the main bed of granite).
Address of Owners or Representatives (?) : J. G. Richards, Jr., Liberty Hill, S. C., and E. Mitchell Seabrook, Edisto Island, S. C.

OBS-Abbeville-York Zone. Type: Biotite Granite.
Acreage-About 1,600 with rolling topography, abundantly watered, and fairly well timbered. Acreage of rock exposed ; occurs at three important localities of undetermined area. At localities Nos. 1 and 2, the granite appears mantling the plateaus in huge detached blocks, some representing as much as 8,000 cubic feet of granite each; at these two localities there is no overburden, and the topography is ideal for gravity drainage. At locality No. 3 the granite is exposed along the scarp of the hill in an apparentlv continuous ledge covered with a variable overburden, but shallov monomgs on the adjacent plateau indicate a probable continuation of this rock over a good area. The topographic features admit of easy drainage by gravity. There has been no development-quarrying on this property. The granite occurring in this region has nowhere been exposed with a greater thickness than 60 feet; which in many places decreases
to less than 20 feet; near and below the valley lines the original granitic mass has weathered to a friable sap, or clayey mass, to an undetermined depth.
Rift and Grain-This rock lifts readily and splits perfectly true to holes 8 inches apart.

Structure-This rock is homogeneous and entirely free from gneissoid character, but the blocks or component units necessarily involve peripheral parting planes, which naturally limit uninterrupted quarrying. If the supposed ledge materializes as such, this objection will naturally be minimized.
Very occasional bands of quartzose and feldspathic ribbon occur in the body of the rock. The amount of sap is generally less than one inch on the exposed surfaces.

Texture-Fine grained and compact.
Specific gravity, 2.63; absorption ratio, 0.310 .
Color-Medium gray, which polishes to much darker gray, affording fine relief effects.

Working Qualities-Splits true, and works well under the hammer and chisel ; susceptible of a very high polish, yielding a lustrous gray product exceptionally well adapted to high-grade monumental and other ornate work, especially where relief effects are desired. The granite of this region represents one of the finest monumental granites in the State.

Chemical Analysis-Lime, 1. 32 per cent.; Magnesia, 0.58 per cent.; Alumina, $14.5^{1}$ per cent.; Ferric Oxide, I. 28 per cent.; Ferrous Oxide, I. 52 per cent. ; Titanic Oxide, o. 24 per cent.; Manganese, trace ; Soda ( Na 2 O ), 3.21 per cent.; Potash ( K 2 O ), 4.30 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Silica (and insoluble), 72.22 per cent.; Ignition, 0.52 per cent. Total, 99.70 per cent.
Mineralogical and Petrographic-This rock is a fine grained, apparently massive biotite granite, or granitite, composed of quartz, feldspar and mica. The quartz is holo-crystalline with a highly vitreous lustre and a smoky white color, varying through occasional particles to pale brown; the quartz polishes to a smoky hue. Feldspar, oligoclase with some microcline, affords occasional facets and is rarely porphyritic; the feldspar polishes milk white with a lively lustre. Mica biotite prevails in small grains and tufts of aggregated scales and occasional short prisms; the mica polishes to a highly contrasting black. Muscovite is observed sparsely disseminated; uranophane appears in some of the seams.
Microscopic-"Microscopically the rock proves to be rich in oligo-
clase with microcline abundantly present. Of the feldspars the microcline is quite clear and fresh, while the plagioclase is kaolinized in part. The former feldspar shows the grating structure, while the latter is twinned after the Albite law in the usual way. The plagioclase shows a decided tendency towards idiomorphism. Quartz is abundant in clear, irregular grains. It is noted that a considerable number of these grains will commonly extinguish together as does the quartz of pegmatite. This and the idiomorphism of the plagioclase gives the panidiomorphic texture in imperfect development. This texture has been considered by some petrographers as characteristic of dike granites. Biotite is not abundant. It is dark green-ish-brown, strongly pleochroic, very slightly altered to chlorite and iron ore, and occurs in very small, ragged flakes. With it is associated a little muscovite. The latter is colorless and ragged. Accessory minute apatites are noted, also a very little magnetite."

Geological-This granite or granitite occurs near the lower exposed limit of the Piedmont plateau, and has apparently been erupted through and effused over the Algonkian slates during some period succeeding the carboniferous base leveling. The superposition is exhibited about 2 miles west of Heath Springs on the Liberty Hill road. This region was once a continuous granitic area, extending from the Wateree River to a point within two miles of Heath Springs, and represented several zones of diverse forms of granite, ranging from light gray, through dark gray, to a pronounced pink; and from very fine grained to coarsely porphyritic,-probably on account of differences in the rate of crystallization and local contamination which has in a varying degree contributed accessory minerals.

These different forms of granite irregularly survived weathering in accordance with several conditions. First, drainage; the rock has apparently only survived where promptly relieved of water. I have observed in general that a poultice of wet clay (or decomposed granite) stimulates the greatest softening or destructive effects on nearly all forms of rock. Second, texture ; the coarse grained porphyritic granites in this region, partly by reason of greater porosity, are far less persistent than the fine grained, dense granites above the water line; below the water line both have perished to an undetermined depth, in many instances probably approximately co-ordinate with the adjacent valley level of the main drainage stream.

The consequence is that this entire region, to a depth of many feet, presents a matrix of rotten granite with plateaus capped with solid granite, where the texture was fine grained and the drainage
good. In many instances these granitic mantles have broken into huge blocks, partly by virtue of the irregular yielding of the subjacent rotten matrix, but chiefly by reason of the weathering, which has proceeded along the cracks probably created during the process of consolidation of the magma (to crystallized rock), where effused over vast areas; other cracks occur on account of subsequent intrusions of igneous dikes and by virtue of strains incident to orographic movements. The weathering process naturally operated with greatest effectiveness on the sharp, thin edges, and thus afforded in some instances a vast succession of firm rounded blocks bedded in a matrix of its own ruins. The continued process of drainage, erosion and degradation has removed the underlying rotten matrix where valleys now exist, and has precipitated the overlying blocks in confused heaps, whereas the rock on the plateaus remains comparatively undisturbed and affords good quarries.

## MATERIAL: GRANITE SURVEY NO. 7355.

Area: Santee. Sub-Area: Wateree River; Cedar Creek. Location: Lancaster County; Excelsior Granite Quarry; 5.2 miles S. $40^{\circ} \mathrm{W}$. of Heath Springs; connected by standard gauge spur track.
Address of Owner or Representative (?): Excelsior Granite Co., Heath Springs, S. C.
OBS-Abbeville-York Zone. Type: Biotite Granite. This tract comprises 40 acres of the Dr. Strait property. Beginning slightly above the valley line, it exposes the granite rising with the surface topography to the crest of the ridge. Apparently a continuous mass, this bed is broken into long blocks by weathering along vertical parting planes, and in many instances the solid blocks are but rounded masses more or less separated and buried in their own weathered ruins, which encircle each bowlder in concentric layers of argillaceous matter; the separation between the soft matter and the granite is sharp, and the sap attached to the granite is nominal. Some of these blocks comprise approximately 20,000 cubic feet of solid granite.

Rift and Grain-Splits true to almost any length of line, and, with reasonable care, lifts well.

Structure-Free from gneissoid structure; free from parting planes, excepting such as circumscribe the individual masses of stone.

Texture-Fine grained, uniform, compact.
Specific gravity, 2.66 per cent.; absorption ratio, 0.38 .

Color-Gray, polishes to much darker gray, affording fine relief for the unpolished surface.

Working Qualities-Splits true and works well under the chisel or chipping hammer; susceptible of a very high polish; superbly adapted to high-grade monumental and other ornate work, especially where relief effects are desired. This property is actively operated and contributes an extensive supply of stone for monumental work.

Chemical Analysis-Lime, I. 84 per cent.; Magnesia, o. 62 per cent.; Alumina, 15.76 per cent.; Ferric Oxide, r. 07 per cent.; Ferrous Oxide, 1.76 per cent.; Titanic Oxide, 0.45 per cent.; Manganese Oxide, trace; Soda ( Na 2 O ), 3.39 per cent.; Potash ( K 2 O ), 4.27 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 70.11 per cent.; Ignition, 0.45 per cent. Total, 99.72 per cent.

Mineralogical and Petrographic-This rock is a fine grained biotite granite, or granitite, composed of quartz, feldspar and mica. The quartz is of the holo-crystalline type with high lustre and a white color varying to smoky; it polishes to a light smoky hue. Feldspar, gray-white in color with pearly to vitreous lustre on the cleavage faces, is the predominant mineral (pplishes milk white with fine lustre). Mica, biotite, in subordinate amount occurs in small grains and foils. Muscovite appears sparingly. In some seams thin infiltrations of uranophone appear.

Microscopic-"The chief feldspar is microcline. It forms small, irregular clear grains with the common twinned structure. Oligoclase is abundant. It is twinned after the Albite law, has a slight zonal structure, is somewhat kaolinized, and shows a tendency towards idiomorphism. The quartz forms irregular clear grains free from strain effects. The biotite plates are greenish-brown, strongly pleochroic and rather regular in outline, commonly showing plane faces parallel to the cleavage lines. Muscovite is quite subordinate to the biotite, and tends to more ragged forms. It is white, brilliantly polarizing, with just the weakest pleochroism. Apatite, as accessory, forms colorless minute needles. Magnetite accessory is rare."

MATERIAL: GRANITE-PORPHYRY. SURVEY NO. 7375.
Area: Santee. Sub-Area: Wateree River; Beaver Creek. Location: Kershaw County; Johnson property; io miles southwest of Kershaw.
Address of Owner or Representative (?): Robt. Johnson, Camden, S. C.

OBS-Edgefield-Chesterfield Zone. A bold boss of granitic rock abruptly ascends with a slight curve to an elevation of about 40 feet above its exposed base. An irregular area comprising probably an acre and a half is practically free from overburden. No test work has been done at this locality; the exposed surface is too much weathered to admit of an expression of opinion as to the character of this rock, in else than that it is apparently coarse grained to porphyritic.

MATERLAL: GRANITE SURVEY NO. 7378.
Area: Santee. Sub-Area: Wateree River; Beaver Creek. Location: Kershaw County; Flat Rock (Old DeKalb Granite); Cleyburn.
Address of Owner or Representative (?): Robert Johnson, Camden, S. C.
OBS-Edgefield-Chesterfield Zone. Type: Biotite GranitePorphyry (with intruded Taxehaw). An abrupt scarp affords a limited exposure of granite which has been quarried to a limited extent.

Rift and Grain-Good.
Structure-Apparently free from gneissoid character.
Texture-Coarse grained to porphyritic ; feldspar phenocrysts attain length exceeding one-half inch.
Specific gravity, 2.65; absorption ratio, 0.129 .
Color-Red-gray
Working Qualities-Good; takes fine polish.
Chemical Analysis-Lime, r. 64 per cent.; Magnesia, 1. 25 per cent.; Alumina, 15.41 per cent.; Ferric Oxide, r. 85 per cent.; Ferrous Oxide, r. 59 per cent.; Titanic Oxide, 0.60 per cent.; Magnesia, trace; Soda (Na2O), 3.48 per cent.; Potash (K2O), 4.6r per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), trace; Sulphuric radical, trace; Silica (and insoluble), 68.71 per cent.; Ignition, 0.34 per cent. Total, 99.46 per cent.

Mineralogical and Petrographic-Flesh-red feldspar is the predominant mineral, crystals exhibit good cleavage (twin after Carlsbad law). Small grains of yellow-white plagioclase with fine cleavages, pearly lustre (twin after Albite law). Large, irregular grains of gray quartz with vitreous lustre occur. Flakes and plates of black biotite intermingled with the quartz occupy the spaces between the feldspars.
Microscopic-"In the thin section is seen one large grain of the pink feldspar-soda orthoclase. It has a slight mottled kaolinization
and extinguishes like a microperthitic intergrowth of two feldspars, though it is not possible to determine the variety of each separate portion. Subordinate oligoclase is present in finely twinned forms with a distinct zonal structure. This feldspar is also slightly kaolinized. It tends to form well defined crystal faces parallel to the twinning lamellæ, and to this extent is idiomorphic. Clear, colorless quartz closely fills the interspaces between the plagioclases. It displays very slight strain effects. Biotite occurs in large, dark brown plates. The outlines of these plates are irregular but not ragged. The biotite shows no sign of alteration or strain. As accessories, we have apatite and magnetite."

## MATERIAL: GRANITE-PORPHYRY. GURVEY NO. 7525.

Area: Pee Dee. Sub-Area: Lynches River Branch. Location: Lancaster County; Taxehaw Granite Quarry; designated the "Forty-Acre Rock;" 6.5 miles west of Jefferson.
OBS-Edgefield-Chesterfield Zone. Type: Granite-Porphyry. (Taxehaw type locality). This tract comprises a huge granite boss, of which a large area is free from overburden.

Rift and Grain-Apparently good for porphyritic granite.
Structure-Massive.
Texture-Coarse granito-porphyritic.
Working Qualities-Apparently good; this stone was formerly utilized for millstones.

Mineralogical and Petrographic-A granitic aggregation of white feldspar, vitreous gray quartz, and black biotite constitute the ground mass which incloses phenocrysts of pink-gray feldspar; the latter is vitreous to pearly on the flat crystal faces, which exhibit poor crystal outlines; while the feldspar of the ground mass affords good boundaries.
Microscopic-"The large phenocrysts show the microscopic characteristics of soda orthoclase. They are slightly kaolinized and quite irregular in external form in the thin section. The ground mass feldspar is a rather idiomorphic zonal oligoclase, and is slightly weathered. The zonal structure is not prominent, the center of the crystal being slightly more basic than the margin. The Albite twinning lines of this feldspar are very fine. Quartz closely fills all interspaces between the other minerals. It is clear and colorless. The biotite has the form of thick prisms and irregular grains. It is brown and intensely pleochroic. Abundant apatite and very little magnetite occur as accessories. Titanite as accessory is in scattered
deep brown crystals. A very little epidote is noted in close association with some of the biotite."

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\text { material: Granite. survey no. } 7555 \text {. }
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Area: Pee Dee.
Sub-Area: Buffalo Creek.
Location: Lancaster County; (Old_Sumter Quarry); 6.5 miles N. $48^{\circ}$ E. of Kershaw.
OBS-Edgefield-Chesterfield Zone. A body of coarse porphyritic granite of the Taxehaw type occurs at this locality.
material: granite (Scotch). survey no. 7645.
Area: Santee. Sub-Area: Black Creek Branch. Location: Chesterfield County; Oro Quarry; 9 miles west of Ruby; 0.9 mile south of the Chesterfield-Lancaster Railway.

Address of Owner or Representative (?) : William Godfrey, Cheraw, S. C.

OBS-Edgefield-Chesterfield Zone. Type: This granite pertains to the DeKalb type.
Rift and Grain-Good.
Structure-Apparently free from schistosity.
Texture-Coarse grained to porphyritic.
Specific gravity, 2.66.
Color-Red-gray with green dashes due to epidote.
Working Qualities-Good; takes an excellent polish.
Mineral Composition-Under the hand-glass flesh-red feldspar is the predominant mineral; irregular grains of vitreous quartz are second in importance; flakes and plates of biotite are distributed through the interspaces of the feldspar. Some portions have partly altered to epidote, thereby affording a greenish tint in patches, which heightens the effect.

## LIMESTONE-DOLOMITE-MARBLE.

Beds of these stones occur in the Chauga, Poor Mountain, and Cherokee Zones.

The Chauga Zone affords strata of blue limestone separated by black slates (Sur. Nos. 1065, 1070, 1410) ; quarried to supply lime prior to 1850 ; no quarries are in operation.

The Poor Mountain Zone exhibits a bed of very white, coarse grained dolomitic marble, attaining in some places the thickness of 30 feet (Sur. Nos. 1300, 1302, 1425).

[^7]The Cherokee Zone presents successive beds of blue limestone interstratified with hornblende slates (Sur. Nos. 6223, 6335), and a more recent bed of thick blue limestone capped with a white dolomitic marble (Sur. No. 6129).

In the upper blue stone, dynamo-metamorphism has constrained a dimensional arrangement of the particles of limestone, which structure determines planes of rift parallel to the bedding.

The upper phase (marble) of this zone apparently extends interruptedly from Cherokee County through Union and Laurens Counties (Sur. Nos. 5675, 5240, 5189,5187 ).

In Cherokee County the limestone has been quarried to a depth of 75 feet at the quarry of the Limestone Springs Lime Works (Sur. No. 6129) ; in connection with which four large continuous kilns are operated with an annual output of approximately 100,000 barrels of lime.

Two small kilns are intermittently operated north of Blacksburg respectively, at the Ettres (Sur. No. 6410), and the Hardin (Sur. No. 6413) quarries.

## Uses of Marble (and Limestone).

Monumental, statuary, general decorative and refined structural work; manufacture of lime, and hydraulic cements; manufacture of carbonic acid gas; whiting; flux in various smelting processes; agricultural adjunct; road metal.

## Material: limestone. . SURVEy no. IO24.

Area: Savannah. Sub-Area: Tugaloo River; Brasstown Crk. Location: Oconee County ; 9.5 miles N. $58^{\circ} \mathrm{W}$. of Fort Madison; 3.5 miles north of Pulaski.

Address of Owner or Representative (?) : J. T. Patton, Toccoa, Ga.
obS-Chauga Zone. Limestone about 9 feet thick, inclosed by hydromica slates (strike N. $30^{\circ} \mathrm{E}$. ; dip $38^{\circ} \mathrm{S} .60^{\circ} \mathrm{E}$.), contains 51.14 per cent. of carbonate of lime. For complete analysis, see analysis No. 1024, "Table of Analyses of Limestones."

## MATERIAL: LIMESTONE. SURVEY NO. IO26.

Area: Savannah.
Sub-Area: Tugaloo River.
Location: Oconee County; io miles N. $26^{\circ} \mathrm{W}$. of Fort Madison; 7 miles north of Toccoa.
OBS-Chauga Zone. Dolomitic limestone exposed at low water in bed of the Tugaloo River near the mouth of Brasstown Creek.

MATERIAL: LIMESTONE. SURVEY NO. 1065.
Area: Savannah. Sub-Area: . Chauga River; Hell Hole Br. Location: Oconee County; Hendrix property; 8.i miles N. $4 \mathrm{I}^{\circ} \mathrm{W}$. of Walhalla ; about $\mathrm{I}, 000$ feet north of Chauga River, on Hell Hole Branch.
Address of Owner or Representative (?): J. Hendrix, estate, Walhalla, S. C.
OBS-Chauga Zone. Exposed in the cliffs of a deep gorge (accessible by road) appear two seams of limestone respectively 9 feet and 3.5 feet thick; separated by 8 feet of slate; immediately overlaid by 8.8 feet of pyritic black slate, which affords a trace of gold. The underlying rock consists of a dimpled gray-green mica slate. (Strike N. $32^{\circ}$ E.; dip $59^{\circ}$ S. $58^{\circ}$ E.) These beds were worked to supply lime during "the fifties." The upper stratum contains carbonate of lime, 41.69 per cent.; carbonate of magnesia, 30.32 per cent. The lower stratum contains carbonate of lime, 48.48 per cent.; and carbonate of magnesia, 40.67 per cent. For complete analysis see analysis No. 1065, +5 and +7 , "Table of Analyses of Limestones."

MATERIAL: LIMESTONE. SURVEY NO. IO7O.
Area: Savannah. Sub-Area: Chauga River Branch. Location: Oconee County; Woodall Place; Chauga Valley; nine miles $\mathrm{N} .72^{\circ} \mathrm{W}$. of Walhalla.
Address of Owner or Representative (?): Southern Woodland Company, Charleston, S. C.
ObS-Chauga Zone. A seam of dolomitic blue limestone, 6.5 feet wide, inclosed by highly siliceous slates, is exposed in the bed of a branch entering Chauga River from the west. Formation (strikes N. $48^{\circ}$ E.; dips $40^{\circ}$ S. $42^{\circ}$ E.). This bed has been worked intermittently, chiefly to supply lime for neighborhood uses. Contains 45.69 per cent. of carbonate of lime, and 30.32 per cent. of carbonate of magnesia. For complete analysis see analysis No. Io7o, "Table of Analyses of Limestones."

MATERIAL: LIMESTONE.
SURVEY NO. I 300.
Area: Savannah.
Sub-Area: Chauga River; Ramsey Crk.
Location: Oconee County ; Hall property ; Poor Mountain; 4.3 miles west of Walhalla.
Address of Owner or Representative (?) : T. N. Hall, Walhalla, S. C.

OBS-Oconee Creek Zone. Near the head of the gulch which separates Poor Mountain from Buzzard Roost Mountain, south of the divide, marble is exposed in a layer 43 feet thick, dipping about $6^{\circ}$ southwest. The upper 38 feet is interlaminated with quartzose layers which probably constitute 50 per cent. of the whole. The lower five feet affords a pure white dolomitic coarse grained marble which works well under the tools of the stonecutter, and takes a good polish. The white seam is best exposed on the west side of the road near the gap.
material: limestone. survey no. izor.
Area: Savannah. Sub-Area: Chauga Riv.; Ramsey Crk.
Location: Oconee County; Buzzard Roost Mountain; 5.8 miles S. $88^{\circ} \mathrm{W}$. of Walhalla.
Address of Owner or Representative (?): T. N. Hall, Walhalla, S. C.

OBS-Oconee Creex Zone. Along the roadside on the southeast side of Buzzard Roost Mountain, near the level of the divide, the lower portion of the ledge described under Survey No. 1300 is exposed, with an irregularity of outline due to the weathering of the limestone. This stone is a white, coarse grained marble, susceptible of a fair polish.
material: limestone.
SURVEY NO. I3O2.
Area: Savannah. Sub-Area: Chauga Riv.; Ramsey Crk. Location: Oconee County; Rich Mountain; 5.8 miles S. $82^{\circ} \mathrm{W}$. of Walhalla.
Address of Owner or Representative (?) : J. M. Wadkins, Walhalla, S. C.
obS-Oconee Creek Zone. The ledge of limestone described under 1300 and 1301 is exposed at the foot of Rich Mountain in the bed of a small branch of Ramsey Creek; very little of the white portion is in evidence at this point, where actinolite largely prevails, irregularly streaked with dolomitic marble.

MATERIAL: LIMESTONE.
SURVEY NO. $14{ }^{10}$.
Area: Savannah. SubArea: Little River; Tomassee Creek. Location: Oconee County; Kuhtman property; Tomassee Falls; 12 miles N. $9^{\circ} \mathrm{W}$. of Walhalla.
Address of Ower or Representative (?) : Miss Leonie Kuhtman, Walhalla, S. C.

OBS-Chauga Zone. A small ravine entering the Tomassee Valley from the west, near the point of convergence of the several tributary gulches at the head of the valley, affords the following section, beginning at the top of the ridge: 58 feet of clayey matter; 2 feet of firm quartz slate; 20 feet fine siliceous gray-green, curled, mica slate; to feet of brown arenaceous slate breaking into rhomboidal fragments; 80 feet of gray dimpled siliceous slates, overlying greenish and reddish and slate-colored arenaceous slates, the latter being very hard; 30 feet of gray arenaceous slate; 10 feet hard gray arenaceous slate; 20 feet of wavy arenaceous schists, in alternate gray and dark bands, inclosing white quartz seams; 20 feet of thin layers of arenaceous schists (the above slates and schists vary through very hard, to medium and moderately soft in texture) ; 35 feet of amber-colored decomposed slates, breaking in rhomboidal blocks, and weathering to a dark brown soil; 5 feet of very hard quartzitic slate; 95 feet, thin layers of calcareous slate, quartzite and limestone interstratified; 7 feet of an ordinary grade of limestone; 15 feet of brown slates inclosing thin layers of limestone; a layer of highly ferruginous matter overlying 17 feet of fairly good limestone affording carbonate of lime 63.75 per cent. For complete analysis see analysis No. 1410, "Table of Analyses of Limestones."

MATERIAL: LIMESTÓNE.
SURVEY NO. I4I5.
Area: Savannah. Sub-Area: Little Riv.; Oconee Crk.
Location: Oconee County; Abbott's Cove; 6.5 miles N. $2^{\circ}$ W. of Walhalla.
Address of Oumer or Representative (?) : Clem Watkins, Walhalla, S. C.

OBS-Chauga Zone. Exposure in southwesterly extension of Tomassee Falls section, but much obscured.

MATERIAL: LIMESTONE.
SURVEY NO. I 425.
Area: Savannah. Sub-Area: Keowee River; Oconee Crk.
Location: Oconee County ; Kuhtman property; Horse Shoe Curve ; 4 miles N. $18^{\circ} \mathrm{W}$. of Walhalla.
Address of Owner or Representative (?) : Miss Leonie Kuhtman, Walhalla, S. C.
OBS-Oconee Creek Zone. This exposure occurs in an excavation of the old Blue Ridge Railway, known as the Horse Shoe Curve, and affords the following vertical section with the (strike N. $42^{\circ}$ E.; dip $24^{\circ}$ S. $48^{\circ}$ E.). Top of scarp quartz-mica schist ; 30 feet decom-
posed micaceous and feldspathic matter; 2.5 feet itacolumitic; 2.5. feet stratified hornblende schists, moderately firm; 24 feet decomposed hornblende slates and sandstone; 32 feet of blue and white limestone yielding the following analysis, carbonate of lime 56.27 per cent. For complete analysis see analysis No. 1425, "Table of Analyses of Limestones." The topographic features of this deposit are favorable for economic quarrying over a limited area. As indicated by analysis this stone would afford a fair limestone for neighborhood use, but not of standard commercial grade. The white color is too irregularly distributed, and the grain too coarse, to admit this stone to monumental uses, but for ornamental structural purposes it is well adapted; occasional inclusions of pyrite and black mica occur along irregularly distributed seams.

## MATERIAL: LIMESTONE SERIES. SURVEY NO. I428.

Area: Savannah. Sub-Area: Little River; Cane Crk. Location: Oconee County ; Ivester Place; four miles N. $20^{\circ} \mathrm{W}$. of Walhalla; 1.5 miles southwest of Horse Shoe Curve.
Address of Ower or Representative (?): Miss Leonie Kuhtman, Walhalla, S. C.
OBS-Oconee Creek Zone. The associate itacolumitic quartz mica schists, decomposed hornblende schists, and blue slates, of the limestone series are exposed along a branch (strike N. $45^{\circ}$ E.; dip $+18^{\circ}$ S. $45^{\circ}$ E.).

MATERIAL: LIMESTONE. SURVEY NO. 5 I85.
Area: Santee. Sub-Area: Saluda Valley Branch. Location: Laurens County ; Raysor's Kiln; o. 6 miles north of Raysor's Bridge; 2.8 miles S. $66^{\circ} \mathrm{W}$. from Ware Shoals.
OBS-Cherokee Zone (?). A highly pitched bed of slightly dolomitic limestone, blue mottled with white and with green pyroxene inclusions, occurs at this point, underlying a quartz-mica ${ }^{\text {sslate }}$ (biotite and muscovite) and overlying a hornblendic slate; all striking northeasterly and dipping southeasterly. Overlying this zoner 0.5 mile south, appears the decomposed biotite gneissoid series, in a soft and friable greenish chloritic mass inclosing occasional hard ledges (strike N. $59^{\circ}$ E.; dip $13^{\circ} \mathrm{S}$. E.). The limestone incloses too much foreign matter to afford econonic quantities of a marketable grade of lime. Selected stone contains 81.77 per cent. of carbonate of lime, and 5.91 per cent. of magnesia. For complete analysis, see analysis No. $5^{185}$, "Table of Analyses of Limestones." "In thin section the rock is seen to have a saccharoidal texture and to
$\omega$
consist chiefly of calcite. The calcite grains are rounded, colorless and strongly refracting. Brown flakes of biotite with moderate pleochroism are present in small amount. Light green rounded grains of coccolite pyroxene are quite abundant. Small zircons are noted. Quartz forms strained rounded grains uniformly but not abundantly disseminated through the calcite mass."

## material: limestone. survey no. 5187.

Area: Santee.
Sub-Area: Reedy Riv.; Walnut Crk. Br. Location: Laurens County; 1.8 miles N. $24^{\circ}$ E. of Raysor's Quarry. Address of Owmer or Representative (?): James Martin, Ware Shoals, S. C.
OBS-Cherokee Zqne This deposit, which occurs on the western scarp of Walnut Creek, about half way and on a direct line between' Raysor's Quarry and Master's Kiln, is largely obscured ; the superficially exposed stone having been quarried for lime in the remote past.

## material: marble. SURVEy no. 5 I89.

Area: Santee.
Sub-Area: Reedy River Branch.
Location: Laurens County; Master's Kiln; four miles east of railway station at Ware Shoals.
Address of Owner or Representative (?) : Joe Johnson, Spartanburg, S. C.
OBS-Cherokee Zone. This composite exposure comprises about eight feet of white coarse grained, crystalline, dolomitic limestone, in two adjacent layers of respectively five and three feet in thickness. It occurs alongside a branch with excellent natural conditions for gravity drainage. This stone was long quarried as a source of lime and also for marble for neighborhood monumental purposes. Its output is now practically confined to the latter use. The following represents a vertical section of this very interesting exposure:
I. The upper i2 feet of the overburden comprises a loose decomposed mass, including occasional detached blocks of slightly micaceous quartzite, a compact bed of which occurs immediately overlying the calcareous bed.
II. A zone of o to 2 feet thick comprising horizontal lenticles of a dark green matrix inclosing much actinolite; these lenticles dovetail with lenticles of limestone, with their surfaces rounded by solution. Some of the lenticles assume in part the form of aragonite.

Eight feet of coarse crystalline white marble, with a slight inclination southerly; abruptly broken off at the northern end of the quarry, where the loose overburden laps over the ragged ends. Occasional small lumps of partly crystallized graphite are included in the limestone, also occasional clusters of actinolite crystals. This dolomitic limestone contains 63.56 per cent. of carbonate of lime and 32.01 per cent. of carbonate of magnesia. For complete analysis see analysis No. 5189, "Table of Analyses of Limestones."
III. The underlying 12 feet consists of seams of limestone intercalated with layers of quartz, and includes irregularly distributed lenticles of the following aggregations: biotite and quartz; quartz; feldspar and mica; hornblende porphyry.
IV. The above series is exposed in the quarry breast which is about 130 feet long and 32 feet deep; its strike is north $24^{\circ}$ E., apparently with a slight dip to the southeast; it is associated with the following series which appears more vertical.
V. Very hard (almost massive) hornblende slates, quartzite (with a little mica) of adamantine hardness.
VI. About 200 feet north of the limestone a bold diorite dike occurs and interruptedly appears for more than two miles parallel to the line connecting the successive outcrops of this limestone. On the north side of the dike the earth's surface is more elevated, but it is deeply incised by a branch along which no evidence of the limestone series appears, nor has it been observed elsewhere in Laurens County above this line. The formation north of this line at Raysor's, Master's and Mahaffey's limestone beds is of the gneissoid type.

MATERIAL: LIMESTONE. SURVEY NO. 5240.
Area: Santee.
Sub-Area: Reedy River; S. Reaburn Crk. Location: Laurens County; 7.5 miles N. $60^{\circ}$ W. of Laurens. Address of Ower or Representative (?) : Mrs. H. M. Mahaffey, Alma, S. C.
OBS-Cherokee Zone. This locality exposes, within 165 feet, four layers of dolomitic limestone, interstratified with other material as exhibited in the appended column. The basal layer which emerges nine feet above the swamp level has contributed a considerable quantity of lime for neighborhood uses. The average strike of the formation is N. $22^{\circ} \mathrm{E}$., with a dip of $32^{\circ} \mathrm{S} .68^{\circ} \mathrm{E}$.
I. On the hillside overlying the limestone series an extremely fine grained variety of eurite is observed under which appears a disintegrated micaceous slate.
II. Four-foot layer of dolomitic limestone analyzing 52.46 per cent. carbonate of lime and 38.54 per cent. carbonate of magnesia.
III. Eighteen feet of disintegrated soft green matter resembling loose steatite at its base, underlying which occurs a thin seam of dolomite, which is separated by 22 feet of obscured matter from the underlying 5 -foot bed of arenaceous limestone; under which 60 feet of matter is obscured excepting at bottom, where a sienna-colored earth and clay, apparently resulting from weathered dolomite, overlies the following:
IV. Nine-foot bed of dolomitic limestone, with calcite included in parting planes; this limestone analyzes 54.39 per cent. of carbonate of lime and 39.98 per cent. of carbonate of magnesia. For a full analysis of these limestones, see analysis No. 5240, "Table of Analyses of Limestones."

MATERIAL: MARBLE.
Area: Santee.
Location: Laurens County; Musgrove Mill marble; seven miles south of Enoree.

MATERIAL: MARBLE. SURVEY NO. 5675.
Area: Santee. Sub-Area: Enoree Riv.; Frenchman's Crk. Location: Union County; Gregory Quarry; 12 miles S. $60^{\circ} \mathrm{W}$. of Union; on scarp of Frenchman's Creek; i mile south of road from Cross Anchor to Cross Keys.
Address of Owerer or Representative (?) : G. F. Gregory, 106 West 105th St., New York City.
OBS-Cherokee Zone (?). Two seams of white crystalline coarse grained dolomitic marble, respectively five feet and two feet thick, are exposed at this point, separated by three feet of nondescript slate; the formation strikes N. $60^{\circ} \mathrm{E}$., dips $15^{\circ} \mathrm{S}$. E. The outcrop is exposed on a scarp adjacent to Frenchman's Creek. The section exposed here is worthy of the following record: Starting one-half of a mile northwest of the marble, we observe in succession, beds of felsite, sintery quartz, greisen, decomposed biotite slates, and then a firm mica schist, which immediately underlies the limestone; overlying the limestone we successively encounter a soft chloritic mass, hard green quartzose slates, green mica slates, quartz and mica schists. A core of the lower portion of the dolomitic bed extracted by the diamond drill indicates that the limestone is largely replaced by pyroxenite. The core sample analyzed: Lime, 19.64 per cent.; Magnesia, 12.14 per cent.; Alumina, 6.03 per
cent.; Ferric Oxide, 2.70 per cent.; Ferrous Oxide, 3.30 per cent.; Titantic Oxide, 0.36 per cent.; Manganese Oxide, trace; Soda ( $\mathrm{Na2O}$ ) 1.57 per cent.; Potash (K2O) 1. 67 per cent.; Carbonic Acid (CO2) 8.90 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ) 0.05 per cent.; Sulphuric Radical ( $\mathrm{SO}_{3}$ ) trace; Silica, 41.54 per cent.; Ignition, 1.74 per cent. Total, 99.64 per cent. Specific gravity, 2.93.

The core material is a light green granular pyroxenite, with massive structure traversed by shear-planes along which slight movement has taken place. Along these planes dark green, brilliantly cleavable, hornblende has been developed by dynamo-metamorphic process. The hornblende has a strong dimensional arrangement. Portions of the core exhibit much crystallyzed calcite.

A thin section of a portion of the core along one of the shearplanes shows a crystalline aggregate of pyroxene and homblende grains.

The pyroxene grains are colorless with large extinction angles and poor cleavage. They are traversed by a great abundance of cracks. The hornblende is light green, moderately pleochroic and has small extinction angles measured to the cleavage. The hornblende grains show a long prismatic habit, whereas the pyroxene grains are rounded or short and thick. A large amount of talc appears in the section. Calcite from alteration is present in small amount. Accessory titanite is noted in small crystals and grains. Colorless garnets are noted in the thin section and may even be found with a lens in the hand specimen, where they have a rich red color.
material: limestone. survey no. 6i21.
Area: Santee.
Sub-Area: Thicketty Creek Branch. Location: Cherokee County; 300 feet south of Thicketty Station.
obS-Cherokee Zone. In the bed of a branch and immediately overlying a decomposed gneissoid boss, a 3.5 -foot bed of white quartz occurs, underlying a 2 -foot seam of hard white limestone, over which occurs 2.2 feet of interlaminated quartz and limestone, and then a 3 -foot bed of blue pyritic quartz, on top of whinh appear altered gneissoid and other micaceous rocks. The limestone (strikes slightly north of east; dips $14^{\circ}$ southerly). This dolomitic limestone contains 48.94 per cent. of carbonate of lime and 27.23 per cent. of carbonate of magnesia. For complete analysis see analysis No. 6i21, "Table of Analyses of Limestones."

## material : limestone survey no. 6129.

Area: Santee. Sub-Area: Broad Riv.; Limestone Crk. Location: Cherokee County; Limestone Springs ; one mile south of Gaffney.
Address of Owner or Representative (?): Gaffney Lime Co., Gaffney, S. C.
OBS-Cherokee Zone. This locality affords the most prominent exposure of the crystalline limestones exhibited in South Carolina. Within 1,600 feet, transverse to the line of outcrop, it exhibits two thick series of limestone separated by itacolumitic schists; the formation strikes N. $48^{\circ}$ E.; dips $43^{\circ} \mathrm{S}$. E. The underlying or northerly series contains the smaller amount of carbonate of magnesia, and a correspondingly increased amount of carbonate of lime.

Proceeding from the north the upturned edges of the blue limestone are observed in numerous contiguous strata, aggregating one hundred and forty feet across the newly opened quarry. This series affords limestone containing 96.86 per cent. of carbonate of lime; overlying the above series true itacolumite beds are exposed. Overlying the itacolumite is a stratum of white dolomitic marble which, with other white and blue strata, are interstratified with material of obscured outcrop until we arrive at the thick consecutive strata which constitute the material of the main quarry. The limestone at this quarry shows on the northeast end eighteen feet of overburden, consisting of clayey matter inclosing a horizontal zone of pebbles. The underlying upturned edges of the limestone strata have been weathered into irregularly rounded protuberances. The quarry is 75 feet deep, 375 feet along the strike, and 150 feet across.

The limestone exposed on the northwest face is a hard blue dolomitic limestone, the lower portion of which contains 86.86 per cent. of carbonate of lime; 10.15 per cent. of carbonate of magnesia; the upper blue containing 77.34 per cent. of carbonate of lime and 18.89 per cent. of carbonate of magnesia. Overlying the foregoing appears about 18 feet of a hard, prevalently white, crystallized dolomitic limestone, containing 54.53 per cent. of carbonate of lime; 41.19 per cent. of carbonate of magnesia. For complete analysis see analysis No. 6129, "Table of Analyses of Limestones."

The succeeding formations comprise a stratum of quartzite and then thick masses of pale green and gray foliated sericites and other hydromica slates; quartz-mica schists, yellow, red and pink fine grained residual mass of disintegrated highly siliceous mica schists. The associate plant comprises, in addition to the drilling and hoisting
equipments, two 'batteries of improved limestacks; the first consists of two improved Shoops-kilns, located on the northerly series of lime strata, each with a daily capacity of 120 barrels of lime; the second battery located at the older quarry comprises three improved kilns, each with a daily capacity of 100 barrels of lime. Four cords of wood are burned in preparing 100 barrels of lime.

A spur track 1.4 miles long connects with the Atlanta and Charlotte Railway (Southern Railway) at Gaffney. About sixty operatives are employed in connection with this industry. The limes derived from this quarry are extensively used in structural work; experimental sand brick made from the lime from the northerly quarry, and from the neighboring sand beds in the Broad River, withstand freezing and other physical tests most satisfactorily. For rubble masonry with drafted edges this stone affords fine effects.

MATERIAL: LIMESTONE. SURVEY NO. 6232.
Area: Santee. Sub-Area:Broad Riv.; Cherokee Crk. Location: Cherokee County; two miles N. E. of Gaffney; Nesbit place.
Address of Oimer or Representative (?): M. L. Ross, Gaffney, S. C.

OBS-Cherokee Zone. About 0.7 of a mile southeast of the Ross tin mine, and slightly south of the Atlanta-Charlotte Railway, a limestone series occurs with a strike N. $62^{\circ}$ E., and a dip $54^{\circ}$ S. E., resting against the extensive series of granite gneisses (which are best exhibited along Cherokee Creek) immediately above the railway bridge. Two branches entering the creek from opposite sides admit the following section :
Decomposed Gneissoids.
Variegated blue and red soft decomposed slates, apparently containing graphite; quartz mica schists; soft, gray-green decomposed schists; hard hornblende schist; green-black soft schists; mica schists; siliceous flag slates; ( 14 feet) hornblende slates; (4 feet) arenaceous slate with siliceous seams and some limestone; mica schists; gray-green decomposed slates; thin stratum blue limestone; ( 12 feet) very compact quartz schists; ( 24 feet) gray-green shimmering schist; ( 4 feet) slate-colored limestone interstratified with thin slate; (ino feet) of limestone series, formerly quarried to supply flux; very thin laminae of fine grained siliceous matter and mica (mica schist) weathering to itacolumitic form.

The limestone from the iro-foot series analyzes:
Lime, $\mathbf{2 6 . 8 6}$ per cent.; Magnesia, 2.39 per cent.; Ferric Oxide and Alumina, 3.04 per cent.; Carbonic Acid (CO2) 22.09 per cent.; Silica (and insoluble) 45.36 per cent.; Ignition 0.09 per cent.; Moisture, 0.02 per cent. Total, 99.85 per cent.
material: dolomitic limestone. survey no. 6325 .
Area: Santee. Sub-Area: West Bank Broad River. Location: Cherokee County; one mile above Atlanta-Charlotte Railway Bridge.
OBS-Cherokee Zone (Line Anderson-Spartanburg). In the "cut" of a spur railway track occurs a prominent mass of compact light greenish schist, with crystalline texture and thinly banded gneissoid structure in bands from $1 / 16$ to $3 / 8$ of an inch in thickness. Variation in the amount of hornblende grains, with parallelism of arrangement, affects the width of the bands. Quartz, feldspar and calcite are also observable. In thin section the quartz largely predominates, in irregular grains, of which much occupies, in a secondary form, the interspaces of the other minerals.

Pyroxene of a colorless granular variety is abundant. Ragged grains of hornblende occur, with moderate pleochroism. Small grains of microcline are noted.

In one section of the pronounced green portion neither epidote nor carbonates are observed. In the lighter portions, irregularly interstratified with the pronounced green, epidote and crystalline limestone appear; a sample of the latter afforded by analysis: Lime, 4.28 per cent.; Magnesia, o.51 per cent.; Ferric Oxide and Alumina, 3.36 per cent.; Carbonic Acid (CO2) 3.59 per cent.; Silica (and insoluble) 88.09 per cent.; Ignition 0.03 per cent.; Moisture, o. 8 per cent. Total, 99.94 per cent.
material: limestone. survey no. 6329.
Area: Santee.
Sub-Area: Broad River Branch.
Location: Cherokee County; Simon Quarry; o. 6 miles S. $58^{\circ} \mathrm{W}$. of Gaffney public school building.
Address of Owner or Representative (?): J. Edward Maston, care Drake, Maston \& Co., New York.
OBS-Cherokee Zone. Blue limestone is exposed in the valley where it appears highly tilted (strike N. $58^{\circ}$ E.; dip $72^{\circ}$ S. E.). The amount of overburden is slight. The old quarry exposes a width of 59 feet of limestone which includes an intermediate ledge seven feet wide, of highly siliceous stone.

An average sample of the workable portion afforded 81.44 per cent. of calcium carbonate. For complete analysis see "Table of Analyses of Limestones."

Limestone from this quarry was calcined at a kiln on an adjacent hillside.

## material: limestone survey no. 6335.

Area: Santee.
Sub-Area: Black Rock Creek. Location: Cherokee County; Black Rock Creek.

OBS-Cherokee Zone. At the point where Black Rock Creek Valley merges with the Broad River Valley the dolomitic limestones occur. About $\mathrm{I}, \mathrm{ooo}$ feet above this point, on Black Rock Creek, limestone is observed interstratified with black slates, giving origin to the name of the related creek.

## material. limestone. . survey no. 6410.

Area: Santee. Sub-Area: King's Creek Branch. Location: Cherokee County; Ettres Quarry; o. 8 miles southeast of Grover.
Address of Owner or Representative (?) : E. C. Black, Blacksburg, S. C.

OBS-Cherokee Zone. At this locality the upturned edges of two strata of limestone are exposed, separated by a decomposed yellow, green and black graphitic mass (strike N. $63^{\circ}$ E.; dip $42^{\circ} \mathrm{N}$. $27^{\circ} \mathrm{W}$.). The stratum of limestone worked was about twelve feet across; this probably represents a very small part of the width of the limestone series at this point. A primitive lime kiln was formerly operated at this locality.

## material: limestone. Survey no. 64if.

Area: Santee. Sub-Area: Broad River; King's Creek Br. Location: Cherokee County; Whisenant's Quarry; one mile southeast of Grover.
Address of Owner or Representative (?): T. H. Mullinaux, Blacksburg, S. C.
OBS-Cherokee Zone. This locality is about 0.4 of a mile southwest of the Ettres quarry and apparently on the same stratum. (Strike N. $64^{\circ}$ E.; dip $37^{\circ}$ N. $26^{\circ}$ W.). A primitive kiln was formerly operated at this point.
material: limestone. survey no. 6412.
Area: Santee. Sub-Area: Broad River; King's Crk. Br. Location: Cherokee County; Deal Estate; 1.8 miles southwest of Grover.
OBS-Cherokee Zone. One mile southwest of the Mullinaux bed the Ettres stratum of limestone is again exposed. Considerable quarrying was formerly done at this locality. (Strike N. $60^{\circ} \mathrm{E}$.; $\operatorname{dip} \mathrm{N} .40^{\circ} \mathrm{W}$.).
material: limestone. survey no. 6413.
Area: Santee. 'Sub-Area: Broad River; King's Crk. Br. L.ocation: Cherokee County; 0.1 mile east of Atlanta and Charlotte Railway (So. R. R.) ; 3.5 miles northeast of Blacksburg.
Address of Owner or Representative (?) : A. Hardin, Blacksburg, S. C.

OBS-Cherokee Zone. 0.9 of a mile southwest of the Deal quarry the Ettres stratum of limestone is exposed by a small stream, where the rock is occasionally quarried and burned to supply lime for neighborhood uses.

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\text { material: limestone. Survey no. } 6415 .
$$

Area: Santee. Sub-Area: Broad Riv.; King's Crk. Br. Location: Cherokee County; Old Hambright Quarry; two miles east of Grover; 0.5 mile south of North Carolina line.
Address of Owner or Representative (?): Oliver Jenkins, Grover, S. C.

OBS-Cherokee Zone. (Strike N. $45^{\circ}$ E.; dip horizontal). Largely obscured.

## material: limestone. survey no. 6420.

Area: Santee.
Sub-Area: Broad Riv.; King's Crk. Br. Location: Cherokee County; Old Bird Quarry; 3.5 miles northeast of Blacksburg; on branch 200 feet north of road from Blacksburg to Antioch Church.
Address of Owner or Representative (?): G. R. Dickson, Blacksburg, S. C.
OBS-Cherokee Zone. The extension of the Hambright stratum of limestone is exposed at the Old Bird Quarry. (Strike N. $64^{\circ}$ E.; dip steep, N. W.) 2.6 miles southwest of Hambright Quarry. Country rock: Mica slates above; itacolumitic slates, graphite slate, green gray dimpled slate, mica schists, etc., below.

MATERIAL: LIMESTONE. SURVEY NO. 642 I .
Area: Santee. Sub-Area: Broad Riv.; King's Crk. Br. Location: Cherokee County; Westbrook Limestone Quarry; 2.9 miles northeast of Blacksburg.
Address of Owner or Representative (?): R. A. Westbrook, Blacksburg, S. C.
OBS-Cherokee Zone. Extension of Hambright stratum of limestone exposed at Westbrook Quarry on a branch 0.7 mile southwest of Bird Quarry. Former exposure greatly obscured.
material: limestone survey no. 6423 .
Area: Santee. Sub-Area: Broad Riv.; King's Crk. Br. Location: Cherokee County; Green Limestone Quarry; 2.5 miles east of Blacksburg.
Address of Owerer or Representative (?): Blacksburg Land \& Improvement Co., Blacksburg, S. C.
OBS-Cherokee Zone. An extension of the Hambright stratum of limestone exposed on a branch 0.4 mile southwest of Westbrook Quarry. (Strike N. $64^{\circ}$ E.).
material: limestone survey no. 6425.
Area: Santee. Sub-Area: Broad Riv.; King's Crk. Br. Location: Cherokee County, two miles southeast of Grover; prong of King's Creek near confluence.
Address of Owner or Representative (?): Hannah Green, Blacksburg, S. C.
OBS-Cherokee Zone. At this locality there occur two layers of white coarsely crystalline dolomitic limestone respectively 6 and 14 feet thick (strike N. $60^{\circ}$ E.; dip $37^{\circ}$ S. E.) ; they overlie mica schists and hydromica slates; in the latter, 160 feet from the limestone, occurs a zone of iron ores graduating with depth to granular iron pyrites.

## SLATES, SCHISTS, "SHALES."

Geographic Limits-A broad belt of "clay slates," schists, "shales," etc., extends along the fall line from the North Carolina line (near the point of entrance of the Pee Dee River) to the Savannah River above North Augusta. It comprises portions of Chesterfield, lower Lancaster, upper Kershaw, lower Fairfield, upper Richland, upper Lexington, lower Saluda, Edgefield, and upper Aiken Counties. The
average width of this Edgefield-Chesterfield Zone is approximately 18 miles. Granite and other igneous intrusions have obliterated the slates in many parts of this area, while some other parts have been largely obscured by the overlapping Coastal Plain sands.

Good bodies of these slates, of value to the brick industry, are exposed in Chesterfield County along the scarps of Little Westfield Creek (near the Cheraw-Hamlet Railway), also near Chesterfield, near Ruby, and near the Brewer Gold Mine; in Lancaster County near the Haile Gold Mine; in Fairfield County along Sawney's Creek; in Kershaw County along Rice Creek; in Richland County along Crane Creek, along Gill's Creek, and along the Broad River eastern scarp; in Lexington County along the Dutch Fork; in Saluda County near the Culbreath Mine; in Edgefield County along Turkey Creek and Stevens Creek, notably near Plum Branch, and near the confluence of the Savannah River.
Physiography and Geognosy-The Edgefield-Chesterfield slates do not represent true shales such as are typified by the sedimentary beds of the Carboniferous which are so extensively utilized in the manufacture of paving materials. Their origin involved an inverted process. The true Carboniferous shales represent sediments deposited by large bodies of water, and subsequently partly indurated by heat and pressure. The Edgefield-Chesterfield slates on the other hand represent a vast mass of igneous porphyries, of very much greater age, which have been subjected to strains which have produced the slaty cleavage which characterizes these rocks; they still retain some of the original igneous forms of mineral.
This material is dark gray in color, breaks in rhomboidal blocks and is moderately hard. See analyses Sur. Nos. 7527, 7550 (a), and 7550 (b). It burns to a gray-black vitreous body (between $1800^{\circ}$ and $2000^{\circ} \mathrm{F}$.), which is very dense and smooth.
Meta-Chemic changes near the surface have modified the composition of many of the slates and enabled them to incorporate water of crystallization, and induced a softer physical condition which has rendered them more subject to the disintegrating effects of weathering forces. The result of these changes has afforded a material which in chemical composition is for practical purposes similar to shales. A prominent belt of such material comprises pale, dirty green slates, occasionally observed weathered to brown, red and yellow colors. (See Table of Analyses of Edgefield-Chesterfield slates, Sur. Nos. 2280, 7665, 7735). These shales afford: Specific Gravity, 2.8; Plasticity, 20 to 30 ; Tensile Strength, 30 to 40 pounds. They
burn to a dense vitrified body at a temperature varying, with the character of the slate, from $1900^{\circ}$ to $2100^{\circ} \mathrm{F}$.

Within each side of the Edgefield-Chesterfield Zone occurs a marginal body of highly siliceous matter, which probably represents volcanic tuffs, now altered to a soft unctuous mass of extremely fine texture. Tongues of this material invade the main body of the slates. (See Table of Analyses of Edgefield-Chesterfield Slates, Sur. No. 7550).

Economic-The slates of the Edgefield-Chesterfield Zone afford some fair grades of flagstone, and some fairly good beds of roofing slate; the latter in Fairfield County, near the Lamar Mine, and in Edgefield County along Stevens Creek.

The greatest value of these slates is recognized in the excellence of the material which they offer for vitrified wares, such as paving brick, sewer-pipe, etc. In many places, however, disseminated grains of pyrite destroy the value of these slates.

## SEWER-PIPE OR VITRIFIED BRICK MATERIALS.

The following are the approximate limits of the constituents required of these clays, as determined by analyses of the materials successfully used in the manufacture of vitrified wares. Clay, base 45 to 60 per cent., with an average 52 per cent. Quartz, impurities 20 to 45 per cent., with an average 35 . per cent. Fluxing, impurities 8 to 20 per cent., with an average 13 per cent.

It is observed that they are lower in the scale of fusibility than the potter's clays, between which and the tile or brick clays, they constitute a connecting link. The clay body for the required wares has been heretofore derived from shales or from recent deposits of alluvial pipe clays or, more ordinarily, from a mixture of the two. The shales ordinarily employed approximately conform to the limits above indicated.

The principal difficulty restricting the use of shales alone is found in the expenditure of power necessary to reduce them to such a degree of fineness as develops the proper plasticity, and insure a minimum tensile strength of 50 pounds; it has been found more expedient to incorporate with the coarse grained shale a plastic clay of high tensile strength. A very serious difficulty results from the small margin between the points of vitrification and viscosity, endangering overburning to the prejudice of strength, shape and color. There should be a margin of $145^{\circ} \mathrm{F}$. or more between these peints. This, however, is rarely realized, and it becomes necessary
to mix with these shales a clay of a different degree of fusibility, such as a high-grade pipe clay or a fire clay, so as to increase this margin. Clays thus required to be mixed with shales are approximately represented within the following limits of composition:


The combined tensile strength consistent with best practice should not be less than 50 pounds to the square inch, although some clays are worked of inferior strength.

The dry shale is first ground in a dry pan machine to a degree of fineness varying from $1 / 16$ to $3 / 32$ inch-mesh. After screening it is mixed with clay in the proportion of about 3 to I (varying with character of clay, etc.), and the mixture is tempered in a horizontal pugging mill, whence it passes through the usual process of molding, repressing and drying ; the burning is ordinarily effected in a downdraft kiln at temperatures varying with the requirements of the material, from $1700^{\circ} \mathrm{F}$. to $2000^{\circ} \mathrm{F}$.
Vitrified wares are sometimes salt glazed; the clays in such cases should have sufficient silica to insure uniform combination over the entire surface, with the sodium of common salt.

It is to be noted that shales are accredited with much larger proportions of fluxing impurities than they respond to in their fusion points. Iron oxide ordinarily constitutes exceeding half of these impurities, and it possibly occurs in the form of fine, hard grains of magnetite, or hematite, which are probably not readily affected by the solvent action of slightly vitrified slags. Grains of iron sulphide are objectionable by reason of the blistering action of the sulphuric anhydride and sulphurous acid formed at higher temperatures and through the formation of blotches incident to the action of the vitroous matrix on the porous oxides at these temperatures. The sulphates of the alkaline earths are also objectionable on account of their blistering effects at high temperatures, the sulphuric anhydride becoming disassociated.

Properly vitrified wares should not absorb more than 2 per cent. of their weight in water, after an immersion of 24 hours, otherwise they become subject to the dangers of freezing. They should furthermore be able to resist a crushing strain of not less than 8,000 pounds to the square inch, in order to insure proper toughness and
strength. A brick vitrified to a glassy texture, or with a glazed surface, is objected to as a paving brick, by reason of its slippery surface. The extreme loss of weight by the attrition of the rattling test should not exceed 12 per cent.

Copies of analyses (Ohio Geol. Survey, Vol. VII, pp. 133).
Shales and Shale-Clay Mixtures used in the manufacture of paving materials in Ohio:


No. I. Shale from the Ohio Paving Company, Columbus, Ohio, mined at Darlington, Ohio, on Lower Kittanning horizon. Average sample (Lord, Chemist).

No. 2. Shale and fire clay mixture, from the A. O. Jones Company, Zanesville, from the Kittanning horizon (Lord, Chemist).

No. 3. Shales from Columbus Sewer Pipe Company, from Huron shale horizon. Average sample (Macpherson, Chemist).

No. 4. Shales and fire clays mixed from the T. B. Townsend Brick Company, Zanesville. Freeport shales and Kittanning. Fire clays. (Lord, Chemist.)

## QUARTZ.

Some of the veins of barren quartz which are variably distributed throughout the crystalline area present very large bodies of pure silica. In some cases these quartz bodies constitute local phases of pegmatite intrusions, whose extensions vary through micaceous to feldspathic; others represent deposits from solution, segregations, etc.

Large veins of quartz occur at many localities, notably near Saluda Old Town (Sur. No. 5440) ; Ridgeway (Sur. No. 6755) ; King's Creek (Sur. No. 6463).

## Uses of Quartz.

Reduced to a fine state of subdivision pure quartz, or "flint," is used in the manufacture of pottery, and glass; also as a low-grade abrasive and polishing material. Lump quartz is used as a packing for Glover Acid Towers.

## material: quartz. SURVEy no. 5440 .

Area: Santee.
Sub-Area: Little River Branch.
Location: Newberry County; 5.2 miles north of Saluda Old Town. Address of Owner or Representative (?) : J. A. Burton, Newberry, S. C.

OBS-Abbeville-York Zone. Beginning at a branch, the outcrop of a quartz ledge ascends a sharp knoll, with the strike N. $44^{\circ}$ W. This mass attains the width of 28 feet and consists of a very pure white crystalline quartz, which in large fracture appears to be constituted of units in the form of hexagonal prisms. Parting planes appear, with strike $\mathrm{N} .52^{\circ} \mathrm{W}$. inclined $39^{\circ} \mathrm{S} .38^{\circ} \mathrm{W}$. This quartz is excellently adapted to the uses of the potter, and probably for the packing of Glover Towers.
material: quartz. SURVEy no. 6463 .
Area: Santee. Sub-Area: Broad Riv.; Manning Crk. Location: Cherokee County; o. 5 miles S. King's Creek Station. Address of Owner or Representative (?): Thompson \& Oliver, Charlotte, N. C.
OBS-Abbeville-York Zone. In a mass of sericite schists occurs a gash vein of very pure white quartz from io to 30 feet wide, exposed by. the railway "cut" of the Yorkville-Blacksburg railroad. This quartz is excellently adapted to Glover Tower duties.

$$
\text { material: quartz. SURVEy no. } 6755 \text {. }
$$

Area: Santee.
Sub-Area: Cedar Creek Branch. Location: Fairfield County; one mile south of Ridgeway.
OBS-Edgefield-Chesterfield Zone. An extensive series of white quartz veins occurs in this formation. This quartz has been freely used for packing Glover Towers.

## ROAD-BUILDING MATERIALS.

ROAD-BED MATERIAL-ROAD-DRESSING MATERIAL.
The materials in South Carolina which are suited for road metal consist of trap, granite, gneiss, limestone, slate, novaculite (chert), cobblestones and gravels. Tertiary clays and marls afford valuable cements for plating sand roads.

TRAP AND OTHER INGNEOUS DIKES.
The great toughness of these rocks, which renders them valuable for road metal, imposes such high cost in quarrying and crushing as to have prohibited their general use.

The highly basic traps, or amphibolites, are subject to the objection of weathering more readily than the more siliceous diorites. These rocks occur most extensively distributed through the Abbe-ville-York Zone, and subordinately in all other zones of the Crystalline area.

## GRANITE AND GNEISS.

Granite and Gneiss constitute the most generally distributed and one of the best road-bed materials in the Crystalline area. The varieties containing the greater amounts of quartz (free silica) generally constitute the better road metal, the highly feldspathic and micaceous varieties being more subject to weathering influences. Granites and Gneisses suitable for road material occur more or less abundantly exposed by the streams north of the Edgefield-Chesterfield Zone, and subordinately in the Vaucluse Zone. (See Granite Division.)

## LIMESTONE.

This rock constituted the "pioneer" material in the "macadamizing" of roads. The ease with which it is reduced to a dust which forms a sticky mud has largely caused its displacement as a top dressing; however, it constitutes fine material for a road-bed, but should be top dressed with chert.
Limestone occurs in Oconee, Cherokee, Union and Laurens Counties (see Limestone Division).

## SLATES AND SHALES.

The more siliceous and sandy shales or slates constitute a very fair grade of road metal; they pack hard and wear well. On the other hand, the varieties high in alumina weather to a clayey mass; they are best adapted to sand roads.

Slates constitute the main body of the Edgefield-Chesterfield Zone which extends from the Savannah River to the North Carolina line, where the Pee Dee River enters South Carolina. These slates border the "Sand Hill" region, along which they could be utilized to great advantage.

## Novaculite-"Chert."

Bodies of novaculite, consisting of quartz and teldspar, afford considerable variation in the proportion of these minerals. The highly siliceous varieties represent one of the best roadbed and roaddressing materials observed in South Carolina; they afford compact, hard roadways, comparatively free from dust and mud. The highly feldspathic varieties respond more freely to weathering influences with the attendant disadvantages of dust or mud.

The novaculites constitute a very extensive series of rocks throughout the Abbeville-York Zone; the greater number of observed exposures represent the more highly feldspathic varieties.

MATERIAL: CHERT (NOVACULITE). SURVEY• NO. 1840.
Area: Savannah. Sub-Area: Little River Branch.
Location: Abbeville County; 3.8 miles N. $19^{\circ} \mathrm{W}$. of Abbeville; on Anderson road.
Address of Owner or Representative (?) : D. Wyatt Aiken, Abbeville, S. C.
OBS-On the crest of a ridge a stratum of shattered chert-like quartz appears about 80 feet wide (strike N. $65^{\circ}$ E. with an indeterminable dip). This material is hard and tough, and superbly adapted as a road metal; large quantities have been utilized in the plating of roads, to which there are none superior in the upper country.
material: chert (novaculite). survey no. 5580.
Area: Santee. Sub-Area: Saluda River; Bush River Br. Location: Newberry County; 1.4 miles north of Newberry. Address of Owner or Representative (?) : W. Y. Fair, Newberry, S. C.

OBS-The formation at this locality (strike N. $30^{\circ} \mathrm{E}$. dip $+70^{\circ}$ N. $60^{\circ} \mathrm{W}$.), includes a stratum of porphyritic quartz, of very tough chert-like consistency, about 25 feet wide. The mass of quartz is compact, but readily breaks into sharp lumps apparently determined in part by feldspathic seams. The eastern or hanging wall appears
to be a partly decomposed red feldspathic mass. This quarry is equipped with appropriate crusher, riddles, and bins, and supplies a large amount of excellent road metal, sized respectively to a threeand to a half-inch ring; the latter size is also utilized for pebble roofing purposes.

## COBBLESTONES AND CEMENT GRAVELS.

The Lafayette cobbles and pebbles afford respectively the best roadbed and road-dressing materials available in this State. They constitute a marginal fringe to the scarps of the greater streams in the crystalline area, and appear in beds covering broad plateaus where these streams penetrate the coastal plain. The latter area affords beds of great economic importance on the high plateaus of the Pee Dee near Cheraw; along the scarp delimiting the basin at the confluence of the Wateree and Congaree Rivers, notably along the line of the Garners Ferry road from Columbia; along the high ridge on the east of the Savannah River, interruptedly from North Augusta to Luray.

The cement gravels, which represent Lafayette pebbles, which were scoured down from the high scarps and deposited with clay in the valleys during the Columbia phase, occur as a capping to the "second bottoms" of the Savannah River near Beach Island, and thence interruptedly to the mouth of lower Three Runs; they also appear in beds of economic importance immediately south of Camden.
For roads across the sands and sandy-loams of the coastal plain, Lafayette, Eocene, or Pleistocene clays are mixed with sands in the proportion of 6 to 4 , and applied in a layer about io inches thick; the clays high in the content of iron afford the best results. The soft upper Eocene marls which abound in Charleston and Berkeley Counties also constitute an excellent binding material for sand roads.

The very hard crystalline marl of the Mt. Hope phase exposed along the Santee River should afford a good grade of metal for roadbeds.
material: cobbles. survey no. 1543.
Area: Savannah. Sub-Area: Seneca River. Location: Pickens County; i mile west of Calhoun; in railway "cut."
OBS-A heavy bed of cobbles, bedded in red, case-hardened clays of apparent Lafayette equivalence, appears in a railway "cut" on the eastern scarp of Seneca River about 48 feet above the zero
water level. Rests unconformably on edges of the gneissoid slates. The extension of this formation is interruptedly observed at a corresponding elevation on both sides of the river as far down as the Blue Ridge Railway bridge, where it is very characteristically exposed on the western scarp. At this latter point the close approach of the opposite high scarps appears to have afforded a constricting barrier to glacial floods, which were thus impounded with cobbleburdened ice floes in the basin formed at the confluence of the Keowee River, Twelve-Mile Creek, and Seneca Creek.

$$
\text { MATERIAL: COBBLES. SURVEY NO. } 7040 .
$$

Area: Santee.
Sub-Area: Catawba River Valley. Location: York County; 4 miles northwest of Ft. Mills; 2.5 miles east Catawba River; Ridge.
OBS-At an elevation of 677 feet (M. L. T.), and about 300 feet superior to the bed of the Catawba River ( 2.5 miles distant) occurs a moderately heavy bed of cobbles mantling the ridge; interruptedly exposed for many miles.
material: pebbles (Lafayette). survey no. 7075. Area: Santee. Sub-Area: Catawba River Valley. Location: York County; 1.3 miles north of Catawba River, alongside the Columbia-Charlotte Railway (S. R. R.).
OBS-The railway cut at this point exposes a heavy bed of cobbles, of probable Lafayette antecedents, covered by a bed of Lafayette red clay.

## SAND.

Sand-Brick Sand, Molding Sand, Building Sand.
Crystalline Area-In the crystalline area important deposits of sand are found mainly in the beds of streams and along such associate flats as are subject to overflow by storm currents; these sands are suitable for the manufacture of sand brick, and for mixing mortar and cement.

Some extensive bodies of fine-grained sand represent disintegrated sericite schists and itacolumites; some bodies of this material afford a good molding-sand. This material occurs in the Cherokee Zone; along the upper part of the Abbeville-York Zone; along the Edge-field-Chesterfield Zone.

Analysis-Lime, 0.60 per cent.: Magnesia, 0.50 per cent.; Alumina, 5.70 per cent.; Soda and Potash, 0.80 per cent.; Iron Oxide, 6.80 per cent.; Silica, 80.00 per cent. ; Mcisture, o. 60 per cent.; Ignition, 5.00 per cent. Total, io0.00 per cent.

## ANALYEES OF SOUTH CAROLINA GRANITES.

Tablif No. 2.

| 1 2 8 4 | County. <br> Locality <br> Stream. <br> Owner <br> ( 1$)$ | Anderson .. .. <br> Pendleton Q. . . <br> 18 Mile Crk. .. <br> C. Banckel.. .. | Pickens .. ... <br> Beverly Q.. . .. 18 M: Crz. Br.. Beverly Bros. | LAUEBNE .. . <br> Ware Shoals Q. Saluda Rlver . W. S. Mfg. Co |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Aria .. .. .. .. . . .. . | Savannah .. .. |  | Santee .. .. .. |
| 6 | Surver No. .. . . . . . . | 1335 | 1635 | 6175 |
| 7 | Analisis : |  |  |  |
| 8 | Lime . . . . . . . . . . . | 3.28 | 2.80 | 2.80 |
| 0 | Magnesia . . . . .. .. .. .. | 1.80 | 1.04 | 1.45 |
| 10 | Alumina . . | 17.22 | 14.30 | 17.22 |
| 11 | Ferrlc Oxlde | 1.75 | 2.44 | 1.70 |
| 12 | Ferrous Oxide . . . . . . . . | 2.49 | 2.48 | 2.67 |
| 18 | Titanlc Oxide. . . . . . . . . | . 60 | . 60 | . 72 |
| 14 | Manganese Oxide (MnO)... | trace | . 11 | trace |
| 15 | Soda ( $\mathrm{Naz} \mathrm{O}^{\text {) }}$. | 5.28 | 8.80 | 8.68 |
| 18 | Potash (K2O) ... . . . . . | 5.14 | 8.84 | 3.80 |
| 17 | Carbonle Acld (COa) . . . .. | - | ... . . . . . . | - . . . . |
| 18 | Phosphoric Acld ( $\mathrm{PaO}_{5}$ ).... | trace | trace | trace |
| 19 | Iron Sulphide. . . . . . . . . | - .. . . . | $\cdot$ | .. . . . . . . . |
| 20 | Sulphuric radical . . . . . . | trace | trace | . 08 |
| 21 | Sllica. . . . . . . . . . . . | 82.84 | 68.15 | 65.72 |
| 22 | Ignition ... .. .. .. .. . | . 28 | . 28 | . 86 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . . . |  | .. . . . . . . | . . . . . . . |
| 24 | - .. .. . . $\cdot$ |  | . . . . . . | .. .. . ${ }^{\text {a }}$ |
| 25 | Total | 99.68 | 00.85 | 100.19 |
| 26. | Specific Gravity | 2.68 | 2.66 | 2.68 |
| 27 | Litholoaicalí Zonn. . . . . . | Saluda.. .. .. | Saluda. . . . . | An-Spart .. . |

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ANALYEES OF SOUTH CAROLINA GRANITES.
TABLI NO. 2.

| 1 2 8 4 | Gribewrood .. .. <br> Beajamin Q.. . . . <br> Black Rock Crk... <br> A. E. Benjamin. . | Latiens .. .. ... High Polnt Q. . . . Beaverdam Crk. ... W. Y. Fair. . . . . . | Salotha. . .. .. .. <br> Praetor Q.. . . . . . <br> Clouds Crk. .. . . . <br> M. Praetor | Bates Quarry. <br> West Crk. <br> A. Bates. |
| :---: | :---: | :---: | :---: | :---: |
| 6 | Santee .. .. ... | Santee . . . . . . . | Santee . . . . . . . | Santee. |
| 6 | 5195 | - 5265 | 5480 | 5482 |
| 8 | 1.28 | 1.64 - | 1.70 | 1.72 |
| 0 | . 78 | 1.16 | . 86 | . 61 |
| 10 | 14.68 | 15.73 | 15.48 | 18.82 |
| 11 | 1.08 | 2.14 | 1.10 | . 98 |
| 12 | 1.62 | 1.57 | 8.73 | 1.43 |
| 18 | . 60 | . 45 | . 84 | . 24 |
| 14 | trace | trace | trace | trace |
| 15 | 8.97 | 8.45 | 8.08 | 8.04 |
| 16 | 5.37 | 4.64 | 8.86 | 6.08 |
| 17 | . | $\cdots$ | . | ... .. .. .. . . . |
| 18 | trece | trace | trace | trace |
| 12 | - . . . . . . . | ... .. . . . . . . | - | $\cdots$ |
| 20 | . 08 | trace | . 13 | trace |
| 21 | 70.54 | 88.80 | 68.70 | 73.10 |
| 22 | . 27 | . 33 | . 81 | . 23 |
| 23 | - . . . . ${ }^{\text {. }}$. | ... ... . . . . . | ... .. . . . . . . | ... .. ... . . . ${ }^{\text {a }}$ |
| 24 | .. .. . . .. .. .. | . . . . . . . . . | .. .. .. .. .. . | $\cdots$ |
| 25 | 100.11. | 00.81 | 98.81 | 100.08 |
| 26 | 265 | 2.65 | 2.73 | 2.64 |
| 27 | Ab-Yort . . . . . | Ab-York . . . . . . | Vauclnse . . . . . . | Vaucluse. |

## ANALYSEG OF SOUTH CAROLINA GRANITES.

Table No. 2.

| 1 2 8 4 | Countr <br> Locallty <br> Etream. <br> Owner (?) | NEWbRRET. . . <br> Leltrey Gr. Q.. <br> Cannons Ck. Br <br> T. B. Leltrey . | Union .. .. .. <br> Flat Rock Q. . . <br> Broad Rlver .. <br> Buifalo LUCk Co. | Fangritid. . .. <br> Ragadale P. ... <br> Rock Crk... .. <br> F. W. Ragrdale |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Arma .. .. .. .. .. .. | Santee . . . . | Santee .. .. | Santee .. .. .. |
| 6 | Surver No. . . . . . . . . | 0574 | 0500 | 6520 |
| 7 | ANALYSIS : |  |  |  |
| 8 | Lime . . . . . . . . . . . | 1.82 | 2.14 | 2.40 |
| 9 | Magnesia . . | . 75 | . 48 | . 68 |
| 10 | Alumina | 16.77 | 14.22 | 15.28 |
| 11 | Ferric Oxide | . 95 | 1.14 | 1.58 |
| 12 | Ferrous Oxide . | 1.58 | 1.24 | 1.58 |
| 13 | Tltanle Oxlde. . | . 36 | . 24 | . 42 |
| 14 | Manganese Oride (MnO)... | trace | trace | trace |
| 15 | Soda ( $\mathrm{Na}_{2} \mathrm{O}$ ).. | 3.43 | 6.39 | 4.38 |
| 16 | Potash (K2O) . . . . . . . . | 4.10 | 4.82 | 2.86 |
| 17 | Carbonlc $\mathrm{Acld}\left(\mathrm{CO}_{2}\right)$. |  |  | ... .. .. .. .. |
| 18 | Phomphorlc Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ).... | trace | trace | trace |
| 18 | Iron Sulphide. . . . . . . . |  |  |  |
| 20 | Sulphuric radical ... . . . | trace | trace | trace |
| 21 | Stilca . | 69.62 | 70.20 | 70.90 |
| 22 | Ignition . . . . . . . . . . . . | . 48 | . 83 | . 17 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . . . |  |  |  |
| 24 | . . . : . . . . . . . . . | .. . . . . . . | . . . . . . . | .. .. . . . ${ }^{\text {. }}$ |
| 25 | Total | 99.69 | 100.20 | 89.90 |
| 26 | Specific Gravity . . . . . . . | 2.65 | 2.63 | 2.68 |
| 27 | Lithological Zone. . .. .. | Ab-Yort . . | Ab-York .. | Ab-York .. |

## analyses of south carolina granites.

tabli No. 2.

| 1 2 3 | Leximeron .. .. <br> Roes Quarry. <br> Congaree River <br> R G. Ross | Yore .. .. .. ... <br> Whitesldes Q. <br> Bullocks Crk. <br> T. P. Whitesiden | Fatbifieln .. .. .. <br> Anderson Q. .. .. <br> Little River .. ... <br> Winnaboro G. Co... | Fairfield. <br> Rion $\mathbf{Q}$. <br> Little River. <br> Winngboro Gr. Co. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Santee .. .. ... | Santee . . . . . . . | Santee .. .. .. .. | Santee. |
| 6 | 6599 | 6815 | 6888 | 6740 |
| 7 | .. .. .. .. .. . | - .. .. .. .. . | .. .. .. .. .. . | . .. .. .. .. .. . |
| 8 | 1.88 | 2.08 | 1.54 | 1.38 |
| 9 | . 84 | . 43 | . 22 | . 38 |
| 10 | 14.06 | 14.89 | 13.72 | 15.38 |
| 11 | . 70 | . 75 | 8.64 | 1.24 |
| 12 | 1.80 | 1.24 | ... .. .. .. .. .. | ... .. .. .. .. .. |
| 13 | . 48 | . 36 | .. .. ... .. .. .. | ... .. .. .. .. .. |
| 14 | . 16 | trace | .. .. .. .. .. .. |  |
| 15 | 8.48 | 4.47 | 6.39 | . 55 |
| 18 | 3.94 | 4.70 | 4.88 | 6.89 |
| 17 | . .. ..... .. | . . . . . | ... .. .. .. .. . | ... .. .. .. .. |
| 18 | trace | trace | ... .. .. .. .. |  |
| 19 | ... .. .. .. .. .. |  | .. .. .- .. .. |  |
| 20 | trace | trace | ... .. .. .. .. |  |
| 21 | 72.18 | 70.77 | 69.74 | 73.26 |
| 22 | . 18 | . 19 | ... .. .. .. .. .. | ... .. .. .. .. .. |
| 23 | -... $\cdot$ |  |  |  |
| 24 | . ....... | . .. .. .. .. . | .. .. .. .. .. . | … .. .. . . . |
| 25 | 88.09 | 09.88 | 90.23 | 30.07 |
| 20 | 2.68 | 2.65 | 2.60 | ... .. .. .. .. |
| 27 | Vauclue . . . . .. | Ab-York. . . . . . . | Ab-York .. | Ab-York. |

## ANALYSES OF SOUTH CAROLINA GRANITES. <br> Table No. 2.

| 2 8 4 | Countr <br> Locallty <br> Stream. <br> Owner <br> ( $?$ | York . . .. ... <br> Jacksons Q. ... <br> Allisons Crk. Br. <br> W. T. Jackson. | Kersilaw .. .. <br> Rlchards Gr. Q. <br> Beaver Crk. .. . <br> Seabrook-Ilch. | Lancaster.. .. <br> Excelalor Gr. Q <br> Cedar Crk. .. . <br> Excels'r Gir. Co. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Area .. .. .. .. .. | Santee .. .. .. | Santee . . . . . | Santee .. |
| 6 | Surtex No. . . . . . . . . | 6810 | 7850 | 7855 |
| 7 | Analysis : |  |  |  |
| 8 | Lime . . . . . . . . . . . | 2.86 | 1.82 | 1.84 |
| 9 | Magnesla . . . . . . . . . | . 74 | . 58 | . 62 |
| 10 | Alumina . | . 15.75 | 14.51 | 15.76 |
| 11 | Ferric Oxide | 1.16 | 1.28 | 1.07 |
| 12 | Ferrous Oxlde . . . . . . . | 1.49 | 1.62 | 1.76 |
| 13 | Titanic Oxide. . | . 36 | . 24 | . 45 |
| 14 | Manganese Oxlde (MnO) | trace | trace | trace |
| 15 | Soda (NazO) . . . . . . . . | 4.78 | 8.21 | 8.89 |
| 16 | Potash (KıO) | 8.49 | 4.80 | 4.27 |
| 17 | Carbonic Acld (COz). . . . |  |  | . . . . . . . . ${ }^{\text {a }}$ |
| 18 | Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ).... | trace | trace | trace |
| 10 | Iron Sulphide. . |  |  | ... . |
| 20 | Sulphuric radical . . . . . . | trace | trace | trace |
| 21 | silica. . .. .. .. .. .. | 68.90 | 72.22 | 70.11 |
| 22 | Ignition ... .. . . . . . . . | . 18 | . 62 | . 45 |
| 28 | Molsture (at $100^{\circ} \mathrm{C}$ ). .. |  |  | ... .. .. .. .. |
| 24 | .. .. .. .. .. .. .. . . . | . ... .. ... . | .. .. . . . . ${ }^{\text {a }}$ | .. .. .. .. |
| 25 | Total | 9048 | 99.70 | 90.72 |
| 28 | Specific Gravity .. . . .. .. | 2.66 | 2.63 | 2.66 |
| 27 | Litholoaical zone. . . . . . | Ab-York . . . | Ab-York .. ... | Ab-York .. .. |

ANALYSES OF SOUTH CAROLINA GRANITES.
Table No. 2.

| -1 | Krebinw . . . . . | .. .. .. .. .. .. | . | .. .. . . . . |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Flat Rock Q..... | -. .- .. . . ${ }^{\text {- }}$ | , | - |
| 8 | Bearer Crk .. | .. .. .. | - .. .. .. .. ... | . . . . . . . . $\cdot$ |
| 4 | A. Johnson. | $\cdots \cdots$ | . . . . . . . . . . | .. . . . . . . . . |
| 5 | Santee.. .. . . . . | -• | . . . . . . . . . . | $\cdots \cdots$ |
| 0 | 7378 |  | - . . . . . . . . | . |
| 7 | . . . . . . . . . | . | - . . . . . . . | - . . . . . . . . |
| 8 | 1.64 | . . . . . . . . . | -•••• . . . . | . . . . . . . . . |
| 8 | 1.25 | -••••••••• | . . . . . . . . . ${ }^{\text {a }}$ | -••••••••• |
| 10 | 15.41 | . . . . . . . . . . | . | . . . . . . . . . |
| 11 | 1.85 | . . . . . . . . . | . . . . . . . . . ${ }^{\text {. }}$ | . . . . . . . . . |
| 12 | 1.57 | - | - . | . . $\cdot$ |
| 18 | . 60 | - . | . . . . . . . | - •• |
| 14 | trace | -• | . . . . . . . . . | . . . . . . . |
| 15 | 8.48 | .. . . | - . . . . . . . | . . . . . . . . . . |
| 16 | 4.61 | - | .. .. .. .. .. ... | -•••••••• |
| 17 | . .. . | .. . . . . . . | .. . . . .. .. . . | .. .. .. .. .. ... |
| 18 | trace | .. . . . . . . . . . | . . . . . . . . . . |  |
| 19 | … .. . . . . . . | . . . . . . . . | $\cdots$ | . |
| 20 | trace |  |  | . . . . . . . |
| 21 | 68.71 |  |  |  |
| 22 | . 34 |  |  |  |
| 24 | . |  |  | . . . . . . . . . . |
| 4 | .. . . . ${ }^{\text {a }}$ | . . . . . . . . .. |  | … . . . . . . . . |
| 25 | 90.46 | . . . . . .. | $\cdots$ | . . . .. . . . . . |
| 28 | 2.65 | - | . . . . . . | -••• |
| 27 | Vaucluse .. | . . . . . . . . . | . . . . . . . . | . . . . . . . . . |

CRYSTALLINE AREA SERIES-ANALYSES OF LIMESTONEA.
TABLI NO. 8.

| 1 2 3 4 | County. <br> Locallty. <br> Stream <br> Owner <br> (?) | Oconer. . .. .. <br> Brasstown <br> Brasstown Crk. <br> J. r. Patton ... | OCONnill. . . . . <br> Hell Eole <br> Chauga River . <br> J. Hendrix Est. | Oconere .. .. <br> Hell Hole .. . <br> Changa Rlver <br> J. Hendry Est. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Arfa . . | Savannal .. | Savannal .. .. | Savannal .. |
| 6 | Suzver No. . | 1024 | 1065+5 | $1065+7$ |
| 7 | Analysis: |  |  |  |
| 8 | Lime | 28.88 | 28.88 | .. .. .. .. • |
| $\theta$ | Magnesia .. | 1.82 | 15.09 | -. .- .. .. |
| 10 | Alumina | 9.24 | 2.34 |  |
| 11 | Ferric Oxide | . 81 | . 65 | $\ldots$.. .. .. . |
| 12 | Ferrous Oxide. | 2.40 | . 57 | .. .. .. - • |
| 18 | Titanic Oride. . | . 32 | . 05 | -. .. .. . . |
| 14 | Manganese Oxide (MnO) .. | trace | trace | -. . |
| 15 | Soda ( Na 2 O ) . . | 1.86 | . 46 | .. .. .. .. |
| 18 | Potash (K2O). | 1.39 | . 72 | .. .. .. .. - |
| 17 | Carbonic Acld (COz) .. .. | 22.58 | 84.22 | .. . . . - |
| 18 | Phoaphoric Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ) .. | trace | . 15 |  |
| 18 | Iron Sulphide. . | 1.03 | trace | . . . . |
| 20 | Suiphurle radical. . . . . . |  | .. .. .. .. .. |  |
| 21 | Slilica (and Insoluble) .. .. | 29.95 | 22.21 | 9.88 |
| 22 | Ignition | 1.07 | . 24 |  |
| 28 | Molsture (at $100^{\circ} \mathrm{C}$ ) . | . 12 | . 19 | . 18 |
| 24 | -• . . . . . . . . . . . | .. .. .. . . . | . . . . . . . . | $\cdots$ |
| 25 | Total | 99.92 | 100.15 | .. . . . |
| 28 | Equtpalents : |  |  |  |
| 27 | Calclum Carbonate | 51.14 | 41.00 | 48.48 |
| 28 | Calcium Phosphate . . . . . | $\cdots$ | . . . . . . . | .. . . . |
| 29 | Calclum Sulphate. . . . . . | . . . . . . | .. ... .. . . . |  |
| 80 | Magnesium Carbonate | . .. .. .. .. | 80.82 | 40.67 |
| 81 |  |  |  |  |
| 82 | Geological horizon. |  |  |  |
| 83 | Perrognaphic zone. . | Chauga | Chauga .. . . | Changa |
| 84 | Gmoanostic .. .. .. .. .. | In Ravine : Blue Limentone Interetratified with hyriromlea and graphitic slaten | In Ravine ; 9 tt. lajer blae limeatone (dol): ander graphitic slate. | In Ravine: 8.6 ft. layer lime stone (dol) alep arated by date arated hy |

## CRYSTALLINE AREA BERIES-ANALYSES OF EIMESTONES.

Table No. 3.

| 1 2 8 4 | Oconem. . . . . . . <br> Woodall. <br> Cbanga River. <br> S. Woodland Co. | Oconez. . . . . . . <br> Tomassle Falls <br> Tomassee Crt. <br> Misa L. Kuhtman. | Oconer. . . . .. . <br> Horse Shoe Bn.... <br> Oconee Crk. .. .. <br> Miss L. Kuhtman.. | LAOBENS <br> Raybors Kiln <br> Saluda Rlver <br> J. C. Raysor |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Savannah .. .. .. | $\text { Savannah . . } \begin{aligned} & \text {. . . } \\ & 1410 \end{aligned}$ | $\begin{aligned} & \text { Savannah . . . . . } \\ & 1425 \end{aligned}$ | Santee $\quad 5185$ |
| 6 | 1070 |  |  |  |
| 7 |  |  |  |  |
| 8 | 30.26 | 35.72 | 82.10 | 45.80 |
| 9 | 19.71 | 1.23 | . 50 | 5.86 |
| 10 | 1.07 | 6.34 | 3.11 | 1.23 |
| 11 | . 14 | . 21 | . 33 | 1.57 |
| 12 | . 56 | 2.40 | . 35 | ... .. .. .. .. .. |
| 13 | . 03 | . 22 | . 10 | ... .. ... .. . . . |
| 14 | trace | trace | trace | . . . . . . |
| 15 | . 10 | . 71 | . 52 | … .. .. .. . |
| 16 | . 50 | 1.33 | . 85 | . ... .. .. |
| 17 | 44.68 | 28.70 | 24.79 | 88.80 |
| 18 | trace | trace | trace | … ... . . . . |
| 19 | trace | 1.50 | 1.03 | ... .. .. .. .. |
| 21 | .. . . . . . |  |  | ... .... |
| 21 | 2.91 | 21.10 | 36.55 | 6.75 |
| 22 | . 24 | . 08 | . 05 | . |
| 28 | . 18 | . 07 | -.. . . . . . . . | ... ... . . . . |
| 24 | . . . . . . . . . . | .. . . . . . . . | .. .. .. .. .. .. | .. . . . . . . |
| 25 | 100.81 | 89.62 | 100.28 | 100.01 |
| 28 |  |  |  |  |
| 27 | 64. 01 | 88.75 | 56.27 | 81.77 |
| 28 | ... .. .. .. . . . | .. . . . . . . ${ }^{\text {. }}$ | ... .. . ${ }^{\text {. }}$. $\cdot$. | $\cdots$ |
| 29 | … .. .. . . . . | ... .. .. . . . . | ... . . . . . . . | . . . .. ... . |
| 80 | 89.72 | 1.27 | ... .. .. .. . . . | 5.91 |
| 31 | ............ . | . . . . . . . . . . | ... .. ... . . . . | ... .- .- .. . |
| 82 | - .. .. ... .. . | . | . |  |
| 83 | Chauga. | Changa. . | Poor Mountain. | A-Y Cherokee (9) |
| 84 | In Ravine; 6.5 ft . lajer blue llme. stone interst. alliceous mintea. | In Ravine; 12 calcareons seams interst. mample from 6 ft . layer. | On Mountain Side : 22 ft . layer, white and blue limestone under Itacol. rocks. | Bed of branch ; thickness indeterminable Interstrat. with blotite and hornblende siates. |



## CRYSTALLINE AREA SERIEG-ANALYBES OF LIMEBTONES.

Tably No. 8.

| 1 2 8 4 | County. <br> Locality <br> Stream. <br> Owner <br> ( 1 ) | Laurens. .. .. <br> Masters Klin <br> Walnut Crk. <br> J. Johnson | $\begin{aligned} & \text { Laurins. . . . . } \\ & \text { Mahaffey Kiln . } \\ & \text { Reaburn Crk. . } \\ & \text { Mre. S. B. Mahaffey } \end{aligned}$ | Ladorins. . . . Mahafey Klln Reaburn Criz. Mra. S. B. Mahaticy |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Area .. .. .. .. .. .. .. | Santee . . | Sant | San |
| 6 | Surver No. | 5189 | 5240 (a) | 5240(b) |
| 7 | Analysis : |  |  |  |
| 8 | Lime | 35.61 | 29.43 | 30.48 |
| 9 | Magnesla . . | 17.30 | 18.34 | 19.20 |
| 10 | Alumina | . 24 | .. .. ... ... .. | .. . . .. .. . |
| 11 | Ferric OxIde | . 18 | 2.08 | 2.28 |
| 12 | Ferrous Oxide. | . 21 | . . . . . . . | .. .. .. .. . |
| 13 | Titanle Oxlde. . | . 01 | .. ... .. ... . | .. . . . . . . |
| 14 | Manganese Ozide (MnO) .. | trace | . 17 | . 45 |
| 15 | Soda (NazO) | . 02 | .- . . . . . . | .. .. .. .- . |
| 16 | Potash ( K 2 O ) . $^{\text {c }}$ | . 05 | .. .. ... .. . | .. .. .. . . . |
| 17 | Carbonlc Acld ( $\mathrm{CO}_{2}$ ) . . .. | 44.80 | 43.23 | 44.71 |
| 18 | Phosphorlc Acld ( $\mathrm{PaO}_{5}$ ) .. | trace | . . . . | .. .. .. .. .. |
| 18 | Iron Sulphide. . . . . . . . | trace | .. .. .. . . . | .. .. .. .. . |
| 20 | Sulphurle radical. .. .. | $\cdots \cdots$ | . . . . . . . | .. .. . . .. . |
| 21 | sllica (and insoluble) | 1.68 | 6.68 | 2.45 |
| 22 | Ignition .. .. | . 02 | . 09 | . 14 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . . . | . 08 | . 07 | . 08 |
| 24 |  | . . . . . . | $\cdots \cdots$ | .... . . . . |
| 25 | Total | 100.18 | 100.04 | 89.70 |
| 26 | Fquivalent |  |  |  |
| 27 | Calclum Carbonate | 63.56 | 62.46 | 54.39 |
| 28 | Calcium Phosphate . . . . . | . .. .. .. . | $\cdots \cdots$ | .. . . . . |
| 29 | Calclum Sulphate. .. .. | .. ... .. ... .. | .... .. . . |  |
| 30 | Magnesium Carbonate | 32.01 | 38.64 | 39.98 |
| 81 | . .. .. .. .. .. .. .. .. |  |  | .. . . . . |
| 82 | Grological Horizon. |  |  |  |
| 88 | Petrographic Zomm. | A-Y Cherokee( ${ }^{\text {( }}$ ) | A-Y Cherokee( ) | A-Y Cherokee |
| 34 | Grognostic .. . . . . . . | Pit: 8 ft. marble interstrat. with hornblende and quartzose slates | Upper Strat.; 4 it. gray Ilmestone interstratiffed with hornblendo and mica slates. | Lower Stratam: 9 ft. gray ilmestone Interiam. with hornblende and mica slates. |

CBYBTALLINE AREA SERIES-ANALYSES OF LIMESTONES.
Table No. 3.

| 1 2 8 4 | 0xion .. .. .. .. <br> 5MW Crose K .... <br> Freachman Crk. .. <br> Mr. Gregory | CHerombis .. .. .. <br> Thicketty . . . . . <br> Thicketty Crk. ... | Cheronez ..... .. Llmestone Sp... . . Limestone Crk.. .. Garney Lime Co... | Cemfore: <br> Llmestone Bp. <br> Limestone Crk. <br> Gaffney Lime Co. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | gantee . . . . . .. | Santee .. . . . . . | Santee . . . . . . . | Santee |
| 8 | 5675 | 6121 | 6129 (a) | 6120 (c) |
| 7 |  |  |  |  |
| 8 | 39.18 | 27.48 | 30.54 | 43.31 |
| 9 | 14.74 | 15.82 | 10.60 | 8.75 |
| 10 | . 12 | . 76 | . . . . . . . . | ... . |
| 11 | . 28 | 1.03 | . 26 | . 75 |
| 12 | ... .. . . . . . . | $\cdots \cdots \cdots$ | . . . . . . . . . ${ }^{\text {a }}$ | . . . . . . . . . |
| 13 | trace | - .. .. . . . . | ... -. .. . . . . | ... .. .. .. |
| 14 | trace | . 24 | trace | ... .. .. .. .. .. |
| 15 | . 02 | . . . . . . . . | ... .. .. . . . . | ... .. .. .. .. .. |
| 16 | . 01 | - .. .. .. .. .- | ... .. ... .. .. .. | ... .. .. .. . . ${ }^{\text {a }}$ |
| 17 | 44.40 | 85.71 | 45.58 | 44.17 |
| 18 | trace | . 05 | .. . . . . . . . | ... .. .. .. .. .. |
| 19 | trace | trace | - •• | ... .. .. .. .. .. |
| 20 |  |  |  | ..... . . |
| 21 | 1.18 | 18.42 | 8.59 | 2.86 |
| 22 | . 12 | . 42 | . 23 | ... .. .. .. .. .* |
| 28 | . .. .. | .. .. .. . . . . | . 02 | . 08 |
| 24 |  |  |  | . . . . . . . . . ${ }^{\text {a }}$ |
| 25 | 100.00 | 98.84 | 99.82 | 89.87 |
| 28 |  |  |  |  |
| 87 | 69.93 | 48.84 | 54.53 | 77.34 |
| 28 | . . . . . | . 11 |  | ... .. .. .. .. . |
| 29 |  |  |  |  |
| 80 | 25.94 | 27.23 | 41.19 | 18.89 |
| 81 |  | ... .. .. .. .. .. | ... .. .-. ${ }^{\text {. }}$. |  |
| 32 |  |  |  |  |
| 33 | A-I Cherokee (\%). | A-Y Cherokee ( 7 ). | Cherokee | Cherokee. |
| 84 | Ravine ; 5 to 7 ft. marble interlam. With quarta and mica slates. | In Galch: 2 ft. lay er wh. dolomitic Ilmestone Interstrat. Fith quarts ore and mica slates | No. 1 : upper stratum white crystal. line dolomite. | No. 2: exposed In bottom of original quarry. |

## CRYBTALLINE AREA BERIES-ANALYBES OF LIMEBTONES.

Tably No. 8.

| 1 2 8 4 |  | Cheroker .. . <br> Limestone Sp. . <br> Limeatone Crik.. <br> Gafiney Lime Co | Cherokema .. .. <br> Limestone Sp. . <br> Limestone Crk.. <br> Gaffney Lime Co | Cheroker .. .. <br> 2M E Gafriey.. Cherokee Crk br <br> IL. R. Rosa .... |
| :---: | :---: | :---: | :---: | :---: |
| 6 | Area | Santee | Santee . . . | Santee . . |
| 6 | Surpar No. | 6129(d) | 6129 (e) | 6232 |
| 7 | Analisis : |  |  |  |
| 8 | Lime | 48.68 | 54.24 | 26.88 |
| 9 | Magnesia . . .. .. .. . . . | 6. 60 | 1.16 | 2.39 |
| 10 | Alumina | . 23 | . 23 | 3.04 |
| 11 | Ferric Oxide | . 47 | . 47 | . |
| 12 | Ferrous Oxide. |  |  | . . . .. .. . |
| 13 | Tltanic Oxide.. | trace | trace | .. .. .. .. .. |
| 14 | Manganese Oxide (MnO) .. | trace | trace | -• .. . |
| 15 | Soda (Na2O) . . . . | . 08 | . 02 | -• - |
| 16 | Potagh ( $\mathrm{K} 2^{(1)}$ ) . . . . . . | . 01 | . 01 | - |
| 17 | Carbonic Acld (COz) .. .. | 43.52 | 48.27 | 22.00 |
| 18 | Phosphoric Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ) .. | trace | trace | .. .. .. .. . |
| 18 | Iron Sulphide. . . . . . . . . |  | .. .. .. .. |  |
| 20 | Suiphuric radical. .. .. .. | . . . . . . . | .. .. .. .. . | .- .. .. ... . |
| 21 | Slitca (and Insoluble) .. .. | 1.28 | . 71 | 45.36 |
| 22 | Ignition .. .. .. .. . . . | . 12 | . 11 | . 00 |
| 28 | Moisture (at $100^{\circ} \mathrm{C}$ ) . . . . | . 06 | . 02 | . 02 |
| 24 | - .. . . . . . . . - | . . . |  | . . . . . |
| 25 | Total | 100.08 | 100.24 | 98.85 |
| 26 | Equivalimets: |  |  |  |
| 27 | Calclum Carbonato .. .. .. | 86.86 | 96.86 | 47.98 |
| 28 | Calcium Pbosphate . | - . . . . . | - : $\cdot$ |  |
| 29 | Calclum Sulphate. | . . . . . . . | .. . . . . . . |  |
| 30 | Magnegium Carbonate .. .. | 10.15 | 1.83 | 1.88 |
| 81 | . . . . . . . . . . . . . | $\cdots \cdots$ |  |  |
| 82 | Grological Horizon. . . . | .. .. .. .. .. | .. .. .. . |  |
| 88 | Petrographic Zont. . | Cherokee | Cherokee | Cherokee |
| 84 | Gnognortic .. | No. 8 : hard biue dolomitic limentone. | No. 1: lower Stratum northeriy outcrop hard blae lime stone. | Limentone interstrat with hornblende rlater |

## CRYBTALLINE AREA SERIRS-ANALYSES OF LIMESTONES.

Table: No. 3.


## ANALYSES OF FDGEFIELD-CHESTERFIELD BLATES AND SCHIETS.

Table No. 4.

| 1 2 3 4 | County <br> Locality <br> Stream <br> Addreas. | AIEMN . . . . . <br> N. Augusta <br> Sav. River. | Edgrbield. . . <br> Parker Place. <br> Beaverdam Crk. <br> H. Parker | Khrsinaw . . <br> Rollinge MIL. <br> Horse Pen Crk <br> J. C. Rollings. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | AREA .. .. .. .. .. .. .. | Savannah . | Savannah . | Santee |
| 6 | Suryei No. | 2280 | 2225 | 612 |
| 7 | Analysis: |  |  |  |
| 8 | Lime | . 84 | 1.04 | . 33 |
| 8 | Magnesia .. | . 22 | . 56 | . 91 |
| 10 | Alumina | 15.45 | 21.14 | 16.88 |
| 11 | Ferric Oxide | 1.78 | 12.02 | 2.26 |
| 12 | Ferrous Oxide . | $\cdots$. . . . . | . . . . . . $\cdot$ | . . . . . . . |
| 13 | Titanic Oxide . | . 56 | .. .. . . . . | .. .. ... .. . |
| 14 | Manganese Oride (MnO)... | .- .. ... ... .. | . . . . . . . | .. . . . . . . |
| 15 | Soda (NazO) | . 27 | 1.12 | . 08 |
| 16 | Potash ( $\mathrm{KaO}_{2}$ ) | . 96 | . 05 | 8.17 |
| 17 | Carbonic Acld ( $\mathrm{CO}_{2}$ ) | .. . . . . . | . . . . . . . |  |
| 18 | Phosphoric Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ) | . . . .. . . . | . .. .. .. . | . . . $\cdot$. |
| 18 | Iron Sulphide . . . | $\cdots$ | - ... .. . . - | .. .. ... .. .. |
| 20 | Sulphuric radical . . . . | .. .. ... .. . | . . . . . . . | .. .. .. .. .- |
| 21 | Sillica (and Insoluble) | 75.20 | 52.41 | 72.37 |
| 22 | Ignition .. . | 5.28 | 8.85 | 3.84 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) ... . | .. .- .. .. .- | - . . . . . $\cdot$ | .. .. .. .. .. |
| 24 |  | .. .. .. .. .. |  | .- . . . . . |
| 25 | Total .. | 100.02 | 98.66 | 98.84 |
| 26 | Rational analisis: |  |  |  |
| 27 | Clay Substance . . | 42.81 | 60.08 |  |
| 28 | Quartz. . . . . | 54.05 | 21.12 |  |
| 29 | Feldspar | 2.76 | 10.46 | .. .. .. .. .. |
| 30 | Total .. | 100.02 | 99.08 | -• .. .- |
| 31 | .. .. .. .. .. .. .. .. .. |  |  | . ${ }^{\text {. }}$. . . ${ }^{\text {- }}$ |
| 32 | Grological Horizon |  |  |  |
| 83 | Petrographic Zone.. | Fdgefield-Ch'sfid | Edgefield-Ch'sfd | Edgefield-Ch'sdd |

## ANALYEES OF EDGEFIELD-CERETERFIELD SLATES AND BCEIBTG.

TABLE No. 4.

| 2 | (RICEHAKD. . . . . <br> Dent's Pond. <br> Glle Cry. Val. <br> Municipal | Lancabtitr . . Halie Mine Ledbetter Crk. E. Thlea | Lancastizr . . . . Halle Mine . . . Leabetter Crk. . . E. Thlem . . . . . | lancaster <br> Halle Mina <br> Ledbetter Crk. <br> Halle G. M. Co. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Santee | Pee Dee . . | Pee Dee . . . . | Pee Dea. |
| 6 | 557 | 7550(a) | 7850(b) | 7550(c) |
| 7 |  |  |  |  |
| 8 | 0.10 | 0.20 | 0.20 | 0.60 |
| 9 | 0.25 | 0.22 | 0.88 | 0.50 |
| 10 | 38.41 | 31.67 | 87.65 | 6.70 |
| 11 | 1.67 |  |  | 6.80 |
| 12 | .. .. .. .. .... | 3.55 | 2.60 |  |
| 18 | 0.87 | .. .. .. .. .. .. | .. .. .. .. .. .. | .. .. .. .. .. .. |
| 14 | .. .. .. .. .. .. | 0.16 | .. .. .. .. .. .. | .. .. .. .. .. .. |
| 15 | 0.12 | 6.96 | 4.60 | 0.80 |
| 18 | 0.68 | 6.97 | 8.71 |  |
| 17 | . | . .. .. .- . | .. .. .. .. .. .. |  |
| 18 | .. .. .. .. .. .. |  |  |  |
| 18 | . $\cdot$. | .. .. .. | .. .. .. .. .. .. | .. .. .. .. .. |
| 20 | - | .. .- .. .. .. .- | .. .. .. .. .. .. | .. .. .. .. .. .. |
| 21 | 58.19 | $44.81$ | 45.62 | so.00 |
| 22 | 10.63 | .. .. .. .. ... . |  | 8.00 |
| 23 |  | 6. 80 | 5.85 | 0.60 |
| 24 | .. .. .. .. .. | $\cdots$ | . |  |
| 25 | 100.40 | 100.04 | 09.39 | 100.00 |
| 28 |  |  |  |  |
| 27 | .. .. .. .. .. .. | .. .. .. .. .. .. | .. .. .. .. .. .. | ... .. .. .. .. |
| 28 |  |  |  |  |
| 29 |  |  |  |  |
| 30 |  | .. |  |  |
| 31 |  |  |  |  |
|  |  |  |  |  |
| 83 | Edgetield-Cbre. . . ${ }^{\text {a }}$ | ..... .. . . . ${ }^{\text {Edgedeld-Cb'sid. }}$. | ............. | Edgefeld-Ch'sAd. |

498

ANALYSES OF EDGEEIELD-CHESTERFIELD SLATES AND SCHIETS.
TAbIa No. 4.

| 1 2 8 4 |  | LANCABTIER . . . <br> Blackmon Mine. <br> Fiat Creek. . . | Cheistiertield . Ruby <br> Thompaon's Criz Branch. <br> - MeGregor | CyEertagrin. Watmon Piece. L. Wentseld Cri .. .. .. .. .. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Arim . . . . . . . . . . . | Pee Dee . | Pee Dee. | Pee Dee. |
| 6 | Survey No. | 7597 | 7685 | 7735 |
| 7 | ANALYAIS : |  |  |  |
| 8 | Llme .. .. .. .. .. .. .. | . 88 | 0.14 | . 38 |
| 9 | Magnesla .. .. . . . . . . . | 1.18 | 0.81 | . 39 |
| 10 | Alumina | 28.84 | 20.49 | 23.82 |
| 11 | Ferric Oxide . . | 1.10 | 2.72 | 8.38 |
| 12 | Berrous Oxide . . . . . . . | .. .. .. . . . | - .. .. .. . | - |
| 18 | Titanic Oxide . . | . 29 | 1.12 | 1.19 |
| 14 | Manganese Oxide (MnO). | trace | . | .. ... .. .. |
| 15 | Soda ( Na 2 O ) . . . . | . 49 | 0.00 | . 72 |
| 16 | Potash ( $\mathrm{KzO}^{\text {O }}$ ) . . . . . | 6.62 | 2.65 | 1.48 |
| 17 | Carbonle Acid ( $\mathrm{CO} a$ ) .. .. | .. .. .. .. .. | .. ... .. .. . | .. .. .. .. .. |
| 18 | Phosphoric Acld ( $\mathrm{PaO}_{3}$ ) ... | trace | .. . . . . . . | .. .. .. .. . |
| 10 | Iron Sulphide ... .. .. | .. .. . . . . | .. .. .. .. . | .. .. .. .. . |
| 20 | Sulphurle radical ... .. | - . . . . . . |  | .. .. .. .. . |
| 21 | SIllica (and insoluble) .. | 67.26 | 07.38 | 61.02 |
| 22 | Ignition |  | 6.08 | 7.58 |
| 28 | Molsture (at $100^{*} \mathrm{C}$ ) | 8.64 | - . . . . . | .. .. . . . . |
| 24 | - . . . . . . . . . . |  |  |  |
| 25 | Total | 99.68 | 100.88 | 100.46 |
| 26 | Rational Analygis: |  |  |  |
| 27 | Clay Substance . . | .. .. .. . | 54.83 | 59.68 |
| 28 | Quartz.. | . . . . . . | 88.84 | 28.08 |
| 29 | Feldspar | .. .. . | 7.21 | 12.70 |
| 30 | Total |  | 100.88 | 100.46 |
| 31 | .. .. . . . . . . . . . |  |  | . .. . . . . . |
| 32 | Gbological hosizon |  |  |  |
| 88 | Pmitoonapaic Zone. | Pdgefield-Ch'std | Edgefield-Ch'wid | Eagesold-Ch'sd |

# PART IV. <br> COASTAL PLAIN-ECONOMIC AND INDUSTRIAL. 

MARL, GLAUCONITE, PHOSPHATES, FULLERS EARTH, PEAT, SANDS, CLAY.

## MARL.

Marl is invested with great importance in its relation to prospective manufacturing enterprises in the production of portland cement, lime, and sand brick; also in its application to the improvement of agricultural lands, and to the betterment of roadways. In depth and areal distribution the beds of marl in South Carolina are vast; in physical condition they range from the softness of plastic clay to the hardness of the best limestone; in quality they comprise grades exceeding 90 per cent. of Calcium Carbonate. Soft, fine grained and almost gritless varieties occur, which contain over 70 per cent. of Calcium Carbonate, no Magnesia, and almost sufficient Alumina to constitute a natural cement limestone. Soft grades high in lime, phosphoric acid, and potash, offer an excellent fertilizer with which to effect an economic regeneration of the lands adjacent to these beds; deposits high in both lime and magnesia, and therefore of value to the cereals, also occut.

These marls have greater potentialities for the permanent improvement of lands than has been realized from the chemically treated products of the phosphate beds, which are active but ephemeral and ever require expensive renewals of application. In New Jersey the judicious application of marl to lands has resulted in the most remarkable increase in productiveness, and enhancement of values. In these respects her lands, at one time poor and almost valueless, now excel the lands of some of our most favored agricultural sections.
At Bostick and other points in South Carolina, where fields were judiciously marled more than forty years ago, the advantages of such fields over their unmarled neighbors, separated by no more than twenty feet, are obvious.
Marls in South Carolina occur in parts of the Cretaceous, Eocene, Oligocene, Miocene, Pliocene and Pleistocene formations. Their exposures are principally along the rivers and their tributaries,
within the lower two-thirds of the coastal plain, and increasing within certain limits as they approach tidewater. Thus the Edisto, Ashley, Cooper, Santee, Pee Dee and Waccamaw Rivers, and their lower tributaries, expose enormous deposits, some constituting bluffs thirty feet in height and extending to great depths below the water line. The Ashepoo and Savannah river-banks afford marls, but of less frequent occurrence and less prominent exposures.

Along the Edisto River marl is interruptedly exposed from Hollomans Bridge to a point four miles below Branchville, and thence to a point near the Charleston and Savannah Railroad bridge; along the Ashley River from its source to the Charleston and Savannah Railway bridge; along the Cooper River from its source to the Charleston Naval Station; along the Santee River from Half Way Swamp (Orangeburg County) to Wambaw Creek; along the Pee Dee River from the mouth of Jeffries Creek (in Florence County) to Topsaw Landing (about 17 miles N. E. of Georgetown) ; along Lynches River from Old Effingham to the Pee Dee River; along the Waccamaw River from Hammond to Bucksville.

The beds best adapted to the manufacture of cement occur along the Santee and the Ashley and Cooper Rivers, where good water is available for navigation. Experimental briquettes of cement made from the Ashley marl exceeded by 50 per cent. the tensile strength required by the U. S. Army Engineer's specifications. The upper portion of the marl along the Santee River is very hard and is well adapted for road metal. The black soft Cretaceous claymarl (lower part of Burches Ferry phase of marl), commonly called soapstone, which occurs prominently developed along the Pee Dee River and its tributaries, in beds exceeding two hundred feet in thickness, represents a good agricultural marl which should be extensively utilized. It shows prominently on Bigham's Branch (Florence County), and at Ards Landing (on Lynches River), from which point it extends under the lower part of Williamsburg County.

In addition to the above marl, beds of Greensand Marl (or Glauconite) occur in this State at numerous points, their value consisting mainly in the contained phosphoric acid and potash, the latter being in the form of a compound silicate of potash which is but slowly soluble.

There are two extensive plants, with kilns, equipped for mining and calcining the Tertiary marls between the Ashley and the Cooper Rivers, which prepare lime chiefly for agricultural purposes.

## MATERIAL: MARL. SURVEY NO. 42.

Area: Savannah.
Sub-Area: Upper Three Runs.
Location: Aiken County; in miles S. $65^{\circ} \mathrm{W}$. of Williston; south side of Tinkers Creek.
Address of Owner or Representative (?) : J. D. Kennedy, Windsor, S. C.
OBS-Eocene (Santee Phase on Warley Hill). A precipitous scarp which ascends to an elevation of 123 feet above the bed of Tinkers Creek; its south side affords the following section:
(a) The upper portion, which in extension constitutes a broad plateau, consists largely of red argillaceous, case-hardened sands (Lafayette) yielding the ideal cotton soil.
(b) Deep red sands (Eocene) partly resulting from altered glauconites, which likewise constitute fine soils; this lower sand is finely exhibited near Hixons Bridge, with characteristic Eocene fossils.
(a) and (b) aggregate 78 feet in thickness.
(c) At the depth of 78 feet occurs a bed of marl 9 feet thick, constituted of loose shell marl (fragments) with occasional specimens of the ostrea Georgiana included; this marl stratum (c) analyzes: Lime, 33.69 per cent.; Magnesia, 0.29 per cent. ; Alumina, 0.22 per cent.; Ferric Oxide, 1.07 per cent.; Manganese Oxide ( MnO ), 0.24 per cent.; Carbonic Acid ( CO 2 ), 25.84 per cent. ; Phosphoric Acid $\left(\mathrm{P}_{2} \mathrm{O}_{5}\right), 0.26$ per cent.; Silica (and insoluble), 36.77 per cent.; Ignition, 1.33 per cent.; Total, 99.6i per cent.; Equivalents: Calcium Carbonate, 58.79 per cent. ; Tri-Calcium Phosphate, 0.57 per cent.
(d) Compact harsh glanconitic marl weathered to a deep brown color; incloses many white softened shells.
Three feet exposed but extends to greater depth. (Suspected of Warley Hill equivalence.)
(e) Laminated argillaceous shale varying from pea-green through dark gray to black. Fine grained excepting near base where coarse sands and small pebbles are inclosed.
(d) and (e) aggregate 23 feet thick.
(f) 3 feet compact mass of soft dove-colored shale with many softened shells.
(g) Pale green soft shale (unstratified) inclosing matted mass of softened shells; grades towards base to compact harsh brown glauconitic marl inclosing similar softened shells. In the
upper part of (g) large specimens of Venericardia Planicosta appear.
Thickness of ( $g$ ) is 10 feet.
(h) Partly silicified gray-green shale appears in the bed of the creek inclosing fossil casts and molds (better exhibited at Cox's Bridge (Sur. No. 4I) 0.3 mile above Kennedys Scarp.

## MATERIAL: MARL, ETC. SURVEY NO. 43 .

Area: Savannah.
Sub-Area: Tinkers Creek.
Location: Aiken County; 12.8 miles S. $60^{\circ} \mathrm{W}$. of Williston; south side of Tinkers Creek; o.2 miles east of Hixon's Bridge; 900 feet N . of Hix House on scarp of swamp.
(a) 15 feet deep red sands.
(b) 0.2 feet clay seam.
(c) 6 feet to 18 feet very fine grained yellow and red sands with thin layer of fossils and rounded fragments of limestone near base.
(d) 4 feet pea-green and dark drab clay.
(e) Stratified pea-green shale.

Two hundred feet south of Hixon's Bridge on Tinkers Creek, the old Tylers Bridge road exposes in an excavation the following section:
(a) Deep red, yellow and white fine grained sands interstratified near base with thin lines of pea-green shale.
(b) Fine grained sands including an irregular layer of green glauconitic matter along which appear numerous loose silicified shells notably the turretella carinata.
This irregularly grades into about two feet of clayey red sands inclosing numerous large lignitic splotches.
(c) Pea-green shale.

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\text { MATERIAL: MARL. SURVEY NO. } 52 .
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Area: Savannah.
Sub-Area: Lower Three Runs. Location: Barnwell County; Usserys Bluff ; 4 miles N. $20^{\circ} \mathrm{W}$. of Baldock.
Address of Owner or Representative (?) : J. W. Ussery, Baldock, S. C.

ObS-Eocene (Santee Phase on Warley Hill Phase).
(a) The plateau east of Lower Three Runs ascends in a succession of terraces to an elevation of 156 feet above the bed of this creek. The character of the upper 95 feet is largely ob-
scured, but apparently consists of compact red sands and tough red arenaceous clay.
(b) The next inferior terrace exhibits finc grained tough red clay near its upper part; the lower part is obscured.
(c) Slightly superior to the water line, and extending below, occurs a bed of pale green marl, inclosing numerous large specimens of the ostrea Georgiana. The marl in the bed of the stream is of the coarse grained, dirty-green, glauconitic character, characterizing the Warley Hill marl.

MATERIAL: MARL. SURVEY NO. 54.
Area: Savannah. Sub-Area: Lower Three Runs; Boggy Crk. Location: Barnwell County; Baldock.
Address of Owner or Representative (?): J. L. Ellis, Baldock, S. C.

OBS-Eocene (Santee Phase)? A bed of marl is exposed along the banks, and in the bed of Boggy (or Mill) Creek and underlying the adjacent swamps; this constitutes the most southerly exposure of the Santee phase of marls, superior to the Savannah Valley line. Within 300 feet of the railway station this marl appears in an open flat with nominal overburden; it analyzes: Lime, 35.51 per cent.; Magnesia, o. 82 per cent.; Alumina, 0.24 per cent.; Ferric Oxide, 1.51 per cent.; Manganese Oxide ( MnO ), 0.12 per cent.; Carbonic Acid (CO2), 28.or per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 0.20 per cent.; Silica (and insoluble), 32.07 per cent.; Ignition, 1.06 per cent. Total, 99.54 per cent. Equivalents: Calcium Carbonate, 62.93 per cent.; Tri-Calcium Phosphate, o.44 per cent.; Magnesium Carbonate, 0.67 per cent.

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\text { MATERIAL: MARL. SURVEY NO. } 63 .
$$

Area: Savannah. Sub-Area: Savannah River Val.; Pen Br. Location: Barnwell County; i mile N: W. of Robbins. Address of Owner or Representative (?) : H. M. Cassell, Ellenton, S. C.

OBS-Eocene (Santee Phase). Marl of undetermined thickness, with 15 feet of overburden, is exposed in the bottom of a well, affording specimens of the ostrea Georgiana, etc.
material: marl. SURVEy No. 134.
Area: Savannah.
Sub-Area: McBean Creek. Locality: 0.3 miles south of McBean Station (Ga.); scarp on the
south side of McBean Creek (o.I miles east of the public road) exhibits a series of deeply incised gullies which expose the lower portion of the following section ( $c, d, e, f, g$ ), the upper portion (b) being exposed by the public road along its winding ascent of the hill; upon attaining the plateau level a prominent knoll is observed about 500 feet east of the road which affords the cap (a):
(a) The capping knoll (about 125 feet above the base of the section) is shingled with loose pieces of a very dense fine grained mass of silica and silicified shells; the outer portion being covered with stalactite-like masses of a beautiful opalescent quartz. This is suspected of equivalence to the King's Creek Silex.
(b) About 60 feet of a compact mass of deep red sands apparently derived from glauconite; incloses numerous pockets of loose silicified casts and molds of shells.
The basal portion of these sands inclose coarse sand and rounded pebbles ( $1 / 2$ inch and less in diameter).
(c) 24.5 feet-Yellow, white and purple fine grained sands.
(d) 1.5 feet-Stratified drab-clay in a slightly undulating layer inclosing lignitic matter.
(e) 6.0 feet-Yellow and red fine grained clayey sands with lignitic seams and splotches; rests on irregular surface of (f); at some adjacent exposures has deposited entirely around residual masses of marl excepting the basal surface which rests on the green shale (f).
(f) I to 10 feet (and extending to undetermined depth) pea-green marly shale inclosing large irregular masses of yellowish compact marl ; the marl incloses numerous small hard concretions of carbonate of lime. Irregular deposition and extensive solution have combined to leave the marl in slightly isolated masses varying from nominal to seven feet in thickness, surrounded by contemporaneous pea-green shale, and in part by subsequently deposited lignitic clay-sands (e).
(g) Pea-green laminated shale.

The base of (f) is about 14 feet above the zero water level of McBean Creek (at McBean) and about 66 feet above the zero water level ( 87.1 feet M. L. T.) of the Savannah River at Shell Bluff.
On the southerly scarp of McBean Creek about $1 / 2$ mile west of the above section (Sur. No. I34), the marl in zone (f) constitutes
a more consistent layer, which has been quarried for the manufacture of lime. Incloses lutraria lapidosa, ostrea sellæformis, etc.

## MATERLAL: MARL. SURVEY NO. 220.

Sub-Area: Shell Bluff.
Arca: Savannah.
Location: Shell Bluff on the western side of the Savannah River, about 4 miles west of Ellenton.

OBS-Eocene
The plateau adjacent to Shell Bluff attains an elevation varying from 103 to 132 feet above the zero water level ( 87.1 feet M. L. T.) of the Savannah River. Shell Bluff comprises two terraces, the upper (A \& B) being terminated by a marl bluff 24 feet high; from the base of the latter the surface (C) irregularly declines over a short distance to the crest of the second cliff (D, E, F, G, H, I, J, K,) which extends 69 feet above the zero water level of the Savannah River, which impinges on its base ( K ).
(A) 10 feet-Soil inclosing fragments of shells.
(B) 24 feet-Yellow-white marl; but few fossils excepting in the lower part where the ostrea Georgiana appears in great size and large numbers.
(C) 10 to 15 feet obscured-At one point of uncertain antecedents lignitic clay-sands and pea-green yellow shales occur at this level.
(D) 2 feet-Very fine grained compact white marl.
(E) 7 feet-Moderately hard gray marl.
(F) 5 feet-Ledge of hard brown coquina, including numerous hollow impressions of shells.
(G) 6 feet-Compact dirty white to purplish colored marl inclosing large specimens of ostrea sellæformis.
(H) 18 feet-Pale yellow-green marl.
(I) 34 feet-Dirty brown, coarse, granular, compact marl with horizontal sand seams.
(J) 4 feet-Soft yellow marl affording numerous water passages. (K) 3 feet-Soft granular gray-green marl.

Mr. Ruffin's "Report on the Agricultural Survey of South Carolina" (1843) submits the following section relating to the lower bluff :

[^8]
nedy Bluff; the intervening space and less elevated surfaces of the shales and marls received the succeeding Barnwell Buhr-sands.

MATERIAL: MARL AND FULLERS EARTH. SURVEY NO. 234.
Area: Savannah. Sub-Area: Savanah River Scarp. Location: Adjacent to Hampton County; Porters Landing; western bank Savannah River; 10 miles S. W. of Garnett.
OBS-Pleistocene on Miocene (Edisto and Marks Head), on Oligocene (Parachucla Shales and Marls on Combahee Shales).* This highly instructive section, which is to be observed immediately above Porters Landing on the west bank of the Savannah River, is of great value in exhibiting the character of the formations which extend largely obscured along the South Carolina side of the river almost to Purysburg. It constitutes a bluff 118.9 feet above the zero water level of the river ( 27.8 feet M.L.T.), as follows, to wit:
(a) 64.0 feet-White, yellow and red sands in stratified beds of both fine and coarse grained material.
(b) Thin broken line of vertebrate remains, and small pieces of phosphate rock.
Miocene, Edisto Phase.
(c) 5.9 feet-Ledge of compact yellowish marl inclosing pecten eboreus, ecphora quadricostata, numerous anomias, etc.
Miocene, Marks Head Phase.
(d) 27 feet-Dun-colored mass of leached marl and indurated sands inclosing many rounded concretions of carbonate of lime encasing variable amounts of sand. Some concretions more than two feet in diameter. The basal portion is a hard concretionary layer (about a half foot thick) formed along a highly irregular surface. Stratum (d) appears at same leved as the Marks Head Marl at its type locality, one mile northwest.
Oligocene, Parachucla Phase.
(e) 1.7 feet-White sands inclosing a large number of one species of pecten, and numerous shell fragments.
(f) 14.0 feet-Fine grained laminated shale with sand partings. The median portion appears in the form of silicified concretions. The base includes a line of rounded pebbles.

[^9](g) o to 6 feet-A much leached marl inclosing carolia Floridana, pectens, sharks teeth, ribs of cetaceans, and a large number of small discoidal quartz pebbles.
Combahee Phase.
(h) Above zero water level appears o to 8 feet of a laminated drab shale with arenaceous partings. Incloses molds of the lucinidæ, and at Hudsons Ferry impressions of the dwarf Palmetto.

## MATERIAL: MARL. SURVEY NO. 235.

Area: Savannah.
Sub-Area:
Location: Marks Head on the western side of the Savannah River, one mile northwest of Porters Landing; near the head of Marks Head Run.
OBS-Miocene (Marks Head Phase).
(a) Surface sands.
(b) Thin broken line of hard yellow marl (Edisto?).
(c) Yellow-brown clayey matrix inclosing soft fossil shells.
(d) Partly indurated sand mass inclosing some fossil molds. (d) and (e) aggregate 14 feet in thickness.
(e) 4 feet-Blue-green matrix inclosing many small rounded black particles, and soft shells (pecten, mytilus, módiola, arca, anomia, etc., etc.)
(f) I foot-Hard, sandy, brown matrix inclosing many soft shells. Extends below valley line increasing in hardness with depth.

## MATERIAL: MARL. SURVEY NO. 339.

Area: Edisto. Sub-Area: Combahee River; Lemon Swamp. Location: Bamberg County; Cedar Springs; 2 miles S. $50^{\circ} \mathrm{W}$. of Bamberg.
Address of Owner or Representative (?): J. T. O'Neal, Bamberg, S. C.

OBS-Eocene (Santee Phase (?)). Cedar Springs, constituting the main head of Lemon Swamp, exhibits a compact yellowwhite marl basin, under the surface of the waters.

This marl contains: Lime, 4 I .83 per cent.; Magnesia, 0.70 per cent.; Alumina, l.I7 per cent.; Ferric Oxide, i. 08 per cent.; Manganese ( MnO ), o. 19 per cent.; Carbonic Acid ( $\mathrm{CO}_{2}$ ), 32.36 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), o.20 per cent.; Silica (and insoluble), 20.64 per cent.; Ignition, i. 28 per cent.; Total, 99.45 per cent. Equivalents: Calcium Carbonate, 73.62 per cent.; Tri-Calcium Phosphate, o. 44 per cent.

MATERIAL: MARL. SURVEY No. 341 .
Area: Edisto.
Sub-Area: Edisto River. Location: Bamberg County; northerly extension of Binnakers Bridge marl. For description see 342.
OBS-Eocene (Lower Warley Hill Marl).
material: marl. SURVEy no. 342.
Area: Edisto.
Sub-Area: Edisto River. Location: Bamberg County; Binnakers Bridge; northwest bank. Address of Owner or Representative (?): James B. Guess, Denmark, S. C.
OBS-Eocene (Warley Hill). A moderately soft compact marl, of pea-green color, occurs along the southern bank of the South Edisto River, with interrupted exposures extending from near Holomans Bridge to a point 3 miles below Binnakers Bridge, varying in distance from 6 to 9 miles north of Denmark. With its upper surface approximately 6 feet above the zero water line, it extends to an undetermined depth.

The associate plateau south of the river ascends from the bank in terraces to an elevation of 98 feet superior to the zero water level.
(a) The first or upper terrace, comprising about 43 feet, consists of mottled clays with a slight coating of ferruginous pebbles.
(b) The upper portion of the second terrace consists of case-hardened loams, under which dirty-yellow sands, partly crossbedded, prevail to the surface of the marl.
(c) 6 feet of soft pea-green marl, composed of: Lime, 17.08 per cent.; Magnesia, 0.50 per cent.; Alumina, 2.45 per cent.; Ferric Oxide, 2.63 per cent.; Carbonic Acid (CO2), 13.18 per cent.; Silica (and insoluble), 58.21 per cent.; Ignition, 2.77 per cent.; Moisture, 3.35 per cent.; Total, 100.17 per cent. Equivalents: Calcium Carbonate, 29.98 per cent. This marl passes under the zero water line.

Material: marl. SURVEY no. 343.
Area: Edisto. $\quad$ Sub-Area: Limestone Creek. Location: Orangeburg County; 7.5 miles N. $45^{\circ} \mathrm{W}$. of Orangeburg.
OBS-Eocene (Congaree Phase).

MATERIAL: MARL. SURVEY NO. 344 .
Area: Edisto. Sub-Area: Caw Caw Swamp.
Location: Orangeburg County ; Pooser's Hill and "Wannamaker's Lime Hole"; 5.5 miles north of Orangeburg on the Bull Swamp Road.
OBS-Eocene (Barnwell Sands on Warley Hill). The road excavation on the northerly slope of the hill south of Turkey Creek exposes the following section:
(a) 4.5 feet red loam with a thin broken line of pebbles along the base which undulates in conformity with the underlying material. Includes thin lines of green clay.
(b) 2 to 5 feet very fine grained yellow and red sands with pockets and cirrus-like clouds of very fine grained white sands; the pockets contain numerous varieties of shells. This layer rests on the eroded surface of the Warley Hill shales.
(c) 9 feet of soft pea-green shale.
(d) I5 feet of stratified shale partly silicified. Contains numerous fossil molds and casts.
The scarp of the swamp about 0.3 miles southwest of Pooser's Hill exposes a soft green shale (e) in the form of a low grade marl, grading into the fossiliferous shale (d) where the carbonates extinguish. At this locality is the "Wannamaker Lime Hole" where this extremely low grade marl was formerly quarried for agricultural uses.

## MATERIAL: MARL SURVEY NO. 347.

Area: Edisto.
Sub-Area:
Location: Orangeburg County; 12 miles west of Orangeburg, S . C., on South Edisto River.

Address of Owner or Representative (?): Henry S. Spires, Copes, S. C.

Analysis afforded: Lime, 34.82 per cent.; Magnesia, 0.64 per cent.; Alumina, 0.42 per cent.; Ferric Oxide, 0.56 per cent.; Carbonic Acid (CO2), 27.78 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.06 per cent. ; Sulphuric Acid ( $\mathrm{SO}_{3}$ ), o. 28 per cent. ; Silica (and insoluble), 34.7 I pez cent.; Ignition, 0.49 per cent. ; Total, 99.76 per cent. Equivalents: Calcium Carbonate, 6r. 65 per cent.; Calcium Phosphate, 0.13 per cent.; Calcium Sulphate, 0.48 per cent.; Magnesium Carbonate, 1.34 per cent.

Material: marl. SURVEY No. 349.
Area: Edisto.
Sub-Area: Four Hole; Lime Creek.
Location: Orangeburg County; Jenkins Hill; 3 miles S. $25^{\circ} \mathrm{W}$. of Jamison.
Address of Owner or Representative (?): Mrs. Jennie O'Cain, Orangeburg, S. C.
OBS-Eocene (Santee on Warley Hill). Shallow excavations along Lime Creek Swamp expose the Eocene marl, which was formerly utilized to a limited extent as a source of lime. (Ostrea sellæformis is the predominant fossil.)

This marl analyzes: Lime, 52.85 per cent.; Magnesia, 0.88 per cent.; Alumina, 0.38 per cent.; Ferric Oxide, 0.96 per cent.; Carbonic Acid ( CO 2 ), 42.10 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.06 per cent.; Sulphuric Acid ( $\mathrm{SO}_{3}$ ), o. 14 per cent.; Silica (and insoluble), 2.56 per cent.; Ignition, 0.14 per cent.; Total, 100.07 per cent. Equivalents: Calcium Carbonate, 94.00 per cent.; Tri-Calcium Phosphate, 0.13 per cent.; Calcium Sulphate, 0.24 per cent.; Magnesium Carbonate, 1.50 per cent.

## MATERIAL: MARL. SURVEY NO. 355 .

Area: Edisto.
Sub-Arca: Coosawhatchie River.
Location: Hampton County; Gifford Station; on edge of ridge delimiting lowlands west of Coosawhatchie River.
Address of Owner or Representative (?) : W. C. Mauldin, Hampton, S. C.
OBS-Miocene? (Salkehatchie Phase). In a well on a scarp limiting the Coosawhatchie bottoms on the west, the following section is exposed:
(a) 2I feet of a firm mottled red and white clay.
(b) 3 to 8 feet of glauconitic marl. An analysis of the glauconitic marl afforded: Lime, 10.34 per cent.; Magnesia, 1.55 per cent.; Alumina, 2.86 per cent.; Ferric Oxide, 2.52 per cent.; Titanic Oxide, 0.45 per cent. ; Soda ( Na 2 O ), 1.25 per cent.; Potash (K2O), I.16 per cent.; Carbonic Acid (CO2), 0.56 per cent. ; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 6.61 per cent. ; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 3.02 per cent. ; Silica (and insoluble), 65.06 per cent.; Ignition, 2.18 per cent.; Moisture (at $100^{\circ} \mathrm{C}$.), 2.57 per cent.; Total, 100.13 per cent.; affording an equivalent of 14.44 per cent. of Phosphate of Lime; 5.13 per cent. of Sulphate of Lime; which, in conjunction with the 1.16 per cent. of Potash, presents a good agricultural fertilizer for
neighborhood use. This loose glauconitic marl is of a dark gray-green color, and granular texture; it incloses small sharks' teeth and vertebræ, also small dental plates, apparently of the mylobatus.
(c) II feet of hard marl almost entirely silicified by solutions from the overlying glauconite. An analysis of the silicified marl afforded: Lime, 1.46 per cent.; Magnesia, 0.24 per cent.; Alumina, 0.51 per cent.; Ferric Oxide, 3.92 per cent.; Carbonic Acid, 0.24 per cent.; Phosphoric Acid, 0.82 per cent.; Silica (and insoluble), 91.01 per cent.; Ignition, 1.40 per cent.; Total, 99.60 per cent. A stratum of water-bearing sands occurs under the silicified marl.

MATERIAL: MARL. SURVEY NO. 358.
Area: Edisto.
Sub-Area: North Edisto; western bank. Location: Bamberg County; Tuckers Ferry; 5 miles S. $30^{\circ} \mathrm{W}$. of Branchville.
OBS-Eocene (Warley Hill Phase). A moderately soft subgranular marl extends about 4 feet above the zero water line ( + II8.6 feet M. L. T.) at this point. This marl contains: Calcium Carbonate, 43.3 I per cent.; Calcium Phosphate, I. 55 per cent.

MATERIAL: MARL. SURVEY NO. 360 .
Area: Edisto. Sub-Area: East bank of North Edisto River. Location: Orangeburg County ; Box Branch; 5 miles southeast of Branchville.
OBS-Eocene (Warley Hill Phase). A hard, gritty, graygreen marl inclosing many particles of glauconite emerges 3 feet above the zero water line ( +112 feet M. L. T.), and extends from this point interruptedly along both banks of the Edisto River as far south as Sullivans Bridge (No. 374).

Analysis of marl from the Box Branch bank of Edisto River: Lime, 25.44 per cent.; Magnesia, 0.33 per cent.; Alumina, 0.44 per cent.; Ferric Oxide, 0.63 per cent.; Soda ( $\mathrm{Na2O}$ ), 0.19 per cent.; Potash (K2O), 0.07 per cent.; Carbonic Acid, 19.40 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.75 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 0.42 per cent.; Silica (and insoluble), 49.77 per cent.; Ignition, .86 per cent. ; Moisture, 0.70 per cent.; Total, 100.00 per cent. Equivalents: Calcium Carbonate, $43.3^{1}$ per cent.; Tri-Calcium Phosphate, I. 65 per cent.; Calcium Sulphate, 0.71 per cent.; Magnesium Carbonate, 0.67 per cent.
material: marl. survey no. 36i.
Area: Edisto. Sub-Area: East bank of Edisto River. Location: Dorchester County; Utseys Bluff; 5 miles south of Fifty Eight Mile Railway Station.
OBS-Eocene (Santee (?) Phase on Warley Hill Phase). Utseys Bluff ascends precipitously 38 feet above the zero water level ( $\pm$ ror feet M. L. T.) and exposes the following section :
(a) 28 feet of soil, loams and sands, comprising near the lower limit fine grained yellow and buff sub-plastic sands.
(b) 10.50 feet of a soft yellowish-gray marl, including interrupted indurated ledges. A species of balanus constituted the only fossil in evidence. This marl contains: Calcium Carbonate, 57.06 per cent.; Tri-Calcium Phosphate, 1.26 per cent.; Calcium Sulphate, 0.29 per cent.; Magnesium Carbonate, 0.46 per cent.
(c) 1.5 feet of compact, harsh, dirty-green glauconitic marl, similar to marl from Mingo Hill (No. 362), which contains: Cal-- sum Carbonate, 18.60 per cent.; Tri-Calcium Phosphate, 2.46 per cent.; Calcium Sulphate, $0.3^{\text {I }}$ per cent.; Magnesium Carbonate, 1.50 per cent.

## material: marl. survey no. 362 .

Area: Edisto. Sub-Area: West Branch of Edisto River. Location: Colleton County; Mingo Hill; 6 miles S. $50^{\circ} \mathrm{W}$. of Reeves.
ObS-(Warley Hill Phase): The coarse, hard glauconitic marl shows in a tabular ledge 2 feet above low water, and extends about half way across the normal channel. This marl contains: 18.60 per cent. of Calcium Carbonate; 2.46 per cent. of Tri-Calcium Phosphate.
Analysis: Lime, ir. 88 per cent.; Magnesia, 0.71 per cent.; Alumina, o.51 per cent.; Ferric Oxide, 0.98 per cent.; Soda (Na2O), 0.19 per cent.; Potash (K2O), 0.06 per cent.; Carbonic Acid (CO2), 8.97 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 1.12 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o.19 per cent.; Silica (and insoluble), 73.64 per cent.; Ignition, 0.43 per cent.; Moisture, 1.07 per cent.; Total, 99.75 per cent. Equivalents: Calcium Carbonate, 18.60 per cent.; Tri-Calcium Phosphate, 2.46 per cent.; Calcium Sulphate, 0.31 per cent.; Magnesium Carbonate, 1.50 per cent.

## MATERIAL: MARL. SURVEY NO. 365.

Area: Edisto.
Sub-Area: Edisto River. Location: Colleton County; Stokes Bridge; 9 miles S. $10^{\circ}$ W. of Pregnalls; west bank of Edisto River. Address of Owner or Representative (?): Various.

OBS-Eocene (Warley Hill Phase). The western half of the normal channel of the river is occupied by the hard, coarse glauconitic marl, extending about 2.0 feet above the zero water line (土 57 feet M. L. T.).

This marl contains: Lime, 10.51 per cent.; Magnesia, 3.53 per cent.; Alumina, 1.47 per cent.; Ferric Oxide, 4.06 per cent.; Soda ( $\mathrm{Na2O}$ ), 0.39 per cent.; Potash (K2O), 0.25 per cent.; Carbonic Acid (CO2), 8.59 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 3.32 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o. 86 per cent.; Silica (and insoluble), 62.02 per cent.; Ignition, 1.39 per cent.; Moisture, 3.31 per cent.; Total, 99.80 per cent. Equivalents: Calcium Carbonate, 10.64 per cent.; Calcium Phosphate, 7.27 per cent.; Calcium Sulphate, 1.46 per cent.; Magnesium Carbonate, 7.44 per cent.

It represents a good agricultural fertilizer for neighborhood uses, and prevails in large quantities.

Proceeding down the river this marl is observed with its upper surface slightly submerged until it reaches the mouth of Indian Field Creek, below which it is occasionally detected in the bottom of the river to Scotchman's Bluff ; between Scotchman's Bluff and Four Hole Swamp this glauconitic marl again appears above the surface of the zero water level (about 1.4 feet) in a tabular mass, occupying the western side of the channel for nearly one-half mile, below which it is not again observed until the vicinity of Sullivans Bridge is attained.

## MATERIAL: MARL. SURVEY NO. 366.

Area: Edisto.
Sub-Area: Edisto River. Location: Colleton County; Raysors Bridge; one-fourth of a mile below bridge on west side; 8 miles $\mathrm{S} .25^{\circ} \mathrm{W}$. of St. Georges.
OBS-Miocene on Eocene. Immediately below the bridge the hard, coarse glauconitic marl extends about half way across the channel on the west side, and about 2 feet above zero water level ( +7 I feet M. L. T.) : approximately $\mathrm{I}, 200$ feet below the bridge this glauconitic marl under the west bank supports a bed of Miocene marl exhibited in the following section:
(a) 15 feet of mottled clay and sands.
(b) If feet of dun-colored clays in layers, horizontally interstratified with thin seams of sand.
(c) 3 feet of coarse sands, on the much eroded surface of the Miocene marl.
(d) o to 3.25 feet of Miocene marl, consisting of shells in a dark blue soft matrix; marl contains 80.82 per cent. of Calcium Carbonate.
(e) 2 feet and more of harsh, hard glauconitic marl; similar to Stokes Bridge marl (No. 365).

## MATERIAL: MARL. SURVEY NO. 369.

Area: Edisto.
Sub-Area: East bank of Edisto River. Location: Dorchester County; Scotchmans Bluff; 9 miles south of Pregnalls; I mile above mouth of Four Hole Creek.
OBS-Eocene. Beginning one mile above Scotchmans Bluff a few obscure exposures are observed of the soft, porous, yellowwhite marl, which extends superior to the zero water line along the eastern bank of the Edisto River. A slight anticline occurs at Scotchmans Bluff along the upper portion of which the marl emerges about 7 feet above zero water ( $\pm 36$ feet M. L. T.) ; (dips about N. $40^{\circ}$ W., 1.7 feet in 100 feet.)

Analysis: Lime, 15.23 per cent.; Magnesia, o.31 per cent.; Alumina, o. 76 per cent.; Ferric Oxide, 1.42 per cent.; Soda (Na2O), 0.30 per cent.; Potash ( $\mathrm{K}_{2} \mathrm{O}$ ), 0.07 per cent.; Carbonic Acid (CO2), if. 24 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), i. 03 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o.19 per cent.; Silica (and insoluble), 68.53 per cent.; Ignition, o.Io per cent.; Moisture, o. 33 per cent.; Total, 99.51 per cent. Equivalents: Calcium Carbonate, 24.78 per cent.; Tri-Calcium Phosphate, $2.26^{\circ}$ per cent.; Calcium Sulphate, $0.3^{1}$ per cent.; Magnesium Carbonate, 0.65 per cent.

## material: marl. survey no. 370.

Area: Edisto. Sub-Arca: North bank of Four Hole Creek. Location: Dorchester County; i. 5 miles east of Dorchester; highway bridge ; I mile north of Charleston and Columbia Railway bridge (Southern Railway).
OBS-Eocene. The Eocene marl is here exposed extending i6 feet above the zero water level of Four Hole Creek. It contains: Lime, 49.08 per cent. ; Magnesia, o. 67 per cent.; Alumina, o.13 per cent.; Ferric Oxide, 0.52 per cent.; Manganese Oxide (MnO), 0.25 per cent.; Carbonic Acid (CO2), 38.06 per cent.; Phosphoric Acid
( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.30 per cent. ; Silica (and insoluble), 9.86 per cent. ; Ignition, o. 71 per cent.; Total, 99.58 per cent. Equivalents: Calcium Carbonate, 86.59 per cent.; Tri-Calcium Phosphate, o. 66 per cent.

This analysis indicates a marl excellently adapted to the manufacture of hydraulic cement; the South Carolina Railroad, which is within one mile, exposes in the railway excavation on the north side of Four Hole Swamp a good clay for cement requirements.

## MATERIAL: MARL. SURVEY NO. 371.

Area: Edisto.
Sub-Area: Four Hole.
Location: Dorchester County; Old Indigo Vats; 2.5 miles west of Ridgeville.
OBS-Eocene. The marl which is exposed on Four Hole Creek north of the Charleston and Columbia Railway (Southern Railway) is interruptedly exposed, with a gradually declining elevation, above the bed of the stream until it reaches the Edisto River.

MATERIAL: MARL. SURVEY NO. 373.
Area: Edisto.
Sub-Area: Edisto River.
Location: Dorchester County; Givhams Ferry; 7.5 miles S. $20^{\circ} \mathrm{W}$. of Ridgeville.
Address of Owuer or Representative (?): City of Charleston.
OBS-Miocene (Goose Creek and Edisto Phases), on Eocene (Cooper? and Warley Hill Phases). The marl characterizing this bluff extends from a point one mile above Scotchman's Bluff to a point 1.5 miles below Givham's Ferry on the Dorchester bank.

At Givham's Ferry underlying 9 feet of Pleistocene clays, three marl zones are exposed, which aggregate 23.6 feet above the zero water level ( 29 feet M. L. T.), in accordance with the following section:
(a) 9 feet of Pleistocene sands and clay resting with false unconformity on:
(b) 4 feet of porous yellow-white Goose Creek marl, inclosing amusium Mortoni, small rounded pebbles of phosphate rock, small sharks' teeth, etc., its upper surface has been much eroded.
Analysis: Lime, 32.91 per cent.; Magnesia, 0.56 per cent.; Alumina, 1.29 per cent.; Ferric Oxide, o. 77 per cent.; Carbonic Acid (CO2), 25.60 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), o. 92 per cent.; Silica (and insoluble), 35.71 per cent.; Ignition, 1.52 per cent.; Moisture, 0.20 per cent.;

Total, 99.50 per cent. Equivalents: Calcium Carbonate, 56.81 per cent.; Calcium Phosphate, 2.01 per cent.; Magnesium Carbonate, i. 17 per cent.
(c) 5 feet hard, yellow-brown marl (Miocene-Edisto Phase), with its upper part much perforated by pholadæ; the upper part of this layer contains many specimens of the ostrea Haitiense, the lower part pecten eboreus, ostrea disparilis, etc., etc.
Analysis: Lime, 5 I .63 per cent.; Magnesia, o. 65 per cent.; Alumina, o. 38 per cent.; Ferric Oxide, o. 63 per cent.; Carbonic Acid (CO2), 40.71 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), o. 59 per cent.; Silica (and insoluble), 5.19 per cent.; Ignition, 0.38 per cent.; Moisture, 0.04 per cent.; Total, 100.20 per cent. Equivalents: Calcium Carbonate, 90.93 per cent.; Tri-Calcium Phosphate, i. 29 per cent.; Calcium Sulphate, I .36 per cent.
(d) 8 feet soft, yellow marl with its upper surface, on which the miocene rests, undulatory.
Analysis: Lime, 31.45 per cent.; Magnesia, 12.98 per cent.; Alumina, 1. 65 per cent.; Ferric Oxide, o. 92 per cent.; Carbonic Acid ( CO 2 ), 37.97 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 1.08 per cent.; Silica (and insoluble, in. 76 per cent.; Ignition, 0.68 per cent:; Moisture, 1.58 per cent.; Total, 100.07 per cent. Equivalents: Calcium Carbonate, 53.85 per cent.; Calcium Phosphate, 2.37 per cent.; Magnesium Carbonate, 27.26 per cent.
(e) 6.5 feet soft, drab marl passing below water line; this marl contains: Lime, 32.31 per cent.; Magnesia, i. 89 per cent.; Alumina, 0.95 per cent.; Ferric Oxide, 0.63 per cent.; Soda ( Na 2 O ), o. 39 per cent.; Potash (K2O), o.11 per cent.; Carbonic Acid (CO2), 26.30 per cent.; Phosphoric Acid $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 1.03 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 0.36 per cent.; Silica (and insoluble), 33.32 per cent.; Ignition, 1.54 per cent.; Moisture, i.Io per cent.; Total, 99.93 per cent. Equivalents: Calcium Carbonate, 55.05 per cent.; Tri-Calcium Phosphate, 2.26 per cent.; Calcium Sulphate, 0.61 per cent.; Magnesium Carbonate, 3.97 per cent.

MATERIAL: MARL. SURVEY NO. 374.
Area: Edisto.
Location. Dorchester County; Sullivans Bridge; 15 mile S. $65^{\circ}$ W. of Summerville; approximately 99 miles by river course
from the Charleston and Savannah Railway bridge; 14.25 feet. Elevation (M. L. T.).
OBS-Eocene (Warley Hill Phase). Approximately 3 miles above Sullivans Bridge the hard, harsh glauconitic marl, observed near the zero water level of the Edisto River, interruptedly extending from Box Branch (360) to a point near Scotchmans Bluff (369), reappears and continues to a point 0.7 mile above Sullivans Bridge, where it emerges one foot above the zero water level; from this elevation ( 14.25 feet M. L. T.) it rapidly declines below water level, and is not again observed southerly along the Edisto River. At Beech Bank ( 6 feet elevation M. L. T.) the overlying yellowwhite marl is similar to that exhibited at Scotchmans Bluff and at the base of the bluff at Givhams Ferry, this constitutes its only appearance below Sullivans Bridge; its surface is at an elevation of II. 3 feet (M. L. T.) ; otherwise the exposures of consistent formations along the 19 miles, by river course, from Sullivans Bridge to the Charleston and Savannah Railway bridge, are confined to the Mio-Oligocene and Miocene formations.

MATERIAL: MARL. SURVEY NO. 375.
Area: Edisto.
Sub-Area: Edisto River. Location: Colleton County; Beech Bank; 6.7 miles N. $30^{\circ}$ E. of Jacksonboro; west bank of Edisto, 0.7 mile above Parkers Ferry; elevation of zero water level 6 feet (M. L. T.).
obS-Uligucene on Eocene. From the point 1.5 miles below Givham's Ferry the yellow-white marl disappears until we arrive one mile north of Parkers Ferry, where this marl is observed gradually emerging in a short fold from the water level ( +6 feet M. L. T.) , above which it attains a height of 5.3 feet at Beech bank, with a highly irregular surface supporting Mio-Oligocene siliceous shales, which in turn (much eroded) support an irregular layer of mixed phosphate pebbles and quartz cobbles, underlying about one foot of laminated clay.

The Parachucla shales contain: Lime, 3.28 per cent.; Magnesia, 0.21 per cent.; Alumina, 3.62 per cent.; Ferric Oxide, 2.67 per cent.; Soda ( Na 2 O ), o. 35 per cent.; Potash, o. 22 per cent.; Carbonic Acid (CO2), o.40 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 2.58 per cent.; Silica (and insoluble), 80.23 per cent.; Ignition, 2.95 per cent.; Moisture, 3.OI per cent.; Total, 99.52 per cent. Equivalents: Calcium Carbonate, o. 39 per cent.; Tri-Calcium Phosphate, 5.64 per cent.; Magnesium Carbonate, 0.44 per cent.

MATERIAL: MARL.
Area: Edisto.
Location: Colleton County. The Dividers; 2 miles above Charles ton and Savannah Railway Bridge at Pon Pon Station.
ObS-Miocene (Edisto Phase). On the east side of the small island, dividing the river, marl occurs about 2 feet below the zero water level; this marl appears under the land of the adjacent banks of the river, as the characteristic Miocene marl, which, in favorable situations elsewhere, has been phosphatized to form "phosphate rock."

This marl is very tough and in places almost as hard as limestone, but, having been more or less perforated by pholadæ, is not so difficult to detach.

While the thickness of this material at this point was not determined, it has nowhere been observed with a greater thickness than 4.5 feet. The underlying marl conforms to the soft Ashley-Cooper type.
The elevation of the Edisto marl at Givhams Ferry is 52.6 feet M. L. T.; at "The Dividers" it is approximately (-) 2.0 feet M. L. T.

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\text { material: marl. SURVEY no. } 395 \text {. }
$$

Area: Edisto. Sub-Area: Ashley River; Captains Creek. Location: Dorchester County; Captains Creek; 1.8 miles S. $25^{\circ} \mathrm{W}$. of Ridgeville.
Address of Oumer or Representative (?): Reuben Owens, Ridgeville, S. C.
OBS-Neocene on Eocene. In the swamp underlying 3 feet of soil occurs:
(a) A searm of fossiliferous marl clay (inclosing scattered particles of phosphate rock) ; this glauconitic layer extends southerly, gradually losing its identity, probably by virtue of a chemical alteration which has yielded phosphoric acid to contribute to the phosphatization of the thin layer of Miocene marl constituting the basis of the South Carolina "Phosphate Rock"; the insoluble residue of the glauconitic earth perhaps constitutes the matrix in which the phosphate rock is embedded.
The glauconitic mass contains in part: Lime, 11.43 per cent.; Magnesia, 0.54 per cent.; Alumina, ir.21 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 7.83 per cent.; Silica (and insoluble), 57.27 per cent.; Ignition, 7.49 per cent.; Moisture, 4.18 per
cent.; Total, 99.95 per cent. (Equivalent: Calcium Phosphate, 17.06 per cent.)
(b) Underlying the glauconitic mass occurs a yellow-white marl containing: Calcium Carbonate, 88.07 per cent.; Calcium Phosphate, i. 62 per cent.
material: marl. SURVEY no. 396.
Area: Edisto.
Sub-Area: Cypress Swamp.
Location: Berkeley County; north of Jedburg.
OBS-Eocene (Ashley-Cooper Phase).
material: marl. survey no. 398.
Area: Edisto.
Sub-Area: Ashley River. Location: Dorchester County; Schultzes Lake; 1 mile above bridge; 5 miles S. $40^{\circ} \mathrm{W}$. of Summerville.
OBS-Ashley-Cooper. The bed and east bank of the Ashley River, one mile above Slans Bridge, exposes a bed of marl which extends with interrupted exposures from Schultzes Lake to Bees Ferry, south of which it rapidly declines below the level of low tide by reason of the scouring effect of the Gulf Stream current, which prevailed prior to the Miocene.

MATERIAL: MARL. SURVEY NO. 400.
Area: Edisto. Location: Dorchester County; Bacons Bridge; 5.5 miles S. $15^{\circ} \mathrm{W}$. of Summerville.
OBS-Eocene (Ashley-Cooper Phase). The Ashley River first exposes the Ashley marl near that portion of its local enlargement designated Schultzes Lake, from which point this marl is interruptedly exposed in the banks of Ashiey River as far down as Bees Ferry. At Bacons Bridge the marl ascends about 10.5 feet above the level of mean low tide.

MATERIAL: MARL. SURVEY NO. 402.
Area: Edisto.
Location: Berkeley County; Ingleside Station.
Address of Owner or Representative (?): Ingleside Mining Co., Charleston, S. C.
obS-Eocene (Cooper Phase). The marl which is exposed in the bed of the swamps of this locality, at an elevation of 10 feet M. L. T., occurs with 17 feet of overburden under the ridge where
the quarry is located. The overburden consists successively with depth as follows:
(a) 2 feet of loams.
(b) 12 feet of stratified clays of alternate yellow and drab bands; separated by thin lines of mica.
(c) 2 feet of very fine grained plastic sands.
(d) i foot of coarse water-bearing sands.
(e) 91 feet dark greenish and drab marl, inclosing dark, fine particles of phosphatic material, pecten Claibornensis, etc.
This marl contains: Calcium Carbonate, 74.40 per cent.; TriCalcium Phosphate, 5.40 per cent.

## MATERIAL: MARL. SURVEY NO. 4O3.

Area: Edisto.
Sub-Area: Ashley River.
Location: Dorchester County ; Priestlys Bluff ; 4.6 miles S. $30^{\circ} \mathrm{W}$. of Ladson.
Address of Owner or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.
OBS-Eocene (Ashley Phase). The marl is exposed in the east bank of Ashley River, emerging about io feet above M. L. Tide; the overburden varies from nil to 20 feet.

MATERIAL: MARL SURVEY NO. 404.
Area: Edisto.
Location: Dorchester County; Greggs; 4.7 miles S. $27^{\circ}$ W. of Ladson.
Address of Oumer or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.
OBS-Miocene (Edisto Phase) on Eocene (Ashley Phase). The Ashley marl at this locality is capped with a phosphatized form of typical Miocene marl (Ecphora). This represents the upper limit of workable phosphate deposits. At this point the phosphatization of the marl has not been so complete as obtained at lower points; the relative phosphatization being represented by 54 and 60 per cent. of Tri-Calcium Phosphate.

MATERIAL: MARL. SURVEY NO. 405.
Sub-Area: Ashley River.
Area: Edisto.
Location: Dorchester County; Ashley Marl Works; 3.6 miles S. W. of Sineath Station.
Address of Owner or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.

OBS-Miocene (Edisto Phase) on Eocene(?) (Ashley Phase). The surface of the ground at this point is about 8 feet above M. L. T. The quarry affords the following exposure:
(a) 3.0 feet of loam.
(b) 0.5 feet of phosphate rock imbedded in a dark aluminous matrix.
(c) 2.5 feet of a mucky aluminous mass, containing: Lime, 6.10 per cent.; Magnesia, o.20 per cent.; Alumina, 7.1I per cent.; Ferric Oxide, 2.36 per cent.; Carbonic Acid, 1.60 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 3.66 per cent.; Silica (and insoluble), 73.13 per cent.; Ignition, 2.96 per cent. ; Moisture, 2.75 per cent.; Total, 99.87 per cent. Equivalents: Calcium Carbonate, 3.14 per cent.; Tri-Calcium Phosphate, 8.00 per cent.; Magnesium Carbonate, 0.42 per cent.
(d) 10.0 feet of dark green drab marl, inclosing scattered fine rounded particles of phosphatic matter (but with no observable fossils) ; rubs grainy, with slight plasticity, when wet.
Analysis: Lime, 48.80 per cent.; Alumina, i.1I per cent.; Ferric Oxide, 0.95 per cent.; Carbonic Acid (CO2), 34.50 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 4.13 per cent.; Silica (and insoluble), 8.56 per cent.; Ignition, o. 62 per cent.; Moisture, r. 19 per cent.; Total, 99.86 per cent. Equivalents: Calcium Carbonate, 78.41 per cent.; Tri-Calcium Phosphate, 9.02 per cent.
(e) 18.0 feet of marl physically similar to overlying marl excepting in content of smaller quantity of microscopic particles of phosphate rock.
Analysis: Lime, 43.41 per cent.; Magnesia, o.31 per cent; Alumina, 1.88 per cent.; Ferric Oxide, o.95 per cent.; Carbonic Acid (CO2), 32.79 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 1.76 per cent.; Silica (and insoluble), 15.45 per cent.; Ignition, 1.68 per cent.; Moisture, 1.29 per cent.; Total, 99.52 per cent. Equivalents: Calcium Carbonate, 73.77 per cent. ; Tri-Calcium Phosphate, 3.85 per cent.; Magnesium Carbonate, o. 65 per cent.
(f) Broken layer of rounded quartz pebbles $<21 / 2$ inches in diameter, separating the Ashley from the Cooper marl.
(g) 22.0 feet of light gray smooth plastic marl.

Analysis: Lime, 41.80 per cent.; Magnesia, i. 20 per cent.; Alumina, 2.74 per cent.; Ferric Oxide, i.IO per cent.; Carbonic Acid (CO2), 33.74 per cent.; Phosphoric Acid
( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), o. 45 per cent.; Silica (and insoluble), 15.61 per cent.; Ignition, I.31 per cent.; Moisture, 2.46 per cent.; Total, $100.4^{1}$ per cent. Equivalents: Calcium Carbonate, 73.70 per cent.; Tri-Calcium Phosphate, 0.98 per cent. ; Magnesium Carbonate, 2.5 I per cent.
(h) 15.5 feet of smooth gray marl.

Analysis: Lime, 44.84 per cent.; Magnesia, 1.29 per cent.; Alumina, 2.20 per cent.; Ferric Oxide, o. 63 per cent.; Carbonic Acid (CO2), 36.49 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.16 per cent.; Silica (and insoluble), ir. 69 per cent.; Ignition, 0.95 per cent.; Moisture, 1.58 per cent.; Total, 99.83 per cent. Equivalents: Calcium Carbonate, 79.73 per cent.; Tri-Calcium Phosphate, o. 35 per cent.; Magnesium Carbonate, 2.70 per cent.
This stratum was quarried to a depth of 80 feet (M. L. T.), where it is reported a layer of loose shells occurred.


FIG. II.-ASHLEY MARL PIT.

## MATERIAL: MARL. SURVEY NO. $4051 / 2$.

Area: Edisto. Sub-Area: Western bank of Ashley River. Location: Charleston County; Clements Bluff; formerly Cattel's Pluff: 5 miles N. $50^{\circ}$ W. from Drayton Statio: (Bees Ferry).

OBS-Eocene (Ashley-Cooper Phase). Almost opposite Ashley marl pit, with which it is presumably equivalent in character.

MATERIAL: MARL. SURVEY NO. 406.
Area: Edisto.
Sub-Area: Ashley River. Location: Charleston County; Runnymede; 4.5 miles N. $50^{\circ} \mathrm{W}$. of Drayton Station (Bees Ferry).
Address of Owner or Representative (?): Capt. C. C. Pinckney, Charleston, S. C.
OBS-Miocene (Edisto Phase) on Eocene (Ashley-Cooper Phase). The marl is exposed in a bluff emerging about 10.5 feet above M. L. Tide.

MATERIAL: MARL. SURVEY NO. 407.
Area: Edisto.
Location: Charleston County; Lambs; 3 miles N. $30^{\circ}$ W. of Drayton Station (Bees Ferry).
Address of Owner or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.
ObS-Miocene (Edisto Phase) on Eocene (Ashley-Cooper Phase). Marl appears on bluffs on both sides of the river about 7 feet above the level of low tide, and immediately underlies the phosphate bed.

$$
\text { MATERIAL: MARL. SURVEY NO. } 410 .
$$

Area: Edisto: Sub-Area: West bank of Ashley River. Location: Charleston County; Bees Ferry (Drayton Station). Address of Owner or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.
ObS-Miocene (Edisto Phase) on Eocene (Ashley-Cooper Pifase). This is the lowest point at which marl is exposed on the banks of the Ashley River superior to low tide level, and represents the upper limit of an ancient beach line (coursing approximately east and west), south of which the marl has been scoured away by a former Gulf Stream action to a depth of 40 feet below M. L. T. within a distance of two miles. The following section is from this locality, (exhibited in Plate No. 12) :
(a) 3 feet of soil.
(b) I. 3 feet of phosphate rock in a mucky matrix; matrix contains: Alumina, 7.11 per cent.; Ferric Oxide, 2.36 per cent.; Silica, 73.13 per cent.; Calcium Carbonate, 3.14 per cent.; Calcium Phosphate, 8.00 per cent.
(c) 4.5 feet above M. L. T. (and extending downwards) occurs a green-drab marl of typical Ashley phase, inclosing minute particles of rounded Calcic Phosphate. Marl analysis: Lime, 29.44 per cent.; Magnesia, 0.65 per cent.; Carbonic Acid (CO2), 16.29 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 7.00 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o.58 per cent. Equivalents: Calcium Carbonate, 37.04 per cent.; Calcium Phosphate, 15.28 per cent.; Calcium Sulphate, 0.97 per cent. ; Magnesium Carbonate, I. 36 per cent.

## MATERIAL: MARL. SURVEY NO. 411 .

Area: Edisto. Sub-Area: East bank of Ashley River. Location: Charleston County; Faber Place; 0.6 mile east of Drayton Station (Bees Ferry).
Address of Ower or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.
OBS-Post-Pliocene on Miocene on Eocene (Ashley-Cooper Phase). This constitutes an easterly extension of the Bees Ferry ancient beach line; Ashley marl supports a thin layer of phosphatized Miocene marl, on which rests a thin bed of Pleistocene shells covered by very fine grained sands and loams of yellow, white and red color.

$$
\text { MATERIAL: MARL. SURVEY NO. } 4 \text { II I/2. }
$$

Area: Edisto.
Sub-Area: Cooper River.
Location: Charleston County; Swamp; o.i mile south of Old Cohen Place; 0.6 mile west of Goodrich ( 8 -mile post, Southern Railway) ; Charleston-Columbia Railway.
Address of Owner or Representative (?) : Virginia-Carolina Chemical Co., Charleston, S. C.
OBS-Miocene (Goose Creek Phase) on Miocene (Edisto Pbase) on Eocene (Ashley Phase). Five feet below the surface of the swamp, about io feet south of the central drain and about 60 feet east of the causeway leading to the "Old Cohen House," the northerly littoral line of the Goose Creek marl is exposed abruptly feathering to nil, and delimiting on the south the available phosphate beds. A bed of phosphate rock ( 15 inches thick) prevails within 3 feet of the edge of the Goose Creek marl; the nodules are incorporated to a limited extent along the littoral area of the Goose Creek marl; and a few scattered nodules appear on the upper surface of the Goose Creek marl, along the littoral line. Along the southerly drain-
age ditch of the swamp the Goose Creek marl was shown by a pit to exceed 7 feet in thickness.

MATERIAL: MARL.
Area: Edisto.
Location: Charleston County; Corn Hill; 2.8 miles west of Six Mile House; east side of Ashley River.
OBS-Pleistocene (Wando Phase).
(a) 4.0 feet of sticky drab clay.
(b) 4.0 feet of white sands.
(c) 3.0 feet of blue sands.
(d) I.o feet of white sands.
(e) 1.5 to 2 feet of loose decayed shells mixed with rounded phosphate pebbles. (Accabee Phase).
(f) 0.5 to 0.6 feet of soft marl.
(g) 2.0 feet of solid, very hard marl.
(h) 8.0 feet of sands, marly towards bottom of pit.
material: marl. Survey no. 414.
Area: Edisto.
Location: Berkeley County; Santee Canal OBS-Eocene (Cooper Phase). Marl exposed in bed of canal.

## material: marl. Survey no. 418.

Area: Edisto. Sub-Area: Cooper River; Wadboo River. Location: Berkeley County; Bulls Head; 4 miles N. $80^{\circ}$ E. of Moncks Corner; $3 / 4$ mile northeast of Biggin Church parsonage.
OBS-Eocene (Cooper Phase). At an elevation of 36 feet (M. L. T.) the northerly exposure of this marl appears along an abrupt scarp bordering Bulls Head Swamp, a tributary which enters Wadboo Creek above the Biggin Church parsonage. The surface of this marl gradually declines southerly to Strawberry Ferry, beyond which it passes below tide level.
(For analysis see No. 419).

$$
\text { MATERIAL: MARL. SURVEY No. } 419 .
$$

Area: Edisto. Sub-Area: Cooper River; Wadboo River. Location: Berkeley County; Biggin Church parsonage; 2.6 miles S. $70^{\circ}$ E. of Moncks Corner.

Address of Ozener or Representative (?): Isaac Ball, Charleston, S. C.

OBS-Eocene (Cooper Phase). This marl emerges 32 feet above low water and includes a capping of indurated marl 1.7 feet thick.
Analysis of average sample afforded: Lime, 45.38 per cent.; Magnesia, 0.38 per cent.; Alumina, 0.50 per cent.; Ferric Oxide, I. 34 per cent.; Soda (Na2O), o.4I per cent.; Potash (K2O), o. 30 per cent.; Carbonic Acid ( CO 2 ), 35.13 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), r .00 per cent.; Silica (and insoluble), 12.76 per cent.; Ignition, 1.46 per cent.; Moisture, 0.85 per cent.; Total, 99.51 per cent. Equivalents: Calcium Carbonate, 78.94 per cent.; Tri-Calcium Phosphate, 2.18 per cent.; Magnesium Carbonate, 0.77 per cent.
The thin indurated ledge capping the soft marl is probably the feather-edge of the Miocene marl, which more southerly assumes the typical form of the Goose Creek marl.

MATERIAL: MARL. SURVEY NO. 423.
Area: Edisto. Sub-Area: W. br. of W. bk. of Cooper River. Location: Berkeley County; Gippy; 2 miles S. $26^{\circ}$ E. of Moncks Comer.
Address of Owner or Representative (?): S. P. Stoney, Moncks Corner, S. C.
OBS-Eocene (Cooper Phase). The soft yellow to drab marl is interruptedly exposed along the scarp bordering the rice field at an elevation of 17.5 feet above M. L. T.
(a) The upper portion merges into an indurated ledge about 4 feet thick, which is probably the litoral aspect of the Miocene; it contains numerous shells of the ostrea disparilis, locally designated ostrea Raveneliana; proceeding southerly to Wappaoolah Creek (No. 428), this upper marl presents a few of the distinctive Miocene forms of the Goose Creek type of marl, typically developed from the mouth of Goose Creek to a point about 1.5 miles south of the water works dam.
(b) The lower portion is similar to the marl exhibited at Steep Bluff (No. 42 I ; see analysis).

MATERIAL: MARL SURVEY NO. 424.
Area: Edisto. Sub-Area: W. bk. of W. br. of Cooper River. Location: Berkeley County; Lewisfield; 2.3 miles S. $13^{\circ}$ E. of Moncks Corner.
Address of Owner or Representative ( ?) : Charles Stevens, Moncks Corner, S. C.

OBS-Eocene (Cooper Phase). The marl emerges 12 feet above low tide at this point; its surface has been considerably eroded.

MATERIAL: MARL.

SURVEY NO. 425.
Area: Edisto.
Sub-Area: Cooper River. Location: Berkeley County; Mulberry Castle; western branch of Cooper River (west bank) ; i. 3 miles S. $23^{\circ}$ E. of Oakley. Address of Owner or Representative (?): Major T. G. Barker, Charleston, S. C.
OBS-Eocene (Cooper Phase). This bold bluff exposes marl extending 15 feet above M. L. Tide, with the surface much eroded and supporting from io to 30 feet of sands and loams; a swampy depression, north of the bluff, contains a small deposit of glauconitic earth inclosing a small quantity of phosphate rock.

MATERIAL: MARL. SURVEY NO. 427.
Area: Edisto.
Sub-Area: Cooper River.
Location: Berkeley County; Mepkin; western branch of Cooper River (east bank); 4 miles N. $54^{\circ}$ E. of Strawberry.
OBS-Eocene (Cooper Phase). An abrupt bluff extends about 3I feet above M. L. T. and is constituted as follows:
(a) 2 feet of soil.
(b) 12 feet of stratified clays.
(c) 3 feet of coarse, harsh sands and gravels, including rounded pebbles ( $<2$ inches in diameter).
(d) 9 feet of granular marl separated by an indurated layer, inclosing disks of limestone, from the underlying bed of marl, which is similar to the upper marl.

MATERIAL: MARL. SURVEY NO. 428.
Area: Edisto. Sub-Area: Cooper River; Wappaoolah Crk. Location: Berkeley County; Wappaoolah; 3.2 miles N. $52^{\circ}$ E. of Strawberry Station.
Address of Owner or Representative (?): Frank Heyward, Oakley, S. C.
OBS-Miocene (Goose Creek Phase) on Eocene (Cooper Piase). The marl occurs with an overlying bed of Miocene marl; the Miocene marl contains: Calcium Carbonate, 78.52 per cent.; Magnesium Carbonate, 0.15 per cent.; Oxides of Iron and Alumina, 7.02 per cent.; Silica (and insoluble), 12.90 per cent. (Copy of analysis by Crowell \& Peck.)

MATERIAL: MARL. SURVEY NO. 429.
Area: Edisto. Sub-Area: E. bk. of W. br. of Cooper River. Location: Berkeley Coụnty; Strawberry Ferry; 4 miles N. $82^{\circ}$ E. of Strawberry.
obS-Eocene (Cooper Phase). The marl is exposed in the edge of the bluff about 7.5 feet above M. L. Tide. The overburden of sands and loams exceeds 25 feet at this point.

## material: marl survey no. 432.

Area: Edisto.
Sub-Area: Cooper River; eastern branch. Location: Berkeley County; Hugers Bridge; 11.5 miles N. $75^{\circ}$ E. of Strawberry Station.
OBS-Eocene (Cooper Phase). The marl is exposed in the beds of the swamps in this vicinity and along the banks of the river slightly above the level of high tide.

MATERIAL: MARL. SURVEY NO. 433.
Area: Edisto. Sub-Area: Western bank of Cooper River. Location: Berkeley County; Richmond Plantation; eastern branch of Cooper River ; 8 miles S. $88^{\circ}$ E. of Strawberry Station.
OBS-Eocene (Cooper Phase). Marl is exposed to a limited extent with a heavy overburden.
material: marl. survey no. 435.
Area: Edisto. Sub-Area: W. bk. of W. br. of Cooper River. Location: Berkeley County; Dean Hall; 4.2 miles S. $80^{\circ}$ E. of Strawberry Station.
Address of Owener or Representative (?): James P. Carson, Oakley, S. C.
OBS-Eocene (Cooper Phase). The surface of the marl passes below the water level and supports about 4 feet of laminated white clay, over which rest loams and sands.

$$
\text { MATERIAL: MARL. SURVEY NO. } 436 \text {. }
$$

Area: Edisto.
Sub-Area: Cooper River. Location: Berkeley County; The Grove; east side; 8 miles N. $70^{\circ}$ E. of Otranto.

OBS-Miocene (Goose Creek Phase). An old canal formerly exposed Miocene marl (Goose Creek) at this point; scant traces are now in evidence. Noted as the locality at which Dr. Ravenel and Messrs. Tuomey and Holmes collected fossils.
material: marl. SURVEy no. 438.
Area: Edisto. Sub-Area: Cooper River; Fosters Creek. Location: Berkeley County; Liberty Hall; 4 miles N. $65^{\circ}$ E. of Otranto.
Address of Owner or Representative (?) : Colin K. Grant, Charleston, S. C.
OBS-Pleistocene on Miocene. The surface of the marl at this point is intermediate to the levels of high and low tide. A bed of much rounded phosphate pebbles occurs on its surface, supporting a thin layer of shells, over which occurs about 5 feet of a tenacious stratified buff clay, underlying clay, loam and sands.

Material: marl. SURVEy No. 44I.
Area: Edisto. Sub-Area: Cooper River; Goose Creek. Location: Berkeley County; Smith Place (Yeamans Hall) ; west side of creek ; N. $55^{\circ}$ E. of Saxon.
Address of Owner or Representative (?) : Mrs. Edward Durant, Charleston, S. C.
OBS-Miocene (Goose Creek Phase). An abrupt bluff on the southwest bank of Goose Creek emerges 21 feet above M. L. Tide and affords the following section:
(a) 14 feet of soil, sand and yellow-red clay.
(b) 7 feet of soft, yellow, highly porous marl, inclosing many species of echini, large specimens of the amusium Mortoni and characteristic Miocene shells.
Analysis of marl: Lime, 47.86 per cent.; Magnesia, o. 52 per cent.; Alumina, 0.43 per cent.; Ferric Oxide, o. 32 per cent.; Carbonic Acid (CO2), 37.50 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), o. 7 I per cent.; Silica (and insoluble), 10.33 per cent.; Ignition, r.I3 per cent.; Moisture, i. 19 per cent.; Total, 99.99 per cent. Equivalents: Calcium Carbonate, 83.95 per cent.; Tri-Calcium Phosphate, I. 55 per cent.; Magnesium Carbonate, r. 09 per cent.
This exposure is near, and the marl similar, to that described by Tuomey as occurring on the Smith place near the Yeamans Hall spring.

$$
\text { MATERIAL: MARL. SURVEY NO. } 44 \mathrm{I} \text { I/2. }
$$

Area: Edisto.
Sub-Area: Cooper River. Location: Berkeley County; Charleston Water Works; west bank of Goose Creek ; 0.4 mile northeast of Saxon.

Address of Owner or Representative (?): Charleston Light and Water Co., Charleston, S. C.
ObS--Pleistocene (Ten Mile Phase) on Eocene (Cooper Phase). On the west bank of Goose Creek about 1.5 miles east of the Yeamans Hall tract (No. 44I) the Cooper marl emerges in a much eroded short fold 12 feet superior to M. L. Tide, and limits the typical Goose Creek (Miocene) marl to the south. The Cooper marl here supports a thin seam of reworked phosphatic pebbles, over which occur stratified yellow, red and white sands of very fine grain, interlaminated with occasional thin seams of a drab clay; this overburden of "Ten Mile Sands" aggregates about 14 feet in thickness. Analysis of an average sample of this marl afforded:
Lime, 26.80 per cent.; Magnesia, 3.9 I per cent.; Alumina, 0.83 per cent.; Ferric Oxide, 1.38 per cent.; Soda (Na2O), 0.29 per cent. ; Potash (K2O), o. 39 per cent.; Carbonic Acid (CO2), 21.88 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o. 34 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 3.03 per cent.; Silica (and insoluble), 37.06 per cent.; Ignition, i. 65 per cent.; Moisture, 2.07 per cent.; Total, 99.63 per cent. Equivalents: Calcium Carbonate, 40.99 per cent.; Tri-Calcium Phosphate, 6.62 per cent.; Calcium Sulphate, 0.58 per cent.; Magnesium Carbonate, 7.40 per cent.

## MATERIAL: MARL. SURVEY NO. 444.

Area: Edisto.
Sub-Area: Cooper River.
Location: Charleston County; Navy Yard; 1.5 miles east of Ashley Junction.
Address of Ozener or Representative (?): United States.
OBS-Pleistocene on Eocene.
(a) 1.o feet-Fine grained yellow Sea Island sands.
(b) 9.0 feet-Yellow to red clay loam stratified near base.
(c) 10.5 feet-Water-bearing sands.
(d) 0.3 feet-Reworked phosphate rock in rounded lumps on eroded surface of Cooper marl (e).
(e) 14.0 feet-Cooper marl; greenish-gray and semi-plastic when wet, yellow when dry; incloses pecten Claibornensis; extends to much greater depth below dry dock.

MATERIAL: MARL. SURVEY NO. 453.
Area: Edisto.
Sub-Area: Rantowles Creek.
Location: Charleston County.
OBS-Miocene (Edisto Phase). The Ashley marl underlies the phosphate rock along a plain slightly undulating between low and high tide levels.

MATERIAL: MARL. SURVEY NO. 456.
Area: Edisto.
Sub-Area: Stono River. Location: Charleston County; Cherokee Mines; north bank of Stono River; 6 miles N. $5^{\circ} \mathrm{W}$. of Charleston.
Address of Owner or Representative (?): Virginia-Carolina Chemical Co., Charleston, S. C.
OBS-Pleistocene (Bohicket and Wadmalaw Phases), on Miocene (Edisto Phase), on Eocene (Ashley Phase). The surface of the marl approximately conforms the level of low tide on the north side of Stono River, but rapidly declines southerly.

Material: marl. SURVEy no. 457.
Area: Edisto.
Sub-Area: Stono River.
Location: Charleston County; Bolton Mines; 0.3 mile south of Johns Island Station.
Address of Owner or Representative (?): P. Bradley, Charleston, S. C.

OBS-Pleistocene (Bohicket and Wadmalaw Phases) on Miocene (Edisto Phase), on Eocene (Ashley-Cooper Phase).
The following section is exposed:
(a) 4 feet of vegetable muck.
(b) 5 feet of green glauconitic clay-sands. $\}$ Bohicket Phase.
(d) 2 feet of post-Pliocene shells. (Wadmalaw Phase.)
(e) 2 feet phosphate rock. Phosphate rock represents a bed of Miocene (Ecphora) vesicular marl, which in many places has not been phosphatized. Stono River opposite Wappo Cut presents an area of the unphosphatized marl. This marl contains: Lime, 44.88 per cent.; Magnesia, 1.09 per cent.; Alumina, 63 per cent.; Ferric Oxide, 2.07 per cent.; Titanic Oxide, trace; Manganese Oxide, trace; Soda (Na2O), o.18 per cent.; Potash ( K 2 O ), 0.27 per cent.; Carbonic Acid (CO2), 29.30 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 5.15 per cent.; Sulphuric Acid ( $\mathrm{SO}_{3}$ ), I. 50 per cent.; Silica (and insoluble), 14.07 per cent.; Ignition, 0.17 per cent.; Moisture, 1.07 per cent.; Total, roo. 38 per cent. Equivalents: Calcium Carbonate, 66.66 per cent.; Bone Calcium Phosphate, ir. 25 per cent.; Calcium Sulphate, 2.55 per cent.
The phosphatized marl contains: Tri-Calcic Phosphate, 60 per cent.

The phospate rock is not of concretionary structure, but consists of a bed of phosphatized marl, invaded by a stiff, dark calcareous mud, inclosing rounded pebbles of phosphate rock and quartz, and the fossil remains of many vertebrates. The phosphatized mass is extremely irregular and even jagged in outline, and in many instances is honeycombed with irregular spaces; the phosphate rock is distinctly characterized by the almost uniform inclusion of casts and molds of the original Miocene marl; vertebrate remains, being very rarely included, although freely existing in the mud matrix.
Occasional mollusks as remote as the Eocene (crassatella alta, etc.,) were mechanically introduced in some estuaries prior to the phosphatizing process, but no distinctively Pliocene invertebrates have been observed in these beds, in the phosphatized form.

|  | Carolina ph | sphate rock. |  |
| :---: | :---: | :---: | :---: |
| Phosphoric Acid | 25 to 28 p.c. | Sesquioxide of Iron | Ito 4 p.c. |
| Carbonic Acid | $22^{1 / 2}$ to 5 p.c. | Fluorine | 1 to 2 p.c. |
| Sulphuric Acid | $1 / 2$ to 22 p.c. | Sand and Silica | 4 to 12 p.c. |
| Lime | 35 to 42 p.c. | Organic matter and |  |
| Magnesia | traces to 2 p.c. | combined water | 2 to 6 p.c. |
| Alumina | traces to 2 p.c. | Moisture | to 4 p.c. |
| (Proceedings | Agricultural Soci | ty of South Carolina | December |
| 2, 1879. Lectur | re by C. U. She | d, Jr.) |  |

## material: marl. survey no. 458.

Area: Edisto.
Sub-Area: Stono River.
Location: Charleston County; St. Andrews Mine; 0.3 mile southwest of Johns Island Station.
Address of Owner or Representative (?): Estate Fred G. Latham, Charleston, S. C.
OBS-Pleistocene (Bohicket and Wadmalaw Phases) on Miocene (Edisto Phase), on Eocene (Ashley Phase).
Similar to the Bolton deposit (No. 457), but is not covered by Post-Pliocene shells.

## material: marl. survey no. 460 .

Area: Edisto.
Location: Colleton County; Wide-Awake; east of Church Flats; 2 miles $\mathrm{S} .20^{\circ} \mathrm{W}$. of Rantowles.

OBS-Miocene (Edisto Phase) on Eocene (Ashley Prase). Thin bed of marl, consisting of loose post-Pliocene shells, overlies limited patches of phosphate rock.
material: marl. survey no. 464.
Area: Edisto.
Sub-Area: Wadmalaw River.
Location: Colleton County; Youngs Island; Simmons Bluff.
OBS-Pleistocene (Bohicket Phase on Wadmalaw Phase). 2.0 feet sandy soil.
6.0 feet red loam; proportion of clay increasing with depth.
I. 5 feet white plastic sandy clay.
1.5 feet fine white sands with very small dark grains of phosphate? matter.
3.0 feet green glauconitic clay, inclosing a few casts. Alteration in parts has afforded a limonitic cement indurating subjacent sands.
3.0 feet loose Pleistocene shells showing above M. L. T.

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\text { MATERIAL: MARL. SURVEY NO. } 474 .
$$

Area: Edisto. Sub-Area: Ashepoo River; Horse Shoe Crk. Location: Colleton County; 4 miles north of Ashepoo Station.
Address of Owner or Representative (?): Virginia-Carolina Chemical Co., Charleston, S. C.
ObS-Miocene (Edisto Phase) on Eocene (Ashley-Cooper Phase). Marl underlies phosphate rock.

$$
\text { MATERIAL: MARL. SURVEY No. } 684 \text {. }
$$

Area: Santee.
Sub-Area: Stouts Creek. Location: Orangeburg County; Warley Hill; 5 miles north of Creston ; excavation for public road parallel to Santee River ( 1.7 miles distant), on the south side of the bridge over Stouts Creek.
OBS-Type locality of Warley Hill marl; underlying littoral line of Santee marl. A hill ascending about 63 feet within 500 feet, south of Stouts Creek, exposes in the roadside ditches and banks the following section:

## Warley Hill Section.

Barnavell Buhr-Sands (?).
12.0 feet fine grained yellow-red clay inclosing numerous fine particles of glauconite rounded by weathering; the lower portion includes many splotches of unaltered green glauconitic matter. 3.o feet stratified red clay and gray-green glauconitic matter.

## Upper Warley Hill Marl and Lower Warley Hill Shales.

5.8 feet characteristic fossiliferous Warley Hill marl of gray-green color and of hard harsh texture. It consists of abundant particles of glauconite in a dirty-white matrix of marl. Its lower portion occupies small cavities in the subjacent formation.
1.8 feet yellow-white shale with pronounced conchoidal fracture; contains surface pitted with small cavities.
1.0 feet very fine grained ochreous plastic clay probably derived from the alteration of glauconitic matter.
10.0 feet semi-plastic, pea-green shale obscurely stratified; incloses occasional particles of lignite. This represents that upper portion of the Lower Warley Hill shales which in some localities grades towards its upper median part to a pea-green marl containing 3 to 70 per cent. of carbonate of lime.
Congaree Shales.
4.6 feet gray granular compact shales; fossiliferous and partly silicified to Buhrstone form.
1.3 feet thin layers of fine grained black shale.
1.8 feet red sands.
1.0 feet thin layers of black shale.
12.5 feet fine grained light-gray conchoidal shale which includes some gray-black portions. Bottom is a coarse granular gray shale.
Upper Black Mingo (?).
4.8 feet fine sands in a black argillaceous matrix; incloses tender casts and some sharks' teeth.
5.9 feet very fine sands in a white matrix. Incloses numerous tender casts and small teeth.
65.5 feet=Level of Stout's Creek below top of Warley Hill.

$$
\text { material: marl. survey no. } 696 .
$$

Area: Santee.
Sub-Area: Half Way Swamp.
Location: Orangeburg County; Creston; 0.5 mile north of railway station; on small branch, o.r mile north of the railway bridge over Half Way Swamp.
Address of Owner or Representative (?): R. E. Edwards, Jr., Creston, S. C.
OBS-Santee Marl on Warley Hill Marl.
material: marl survey no. 697.
Area: Santee.
Sub-Area: Half Way Swamp.
Location: Orangeburg County; Bell Broughton; 0.8 mile southeast of Creston.
Address of Owner or Representative (?): R. E. Edwards, Creston, S. C.
ObS-Santee Marl. An old quarry on the southerly side of Half Way Swamp exposes about 16 feet of a very compact yellowwhite marl, superimposed on Warley Hill marl.

$$
\text { MATERIAL: MARL. SURVEY NO. } 699 .
$$

Area: Santee. Sub-Area: Santee Swamp Scarp. Location: Orangeburg County; Cave Hall; 6 miles northeast of Elloree.
Address of Owner or Representative (?): S. E. Owens, Creston, S. C.

ObS--Santee Marl on Warley Hill Marl. A ravine with abrupt sides has etched its way along the line of a subterranean passage which extended from the swamp more than a half mile under the plateau. The cliff at the head of this ravine exposes about i6 feet of compact yellow-white marl of the Santee type overlying the hard gray-green Warley Hill marl along a slightly undulating plane about 3 feet above the base line of the ravine. The base of the Santee marl incloses many rounded lumps of the Warley Hill marl. Ostrea sellæformis is prominent in the Warley Hill stratum.
material: marl. survey no. 70 I.

Area: Santee.
Sub-Area: Poplar Creek. Location: Orangeburg County; Whaleys Mill; 5 miles east of Elloree.
Address of Owner or Representative (?): R. E. Clark, Elloree, S. C.

OBS-Santee Marl on Warley Hill Marl. The scarp immediately northeast of the mill exposes the following section:

Santee Marl.
9 feet of compact yellow-white marl, which incloses pecten Lyelli and ostrea sellæformis.
Analysis of marl: Calcium Carbonate, 91.36; Calcium Phosphate, .56; Magnesium Carbonate, 2.I5.
Warley Hill Marl.
7 feet of a harsh gray-green marl, which includes abundant grains of glauconite and incloses fossil forms.

Analysis of marl: Lime, 42.76 per cent.; Magnesia, 1.05 per cent.; Alumina, 82 per cent.; Ferric Oxide, 4.22 per cent.; Ferrous Oxide, -; Titanic Oxide, -; Manganese Oxide, -; Soda (Na2O), .51; Potash (K2O), .48; Carbonic Acid ( $\mathrm{CO}_{2}$ ), 30.09; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 2̀.98; Iron Sulphide, -; Sulphuric radical, 3.12; Silica (and insoluble), 11.98; Ignition, .35 per cent.; Moisture (at $100^{\circ} \mathrm{C}$.), 1.20 per cent. Total, 99.56.

## MATERIAL: MARL, SURVEY NO. 705.

Area: Santee. Sub-Area: Western scarp of Santee River. Location: Orangeburg County; Pinckney Landing; 6 miles southeast of Elloree; 114.7 miles from the ocean by river route.
Address of Owner or Representative (?): Estate Isaac V. Bardin, Charleston, S. C.
ObS-Eocene (Santee Phase). Bluff extends 48 feet above low water ( $55.7 \mathrm{M} . \mathrm{L} . \mathrm{T}$.) at the landing, where the marl is largely obscured; 500 feet above the landing the scarp exposes the upper surface of the Santee type of marl (Eocene) at an elevation of 38 feet above low water; above the low water level this marl probably rests on the glauconitic marl, in accordance with the relative position exhibited at Whaleys Mill on Poplar Creek, at Cave Hall, at Creston, at Weeks Landing, and at Warleys Hill; which places are successively north of Pinckney Landing. The ostrea sellæformis is the predominant fossil at Pinckney Landing.
This marl is compact, fine grained, and yellow-white. An average sample afforded: 41.15 part of Carbonic Acid, equivalent to 93.5 per cent. of Calcium Carbonate.

## material: marl. survey no. 706.

Area: Santee. Sub-Area: Western scarp of Santee River. Location: Orangeburg County; Tates Landing; ini. 3 miles by navigable course of river from the ocean; I mile above railway bridge at Vances Ferry.
Address of Owner or Representative (?): J. H. Dantzler, Tates Landing, S. C.
ObS-Eocene (Santee Phase). The Santee marl (Eocene) extends 24 feet above zero water line ( $52.8 \mathrm{M} . \mathrm{L} . \mathrm{T}$.) in a projecting bluff ; the overburden of loam and sands aggregate from o to 20 feet in thickness. Ostrea sellæformis constitutes the most abundant fossil. An average sample afforded 42.15 per cent. of Car-
bonic Acid ( CO 2 ), equivalent to 95.8 per cent. of Calcium Carbonate. The projecting portion is much harder than the underlying marl, which has been eroded by the river.

## material: marl. SURVEY no. 707.

Area: Santee. Sub-Area: Western scarp of Santee River. Location: Orangeburg County; Vances Ferry; I mile northeast of Vances Station; ino. 3 miles by navigable course of the river from the ocean.
Address of Owner or Representative (?): G. M. Norris, Vances, S. C.; D. J. Avinger, Vances, S. C.; and Mrs. G. Avinger, Cordesville, S. C.
OBS-Eocene (Santee Phase). Bluff of Santee marl (Eocene) extending about 24 feet above zero water level ( 52.0 feet M. L. T.). A sample from the upper part afforded 39.93 per cent. of Carbonic Acid ( CO 2 ), equivalent to 86.21 per cent. of Calcium Carbonate.

$$
\text { material: marl. } \quad \text { survey no. } 7071 / 2 .
$$

Area: Santee. Sub-Area: Western scarp of Santee River. Location: Orangeburg County; 3 miles northwest of Eutawville. Address of Owner or Representative (?) : Thomas Flood, Eutawville, S . C.
OBS-Eocene. Six feet of Santee marl (Eocene) exposed above zero water level of the Santee River on the western bank.

$$
\text { MATERIAL: MARL. SURVEY NO. } 710 .
$$

Area: Santee.
Sub-Area: Potato Creek. Location: Clarendon County.

OBS-Santee Marl appears in the bed of Potato Creek.

## MATERIAL: MARL. SURVEY NO. 7I3.

Area: Santee.
Sub-Area: Western scarp of Santee River.
Location: Berkeley County; Pond Bluff, Ferguson; 4 miles northeast of Eutawville; 91.8 miles by navigable course of river to the ocean.
Address of Owner or Representative (?): T. L. Connor, Eutawville, S. C.
OBS--Eocene (Mt. Hope Phase). The following section obtains above zero water level ( 24.8 feet M. L. T.) :
(a) Overburden of soil, etc., increasing from 4.8 feet with departure from the river bank.
(b) 4 feet of very hard crystalline yellow-white marl. Analysis: Lime, 53.4 per cent.; Magnesia, 0.26 per cent.; Alumina, 0.05 per cent.; Ferric Oxide, 0.71 per cent.; Soda (Na2O), o.II per cent.; Potash (K2O), 0.08 per cent.; Carbonic Acid (CO2), 42.06 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.08 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 0.22 per cent.; Silica (and insoluble), 1.92 per cent.; Ignition, 0.65 per cent.; Moisture, 0.39 per cent.; Total, 99.94 per cent. Equivalents: Calcium Carbonate, 94.96 per cent.; Tri-Calcium Phosphate, 0.17 per cent.; Calcium Sulphate, 0.36 per cent.; Magnesium Carbonate, 0.54 per cent.
(c) 3.2 feet of porous yellow-white marl, consisting of a matted mass of spines and plates of echini fragments of corals, shells of the ostrea sellaeformis and other forms. Analysis: Lime, 53.44 per cent.; Magnesia, 0.22 per cent.; Alumina, 0.92 per cent.; Ferric Oxide, o.8I per cent.; Soda ( Na 2 O ), 0.18 per cent. ; Potash (K2O), 0.07 per cent.; Carbonic Acid ( CO 2 ), 42.02 per cent.; Phosphoric Acid $\left(\mathrm{P}_{2} \mathrm{O}_{5}\right)$, 0.16 per cent.; Sulphuric radical $\left(\mathrm{SO}_{3}\right)$, o.II per cent.; Silica (and insoluble), I. 7 I per cent.; Ignition, 0.39 per cent.; Moisture, 0.39 per cent.; Total, 100.42 per cent. Equivalents: Calcium Carbonate, 94.96 per cent.; Tri-Calcium Phosphate, 0.36 per cent.; Calcium Sulphate, 0.17 per cent.; Magnesium Carbonate, 0.46 per cent.
(d) 2.8 feet of very hard crystalline marl similar to (b).
(e) 3.2 feet of porous marl, with spines and plates of echini similar to (c), which well borings indicate as extending 1.8 feet below the zero water level; (f) then in feet of sand; (g) . 4 feet of rock; (h) 0.7 of a foot of soft blue material; (i) compact rock 84.3 feet; (j) approximately 236 feet of sand; (k) 12.5 feet of rock, below which occurs (1) water-bearing sand, with a hydrostatic head equivalent to the elevation of 64 feet M. L. T.

## MATERIAL: MARL. SURVEY NO. 715.

Area: Santee. Sub-Area: Western scarp of Santee River. Location: Berkeley County; Mt. Hope; I. 5 miles N. $60^{\circ}$ E. of Ferguson (Pond Bluff) ; 90.4 miles by navigable river course from ocean.
Address of Oumer or Representative (?) : W. H. Warley, Charleston, S. C.

OBS-Eocene (Mt. Hope Phase). Affords the following section:

Stratified sands; about 4 feet of very hard semi-crystalline marl, inclosing grains of phosphate rock; 4 feet above zero water level exposes soft vesicular marl inclosing spines and plates of echini. Zero water level=23.8 feet above M. L. T.

$$
\text { material: marl. survey no. } 716 .
$$

Area: Santee.
Sub-Area: Western river bank Location: Berkeley County, three miles N. $72^{\circ}$ E. of Ferguson (Pond Bluff).
Address of Owner or Representative (?): Mrs. P. F. Murphy, Eadytown, S. C.
OBS-Neocene. Four feet of plastic argillaceous marl of greenish color, inclosing white marl concretions, overlies stratified sands which extend 9 feet above zero water level.

$$
\text { MATERIAL: MARL. SURVEY NO. } 717 .
$$

Area: Santee. Sub-Area: Western scarp of Santee River. Location: Berkeley County; Warley's Landing; 4 miles N. $78^{\circ}$ E. of Ferguson (Pond Bluff).
Address of Owner or Representative (?): Mrs. P. F. Murphy, Eadytown, S. C.
OBS-Neocene on Eocene
(a) With an overburden rapidly increasing from nil with departure from the river occurs:
(b) 4.0 feet of an argillaceous green marl;
(c) 2.5 feet of sands which inclose pebbles less than 1 inch in diameter;
(d) Yellowish-white marl emerging 4 feet above the zero water level. This lower marl constitutes a matted mass of spines and plates of echi and fragments of corals.

$$
\text { MATERIAL: MARL. SURVEY No. } 719 .
$$

Area: Santee. Sub-Area: Western scarp Santee River. Location: Berkeley County; Mexico plantation; bluff immediately above the upper entrance of Santee Canal.
Address of Owner or Representative (?): Mazyck Porcher Est., Charleston, S. C.
OBS-Bluff ascends in feet above zero water level, exhibiting the following:
(a) 5.5 feet consists of densely compact, fine grained sands overlying:
(b) 6 feet of micaceous cross-bedded sands with oblique lines of lignitic clay;
(c) 5.5 feet consists of a greenish marl-clay with very limited amount of carbonates, passes below zero level of water.

MATERIAL: MARL. SURVEY NO. 720.
Area: Santee.
Location: Berkeley County; Crest of Santee Canal.
OBS-Mt. Hope Marl.

## MATERIAL: MARL. SURVEY NO. 739-740.

Area: Santee.
Sub-Area: Santee River banks. Location: Berkeley and Georgetown Counties; Lenud's Ferry. OBS-Eocene.
(a) Irregular layer of greensand; see Table of Analyses Glauconites Sur. No. 740.
(b) 4 feet-Ledge of very hard crystalline marl projects over the westerly line of the Santee River; is also exposed along the scarp of the swamp east of the Santee River; contains calcium carbonate 89.64 per cent. For complete analysis see Table of Analyses of Tertiary Marls 740(b).
(c) 5 feet-Soft yellow marl, with some rounded fragments. Contains calcium carbonate 85.57 per cent. For complete analysis see Table of Analyses Tertiary Marls 740 (c).
(d) Marl inclosing glauconite; undulation of the surface of this stratum causes its thickness above the zero water level ( 5 feet M. L. T.) to vary from o to 5 feet.

This series of marls irregularly extends down the westerly valley of the Santee River, with exposures at Echaw Creek (Sur. No. 745), and finally at Wambaw Creek (Sur. No. 746), where the glauconitic phase alone survives and passes below the valley line.
material: marl. survey no. 835 .
Area: Pee Dee.
Location: Darlington County; west side of Sparrow Swamp; 4 miles southeast of Lamar.
Address of Owner or Representative (?): John Tolston, Lamar, S. C.

OBS-Miocene (Pee Dee Phase). The base of the western scarp of Sparrow Swamp exposes from 5 to 6 feet of Miocene marl, consisting of shells (Arca incile, pecten eboreous, venus Rileyi, etc., etc.,) bedded in a blue argillaceous soft marl. The adjacent and apparently supernatant plateau consists of io feet of loam on 16 feet of clay. A water-bearing stratum of sand at a depth of 34 feet separates the marl horizon from the underlying compact material popularly designated "soapstone," none of which was obtainable for accurate discrimination, but which probably pertains to either the Black Creek Phase (Cretaceous), or to the Congaree Phase (Eocene).

## MATERIAL: MARL

Area: Pee Dee.

Location: Sumter County; Muldrow Place; 5 miles S. $45^{\circ}$ E. of Mayesville; 0.5 mile north of Brick Church on edge of swamp.
Address of Owner or Representative (?) : Col. James Muldrow, Mayesville, S. C.
OBS-Miocene. Twelve feet of sands and loams; 12 feet of marl, consisting of loose shells in a blue clay-marl matrix (243 species collected); 66 feet of blue sticky material ; seam black lignitic matter; 20 feet of dark sticky material; fossil cypress wood; 73 feet of dark sticky material; i foot thin seams of hard flint; waterbearing stratum, with hydrostatic head of 2I feet above surface (surface +I 34 feet M. L. T.),

The Muldrow marl afforded the following analysis: Lime, 40-41 per cent.; Magnesia, 0.26 per cent.; Alumina, o.2I per cent.; Ferric Oxide, 0.63 per cent.; Soda (Na2O), 0.39 per cent.; Potash (K2O), 0.07 per cent.; Carbonic Acid (CO2), 31.59 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.25 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o. 39 per cent.; Silica (and insoluble), 23.57 per cent.; Ignition, 1.27 per cent.; Moisture, 0.56 per cent.; Total, 99.93 per cent. Equivalents: Calcium Carbonate, 7 I. 16 per cent.; Calcium Phosphate, 0.87 per cent.; Calcium Sulphate, o. 66 per cent.; Magnesium Carbonate, 0.54 per cent.

## MATERIAL: MARL. SURVEY NO. 842.

Area: Pee Dee. Sub-Area: East bank of Lynches River. Location: Florence County; 1.5 miles south of Cartersville.

ObS-Miocene (Pee Dee Phase). Detached beds of Miocene marl, consisting of shells in a blue argillaceous matrix, occur in the first bottoms, on the east side of Lynches River, I mile below the
railway bridge. Pecten eboreus, arca incile, and venus Rileyi constitute the most abundant included fossils. This marl has been used to advantage for agricultural purposes.
material: marl. Survey no. 847 .
Sub-Area: Jeffries Creek.
Area: Pee Dee.
Location: Florence County; Claussen P. O.; west side of Jeffries Creek; 9 miles S. $50^{\circ}$ E. of Florence.
Address of Owner or Representative (?): W. F. Claussen, Claussen, S. C.
OBS-Cretaceous (Burches Ferry Phase): A large well at the steam mill on the ridge ( 46 feet above zero water line of Jeffries Creek) exposes:
(a) 14 feet of loam and clay.
(b) 18 feet of hard gray Cretaceous (Ripley) marl, inclosing exogyra costata, etc.
(c) 3 feet of sands interstratified with horizontal seams of thin shale.
(d) 4 feet of dark laminated shale (similar exposure at zero water level of Jeffries Creek, o. 6 mile east). Water-bearing sands.
(c) and (d) pertain to the Black Creek Phase.

## MATERIAL: MARL. SURVEY NO. 848.

Area: Pee Dee. Sub-Area: Willow Creek.
Location: Florence County; 2 miles soluth of Claussens; 3 miles west of Georgetown road bridge, over Willow Creek; 10.5 miles S. $50^{\circ}$ E. of Florence.
Address of Owner or Representative (?): W. F. Claussen, Claussen, S. C.
OBS-Cretaceous (Burches Ferry Phase). The south side of Willow Creek, 0.2 miles east of the Plantation Bridge, exhibits a bluff constituted as follows :
(a) 5 to 15 feet of yellow arenaceous loam.
(b) 2 feet indurated ledge of Cretaceous marl.
(c) 17 feet of harsh compact Cretaceous green-gray marl (Ripley), inclosing belemnitella Americana, exogyra costa, anomia argentaria, etc.; about 8 feet above the level of the creek occurs a thin horizontal broken layer of black flint pebbles and fragments of fossil bones. This marl is similar to the Burches Ferry marl (855), in connection with which analysis is presented.

MATERIAL: MARL.
Area: Pee Dee.
Area: Pee Dee. County ; Myers Hill; George Jewn Road;
Location: Florence County; Myers Hill; Georgetown Road; ro miles S. $74^{\circ}$ E. of Effingham; 2.9 miles northwest of Burches Ferry.
Address of Owner or Representative (?) : W. A. Meyers, Jeffries Creek P. O., S. C.
OBS-Eocene on Cretaceous (Burches Ferry Phase). Myers Hill, as indicated by the exposures alongside the highway south of the dwelling, and the branch north of the dwelling, which enters Jeffries Creek about 0.3 mile from the hill, affords the following section:
(a) 2 feet sandy loam (about 8i feet above M. L. T.).
(b) 6 feet red clay.
(c) 12 feet white, straified, coarse and fine grained sands, inclosing dense silicified slabs, containing casts of venericardia planicosta (exposed by highway south of dwelling).
(d) 12 feet soft yellow marl, including interrupted ledges of a highly indurated character (the soft marl incloses exogyra costata, belemnitella Americana, etc.) ; exposed by highway south of dwelling.
Analysis: Lime, 46.82 per cent.; Magnesia, 0.15 per cent.; Alumina, 0.4 I per cent.; Ferric Oxide, 0.94 per cent.; Soda ( Na 2 O ), 0.69 per cent. ; Potash (K2O), 0.28 per cent.; Carbonic Acid ( CO 2 ), 36.47 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.27 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o.41 per cent.; Silica (and insoluble), 12.45 per cent.; Ignition, 0.50 per cent.; Moisture, 0.51 per cent.; Total, 99.90 per cent. Equivalents: Calcium Carbonate, 82.54 per cent.; Tri-Calcium Phosphate, 0.59 per cent.; Calcium Sulphate, 0.68 per cent.; Magnesium Carbonate, 0.31 per cent.
(e) 23 feet green-gray, moderately compact marl (inclosing large numbers of exogyra costata, belemnitella Americana, etc., etc.).
(f) 2 feet stratified black shale.
(g) 3 feet coarse sands.
(h) 5 feet superior to zero water level ( 16 feet M. L. T.)' of Jeffries Creek obscured.

## MATERIAL: MARL

Area: Pee Dee.

SURVEX NO. 855 .
Sub-Area: Pee Dee River.

Location: Florence County; Burches Ferry; 14.5 miles S. $54^{\circ}$ E. of Florence.
Address of Ouner or Representative (?): Geo. J. Steele, Rector Hinds, Hyman P. O., S. C.
OBS-Cretaceous (Burches Ferry Phase) on Cretaceous (Black Creek Phase). Bluff on west bank of Pee Dee River immediately north of confluence with Gordon Mill Creek exhibits:
(a) 2.0 feet sandy loam.
(b) 4.0 feet gray marl, granular ; yields readily to the pick.
(c) 2.0 feet ledge of hard marlstone incloses fragments of fossils.
(d) 8.7 feet gray-green granular marl (inclosing profusion of exogyra costata, belemnitella Americana, etc.)
Analysis: Lime, 17.59 per cent.; Magnesia, 0.24 per cent.; Alumina, 1.52 per cent.; Ferric Oxide, 1.73 per cent.; Soda ( $\mathrm{Na2O}$ ), 0.48 per cent.; Potash ( K 2 O ), 0.43 per cent.; Carbonic Acid (CO2), 13.15 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), , 0.48 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o. 88 per cent.; Silica (and insoluble), 59.30 per cent.; Ignition, 2.04 per cent.; Moisture, 2.49 per cent.; Total, 100.33 per cent. Equivalents: Calcium Carbonate, 29.30 per cent.; Tri-Calcium Phosphate, 1.06 per cent.; Calcium Sulphate, 1.48 per cent.; Magnesium Carbonate, 0.50 per cent.
(e) 5 feet stratified black shaly clay, interlaminated with thin layers of mica and fine grained yellow and gray sands (Black Creek shale).
Analysis: Lime, 3.38 per cent.; Magnesia, 2.59 per cent.; Alumina, 13.88 per cent.; Ferric Oxide, 2.05 per cent.; Ferrous Oxide, 3.1 i per cent.; Titanic Oxide, 0.60 per cent.; Soda (Na2O), 0.65 per cent.; Potash (K2O), r. 49 per cent.; Carbonic Acid ( CO 2 ), 1.53 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 2.52 per cent.; Silica (and insoluble), 48.09 per cent.; Ignition, 5.18 per cent.; Moisture, 14.78 per cent.; Total, 99.85 per cent. Equivalents: Calcium Carbonate, 2.89 per cent.; Calcium Sulphate, 4.28 per cent.; Magnesium Carbonate, 0.50 per cent.
The face of the bluff courses N. $30^{\circ} \mathrm{W}$., in which direction the strata dip about $\mathrm{I}^{\circ}$, by reason of a local undulation. Jeffries Creek, which enters this Pee Dee River about I mile above Burches Ferry delimits this Cretaceous (Ripley) marl on the north. From Burches

Ferry ascending Gordon Mill Creek the Cretaceous marl is observed along its banks to a point within 300 feet of the Georgetown road, about I miles distant, where the Eocene sands obscure its presence. Below Burches Ferry along the scarp of the swamp, intervening to Cain's Landing (distant about 4,000 feet), occasional slabs of the Eocene sandstone containing venericardia planicosta are observed in the stratified and partly silicified sands overlying the Cretaceous marl, notably at a point about $\pm 1,800$ feet south of Burche's Ferry.
material: marl. SURVEy no. 858.
Area: Pee Dee.
Sub-Area: Pee Dee River. Location: Florence County; Cains Landing; 15 miles S. $53^{\circ}$ E. of Florence ; 87.2 miles from Georgetown, by river course.
Address of Owner or Representative (?): H. A. Steele, Jeffries Creek, S. C.
OBS-Cretaceous (Burches Ferry Phase). The bluff at Cains Landing ascends 15.4 feet above zero water level (14.1 feet M. L. T.). The strata $\operatorname{dip} 1^{\circ} 15^{\prime}$ N. $10^{\circ} \mathrm{W}$. and consist of :
(a) 2 to 6 feet green to drab plastic argillaceous marl. Analysis: Lime, 15.60 per cent.; Magnesia, 1.51 per cent.; Alumina, II 54 per cent. ; Ferric Oxide, 4.32 per cent.; Titanic Oxide, 0.66 per cent. ; Soda ( Na 2 O ), 0.54 per cent. ; Potash ( K 2 O ), 1.42 per cent. ; Carbonic Acid (CO2), in. 24 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), trace; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 1.29 per cent.; Silica (and insoluble), 44.00 per cent.; Ignition, 2.81 per cent. ; Moisture, 4.84 per cent. ; Total, 99.77 per cent. Equivalents: Calcium Carbonate, 25.57 per cent.; Calcium Sulphate, 2.19 per cent.
(b) 0.5 feet layer of calcareous nodules.
(c) 3 feet drab marl varying to black and inclosing small ( $\mathbf{2}^{\prime \prime}$ ) calcareous nodules.
(d) 0.6 feet layer of shells cemented very hard with limonite; some shells coated with a drusy layer of pyrite.
(e) 4.2 feet gray-green marl (inclosing exogyra costata and belemnitella Americana) ; the upper portion very hard; interior of some shells lined with small crystals of pyrite.
Analysis: Lime, 35.00 per cent.; Carbonic Acid (CO2), 27.08 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 0.43 per cent. Equivalents: Calcium Carbonate, 6 I .56 per cent.; Tri-Calcium Phosphate, 0.95 per cent.
(f) 1.2 feet hard crystalline green-gray marl.
(g) 4.0 feet soft gray-green marl.
material: marl. Survey no. 859 .
Area: Pee Dee.
Sub-Area: Pee Dee River Branch. Location: Florence County ; Meyers Well; 12.5 miles S. $40^{\circ}$ E. of Florence; 87.7 miles by river from Georgetown; 2.0 miles west of Dewetts Bluff.
Address of Owner or Representative (?): G. H. Meyers, Hyman P. O., S. C.

OBS-Miocene. A well extending through loam and clay exposes at the depth of 18 feet a loose white marl containing a large number of shells, predominantly Miocene, mixed with sand.
Analysis afforded: Lime, 18.28 per cent.; Magnesia, 0.26 per cent.; Alumina, 1.42 per cent.; Ferric Oxide, 1.85 per cent.; Soda ( Na 2 O ), o.21 per cent.; Potash ( K 2 O ), 0.35 per cent.; Carbonic Acid (CO2), 14.33 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 0.34 per cent.; Silica (and insoluble), 60.06 per cent.; Ignition, 0.77 per cent.; Moisture, 2.26 per cent.; Total, 99.93 per cent. Equivalents: Calcium Carbonate, 3 I. 94 per cent.; Tri-Calcium Phosphate, 0.73 per cent.; Magnesium Carbonate, o. 54 per cent.

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\text { MATERIAL: MARL. SURVEY NO. } 860 .
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Area: Pee Dee. Sub-Area: Pee Dee River; Bigham Br. Location: Florence County; Bigham Branch; if. 5 miles S. $78^{\circ}$ E. of Effingham; 3.5 miles north of Dewetts Bluff.
Address of Owner or Representative (?): L. S. Bigham, Jeffries Creek, S. C.
OBS-Cretaceous. The highway cut, 200 feet south of Bigham Branch, and about to feet superior thereto, exposes a blue black Cretaceous (Ripley) marl.

Analysis: Lime, 20.69 per cent.; Magnesia, 0.97 per cent.; Alumina, 10.97 per cent.; Ferric Oxide, 3.32 per cent.; Soda (Na2O), 0.83 per cent.; Potash ( K 2 O ), 1.67 per cent.; Carbonic Acid (CO2), 15.64 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), o. 27 per cent.; Iron Sulphide, 2.84 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o. 38 per cent.; Silica (and insoluble), 39.87 per cent.; Ignition, 2.19 per cent.; Total, 99.64 per cent. Equivalents: Calcium Carbonate, 5.50 per cent.; Tri-Calcium Phosphate, 1.45 per cent.
material: marl. Survey no. 86i.
Area: Pee Dee.
Sub-Arca: Pee Dee River. Location: Florence County; Dewett's Bluff; 12.5 miles S. $70^{\circ}$ E. of Effingham; west bank of Pee Dee River; 82 miles by river from Winyah Bay.

Address of Owner or Representative ( ?) : W. T. Hyman, Forestville, S. C.
OBS-Cretaceous (Burches Ferry Phase). Abrupt bluff ascending 54 feet above zero water level ( 12 feet M. L. T.) exhibits:
(a) 12.0 feet of sands and red clay loam.
(b) 2.3 feet of sands inclosing pebbles of a half inch diameter and less.
(c) 3.0 feet of sands.
(d) 6.0 feet of laminated white pink and red clays in horizontal layers.
(e) 9.0 feet of white, yellow, black and brown stratified sands.
(f) I foot of ferruginous sandstone.
(g) 7 feet of purple and white mottled clays.
(h) 4.7 feet of gray marl (probably upper aspect of Cretaceous).
(i) 9.0 feet of blue-black Cretaceous (Ripley) marl inclosing exogyra costata, etc.

## MATERIAL: MARL. <br> survey no. 862.

Area: Pee Dee.
Location: Florence County; Myers Landing; west bank of Pee Dee River; 79.8 miles by river course from the ocean; 15 miles N. $60^{\circ}$ E. of Lake City; 2.5 miles north of Bostick.
Address of Owner or Representative (?): Joe Myers, Forestville, S. C.
obS-Miocene (Pee Dee Phase). Along the scarp bordering the Pee Dee westerly swamp there occurs: Thirty-three feet above zero water level (II.i feet M. L. T.), a 5 -foot ledge of indurated marl, characterized by numerous specimens of pecten eboreus. It is separated from the underlying granular buff marl (of Goose Creek type) by an undulating plain, emphasized by a layer of pebbles (exposed in a gulch a short distance north of the road to the landing, along the line of the scarp delimiting the swamp).

MATERIAL: MARL. SURVEY NO. 863.
Area: Pee Dee.
Sub-Area: Pee Dee River. Location: Florence County; Bostick Landing; 15 miles N. $65^{\circ}$ E. of Lake City; west bank of Pee Dee River; 76.4 miles by river course from Winyah Bay.
Address of Owner or Representative (?) : P. J. Bostick, Bostick, S. C.

OBS-Mio-Pliocene on Miocene (Pee Dee and Goose Creer Phases) on Cretaceous (Burches Ferry Phase). This locality affords the following exposure in a terraced scarp, ascending 48 feet above zero water level ( 9.2 feet M. L. T.) :
(a) 7 feet of sands and loam.
(b) 16 feet of dirty buff-colored sandy marl, granular and friable; mass of loose fragments of shells at base.
(c) 4 feet ledge of indurated dirty yellow marl containing pecten eboreus, natica duplicata, etc.
(d) 21 feet of granular buff porous marl (Miocene) containing numerous casts in its upper part, the amusium Mortoni being prominent in the lower part.
Analysis: Lime, 36.75 per cent.; Magnesia, 0.39 per cent.; Alumina, o. 59 per cent.; Ferric Oxide, o.71 per cent.; Soda ( $\mathrm{Na2O}$ ), 0.26 per cent.; Potash ( K 2 O ), o. 18 per cent.; Carbonic Acid (CO2), 28.77 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 0.50 per cent.; Silica (and insoluble), 24.59 per cent.; Ignition, o.3I per cent.; Moisture, 6.76 per cent. Total, 99.81 per cent. Equivalents: Calcium Carbonate, 64.57 per cent.; Tri-Calcic Phosphate, r. 09 per cent.; Magnesium Carbonate, 0.75 per cent.
The Cretaceous marl is masked by the Tertiary along the river scarp, but is revealed ( 14 feet M. L. T.) superior to water level by deep well borings at Bostick, a half mile west of the landing. Bostick well section (surface elevation 57 feet M. L. T.) :
(aa) 18.0 feet sand and clay.
(bb) 0.5 feet water-bearing sands.
(cc) 18.5 feet buff-colored marls.
(dd) 5.5 feet "shell rock" marl.
(ee) $\mathbf{1 8 7 . 0}$ feet blue-black sticky marls.
(ff) 2.0 feet + water-bearing sands, with hydrostatic head superior to surface. Incloses rotten wood.
232.0 feet total depth $=(-) 175$ feet M. L. T.

Material: marl. survey no. 866.
Area: Pee Dee.
Sub-Area: Pee Dee River. Location: Florence County; Stones Landing; 15 miles N. $58^{\circ}$ E. of Lake City; west bank of Pee Dee River; 75.6 miles by river course from Winyah Bay.
Address of Owner or Representative (?): C. Belin, Bostick, S. C. OBS-Miocene. Under an abruptly increasing overburden of
sands and loam occurs a 4 -foot ledge of indurated marl (pecten eboreus, etc.) ; 9 feet of drab marl; Cretaceous marl (Ripley) near zero water line.
material: marl. survey no. 867.
Area: Pee Dee. Sub-Area: Pee Dee River.
Location: Florence County ; Davis Landing; 16.5 miles N. $75^{\circ}$ E. of Lake City; west bank of Pee Dee River; 72.3 miles by river course from Winyah Bay.
Address of Owner or Representative (?) : Mrs. M. J. Davis, Bostick, S. C.
OBS-Miocene (Pee Dee Phase) on Miocene (Goose Creek Phase) on Cretaceous (Burches Ferry Phase). The bluff 200 feet north of Davis Landing exposes 52.5 feet of marl ( 29.5 feet of Tertiary and 23 feet of Cretaceous), as shown in the following section:
(a) 8 feet sands and loams.
(b) 16.75 feet indurated ledge of dirty yellow marl (inclosing pecten eboreus, predominantly at base).
(c) 8.0 feet compact yellow marl (a matted mass of chama-congregata and arca incile in proportion of about 20 to I).
(d) 4.75 feet friable yellow-white marl (inclosing amusium Mortoni and pecten eboreus). Goose Creek Phase.
(e) 23 feet dark blue-green marl (Cretaceous); harsh when dry, unctuous and semi-plastic when wet (incloses exogyra costata, belemnitella Americana, anomia, turretella) ; continues below zero water level, the elevation of which is 7.9 feet above M. L. T.
The upper portion of this Ripley marl exhibits several interrupted horizontal ledges of indurated semi-crystalline marl high in Carbonate of Lime.

The Tertiary Zone averages: Carbonate of Lime, 65 per cent. The Cretaceous Zone affords: Soft mass-29.0 per cent. Carbonate of Lime ; i.o6 per cent. of Phosphate of Lime; Indurated ledges60 per cent. of Carbonate of Lime; o. 90 per cent. of Phosphate of Lime.
material: marl. • survey no. 868.
Arca: Pee Dee. Location: Florence County; Godfrey's Landing; 17 miles N. $77^{\circ} \mathrm{E}$. of Lake City ; west bank of Pee Dee River; 71. 2 miles by river course from Winyah Bay.

Address of Owner or Representative ( ?): Capt. Johnson, Savage, S. C.

OBS-Miocene (Pee Dee Phase). Tertiary marls emerge above zero water level ( 7.5 feet M. L. T.) about 18 feet. The ledge containing the arca incile is prominently developed. In general features it is similar to the Tertiary marl exposed at Davis Landing (No. 867).

## material: marl survey no. 869 .

Area: Pee Dee.
Sub-Area: Pee Dee River.
Location: Florence County; Savage Landing; 17.5 miles N. $78^{\circ}$ E. of Lake City; west bank of Pee Dee River; 70.2 miles by river course from Winyah Bay.
Address of Owner or Representative (?) : Captain Johnson, Savage, S. C.
OBS-Miocene (Pee Dee Pease). The Tertiary marls, similar to the exposure at Davis Bluff (No. 867), emerge to the elevation of 26 feet above zero water level ( 7.6 feet M. L. T.).

## material: marl. survey no. 870 .

Area: Pee Dee.
Sub-Area: Pee Dee River. Location: Florence County; Allisons Landing; 19 miles N. $83^{\circ}$ E. of Lake City; western bank of Pee Dee River; 67 miles by river course from Winyah Bay.
Address of Owner or Representative (?) : A. Poston, Savage, S. C. OBS-Cretaceous (Burches Ferry Phase). The western bank of the Pee Dee River exposes at Allisons Ferry, above zero water line ( 5.6 feet M. L. T.), the following:
(a) 2 feet yellow loam.
(b) 3 feet pea-green plastic clay marl (glauconitic).
(c) 1.5 feet soft drab marl.
(d) 2.0 feet crystalline marl ledge.
(e) 5.0 feet porous yellow-white marl, inclosing numerous specimens of exogyra costata.
Stratum (d) contains: Carbonate of Lime, 74.46 per cent.; Phosphate of Lime, 1.34 per cent. Stratum (e) contains: Carbonate of Lime, 51.56 per cent.; Phosphate of Lime, o.61 per cent. A half mile west of Allison's Ferry a well exposes marl, with Miocene shells, 27 feet above the zero water level of Allisons Ferry.

MATERIAL: MARL.
Area: Pee Dee.

SURVEY NO. 876.
Sub-Area: Pee Dee River. Location: Georgetown County; Smith Mills; 23 miles S. $84^{\circ}$ E. of Lake City; 52 miles by river course from Winyah Bay.
Address of Owner or Representative (?): J. R. Smith, Smith Mills, S. C.
OBS-Cretaceous (Burches Ferry Phase). The Cretaceous (Ripley) marl emerges 6.5 feet above zero water level, and supports about 15 feet of white and yellow sands.

## material: marl. survey no. 877 .

Sub-Area: Pee Dee River.
Area: Pee Dee. Location: Georgetown County; Petersfield; 23 miles N. $5^{\circ}$ E. of Georgetown; western bank of Pee Dee River; 42.5 miles by river course from Winyah Bay.
Address of Owner or Representative (?): C. A. Robins, Petersfield Landing, Georgetown County, S. C.

OBS-Cretaceous (Burches Ferry Phase). A scarp ascending 22 feet above zero water level (2.I feet M. L. T.) exposes:
(a) 12 feet capping of ferruginous sandstone, sands and loam.
(b) 3 feet dirty white fine grained arenaceous clay.
(c) 7 feet Cretaceous (Ripley) marl of green-black color; extends below zero water level.
material: marl. survey no. 879.
Area: Pee Dee.
Sub-Area: Pee Dee River. Location: Georgetown County; Yahannah; 20.5 miles N. $18^{\circ}$ E. of Georgetown; eastern bank of Pee Dee River; 28 miles by river course from Winyah Bay.
Address of Owner or Representative (?): William Riley, Yahannah Landing, Georgetown County, S. C.
ObS-Cretacéous (Burches Ferry Phase). The Cretaceous (Ripley) marl emerges slightly above zero water level (I. 3 feet M. L. T.).
material: marl. survey no. 880 .
Area: Pee Dee.
Sub-Area: Pee Dee River.
Location: Georgetown County; Topsaw; 26 miles by river course from Winyah Bay; 18.5 miles N. $18^{\circ}$ E. of Georgetown.
Address of Owner or Representative (?) : J. H. West, Topsaw Landing, Georgetown County, S. C.

OBS-Cretaceous (Burches Ferry Phase). Cretaceous (Ripley) marl is exposed on the western bank of the Pee Dee River slightly above the level of low tide. This is the lowest point on the Pee Dee River at which the Cretaceous marls are exposed.

## material: marl. survey no. 888 B.

Area: Pee Dee.
Sub-Area: Pudding Swamp. Location: Clarendon County; Plowden Mills; 7.5 miles northeast of Manning.
OBS-Mrocene. The flats of a westerly branch of Black River afford extensive pockets of shell marl similar to the Muldrow bed (No. 838).

## material: marl. survey no. 894.

Area: Pee Dee. Sub-Area: Northern scarp Black River. Location: Georgetown County; Evans Bluff; 8 miles N. $60^{\circ}$ E. of Harpers; 2 miles south of Perkins Bluff.
Address of Owmer or Representative (?) : J.•J. Evans, Harpers, S. C.

OBS-Miocene (Edisto (?) Phase) on Eocene. The river above Perkins Bluff exposes a bluff affording the following section:
(a) Variable amount of soil and red clay.
(b) 3 feet of yellow marl inclosing pecten eboreous, corals and other fossils; upper part perforated by pholadæ.
(c) 6 feet of hard gray marl with fragments of shells firmly bedded; projects over the succeeding.
(d) 4 feet of moderately firm white marl, fossiliferous.
(e) I foot above low tide extends a mass of comminuted small shells, partly consolidated and resembling buhr-rock, but not silicified.

## material: marl. survey no. 895.

Area: Pee Dee. Sub-Area: Northern scarp of Black River. Location: Georgetown County; Perkins Bluff; io miles N. $55^{\circ}$ E. of Harpers.
OBS-Eocene (Black Mingo Phase) on Cretaceous (Ripley Pease). This composite exposure exhibits:
(a 1 to 2 feet of fossiliferous buhr-rock.
(b) 4 feet of laminated Eocene shale, partly silicified and inclosing casts of venericardia planicosta and other fossils.
(e) 3 feet of obscured matter.
(d) 4 feet of firm, partly silicified shale, inclosing specimens of the enclimatocerous Ulrichi.
(e) 4 feet of reddish sands and shales, resting at level of low tide on Cretaceous marl (Ripley).

MATERIAL: MARL. SURVEY NO. 896.
Area: Pee Dee.
Sub-Area: Northern scarp of Black River. Location: Georgetown County; Brown's Ferry; formerly designated

Rope Ferry; 12.5 miles N. $50^{\circ}$ E. of Harpers.
OBS-Cretaceous (Burches Ferry Phase). The plateau ascends about 29 feet above M. L. T.
(a) The upper 2I feet consists successively of colored sands, Pleistocene clays, and Pleistocene sands inclosing pebbles of less than a half inch diameter.
(b) 3 feet of laminated Eocene shale.
(c) 2.I feet of very hard marl capping a dark Cretaceous marl (Ripley), which emerges 3 feet above low tide level.

MATERIAL: MARL. SURVEY NO. 897.
Area: Pee Dee. Sub-Area: Black River.
Location: Georgetown County; confluence of Black Mingo with Black River; 15 miles N. $18^{\circ} \mathrm{W}$. of Georgetown; 30 miles by navigable river course from Winyah Bay.
OBS-On both banks of Black River for a short distance below the mouth of Black Mingo, detached masses of white marl are observed at the level of low tide ( $\pm 0.6$ feet M. L. T.).

MATERIAL: MARL. SURVEY NO. 9 I6.
Area: Pee Dee.
Sub-Area: Little Pee Dee River.
Location: Marion County; Hodge's Mill; 3.5 miles southeast of Mullins.
OBS-Miocene. About 200 feet west of the public highway, in the bank of Hodge's Mill Branch, near its confluence with Little Pee Dee River, occurs:
(a) 5.3 feet laminated clays in red, yellow and black horizontal bands.
(b) I.O feet bands.
(c) 4.7 feet blue sticky Miocene( ?) marl, inclosing many shells in a highly softened form.

MATERIAL: MARL. SURVEY NO. 936.
Area: Pee Dee. Sub-Area: Sampit River. Location: Georgetown County; Sampit; 5 miles south of Harpers. OBS-Miocene (?) Marl on the Black Mingo Shale.
material: marl. SURVEy no. 940.
Area: Pee Dee. $\quad S u b$-Area: Bank of Waccamaw River. Location: Horry County; near Wampoo; 18 miles N. $82^{\circ}$ E. of Conway.
OBS-(Burches Ferry Phase).

## material: marl. survey no. 94I.

Area: Pee Dee. Sub-Area: Bank of Waccamaw River. Location: Horry County; Harpers; 12 miles N. $80^{\circ}$ E. from Conway.
OBS-Mio-Pliocene (Waccamaw Phase) on Cretaceous (Burches Ferry Phase).

## material: marl. survey no. 943.

Area: Pee Dee.
Sub-Area: Waccamaw River. Location: Horry County; confluence of Tilly's Lake and the Waccamaw River; 9.5 miles $\mathrm{S} .80^{\circ} \mathrm{E}$. of Conway.
Address of Owner or Representative (?): F. A. Burroughs, Conway, S. C.
OBS-Mio-Pliocene (Waccamaw Phase) on Cretaceous (Burches Ferry Phase). Above the ferry on the eastern bank the following section is exposed:
(a) Variable. Fine grained sands.
(b) 3.0 feet coarse sands, inclosing pebbles less than a half inch in diameter.
(c) 6.0 feet clayey loam.
(d) 1.2 feet laminated drab-colored clays.
(e) 6.0 feet horizontally banded yellow and orange-colored sands.
(f) 1.3 feet yellow-brown marl, inclosing many Mio-Pliocene shells; many in pairs.
(g) 9.2 feet gray marl, consisting of a mass of Mio-Pliocene shells, in part comminuted; the lower 1.8 feet incloses many specimens of exogyra costata, evidently washed-in originally from the subjacent Cretaceous marl. Average sample afforded the following analysis: Lime, 36.89 per cent. ; Magnesia, 0.22 per cent.; Alumina, 0.26 per cent.; Ferric Oxide, 1.10 per cent.; Soda (Na2O), 0.60 per cent.; Potash (K2O), o.2I per cent.; Carbonic Acid (CO2), 28.79 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), , 0.24 per cent.; Sulphuric radical $\left(\mathrm{SO}_{3}\right), 0.38$ per cent.; Silica (and insoluble), 30.18 per cent.; Ignition, 0.22 per cent.; Moisture, 0.85 per cent.; Total, 99.94 per cent.

Equivalents: Calcium Carbonate, 64.90 per cent.; Calcium Phosphate, o. 53 per cent.; Calcium Sulphate, o. 63 per cent.; Magnesium Carbonate, 0.46 per cent.
(h) 3.0 feet dirty green granular Cretaceous marl emerging 3 feet above M. L. T., and thence extending below; contains many specimens of exogyra costata. Analysis: Lime, 23.77 per cent.; Magnesia, 0.43 per cent.; Alumina, 0.80 per cent.; Ferric Oxide, 1. 73 per cent.; Soda (Na2O), 0.42 per cent.; Potash ( K 2 O ), 0.28 per cent.; Carbonic Acid ( CO 2 ), 18.53 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), 0.47 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), o. 35 per cent.; Silica (and insoluble), 51.63 per cent.; Ignition, o.13 per cent.; Moisture, 1.12 per cent.; Total, 99.66 per cent. Equivalents: Calcium Carbonate, 41.04 per cent.; Tri-Calcium Phosphate, r.o3 per cent.; Calcium Sulphate, 0.58 per cent.; Magnesium Carbonate, 0.90 per cent.

## MATERIAL: MARL. SURVEY NO. 944.

Area: Pee Dee.
Sub-Area: Waccamaw River.
Location: Marlboro County; Nixon's Landing; 8 miles S. $75^{\circ} \mathrm{E}$ of Conway.
Address of Owner or Representative (?): John Nixon, Conway, S. C.

ObS-Mio-Pliocene (Waccamaw Phase) on Cretaceous (Burches Ferry Phase).

## MATERIAL: MARL. SURVEY NO. 946.

Area: Pee Dee.
Sub-Area: Waccamaw River. Location: Horry County; Hardee Ferry; western bank of Waccamaw River; 4 miles N. $78^{\circ}$ E. of Conway.
Address of Owner or Representative (?): R. Hardee, Conway, S. C.

ObS-Mro-Pliocene (Waccamaw Phase). An irregularly eroded layer of Tertiary marl rests upon the Cretaceous marl, which emerges slightly above M. L. T.

MATERIAL: MARL. SURVEY NO. 947.
Area: Pee Dee. Sub-Area: Little Pee Dee River. Location: Horry County; Lake Swamp.

OBS-Miocene.

## MATERIAL: MARL. SURVEY NO. 948.

Area: Pee Dee.
Sub-Area: Waccamaw Lake. Location: Horry County; 16 miles N. $35^{\circ}$ E. of Conway.

Material: marl. Survey no. 952.
Area: Pee Dee. Sub-Area: Wáccamaw River.
Location: Horry County; Bucksport; 8 miles S. $5^{\circ} \mathrm{W}$. of Conway. Address of Oumer or Representative (?) : L. C. Richardson, Bucksport, S. C.
OBS-Mio-Pliocene (Waccamaw Phase). The edges of the swamp of the tributary branch entering the Waccamaw River immediately above Bucksport afford deposits of Tertiary marl, largely obscured by sands and loams.

Marl contains: Carbonate of Lime, 39.92 per cent.; Phosphate of Lime, 0.9 per cent.
Uses:
Adapted to agricultural purposes when liberally mixed with vegetable mould.

Material: marl. SURVEy no. 978.
Area: Pee Dee. Sub-Area: Lynches River. Location: Sumter County; Hick's Landing; i mile south of Hudson Bridge.
OBS-Miocene (Pee Dee Phase). The bed of the stream below the zero water line affords a low grade shaly marl, very unctuous when wet.

$$
\text { MATERIAL: MARL. SURVEY NO. } 980 \text { (B). }
$$

Area: Pee Dee. Sub-Area: Lynches River.
Location: Florence County; Effingham Bridge; 0.2 mile west of Old Effingham.
OBS-Cretaceous (Burches Ferry Phase). The banks of Lynches River exhibit:
(a) 3 feet of smooth black laminated soft shale, overlying-
(b) green-gray, granular to smooth textured marl, with indurated layers; extending 4 feet above zero water level ; incloses exogyra costata, anomia simplex, etc., etc.

MATERIAL: MARL. SURVEY No. $9801 / 2$.
Area: Pee Dee. Sub-Area: Lynches River. Location: Florence County; Sparrow Swamp; 5 miles west of Effingham Station; 1.2 miles southwest of Old Effingham.

OBS-Cretaceous (Burches Ferry Phase). 2.5 feet of smooth black laminated shale, upper surface 5.5 feet above zero water level of Sparrow Swamp; 3 feet of green-gray, granular to smooth, Cretaceous marl (Ripley), with occasional indurated layers. A flowing well showed the thickness of this marl above the water-bearing stratum as 62 feet. (Exogyra costata constituted the only fossil in evidence.)

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\text { MATERIAL: MARL. SURVEY NO. } 990 .
$$

Area: Pee Dee.
Sub-Area: Lynches River. Location: Florence County ; one mile South of Effingham Station. Address of Owner or Representative (?): Dargan Lumber Co., Effingham, S. C.
ObS-Cretaceous (Burches Ferry Phase). Eastern bank of Lynches River below A. C. L. Railway bridge, I. 5 miles south of Effingham (zero water level=62 feet M. L. T.), exhibits:
(a) Variably distributed white sands.
(b) 7 feet of white and pink arenaceous clays.
(c) io feet of fine grained stratified sands, banded in horizontal zones of white, pink, salmon and yellow colors, the bands occasionally attaining the thickness of 2 feet; dark chocolatecolored clayey sands occur along the lower portion of this zone.
(d) in feet of purple clay and water-bearing sands.
(e) 14 feet of Cretaceous (Ripley) gray marl irregularly emerges I4 feet above zero water level, and extends below. An indurated ledge of this marl appears along the line of zero water level. Deep well borings indicate thickness of Cretaceous marl as izo feet; the upper 28 feet is more compact and includes broken lines of indurated marl; the lower portion (102 feet) being black, soft and sticky. The water-bearing sand stratum underlying the latter has hydrostatic head, forcing water to the elevation of 113 feet M. L. T.

> MATERIAL: MARL. SURVEY NO. 99I.

Area: Pee Dee. Sub-Area: Eastern scarp of Lynches River.
Location: Florence County; McCall Place; 2 miles south of Effingham.
OBS-Mrocene (Pee Dee Phase). At an elevation of in feet above zero water level of Lynches River the scarp delimiting the swamp on the east exposes, at a spring, a ledge of Miocene mart
consisting of a matted mass of shells of chama congregata and arca incile, with a few specimens of pecten eboreus.

## MATERIAL: MARL. . SURVEY No. 992.

Area: Pee Dee. Sub-Area: Eastern scarp of Lynches River.
Location: Florence County; Timmon's Lake (arm of Lynches River); 4 miles south of Effingham.
ObS-Miocene (Pee Dee Phase). At the mouth of Timmons Lake the eastern bank of Lynches River affords a steep ascent of 48 feet above zero water level; it exhibits the following section:
(a) 33 feet of fine white sands. Very fine grained sands stratified in alternate bands of yellow, white and light red.
(b) 7 feet of Miocene marl, consisting of an irregularly compacted mass of shetls (arca incile, venus Rileyi, vermetis, chama congregata, modiola (sp), etc.).
(c) 8 feet. The intervening 8 feet above zero water level is obscured.

## material: marl. SURVEy no. 993.

Area: Pee Dee. Sub-Area: Eastern scarp of Lynches River. Location: Florence County; Anderson Bridge; 3 miles east of Scranton.
OBS-Miocene (Pee Dee Phase). A thin stratum of Miocene marl is exposed in the east bank of Lynches River a short distance above the bridge, where it was formerly dug for agricultural purposes.

> MATERIAL: MARL.

Area: Pee Dee.
SURVEY NO. 995.
Sub-Area: Lynches River.
Location: Florence County; Ard's Bluff; eastern scarp Lynches River; 12.5 miles east of Lake City.
Address of Owner or Representative (?) : S. Poston, Bostick, S. C.
OBS-Cretaceous. Ard's Bluff appears as the eastern scarp of Lynches River; dark green soft Cretaceous marl extends in feet above the zero water level, and supports stratified sands, about io feet thick, which increases with distance from the stream.

Marl analysis: Lime, 4.0 per cent.; Magnesia, i. 10 per cent.; Alumina, 9.27 per cent.; Ferric Oxide, 0.35 per cent.; Ferrous Oxide, 3.1 I per cent.; Titanic Oxide, o.96 per cent.; Soda ( Na 2 O ), r.1I per cent.; Potash (K2O), 2.27 per cent.; Carbonic Acid (CO2), 0.80 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), o. o o per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 2.95 per cent.; Silica (and insoluble), 70.12 per
cent.; Ignition, I.1o per cent.; Moisture, 2.83 per cent.; Total, roo.07 per cent.

$$
\text { MATERIAL: MARL. SURVEY NO. } 996 .
$$

Area: Pee Dee.
Sub-Area: Lynches River.
Location: Florence County ; Bartell's Landing; 4 miles below Ard's Bluff.
Address of Owner or Representative (?): J. W. Holiday, Savage, S. C.

OBS-Cretaceous. A bluff of soft blue Cretaceous marl emerges 8 to to feet above zero water level, on the east bank of Lynches River; it is similar to the marl exposed at Ard's Bluff (No. 995).

$$
\text { MATERIAL: MARL. SURVEY NO. } 998 .
$$

Area: Pee Dee.
Sub-Area: Lynches River.
Location: Williamsburg County; Henry Newell; 3 miles south of Johnsonville.
Address of Owner or Representative (?) : Henry Newell, Ripley, S. C.

ObS-Cretaceons (Burches Ferry Phase). Cretaceous marl. (Ripley) exposed in bottom of well.

MATERIAL: MARL.
Area: Pee Dee. Sub-Area. Black Mingo. Eocation: Williamsburg County; Indiantown; 12.5 miles S. $55^{\circ} \mathrm{E}$. of Lake City.
Address of Owner or Representative (?): David E. McCutchen. Indiantown Church P. O., S. C.
OBS-Cretaceous (Burches Ferry Phase). Low tide exposes Cretaceous (Ripley) marl emerging a few feet above M. L. T.; it is hard and harsh, dark gray-green in color, and contains shells of the exogyra costata and turretella vertebroides.

A thin water-bearing stratum of sands resting on this marl supports about 4 feet of pale gray laminated clay underlying 14 feet of mottled loams and sand.

Old marl pits are to be observed on the scarp limiting the swamp. on the east, about 800 feet northeast of the bridge.

## GLAUCONITE.

MATERIAL: GLAUCONITE. SURVEY NO. 355.
Area: Edisto Sub-Area: Coosawhatchie River. Location: Hampton County ; Gifford Station well, north side of railway near scarp of plateau.

Address of Owner or Representative (?): W. O. Mauldin, Hampton, S. C.
OBS-With an overburden of 21 feet of a firm, mottled-red and white clay occurs a bed of loose glauconitic marl, which affords the following analysis:

Lime, 10.34 per cent.; Magnesia, I. 55 per cent.; Alumina, 2.86 per cent.; Ferric Oxide, 2.52 per cent.; Titanic Oxide, 0.45 per cent.; Soda ( Na 2 O ), r .25 per cent.; Potash (K2O), i.16 per cent.; Carbonic Acid (CO2), 0.56 per cent. ; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 6.61 per cent.; Sulphuric radical ( $\mathrm{SO}_{3}$ ), 3.02 per cent. ; Silica (and insoluble), 65.06 per cent.; Ignition, 2.18 per cent.; Moisture, 2.57 per cent. Total, ioo.13. Equivalents: Calcium Carbonate, o.7^ per cent.; Tri-Calcium Phosphate, 14.44 per cent.; Calcium Sulphate. 5.13 per cent.; Magnesium Carbonate, o. 46 per cent.

This material should afford an excellent fertilizer for use in its vicinity. It contains numerous vertebrate fossils. Geological section presented under marls Survey No. 355 .

## material: glauconite. survey no. $3661 / 2$.

Area: Edisto.
Sub-Area: Edisto River. Location: Colleton County ; i mile south of Raysor's Bridge.

OBS-The west bank exhibits a bluff with mottled clays, overlying about 12 feet of laminated pale drab clay, which rests on a thin undulating seam of oyster shells and fragments of bones. Unconformably underlying the above there is observed, varying from I. 7 feet to 3 .I feet above and extending i. 2 feet below the zero water level, a bed of dark laminated shale (Oligocene-Combahee) overlying the typical glauconitic marl of the Edisto River.
material: glauconite. survey no. 386-387.
Sub-Area: Big Salkehatchie.

Area: Edisto.
Location: Colleton County; 12 miles northeast of Brunson.
OBS-The bed of the Salkehatchie River, from a point above Broxton's Ford to its confluence with Little Salkehatchie River, consists of Mio-Oligocene shales similar to those exposed at the base (zero water level) of the Parachucla series at Porter's Landing on the Savannah River. The more prominent exposures are at Broxton's Ford and Toby's Bluff. The following section is consolidated from both sides of Broxton Ford:

## Western Side:

15 feet. $\left\{\begin{array}{l}\text { Fine sands. } \\ \text { Ash-gray, case-hardened clay. } \\ \text { Gritty, white and red mottled clay. }\end{array}\right.$
12 feet. $\left\{\begin{array}{r}\text { Yellow-red, fine grained, compact argillaceous sands; } \\ \text { the mass is firm and weathers to rounded sur- }\end{array}\right.$ faces.

## Eastern Side:

ro feet. $\left\{\begin{array}{c}\text { Stratified yellow-red medium coarse sands, partly in- } \\ \text { durated. }\end{array}\right.$ 6 feet. $\quad \begin{array}{r}\text { resulting from decomposition of glauconite, }\end{array}$ which appears in irregularly distributed pockets and splotches.
2 feet. $\left\{\begin{array}{c}\text { Fine grained clay shale, of pale ash-blue color, inclos- } \\ \text { ing fine sand, coarse sand, rounded pebbles } \\ \text { and occasional pockets of glauconite. Also con- } \\ \text { tains numerous fossil casts. (Combahee Phase.) }\end{array}\right.$
Zero water level.
Along the flats bordering the Salkehatchie River on the east, a glauconite bed about 5 feet thick is exposed, by wells, overlying the probable equivalent of the fossiliferous shale exhibited at Broxton Ford. The glauconitic material is of the same character as that exposed at Gifford, from which a sample afforded analysis exhibited under glauconite Survey No. 355. (Salkehatchie Phase.)

MATERIAL: GLAUCONITE. SURVEY NO. 393.
Area: Edisto.
Sub-Area: Salkehatchie River.
Location: Colleton County.
OBS-Near the Walterboro-Ehrhard Railway bridge, spanning the Little Salkehatchie River, a well at Carter's Mill exposes a glauconitic bed between 4 and 5 feet thick. (Salkehatchie Phase.)

## MATERIAL: GLAUCONITE. SURVEY NO. 423.

Area: Edisto.
Sub-Area: West Branch of Cooper River. Location: Berkeley County; Gippy.
Address of Owner or Representative (?): S. Porcher Stoney, Moncks Corner, S. C.

OBS-In eroded depressions of the surface of the marl occur pockets of glauconitic matter inclosing fossil shells accumulated from sundry horizons.

## material: glauconite survey no. 688.

Area: Santee. Sub-Area: Half-Way Swamp. Location: Orangeburg County; Keitt Ravine.
Address of Owmer or Representative (?) : Miss A. Keitt, Bennettsville, S. C.
OBS--The public highway, crossing Lyon's Creek on the Keitt place, and the neighboring ravines, afford the following section:
(a) 30 feet. Soil Lafayette red clay, cobbles.
(b) 9 feet. Pink-brown and white clays in thin laminæ parted by fine micaceous sands.
(c) 0.5 feet. Layer of nodular limestone, some of septaria form.
(d) 14 feet. Glauconite, partly weathered; containing shell fragments; analysis:
Lime, 0.44 per cent.; Magnesia, 2.23 per cent.; Alumina, 8.11 per cent.; Ferric Oxide, 16.35 per cent.; Ferrous Oxide, 0.48 per cent.; Soda ( Na 2 O ), 0.25 per cent.; Potash ( K 2 O ), 2.83 per cent.; Silica (and insoluble), 53.22 per cent.; Ignition, 5.88 per cent.; Moisture, 9.78 per cent. Total, 99.98 per cent.
(e) 0.5 feet. Limonite, with casts venericardia planicosta.
(f) 16.0 feet. Cross bedded, coarse sands, with a few small fragments of bone at base. A thin, broken layer of siliceous concretions resembling buhr-rock occurs in this mass.
(g) 25 feet. Yellow, gray and pale green, thin layers of partly indurated clay or shale, interlaminated with thin seams of fine sands and mica; near the surface of this zone occur cauli-flower-shaped nodules of silica, which afford imperfect fossil shells; numerous casts of an echinoderm occur in this zone on a scarp 0.8 mile east; fragments of shells suggestively lignitic occur in a scarp 0.3 mile west; this zone graduates to
(h) ro feet. Layers of coarse, yellow and gray sandstone interlaminated with yellow clay.
(i) 15 feet. Material immediately above level of creek is obscured.

## MATERIAL: GLAUCONITE SURVEY NO. 696.

Area: Santee.
Sub-Area: Half-Way Swamp.
Location: Orangeburg County; Creston.
Address of Ozuner or Representative (?): R. E. Edwards, Jr., Creston, S. C.
OBS—A bed of glauconite, of a lively green color, occurs from 3 to 9 feet thick immediately north of the railway bridge along a branch entering Half-Way Swamp. Analysis shows following composition:

Lime, 0.84 per cent.; Magnesia, 2.00 per cent.; Alumina, 8.06 per cent.; Ferric Oxide, 12.55 per cent.; Ferrous Oxide, 1.24 per cent.; Titanic Oxide, o. 30 per cent.; Soda (Na2O), 0.49 per cent.; Potash ( K 2 O ), 3.9 I per cent.; Carbonic Acid (CO2), 0.35 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), o.05 per cent.; Sulphuric radical, o.21 per cent.; Silica (and insoluble), 58.08 per cent.; Ignition, 5.15 per cent.; Moisture, 6.76 per cent. Total, 99.99 per cent.

MATERIAL: GLAUCONITE SURVEY NO. 739.
Area: Santee.
Sub-Area: Santee River.
Location: Berkeley County ; Lenud's Ferry.
Address of Owner or Representative (?): S. G. Stoney, Charleston, S. C.
OBS-An irregular glauconitic bed overlying the marl exposed near the west landing of Lenud's Ferry affords the following analysis:

Lime, 4.05 per cent. ; Magnesia, 3.13 per cent.; Alumina, 8.47 per cent.; Ferric Oxide, 13.83 per cent.; Soda ( Na 2 O ), 0.53 per cent.; Potash (K2O), 3.28 per cent. ; Carbonic Acid (CO2), 5.49 per cent.; Phosphoric Acid 1.21 per cent.; Silica (and insoluble), 50.47 per cent.; Ignition, 2.0I per cent.; Moisture, 7.7 I per cent. Total, ioo.I8 per cent. Equivalents: Calcium Carbonate, 4.66 per cent.; Calcium Phosphate, 2.65 per cent.; Magnesium Carbonate, 6.57 per cent.

## PHOSPHATE BEDS.

Geographic Limits-The South Carolina phosphate beds occur interruptedly along a belt the lower limit of which extends along a meandering line from a point near the source of the Wando River to the mouth of Broad River; this line irregularly varies from 6 to-

20 miles distant from the present coast line of the outlying "sea islands," located east of the Ashepoo River. From the Ashepoo to the Combahee Rivers an apparent gap occurs. From the Combahee River the southerly line extends by Morgan Island and St. Helena Island, beyond which the phosphate zone disappears under the ocean.
There are 5 main groups, constituted of a series of lesser areas, which afford beds of phosphate rock of commercial importance, to wit: The "Wando Basin," the "Cooper Basin," the "Ashley Basin," the "Edisto Basin," and the "Coosaw Basin."
The Wando Basin comprises the drainage territory tributary to the Wando River above Cainhoy, principally on the northerly side. The Wando Basin probably joined the Cooper Basin along the eastern branch of the Cooper River.
The Cooper Basin comprises the drainage territory tributary to the Cooper River above the United States Navy Yard, and comprises deposits on the eastern branch, on the western branch (with thin beds extending to Hell Hole Swamp), on Back River, on Foster's Creek, on Goose Creek, and on Fiddler's Creek; with its westerly limit along the railway, from a point north of Ashley Junction to Ten-Mile Hill. The Cooper Basin joins the Ashley basin at the head of Nine-Mile Bottom.
The Ashley Basin comprises the drainage territory of the Ashley River, the Stono River, the eastern branch of Rantowles Creek, and the head of Wadmalaw River. Its circumscribing line extends from a point slightly north of Ashley Junction to Ten-Mile Hill, and thence to Greggs. on the Ashley (with thin patches as high as Captain's Creek), thence around Bear Swamp, and down the west side of South Swamp to a point near the mouth of Rantowles Creek (a tongue extends along the north side of Stono River to the Wadmalaw River), from which the line returns along the south side of Stono River to the Cherokee Mines, and proceeds northeasterly to the Ashley River (i mile below Bees Ferry), and thence northerly to the upper side of the ridge above the Charleston-Savannah Railway, which ridge delimits it to the initial point of the line above Ashley Junction.
The northwesterly point of the Ashley Basin approaches the northeasterly point of the Edisto Basin.
The Edisto Basin comprises the drainage territory tributary to the Edisto River, from Sullivan's bridge to a point 2 miles north of Jacksonboro; to Horse Shoe Creek, from Horse Shoe Mines to the mouth of Chechessy Creek, and up the latter creek to its source.

The Coosaw Basin comprises phosphate deposits under marshes and islands and in the beds of the wide intervening waterways.

The circumscribing line, starting from Cotton Hope on the Combahee River, proceeds around Morgan Island and thence along St. Helena Island to Beaufort River, with a tongue extending through Archers Creek to Broad River; from Port Royal the line extends up Beaufort River and through Brickyard Creek to the Coosaw River, and thence proceeds up Whale Branch and north of Chisolms Island, whence it returns to Cotton Hope.

There are several detached outlying patches connecting or bordering the above cited main basins; one of sulordinate prominence in the bed of the Edisto River near the confluence of Dawho Creek;

beE's ferry.
FIG. I2.-PHOSPHATE ROCK BED ON ASHLEY-COOPER M.MRI..
a deposit of low grade material appears along the northerly border of Hell Hole Swamp.

Physiography and Geognosy-Anterior to the Miocene time the shore line of a chamel. deeply incised in the Ashley-Cooper marls. extended along the southerly line of the Wando River. and thence
across the Cooper River (below the United States Nav' Yard) ; it proceeded thence to the Ashley River (i mile below Bee's Ferry), and thence to the Stono River, which it crosses just below the Cherokee Mines, and thence along the southerly side of said Stono River to its source, in union with the Wadmalaw River. The depth of this channel as indicated by the degraded surface of its marl bed, increased from tide level near Bee's Ferry to 40 feet below tide, within the distance of one mile.

The depression incident to the inauguration of the Miocene introduced the Edisto phase of the ecphora marl along a zone, the width of which extended from below this pre-Miocene channel to a line far up on the Dorchester ridge. On the irregularly distributed flats of this Edisto marl, where unencumbered with islands or deposits of sand, phosphatic matter was deposited from the following several sources:

First-From the disintegration, partial solution and erosion of the Ashley marl. Of the fact that this process has been extensive, we find abundant evidence in local irregularities of the surface. As a result of the chemical and physical agencies cutting away this marl, we should have, on the basis of 3 per cent. of phosphate of lime, the minimum contained in the Ashley marl, enough phosphoric acid to afford 121 tons of 60 per cent. phosphate rock from each acre of this marl for every i foot in depth thus disintegrated. The leachings and sediments from the higher areas of the Ashley marl would find their way to the depressed areas previously covered with Edisto marl, which would thus accumulate concentrations at the expense of the quality and quantity of the Ashley marl on the higher areas.

Second-This low marl coast thus formed, from the mouth of the Santee River to the Broad River, a reëntral angle, or concaved surface, to the former gulf stream. A study of the trend of this current, as indicated by the abrupt scouring away of the Ashley marl, will show that it probably impinged upon this coast upon which it stranded phosphatic sediments, and organisms which abstract from the waters of the ocean both the carbonates and the phosphates of lime; these little organisms probably first perished through the fouling of the warm, clear waters of the Gulf stream, by the suspended organic and inorganic matter, which were contributed along the coast by the fresh water streams and by the laving of the coast. Through the action of the tides this matter would be deposited as an ooze or mud along the areas more or less removed from the free access of clear sea water; or along the Miocene-covered
flats where they supplemented the deposit from the first above-mentioned source.

Third-At this period numerous families of fishes, amphibians and reptiles, many species of which are now extinct, prevailed in great numbers, and the fossils of these animals, found intermingled with the phosphate bed, indicate that these creatures contributed to the supply of phosphate material; the beds of the ancient estuaries and the immediate shore line probably afford the greater part of all bones discovered in this deposit. It is in the ancient estuaries, or in the present marine phosphate beds that we principally find the remains of quadrupeds, although even here they are comparatively rarely discovered; and it is under similar conditions that we even more rarely find the isolated bones of birds; but, whereas land animals no doubt contributed to the source of supply of phosphate material, they were probably insignificant factors as compared with the other sources of phosphate matter combined in the phosphate beds of this State.

As the deposits from the foregoing sources accumulated and increased their elevation above sea level, waters from swamps and morasses probably gained access; the organic acids resulting from the decomposition of organic matter abounding in such swamps would, through a well recognized chemical principle, convert the calcium phosphate in this ooze into a soluble form, which, coming in contact with the excess of lime in the underlying marl, would combine with a portion of said marl to convert the same into phosphate of lime. This action would at the same time liberate so much of the carbonic acid of the marl as would dissolve portions of the adjacent marl and its included shells. We accoìdingly observe a bed of Miocene marl (Ecphora or Edisto type), from less than one foot to three feet in thickness, which, having thus been partly phosphatized and partly removed by solvent agencies, now presents a more or less continuous bed honeycombed with numerous irregular cavities, many of which tortuously extend through the bed. An interesting principle attaches to the fact that the solvent agents appear to have exercised a preferential affinity for the carbonate of lime in the form offered by the shells, which were encased in the marl, but which having been dissolved are represented by equivalent voids surrounded by molds of phosphatized material preserving the most delicate lines of the original shells.

Where the shells in pairs were filled with marl the latter remains as phosphatized casts exhibiting the interior form of the shells.

The larger cavities in the phosphate rock were invaded by the supernatant fluid ooze which contained vertebrate remains of many varieties and in great numbers. The phospahtized marl very rarely contains vertebrate remains; occasionally a few teeth of the squalidre are observed. (See Section: Marls, Sur. No. 457.)

During the Pliocene or early Pleistocene time the portion of the phosphate bed along the shore line of the Ashley-Junction channel and other depressed areas was more or less disrupted and worn to rounded fragments by accentuated wave action. The greater portion of the phosphate rock in the Cooper and Wando basins was subjected to this action, which also extended to the lower marginal limits of the other basins. However, as originally phosphatized this bed consisted of a thin layer of Miocene marl which irregularly covered the depressed areas of the Ashley-Cooper (Eocene) marl. It contains numerous casts of Miocene shells, notably: ecphora quadricostata, dentalium attenuatum,

Mr. Tuomey erred in assuming as Eocene this upper layer which rests in immediate contact with the Ashley-Cooper Eocene marl; and the local contributors to the literature of the South Carolina phosphate beds have persevered in the same error. Dr. Dall has definitely confirmed its Miocene character.
The rounded lumps of phosphate rock appear in two distinct phases; first resting on the Ashley-Cooper marls in extension of the original beds; second as transported material in the Accabee gravels which were accumulated during the Pleistocene with the Wadmalaw shell marl and the Bohicket marl sands separating them from the underlying, original phosphate bed.
In certain areas rounded quartz pebbles and shells accumulated from more or less distant beds; some shells as old as the middle Eocene were admixed with phosphatic sediments and phosphatized. The pebbles may have been derived from the Oligocene marls of the Parachucla type in which they are observed.
A third type of bed finds very occasional expression in deposits of so-called "plate rock," which is low in grade and seemingly represents a thin stratified deposit of phosphatic sediment, affording no observed fossils excepting the teeth of Squalidr.
The precise period at which these phosphatic oozes and glauconites, etc., were deposited is still conjectural, but, whereas we were once inclined to accept the view that they were formed during the

Pliocene, recent observations strongly impress the probability that they were accumulated immediately subsequent to the Edisto phase of the Miocene ; and then slightly elevated above the littoral line of the succeeding Goose Creek phase, which finds its marginal line along the northerly margin of the aforementioned pre-Miocene channel. Along this line the phosphatized Edisto marl is sharply delimited by the Goose Creek marl which incloses, along this marginal zone, nodules, pebbles and some vertebrate fossils apparently acquired from the contiguous Edisto beds. From this marginal line the base of the Goose Creek marl abruptly shelves southerly. Furthermore, we have not yet found any portion of the Goose Creek marl phosphatized. It might, therefore, appear that the Goose Creek marl is junior to the phosphate sediments, but some doubt still lingers through the fact that we have not yet found the Goose Creek marl indisputably resting on any portion of the phosphate bed, although we do find it in its light yellow porous form, inclosing phosphate nodules and pebbles superimposed on the typical Edisto marl.

The apparent break in the continuity of the beds between the Ashepoo and Combahee Rivers was probably due to a ridge of Combahee shales which are exposed along the Salkehatchie River unencumbered by calcareous marls; the delimiting influence of these shales is impressively exhibited near the mouth of Huspa Creek and along the Coosawhatchie River where tides prevail. These OligoMiocene shales were merely suggested by Mr. Tuomey as the possible equivalent of his buhrstone siliceous clays.
Immediately superimposed on the phosphate beds we successively observe the Post-Pliocene marl of the Wadmalaw type, the Bohicket green sands and marls, the Accabee gravels with irregular inclusions of rounded phosphate rock and pebbles, Wando clays and sands, sea island loams and sands; a complete series, however, is rarely observed at any one locality.

Industrial-The upper area of this phosphate belt affords a rock too low in phosphoric acid to be of immediate economic importance. The customary guarantees are 58 per cent. and 55 per cent. of calcium phosphate, on land and river rock respectively. The deposit varies in thickness from a few inches to 3 feet, 12 inches representing a good deposit and affording about 1,100 tons to the acre. The thickness of the overburden admitting of economical handling will, of course, vary witl the thickness of the deposit, with the market value of the rock, and with the factor of transportation. With a good 12 -inch seam of rock valued at $\$ 3.50$ per
long ton f. o. b. mines, the maximum thickness of the overburden would be about 14 feet for machine mining and 7 feet for hand mining. Formerly the land mining was performed entirely by hand; the overburden being removed by a system of open trenches of lengths varying according to drainage exigencies. Each miner is assigned i8 feet along the face of the uniformly advanced trench, from which he throws the overburden to the previously exhausted area in the rear ; the underlying rock, bedded in a matrix of calcareous mud, is picked loose, and then heaved by shovel to unbroken ground above; whence it is removed on wheelbarrows to tram-cars and handled thence to the washer, where the mechanically attached mud and sand amounting to from 40 to 65 per cent. of the mass are removed. It is next dried in kilns or in simple heaps piled on wood, after the burning of which the rock is ready for the fertilizer factory, to which it is transported and there ground and chemically treated. The system of hand mining has to a large extent been displaced by the introduction of land dredges or steam shovels, which discharge direct into tram-cars on movable tracks. Steam shovels have been successfully operated to a depth of 19 feet on a 14 -inch seam of rock.
The deposit of phosphate rock was very soon recognized, after its discovery in 1867, as extending across and overlying the beds of the streams and bays, and under marshes which, being within tidal range, and therefore the property of the State, were promptly laid under tribute to the State Treasury.

The phosphate rock from the State waters has been chiefly devoted to the export demand, its low content in iron and alumina making it more attractive to the European market.
That portion of the phosphate deposit found in the bed of the streams is denominated river rock, and is mined by means of floating dredges and then treated by the same process that is applied to the product of the land mines. The river rock was first mined by means of tongs operated by laborers on small flat-boats. But the exhaustion of the shallow rock necessitated the use of steam dredges, which have been operated to the extreme depth of 52 feet, where the rock was extracted under 16 feet of mud. The depth, however, from which the river rock is now extracted does not ordinarily exceed 30 feet.
The ground rock treated with sulphuric acid constitutes acid phosphate, which is the basis of all modern commercial fertilizers.

By means of another chemical process the phosphorus contained in this rock is extracted and employed in the arts, conspicuously in the manufacture of matches. Other chemical processes applied to this rock contribute sundry compounds to the pharmacy.


FIG. II.-DREDGING PHOSIHATE ROCK FROM THE DEPTH OF 52 FEET.


FIG. I2.-LIGHTER RECEIVING ROCK FROM THE JROJECTING CILINDRICAL WASHER.

## ANALYSIS OF SOUTH CAROLINA PHOSPHATE ROCK BY PROF. K. FRESENIUS.

P. C. P. C.
Lime ..... 39.40
Phosphoric Acid ..... 24.64
Magnesia 0.49 Carbonic Acid ..... 4.54
Soda 0.69 Chlorine ..... 0.02
Potash 0.07 Fluorine ..... 3.24
Alumina 0.62 Silica and Sand ..... 16.38
Sesquioxide of Iron. 0.56 Moisture expelled at $100^{\circ} \mathrm{C}$. ..... 1.83
Iron 1. 37 Moisture expelled at red heat ..... 4.66
Sulphur 1.57 Organic matter ..... 0.75
Sulphuric Acid ..... 0.53
Total ..... 101 .36

## FULLERS EARTH.

This material derives its name from its former use in the extraction of grease. In England the fullers earth beds form a distinct subdivision of the Triassic formation, but in South Carolina the socalled fullers earths are shales belonging to the Black Mingo and Congaree phases of the Eocene, and to the Parachucla shales of the Oligocene. The Hampton clays of the Lafayette respond fairly well to bleaching and filtering tests.

The Eocene belt, which affords the large bodies of fullers earth, extends from the Savannah River along the upper part of Hollow and Town Creeks, and thence by Aiken, beyond which it is largely obscured by sands until exposed along the ridge between the two forks of the Edisto; east of the north fork it is exhibited in a gritty form neãr the head of Congaree Creek, and along the south side of the basin which is formed by First and Second Creeks. Here it assumes a finer grained form, which•extends by Gaston, near Congaree Bluff, along Sandy Run, Little Beaver Creek, Wachte Hill, Lyon Creek, and Warley Hill to the Santee River, which it crosses, and is thence exposed along Fullers Earth Creek, Wedgefield, Moore's Spring and Catchall.

The above belt comprises the typical Congaree shale, which is interstratified with very thin seams of mica and fine sands. It attains in places the thickness of approximately 40 feet, and generally includes molds of fossil shells. In color it varies from gray-white through drab to a dark slate. Its specific gravity varies from 1.75 to
2.00. This material bleaches well, and filters well, and is excellently adapted for the treatment of the mineral oils; some objection to the imparted flavor has prejudiced its use for the treatment of the culinary oils and fats. From the vicinity of Sumter one line of this material extends southeasterly in thin beds associated with the Black Mingo shales.

The Black Mingo shale, or fullers earth, appears along Black River from Brewington Lake interruptedly to Perkin's Bluff. An examination of the related section reveals along the bed and banks of Black River, and some of its tributaries, a bed of fullers earth which in many places attains a thickness exceeding 30 feet. The character of this bed varies very slightly in chemical and physical properties in different localities, but important variations to be noted are observed in passing from the top to the bottom of this deposit: the upper fourth part of this bed consists of yellow, dove, and light slate-colored, stratified layers of fullers earth separated by extremely thin layers of micaceous matter; this fullers earth yields easily to any cutting implement. This upper fourth, however, is so high in alumina content that good filtration which is required in its uses is somewhat prejudiced. The middle two-fourths parts of the bed consist of thicker stratified layers of a dark slate-colored material irregularly stained with iron oxide; it is too hard to yield to the knife, having been partly silicified. Near the middle of this twofourths zone a layer of fossiliferous marl occurs, which is high in contained lime, but which rarely exceeds the thickness of one foot; this layer requires careful exclusion.

The lower or bottom fourth part of this bed carries, in many places, an appreciable amount of iron pyrites which, upon exposure, weathers, and thereby forms copperas and alum, both of which are objectionable. It will, therefore, be observed that the middle twofourths parts of this deposit constitute the article of greatest commercial promise.

In some favorable localities, notably near the "Lower Bridge" (4 miles south of Kingstree) the upper soft one-fourth part has been scoured away by floods and other forces of time. In such places the expense of extracting the more desirable portion of the bed should, of course, be much less than in those localities where the upper onefourth part is still intact, and, therefore, represents largeiy "dead work."

It might be competent to note that in the case of diatomaceous earth the burning process ordinarily employed in the preparation of
fullers earth should be either eliminated or conducted with extreme care, for the reason that high heat causes the fine porous diatomaceous silica to combine with the bases present to form an incipient glass-like mass, without porosity, and, therefore, without value for clarifying fats, oils, etc.

Fullers earth is treated and utilized in the following manner: After having been air dried for a few days, it is crushed to pass a three-quarter-inch mesh screen; thence it is conveyed through a rotary dryer heated by a crude oil furnace to a temperature not exceeding $212^{\circ} \mathrm{F}$. Each cylinder will dry from 30 to 60 tons of wet fullers earth in 24 hours, the capacity varying with the amount of moisture present. It is then ground and railed to supply demand for three separate grades, respectively of 15,40 and 90 -mesh sizes.
material: buhrstone survey no. 3I.
Area: Santee.
Sub-Area: Cedar Creek.
Location: Aiken County; Dibble Farm (Old Decaradeaux place); 5.5 miles S. E. of Aiken.

OBS-Eocene.
About 150 feet south of the fish pond dam the following section is exposed, partly in a gully:
(a) 20 feet-Sandstone, fossiliferous buhr-rock, chalcedony.
(b) 11 feet-Gray to white silicified arkose including some small lumps of silicified fine grained light green shale.
(c) 4 fect--Ledge of coarse brown sandstone inclosing rounded pebbles and fossil fragments, lower surface irregularly rests on (d).
(d) 8 feet-Loose conglomerate of dirty brown sands inclosing rounded pebbles (less than $1 / 4$ inches in diameter), variably distributed.
Distinct layer of pebbles in ferruginous matrix at base.
(e) 2.5 feet-Laminated white clay (Middendorf?) irregularly stained brown and red.
(f) Medium grained white sands with some mica (muscovite).

About one-half mile west of exposure Sur. No. 3I the Aiken road at the crest of a small hill exposes in a five foot excavation the following:
(a) Fine grained red and yellow sands inclosing small bunches of silicified shells; the lower portion which is more clayey and incloses rounded pebbles rests on an extensive mass of buhrrock, and against the northwest end of stratum (b).
(b) 2.2 feet-A ledge of laminated soft pea-green argillaceous shale extends with a very slight inclination southeasterly from the middle of this section. Broken fossils possibly derived from the upper surface of the underlying buhr-rock were observed under the pea-green shale, but no pebbles appeared in correspondence with the lower portion of (a).
(c) Vast masses of buhr-rock and chalcedony inclosing occasional fossils, notably near upper surface (See Sur. No. 31).

## MATERIAL: FULLERS EARTH.

Area; Savannah.

SURVEY NO. $3^{8 .}$
Sub-Area: Three Runs.
Location: Aiken County ; between Three Runs and Tinker's Creek; 12 miles S. $67^{\circ} \mathrm{W}$. of Williston.
OBS-Eocene (Whrley Hile). A bed of laminated pea-green Eocene shale is exposed by the road in a cut about 400 feet east of Tinker's Creek. This material is of a gritty texture and represents an inferior fullers earth.

## MATERIAL: FULLERS EARTH. SURVEY NO. I73.

Sub-Area: Wise Creek.
Area: Savannah.
o. 6 mile south of Aiken Courthouse.
OBS-Eocene (Congaree Phase). Calico Spring, at the head of Wise Creek, affords the following exposure:
(a) 2.0 feet. Hard quartzite varying to sandstone, which contains fossiliferous casts.
(b) 4.0 feet. Drab, laminated, coarse fullers earth.
(c) 1.5 feet. Very compact grainless fullers earth with conchoidal fracture.
(d) 3.0 feet. Harsh, coarse grained fullers earth.
(e) - fect. Drab, soft, fine grained fullers earth.
material: fullers earth. survey no. 257.
Area: Edisto.
Sub-Area: Lightwood Creek.
Location: Lexington County; 3 miles S $45^{\circ}$ E. of Leesville.
Address of Owner or Representative (?): Elmore Smith, Leesville, S. C.
ObS-Eocene (Congaree Phase). Table of hard material 360 feet wide and 2,400 feet long, with its base superior to the valley lines of Hell Hole Branch, comprising:
(a) 12.1 feet. Ledge, upper portion white quartzite, locally approximating arkose, consisting of medium to coarse size angular grains of quartz in a matrix of silica, which matrix irregularly varies to silicified kaolin affording a milk-white tone. Affords a good structural material which works readily under cutting tools, but is not susceptible of polish.
The intermediate portion shows thin stratified seams of indurated fullers earth, and thin lines of muscovite. The lower portion is a brecciated mass of silicified angular lumps of fullers earth in a quartzitic matrix. The extension of this bed, which is interruptedly exposed along the western scarp of the Edisto River as far down as the mouth of Turkey Creek, first exhibits fossils about 2 miles northwest of Seivern (venericardia planicosta, etc., etc.)
(b) 12 feet. Bed of Eocene (?) white-yellow clay silicified in its upper portion to an approximate novaculite, which characterization gradually disappears with depth, the lower portion being of a dense tallowy consistency.

## MATERIAL: FULLERS EARTH. SURVEY NO. 262.

Area: Edisto.
Sub-Area: Three Cornered Pond. Location: Aiken County; Three Cornered Pond; 2 miles east of Seivern.
Address of Owner or Representative (?) : Wayne Gunter, Seivern, S. C.

OBS-Eocene (Congaree Phase). The scarp encircling Three
Comered Pond exposes about 16 feet of laminated Eocene shale, underlying an indurated slightly fossiliferous sandstone (fossil casts more prominent on the place of Mr. Marshall Gunter on the scarp I mile from Sand Dam Bridge). The shale or fullers earth appears to be a littoral deposit along a Cretaceous ridge, borings indicate that it does not penetrate the ridge horizontally more than 40 feet from the outcrop. This material, when first extracted, is susceptible of being easily sawed or shaped with ordinary tools; use largely confined to the construction of neighborhood chimneys. This material is comparatively free from grit ; it bleaches well, filters well, and is free from objectionable odor and taste.

Analysis: Lime, 1.01 per cent.; Magnesia, 0.64 per cent.; Alumina, 14.92 per cent.; Ferric Oxide, 4.01 per cent.; Silica (and insoluble), 73.84 per cent. ; Ignition, 4.00 per cent. Total determined 98.42 per cent.

Material: buhrstone and fullers earth. SURVEY no. 272.
Area: Edisto. Sub-Area: Dean Swamp.
Location: Aiken County; Sally place; i mile west of Sally Station.
OBS-The eastern scarp of Dean Swamp affords the following exposure:
(a) 4.8 feet Eocene fossiliferous grit (elevation 245 feet M. L. T.) corresponding to the buhrstone on Goodland Swamp ( 2 miles east), where the venericardia planicosta and other Claiborne (Congaree phase) fossil forms are distinct and fairly abundant, notably on the old Martin Sally place near Perry (Sur. No. 270) and Rocky Grove Church (Sur. No. 327), and at the Stroman place on Rocky Swamp (Sur. No. 330).
(b) 7.0 feet sands.
(c) 3.0 feet reddish-brown sands inclosing numerous specimens of the Ostrea Johnsoni.
(d) 15 feet bright red, yellow and orange sands grading with depth to brown sands inclosing numerous bunches of lignitic matter; the lower portion consists of white sands with some brown tracery.
The fullers earth which belongs under (d) is best exhibited at Three Cornered Pond (Sur. No. 262) ; most instructively exhibited at Phillip's Mill on Goodland Swamp (Sur. No. 332), where the lignitic sands are observed overlying the laminated clays and underlying the oyster shell bed.

Material: fullers earth. SURVEy no. 345.
Area: Edisto. Sub-Area: Caw Caw Swamp. Location: Orangeburg County; Caw Caw Swamp; 3 miles N. $40^{\circ}$ W. of Orangeburg.

OBS-Eocene.
The Caw Caw Swamp road east of the bridge over Caw Caw Swamp occupies a 4 - ft . excavation which exposes in its sides :
(a) Yellow and red argillaceous sands inclosing small pockets of silicified shells. Rests on eroded surface of (b).
(b) I foot + Pea-green stratified shale, extends to undetermined depth.
At a slightly higher point the Hampton mottled clays rest on layer (a), the latter including a few lines of pea-green clay.

MATERIAL: FULLERS EARTH, SURVEY NO. 375.
Area: Edisto. Sub-Area: Western Bank of Edisto River.

Location: Colleton County; Beech Bank; 67 miles N. $30^{\circ}$ E. of Jacksonboro; west bank of Edisto; 0.7 mile above Parker's Ferry.
OBS-Oligocene (Combahee Phase) on Eocene. For description see Marls, Survey No. 375.

## Material: fullers earth. SURVEy no. 386-7.

Area: Edisto.
Sub-Area: Big Salkehatchie River.
Location: Colleton and Hampton Counties; 12 miles northeast of Brunson.
OBS-(Combahee Basal Shale Underlying Glauconite). The Mio-Oligocene shales irregularly exposed from Broxton's bridge southerly, represent the lower portion of a bed of which the upper portion (which appears more southerly) constitutes a fair grade of fullers earth.
(For geological section, see Glauconites No. 386-7).
material: fullers earth. SURvey no. 470.
Area: Edisto. Sub-Area: Western Bank of Edisto Riv. Location: Colleton County; Pon Pon.
Address of Owner or Representative (?): V.-C. Chemical Co., Charleston, S. C.
OBS-A very thin surficial deposit of shale of possible Oligocene equivalence occurs at this point.
material: fullers earth. survey no. 486.
Area: Edisto.
Sub-Area: Huspa Creek.
Location: Beaufort County; I mile east of Sheldon; Huspa Creek bridge on Coosaw road.
Address of Owerer or Representative (?): Nathaniel Barnwell, H. C. Colcock, Patrick Wall, and others, Beaufort, S. C.

OBS-Oligocene (Parachucla Phase). Low tide reveals the Parachucla shales in the bed of the creek and extending to approximate high tide level; it is constituted of alternate hard and soft layers, including a little glauconitic matter in pockets. The hard material is deep brown in the body, but graduates through yellow to white at the surface where exposed to the atmosphere. Analysis of firm silicified shale.
(a) Analysis: Lime, 3.32 per cent.; Magnesia, trace; Alumina, 9.12 per cent.; Ferric Oxide, 5.02 fer cent.; Phosphoric Acid, ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 2.80 per cent.; Silica (and insoluble), 64.35 per
cent.; Ignition, 5.25 per cent.; Moisture, 9.17 per cent. Total, 99.03 per cent. (Tri-Calcium Phosphate equivalent, 6.17 per cent.)
(b) Analysis of Soft Material: Lime, 1.15 per cent.; Alumina, 4.71 per cent.; Ferric Oxide, 3.05 per cent.; Phosphoric Acid, 0.97 per cent.; Silica (and insoluble), 77.17 per cent.; Ignition, 4.17 per cent.; Moisture, 8.16 per cent. Total, 99.38 per cent. (Tri-Calcium Phosphate equivalent, 2.12 per cent.)

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\text { MATERIAL: FULLERS EARTH. SURVEY NO. } 496 .
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Area: Edisto.
Sub-Area: Coosawhatchie River.
Location: Beaufort County ; Dawson's Landing; 2.5 miles south of Coosawhatchie Station.
Address of Ower or Representative (?) : Dr. T. B. Whatley et al., Gillisonville, S. C.
OBS-Oligocene (Parachucla Phase). The Parachucla stratified shales are exposed in the bed and in the banks of Coosawhatchie River, ascending 9 feet above M. L. T. Consists of alternate hard and soft layers, brown in the body but graduating through yellow to white at the surface.
(a) Analysis of Soft Disintegrated Interlaminations: Lime, 2.61 per cent.; Magnesia, trace; Alumina, 10.02 per cent.; Ferric Oxide, 4.24 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ), 2.20 per cent.; Silica (and insoluble), 64.05 per cent.; Ignition, 6.03 per cent.; Moisture, 9.93 per cent. Total, 99.08 per cent. (Calcium Phosphate equivalent, 4.8 r per cent.)
(b) Analysis of Firm Silicified Parts: Lime, 2.02 per cent.; Alumina, 10.15 per cent.; Ferric Oxide, 3.14 per cent.; Phosphoric Acid ( $\mathrm{P}_{2} \mathrm{O} 5$ ), r. 69 per cent.; Silica (and insoluble), 67.62 per cent.; Ignition, 5.86 per cent.; Moisture, 8.90 per cent. Total, 99.38 per cent. (Tri-Calcium Phosphate equivalent, 3.7 I per cent.)

## máterial: fullers earth. SURVEY no. 505.

Area: Santee.
Sub-Area: Congaree Crk; First Crk. Location: Lexington County; Elmore Williams' place; o. 8 mile west of Gaston.
Address of Ouncr or Representative (?) : Martin estate.
OBS-Eocene. The lower portion of nature's vast amphitheatre, at the head of First Creek, affords several isolated exposures of fullers earth; the more important exposure occurs on the southerly scarp, in a ledge of 8 feet of fossiliferous fullers earth capped with
fossiliferous quartzite. The overburden increases in proportion to the slope of the hillside constituting the adjacent plateau on the southeast.

Analysis of This Fullers Earth Indicated: Lime, 3.12 per cent.; Magnesia, 2.01 per cent.; Alumina, 7.66 per cent.; Ferric Oxide, r. 93 per cent.; Silica (and insoluble), 8r. 65 per cent.; Ignition, 3.58 per cent. Total determined, 99.95 per cent. Bleaches and filters well, but imparts slight taste to cotton seed oil.

The Congaree Basin, encircled by Cretaceous sands and clays, was connected with the Eocene seas through an opening to the southeast (now near the site of Gaston).

The Eocene waters paved this basin and the bed of its seas with alternate deposits of aluminous ooze and extremely thin layers of micaceous sands at such depths as afforded quiessence with occasional brief intermittent periods of such current movement as was sufficient to bring in very fine grained sands and mica. The ooze probably contained some glauconite, the subsequent decomposition of which contributed in part to the induration of the mass, with the entombed remains of the prevailing marine fauna (principally venericardia planicosta, squalidæ, etc.). At the same time the shallow shore lines disturbed by waves and currents received and deposited the coarser materials and comminuted shells which were subsequently consolidated to buhr-rock. A period of emergence advanced the shore line seaward, and interruptedly violent and variably stimulated currents which deposited successively sands, mixed clays, and comminuted shells on the fullers earth; the comminuted shells (subsequently indurated to buhr-rock) thus extending over the fullers earth, sometimes in contact with its denuded surface, sometimes separated by I to 50 feet of stratified layers of vari-sized, parti-colored sands and seams of clay.

## MATERIAL: FULLERS EARTH. SURVEY NO. 5I3.

Area: Santee.
Sub-Area: Sandy Run.
Location: Lexington County; 2 miles south of Gaston; 0.3 mile east of Columbia; Denmark Railway (S. A. L. Railway).
Address of Owner or Representative (?): J. F. Mack, Gaston, S. C.

OBS-Eocene. The surface and a well afford the following highly interesting section:
(a) Dune's of cobbles $3^{1 / 2 \prime 2}$ diameter in Lafayette loam.
(b) 4.6 feet. Sands inclosing an interrupted ledge of buhr-rock (containing ostrea Johnsoni and scutella (sp.) $3^{1 / 22^{\prime \prime}}$ diameter).
(c) 8.2 feet. Argillaceous yellow sands interstratified with horizontal lines of white and purple clays.
(d) 3.0 feet. Plastic purple clay.
(e) - feet. Drab fullers earth inclosing molds and casts (principally venericardia planicosta). Penetrated 4 feet by well.

MATERIAL: FULLERS EARTH.
Area: Santee.

SURVEY NO. 5 I8.
Sub-Area: Sandy Run.

Location: Lexington County; Sturkie (Zid) place; 3 miles southeast of Gaston on west side of Sandy Run.
OBS-Eocene. A bed of light gray fullers earth (Eocene shale) interstratified with thin seams of micaceous sand, of obscured aggregrate thickness ( 6 feet exposed), occurs on a hillside of which the top at a distance of 600 feet is 50 feet higher; the intervening material consisting of the following, proceeding downward:
(a) Yellow-red clay weathering to rhomboidal fragments.
(b) Yellow sand inclosing small pebbles; unconformity.
(c) Undulating layer discoidal fragments.
(d) Clay in thin stratified layers.
(e) Thin layer of ferruginous sandstone (c, d, and e conform in convolutions) ; unconformity.
(f) Buff and white sands with broken horizontal lines and whorls of white clay.
(g) Thick bed of fullers earth inclosing numerous fossil molds.

MATERIAL: FULLERS EARTH. SURVEY NO. 520.
Arca: Santee.
Sub-Area: Savannah Hunt.
Location: Lexington County; 4 miles northeast of Gaston. Address of Owner or Representative (?): Archie Wolf, Gaston, S. C.

OBS-Eocene. Light gray fossiliferous fullers earth, interstratified with seams of micaceous sand, is exposed I .8 miles southwest of Congaree Bluff at an elevation of approximately 204 feet. Thickness largely obscured.

MATERIAL: FULLERS EARTH. SURVEY NO. 522.
Area: Santee.
Sub-Area: Little Beaver Creek.
Location: Orangeburg County; 5 miles S. $80^{\circ}$ E. of Swansea. Address of Oumer or Representative (?): R. D. Kucker, Norths, S. C.

OBS-Eocene. The head of Little Beaver Creek is observed in a deeply incised valley with comparatively steep sides exposing:
(a) 30.0 feet. Sands and loam.
(b) 1.0 foot. Buhr-rock.
(c) 12.0 feet. Red clay and loam in horizontally stratified bands.
(d) 26.5 feet. Obscured.
(e) 1.5 feet. Yellow ochreous clay.
(f) 4.0 feet. Fine grained white clay, slightly mottled with organic stains.
Analysis: Lime, o. 6 per cent.; Magnesia, o. 37 per cent.; Alumina, 35.07 per cent.; Ferric Oxide, 1. 61 per cent.; Titanic Oxide, I.I3 per cent.; Soda ( Na 2 O ), 0.27 per cent.; Potash (K2O), 0.29 per cent.; Silica (and insoluble), 48.37 per cent. ; Ignition, 12.53 per cent. Total, 99.70 per cent.
(g) 5.0 feet. Deep scarlet, fine grained clay.

Analysis: Lime, 0.4 per cent.; Magnesia, 0.90 per cent.; Alumina, 31.46 per cent.; Ferric Oxide, 5.38 per cent.; Titanic Oxide, I. 53 per cent.; (Soda and Potash undetermined), Silica (and insoluble), 47.82 per cent.; Ignition, 12.18 per cent. Total determined, 99.3 per cent.
(h) I. 5 feet. Laminated compact micaceous shale.
(i) 6.0 feet. Dark gray, iron stained, shale exposed above bed level of the creek.
Analysis: Lime, o.i6 per cent.; Magnesia, o. 72 per cent.; Alumina, 9.9 i per cent.; Ferric Oxide, 2.83 per cent.; Titanic Oxide, 0.97 per cent.; (Soda and Potash undetermined); Ignition, 6.54 per cent.; Silica (and insoluble), 78.19 per cent. Total determined, 99.32 per cent.
material: fullers earth. Survey no. 523.
Area: Santee.
Sub-Area: Beaver Creek.
Location: Orangeburg County; 5.7 miles S. 81 ${ }^{\circ}$ E. of Swansea.
Address of Owner or Representative (?): Andrew Rucker, L.
Speigner, John Wannamaker, Jos. Reid, Benjamin Fertick, and T. J. Creiger.
OBS-Eocene Properties occur along Little Beaver Creek below Ruckers and afford more or less obscured beds similar to the one described under 522.

Material: fullers earth.
Area: Santee.
Location: Orangeburg County; io miles N. $45^{\circ}$ W. of St. Matthews.
Address of Owner or Representative (?): G. L. Wachte, St. Matthews, S. C.

OBS-Eocene. The hillsides immediately north of the Wachte house, and about 25 feet below the plateau level, expose a bed of fossiliferous fullers earth; layers interstratified with thin seams of micaceous sands; cream color characterizes the upper portion, the lower being black in color, and more massive in structure.

## MATERIAL: FULLERS EARTH. SURVEY NO. 575.

Area: Santee.
Sub-Area: Carter's Creek. Location: Richland County; i mile south of Acton.

OBS-(?) The bed of Carters Creèk at the elevation of 124 feet, M. L. T., consists of a dark gray laminated clay irregularly stained with iron oxide. The full thickness, exceeding 8 feet, is not exposed.

## material: fullers earth. survey no. 625 .

Area: Santee.
Sub-Area: Beeclı Creek Branch. Location: Sumter County; Rocky Point; o.5 mile northeast of Wateree Junction.
OBS-Pleistocene on Eocene on Cretaceous.
Lafayette red cemented sands.
White sands
23.0 ft .

Eocene siliceous clay with bottom conforming to irregu-
larity of underlying bed .. .. . . . . . . . . . . . . 7.0 ft.
Unconformity-
Fine white sands, coarse white sands, yellow and bright orange sands . . .. .. . . . . . . . . . . . . . . . .. .. 14.0 ft .
Orange sands interlaminated with broken lines of limonitic plates coated with clay and affording impressions of Dicotyledenous leaves 9.0 ft .

Irregularly bedded white, purple, pink, and drab clay inclosing yellow and white sand pockets 15.0 ft.

Elevation of base of section 115 feet (M. L. T.)
This Eocene shale extends northerly at the following successive localities with elevations above the sea level indicated in feet:

Rocky Point (C. No. 625) .. .. .. .. . . .. .. .. 160 ft .
Wedgefield Cut (C. No. 630) . . . . . . . .. . . .. 260 ft.
Spring, i. 5 miles north of Wedgefield (E. No. 633) 299 ft .
Statesburg (C. No. 635) . . . . . . . . . . . . . . . .. 269 ft.
Marden (E. No. 637) . . . . . . . .. .. .. .. .. 251 ft.

585
material : fullers earth. survey nos. 630-63I.
Area: Santee. Sub-Area: Wateree Swamp Scarp.
Location: Sumter County; Wedgefield Cut; between Wedgefield and Camden Junction; exposed in two cuts of the ColumbiaSumter railway (A. C. L.).
Address of Ozener or Representative (?) : Aycock Estate, Wedgefield, S. C.


FIG. I 5.-ROCKY POINT.
OBS-Pleistocene on Eocene on Cretaceous.
The lowest Cretaceous stages probably find no exposures in this area superior to the valley lines, their littoral lines having been at lower levels; but that portion of the following comprehensive section which represents a well at Wedgefield indicates that the Potomac equivalent probably occurs ior feet below the sea level. The upper

150 feet of this section, comprising the Lafayette, Congaree, and in part the Upper Cretaceous formations, has been consolidated from the neighboring exposures intervening from Wedgefield Ridge to the Wtaeree River.

| Upper Cut.(a) Lafayette loam . . . . | Thick- Eleva ness. tion. (M. L. T.) |  |
| :---: | :---: | :---: |
|  | Feet. | Feet. |
|  | 6.0 | 265 |
| (b) Red sandy clays inclosing few small rounded pebbles | 0/15 |  |
| (c) Gray argillaceous compact hard coarse sands. | \%/30 |  |
| (d) Pronounced plain of unconformity |  | 25 |
| (e) Eocene Fullers Earth (inclosing casts) | 10/20 |  |
| (f) Thin layers of drab clay interlaminated with slightly lignitic at base and occupying depressions in the underlying unconformable material . |  |  |
| Marked conformity |  | 232 |
| (g) Coarse sands with some glauconite. In places ascends in unconformable peaks 15 feet high into overlying materials | 5/15 |  |
| (h) Clay-iron stone and brown sand conglomerate, resulting from decomposition of glauconite.. | 1.5 |  |
| (i) Greensand marl | 17.5 |  |
| Lower Cut. |  |  |
| (j) Consolidated mass of greensand interlaminated with iron-stone, drab clay, orange and yellow sands, mixed, angular and coarse sands. | 11.0 |  |
| Unconformity |  | 197.6 |
| (k) Coarse, yellow clay, inclosing rounded gravel. | 1.5 |  |
| (1) Angular fragments of feldspar and quartz in clay matrix | 1.5 |  |
| (m) Purple and gray clay, containing much iron pyrites | 8.0 | 195 |
| (n) Sands, etc. . . . . |  | 129 |
| Pee Dee River low water level 89 feet (M.L.T.) |  |  |

The following data derived from Well section:
(o) Sands and clays, amounts unrecorded.
(p) Very dark lignitic clay, inclosing large pieces
of wood . . . . . . . . . . . . . . . .. . . .. 25.0 (-) roi
(q) Interstratified sands, clays and arkose .. .. .. $195.0(-) 321$
(r) Very hard rock arrested work at . . . . . . . . 12.0 (-) 333

No water at this horizon.

MATERIAL: FULLERS EARTH. SURVEY NO. 633.
Area: Santee.
Sub-Area: Beech Creek Branch.
Location: Sumter County; Moore's Spring; 2.2 miles north of Wedgefield.
Address of Owner or Representative (?): Mr. Scriven Moore, Wedgefield, S. C. (R. F. D. No. 3).
OBS-Eocene. At "Moores Spring;" about 200 feet west of Statesburg highway, ig feet of laminated shales (Eocene) occur interstratified with seams of sand and mica; shale incloses casts of venericardia planicosta.
Upper surface of shale 48 feet above Wedgefield Railway Station.

$$
\text { material: fullers earth. Survey no. } 639 .
$$

Area: Santee.
Sub-Area: Beech Creek Branch:
Location: Sumter County; Catchall; 3 miles E. of Claremont.
Address of Owner or Representative (?): Mr. Edwards, Catchall, S. C.

OBS-Eocene. About o. 7 mile southwest of Catchall a gulch exposes near the summit of the encircling scarp a ledge, about 7 feet thick, of laminated pale gray shale (Eocene), interstratified with thin layers of fine yellow-white sands and mica; capped by indurated matter; neighboring hills west of Catchall expose, at slightly higher level, sands capped with fossiliferous buhr-rock.

$$
\text { MATERIAL: FULLERS EARTH. SURVEY NO. } 676 .
$$

Area: Santee.
Sub-Area: High Hill Creek.
Location: Orangeburg County; Bates Pond; 3 miles N. $10^{\circ} \mathrm{W}$. of St. Matthews.
Address of Owemer or Representative (?): Dr. W. T. C. Bates, St. Matthews, S. C.
OBS-Eocene.
(a) 9.0 feet of yellow-red argillaceous loam.
(b) 1.8 feet of white clay with indurated patches.

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88-R. & R.-(500)
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(c) 7.5 feet of green sand (glauconitic) inclosing fragments of fossil shell.
(d) 12.0 feet of medium fine, angular sands, inclosing small rounded black particles.
(e) 30.0 feet of indurated sands with thin seams of soft shale.
(f) 3.5 feet of soft shale, in 10 -inch layers, interstratified with thin seams of fine sand and mica.
(g) 3.0 feet of yellow rounded sands, interlaminated with limonitic seams.
(h) 3.8 feet of green-black matrix inclosing sand.
(i) 2.0 feet of laminated, drab fullers earth.
(j) 2.40 feet of dirty white gritty clay at top; lower portion inclosing rounded particles of quartz and feldspar.
material: fullers earth. survey no. 68i.
Area: Santee.
Sub-Area: Lyon's Creek Branch (N.) Location: Orangeburg County; Gates Quarry; 2 miles southeast of Singleton; head of Half-Way Swamp.
Address of Owner or Representative (?): W. H. and J. M. Whetstone, St. Matthews, S. C.
OBS-Eocene. Dark ferruginous sands; 7.0 feet of Eocene buhrrock quarried to supply mill stone; dark fullers earth.
material: fullers earth. survey no. 682.
Area: Santee.
Sub-Area: Congaree Swamp.
Location: Orangeburg County; Lang Syne; 2.5 miles E. of Fort Motte ; Tomb Field Gully.
Address of Owner or Representative (?): J. A. Peterkin, Fort Motte, S. C.
OBS-Eocene (Congaree Phase, Partly Mingo)?
(a) 12 to 18 feet of case-hardened, red Lafayette loam unconformably superimposed.
(b) 5 to 8 feet of laminated drab fullers earth dipping $\pm 24^{\circ} \mathrm{N}$. W.; unconformity.
(c) 4 feet of sub-angular buff colored sands of medium grain; upper surface inclined.
(d) 6 feet of similar sands inclosing some lignitic matter.
(e) $\mathbf{2 . 5}$ feet of sands irregularly silicified; inclosing numerous fragments of shells; lower Eocene (?) also quartz pebbles ( $<\mathrm{I} 1 / 2$ inches in diameter).
(f) 3.0 feet of coarse, arenaceous, dirty yellow clay.
(g) 0.3 feet, seam of kaolin.
(h) 4.0 feet of horizontally laminated argillaceous sands.
(i) 6.5 feet of pebbles ( $<1$ inch in diameter) in argillaceous matrix.
(j) 4 feet of soft black shale in bottom of gully.

## Material: fullers earth. SURVEY No. 685.

Area: Santee.
Sub-Area: Fullers Earth Creek.
Location: Clarendon County; Manning Manor; 5 miles south of Manchester; 3 miles west of Pinewood.
Address of Owner or Representative (?): Mrs. F. F. Thompson, No. 283 Madison Avenue, New York, N. Y.
OBS-Eocene (Congaree Phase). Fullers Earth Creek has sculptured a gorge through the fullers earth and exhibits the following section :
(a) 0 to 40 feet of loams and sands.
(b) 6.0 feet of harsh, gritty fullers earth inclosing casts of Eocene fossils.
Analysis: Lime, 0.37 per cent.; Magnesia, o. 42 per cent.; Alumina, 4.83 per cent.; Ferric Oxide, 2.8ı per cent.; Ignition, 4.63 per cent.; Silica (and insoluble), 86.80 per cent. Total determined, 99.86 per cent.
(c) 24 feet of stratified gray, drab, and black fullers earth (Eocene shale) interlaminated with thin seams of fine sands and mica (muscovite).
Analysis: Lime, 0.82 per cent.; Magnesia, 0.4 I per cent.; Alumina, Io.Io per cent.; Ferric Oxide, 5.8ı per cent.; Ignition, 3.20 per cent.; Silica (and insoluble), 78.64 per cent. Total determined, 98.98 per cent.
Bleaches cotton seed oil and filters well; contains small quantity of grit.

MATERIAL: FULLERS EARTH. SURVEY NO. 703.
Area: Santee.
Sub-Area: Santee River. Location: Clarendon County; Wrights Bluff; 5 miles southwest of St. Pauls.
OBS-Eocene. The eastern bank of Santee River exposes a small bluff emerging 13 feet above zero water level ( 59.6 feet M. L. T.)
(a) 2.4 feet of indurated drab fullers earth.
(b) 5.1 feet of soft fullers earth.
(c) 5.5 feet of plastic yellow clay.

## MATERIAL: FULEERS EARTE.

## EUEVII 210.727.

Area: Santee.
Sub-Area: Santee River.
Location: Williamsburg County; Pittman; 2.5 miles S. $20^{\circ} \mathrm{W}$. of Gourdin; 500 feet east of trestle approaching Santee Bridge from the north.
Address of Owener or Representative (?): Mrs. E. B. Pitman, Gourdin, S. C.
OBS-Eocene (Mingo Phase). The swamp east of the Santee River is delimited by a bluff of fullers earth (Eocene shale), emerging 12 feet above the swamp level, which supports steep hillsides affording the following section:
(a) Loam.
(b) Mottled clay, moderately plastic.
(c) Gray and yellow moderately fine grained clay.
(d) Layer of small pebbles.
(e) 3 to 15 feet of red Eocene sands inclosing silicified slabs preserving venericardia planicosta, etc.
(f) 12 feet drab, brown, and black fullers earth; extends below swamp level to undetermined depth. A fractional analysis of the compact material afforded: Lime, o. 68 per cent.; Magnesia, 0.98 per cent.; Alumina, il.00 per cent.; Silica (and insoluble, 81.51 per cent.; Sulphur, trace.; Ignition, 4 per cent.
An addition of 5 per cent. of this (prepared) material to cotton seed oil effects good bleaching and admits of good filtration; the foreign taste imparted is very slight.

## MATERIAL: FULLERS EARTH. SURVEY NO. 825.

Area: Pee Dee Sub-Area: Hurricane Creek.
Location: Darlington County; Floyds Mill; 7.2 miles northeast of Darlington.
Address of Owmer or Representative (?): W. W. Isgat, Darlington, S. C. (R. F. D. No. 3).
ObS-Cretaceous, Eocene (Black Creek and Congaree Phase). Thirty-nine feet laminated dove, gray, and dark brown shales (Eocene ?), interstratified with thin and thick seams of fine white and yellow sands and mica; supported along an irregular plane of erosion on underlying Cretaceous shale, with a highly ferruginous layer intervening.

Analysis: Silica (and insoluble), 66.27 per cent.; Alumina, 18.03 per cent.; Ferric Oxide, 5.15 per cent. ; Titanic Oxide, 1.70 per cent.;

Lime, o.70 per cent.; Magnesià, 0.42 per cent.; Soda (Na2O), 0.67 per cent.; Potash (K2O), r. 27 per cent.; Ignition, 6.16 per cent. Total, 100.37 per cent.
Dark bedded shale emerges above zero water level ( + roo feet M. L. T.), extends interstratified with sands to a considerable depth as revealed by well borings.
material: fullers earth. survey n. 83i.
Area: Pee Dee.
Sub-Area: Black Creek.
Location: Florence County; Ashby Place; 4 miles north of Florence; Black Creek.
OBS-Eocene. A small branch entering .Black Creek from the South affords a terraced exposure extending over 1,000 feet (horizontal), as follows:
(a) 7.0 to 10.0 feet dark laminated shale inclosing silicified logs.
(b) Supported along a surface of pronounced false unconformity.
(c) 3.0 to 11.0 feet blue-black compact sands inclosing mica and lignitic matter.
(d) The upper surface affords pronounced false unconformity.
(e) 9 feet sub-angular sands in irregular bands, respectively of buff, and yellow-red color, the lower portion being markedly ferruginous.
(f) 8 feet dark laminated shale interstratified with occasional seams of sand, and inclosing lignitic matter, emerges 8 feet above the zero water level (about 73 feet M. L. T.)

## material: fullers earth. sukvey no. 833 .

Area: Pee Dee.
Sub-Area: Black Creek. Location: Darlington County; Mechanicsville Road; ridge between Swift and Black Creeks; I. 3 miles northeast of Darlington.
OBS-Congaree (?). Two zones of shale are exposed on the Black Creek slope of the ridge; one in the bank of the creek, the other at a superior elevation of about 23 feet. The upper zone appears about 5 feet thick, but includes much sand; in the suburbs of Darlington it supports patches of Miocene marl, exposed along the westerly tributaries of Swift Creek at an elevation of 127 feet M. L. T. The lower zone emerges about 6 feet above Black Creek. Zero water level ( 95 feet M. L. T.), and extends to a depth of approximately 160 feet, as shown by well borings.
material: fullers earth.
Area: Pee Dee.
Location: Florence County; Mars Bluff; western scarp Great Pee Dee River; about 500 feet below the ferry.
Address of Owner or Representative (?):
OBS-Pleistocene on Eocene on Cretaceous.
(a) 9 feet-Pale yellow clay loam.
(b) 8 feet-Mottled clay, stratified above basal layer consisting of I. 5 feet of sands inclosing small rounded pebbles.
(c) 10 feet-Dirty pale yellow stratified sands inclosing a few lines of clay.
(d) 3.5 feet-Thin layers of partly silicified shale interstratified with sands.
(e) II.o feet-Very fine grained buff, pink and gray sands in broad bands of cross bedded structure.
(f) 3.0 feet-Soft shale interstratified with sands.
(g) 0.5 foot-Fossiliferous sandstone (Eocene).
(h) I.00 foot-Thin lines of shale interstratified with fine sands.
(i) 0.5 foot-Silicified sands and shells.
(j) 2.9 feet-Thin layers of shale interstratified with sands.
(k) 9.I feet-Fine grained compact white and yellow sands.
(1) Io.0 feet-Black shale interstratified with blue sands (probably Black Creek shale, Cretaceous).
Zero water level +20.3 feet M. L. T.).
material: fullers earth. survey no. 845 B.
Area: Pee Dee. Sub-Area: Pee Dee River.
Location: Florence County; McCorkle Bluff; southerly extensior of Mars Bluff ; 2.7 miles southeast of Winona Station.
Address of Owner or Representative (i): J. Keys, Darlington ${ }_{r}$ S. C.

OBS-Cretaceous-Eocene. Four feet thinly laminated shale, 26 feet above zero water level; i4 feet largely obscured, but exposes loose sandstone; 8 feet black shale (Cretaceous).

MATERIAL: FULLERS EARTH. SURVEY NO. 89 I.
Area: Pee Dee.
Sub-Area: Black River. Location: Williamsburg County; 7.5 miles N. $52^{\circ}$ W. of Kingstree; I. 5 miles west of Mouzon Bridge, which spans Black River. Address of Owner or Representative (?) : Mallard Lumber Co.r Greelyville, S. C.

OBS-Eocene (Bliack Mingo Phase). A large well exposes:
(a) 3 feet sandy loam.
(b) 4 feet yellow and red clay loam.
(c) 6 feet yellow-gray granular mass of sands (elsewhere in this vicinity inclosing buhr-rock).
(d) 23 feet fullers earth (Eocene shale), the lower portion contains pyrites, the weathering of which in contact with the fullers earth has produced an appreciable amount of aluminum sulphate.

MATERIAL: FULLERS EARTH. SURVEY NO. 892.
Area: Pee Dee.
Location: Williamsmburg County; Lower Bridge; 1.8 miles S. $15^{\circ}$ E. of Salters; 6 miles southwest of Kingstree.

Address of Owmer or Representative (?): Several tracts respectively owned by J. T. Bryan, Stoll Bros., J. C. Everett, J. A. Ferrell, National Earth Co., Kingstree, S. C.
ObS-Eocene (Black Mingo Phase). The ig-foot bluff and highway cut on the western scarp, which ascends within 200 feet of Black River to the elevation of 37 feet above zero water level, expose:
(a) 6 feet of case-hardened red sands, inclosing fragments of shells, merging downward to:
(b) 3 feet of stratified yellow and red sands containing, near bottom, coarse sub-angular sands and gravel attaining diameter of $1 / 2 \mathrm{inch}$.
(c) Pronounced unconformity.
(d) 3.5 feet bright red, yellow, gray, and white layers of clay.
(e) 2.5 feet yellow and white stratified clay.
(f) Pronounced unconformity; the underlying surface is much eroded and ascends in broken steps as it recedes from the river.
(g) io feet (increasing to 21 feet within 200 feet of river), gray fullers earth (Eocene shale), with layers of hard, black silicified material, laminated; the thin parting seams consisting of finte sands and mica.
(h) 0.8 feet hard mass of shells, in places highly silicified, in others actively carbonic.
(i) 9 feet soft unctuous black fullers earth. Zero water level.
material: fullers earth. survey no. 895.
Sub-Area: Black River.

Location: Georgetown County; Perkin's Bluff; 10 miles N. $55^{\circ}$ E. of Harpers.
ObS-Eocene (Black Mingo Phase). The left bank of Black River exposes the following section:
(a) 0.8 feet buhr-rock.
(b) 7.0 feet laminated shales, partly silicified. The lower portion constitutes an indurated ledge inclosing fragments of large bones and fairly well-preserved specimens of the enclimatocerous Ulrichi.
(c) 8.0 feet red compact sands.
(d) Cretaceous (Ripley) marl at level of low tide.
material: shale. survey no. 898.
Area: Pee Dee. Sub-Area: Black Mingo. Location: Georgetown County; Rhems; 21.5 miles east of Kingstree.
Address of Owner or Representative (?) : Rhems Bros., Rhems', S. C.

OBS-Eocene. Extending 9.2 feet above low tide level of Mingo Creek at Rhems Landing occurs:
(a) Eocene shale with the upper 5 feet much indurated.
(b) 4 feet exposed above zero water level, is fissile and contains numerous casts of the venericardia planicosta, etc. The adjacent plateau ascends to a height of 35 feet, the gulches of which expose silicified casts of shells, probably of lower Eocene equivalence.
material: fullers earth. survey no. 905.
Area: Pee Dee. Sub-Area: Little Pee Dee River.
Location: Marion County; Hamer's Landing ; 2.5 miles northeast of Dillon.
ObS-(Probably Black Creek Phase). The bed of the river consists of an unctuous black shale (of indeterminable horizon).

## MATERIAL: FULLERS EARTH. SURVEY NO. 929.

Area: Pee Dee. Sub-Area: Black River; Brewington Lake. Location: Clarendon County; Brunson's Mill; 5.5 miles N. $67^{\circ}$ E. of Wilson.

Address of Owner or Representative (?): Joel E. Brunson, Sumter, S. C.
ObS-Eocene (Black Mingo Phase). A pit at the saw mill exposes 3 feet sand and loam; 6 feet stratum of red argillaceous sands inclosing fossiliferous buhr-rock. This buhr-rock on the ridge contains venericardia planicosta, ostrea ( $\mathrm{Sp}:$ ) and other Eocene forms. Fifteen feet fullers earth (Eocene shale) stratified, with interlaminating sand and mica; 0.8 feet hard fossiliferous stratum. This material would require careful washing to eliminate the excessive amount of sand contained in the parting planes.

## material: fullers earth. survey no. 929 A.

Area: Pee Dee. Sub-Arca: Brewington Lake ; Deep Creek. Location: Clarendon County; 1.2 miles east of Georgetown-Sumter Railway (A. C. L. Ry), near Wilson; 5 miles southeast of Manning.
Address of Ouner or Representative (?): W. H. Muldrow, Wilson, S. C.
OBS-Eocene. Deep Creek valley exposes a bed of fullers earth (Eocene shale), which has been explored to a depth of 18 feet; the overburden, consisting of sand, loam, and clay, varies from nil to 12 feet in thickness. This material consists of layers of a light graycolored laminated shale, with partings consisting of mica and very fine grained sand. It is sufficiently soft to yield readily to the pick. This earth bleaches well, filters freely, and imparts neither odor nor taste. Five per cent. yields good results.
Analysis: Lime, o. 58 per cent.; Magnesia, i. 05 per cent.; Alumina, 10.70 per cent.; Ferric Oxide, 2.57 per cent.; Titanic Oxide, 0.55 per cent.; Soda ( $\mathrm{Na2O}$ ), 0.23 per cent.; Potash ( K 2 O ), I.2I per cent.; Silica (and insoluble), 79.43 per cent.; Ignition, 3.94 per cent. Total, 100.26 per cent.
material: fullers earth. survey no. 936.
Area: Pee Dee.
Sub-Area: Sampit River.
Location: Georgetown County; Sampit Bridge; 9.5 miles west of Georgetown.
Address of Owner or Representative (?): Mrs. S. J. McConnell, Sampit, S. C.
OBS-Eucene (Black Mingo Phase). The Black Mingo shales appear at this point with their surface slightly above the level of low tide.

PEAT.
"Moor-peat," or partly decayed vegetable matter which maintains its fibrous character, and "fuel-peat," which is dark and represents a more advanced stage of decomposition, occur in South Carolina. No extensive beds of peat have been observed in the crystalline area; several small deposits of moor-peat of comparatively recent origin underlie very limited swamps; others, of probable Lafayette antecedents, occur with thick overburdens of clay, high above the main valley lines (see Survey No. 5173).

The coastal plain swamps afford some peat beds of probable late Pleistocene and Recent antecedents; they present the moor-peat type; some of the rice fields exhibit beds of moor-peat of variable extent and thickness. An extensive body of peat occurs interruptedly along the Combahee River, notably under the marshes, which extend to the head of Bull River. A marginal fringe of fuel-peat, underlying the probable equivalent of the Bohicket marl-sands, is interruptedly exposed along the ocean beach line of Horry and Georgetown Counties (see Survey No. 953). The extent of the peat beds of South Carolina will be investigated in fuller detail during the ensuing year (1907).

Uses" of Peat.
Fuel--The relative value of pure peat (including 22 per cent. moisture) as a fuel as determined by Professor Klasson, of the Swedish Commission, is about zo per cent. greater than wood (with 20 per cent. of moisture) ; the following figures were submitted as expressing the relative heat values:

| Wood. | Peat. | Brown Coal. Steam Coal | Anthracite. |  |
| :---: | :---: | :---: | :---: | :---: |
| 49 | 57 | 60 | 80 | 86 |

As a fuel, peat is used in several forms :
I. The peat fresh from the bog is squeezed, pugged, dried and then solidified under pressure in molds with forms convenient for transportation and use.
II. Peat-coal is prepared by heating peat to a temperature of approximately $400^{\circ} \mathrm{F}$.; said to compare favorably with bituminous coal. When carbonized in closed vessels one ton of high-grade peat affords about $\mathrm{I}, 000$ pounds of peat coal, and, as by-products, 9.5 quarts of illuminating oil, 4.7 quarts of heavy oil, and 2.8 pounds of paraffine.

Ethyl alcohol is obtainable from peat by a special process which affords about one gallon of absolute alcohol from the ton of peat. Artificial wood for structural purposes is made from peat. Peat fibre is manufactured into a yarn and into textile articles, such as wearing apparel, blankets, surgical bandages (highly antiseptic), etc. Peat fibre is also used in the manufacture of paper.
Moss-Litter, derived from the partially decomposed portions of the peat beds, is known as "moor-peat." As prepared from the moor-peat, the moss-litter is used for filling mattresses; as a packing for fruits and fish; as a litter for domestic animals, etc., etc.

## MATERIAL: PEAT. . SURVEY NO. 953.

Area: Pee Dee. Sub-Arca: Atlantic Ocean Beach. Location: Horry County; Myrtle Beach.
Address of Ozener or Representative (?): Frank Burroughs, Conway, S. C.
OBS-One mile south of the hotel an interrupted line of peat occurs along the beach 8 feet above low water mark. The peat masses are 2.8 feet thick and appear to have constituted the bottom of some former morass, now encroached upon by the sea. An analysis of this peat afforded on the dry basis:
Organic and volatile matter.. . . .. .. .. .. .. .. .. .. .. 70.70
Ash. . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . 29.30


## material: peat. SUlviey no. 5173.

Area: Santee.
SubArea: Saluda River Valley.
Location: Laurens County; Sharpe Property; i mile northwest of Mt. Bethel Church; 3 miles N. $21^{\circ}$ E. of Ware Shoals (Railway Station).
Address of Owner or Representative (?): A. Washington Sharpe, Eri, S. C.
OBS-A remarkable deposit of peat is exposed in a gully at this locality about 120 feet above the zero water line of the Saluda River.

The body of the peat bed is covered with a thin layer of white clay and 12 feet of unstratified clayey material, which increases as the topography rises, and which probably was derived from the decomposed mica schists and gneissoids of the inclosing ridges. Borings reveal a thickness of 16 feet of peat; overlying gneissoid

# rocks (strike N. $25^{\circ}$ E., dip $60^{\circ} \mathrm{E}$ ). Analysis afforded the following results on the dry basis: <br> Organic and volatile matter. . . . . . . . . . . . . . . . . . . . . . 45.87 <br> Ash. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 54.13 <br> 100.00 <br> Included in above was found: <br> Phosphoric Acid. . . . . .. . . . . . . . .. .. .. . . . . . .. 0.15 <br> Potash. . . . . .. .. . . . . .. .. .. .. . . .. .. .. .. . . .. 0.38 <br> The areal extent of this bed has not been explored. A thin bed of similar peat occurs one mile southeast, near the head of the branch at Mt. Bethel Church. 

## SAND.

Glass Sand, Sand Brick Sand, Building Sand, Locomotive Sand Coastal Plain.

A belt of sands, of probable Columbia equivalence, extends across the State south of the fall line, and constitutes the capping of the "sand hills." This material is fine grained, sub-angular, and hard; it affords a very good grade of locomotive sand.

The sand interstratified with the Cretaceous clays is very pure, with the exception of a small amount of admixed kaolin, which is removed by a washing process which thus furnishes a high-grade sand (Silica, 99.63 per cent.; Alumina, o.37 per cent.) ; which is utilized in the manufacture of glass.

A greatly broken belt of fine grained, high-grade glass sand interruptedly extends across the western part of the State above the littoral line of the Miocene formation.

Material Glass Sand (Survey No. 382) ; Barnwell County; near Ulmers; Edisto Area; Salkehatchie River sub-area; John F. Weekly, Ulmers, S. C.

Analysis: Alumina, 0.15 per cent.; Manganese Oxide, trace; Iron sesquioxide, o.31 per cent.; Silica, 99.53 per cent.; Water and Organic Matter (ignition), o. 16 per cent. Total, 99.97 per cent.

Material Glass Sand (Survey No. 923) ; Clarendon County ; Pee Dee area; Pocotaligo River sub-area; John M. Tindal, Tindal, S. C.

Analysis: Alumina, 0.89 per cent.; Iron sesquioxide, o. 38 per cent.; Silica, 98.61 per cent. : Loss on Ignition, o. 15 per cent. Total, 100.03 per cent.

Material Glass Sand (Survey No. 929 A) ; Clarendon County; Pee Dee area; Brewington Lake; Deep Creek; sub-area; W. H. Muldrow, Wilson, S. C.
Analysis: Alumina, o. 15 per cent.; Ferric Oxide, o.ro per cent.; Silica, 99.56 per cent.; Water and Volatile Matter, 0.05 per cent. Total, 99.86 per cent.
A belt, designated the Ten-Mile Ridge, which interruptedly extends parallel with the coast west of the Santee River, consists of very fine grained sands, which are utilized in the manufacture of sand brick. The most prominent exposures appear in the Edisto area, notably across the Ashley and Cooper basins, and near Yemassee.
Building Sands-The beds of bold, fresh water streams afford deposits of superior gravel and sands, notably along the expanded portions where the flood water currents are arrested by resisting tides.
A very extensive deposit of superior building sand thus occurs in the portion of the Edisto River immediately above Dawho Creek, which constitutes the main source of supply of this material to the City of Charleston.
The Pee Dee drainage system affords important deposits near the line of the Wando Pass.

## CLAY.

High Grade.
China Clay.
Paper Stock Clay, Kaolin.
Ball Clay.
Fire Clay.
Potter's Clay.

Low Grade.
Tile Clay. Brick Clay. Argillaceous Shale. Ferruginous Shale. Calcareous Shale.

## RESIDUAL KAOLINS.

The residual kaolins, as concentrated for the trade, vary from moderately fusible to highly refractory according to the anount of and character of the fluxing impurities.
No residual deposits of kaolin have been commercially developed in South Carolina, and whereas there are many indications of such
veins scattered throughout the granitic or crystalline region, the occurrences of most conspicuous promise yet noted are along a zone in close proximity to the trappean rocks, extending from Mount Carmel to Kings Mountain ; the dynamic influences of these igneous rocks probably predisposed the feldspar, etc., to rapid kaolinization through allotropic modifications.

## SEDIMENTARY KAOLINS.

The sedimentary kaolin beds in South Carolina range in purity from 99 per cent. of clay substance to the lowermost grades.


FIG. I6.-INTERIOR OF CLAY WASIING PLANT-EDISTO AREA.
Some sedimentary clays fulfil the conditions of china clays in being lean and in burning to a white body without crazing or displaying other physical defects.

These kaolins are extensively distributed in the Savannah River area, the Santee area and the Edisto area, in the Counties of Aiken, Lexington, Richland, and Kershaw. The Savannah River area affords one of the most remarkable exposures of sedimentary kaolin in
the United States, not only in its relations to quality and quantity, but in the scientific interest attaching thereto. From Hamburg to Aiken we observe a zone of these clays extendirig 14 miles in length by 5 miles in width, with numerous barrens caused by pre-Eocene erosions and the degradations of recent drainage.

These beds of kaolin vary from 5 to 25 feet in thickness, with an overburden of cross-bedded sands, thin laminæ of clay and occasional Lafayette loams and cobbles ranging in thickness from nil to more than 100 feet. Thickness of the kaolin determines the amount of overburden that can be economically removed. This overburden is degraded by laborers with pick, shovel, and cart, or with scrapes or steam shovels, until a sufficient terrace of clay is bared for extraction. This kaolin is moved in the lump form to the diry sheds, where, after exposure to air and light for a few weeks, it is packed in casks of one ton capacity and shipped to the consumer. It probably represents the largest body of clay closely approximating kaolinite that is found in the United States.

The Aiken area also affords important deposits along Beaver Pond Creek and Hollow Creek.

The Edisto area reveals interesting beds of these clays on North Edisto River, between Cook's Bridge and Merritt's Bridge, and along Fox Creek, superior deposits along the South Edisto River, along Chalk Hill Creek, Juniper Creek, Marbone Creek, and near Sand Dam Bridge.

The Santee area reveals valuable beds along Thom's Creek, Cedar Creek, Colonels Creek, Shaws Creek, Swift Creek, Rafting Creek and Fine Tree Creek, and in some places adjacent to the Congaree and Wateree Rivers.
In addition to the foregoing class, which requires no other preparation than simple drying, there are considerable beds of Cretaceous clays commingled with sands which are susceptible of concentration by the usual washing process. There is a modern plant for such purpose in operation at Seivern, S. C.

The class of clay indicated, Middendorf, prevails in large beds in the Aiken, Santee, and Pee Dee areas. In color they are very pale greenish-yellow, but burn to a white body with quite variable shrinkage. Their tensile strength is superior to that of the whiter clays. Their extreme fineness of particle renders them much more fusible than other clays similar in composition but coarser in texture.


## WOOD PULP KAOLIN.

Many of the sedimentary kaolins occurring, as described in the preceding paragraph, are, by reasons of their previously noted limitations, devoted to the manufacture of wood pulp paper.
The paper stock clays are white plastic kaolins of either residual or sedimentary extraction which, upon burning, either cinder or develop color or other incorrigible defects unsuiting them to the Ceramic arts.

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FIRE CLAYS.
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Clays adapted to the manufacture of refractory articles are known as fire clays, and are ordinarily subdivided into flint clays and plastic fire clays.

There are no flint clays in South Carolina, these clays belonging to the coal measures.

The equivalents of the plastic fire clays, combining the refractoriness of flint clays, we have in the lower Cretaceous formations, ranging in composition from the common grades to the best imported German product.

The sedimentary fire clays of South Carolina are found in the Cretaceous, the Eocene and the Neocene formations along the zone contiguous to the fall line. Some beds of fire clay of unmistakable sedimentary origin and others of meta-residual extraction are found in the crystalline area. These meta-residual clays are employed to bond the more refractory clays, and the Middendorf sedimentary beds should be serviceable for the same purpose.

## Stoneware clay and potter's clay.

These clays represent successive gradations between fire clays and tile clays, the fire clays extending the gradations upward to the limits of kaolin.

Throughout the Crystalline region we observe occasional patches of both residual and sedimentary clay suitable for the coarser grades of potter's ware, the best results are secured by mixing the residual or meta-residual clays with the coastal plain sedimentaries, which are abundantly available for this purpose.

## SEWER PIPE OR VITRIFIED BRICK CLAY.

The clay body for the required wares has been heretofore derived from shales or from recent deposits of alluvial pipe clays, or, more
ordinarily, from a mixture of the two. The shales ordinarily employed as a source of tile clay approximately conform to the limits above indicated. (See Shales.)

## PIPE, TILE, AND BRICK CLAYS.

Brick clays occur extensively in South Carolina over the Crystalline area as residual, meta-residual and sedimentary deposits. They are distributed over the coastal plain as sedimentary beds, and in the case of the lixiviation of argillaceous marls they occur as residual deposits.

Throughout the Piedmont region the lower grades of clay are found residual to the extent that the altered gneisses, feldspathic schists, etc., have escaped degradation. This degradation, or erosion, has contributed to the formation of higher grade, sedimentary, potters', and pipe clays occurring in the valleys of the Crystalline region, and over the area of the coastal plain formation.

The sedimentary valley beds of the Crystalline formation are the most important sources of supply of these clays in this State. Characteristic of these latter supplies we find prominent deposits at North Augusta, Brookland, Columbia, Camden, and Society Hill. Above this fall line they occur more or less through the much ramified tributary valleys. Below the fall line the Cretaceous and Eocene formations afford occasional beds answering the requirements of these clays, but in the coastal plain area some of the Hampton clays are conspicuously valuable as brick clays. Such deposits extend from Garnett, on the Savannah River by Walterboro, Summerville, St. Stephens, Marion, and thence to North Carolina, the entire distance affording an undulating zone of detached areas of good clay, some being adapted to the manufacture of high-grade face brick.

605

CLAYS OF THE SAVANNAH ABEA. *

| Burves No. | Age. | Sub-Area. | County. | Name of Owner ( 7 ) |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Cret. | Savannah Riv. Val. | Alken. . . . C., C. \& A. R. R. |  |
| 55 | Arch. . | Norrla Crit Br. . | Abberille . . . |  |
| 78 | Pleis. . | Black Crk. | Hampton. . | Plerre Robert. |
| 100 | Cret. . . | Horse Cry. | Alken. | McNamee a Co. |
| 106 | Cret. . | Horbe Crix. | Alken. . . . | T. G. Lamar \& Co. |
| 110 | Cret. . . | Horse Crk. | Aiken. . . . | Paragon Kaolin |
| 120 | Cret. . . | Beech Island. | Alken. . . . | R. Hasell. |
| 128 | Cret. . . | Town Crk. | Aiken. . . . | G. T. Ramey. |
| 145 | Cret.. . | Beech Island. | Alken. . . . | Col. T. J. Davien. |
| 150 | Cret. . | Town Crk. | Alzen. . . . | Imperlal Kaolln Co. |
| 155 | Cret. . | Horse Crix. | Aiken. . . . | Peerless Clay Co. |
| 160 | Cret. . | Town Crk. | Alten. |  |
| 168 | Cret. . | Town Crk. | Aiken. . . . | J. M. Ford. |
| 165 | Cret. . . | Town Crk. | Aiken. . . | Sterling Kaolin Co. |
| 167 | Cret. . | Wlee Crk. | Alken. | J. G. Harrigal. |
| 169 | Cret. . . | Whe Crk. | Aiken. . . . | W. C. Whltney. |
| 170 | Cret. . | Wlee Crk. | Atzen. . . . | Hitcheock. |
| 178 | Focenc. . | Wise Cri. | Aiken. |  |
| 175 | Cret. . | Wlee Cris. | Aiken. | Mrs. Rlcharde. |
| 180-181 | Cret. . | Wise Crk. | Alken. | Mrs. Geo. Sharpton. |
| 185 | Cret. . . | Bridge Crk. | Alken. | Granlteville Mfs. Co. |
| 190 | Cret. . . | Bridge Crk. . | Alken . . . . | Mrs. C. B. Wise. |
| 195 | Cret. . | Bridge Crk.. | Alken. . . . | J. B. McMulian. |
| 200 | Cret. . . | Horse Cry. | Alken. . . . | Walker Green. |
| 205 | Cret. . . | Horae Crik. | Aiken. . . . | Sterling Kaolln Co. |
| 210 | Cret. . | Horse Crk. | Aiken. . . . | Langley Meg. Co. |

[^10]CLAYS OF THE EDISTO AREA.


CLAYS OF THE SANTEE AREA.

| 605 (C) | Eocene. . | Congaree Cris.. . | Lexington. | Martin Eitate |
| :---: | :---: | :---: | :---: | :---: |
| 605 ( B ) | Eocene. . | Flrst Crz. | Lexington. | Elmore Williame |
| 510 | Cret. . | Pirst Crk. | Lexington. |  |
| 515 | Cret. . | Thome Cry. | Lexington. | Mre H. Gelger. |
| 520 | Cret. . | Sav. Hunt Crk. . | Lexington. | Archle Woife. |
| 525 | Cret. . | Cong. River Bluff. | Lexington. |  |
| 540 | Hecent | Cong. River Scarp. | Rlchiand. . | Gulgnard Brick |
| 550 | Cret. . | Crane Crk. | Rlchland. . | Carolina Fire Brtet Co. |
| 560 | Cret. . | Glll's Crk. | Rlchlend. . | Frank Hampton. |
| 568 | Cret. . | Glll's Crk. | Blchland. . | Landram Fire Brici |
| 565 | Cret. . . | Mill Crk. | Rlchland. . |  |
| 575 (C) | Focene. . | Carter's Crk. | Richland. . |  |
| 575 (P) | Eocene. . . | Santee RIver Val. | Berkeley. |  |
| 590 | Cret. . | Colonel's Crk.. | Richland. . | J. Thompeot. |
| 695 | Cret. . . | Jumplng Run. | Richland. . | B. Bloan. |
| 600 | Cret. . . | Wateree Riv. Scarp. | Richland. . |  |
| 605 (C) | Cret. . | Wateree River Val. | Richland.. |  |


| - Sarvey No. | Age. | Sub-Area. | County. | Name of Owuer (?) |
| :---: | :---: | :---: | :---: | :---: |
| 605-606 (E) | Eocene. . . | Fuller's E. Crk. . . | Clarendon. |  |
| 612 |  | Cedar Crk | Richland. | J. F. Smith. |
| 619-621 | Cret. . . | Colonel's Crk:. | Richland. . |  |
| 630 | Eocene. . . | Beech Crk. Br. | Sumter. . | Aycock Fstate. |
| 635 | Cret. . | Beech Crk. | Sumter. . | C. Sanders. |
| 640 | Eocene. . . | Rafting Crk. | Sumter. . | E. Rembert. |
| 645 | Cret. . . | Swift Crk. | Kershaw . | J. C. Rolllnge. |
| 655 | Pleis. . | Plne Tree Crk. . | Kershaw. | Camden Press Brick |
| 670 | Cret. . . | Sanders' Crk. | Kershaw. | K. V̇lleplgue. |
| 675 | Cret. . | Pine Tree Crk. . | Kershaw. | J. Welsh. |

CLAYS OF THE PEE DRE AREA.

| Surrey Na | Age. | Sub-Area. | County. | Name of Owner (?) |
| :---: | :---: | :---: | :---: | :---: |
| 660 | Cret | Black River. | Sumter. . | Hugh Evans. |
| 780 | . . . . . . . | Scapo Crk. | Le | Varlous. |
| 785 | C. and Eo. | Juniper Crk. | Chesterfield | Mrs Ellzabeth |
| 780 | Cret | Black Criz. | Chesterfleld | S. A. L. R. R. |
| 795 | C. and Eo. | Bear Crk. . | Chesterfleid | E. N. Schiriner. |
| 800 (C) | Cret. | Bear Crk | Chesterfield | W. H. Goodale. |
| 800 (E) | Eocene. . | Deep Crk. | Clarendom. | W. H. Muldrow. |
| 810 | Cret. . | Pee Dee R. Scarp | Chesterfield | S. A. L. R. R. |
| 810 | Recent. . | Pee Dee R. Scarp | Darilngton. | Darlington Brlck |
| 820 |  | Cedar Crk. | Chesterdeld | Mrs. Godfrey. |
| 825 | C. and Eo. | Hurricane Criz.. | Darlington. | W. W. Isgat. |
| 880 | Cr | Bigham Branch. | Florence. | L. S. Bigham. |

COABTAL PLAIN BERIEG-ANALYSES OF CRETACEOUS MARLS.
Tabli No. 5.

| 1 2 8 | County. <br> Locallty. <br> Stream. <br> Owner ( 7 ) | Florfnce .. .. <br> Georgetown Rd. <br> Pee Dee R. Br. <br> W. A. Meyers. | Florenc: . . . . <br> Burches Ferry.. <br> Pee Dee R.. .. <br> R. Hinds | FLozeryce .. .. <br> Burches Ferry. <br> Pee Dee R.. .. <br> R. Hinds |
| :---: | :---: | :---: | :---: | :---: |
| 5 | ARDA . . . . . . . . . . | Pee Dee. . . . . | Pee Dee . . . . |  |
| 6 | Survity No. .. .. .. .. .. | 850 | 885 (d) | 855 (e) |
| 7 | ANALYEIS : |  |  |  |
| 8 | Lime .. .. .. .. .. .. .. | 46.82 | 17.59 | 3.88 |
| 9 | Magnesia | . 15 | . 24 | 2.59 |
| 10 | Alumina | . 41 | 1.52 | 13.88 |
| 11 | Ferrlc Oxide | . 04 | 1.73 | 2.05 |
| 12 | Ferrous Oxide. | .. . . . . . . | ... . . . . . | 8.11 |
| 18 | Tltanic Oxide. . . . . . . . . | . . . .. .. .. | ... . . . . . . | . 60 |
| 14 | Manganese Oride (MnO) .. | . . .. .. .. .. | ... .. .. .. . | trece |
| 15 | Soda ( NazO ). . . . . . . .. | . 69 | . 48 | . 65 |
| 16 | Potash ( $\mathrm{K}_{2} \mathrm{O}$ ). | . 28 | . 43 | 1.49 |
| 17 | Carbonic Acld ( $\mathrm{COz}_{2}$ ) .. .. | 86.47 | 18.15 | 1.53 |
| 18 | Phosphoric $\mathbf{A c l d}\left(\mathrm{PzO}_{5}\right)$.. | . 27 | . 48 | trace |
| 19 | I ron Sulphide. . . . | - . . . . . |  |  |
| 20 | Suiphuric radical. . . . | . 41 | . 88 | 2.52 |
| 21 | Sllica (and Insoluble) .. .. | 12.45 | 59.30 | 48.09 |
| 22 | Igaition .. .. .. .. .. .. | . 50 | 2.04 | 5.18 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . .. .. | . 51 | 2.49 | 14.78 |
| 24 |  | . . . . . . . | .. .. . . . . . | . |
| 25 | Total . | 99.90 | 100.83 | 90.85 |
| 26 | Equivalents : |  |  |  |
| 27 | Calcinm Carbonate | 82.54 | 29.80 | 2.89 |
| 28 | Caiclum Phosphate . . . | . 59 | 1.06 | trace |
| 29 | (Salcium Sulphate. . . . | . 68 | 1.48 | 4.28 |
| 80 | Magneslum Carbonate . . .. | . 31 | . 80 | . 50 |
| 31 | .. .. .. .. .. .. .. . . . | . . . - . ${ }^{\text {a }}$ |  | ... .. .. .. .. |
| 82 | Groiogical Horizon. . . . | Cretaceons. . | Cretaceous. . . | Cretaceors. . . . |
| 33 | Groloatcal Phabe.. .. .. | Burches Ferry.. | Burches Fcrry .. | Black Crk. |
| 34 | Geugnostic . . . . . . . .. | Porous yellow granular marl. | Bluff : 14.7 dark <br> gray green compact harsh marl ippleal fos. Burches Ferry marl. | Blufi : +6 ft soft black shale: fine gralned: under lying trpical Hurrbes Fy. marl. |

COASTAL PLAIN BERIEG-ANALYEES OF CRETACEOUS MARLS.
Table No. 6.

| 8 |  | Florience . . . . . . <br> Caing Lndg. .. .. <br> Pee Dee R.. <br> H. A. Steele | Floryicy . . . . . . <br> Blgham Branch ... <br> Bigham Branch <br> L. B. Bigham | Florence. <br> Allisons Lidg. <br> Pee Dee R. <br> A. Poston. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Pee Dee . . . . . . | Pee Dee .. | Pee Dee .. | Pee Dee. |
| 6 | 888 (f) | 888 (a) | 880 | 870 (e) |
| 7 |  |  |  |  |
| 8 | 85.00 | 15.60 | 20.69 | $29.21{ }^{\text { }}$ |
| 0 | ... . . . . . . . | 1.51 | . 97 | . .. .. .. . . . |
| 10 | ... .. .. .. .. | 11.54 | 10.97 | - . . . . . . .. |
| 11 | ... .. .. .. . . | 4.82 | 8.82 | . . . . . . . .. |
| 12 | ... .. .. .. . . . | . . . . . . . . . |  | ... .. . . . . . . |
| 18 | - •• . . $\cdot$ | . 66 | trace | . . . . . . |
| 14 | ... .. .. .. .. .. | trace | . . . $\cdot$ | - . |
| 15 | ... .. ... .. .. . | . 54 | . 83 | ... .. . . . . . . |
| 16 | … ... ... . . . | 1.42 | 1.67 | - .. . . . . |
| 17 | 27.08 | 11.24 | 15.64 | 22.68. |
| 18 | . 48 | trace | . 27 | . 28 |
| 18 |  |  | 2.84 | . .. .. .. . |
| 20 | .. .. .. .. . | 1.29 | . 88 | - . ${ }^{\text {. }}$ |
| 21 | .. .. .. . . . | 44.00 | 89.87 | . . . . . .. |
| 22 |  | 2.81 | 2.18 | - .. .. .. .. |
| 23 | -.. .. .. . . . . ${ }^{\text {a }}$ | 4.84 | ... .. . . . . . . | ... .. .. .. .. . |
| 24 | ........ . . | . . . .. ... . | - . . . . . . | - . . . . . . |
| 25 | ... .. .. .. . . . | 90.77 | 99.64 | . . . . . . . |
| 26 |  |  |  |  |
| 27 | 61.66 | 25.57 | 35.50 | $51.56{ }^{\circ}$ |
| 28 | . 85 | trace | 1.45 | . 61 |
| 29 | - . . . . . . $\cdot$ | 2.18 | . . . . . . . ${ }^{\text {- }}$ | ... .. .. .. .. .. |
| 30 |  |  |  | . . .. . |
| 31 |  |  |  | ... .. . ${ }^{\text {a }}$ |
| 32 | Cretaceous. . . . | Cretaceous. . . . | Cretaceous. | Cretaceous. |
| 33 | Burches Ferry . .. | Burches Ferry.. .. | Burches Ferry. | Burches Ferry. |
| 34 | Biuff: gray yellow hard fon marl. | Bluff : drab soft clay marl. | Branch bed; slate colored soft finegrained marl clay. | Bluff; 6 ft. yellow white porous marl. |

COASTAL PLAIN SERIEG-ANALYBES OF CRETACEOUS MARLS.
Table No. 6.



COAGTAL PLAIN BERIEG-ANALYGES OF TERTLARY MARLS
Table No. 6.

| 2 | Countr. <br> Locallty. <br> Stream <br> Owner <br> ( 1$)$ | AIKEN . . .. .. <br> Kennedy Blufr. <br> Lower 3 Rans. <br> J. D. Kennedy. . | Aikin .. .. ... Kennedy Bluir.. Tinkers Crk. .. J. D. Kennedy. | Barxmell ... . Baldock . . . Mill Crk. . . J. L. Elili. . . |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Abes . . . . . | Savannah .. .. | Savannah .. | Savannah .. .. |
| 6 | Surver No. .. | 42 (c) | 42 (d) |  |
| 7 | Analisis : |  |  |  |
| 8 | Lime | 83.68 | 15.43 | 88.51 |
| 9 | Magneala . . . . . . . . . .. | . 29 | . 32 | . 82 |
| 10 | Alumina .. .. .. .. .. .. | . 22 | . 61 | . 24 |
| 11 | Ferric Oxide | 1.07 | 1.82 | 1.51 |
| 12 | Ferrous Oxide. . . . . . . . | ... .. .. . . . |  |  |
| 13 | Titanic Oxide. . | ... .. . . . . |  |  |
| 14 | Manganese Oxide (MnO) .. | . 24 | . 18 | . 12 |
| 15 | Soda (Na2O).. . . . . . . . |  |  |  |
| 16 | Potagh (K2O). . . . . . .. |  |  |  |
| 17 | Carbonlc Acld ( $\mathrm{COz}_{2}$ ) .. .. | 25.84 | 11.64 | 28.01 |
| 18 | Phosphoric Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ) .. | . 26 | . 15 | . 20 |
| 19 | Iron Sulphlde. . . . . . . . . |  |  |  |
| 20 | Snlphuric radical. .. .. .. | trace | trace | trace |
| 21 | Silica (and insoluble) . . . | 36.67 | 67.41 | 89.07 |
| 22 | Ignition .. .. .. . . . . . | 1.33 | 1.94 | 1.08 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . . . |  |  |  |
| 24 | .. .. .. .. | . . . . . . . | . . . . . . . ${ }^{\text {a }}$ | $\cdots$.. ... ... |
| 25 | Total | 08.61 | 89.61 | 99.54 |
| 26 | Equivalents : |  |  |  |
| 27 | Calclum Carbonate . . . . . | 88.79 | 26.48 | 62.93 |
| 28 | Calclum Phosphate . . . . . | . 57 | . 33 | . 44 |
| 29 | Calcium Sulphate. . . . . | trace | trace | tract |
| 80 | Magneslum Carbonate .. .. |  |  | . 67 |
| 81 | .. .. .. . . . . . . . . .. | ... .. .. . . . |  | ... . . . . . . |
| 82 | Groloatcal Horizon . . . | Focene | Eocene | Focene . . . . . |
| 33 | Gbological Phasy. . |  |  |  |
| 34 | Gzoonostic .. .. .. .. .. | Scarp.; yellow marl loosely aggregated at top, compart at bottom: overlles Warleg H. | Bluf: : pea-green alumiuons mati. | Bed of Cris.: medinm mott 8ub-granular yellow-white marl. |

COASTAL PLAIN BERIES-ANALYEES OF TERTIARY MARLB.
table No. 6.


COASTAL PLAIN GERIEG-ANALYEES OF TEETIARY MARLS.
Tably No. 6.

| 2 3 4 | County. <br> Locality. <br> Stream. <br> Owner <br> (?) | Barntiml .. <br> Allendale <br> Well <br> Town | HAICPTON .. .. <br> Gliford. . . . . . <br> Coosa whatchie River. <br> W. C. Mauldin. | Blymerg .. ... <br> Box Branch <br> Edisto Rlver <br> Varions |
| :---: | :---: | :---: | :---: | :---: |
| 5 | AREA .. .. .. .. .. .. .. | Edisto .. | Ediato .. | Edisto .. .. .. |
| 6 | Suryey No. | 353 | 355 (c) | 380 |
| 7 | Anclysis : |  |  |  |
| 8 | Lime .. .. .. .. .. .. .. | 52.32 | 1.46 | 25.44 |
| 9 | Magnesia . . . . . . . .. .. | . 85 | . 24 | . 33 |
| 10 | Alumina . . . . . . . . . | . 17 | . 51 | . 44 |
| 11 | Ferric Oxlde | . 28 | 3.82 | . 63 |
| 12 | Ferrous Oxide. | . . . . . . . | .. .. .- | . . . .. .. .. |
| 13 | Titanic Oxide. . . . . . . |  |  |  |
| 14 | Manganese Oxide ( MnO ) .. | . 14 | ... ... .. . . | ... .. .. . . $\cdot$ |
| 15 | Soda ( NazO ) . . . . . . . . . | ... • . . . . |  | .19 |
| 16 | Potash ( $\mathrm{K}_{2} \mathrm{O}$ ) . |  | . 24 | . 07 |
| 17 | Carbonic Acid ( $\mathrm{CO}_{2}$ ) .. .. | 41.13 | . 82 | 18.40 |
| 18 | Phosphoric Acld ( $\mathrm{P}_{2} \mathrm{O}_{5}$ ) .. | . 09 | ... .. .. .. . | . 78 |
| 19 | Iron Sulphide. . . . . . . . . | trace | ... . . . . . | ... .. . . . . |
| 20 | Sulphuric radical. . . . . . |  |  | . 42 |
| 21 | Sillica (and insoluble) .. | 4.27 | 91.01 | 49.77 |
| 22 | Ignition .. .. .. .. .. .. | . 23 | 1.40 | 1.86 |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . |  |  | . 70 |
| 24 | - .. .- . . . . . . . . ${ }^{\text {a }}$ | .. . . . . . . | . . . . . . | .. .. .. .. |
| 25 | Total . | 98.48 | 99.60 | 100.00 |
| 26 | Fquivalents: |  |  |  |
| 27 | Calclum Carbonate | 93.16 | . 55 | 43.31 |
| 28 | Caicium Phosphate | . 20 | 1.78 | 1.65 |
| 29 | Calclum Suiphate. .. . . |  |  | . 71 |
| 30 | Magnesium Carbonate | . 35 |  | 67 |
| 31 | . .. .. . . . . . . . . |  |  | $\cdots \cdots$ |
| 32 | Geologicai Horizon. | Focene. . . . | Focene.. . . | Eоседе. . .. .. |
| 33 | Geological Phare. |  |  |  |
| 34 | Geognostic . . . . . . . .. | Upper part of marl under 93 ft. overburden. | $\begin{aligned} & \text { Plt: hard stll } \\ & \text { cifed Focene } \\ & \text { marl, probably } \\ & \text { Cooper. } \end{aligned}$ | River Bank: 4 ft. (above water zero) 둡 green porph. harsh marl. |

COABTAL PLAIN BERIER-ANALYEES OF TERTIARY MABLS.
Table No. 6.

| 1 2 8 4 |  | Collmion .. .. .. Mingo Hill . . Edisto Rlver Earlons .. . . . . Var | Colleton .. . . . <br> Stokes Brg. <br> Edisto Rlver <br> Varlous | Dobchrater. <br> Scotchmans Blaff. <br> Edisto Rlver. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Edisto . . . . . . . | Ediato . . . . . .. | Edisto .. .. .. .. | Edisto. |
| 6 | 881 | 862 | 385 | 369 |
| 7 |  |  |  |  |
| 8 | 88.48 | 11.88 | 10.51 | 15.23 |
| 9 | . 22 | . 71 | 3.63 | . 81 |
| 10 | ... ... ... . . . | . 51 | 1.47 | . 76 |
| 11 | ... .. .. .. .. . | . 98 | 4.06 | 1.42 |
| 12 | ... .. .. . . . . | -••••••• | - | -•••••••••• |
| 18 | - . . . . $\cdot$. | - . . . . . . ${ }^{\text {- }}$ | ... .. .. . . . . | -• . . . . . |
| 14 | ... .. ... .. .. .. | - .. . . . . . . | - | ... .. ... . . . . |
| 15 | ... .. .. . . . . ${ }^{\text {a }}$ | . 19 | . 39 | . 30 |
| 18 | ... .. .. .. .. . | . 06 | . 25 | . 07 |
| 17 | 24.52 | 8.97 | 8.59 | 11.24 |
| 18 | . 58 | 1.12 | 8.82 | 1.03 |
| 19 | - .. . . . . ${ }^{\text {a }}$ | - . | ... .. . . . . . . | . . . . . . . . |
| 20 | .. . . . . . . . . | . 19 | . 86 | . 19 |
| 21 | - . . . . . . . | 78.64 | 62.12 | 68.58 |
| 22 | ... .. .. .. .. . | . 48 | 1.89 | . 10 |
| 28 | ..... - . . . ${ }^{\text {a }}$ | 1.07 | 8.31 | . 38 |
| 24 | . . . . . . | . . . . . . . . . | . . . . . . . . . . | . . . . . . . |
| 25 |  | 99.75 | 99.80 | 98.51 |
| 28 |  |  |  | . |
| 27 | 57.06 | 18.60 | 10.64 | 24.78 |
| 28 | 1.28 | 2.48 | 7.27 | 2.28 |
| 20 | . 29 | . 81 | 1.46 | . 81 |
| 80 | . 46 | 1.50 | 7.44 | . 65 |
| 81 | ... .. .. .. .. .. |  | . | . |
| 82 | Eocene . . . . . . . . | Eocene . . . . . . . | Eocene . . .. .. . | Eocene. |
| 38 | Santee ( 7 ).. | Warley EIll .. | Warley Hill .. .. |  |
| 84 | Bluff ; opper layor drab marl modertely compact. | River Bank; 2 ft. (above water) gray green porph. marl | River Bank; 2 ft . (above water) gray green porph. marl harsh compact. | Rlver Bank; yel-low-green compact marl. |

$6 \times 6$

## COABTAL PLAIN SERIEB-ANALTEES OF TERTIARY MARIA.

Table No. 6.

| 1 2 3 4 | County . <br> Locailty. <br> Stream <br> Owner <br> (?) | Dorchister ... <br> Near 8. R. R... <br> Four Hole Crit. | COLLliton .. .. <br> Glvham's Ferry. <br> Ediato Rlver <br> Charleston | Colterion .. .. <br> Glvham'e Ferry. <br> Edisto Rlver .. <br> Charleston |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Area | Edisto | Edinto. . | Edisto . |
| 6 | Supter No. .. .. .. .. .. | 370 | 873 (b) | 378(c) |
| 7 | Analisis: |  |  |  |
| 8 | Lime | 49.08 | 82.91 | 61.68 |
| 9 | Magnesla .. . . . . . . . . . | . 87 | . 56 | . 65 |
| 10 | Alumina | . 18 | 1.29 | . 88 |
| 11 | Ferric Oxide | . 52 | . 79 | . 08 |
| 12 | Ferrous Oxide. | - . . . . . . |  |  |
| 18 | Titanic Oxlde.. . | - ... . . . ${ }^{\text {a }}$ | -• . . . | - .. . ${ }^{\text {a }}$ |
| 14 | Manganese Oxide (MnO) .. | . 25 | .. . . . . |  |
| 15 | Sodn (NazO).. . . . . . . . |  |  |  |
| 18 | Potash (KaO). .. . . .. .. | ... . . . . . ${ }^{\text {. }}$ |  |  |
| 17 | Carbonic Acld ( $\mathrm{COz}_{2}$ ) | 88.08 | 25.60 | 40.71 |
| 18 | Phosphortc Acld (PaOs) .. | . 30 | . 92 | . 69 |
| 19 | Iron Sulphlde. . | trace | ... . . . . . . |  |
| 20 | Sulphurte radical. . . | .. .. . . . . | ... . |  |
| 21 | Sllica (and Insoluble) .. | 0.86 | 38.71 | 5.19 |
| 22 | Ignition .. .. .. .. .. .. | . 71 | 1.52 | . 38 |
| 23 | Molature (at $100^{\circ} \mathrm{C}$ ) . . . . . |  | . 20 | . 04 |
| 24 | . .. .. .. .. . | .. .. .. .. .. | .. . . . . . . ${ }^{\text {a }}$ | . . . . . |
| 25 | Total | 99.58 | 99.50 | 100.20 |
| 26 | Equivalents: |  |  |  |
| 27 | Calclum Carbonate | 86.59 | 56.81 | 90.93 |
| 28 | Calclum Phosphate . . . . . | . 68 | 2.01 | 1.20 |
| 29 | Calclum Sulphate. . . .. .. | trace | ... . . . . | ... .. . . . . ${ }^{\text {a }}$ |
| 80 | Magnesium Carbonate .. .. |  | 1.17 | 1.80 |
| 81 | . .. .. .. .. .. .. .. .. |  |  | ... - . . |
| 32 | Groloaical Honizon. .. | Focene. . | Mlocene | Mlocene . . |
| 83 | Groloorcal Phasa.. |  | Goose Crix. | Edisto |
| 34 | Grognortic .. . | 19 ft . blutt yel-low-white compact marl. | 32 ft bluff ; top sone soft. | 32 ft blatt ; 5 ft. stratum vers hard marl inclosing many pholad bore holes |

## COASTAL PLAIN SERIRE-ANALYBRE OF TERTIARY MARLS.

Table No. 6.

| 1 2 8 4 | Collumion .. .. .. Givham's Fy.. . . . Edisto River .. .. Charlenton. . . . . | Colinton .. .. .. Givham's Fry... Edisto Rlver .. .. Charienton . . | Colleton . . .. .. <br> 2M W Rldgeville.. <br> Captalns Cry... .. <br> Reuben Owens ... | Brekneray. <br> Ingleside. <br> Goose Creek. <br> Ingleside Mng. Co |
| :---: | :---: | :---: | :---: | :---: |
| 5 | $\text { EAlsto . . . . . . . } \begin{aligned} & 373(\mathrm{~d}) \end{aligned}$ | Edinto . . . . . . . | $\begin{aligned} & \text { Editto } \text {.. } \\ & . . \\ & \text {. . } \\ & \hline 95(\mathrm{~b}) \end{aligned}$ | Edisto. |
| 6 |  |  |  | 402 |
| 7 |  |  |  |  |
| 8 | 31.45 | 82.31 | 50.20 | ... . |
| 9 | 12.88 | 1.89 | . . .. . . . . | . . . . . . |
| 10 | 1.65 | . 95 | ... .. . . . . . | . . . . . . . . . |
| 11 | . 92 | . 68 | - | - |
| 12 | - .. . . . | . . . . . . . . . | … .. .. .. . ${ }^{\text {. }}$ | . . . . . . . . . ${ }^{\text {. }}$ |
| 18 | .. . . . . | . . . . | - ••••••• | . . . . . . . . |
| 14 | - . | - | . . . . . . - | - . . - - |
| 15 | ... .. .. . . . . ${ }^{\text {a }}$ | . 89 | . $\cdot$ • | . |
| 16 | … ......... | . 11 | … .. .. . . . . | ... .. . . . . . . |
| 17 | 37.97 | 26.30 | - . . . . | ... .. . . . . . |
| 18 | 1.08 | 1.08 | . 74 | . . |
| 19 | . | -• | … .. .. . .. . |  |
| 0 | ... .. .. .. .. . | . 38 | - . . . | ... .. . . . . |
|  | 11.76 | 38.32 | 6.58 | 18.42 |
| 2 | . 68 | 1.64 | $\cdots \cdots$ | ... . . . . - ${ }^{\text {- }}$ |
| 2 | 1.58 | 1.10 | . 97 | ... . . . . . ${ }^{\text {. }}$ |
| 4 | … . . | . . . . . . . . . | - | . . . . . . . . |
| 25 | 100.07 | 89.93 | ... .. ...... . | ... .. .. . . ${ }^{\text {a }}$ |
| 26 |  |  |  |  |
| 27 | 53.85 | 55.05 | 88.07 | 74.40 |
| 28 | 2.87 | 2.26 | 1.82 | Б. 40 |
| 29 | . | . 81 | -• | . |
| 80 | 27.28 | 8.97 | . .. .. .. .. | ... . . . . . . . |
| 31 | ... .. .. . . . . | - . . . . . . - | ... .. .. . . . . $\cdot$ | ... .. .. .. .. .. |
| 32 | Eocene . . . . . . . | Eocene . . | Mlocene . . | Eocene. |
| 38 | ... . . .. .. .. .. |  | Edisto .. . . . . . | Ashley-Cooper. |
| 84 | Intermediate portion of 24 ft . marl bluf under Mlocene marl. | Lower portion of 24 ft marl bluf graduating opward into marl No. 373 (d). | Swamp bottom. | Quarry 91 ft deed: dark drab marl. |

## COABTAL PLAIN EERIEG-ANALYSES OF TERTIARY MARLS

Table No. 6.


COASTAL PLAIN SERIEg-ANALYBES OF TERTIARY MARLS.
Table No. 6.

| 4 | Doscans <br> Aahley Worka. . . . <br> Ashley River . . . . <br> V. C. C. Co. .. .. | Dorchester Bees Ferry .. Ber Ashley River ..... | Chabliciton .. Bees Ferry .. Ashley River . . . . . V. C. C. Co. . . . . | BERKBLET. <br> Parsonage. <br> Wadboo Kiver. <br> Isaac Ball. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Edisto . . . . . . . | Ediato . . . . . . | Edisto . . . . . . . | Edisto. |
| $\theta$ | 405 (g) | \$10(b) | 410 (c) | 418 |
| 7 |  |  |  |  |
| 8 | 44.84 | 0.10 | 29.44 | 45.88 |
| 9 | 1.29 | . 20 | . 65 | . 38 |
| 10 | 2.20 | 7.11 | . . . . . . . . . | . 60 |
| 11 | . 63 | 2.36 | … .. ... .. . . ${ }^{\text {a }}$ | 1.34 |
| 12 | ... ... .. .. .. .. | ... .. .. .. .. .. | .. .. .. .. .. .. |  |
| 13 | ... .. . . . . . . | ... .. .. .. .. . | . . .. .. .. .. | . |
| 14 | ... .. . . . . . ${ }^{\text {a }}$ | ... .. .. .. .. .. | .. .. .. .. .. | ... .. .. .. . . . |
| 15 | ... .. .. . . . . | ... .. .. .. .. .. | ... .. .. .. .. . | . 41 |
| 16 | ... .. .. . . .. . |  | ... . . . . . . . . | . 80 |
| 17 | 36.49 | 1.60 | 16.29 | 85.13 |
| 18 | . 16 | 8.68 | 7.00 | 1.00 |
| 19 | ... .. . . . . . ${ }^{\text {a }}$ | ... .. .. . . . . | ... . . . . . . . . | ... .. .. . ${ }^{\text {. }}$ |
| 20 | ... .. .. .. .. .. |  | . 58 | ... .. .. .. . . . |
| 21 | 11.69 | 78.13 | ... .. ...... $\cdot$ | 12.76 |
| 22 | . 95 | 2.96 | … .. .. .. . . . | 1.46 |
| 23 | 1.58 | 2.75 | ... .. .. .. .. . | . 85 |
| 24 | . . . . . . . . . . | $\cdots \cdots \cdots$ | .. . . . . . . . . | . . . . . . . . . |
| 25 | 90.83 | 99.87 |  | 99.51 |
| 26 |  |  |  |  |
| 27 | 19.73 | 3.14 | 37.04 | 78.94 |
| 28 | . 35 | 8.00 | 15.28 | 2.18 |
| 29 | - . . . . . . . | ... .. .. .. . . . | . 97 | . 77 |
| 80 | 2.70 | . 42 | 1.86 | ... . . .. .. .. .. |
| 31 | - •• : •• . . ${ }^{\text {a }}$ | ... .. . . . . . . | ... .. .. . . . . | ... . . . . . . . |
| 32 | Eocene . . . . . . . . | Tertlary .. . . . . | Eocene . . | Focene. |
| 38 | Cooper .. .. . . . . |  | Ashley | Cooper. |
| 84 | From 50/6w ft. depth. yellow-white compact finegrained marl. | Mad Matrix : inclosing phos. rock overlying Ashley marl. | Bluff: gray granular marl lmmediately under phos. rock. | 24 ft. bluif : jellow gray compact marl. |

40-R. \& R.-(500)

Table No. 6.


COASTAL PLAIN GERIES-ANALYSES OF TERTIARY MARLS.
Table No. 6.

| $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & 4 \end{aligned}$ | BEEEELET .. .. .. <br> Near Bazon .. ... <br> Goome Creek .. .. <br> C. L. \& Water Co. | Charlegton .. .. <br> S Cherokee M.. . . <br> Stono Rlver <br> State of S. C... . . | Oranoentiga .. .. <br> Cave Hall .. . . . . <br> Halfway Swamp... <br> S. E. Owens $\qquad$ | Orangeblrg. Mill. <br> Poplar Creek. <br> R. E. Clark. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Edinto . . . . . . . . | Edisto . . . . . . . | Santee . . . . . . . | Santee. |
| 6 | 441\% | 458 (b) | 699 | 701 |
| 7 |  |  |  |  |
| 8 | 28.80 | 44.88 | 51.40 | 42.78 |
| 9 | 8.81 | 1.09 | . 78 | 1.05 |
| 10 | . 88 | . 63 | . 88 | . 82 |
| 11 | 1.88 | 2.07 | 1.70 | 4.22 |
| 12 | - . - . . . ${ }^{\text {- }}$ | ... .. .. . . . . ${ }^{\text {a }}$ | ... ... .. . . . . | ... . . . . . . |
| 18 | ... .. .. .. .. .. | trace | ... .. .. .. .. . | -•••••• |
| 14 | ... . . . . . . . . | trach | ... .. . . . . . . | ... . |
| 15 | . 29 | .15 | . 22 | . 51 |
| 16 | . 89 | . 27 | . 28 | . 48 |
| 17 | 21.88 | 29.80 | 40.82 | 80.09 |
| 18 | 8.03 | 5.15 | 0.20 | 2.98 |
| 19 | . | .. .. . . . . . | ... .. .. . . . . ${ }^{\text {a }}$ | ... . . . . . . |
| 20 | . 84 | 1.50 | 0.08 | 8.12 |
| 21 | 87.08 | 14.07 | 8.09 | 11.98 |
| 22 | 1.65 | . 17 | .13 | . 35 |
| 23 | 2.07 | 1.07 | . 77 | 1.20 |
| 24 | . . . . . . . . . . | - |  | $\cdots$ |
| 25 | 98.63 | 100.38 | 89.88 | 89.56 |
| 28 |  |  |  |  |
| 27 | 40.99 | 68.86 | 01.36 | 08.11 |
| 28 | 6.62 | 11.25 | . 56 | 6.51 |
| 20 | . 58 | 2.55 | ... .. .. .. .. .. | 5.30 |
| 80 | 7.40 |  | 2.15 | 1.97 |
| 81 |  |  |  | .. .. .. ... . |
| 82 | Miocene . . .. ... | Miocene . . . . . . | Focene . . . . . | Focene. |
| 38 | Cooper. . . . . . | Edinto | Santee .. | Warley Hill. |
| 84 | Blufif dark green and drab marl. | Bed of River: medium hard white fossilliterous marl. | Yellowish-white hard marl much bored by pholade. | Creek Bank: 8 ft . above creek bed; porphyritic marl compact fos. |

## COASTAL PLAIN SERIEG-ANALYBES OF TERTIARY MARLS. <br> Table No. 6.

| 2 | Countr. .. .. .. .. .. .. <br> Locallty. <br> Stream <br> Owner <br> (?) | Berkeley .. .. <br> Pond Bluff .... <br> Santee River.. <br> S. Cyp. L. Co. . | Berkmler .. .. <br> Pond Bluff .... <br> Santee River. <br> S. Cyp. 1. Co. . | Gborartown .. <br> Lenads Ferry. <br> Santee River <br> A. C. Inmb. Co. |
| :---: | :---: | :---: | :---: | :---: |
| 6 | Area . . . . | Santee .. | Santee | Santee .. .. .. |
| 8 | Strvey No. | 713(b) | 713(c) | 740(b) |
| 7 | Analysis : |  |  |  |
| 8 | Lime | 33.41 | 53.44 | 50.76 |
| 9 | Magnesia | . 26 | . 22 | . 87 |
| 10 | Alumina | . 05 | . 92 | 68 |
| 11 | Ferric Oxide .. .. .. .. | . 71 | . 81 | . 79 |
| 12 | Ferrous Oxide. |  |  |  |
| 13 | Titanic Oride.. |  |  |  |
| 14 | Manganese Oride ( MnO ) .. |  |  | ... -. .. .. .. |
| 15 | Soda ( $\mathrm{Na}_{2} \mathrm{O}$ ).. | 11 | . 18 | ... .. . .. .. |
| 18 | Potash ( $\mathrm{K}_{2} \mathrm{O}$ ) . | . 08 | . 07 | ... . . . . . . |
| 17 | Carbonle Acid ( $\mathrm{COz}_{2}$ ) .. .. | 42.06 | 42.02 | 40.39 |
| 18 | Phosphorlc Acld ( $\mathrm{PaO}_{5}$ ) | . 08 | . 18 | . 47 |
| 19 | Iron Sulphide. . . . |  |  | ... .. .. |
| 20 | Sulphuric radical. . . . . . | . 22 | . 11 | ... .. .. |
| 21 | Sillica (and inmoluble) .. | 1.92 | 1.71 | 5.65 |
| 22 | Ignition .. .. .. .. .. .. | . 65 | . 39 |  |
| 23 | Molsture (at $100^{\circ} \mathrm{C}$ ) . . . . . | . 39 | . 89 | . 29 |
| 24 | - ... .. .- | .- .. . . . . . | .. .. ... .. | . . . . . . |
| 25 | Total | 99.64 | 100.42 | 100.02 |
| 28 | Equivalents : |  |  |  |
| 27 | Calcium Carbonate | 94.98 | 94.98 | 89.64 |
| 28 | Calclum Phosphate . . . . . | . 17 | . 36 | 1.03 |
| 28 | Calcium Sulphate. . . . . . | . 38 | . 17 | . . . . . . . . ${ }^{\text {a }}$ |
| 80 | Magneslum Carbonate . . . . | . 64 | . 46 | 1.83 |
| 81 | - . . . . . . . . . . |  |  | ... .. .. .. .. |
| 82 | Georogical horizon. | Eocene. . | Eocene. . . . | Focene. . . . . |
| 83 | Geological Phasp.. | Mt. Hope | Mt. Hope . . . | Santee |
| 84 | Groanostic . . . . . . | 11 ft . blufi: compact graywhite limestone. | 11 ft . bluff: upper very hard gray-white limestone. | 10 tt . hluff: npper crystalline marl. |

## COABTAL PLAIN SERIES-ANALYSES OF TERTIARY MARLS.

Table No. 6.

| $1$ | Grobgintw .. .. <br> Lenuds Ferry. . . . <br> Santee Rlver . . . . <br> A. C. Lamber Co.. | Suntan. . . . . . . . <br> Muldrow .. .. .. <br> Black River <br> Jas Muldrow. | FLobence . . . . . . <br> Myers Well .. ... <br> Pee Dee River ... <br> G. H. Myers | Florence. <br> Bostlek. <br> Pee Dee Rlver. <br> R. J. Groover. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Santee .. . . . . .. | Pee Dee .. .. ... | Pee Dee .. .. .. | Pee Dee. |
| 6 | 740(c) | 838 | 359 | 863 |
| 7 |  |  |  |  |
| 8 | 48.80 | 40.60 | 18.28 | 36.75 |
| 9 | 1.02 | . 26 | . 26 | . 39 |
| 10 | . 62 | . 21 | 1.42 | . 59 |
| 11 | . 82 | . 63 | 1.65 | . 71 |
| 12 | ... .. . . . . - . | $\cdots \cdots$ | . . . . . . . . . | . . . |
| 13 | .. | ... .. .. .- .. | ... .. .. .. . . . | ... .. .- .. .. |
| 14 | ... .. .. .. .. |  |  | ... .. .. .. . |
| 15 | ... .. .. .. .. .. | . 39 | . 21 | . 28 |
| 18 | ... .. ... .. .. . | . 07 | . 35 | . 18 |
| 17 | 38.76 | 31.50 | 14.33 | 28.77 |
| 18 | . 82 | . 38 | . 34 | . 50 |
| 19 | ... .. .. .. . . . | . . . . . . . . . . | ... .. . . - . . | ... .. .. .. .. |
| 20 | ... .. .. .. .. .. | . 38 | ... .. .. .. . . . | ... .. .. . . . |
| 21 | 8.78 | 23.57 | 60.06 | 24.59 |
| 22 | . 77 | 1.27 | . 77 | . 31 |
| 23 | . 17 | . 58 | 2.26 | 6.76 |
| 24 | . . . . . . |  | . | . .. .. .. |
| 25 | 98.61 | 9893 | 90.93 | 90.81 |
| 28 |  |  |  |  |
| 27 | 85.57 | 71.16 | 31.94 | 64.57 |
| 28 | . 70 | . 87 | . 73 | 1.09 |
| 29 |  | . 86 | - | $\cdots$ |
| 30 | 2.18 | . 54 | . 64 | . 75 |
| 31 |  |  |  | ... .. . . . . |
| 32 | Eocene | Mlocene . . | Miocene . . . . | Miocene. |
| 33 | Santee . | Pee Dee | Pee Dee | Goome Crit. |
| 34 | 10 ft : blatif ; lower woft marl. | 9 ft. Pit; loose fossiliferous marl: borings reveal deeper extent. | Bottom of 18 -ft. well : shell marl. | 12 ft scarp; yel-low-white friable marl: fosstliferous overlying crotaceous marl. |

COABTAL PLAIN SERIES-ANALYSES OF TGRTIARY MARLS.
TAble No. 6.


625
ANALYSES OF TERTIARY MARLS—PHOSPHATE ROCK.*

|  | $\frac{8}{8}$ <br> 4 <br> $\stackrel{5}{5}$ <br> 家 <br> $\circ$ $\stackrel{y}{5}$ $i$ <br> P.C. |  |  P.C. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Moisture at $100^{\circ} \mathrm{C}$. |  | 0.00 | 0.84 | 0.79 | 0.57 |
| Organic matter and combined water . . .. .. .. |  | 5.26 | 4.22 | 5.80 | $4 \cdot 3 \mathrm{I}$ |
| Carbonic Acid | 4.28 | 4.47 | $3 \cdot 54$ | 3.61 | 3.79 |
| Equivalent to Carbonate of Lime | 9.73 | 10.16 | 88.04 | 8.20 | 8.61 |
| Phosphoric Acid. . | 26.68 | 27.01 | 27.26 | 25.14 | 27.26 |
| Equivalent to Bone Phosphate of Lime. | 58.24 | 58.95 | 59.51 | 54.88 | 59.51 |
| Sand .. . . | 12.41 | 11.37 | 9.06 | 13.30 | 9.06 |

AVERAGE OF ANALYSES FROM MORE THAN IOO SAMPLES OF SOUTH CAROLINA PHOSPHATE ROCK.

| Phosphoric Acid | 25 to 28 p.c. | Sesquioxide of Iron | I to 4 p.c. |
| :--- | ---: | :--- | :--- | :--- |
| Carbonic Acid | $2^{1 / 2}$ to 5 pcc. | Fluorine | I to 2 p.c. |
| Sulphuric Acid | $1 / 2$ to 2 p.c. | Sand and Silica | 4 to I2 p.c. |
| Lime | 35 to 42 p.c. | Organic matter and |  |
| Magnesia | traces to 2 p.c. | combined water | 2 to 6 p.c. |
| Alumina | traces to 2 p.c. | Moisture | $1 / 2$ to 6 p.c. |

(Proceedings Agricultural Society of South Carolina, December 12, 1879. Lecture by C. U. Shepard, Jr.)

[^11]
## COASTAL PLAIN SERIES- <br> ANALYBES OF TERTIARY SHALES (FOLLERS EARTH).

Table No. 7.

| 1 2 8 4 | Countr. <br> Locallty . <br> Stream. <br> Owner <br> ( 7 | Aiken <br> 3 Corn'd Pond. <br> Edisto R. . . . . <br> W. Gnnter | Collaton .. .. <br> Beech Bank <br> Edisto R. . <br> V. C. C. Co.. | Colherom .. . . <br> Pon Pon .. .. <br> Edisto R. <br> V. C. C. Co.... |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Amed | Edtato . | Edisto | Edisto |
| 6 | Survei No. . | 282 | 875 | 470 |
| 7 | Analysis: |  |  |  |
| 8 | Lime | 1.01 | 8.28 | 1.03 |
| 9 | Magnesia . | . 64 | . 21 | trace |
| 10 | Alumina .. .. .. .. .. .. | 14.92 | 8.62 | 1.92 |
| 11 | Ferric Oxlde | 4.01 | 2.87 | 1.00 |
| 12 | Ferrous Oxide. |  | ... .. .. $\cdot$.* |  |
| 18 | Titanic Oxide. . |  |  | ... .. . |
| 14 | Manganese Oxide (MnO) .. |  |  |  |
| 15 | Soda (NazO). . . . . . . . . | Undt. | . 35 |  |
| 18 | Potash ( $\mathrm{K}_{2} \mathrm{O}$ ) . . . . . . .. | Undt. | . 22 |  |
| 17 | Carbonic Acid (COa) .. .. |  | . 40 | ... ... . . . |
| 18 | Phosphoric $\Delta$ cid ( $\mathrm{PaO}_{5}$ ) .. |  | 2.58 | . 87 |
| 18 | Iron Sulphide. . . . . . . .. |  |  |  |
| 80 | Suiphuric radical. . . . . . | .. .. .. .. ${ }^{\text {. }}$ |  |  |
| 21 | Slice (and insoluble) .. .. | 73.84 | 80.23 | 84.17 |
| 22 | Ignition .. .. .. .. .. .. | 4.00 | 2.95 | 8.74 |
| 23 | Moisture (at $100^{\circ} \mathrm{C}$ ) . . . . |  | 8.01 | 6.90 |
| 24 | - .. .. .. .. . . . . | .. . . . . . . | . . . . . . . | * . . ${ }^{\text {a }}$ |
| 25 | Total | 98.42 | 99.52 | 89.58 |
| 28 | Equivalents : |  |  |  |
| 27 | Calcium Carbonate | ... ... .. . . | . 39 | ... .. .. . . |
| 28 | Calcium Phosphate .. . . . | ... ..... . . | B. 64 | 1.90 |
| 29 | Calcium Sulphate. |  | trace |  |
| 30 | Magneslum Carbonate .. .. |  | . 44 |  |
| 81 | . . . . . . . . . . . . . |  |  |  |
| 82 | Gmological Horizon. . . .. | Eocene. . | Oligocene .. | Oligocene . . . |
| 38 | Gpological Phasp. . | Congaree | Parachucla | Parachur'A ... |
| 84 | Grognostic . . . . . . . .. | 12 ft . scarp marginal hed of fissite shale sillicified layers. | River Rank: strat. shale in isolated natehes | Superficial deposit highly slliclifed about 10.8 ft . thlek. <br> 1 |

## COABTAL PLAIN AERIESANALYBES OF TERTIARY SHALES (FULLERS EARTH).

Table No. 7.


## COABTAL PLAIN SERIEG- <br> ANALYSES OF TERTIARY SHALES (FULLKRS EAETH).

Tablin No. 7.

| 1 2 8 4 | Countr. <br> Locality. <br> Stream <br> Owner <br> ( 3$)$ | LEXINGTON .... <br> W. Gaston <br> First Creek ... <br> Martin Est. ... | Obanorbuza <br> 8.7M S Norths <br> L. Beaver Crx. <br> R. D. Rucker. . | Crarnynon ... Mannligy Manor Fall. Erarth Crt <br> Mrs. F. Thomp son. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Area . | Santee | Santee | Santee . . . . . |
| 6 | Subtey No. | 005 | 522 | 685 (b) |
| 7 | Analysis : |  |  |  |
| 8 | Lime | 8.12 | . 16 | . 87 |
| 9 | Magnesla | 2.01 | . 72 | . 42 |
| 10 | Alumina | 7.66 | 0.91 | 4.88 |
| 11 | Ferric Oxide | 1.93 | 2.88 | 2.81 |
| 12 | Ferrous Oxide. |  |  | ... .. .. .- . |
| 13 | Titanic Oxide.. |  | . 97 | -.. .. . . . . |
| 14 | Mngganese Oxide (MnO) .. |  |  |  |
| 15 | Soda (NazO).. . . . . . . . |  | Undt. |  |
| 16 | Potash (KzO). .. .. .. .. | - . ${ }^{\text {- }}$. | Undt. |  |
| 17 | Carbonlc Acld ( $\mathrm{CO} a$ ) .. .. |  | ... .. . . . ${ }^{\text {. }}$ |  |
| 18 | Phosphorlc $\mathrm{Acld}\left(\mathrm{Pa}_{3} \mathrm{O}_{5}\right) .$. |  |  |  |
| 19 | Iron Sulphide. . . . . . . . . |  |  |  |
| 20 | Sulphuric radical. .. .. .. |  |  |  |
| 21 | Sllica (and lnsoluble) .. .. | 81.65 | 78.19 | 86.80 |
| 22 | Ignition | 8.58 | 6.54 | 4.68 |
| 23 | Mointure (at $100^{\circ} \mathrm{C}$ ) . . . | - . . . . | ... - . ${ }^{\text {a }}$. | ... .. .. .. .. |
| 24 | . .. .. .. . . . . . . . | - .. .. .. . | .. .. . . . . | .. .. .. .. . |
| 25 | Total | 90.95 | 89.32 | 99.86 |
| 26 | Equivalents : |  |  |  |
| 27 | Calcium Carbonate . |  | - $\cdot$ - |  |
| 28 | Calclum Phosphate . . . . . | - .. ... .. | . .. .. . |  |
| 29 | Calclum Sulphate. .. .. .. |  |  |  |
| 30 | Magneslum Carbonate .. .. |  |  |  |
| 31 | . . . . . ${ }^{\text {. }}$. |  |  |  |
| 32 | Grolooical Horizon. | Focene.. . . | Eocene. . . | Eocene. . . . . |
| 33 | Geological Phast. . | Congaree | Congaree | Congaree .. .. |
| 34 | Geoonostic .. .. .. . | Scarp; Insile shale micaceous Interiaminated thickness exposed 8 ft . | Valley Bed: fisslle shale with white clay superimposed thlekness explored +80 ft . | Scarp; upper part assile shale; grit variable aggregates +8 ft . |

COASTAL PLAIN SERIEBANALYBES OF TERTIARY BHALES (FULLERS EARTH).

Tablim No. 7.


[^12] Bantee R., Mri. E. B. Plttman. For analysis see description under Survey No. 727.

Table No. 6.

| 1 2 3 | Connty. . . Locality. . . . . . . . . . . . . . . . . . | hampton .. .. <br> Mauldin <br> Coosawhatchle River. <br> W, H. Mauldin | Colleton .. .. Givhams Fy Rd Captains Crk... Reuben Owens. | DORCHESTKR <br> Bees Ferry <br> Ashley River <br> V. C. C. Co. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Abea .. .. .. .. .. .. .. | Edisto | Edisto .. . . . | Edisto .. .. .. |
| 6 | Subviay No. .. .. .. .. .. | 855 | 395 ( a ) | 410(b) |
| 7 | ANALYSIS: |  |  |  |
| 8 | Lime . . | 10.34 | 1143 | 6.10 |
| 9 | Magnesla . . . . . . . . . . . | 1.55 | . 54 | . 20 |
| 10 | Alumina | 2.86 | 11.21 | 7.11 |
| 11 | Ferric Oxide | 2.52 |  | 2.36 |
| 12 | Ferrous Oxide. |  |  |  |
| 13 | Titanic Oxide. . . . . . . . . | . 45 |  | ... ... . . . . |
| 14 | Manganese Oxide (MnO) .. | trace | ... . | ... .. . . . . |
| 15 | Soda ( Naz O ).. | 1.25 |  |  |
| 16 | 1'otash ( $\mathrm{K}_{2} \mathrm{O}$ ). . | 1.16 | ... .. . . |  |
| 17 | Carbonic Acid ( $\mathrm{CO}_{2}$ ) .. .. | . 58 |  | 1.00 |
| 18 | Phosphoric Acld ( $\mathrm{PaO}_{5}$ ) .. | 6.61 | 7.88 | 3.68 |
| 19 | Iron Sulphide.. .. .. .. |  |  | $\cdots$ |
| 20 | Suiphuric radical. .. .. .. | 3.02 |  | . $\cdot$ |
| 21 | Slifica (and ingoluble) .. | 65.08 | 57.27 | 73.13 |
| 22 | Igaition . . .. .. .. .. .. | 2.18 | 7.48 | 2.06 |
| 23 | Moisture (at $100^{\circ} \mathrm{C}$ ) . . . . | 2.57 | 4.18 | 2.75 |
| 24 | - . . . . | . .. .. .. .. |  | . . . . . . . . |
| 25 | Total | 100.13 | 98.85 | 90.87 |
| 28 | Equivalents: |  |  |  |
| 27 | Calcium Carbonate | . 72 | 3.82 | 3.14 |
| 28 | Caicium Phosphate | 14.44 | 17.06 | 8.00 |
| 29 | Calcium Sulphate. . . . . . | 5.13 | 1.13 | $\ldots$ |
| 30 | Magnesium Carbonate | . 46 | $\cdots$ | .42 |
| 31 |  |  |  |  |
| 32 | Grological Horizon. .. | Tertiary .. | Tertiary . | Tertlary .. ... |
| 33 | Gbological Phasy. . | Neocene | Neocene | Neocene .. |
| 34 | Geoonostic .. .. .. .. .. | Pit: loose fine granular giauconitic. | Swamp Bed ; lonse eranular marl reating on Ashley nuarl. | Mud Metris: rock overlying Ashiey mari. |

COASTAL PLAIN SERIEB-ANALYSES OF GLAUCONITIC MARLS (TERTIARY)
Tablim No. 6.


## ANALYEES OF CLAYS OF THE RAMBURG SERIES. <br> Table No. 8.



ANALYBES OF CLAYS OF THE HAMBURG SERIES.
Tably No. 8.


## ANALYEES OF CLAYB OF THE HAMBURG SERIEG.

TABLI No. 8.

| 1 2 8 4 | Cocnty.. .. .. .. .. .. .. <br> Locallty <br> Stream <br> Owner (1) | AIKIN .. .. .. <br> Brodie . . .. .. <br> Rocky Crz. Val. <br> J. Brodie | AIERN .. .. .. <br> Keeslers <br> LIghtwood Crk. <br> Keesler Place. . | AIMEX .. .. .. <br> Trenholm .. .. <br> Chalt Eill Crt Valley. Trenholm Est... |
| :---: | :---: | :---: | :---: | :---: |
| 5 | AREA .. .. .. .. .. .. .. | Edlsto . . . . . . | Edisto .. . . . . | Edisto |
| 6 | Survey No. .. .. .. .. .. | 260 | 275 | 296 |
| 7 | Analygis: |  |  |  |
| 8 | Sllica . | 44.11 | 60.21 | 46.90 |
| 0 | Alumina . . . . . . . . | 38.19 | 26.62 | 36.08 |
| 10 | Ferrlc Oxlde . . . . . . . | 155 | 1.89 | 1.02 |
| 11 | Titanic Ozide. . . . . . . . . | 1.30 | . 81 | . 86 |
| 12 | Llme . . . . .. .. .. . . . . | . 14 | 18 | trace |
| 18 | Magnesia . . .. .. .. .. .. | trace | . 24 | trace |
| 14 | Soda . . . | . 53 | . 97 | 1.09 |
| 15 | Potash. . . . . . . . . . . . | . 50 | . 67 | . 20 |
| 16 | Igaltlon .. .. .. .. .. .. | 18.37 | 8.58 | 18.82 |
| 17 | .. .. .. .. .. .. .. .. .. | . . . . . | ... .. . . . . | ... .. .... $\cdot$ |
| 18 | .- .. .. .. .. .. .. . | . . . . . . . | - | . |
| 18 | .- .. .. .. .. .. .. .. | - . . . . . . | ... .. .. . . . | ... .. . . . . |
| 20 | - . . . . . . . . . . | . | . | - . |
| 21 | Undetermlned.. .. .. | .. . . . . . . . | ... .. .. .. . | ... .. . . ${ }^{\text {. }}$ |
| 22 | Total | 99.68 | 100.28 | 100.08 |
| 23 | Rational Analysib: |  |  |  |
| 24 | Clay Substance . . . . | 98.77 | 67.56 | 88.99 |
| 25 | Quarts. . . . . . . . . . . . . | . 22 | 28.74 | 4.58 |
| 26 | Feldspar | 70 | 8.88 | 6.54 |
| 27 | Total | 99.60 | 100.28 | 100.06 |
| 28 | Vid. Priliminary Repott on the Clays of South Carolika-Pag.. .. .. <br> Remaris : | 132 | 183 | 184 |

## ANALYSES OF CLAYS OF THE HAMBURG SERIES.

Tablino. 8.

| 1 2 3 4 | AIKREN. . .. .. .. <br> Selvern $\qquad$ <br> Marbone Crk. Val. <br> Impe'1 Kaolln Co. | Licingeron 6M N Belvern. Hoods Brook Val. <br> B. Fallaw. | Liteington. <br> Gelger <br> Thoms Crk. <br> Mrs. H. Gelger . . | Richland. <br> Near Killian. Crane Crk. Valley. Killian Fire B. Ca |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Edisto. . .. .. .. | Edigto . . . . . . . | Santee . . . . .. .. | Santee. |
| 6 | 300 | 815 | 515 | 550 |
| 7 |  |  |  |  |
| 8 | 45.69 | 45.10 | 45.44 | 42.80 |
| 9 | 87.47 | 88.69 | 38.78 | 86.94 |
| 10 | 1.01 | 1.28 | 1.15 | 2.64 |
| 11 | 1.44 | 1.00 | . 98 | . . . . . . . . |
| 12 | trace | . 02 | . 11 | . 80 |
| 13 | none | . 03 | . 12 | . 78 |
| 14 | . 69 | . 52 | . 48 | ... .. .. .. .. . |
| 15 | . 08 | . 37 | . 23 | $\cdots \cdots$ |
| 16 | 18.88 | 13.52 | 12.86 | 15.48 |
| 17 | .. .. ... . . | . . . . ${ }^{\text {a }}$ | -• •• | ... . . . . . ${ }^{\text {a }}$ |
| 18 | .. .. .. . . ${ }^{\text {a }}$ | - .. ... .. .. .. | ... .. .- . ${ }^{\text {. }}$. | ... .. .. . - |
| 18 | - . . . . . . . | ... .. . . . . . . | ... .. .. .. .. . | ... .. .. .. .. . |
| 20 | ... .. .. . . . . | ... .. .. .. .. .. | ... .. .. .. .. . | $\cdots$ |
| 21 | .. .. .. .. .. .. |  |  | ... .. . ${ }^{\text {a }}$ |
| 22 | 100.36 | 100.53 | 100.15 | 100.00 |
|  |  |  |  |  |
| 24 | 94.68 | 96.89 | 87.86 | ... .. . . . . . $\cdot$ |
| 25 | 8.78 | 2.48 | . 83 | ... .. . . . . . . |
| 26 | 1.92 | 1.16 | 1.38 | .. .. .. .. .. |
| 27 | 100.36 | 100.83 | 100.15 | . . . . . . . . |
| 28 |  |  |  |  |
|  | 185 | 136 | 140 | 142 |

## ANALYEES OF CLAYG OF THE HAMBURG GERIES.

Table No. 8.

| 2 8 4 | Countr. <br> Locallty <br> Stream. <br> Owner <br> (?) | michland. . .. M $\boldsymbol{f}$ Columbla. Crane Crk. Val. Kilian flre $B$. | Richland... .. <br> 2.8M NW Cong. <br> Codnr Crit Val <br> J. F. Smith .. | Richlakd... .. OM N Congares. Cola Cris. Val. <br> J. Thompmon . |
| :---: | :---: | :---: | :---: | :---: |
| 5 | amma .. .. .. .. .. .. .. | Santee .. .. | Santee .. . | Santee .. .. .. |
| 6 | Surver No. | 551 | 570 | 500 |
| 7 | Analisis : |  |  |  |
| 8 | silica | 57.30 | 45.72 | 47.78 |
| 8 | Alumina | 28.82 | 38.88 | 37.28 |
| 10 | Ferric Oxide | 2.94 | . 98 | 1.26 |
| 11 | Tltenic Oxide. . |  | . 88 | 1.07 |
| 12 | Lime | 1.58 | . 08 | . 07 |
| 18 | Magnesta .. .. ..... .. .. | 1.51 | . 07 | 11 |
| 14 | Soda |  | .55 | . 6 |
| 15 | Potash.. |  | . 10 | . 10 |
| 18 | Igaition | 11.84 | 18.05 | 12.20 |
| 17 | .. .. .. .. .. .. .. ... .. |  |  |  |
| 18 | .. .. .. .. .. .. .. .. .. |  | . .. . | ... .. .. .. . |
| 19 | .. .. .. .. .. .. .. .. .. |  | .. .. .. .. .- | ... .. .. .. . |
| 20 |  |  | . .- .. | ... .. ... .. . |
| 21 | Undetermlned. | 1.00 | .... . . . | ........ .. . |
| 22 | Total | 100.00 | 100.51 | 100.57 |
| 23 | Rational analybib: |  |  |  |
| 24 | Clay Substance |  | 98.39 | 96.48 |
| 25 | Quarts. |  | 1.21 | 3.17 |
| 28 | Feldspar | .. .. .. .. | . 91 | 1.04 |
| 27 | Total | . .. ... .. . | 100.51 | 100.67 |
| 28 | Vid. Priliminait ripont <br>  Rimatis: | 142 | 144 | 148 |
|  |  |  |  |  |

637
ANALYSES OF CLAYS OF THE MIDDENDORF SERIES.
TAbLe No. 8.

| $\begin{array}{r} 1 \\ 2 \\ 8 \\ 3 \end{array}$ | AIKin. . . . .. .. <br> Richards Place <br> Wioe Crk. Val. <br> Richards Place | 1M ND Warrenvl. <br> Wlse Crk. Val. ... <br> Mrg. G. Sharpton | $\left(\begin{array}{l} \text { AIKBN . . . . . . . } \\ 1.2 \mathrm{M} . \\ \text { Bridge Crk. Gal. . . } \\ \text { Gran. Mrg. Co. . . . } \end{array}\right.$ | RICHMAND. Garner Ferry Road. Mill CrE. Val. |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Alken . . . . . . . | Alken .. .. .. .. | Aiken .. . . .. .. | Santee. |
| 6 | 175 | - 180 | 181 | 565 |
| 7 |  |  |  |  |
| 8 | 47.49 | 50.87 | 55.61 | 49.31 |
| 0 | 35.56 | 31.49 | 27.44 | 34.38 |
| 10 | 2.47 | 2.44 | 1.60 | 1.91 |
| 11 | . 94 | 1.20 | 1.82 | 1.10 |
| 12 | trace | . 32 | . 14 | . 18 |
| 13 | trace | . 25 | . 19 | . 16 |
| 14 | . 74 | 1.01 | 2.51 | . 21 |
| 15. | . 13 | . 63 | . 33 | . 20 |
| 16 | 12.86 | 11.42 | 10.39 | 12.52 |
| 17 | . . . . | .. .. .. .. .. | ... .. .. .. .. ${ }^{\text {. }}$ | ... .. .. .. .. .. |
| 18 | ... .. .. . . . . $\cdot$ | ... .. .. .. .. . | ... .. .. .. .. . | ... .. .. ... .. .. |
| 19 | ... .. .. . . . . | ... .. .. .. .. . | ... .. .. .. .. . | ... .. .. . . . . |
| 20 | ... .. .. .. .. .. | . | ... .. .. .. .. .. | ... .. .. .. . . . |
| 21 | . .. . . | . | - | - .. . . . . . . |
| 22 | 100.19 | 99.63 | 100.03 | 89.97 |
| 23 |  |  |  |  |
| 24 | 98.48 | 86.28 | 76.25 | 91.72 |
| 25 | 2.27 | 10.93 | 20.60 | 7.16 |
| 28 | 1.49 | 2.47 | 3.18 | 1.09 |
| 27 | 100.19 | 99.63 | 100.08 | 99.97 |
| 28 |  |  |  |  |
|  | 122 | 123 | 123 | 143 |

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ANALYSEB OF CLAYS OF THE MIDDENDORE SERIES.
Table No. 8.


## 639

ANALYBES OF CLAY8 OF THE MIDDENDORF SERIES.
Table No. 8.


640

COASTAL PLAIN sERIEG-ANALYBES OF NEOCENE CLAYB.
Table No. 8.

| 1 2 3 4 | County <br> Locallty <br> Stream <br> Owner <br> (?) | Hampton .. .. <br> Scotia <br> Green Swamp <br> A. L Youmons. | HAMPTON <br> N.E. of Garnett <br> Black Swamp. <br> Plerre Robert. | Collition <br> Walterboro. <br> Dungannons Bp |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Aria . | Savannah .. .. | Savannah .. .. | Edisto .. .. .. |
| 6 | Sueter No. | 75 | 76 | 8944 |
| 7 | Analysis : |  |  |  |
| 8 | Lime | . 04 | . 32 | . 20 |
| 9 | Magneria .. | 1.33 | . 14 | ... .. .. .. . |
| 10 | Alumina | 24.87 | 20.15 | 24.83 |
| 11 | Ferric Orlde | 1.79 | . 6.22 | 2.34 |
| 12 | Ferrous Oxide |  | ... .. . . . . . | . . . . .. . . . |
| 13 | Titanic Oxlde. . | 1.32 | . 81 | . . . . . . . . |
| 14 | Manganese Oxlde (MnO) |  |  | ... |
| 15 | Soda (NazO).. | . 72 | 1.08 | ... ... ... ... |
| 16 | Potash ( $\mathrm{K}_{2} \mathrm{O}$ ) | . 72 | 1.08 | 1.88 |
| 17 | Carbonic Acld ( $\mathrm{COz}_{2}$ ). |  | .. . . . . . . | ... .. .. . . . |
| 18 | Phosphoric Acld ( $\mathrm{PzO}_{5}$ ) |  |  |  |
| 19 | Iron Sulphide. . | ... . . . . . | - ..... .. . |  |
| 20 | Sulphuric radical . . . . |  | ... .. .. . . . | ... .. ... .. - |
| 21 | Sllica (and Insoluble) | 60.83 | 64.72 | 61.15 |
| 22 | Ignition | 8.77 | 7.36 | 0.78 |
| 23 | Moisture (at $100^{*} \mathrm{C}$ ). |  | .. .. .. .. .. |  |
| 24 |  |  | $\cdots \cdots$ | .. . |
| 25 | Total | 94.89 | 100.88 | 100.19 |
| 26 | Equivalents : |  |  |  |
| 27 | Calclum Carbonate | ... .. .. ${ }^{\text {. }}$. | ... .. .. .. . | . . . . |
| 28 | Calclum Phosphate | $\cdots \cdots$ |  |  |
| 29 | Calclum Sulphate . . . . . . . |  |  |  |
| 80 | Magneslum Carbonate .. .. |  |  |  |
| 81 | .. .. .. .. .. .. .. .. .. | -•••• .. . . | … .. .. .. |  |
| 32 | Grological Horizon : |  |  |  |
| 83 | Grological Phabe. - .. .. | Hampton | Hampton . . .. | Hampton .. .. |
| 34 | Geognostic .. .. .. .. .. | Hldge: llght. colored clay. | Bed of clay : Intermilttently mantiling ridges. | Fat bed of White clas. |

## 641

COABTAI. PLAIN 8ERIEG-ANALYSES OK NEOCENE CLAY8.
Table No. 8.

| 1 2 3 4 | DORCABSTIR . . .. <br> Near Summerville Cyprees Swp. Br. F. C. Fiahbarde. . | DORCHEBTER. Near Sammerville. Cypress Swd. Br.. . F. C. Fishbarne | Bneksiny .. .. .. <br> St. Stephens Jattasee ILake Br. A. C. L. R. E. |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  | Edisto. | Edisto .. .. | Santee . . . .. .. | - .. .. . . . . |
| 6 | 394 B | 389 C | 720 A | . . . . . . .. .. |
| 7 |  |  |  |  |
| 8 | . 22 | 1.75 | . 26 | . |
| 9 | ... .. .. .. . . . | 1.38 | . 88 | - |
| 10 | 14.36 | 28.61 | 19.40 | . . . . . . . . |
| 11 | 3.04 | 2.89 | 4.69 | . . . . . . . |
| 12 | - .. .- | ... .. .. .. .. . | - . . . | . . . . . . . |
| 13 | ... .. ... . . . . | - . . . . | 1.23 | .. .. .. .. .. |
| 14 | … .... . . . . . | .. .. .. .. . | ... .. .. .. . . . | .. . . . . . . |
| 15 | . 06 | .. .. ... .. .. .. | . 28 | -. .. .. .. .. |
| 16 | 2.14 | 1.10 | 1.60 | . |
| 17 | ... ... . . . . . | .. . . . . . . . | ... .. . . . . . . | .. . . . . . . |
| 18 | ... .. .. .. .. . |  |  | .- . ${ }^{\text {- }}$ |
| 18 |  |  | 1.24 | . . . . . . .. . |
| 20 |  |  |  | .. . . . . . . . |
| 21 | 73.80 | 60.90 | 62.38 |  |
| 22 | 6.31 | 9.60 | 6.81 | - $\cdot$ |
| 23 | .. .. .. .. .. .. |  |  | .. .. .. . . . . |
| 24 |  |  | 1.04 | . .. .- .. .. . |
| 25 | 99.93 | 100.71 | 89.88 |  |
| 26 |  |  |  |  |
| 27 | ... .. . . . . . . | ... .. .. .. .. . | .. .. .. .. ... .- | - |
| 28 |  |  |  |  |
| 29 |  |  |  |  |
| 80 |  |  |  |  |
| 31 |  |  |  |  |
| 82 |  |  |  |  |
|  |  |  |  | - - . . . . . |
| 83 | Hampton | Hampton . . . . . . | Hampton .. . . ... |  |
| 84 | Fhat bed of white clay. | Ridge ; lisht-colored clay. | Ridge ; likit-cnlorgd clay. | - . . . . . . . |

## PART V. GENERAL GEOLOGICAL CONDITIONS.

An inspection of the physiography of South Carolina reveals two series of formations, widely differing in their topographical, structural and floral features, and separated by a meandering line designated the "fall line," which crosses the greater streams at the head of navigation. This line, beginning at North Augusta, proceeds by Columbia and thence by Camden to the North Carolina State line, northeast of Cheraw. The area north of this line, designated the Crystalline Region, comprises the older crystalline rocks and is characterized along its upper limits by a somewhat serrated mountainous profile graduating southerly into intricately ribbed and undulating ridges with deeply sculptured valleys and rapidly flowing streams. South of the fall line we find the younger sedimentary beds, which overlap the crystalline rocks and extend thence to the sea, constituting a vast peneplain known as the Coastal Plain, which along its upper limit characteristically affords extensive plateaus incised with deep valleys in almost abrupt juxtaposition, the included rivers having slow velocities and navigable channels.

Proceeding from the northwest part of the State along a line normal to the coast we observe distinctive zones of elevation extending approximately parallel with the coast. First the Montaine Region, with its serrated topography culminating in peaks as high as 3,500 feet above the sea level, which rapidly and irregularly declines within thirty miles to the Piedmontaine Region where the ridges afford elevations from 700 to 900 feet, and the beds of the larger streams are from 500 to 700 feet above the sea level. This "Piedmont Region" gently graduates through the middle country to the fall line, where the crystalline rocks pass under the Coastal Plain formations at elevations above sea level, varying from ing feet in the deeper valleys to 680 feet on the plateau between the Savannah and the Congaree Rivers, and 597 feet between the Wateree and the Great Pee Dee Rivers. Borings south of the fall line show the inclination of the surface of the crystalline rocks greatly increased, attaining in the Savannah area 54 feet to the mile, and in the Pee Dee area 50 feet to the mile, but apparently less along the line between the two. The overlapping Coastal Plain formations, as exposed along the upper limits of their plateaus, as above indicated, attain a maximum
elevation of 680 feet, from which, through the intervening sand hill region, they decline within 20 miles to an elevation of 400 feet, and thence gently graduate through 80 miles of low country to the sea level at the coast. An examination of the structural and general geological features shows the Crystalline Region to be constituted of rock formations more or less hard, foliated and crystalline, often pitched at high angles, folded, faulted and otherwise dislocated, and deficient in fossil remains.

The Coastal Plain exposes loosely aggregated materials without distinct stratification, and some stratified materials with a gentle dip, the latter more or less rich in fossil remains, the former rarely affording biotic evidences.

Accordingly the geological features of South Carolina admit of systematic treatment under two general divisions, to wit:

Division I. The Crystalline Region.
Division II. The Coastal Plain.

## DIVISION I.-CRYSTALLINE REGION. <br> CHAPTER I.

General Subdivisions.
The Crystalline Region affords natural subdivisions, which are exhibited in successive groups of rocks, exposed along zones trending chiefly in a northeasterly and southwesterly direction, or approximately parallel to the Appalachian System, with conspicuous local exceptions.

In view of the irregularly exhibited succession of the geological groups in the Crystalline Region of South Carolina, and in the absence of sufficient data to warrant their definite discrimination in accordance with the accepted system of chronological grouping, it will suffice for the purpose of system to view each individualized belt of rocks with its characteristic economic minerals as a unit or "Zone." To facilitate reference, these "Zones" are designated by associate local names which are herewith tabulated in the order of their geographic succession, or as the zones are encountered upon proceeding southeasterly from the northwest corner of the State, this direction being normal to, or across, the strike of the zones. The geographic succession thus afforded does not uniformly conform to the geologic order of age of the related formations, for whereas some of the
original formations of the Crystalline Region are largely constituted of igneous rocks and their altered forms, all of which, except some of the intrusive, pertain perhaps to the oldest subdivisions of the Archean time as exhibited in this State, there are on both sides of these older Archean formations several groups of highly metamorphosed sedimentary rocks, some of which represent later phases of the Archean, some Algonkian, some Cambrian, and some possibly are of even later origin in the Paleozoic time ; but no Carboniferous measures have been observed.

The Mesozoic period finds expression in an ancient trough beginning in the upper part of Chesterfield County and extending thence northerly; it is filled with Jura-Trias rocks highly deformed by numerous intrusions of igneous dikes.

## GEOLOGICAL FORMATIONS OF THE CRYSTALLINE REGION.

Petrographic Subdivisions. Probable Age Equivalents.

Chatooga Zone.
Chauga Zone.
Tunnel Hill Zone.
Poor Mountain Zone.
Oconee Creek Zone.
Saluda Zone.
Anderson-Spartanburg Zone.
Cherokee Zone (Lower).
Cherokee Zone (Upper).
Abbeville-York Zone.
Edgefield-Chesterfield Zone.
Vaucluse Zone.
Hornsboro Zone.

Archean.
Cambrian?
Archean.
Cambrian?
Archean.
Archean (and later).
Archean.
Cambrian?
Cambrian?
Archean, and Paleozoic?
Algonkian?
Archean?
Jura-Trias.

Disturbance, deformation, and surface obscuration have been so great that these zones are rarely characterized by sharp definite lines of separation.

Some of these zones, although widely separated geographicaliy and, therefore, designated by different names, are similar in age and character; others will probably be further subdivided by the results of future observations.

The Anderson-Spartanburg Zone probably represents the most prominent body of the oldest phase of the Archean exposed in South Carolina. to which all other rocks in this State are probably junior,
excepting tongues of the corresponding Carolina Gneiss series, which occupy portions of the adjacent zones.
The Tyger Zone (Archean) is not conspicuously separated from the Anderson-Spartanburg Zone excepting that in addition to the Carolina Gneiss series it comprises the prominent development of the Roan Gneiss or hornblende series.
The portion of the Saluda Zone (Archean) west of the Keowee River, corresponds in the main to the Tyger Zone.
The portion of the Saluda Zone east of the Keowee River, originally occupied by the Carolina Gneiss and the Roan Gneiss series, has been invaded by vast intrusions of the Table Rock Granite typically exhibited at Table Rock Mountain.
The Chatooga Zone (Archean) comprises narrow parallel belts of the Carolina. Gneiss series and of the Table Rock granite and thin bands of the Roan Gneiss series.

The Tunnel Hill and Oconee Creek Zones (Archean) largely consist of Keith's Henderson granite.
The Abbeville-York Zone comprises King's Mt. slates and an extensive series of metamorphosed rocks, which have been largely displaced by the invasion of vast series of igneous intrusive and extrusive rock. The rocks of portions of this zone probably belonged to the Archean, but others are apparently of much later origin, possibly subsequent to the time of the Cherokee Zone.
The rocks of the Vaucluse Zone are apparently older than those of the Edgefield-Chesterfield Zone, to the level of which their sheared edges have probably been raised by the long graniticridge (probably of intrusive origin), which has at the same time tilted the main body of the Edgefield-Chesterfield slates with a dip to the northwest; while a small body with a southeasterly dip extends. towards Hamburg from near Edgefield, on the opposite side of the granite ridge. The Vaucluse Zone, in its petrographic relations, corresponds in a large measure to the Abbeville-York Zone, but does not appear to have been invaded to the same extent by igneous intrusions.

The Edgefield-Chesterfield Zone (Algonkian?) comprises slates similarly designated, which have been derived from the metamorphism and foliation of a vast area of basic igneous rocks, porphyries, and some volcanic tuffs, all of which probably pertain to the Algonkian system.

The Chauga and Poor Mt. Zones (Cambrian?) comprise quartz schists and limestone formations, etc., the Chauga and the Poor Mt..

Zones have characteristics in common with the Cherokee Zones, and share with the latter the question as to correct position in the geological scale.

The Hornsboro Zone (Jura-Trias) comprises the Hornsboro sandstone, greatly disrupted by diabase dikes.

## CHAPTER II.

General Character of Rock Formations, Veins, and Otier
Mineral Bodies.
The Petrographic Zones of the Crystalline Region embrace three extensive classes of rocks, designated respectively the Metamorphic, the Igneous, and the Sedimentary; volcanic tuffs enter to a limited extent.

The older igneous and sedimentary rocks have been greatly altered, or metamorphosed, by physical strains and chemical actions, and lave thereby acquired textures and structures widely departing from the original.

The consolidation of the surface of the earth, upon cooling to a comparatively rigid crust, subsequently involved vast crustal strains incident to the adjustment of this spherical crust to a shrinking, plastic interior, and resulted in undulations and abrupt surface irregularities; the portion of the earth's crust which rested under the depressed areas which accumulated the precipitated water naturally cooled, and, therefore, thickened more rapidly than the elevated areas; consequently the subsequent adjustments due to shrinkage, crustal compression, and other strains found bold expression in folding, deformation, crumpling and faulting, principally along the thin areas of the earth's crust which were above the sea level. It is also conceived that this same principle, in differential cooling, disturbed the static equilibrium and thereby caused the heavier sub-oceanic crust to become more and more depressed along its deep zones, with a somewhat coördinate elevation of the land and shoal areas.

While the chemical combination of mixed gases is attended with a decrease of the original volume, and while the chemical combination of solids is generally accompanied with a more limited decrease of the original volume, the combination of a fluid with a solid increases the mass of the solid; to this principle many of the strains in the earth's crust were due through the action of water, vapors, and gases on the rock masses, which were thus increased and expandec..

The early precipitation of moisture and acid vapors on the hot crust of the earth determined vast chemical combinations and changes with corresponding physical strains; the precipitated acicivapors attacked the rocks and carried their soluble compounds to the sea, leaving vast residues of silica, alumina, etc., to contribute to sedimentation. The accumulation of enormous beds of sediments along the coast lines involved disturbances of static equilibrium and imposed corresponding thrusts, and the associate rise of the interior isotherms stimulated the exercise of the chemical affinities of the material constituting the sediments and determined further alterations, physical strains and displacements.
In so much as many rock-masses have thus been highly altered from their original state through aqueo-igneous metamorphism, or the effects of aqueous vapors at moderately high temperatures, which impose sundry changes in crystal form and some changes in composition, and in so much as dynamo-metamorphic action or the effects of heat engendered by crustal movements have not only produced recrystallized, or paramorphic forms of minerals in rock masses, but have produced new mineral forms and combinations, and determined their crystallization and distribution along approximately parallel planes, and thus created a schistose structure which sometimes causes fissility, or susceptibility of being more or less easily split along the schistose planes-and in so much as strains, which in some instances operated along the crust of the earth, encountered in rockmasses lines of least resistance to movement along an infinitude of parallel planes, angular to the line of thrust, which planes became permanently impressed on the structure of the rock, and thus determined planes of cleavage, or splitting, which are generally independent of the direction of schistosity or bedding-and in so much as the extent of these changes is regarded as having depended upon the length of time during which the rocks have been subjected to these influences-therefore, pari passu, vast rock-masses which afford the greatest expression of metamorphism, schistosity, etc., are regarded as the rocks of the greatest age; this principle being sustained by the character of the life forms in localities where fossilforms have survived destructive agencies. Consequently the generic term "Metamorphic Rocks" is applied to those most ancient and extensive rock-masses whose original texture and structure have been almost wholly, if not entirely, changed. Many rock-masses junior to the "Metamorphic Rocks" are metamorphic and schistose, but to a less aggregate extent; as may be observed in the later Paleozoic systems.

It is of course recognized that small areas of rocks have been rendered schistose, or otherwise metamorphosed, by local forces operating as late as the Tertiary period; the degree of schistosity as a criterion of age should therefore be estimated by the effects expressed by large areas and not by isolated specimens.

The forces involved in the Appalachian uplift, associated with the close of the Carboniferous, are supposed to have afforded the latest substantial expressions of schistosity.

The access of large bodies of water to the hot, deep seated rocks has imposed volcanic phenomena, but the gradual access of water ard gases to these rocks has in some cases resulted in chemical changes involving an increment of mass and corresponding energy.

The extensive intrusion of molten igneous rocks has eacricised strains which have been supplemented through the chemical alterations of the igneous rocks.

More or less extensive metamorphic action and foliation have accordingly affected not only the original crust which consisted of consolidated igneous matter, but those sedimentary rocks which were formed prior to the Mesozoic time from the sediments of the original rocks and from their own ruins, and also from the accumulated remains of marine organisms and terrestrial vegetation. The igneous intrusions which successively invaded the different formations from the earliest Archean time to the end of the Carboniferous have likewise been subject to these influences in proportion to their age and susceptibility; all mineral forms are not equally impressed. Protracted microscopic study and field observations as to the order of succession of the various rocks of the successive ages, where favorably situated for definite discrimination, have afforded an approximate basis for differentiating similar rocks occurring elsewhere without associate fossils.

The correlations of the South Carolina rock formations, which are herewith submitted, are predicated on incomplete observations and are, therefore, not final.

## ARCHEAN ROCKS.

## Carolina Gneiss:

Probably the oldest of the metamorphic rocks exposed in South Carolina consist of a series long known as the "Carolina Gneiss," which comprises gneissoids and schists. Muscovite-bearing biotite gneiss occurs in various shades of gray, but weathers through green and yellow-gray to a yellow-red saprolitic mass, which generally
obscures the solid rock excepting along the valley lines. Portions of the gneiss are garnetiferous. The texture of the gneiss varies from fine grained through coarse grained to porphyritic; the latter affords "grosse augen gneiss."

Mica schists comprise biotite schists and muscovite schists, which in many cases have been altered to the hydromica form. These schists are in part garnetiferous. They include thin layers of foliated, fine grained granitoid rock, and graphite schists of probable sedimentary origin. The original character of the rocks from which the Carolina Gneiss series was derived has been greatly obscured, but is considered in the main to have been igneous granitic, into which the schists are occasionally observed to grade. However, in other States certain beds of banded gneiss and associate marble are construed by Keith as implying that a part of the original rock mass was of sedimentary origin; this is probably further indicated by the graphite schists which are intimately associated with the Carolina Gneiss.

Interfoliated with the Carolina Gneiss there occur numerous pegmatite dikes and veins, and small but extensively disseminated bodies, resulting from a general pegmatization which afford sundry economic minerals, such as mica, feldspar, quartz, monazite, zircon, corundum, columbite, etc.

Cutting the Carolina Gneiss series, in sundry directions, eruptive dikes and bodies of more recent diorite and granite are observed with a slightly schistose structure.

The most extensive development of the Carolina Gneiss series in South Carolina is embraced by the Anderson-Spartanburg Zone. It also occupies a narrow belt in the Chatooga Zone, adjacent to the Chauga limestone; also in the Tunnel Hill Zone contiguous to the Poor Mt. limestone series. The Tyger Zone is very prominently constituted of Carolina Gneiss, but is distinguished by a conspicuous development of the hornblende series known as the Roan Gneiss. It also occurs in belts in the Saluda Zone, which increase in width towards the Savannah River. Portions of the Abbeville-York Zone are also suspected of Carolina Gneiss affinities.

## Roan Gneiss Series:

In South Carolina the probable equivalent of this series comprises beds of highly foliated black-green hornblende schist, and hornblende gneiss, interbedded with gray mica gneiss and mica schists; the hornblende rocks weather to a clayey soil of a deep red color. This series is regarded as having been derived from masses of gabbro
and diorite intruded through the Carolina Gneiss to which they are therefore junior, but probably in a small degree for the reason that they exhibit great schistosity. The Roan Gneiss incloses bodies of pyroxenic rocks altered to chlorite schists, soapstone, crysotile, etc.

Pegmatization appears to have occurred to a much more limited extent in this series than in the Carolina Gneiss, and the development of monazite and other rare minerals obtains to a very limited degree. Gold veins of the Tyger type appear to have been determined with illy defined reference to the proximity of the hornblende series.

The Roan Gneiss occurs prominently in the Saluda Zone and in the Tyger Zone, and subordinately in the Chatooga, the AndersonSpartanburg, and possibly in the Abbeville-York Zones. It appears as an intrusion in the older Archean, but possibly as insular masses disrupted by the vast granitic intrusions which characterized the latter part of the Archean time.

## Henderson Granite:

Keith's "Henderson Granite"' consists of granite and granite gneiss, and is frequently porphyritic; it affords the "kleine augen gneiss"; the pink crystal eyes of feldspar appear staggered between the undulating bands of white quartz. It represents a highly metamorphosed porphyry.

It is prominently developed in the Oconee Creek Zone and appears in a narrow belt designated the Tunnel Hill Zone, which lies between the Chauga and Poor Mt. limestones. Also prominently exhibited along the margin of the Saluda Zone near Sassafras Gap.
(See Granite series. Survey Nos. 1402, 5000.)

## King's Mt. Slates:

Comprise large bodies of quartz schist, quartz mica schist, quartzite, mica schist, sericites, monzonite schists, gneissoids, and some argillites with highly developed slaty cleavage, and intermediate forms of rocks of sedimentary origin, all of which have been more or less foliated. They have been greatly folded and otherwise distributed by a vast series of igneous intrusions of enormous volumes, which comprise masses of pyroxenite, diabase, diorite, quartz diorite, mica diorite, porphyrites, gabbro, felsite, and granite ; some of which have been altered to hornblende schists, chlorite schist, actinolitesoapstone, chloritic soapstone, talcose soapstone, serpentine, argillite (?) etc.

The King's Mt. slates are largely confined to the Abbeville-York Zone, although outlying patches extend to the Anderson-Spartanburg Zone.

Some of the igneous phases of this formation find their apparent equivalence in some of the rocks of the Edgefield-Chesterfield Zone.

The Vaucluse Zone also comprises certain of the highly altered sedimentary rocks of the probable equivalence of the King's Mt. slates.

## Steven's Creek Slates:

This series comprises slates heretofore designated "Clay Slates" in which schistosity and slaty cleavage are highly developed. These slates were derived from basic igneous porphyries. Sericite, schists and quartz monzonite schists are also included, but chiefly along the boundaries.

## CHARACTER OF VEINS AND OTHER MINERAL BODIES.

All of the afore-cited groups inclose in varying degrees dikes or earth, in a molten condition; some consolidated as granite, pegmatite, and felsite; others as pyroxenite, gabbro, diabase, diorite, porphyry, trachyte, etc.; the differences were determined by the prevailing chemical composition of the mother magma, the physical characteristics varying somewhat with the conditions encountered in cooling and with the pressure. These dikes pertain to sundry periods necessarily junior to the respective rocks which they have invaded.

The younger granites are generally superior, for the uses of the industrial arts, to the older forms, because the latter have in many cases become foliated or schistose by long exposure to succeeding physical and chemical influences; which principles in other cases have caused the constituent minerals to change their character, abandon their interlocked structure, and arrange themselves in the parallel form known as gneissoid. Great importance attaches to some of the intrusive rocks; first by reason of their self-contained bodies of important minerals; also on account of the ore-bodies which these intrusions have more or less directly caused to be formed in the fissures, cracks and pores of the associate surficial rocks, thus filled with deposits through the increased circulation of more or less concentrated mineral solutions, and through other stimulated forces.

1. Magmatic Segregated Deposits, Fissure Veins, Etc.

The constituents of the deep seated rocks in which an extruded molten mass originate, determine the character of the minerals, valuable or useless, which are included in the body of the extruded dike
or magma, and which are therein severally segregated in crystals and in bunches or along successive zones, by the natural affinity of like matter to assemble during the process of consolidation. (The invasion of the heated mass by aqueous vapors often creates new combinations through aqueo igneous actions; invasion by gases and sublimates also produces prominent changes).

In South Carolina some of the acidic dikes, as pegmatite, inclose valuable ores of tin, columbite, monazite, feldspar, and mica, while other extruded magmas of the basic type inclose nickel, auriferous pyrite, and magnetite; some of the mineral forms included in these dikes are secondary, being attributable to a rearrangement of the originally contained elements through the influence of water and heat, and in some cases by the incorporation of additional matter.

Again it appears that many of the quartz veins were extruded from a granite magma incident to the final consolidation of such magma, and that the extruded matter includes concentrations of gold and sulphides which, with the quartz, were deposited in fissures and other rock spaces in the zone of rock fracture.

## 2. Fissure Veins and Impregnations From Solutions.

The minerals in the associate deep seated rock through which hot solutions ascend, determine at the same time the solvent power of the aqueous menstrum, and the kind of minerals to be dissolved and translated to the surface fissures, and there precipitated by chemical influences, or deposited through cooling or evaporation. This class embraces in South Carolina veins of gold, silver, copper, iron, barytes and possibly lead. However, many of the observed vein deposits of these minerals in this State originated through the exercise of similar general physical and chemical principles incident to certain natural circulation of solutions entirely independent of the stimulating influence of the extrusion of molten matter, but equally dependent upon the high temperature of the deep seated rocks through which the aqueons menstrum circulated, and acquired the necessary forces to dissolve mineral matter to be deposited principally above the "zone of rock flowage."

## 3. Metasomatic Deposits.

Another important class of minerals in South Carolina comprises the products of changes in the mineral composition and form of the associate matter by virtue of heat from crustal movements or heat from contiguous igneous intrusions which, in conjunction with water, causes aqueoigneous and other metamorphic actions through which the elements arrange themselves in new combinations and assume corresponding changes in physical or crystal form. Again,
differential solvent abstraction leaves the mineral mass with a changed composition to be recrystallized into new mineral forms by appropriate influences; the minerals in solution derived by this leaching process deposit in more or less remote crevices or come in contact with other minerals on which they act and displace, or with which they combine to create new mineral forms, a great variety of which characterizes the metamorphic rocks. Asbestos, serpentine, soapstone and talc are ordinarily derived by alteration of pyroxenic rocks which are entirely dissimilar in physical form. Corundum frequently originates in the alteration of compound aluminous silicates; hornblende is derived from augite; cyanite and sillimanite from the feldspars, etc.
4. Sedimentary Deposits.

Another class of ore deposits designated "Sedimentary" is of great importance in some sections, but has not attained great prominence in the formations of the Crystalline Region of this State. They constitute elsewhere valuable beds of coal, iron, etc., formed by the accumulation of organic matter or by the deposition of iron sediments or precipitates in favorably situated basins; these were subsequently further inundated and thereby covered with additional sedimentary matter, all of which have since been consolidated by pressure, heat and chemical alterations. The only beds of ores of possible sedimentary origin (excluding limestone and clays) which attain importance in the Crystalline Region of this State consist of certain iron beds in the Cherokee and in the Anderson-Spartanburg Zones. Occasional limited beds of peat are observed in the Crystalline Region, as the result of a partial alteration of vegetable matter accumulated in connection with the Tertiary period. The Crystalline Region also affords numerous recent sedimentary deposits of superior brick clays deposited contiguous to the greater streams.

## 5. Residual Deposits.

Still another class of mineral deposits, designated "Residual" owes its existence to the alteration of crystalline matter through weathering agencies which serve to extract by solution certain mineral constituents, the residual mass being in some cases available to the industrial arts. Residual kaolins and clays are the more prominent members of this class. The weathering of certain fine grained schists leaves silica in an extremely fine state of subdivision appropriate for polishing purpases.

## 6. Placer Deposits.

The weathering and erosion of rocks inclosing disseminated particles, masses, stockwerkes, and definite veins of the heavy minerals have operated to concentrate these minerals of high specific gravity in the adjacent basins, valleys and beds of streams; the lighter and softer associate minerals have been disintegrated to fine particles, separated, and borne away by the stream currents. Nature has thus separated and concentrated in an easily available form the valuable contents of millions of tons of rock material, which in the great majority of cases could not have been economically accomplished by artificial means. In South Carolina valuable beds of placer gold and monazite and limited accumulations of stream tin, garnets, corundum, rutile and occasional gems have thus originated. They are generally co-mingled with particles of magnetite, ilmenite, hornblende, quartz, etc.

The foregoing summary indicates the more prominent classes of mineral deposits observed in the Crystalline Region of South Carolina, and a meagre outline of their determining principles. Secondary enrichment and numerous other intricate principles are involved in minor ways, a discussion of which would carry us beyond the sphere of this article.

## CHAPTER III.

## ZONES OF THE CRYSTALLINE REGION.

Anderson-Spartanburg Zone ; Tyger Zone; Chatooga Zone; Oconee Creek Zone ; Tunnel Hill Zone; Saluda Zone; Abbeville-York Zone; Vaucluse Zone; Edgefield-Chesterfield Zone; Chauga Zone; Poor Mt. Zone ; Cherokee Zones; Hornsboro Zone.

## Anderson-Spartanburg Zone.

Geographic Limits.-Comprises a wide belt bounded on the west by the Tyger Zone, along a line which irregularly extends from the $82^{\circ}$ longitude on the North Carolina line to Brown's Ferry on the Savannah River; on the north by the State line; on the east by an irregular line which extends from a point approximately one mile east of Grover, along the Whitaker's Mt. Ridge, to the mouth of Buffalo Creek, thence immediately north of Gaffney to Thicketty Station, thence slightly west of Thicketty Creek to West Mt., thence by Graycourt Knob, thence near Wares Shoals (Saluda River), thence north of Abbeville and immediately south of Lowndesville,
whence it proceeds along Rosses Creek to the Savannah River, up which the boundary extends to Brown's Ferry.
Physiography and Geognosy.-The average elevation of the ridges across this area declines from about 900 feet to 700 feet (M. L. T.). With the exception of its extreme northeastern area, which has been subjected to the influences of the Kings Mt. uplift, this zone presents no prominent knobs. The prevailing dip is southeasterly. This area is largely constituted of the granites, gneisses, and schists of the Carolina Gneiss series and incloses to a limited extent the hornblende rocks of the Roan and Gneiss series and numerous more recent igneous intrusions. It comprises the great monazite-bearing belt of rocks which extend from the North Carolina line (at Broad River) through Cherokee, Spartanburg, Greenville and Anderson Counties; they are characterized by a profound pegmatization of the feldspathic rocks, incident to which a great segregation of the rare elements thorium, cerium, dydinium, lanthanum, niobium, etc., has taken place, and an extensive crystallization of mica, feldspar and quartz has obtained, in the pegmatized bodies.
While some intrusive dikes of pegmatite with their associate brown mica are observed, the widely prevalent pegmatization of the Carolina Gneiss series appears to have resulted from aqueo-igneous action; the feldspathic solutions or matrices seem to have afforded an attractive menstrum for tin and the above cited rare minerals, or for some equally unexplained reason served to precipitate these minerals from other menstra or vapors.

The aqueo-igneous forces which determined the pegmatization of the feldspathic rocks probably operated at the same time, through well recognized principles, to cause the pyroxenic rocks to assume the hornblendic form, whose lower permeability and less susceptibility to metasomatic action might account for the absence of the above cited minerals from the hornblende rocks. But while the said rare minerals are characterized by their inclusion with the feldspathic rocks, it is worthy of note that the gold bodies of the Tyger Type exhibit an unexplained association with the hornblende or pyroxene rocks.
Rocks.-Granite-gneiss exposed in successive belts (coarse porphyritic prominent); granite, feldspar-porphyry; granitite; gneissoid slates; mica slates and schists; hornblende schísts; graphite schists; dikes of granite, pegmatite, diabase, and diorite. Many of the rocks are garnetiferous.

Economic Deposits.-Gold, Tin, Lead, Iron, Soapstone, Asbestos, Graphite, Monazite, Mica, Feldspar, Corundum, Beryl, Amethyst, Zircon, Garnet, Columbite, Granite, Peat, Kaolin, Clay.

Industrial.-Monazite is extensively mined in Cherokee, Spartanburg and Greenville Counties and to a limited extent in Anderson County. Mica is mined in Greenville and, spasmodically, in Anderson County, with feldspar (and columbite) as an incidental product in Greenville County. Asbestos is extracted in exploration. Tin is mined in Cherokee County.

Tyger Zone
Geographic Limits.-Comprises an irregularly shaped träct bounded on the west by the Saluda Zone along a line extending southwesterly from Gap Creek towards Pendleton and thence to the Tugaloo River near the point where intersected by the $83^{\circ}$ of longitude; on the north it is delimited by the North Carolina line; on the southeast by a meandering line from a point of the North Carolina State line (near $82^{\circ}$ of longitude) to the Savannah River near Brown's Ferry; the latter river and the Tugaloo River complete the boundary to the $83^{\circ}$ of longitude.

Physiography and Geognosy.-The elevation of the ridges of the Tyger Zone probably declines from 1,200 feet (M. L. T.) to 900 feet (M. L. T.). This zone includes an intermediate elevated ridge designated Paris Mt. and Piny Mt., whose prominence is probably due to the intrusion of igneous granite; such influence is further suggested by a considerable area of the neighboring formations with their strike constrained to the northwest, or transverse to the prevailing strike of the distantly surrounding formations. This zone is largely constituted of the Carolina Gneiss series, but is distinguished from the Anderson-Spartanburg Zone by the more prominent development of the hornblende (Roan Gneiss) series. The Tyger type of gold vein, characterized by a more or less intimate association with the hornblende rocks, finds its type in this zone.
Rocks.-Granite-gneiss (fine grained and porphyritic), granulite, gneissoid slates and schists, hornblende schists (prominent); intruded masses of granite; dikes of diabase and amphibolite are also exhibited, which perhaps pertain to the Jura Trias.

Economic Deposits.-Gold, Iron, Graphite, Mica, Soapstone, Granite, Kaolin.
Industrial.-Granite occasionally quarried on Paris Mt. and Reedy Fork. Gold (placer and rock veins) intermittently worked on Tyger River.

## Chatooga Zone.

Geographic Limits.-This zone comprises a narrow belt between the Chatooga River and a line extending southwesterly from a point on the North Carolina line, about half way between the Toxaway and Whitewater Rivers, to the Tugaloo River, slightly above its confluence with Brasstown Creek.

Physiography and Geognosy.-This area constitutes the southeasterly ridge of the Chatooga River; its crest interruptedly attains the elevation of 2,500 feet; it affords an extremely broken and rough terrane; the formations are greatly folded.
Rocks.-The northwesterly belt of this zone exhibits a granite similar to the Table Rock granite of the Saluda Zone which is slightly schistose in structure but granitic in texture, the color being a "pepper and salt" gray.

The southeasterly belt which sharply abuts the limestone series (Chauga Zone) consists of highly schistose gneissoids; granites; mica schists, etc., of the Carolina Gneiss series; it includes pegmatites ; peridotites, etc.
Thin lines of the Roan Gneiss (hornblende series) are observed in this area. This zone is essentially Archean.
Economic Deposits.-Gold, Lead, Soapstone, Graphite, Mica, Feldspar, Corundum.
Industrial.-No mines now in operation. Gold and lead mines formerly worked. Corundum and mica formerly mined.

## Oconee Creek Zone

Geographic Limits.-Comprises a belt bounded on the northwest by the Poor Mt. Zone; on the southwest by the Tugaloo River; on the northeast by the North Carolina line from a point intermediate to the Horse Pasture River and Toxaway Creek to a point about two miles east of Sassafras Gap; on the southeast by a line from the latter point extending to the Tugaloo River near the confluence of the Chauga River.
Physiography and Geognosy.-The Oconee Creek Zone comprises a belt which occasionally attains the elevation of $\mathrm{I}, 000$ feet (M. L. T.), but which affords an abrupt contrast to the more elevated Poor Mt. Zone which delimits it on the northwest along a line which includes Rich Mt.. Buzzards Roost Mt., Poor Mt., Horse Shoe Curve. Tomassee Mt. and other eminences.

This zone consists chiefly of granite and granite-gneiss derived from porphyry. Its most characteristic form consists of repeated
thin wavy bands of quartz, biotite and muscovite with fine crystalline texture, separated by eyes of pink feldspar (Microcline). It probably pertains to Keith's "Henderson Granite" of which characteristic exposures may be seen at "The Tunnel," in the Tunnel Hill Zone, and on Oconee Creek immediately below the dam at Lays Mill. A, granite similar in its petrographic relations may be observed in the Vaucluse Zone at a small quarry o.r mile north of the jail at Edgefield.

The Oconee Creek series is regarded as junior to the Carolina Gneiss series.
Economic Deposits.-Granite. This stone with its staggered eyes affords attractive architectural effects.

## Tunnel Hill Zone.

Geographic Limits.-Comprises a narrow belt bounded on the northwest by the Chauga Zone, and on the southeast by a line extending from the Tugaloo River near the mouth of Barton Creek, immediately north of Rich Mt., north of Horse Shoe Bend, and thence northeasterly. It constitutes a narrow tongue between the Chauga and the Poor Mt. limestone zones.

Physiography and Geognosy.-An interrupted line of ridges trending northeasterly and attaining the elevation of about 2,000 feet (M. L. T.). At Tunnel Hill the formation apparently makes a slight inclination northwest, with the dark quartz schist of the Brevard series resting on top.

Rocks.-Porphyritic granite gneiss; and gneissoids. Probable equivalent of Keith's "Henderson Granite," assigned to the Archean. Abundant strain effects prevail. This rock appears to have resultea from the granulation and recrystallization of a porphyritic granite. (See granites Sur. No. $1402+2$ ).

Economic Deposits.-The Tunnel Hill granite-gneiss is a very hard rock comprising thin bands curved to enfold rounded crystal individuals of pink feldspar (Kleine augen gneiss). (See Granites Sur. No. 1402).

Industrial.-No deposits along this zone are mined.
Tunnel Hill gneiss is susceptible of attractive architectural effects.

## Saluda Zone.

Geographic Limits.-Comprises an irregularly shaped area bordered on the northwest by the Oconee Creek Zone, from the Tugaloo River to the North Carolina line; the State line constitutes the north-
erly limit of this zone to the head of Gap Creek (near Saluda Gap). It is separated from the Tyger Zone on the southeast by a line extending from Gap Creek southwesterly near Pendleton, and thence to the Tugaloo River near longitude $83^{\circ}$ (above Hatton's Ford) whence the Tugaloo River completes the westerly boundary to the initial point.

Physiography and Geognosy.-The surface is rolling except near the State line, where it is rough, and the mountains attain the greatest elevation ( 3,500 feet M. L. T.) observed in South Carolina. The elevation of the ridge lines which extend southerly from the mountains to the lower limit of this zone declines to 900 feet, and of the valley lines to 600 feet M. L. T.

Almost the entire area of the Saluda Zone was probably originally occupied by the Carolina Gneiss and Roan Gneiss series, which appear to have been extensively disrupted by an intrusive granite, typically exhibited at Table Rock Mountain, and constituting the predominant rock in the portion of this zone northeast of the Keowee River. This Table Rock granite appears in approximate prolongation of the Saluda Mountain range and comprises a series of mountainous granite knolls and ridges whose prominence declines as we proceed southwesterly towards the Keowee River; southwest of which the Carolina Gneiss and Roan Gneiss series are more prevalent. East of the Keowee both the Carolina Gneiss and Roan Gneiss appear in numerous limited areas which appear disconnected, but maintain a general northeasterly strike and a steep southeasterly dip.

The Carolina Gneiss bodies have been variably pegmatized and afford some fair bodies of mica and feldspar; the Roan Gneiss or hornblende series has been somewhat altered to chlorite schists, soapstone, and asbestos; neither of these series east of the Keowee River exhibits appreciable bodies of monazite or gold, while west of the Keowee River the hornblende series is associated with prominent occurrences of gold veins of the Tyger type.

Table Rock Granite is a muscovite-bearing, biotite granite which is not generally highly schistose, although in some of its probable exposures this feature is well developed. It comprises a medium fine grained "pepper and salt" granite, varying to a coarse grained gnesssoid.

While many of the exposures of the Table Rock Granite exhibit but slightly developed schistosity it incloses areas of the Carolina Gneiss and Roan Gneiss which are highly schistose and therefore assumedly much older; and while it appears in the Saluda Zone and in the Chatooga Zone, or on both sides of the Cambrian limestones
and schists, it has not been observed breaking through the latter, yet in many of its aspects this Table Rock Granite is quite fresh enough to represent a post-Carboniferous intrusion. Therefore in so much as the Carolina Gneiss and the Roan Gneiss are prominently exhibited in the Saluda Zone the latter is placed with the Archean Rocks, but in so much as the Table Rock intrusive granite is the predominant rock over a large area, the Saluda Zone is assigned to the Archean with this qualification. Along the westerly marginal line of the Table Rock Mountain granite, appears a more or less persistent line of hornblendic rocks underlying the granite. These hornblendes appear too old to represent a bathylithic intrusion under the fresh granite, and yet the granitic texture of the Table Rock granite might impose objections to accepting the overlying Table Rock granite as a thin effusion. With reference to both the mica slates and schists and the homblende slates and schists a distinction must be observed in the portion of the Saluda Zone west of the Keowee River and in the Tyger and Anderson-Spartanburg Zones. The underlying highly pitched gneissoids, in the enumerated zones, are in many places interstratified with hornblende and micaceous foliated rocks; unconformably resting on the more or less upturned edges of these rocks there occur isolated patches of a thin series of mica and hornblende schists, which possibly once uniformly extended over this entire region, but whose identity has been largely obliterated, excepting in protected areas. However, their full relations have not been sufficiently studied to be understood.
Rocks.-Granite; granite-gneisses (some porphyritic) ; granulite ; gneissoid slates and schists; homblende slates and schists (very prominent) ; peridotite; dikes of granite; diorite (occasional) ; pegmatite.

Economic Deposits.-Gold, Iron, Serpentine, Soapstone, Asbestos, Mica, Feldspar, Corundum, Granite.
Industrial.-Cochran gold mine, Hagood asbestos and mica mines, and Leroy mica mine, spasmodically worked; Beverly, Pendleton, Walhalla and Westminster granite and gneiss quarries, and Fairview soapstone quarry, intermittently operated.

## Abbeville-York Zone

Geographical Limits.-This area is very wide along its northerly boundary which is constituted by the State line, but is narrow along its southwest boundary formed by the Savannah River. It is bounded on the northwest by the Cherokee and by the Anderson-

Spartanburg Zones; on the southeast by a line which proceeds southwesterly from a point on the State line, 1.5 miles northwest of Hornsboro, thence crossing Lynches River 1.8 miles above the mouth of Rocky Creek, thence to Heath Springs, thence below Peays Ferry (Wateree River) by Longtown, thence to the head of Sawneys Creek, thence across Broad River (above its confluence with Little River), thence south of Little Mt., thence north of the Culbreath Mine, thence north of Meeting St. ( 2 miles), and thence direct to a point near McCormick, whence it continues to the Savannah River, south of the mouth of Little River.

Physiography and Geognosy.-This zone is conspicuous for its series of ridges, or broken lines of knobs, whose backbones are constituted of a very hard ottrelite quartzite, pitched at very high angles and striking N. E. The upper series is exposed along the King's Mt. range ; and then successively, proceeding southeasterly, they are observed at Henry's Knob, West Mt., Nanny's Mt., Graycourt Knob, Parson's Mt., and Little Mt. (on the southerly line of this zone). The intervening belts are occupied by highly deformed and intensely metamorphosed slates, volcanic tuffs, vast areas of intrusions of both acidic and basic types, some of which have extensively effused over others. The average elevation of the normal ridges declines from about 700 feet to 500 feet (M. L. T.).
Rocks.-Marble, of seeming upper Cherokee equivalence, appears along the upper limit of the Abbeville-York Zone interruptedly from the east side of the Enoree River to the east side of the Saluda River; gneissoids; granite; syenite; quartz; mica and hornblende schists and slates; quartzite; gabbro; trachyte; porphyries; sericite schists; quartz monzonite schists; diorite slates; diorite; trachyte; pyroxenite; amphibolite; felsite; soapstone.

Economic Deposits.-Gold, Nickel, Copper, Manganese, Iron, Pyrite, Serpentine, Soapstone, Barytes, Monazite, Corundum, Granite, Syenite, Trap, Porphyry, Quartzite, Quartz, Felsite (Road Metal), Abrasive Sands.

Industrial.-Granite; fine and medium coarse grained, is extensively quarried in Fairfield, Newberry and Lancaster Counties; to more limited extent in Laurens and York Counties; extensively prevails in upper Kershaw County. Porphyritic granites (pink feldspar "Scotch granite") quarried in Greenwood County; occur also in Fairfield, Kershaw and Chesterfield Counties; "chert" (felsite) quarried in Newberry County (occurs at various points). Barytes intermittently mined in Cherokee County. Marble is quarried at Masters Kiln for neighborhood uses. Manganese being explored in

Abbeville County (near McCormick). Nickel, with gold, in process of exploration in Saluda County. Gold, actively mined in York, Union, Abbeville and Lancaster Counties.

## Vaucluse Zone.

Geographic Limits.-The Vaucluse area is bounded on the northwest by the Edgefield-Chesterfield Zone; on the southwest by the Savannah River; the delimiting line on the southeast is highly irregular by reason of the variable distribution of the overlapping Coastal Plain sands; the line which interruptedly connects the tongued projections of this area on the southeast, beginning near Hamburg, extends by Vaucluse, Miles Mill, Fox Bridge (Chinquepin Creek), Quattlebaum Mill (Lightwood Creek), thence by Red Bank Creek to Granby ; beyond which this formation is obscured to Granny's Quarter whence it is successively observed at the old Sumter Quarry, at the Taxahaw 40 -acre Rock, and at the North Carolina line, near the Great Pee Dee River.
Physiography and Geognosy.-The Vaucluse Zone constitutes a ridge with a mean elevation of about 600 feet (M. L. T.) from the Savannah River to the North Carolina line on which the Coastal Plain finds its littoral margin. West of the Congaree River it is distinctly higher than the more northerly Edgefield-Chesterfield Zone.

The position of this formation was probably inferior to the Edge-field-Chesterfield slates, through which it has been forced upward by an elongated granitic intrusion, which constitutes the axis of an anticline with a course varying from N. $30^{\circ}$ E. to N. $60^{\circ}$ E., and which passes about 2 miles south of Edgefield. The Vaucluse formations which appear on the northwest of this anticline dip northwesterly and support the Edgefield-Chesterfield slates which have a corresponding dip; the Vaucluse formations which appear on the southeast of this anticline dip southeasterly and support the small division of the Edgefield-Chesterfield slates, which are exposed in the northwesterly corner of Aiken County with a steep southeasterly dip.

Rocks.-The rocks of this area comprise granite, granite-gneiss, gneissoid slates, mica schists, hornblende slates, quartzite, and kaolinized schists.

Economic Deposits.-Granite, Kaolinized Schists.
Industrial.-Granite quarried at Park Hill and in the town of Edgefield. The kaolinized schists have been long used to bond the
more refractory clays from the Cretaceous in the manufacture of crockery ware and refractory ware.

## Edgefield-Chesterfield Zone.

Geographic Limits.-Bounded on the northwest by the AbbevilleYork Zone; on the north by the Hornsboro Zone and the State line; on the southeast by a line proceeding from the point where Whites Creek enters South Carolina (Marlboro County) along said creek to the Pee Dee, thence by Catarrh, thence south of Granny's Quarter, thence crossing the Wateree River (near Camden), thence up Rice Creek and down Crane Creek, and thence crossing the Broad River 3 miles north of Columbia, thence across the Dutch Fork and by Half Way Swamp, to a point near Edgefield, whence it proceeds southwesterly to the Savannah River (near Scott's Ferry), the river completing the boundary on the west. A division extends southwesterly by Edgefield by reason of the granite anticlinal uplift, which diverts a sub-zone of these schists, and a part of the slates towards Hamburg with a southeasterly dip.

Physiography and Geognosy.-This comprises the most consistent zone of rocks exposed in the Crystalline Region. Topographically it is comparatively flat, and depressed in relation to the zones bordering it on both sides; its most prominent ridges rarely attain the elevation of 500 feet (M. L. T.). This zone is collaterally interesting as the only zone in the Crystalline Region to which the cypress and fan palm are indigenous.

Rocks.-Argillite derived from the alteration of basic igneous rocks constitutes the main mass; along both sides of the argillites the sericite schists interruptedly prevail. It appears that the sericite schists originated in the alteration of the tuffs and porphyries which interruptedly occur along the southerly line of the Abbeville-York Zone, with a corresponding but more limited belt along the opposite side of the Edgefield-Chesterfield Zone.

Analysis of foliated porphyry or schist taken from a depth of 270 feet ( 7,550 b.): Lime, o. 20 per cent.; Magnesia, o. 36 per cent.; Alumina, 37.65 per cent.; Ferrous Oxide, 2.60 per cent.; Soda ( Na 2 O ), 4.60 per cent.; Potash (K2O), 3.7 I per cent.; Silica (and insoluble), 45.52 per cent.; Moisture, 5.35 per cent.; Total, 99.99 per cent.

Economic Deposits.-Gold, Granite, Slate, Sericite-Clays.
Some of the slates of this zone are excellently adapted to the manufacture of common and vitrified bricks. See Table of Analyses of Edgefield-Chesterfield Slates and Schists, page -.

Industrial.-Gold mining; quarrying of slate for neighborhood structural uses.

## Chauga Zone

Geographic Limits.-This zone comprises a narrow band bounded on the northwest by the Chatooga Zone, and on the southeast by a line extending from near the point where the Toxaway River enters South Carolina to the Tugaloo River, slightly below its confluence with Brasstown Creek.

Physiography and Geognosy.-The perishable character of the rocks of the upper phase of this formation has determined the creation of the valley along which the upper half of the Chauga River courses; Brasstown Creek valley in prolongation of this line exhibits the straight continuation of this zone. Formation strikes northeasterly and dips with high angle to the southeast; it rests against the Carolina gneiss of the Chatooga Zone on the northwest along a sharply defined line.

Rocks.-Fine grained dark shimmering quartz schist; mica schists; graphite slates; limestone, etc. This group probably corresponds to Keith's "Brevard Schist," assigned to the Cambrian.

Economic Deposits.-Gold, Graphite, Limestone.
Industrial.-Limestone-quarries operated during "the fifties," now idle.

Poor Mt. Zone.
Geographic Limits.-Comprises a narrow belt bordering the southeasterly limit of the Tunnel Hill Zone.

Physiography and Geognosy.-This formation is exposed along Rich Mt., Poor Mt., Potato Top Mt. and Horse Shoe Bend, which establish the southeasterly limit of the prominently elevated region of Oconee County. The soluble character of the limestone has largely caused its disappearance from the depressed areas; intermediate to the successive knobs or ridges; where it has been rapidly drained it has persisted. The exposure of this series from a high point on Poor Mt. to a low point on a dale of Rich Mt. indicates a moderate dip to the southeast.

Rocks.-Narrow belt of Carolina Gneiss series underlying the Poor Mt. series which comprises: dark calcareous slates; marble; thin hornblende schists ; ottrelite (?) schists; sandstones ; itacolumite. The white dolomitic marble of this zone grades to a dark green pyroxenic mass, in places altered by dynamo-metamorphic action to hornblende.

This series probably pertains to Keith's "Brevard Schist," assigned to the Cambrian.

Economic Deposits.-Marble, Limestone.
Industrial.-Marble quarried in desultory manner for neighborhood uses.

Cherokee Zone.
Geographic Limits.-This zone comprises a small area bounded on the southeast by a line which extends southwesterly, from the point where King's Creek crosses the North Carolina line, by Silver Mt., across Broad River, and thence across Thicketty Creek below the mouth of Limestone Creek to a point west of their confluence, where it encounters the Anderson-Spartanburg Zone; which zone thence bounds it on the west and northwest to the North Carolina line; the State line constitutes the boundary on the north.

Some corresponding formations of probable equivalence are interruptedly exposed in a narrow much obscured band which extends towards the Savannah River, along the line which separates the Anderson-Spartanburg Zone from the Abbeville-York Zone, across Laurens County; exhibited at Frenchman's Creek, at Mahaffey's Kiln, at Master's Kiln and at Raysor's Kiln.
Physiography and Geognosy.-This area is largely constituted by a valley which represents the approximate line of the anticline of the King's Mountain uplift. The associate intrusion, in forcing the strata upward in a great fold, created stresses with partings and fissures along the axis of the uplift ; this gave direction to subsequent drainage, erosion and degradation of the upper strata, which being thus removed expose the underlying Cherokee rocks in the valley, and along the partly encircling scarps. The King's Mt. Range and Whitaker's M'. Ridge respectively constitute southeasterly and northwesterly dipping monoclines which were embraced in the original anticline; Whitaker's Mt. Ridge therefore really pertains to the formations which characterize the Anderson-Spartanburg and Abbe-ville-York Zones, whose original line extended near the line now occupied by Whitaker's Mt. Ridge.

The strata exposed in the Blacksburg Valley are in the main distinctly sedimentary but have been highly metamorphosed; the constituent particles of limestone have thereby assumed a dimensional arrangement facilitating splitting along definite parallel planes; the sandstones have assumed the form of ottrelite schists which by weathering have yielded the itacolumitic form; the intercalated bodies of pyrite have changed to specular schist; a prominent belt
of a rock which probably represents an original basic intrusion has been subjected to intense aqueo-igneous action, whereby magnetite, asbestos and the residuary mass (silica, lime and magnesia) have segregated in respective lenticles and zones; and whereby portions of the lime and magnesia, through extraneous chemical influences, have resolved themselves into concretions and other forms of carbonates.

An irregular and interrupted extension of the probable equivalents of the Cherokee limestone, and some associate members of this zone, is observed along the line which separates the Anderson-Spartanburg from the Abbeville-York Zones, as far southwest as the Saluda River, beyond which igneous effusions have obscured the limestone. The nature of the exposures of these probable equivalents of the upper Cherokee limestone, in the western part of Union County, at Frenchman's Creek, and thence across Laurens County, suggests the probability that the limestones have been sheared along fault lines and tilted or lifted so as to bring their edges to the surface, where, with a southeasterly dip, they appear in a false order of succession to the formations north of the fault line, which also have a southeasterly dip.

Rocks.-Siliceous slates (slightly carbonic), quartzite, hornblende slates variably merging to limestone and marble; ottrelite schists; itacolumite slates interbedded with hematite; lithia granite; gneiss: limestone; black slates; mica slates; metamorphosed igneous magnesian rocks with lenticles of magnetite and bodies of asbestos; siliceous and micaceous hematite, and specular iron ores of possibly sedimentary origin, intercalated with slates; massive fine grained gray mica slates; intrusive diabase (distinctly foliated).

Economic Deposits.-Gold, Lead, Specular Iron, Siderite, Hematite, Magnetite, Limestone, Dolomite, Marble, Flagstone, Quartzite.

Industrial.-Limestone and marble beds are extensively quarried near Gaffney for conversion to lime; marble quarried at Master's Kiln (Laurens County). Former extensive utilization of iron deposits suspended on account of charcoal impossibilities. Tin mined from one placer and prominent associate vein on the line of the Anderson-Spartanburg Zone. Clays for fire and face brick extensively mined near Grover.
JURA-TRIAS PERIOD.
Hornsboro Zone

Geographic Limits.-This formation is bounded on the north by the North Carolina line, from a point about 3 miles east of Hornsboro to a point about I. 2 miles west of Hornsboro, the delimiting line then proceeds southeasterly about one (I) mile, thence easterly 5 miles and thence to the initial point on the North Carolina line; from the easterly half of this area a narrow strip has been removed through erosion by the Clay Creek waters, which expose the underlying Edgefield-Chesterfield slates.

Physiography and Geognosy.-This appears to constitute the head of the wide trough which extended northeasterly during the JuraTrias. Its upper surface immediately north of South Carolina approximately conforms to the 450 -foot contour (M. L. T.), which was perhaps not sufficient to extend it across the ridges of crystalline rocks (granites and slates) which prevailed southwest of Clay Creek. Deep borings at Florence have brought to the surface material which has been suggested as of Newark (Jura-Trias) equivalence, but the fine material submitted to this survey suggests the greater probability of the equivalence of the Vaucluse mica slates.

The Hornsboro rocks comprise brown-red and gray sandstones varying in places to a purple-brown indurated clay. Numerous intrusive masses of diabase have greatly disturbed, and partly metamorphosed to secondary forms portions of the red sandstone.

The bodies exhibited in this State are not sufficiently homogeneous to afford valuable quarries. In North Carolina where these beds attain much greater thickness, as in the Jupiter area, workable beds of coal are included by the Jura-Trias. In many places the coal seams have been disconnected by the diabase intrusions, and exhibit so much pyrite, possibly from associate causes, that profitable mining is impossible.
The close of the Jura-Trias in South Carolina was characterized by the intrusion of a vast series of diabase dikes, prominent in the Jura-Trias and in the Edgefield-Chesterfield formations but progressively less so towards the mountain region.

Economic Deposits.-Sandstone.

## DIVISION II.

## CHAPTER I.

## Geological Subdivisions of Coastal Plain.

The successive ages of the Coastal Plain formations of South Carolina with their respectively characteristic life forms, or mineral and lithological individualities, afford three main divisions or groups which, cited in the order of seniority, are "The Cretaceous," "The Tertiary," "The Pleistocene," and a subordinate group, "The Re cent," each of which through characteristic variations affords minor subdivisions or stages, designated "Type Beds."

TENTATIVE SUB-DIVISIONS OF
SOUTH CAROLINA GEOLOGICAL FORMATIONS


Aroces

## CHAPTER II.

## Coastal Plain Conditions.

The Coastal Plain of South Carolina affords natural subdivisions, of its older formations, roughly concentric to St. Helena Sound; to which an area east of the Pee Dee River constitutes an irregular exception. The component formations comprise an extensive series of sedimentary materials of clastic character, and some which have been indurated by chemical solutions at the normal temperatures which successively prevailed. There is no schistosity nor foliation due to intense crustal movements or heat; such parting planes as are observed are bedding planes due to successive changes in the character of sedimentation. The change in the character of the materials was determined by variations in the depth of the water, and periodic changes in the velocity of its currents; or to successive elevations and depressions, through which the shore line has irregularly advanced and receded (chiefly by reason of orographic movements) ; sometimes as a consistent whole; at others with a barrier of islands or an archipelago remaining superior to the ocean level and therefore above the influence of the sediments or marls, which characterized the surrounding formations which were subsequently deposited in the submerged areas. Therefore some portions of the older formations of the Coastal Plain are exposed unencumbered by junior formations; always excepting, however, the loose sands and loams which at the close of the Lafayette-Columbia phase covered the entire Coastal Plain and a large portion of the Crystalline Region.

Fossil or life forms, which in the older Crystalline Region were more primitive and more restricted in varieties and numbers, and which were probably almost entirely destroyed by the intense heat and other metamorphic influences which periodically prevailed during the earlier history of the earth, have survived in numerous varieties and species in the Coastal Plain formations.

In the geological sequence of the earth's formations a vast gap exists along the fall line, which separates the Crystalline Region from the Coastal Plain; here logically belong the Upper Silurian, with its vast fossiliferous iron ore beds, and the Carboniferous, with its coal measures, which characterize the Birmingham and other districts west of the line of the Blue Ridge Mountains; east of which line the conditions appear to have been unfavorable; or, if they obtained, the associate formations were subsequently effaced or submerged beyond the depths hitherto explored by borings, and therefore beyond economic consideration.

## Economic Deposits of the Coastal Plain Formations.

Recent.-Thin beds of sands and clays in sections subject to recent inundation. Economic products: Structural sands and some brick clays.
Pleistocene.-Beds of sands, loams, clays and shells. Economic products: Brick clays, structural sands, cement gravel and marl.
Neocene.-Eolean sands, Lafayette clays, loams, sands, cobbles. Prominently developed across the upper part of the Coastal Plain. Economic products: Sand supply for locomotives, molding sand ; cobblestones for road construction and railway ballast.

Pliocene, Miocene and Oligocene marls, clays and sands. Economic products: Fullers earth, brick clays, sewer pipe and tile clay; phosphate rock; marls adapted to the manufacture of cement and lime; marl and greensand for agricultural purposes.
Eocene.-Dark laminated clays, sands, ferruginous sandstone, Eocene grit, buhr-rock; fine grained yellow Sienna and purple sands and loams; shells, greensand, marl, siliceous clay inclosing layer of buhr-rock, coarse fossiliferous sands, sandy loams, lignitic clay. Occupy approximately the median twofourths of the Coastal Plain, irregularly parallel to the fall line. Economic products: Fullers earth; potter's clay; structural and mill stones; lime marl; greensand and marl for agricultural purposes.
Cretaceous.-Burches Ferry-Buff colored high grade marl; greensand marl.
Black Creek-Soft shales, black clay.
Economic products: Lime marls; agricultural marls; soft shales and black clays suited to the manufacture of brick.

Middendorf-White sands ( 25 feet), bed of dense white and drab kaolin with waxy luster (fossiliferous); harsh sands; vari-colored cross bedded fine grained sands; thin seams of colored clay interlaminated with sands; gravel. Economic products: China clays; paper stock clays; "glass sand."

Hamburg-From nil to eighteen feet of fine white kaolin white sand in micaceous kaolinitic matrix; vari-colored banded sands; arkose; purple and white kaolin; arkose; subangular bowlders and fragments of quartz, slate and gneiss
in arkose matrix (beds of lignitic clay and arkose revealed by borings below the valley lines probably are the equivalents of the Potomac or basal member of the Cretaceous).
Economic products: China clays, paper stock clays, potter's clay, "glass sand."

CHAPTER III.
CRETACEOUS PERIOD.
SUB-DIVISIONS OF THE CRETACEOUS GROUP.


Geographic Limits.-Immediately south of the fall line occurs the Cretaceous, or lowest and oldest member of the Coastal Plain series of formations, which in length is co-extensive with the fall line, but varies much in the width exposed. Thus its exposure begins with a narrow belt in Aiken County and increases in width as it extends easterly, affording its greatest width of exposure along the Great Pee Dee River where it is observed with its extreme limits ninety miles apart but with two Tertiary tongues breaking its continuity.

The Cretaceous formations are interruptedly exposed by the Savannah River from the mouth of Foxes Creek to the mouth of Hollow Creek ( 21 miles) ; by the Edisto River from its source to its confluence with Cedar Creek ( 22 miles) ; by the Congaree River from the Saluda River to Buckingham Bluff on the Santee ( $3^{6}$ miles) ; by the Wateree River from Sanders Creek to Buckingham Bluff ( 35 miles) ; by Black River along its tributaries in Kershaw County and (with a wide intervening area of the Tertiary) from Perkins Bluff (Williamsburg County) to the confluence of Black Mingo (Georgetown County) ; along Lynches River from near Catarrh to the railway bridge near McBee (below which the Cretaceous is obscured to the mouth of Sparrow Swamp) and from the conflu-
ence of Sparrow Swamp to the Great Pee Dee River; by the Great Pee Dee River from its confluence with White's Creek (Chesterfield County), interruptedly to Lower Topsaw Landing (9r miles) ; and by the Waccamaw River interruptedly from the North Carolina line to Conway.

Consolidated Section of the Aiken Beds.
Surface Elevation 440 Feet.


## THE LOWER CRETACEOUS.

## Hamburg Phase; Midendorf Phase.

Geographic Limits.-While the materials which afforded the Lower Hamburg gravels, arkose and clays were unconformably superimposed on the crystalline rocks, approximately along the fall line which extended from the North Carolina line at White's Creek to the Georgia line at North Augusta, the Upper Hamburg kaolin deposit depended upon essentially local conditions of protection and favorable sedimentation, which were more propitious for its formation in the Aiken than in any other area; probably, in part, for the reason that the kaolinitic shales and granulites which contributed much kaolin to the Hamburg beds were immediately north of the Hamburg clay zone in the Aiken Area.

The succeeding Middendorf clay bed with its associate sands is the most extensively distributed, crudely homogeneous, member of the Lower Cretaceous formations exposed in South Carolina. It is the only one of the Cretaceous kaolin beds that even roughly approximates regional continuity.

These several phases which comprise the Cretaceous beds of white clay are, by virtue of succession in the same areas, so intimately associated that it is unnecessary to exhibit their individual areas of exposure, which are therefore consolidated within the following bounds, to-wit: On the north approximately by the fall line; on the west by a line extending along the Savannah River from the mouth of Fox's Creek to the mouth of Hollow Creek; on the south by a line extending from near the mouth of Hollow Creek northeasterly to the South Fork of the Edisto River near Pine Log Bridge ; thence to the North Fork of the Edisto near Horsey's Bridge ; thence across the Congaree ridge and along Sandy Run to the Congaree River; thence along the western scarp of the Congaree and Santee Rivers to a point slightly above Buckingham Landing; thence to Lynches River near the DuBose bridge; thence to Black Creek northwest of Hartsville ; thence along Big Cedar Creek to Society Hill. and thence across the Pee Dee River and up Crooked Creek to the North Carolina line. But while these phases of the Cretaceous are thus exposed along the water courses above this line, the Eocene formation blankets them in the pre-Eocene basins and on some plateaus almost to the fall line.

Physiography and Geognosy.-There are probably no distinctive exposures in South Carolina of the precise equivalence of the oldest Cretaceous phase of the Potomac Epoch,* with its massive flora, although the result of borings in the Santee area admits the probability of its occurrence below the levels of the deepest valley lines in the Coastal Plain Area.
At Aiken from an elevation of 527 feet above the sea level, borings mainly through Cretaceous formations encountered granite at a depth of 490 feet, or 37 feet above the present sea level. A line projected from this cluster of wells normal to the trend of the Crystalline Region, intersects the line of gneisses above Vaucluse at an elevation of 307 feet and at a distance of five miles, thereby representing a decline of 54 feet to the mile for the bed of the Cretaceous.
An inspection of the physiographic and structural features of the terrane, which comprised the coast of the Cretaceous waters, affords interesting suggestions as to the conditions which in part determined the irregular distribution of the sediments constituting this formation.
The Cretaceous currents, as inferred from the deep incisions of its channels in the Crystalline rocks where they debouched into the ocean, gave impetus to currents sweeping parallel to the Crystalline shore on which they deposited Cretaceous sands and other materials, and at the same time formed off-shore a more or less broken area of extensive sand-flats separated from the ocean by sand ridges, which continued to raise their surface as the land subsided.

These vast reef-locked and undulating flats represent the areas on which the clay sediments accumulated as fine grained pure sedimentary kaolin where the waters became still, notably in the sand atolls, but as gritty coarse grained clays interstratified with sands along the current lines. With a renewed depression of the coast, or an increased height of the waters, the surface of this area became partly eroded by new currents which deposited successively gravels, coarse sands and fine micaceous sands until protection by the increased height of the sand-reefs produced again a period of calm waters, when an additional deposition of clay ensued. During the phases of the increased flow of the waters from the land the fine clay materials were principally borne to the ocean to be deposited in its still areas and enter the formation successively of clay shales and marls.

[^13]The older Cretaceous formations consist of shoal water deposits of gravels, sands and kaolins (sedimentary) ; the younger Cretaceous formations consist of deep water formations of fine grained unctuous shales, which were succeeded at greater depths of water by marls.
The subsidence which occurred at the end of the Cretaceous period did not operate uniformly in South Carolina, but created two depressions, the one west and the other east of a gently declining Cretaceous ridge, or axis, extending northwesterly from the site of Georgetown; this ridge was superior to the level of the Eocene ocean by which it probably was entirely surrounded.

The several phases of the Lower and Middle Çretaceous formations appear in a superimposed series along the ridges, but along the adjacent scarps they often appear in an irregular system of broad rough terraces; along which kaolin is mined.

## THE UPPER CRETACEOUS.

## black creek phase. burches ferry phase

## Black Creer Phasr.

Geographic Limits.-The median drainage system of the Pee Dee River exhibits a series of unctuous black shales which extend southerly under the Burches Ferry marl, along the valley of Jeffries Creek. From the western scarp of Black Creek (northwest of Hartsville) its northerly limit appears to extend in a northeasterly direction, south of Society Hill, and perhaps thence along Naked Creek to the North Carolina line. From Hartsville it extends southwesterly and probably constitutes in part the bed of Lynches River, below Bishopville.
Physiography and Geognosy.-The line connecting the occasional marginal exposures, along the north of this area, is emphasized as the probable littoral line by the rapid emergence of the older Cretaceous formation to conspicuously increased elevations north of this limit. South of this line (from Hollow Creek to Naked Creek) this Black Creek formation declines along a southerly plane and probably underlies this entire area, intervening to the ocean.

It comprises unctuous, black, shaly clays inclosing interlaminations of extremely thin micaceous seams and occasional fine grained sand. Along the upper area of exposure units of the above character of material are separated by beds of sand; the zones south of Jeffries Creek are shown by borings to afford a thickness of $23^{\circ}$ feet of this black, unctuous material.

Its more prominent exposures are observed along Black Creek and at the base of Floyd's Mill, Mars Bluff, McCorkle Bluff, and Burches Ferry, at some of which localities it, with a highly eroded surface, underlies the Tertiary shale and marl; while below Jeffries Creek it underlies the Burches Ferry marl, which in its depressions and around its borders supports Tertiary shale and marl. The littoral line of the Black Creek phase, as exposed along its more elevated areas near Hartsville, attains the elevation of about 200 feet M. L. T.
For analyses, see Tables Nos. 5 and 6.
For sections, see Marls and Fullers Earths, Sur. Nos. 825, 855, 905, 995, 996.

## Burches Ferry Phase.

Geographic Limits.-The marl constituting this phase exhibits its most northerly exposure on Jeffries Creek (about io miles south of Florence). Jeffries Creek establishes a sharp separation of the Burches Ferry and the Black Creek series. From Burches Ferry, near the mouth of Jeffries Creek, the easterly limit of exposures of this area as far south as Topsaw Landing is observed along numerous bluffs on the right bank of the Pee Dee River. From Topsaw Landing the southern limit of exposures superior to the levels of the streams extends to the confluence of Black Mingo and Black Rivers, and thence westerly up Black River to Perkins Bluff, where the Burches Ferry marl declines below tide level. The westerly limit extends along Sparrow Swamp to its mouth, and thence probably along Camp Branch to the head of Lynches Lake, and thence by the headwaters of Black Mingo to Perkins Bluff.

A narrow belt of the Burches Ferry marl occurs along the Waccamaw River drainage area, extending from a point near which this river enters South Carolina to a point slightly north of Conway. From this line it declines gently southeasterly, under the Tertiary marls but it is probably bared off shore because the shore line along Myrtle Beach is being continually strewn with Burches Ferry fossils through the activity of the waves.

Physiography and Geognosy.-The greatest observed elevation of this formation is on Lynches River near Old Effingham, where its surface appears at 78 feet M. L. T.; a well bored at this locality is said to hatexhibited 62 feet of this marl above the water-bearing stratum; this thickness, however, might include a portion of the Black Creek series as the gray-green Burches Ferry marl has nowhere been observed with a thickness exceeding 23 feet. From this point of the Carolina Ridge the surface elevation of the marl declines
southeasterly, southerly and southwesterly, disappearing below the water lines within the limits indicated under geographic limits.

The material constituting the Burches Ferry formation consists principally of a compact harsh gray-green, to gray-blue marl which in many places incloses numerous fossil specimens of the exogyra costata and at some localities the belemnitella Americana and other fossil forms. Some of the exposures exhibit layers of a hard graywhite nodular limestone. In its upper aspects the Burches Ferry marl grades to a moderately compact yellow-white marl; the latter aspect is observed near Myers Hill, on the Georgetown road, and at Allison's Ferry. The type locality of the Burches Ferry formation is on the west bank of the Great Pee Dee River at Burches Ferry (See Table of Analyses of Cretaceous Marls).

For analyses, see Tables Nos. 5 and 6.
For sections, see Marls, Sur. Nos. 848, 850, 855, 858, 86ı, 863, $867,870,876,877,879,880,896,940,941,944,980$ (B), $9801 / 2,990$, 998, 999.

## CHAPTER IV.

## TERTIARY ERA.

## Eocene-Oligocene-Miocene-Pliocene.

Eastern Tertiary; Western Tertiary; Carolinian Ridge; Dorchester Strait; St. Georges Anticline.
Geographic Limits.-Exclusive of the area of the Lower Cretaceous formations which constitute an irregular band south of and co-extensive with the fall line, and exclusive of portions of the Black Creek and Burches Ferry Cretaceous areas, duly noted, the surface of the Coastal Plain is occupied by the Tertiary formations; the latter underly a coastal band, and an irregular all-pervading superficial mantle, consisting of Pleistocene and Recent materials.

The line delimiting the Tertiary (Eocene) on the north extends from near the confluence of Hollow Creek and the Savannah River, in Aiken County, by Beech Island, Aiken, Perry, Horsey's Bridge (North Fork Edisto River), and Gaston to the vicinity of Congaree Bluff (with tongues approximately extending respectively to Vaucluse, Seivern, Leesville and to the head of Congaree Creek). Thence it proceeds down the western scarp of the Consice River, and the embayments of its tributaries to Lang Syne and Warley Hill; a narrow broken belt extends along the western scarp of the Wateree.Swamp, and caps such prominent elevations as Cook's Mt., as far north as Black Mt.

From Warley Hill the littoral line crosses the Santee River at the mouth of Fullers Earth Creek and proceeds thence by Wedgefield to Catchall, whence it is largely obscured northeasterly to the eastern division of the Tertiary. From Fullers Earth Creek, in Clarendon County, a second littoral line branches and extends southeasterly by Cades and Rhems, and thence near Georgetown it probably curved into the Eastern Tertiary Division to encircle the Cretaceous "Carolinian Ridge."

The littoral line delimiting the Eastern Division on the north probably proceeds from Catchall by Bishopville, thence up the eastern scarp of Lynches River towards Stokes Bridge, and thence northeasterly by Society Hill, whence it probably proceeds south of Naked Creek to the North Carolina line.

Physiography and Geognosy.-The subsidence of the Coastal Plain of South Carolina, by which the Tertiary shore line receded approximately to the fall line, did not deeply submerge the Cretaceous area northeast of the present line of the Santee River; which area included a pronounced ridge capped with Burches Ferry marl which extended its crest southeasterly from the head of Willow Creek (approximately 10 miles south of Florence) to and beyond Georgetown; from Willow Creek to Winyah Bay this "Carolinian ridge" was probably never extensively submerged until near the close of the Miocene. The westerly slope of the Carolinian ridge as indicated by the Burches Ferry marl passes below the valley line of Black River, dipping southwesterly at the rate of approximately io feet to the mile, as determined by borings at Charleston where 465 feet of Tertiary marls overly perhaps 120 feet of Lower Eocene shales, which are superimposed on the Burches Ferry formation at the approximate depth of 585 feet, below mean low tide.

This Cretaceous ridge, designated the "Carolinian ridge," resolves the Tertiary into two geographic areas hereby designated respectively the Eastern, and Western, Tertiary divisions; these areas were probably connected both north and south of the Carolinian ridge by the waters during the Congaree phase, and during the Miocene time. The great Lafayette flood extension of the shore line inland (questionably related to the Pliocene), and its subsequent recession seaward by shoaling or otherwise, probably afforded within a reeflocked basin fresh water deposits of the Pleistocene group.

Four prominent physiographic features appear to have greatly affected the distribution of Tertiary materials. First, the configuration of the embayments in the Cretaceous materials south of the
fall line. Second, the conformation of the southeasterly trending Carolinian ridge and its included valleys; these affected both the early and later phases of the Tertiary. Third, the depression which admitted the deposition of the Santee marls was restricted to the western area of the Tertiary, and was far more pronounced along the Santee drainage area, and along the Savannah drainage area, than along the Edisto area. The Edisto River from near the confluence of its two forks finds its channel approximately along an anticlinal axis of the Warley Hill marl as far down as Sullivan's Bridge. The marked thinness of the Santee marl in the Edisto area, in contrast with the great thickness of its presumably equivalent marl along the Santee and Savannah Rivers, and the persistent elevation of the underlying Warley Hill marl along the Edisto River proclaim a former ridge, herein designated the "St. Georges Anticline," a Tertiary analogue of the Cretaceous "Carolinian ridge." This anticline has enacted an important part in the distribution of succeeding materials. The Santee marls east of this anticline are characterized by a great prevalence of the ostrea sellxformis to the probable exclusion of the ostrea Georgiana, while the Santee marls west of this anticline abound in the ostrea Georgiana and afford comparatively few of the ostrea sellæformis. The distinctly characterized Oligocene shales and marl, west of this anticline, find no recognized equivalents on its east site. Fourth, during the Miocene period a ridge appears to have extended from the upper part of the Carolinian ridge southwesterly; or, from the mouth of Black Creek, by Old Effingham, by the Santee River entrance of Santee Canal, by Scotchman's Bluff (on the Edisto River) and thence to Porter's Landing (Parachucla, type-point on the Savannah River). This ridge was largely constituted, along its seaward slope, of the compact marls of the Cooper type. The Dorchester strait skirted the northerly slope of this ridge; the southwesterly portion of the strait may have prevailed during portions of the Oligocene time. The depression incident to the introduction of the Miocene extended this channel, probably to the ocean northeast of South Carolina, and admitted more northerly life forms. The assumed crest of the ridge south of this assumed Dorchester strait, appears to zonally divide the two general types of Miocene marl; of which the soft blue marl of the Marks Head phase and largely that of the Upper Pee Dee phase is confined to the north of this ridge. The hard white thin marl which immediately succeeded the soft blue marl of the Marks Head phase, and which contains some of its equivalent forms, bro-
kenly rests upon the southeastern slope of the Dorchester ridge as the basal member of the Miocene formations, which incline (from near the top of the ridge) to the ocean. I admit that the premises for the assumption of this Dorchester strait are not complete; but in view of the exposures of the soft blue Miocene marls, which are zonally separated from the hard open sea marls of the Edisto and the Goose Creek phases by a ridge-line, I submit that the probable existence of such inside waterway should find more logical support than the alternate assumption that the sea entered the narrow valleys of each area, and deposited its forms in limited tributary depressions, in these independent drainage areas, which happened to establish a definite line extending from North Carolina to Georgia, and yet failed to deposit corresponding material along the shores of the numerous estuaries or valleys through which this theory must assume connection with the sea; again, the comparatively homogeneous character of the blue marl matrix argues more consistent conditions than the varied sediments of isolated drainage areas could have afforded.
The Tertiary formations of South Carolina are largely composed of bedded sands, shales, silicified sands and shales, marls, phosphate rock, glauconites, clays and pebbles. The Tertiary period affords in the variable succession of materials and in the advance and retreat of the shore lines of its successive phases, evidences of great oscillations; sometimes due to regional movements in the level of the earth's surface of either secular or sudden character, and sometimes possibly to a general secular elevation of the level of the ocean.
In the western areas of the South Carolina Tertiary the littoral plains of the Tertiary period (Lafayette excluded) gradually ascended from the valley lines to constitute tongues overlapping the Cretaceous formations (at elevations varying from 300 to 530 feet); the eastern area of the South Carolina Tertiary was not afforded the final amount of elevation which characterized the former, the maximum elevation probably does not exceed 400 feet M. L. T.
The Western Tertiary and the Eastern Tertiary divisions of the South Carolina area correspond through a very limited range of phases.
The several series of thick Eocene marls which characterize the Santee Tertiary are apparently entirely missing in the eastern area. In the eastern area the sea bottom appears not to have been sufficiently depressed during the Eocene to admit waters of sufficient depth to form marls; at the period of maximum Eocene depression this division responded to the extent of admitting thin beds of shales and sands. As the Eocene period closed its formations gradually
emerged superior to the level of the sea and its life forms yielded to the transitional character expressed in the Oligocene.

In the westerly division of the Tertiary, a pronounced depression extended from the St. Georges anticline westerly, including a large portion of the adjacent Coastal. Plain of Georgia. The Oligocene waters pertaining to this area first abounded in coral forms now observed in the King's Creek Silex which were succeeded by a compact marl typically exhibited immediately west of the Savannah River in the Brier Creek Zone. Extensive beds of silt which are supposed to have been derived from the Mississippi embayment through the Suwannee Straits deposited over this depressed area and gave origin to the Combahee shales, of the Oligocene. Brief interference with silting admitted the formation of the Parachucla marls. Resumed silting continued the formation of the Parachucla shales. This Parachucla group inclines in its faunal relations more to the Miocene than to the Eocene.

The general depression which inaugurated the Miocene period included both the eastern and western areas and afforded their characterizing marls, glauconites, etc. The gradual emergence of the land along the Dorchester Ridge advanced the Miocene shore line seaward and afforded successive phases of Miocene marl, progressively increasing in the percentage of modern life forms, but it is worthy of note that the narrow belt designated the Dorchester strait affords the most advanced of the distinctively Miocene forms, and was the last to be elevated above the sea level.

## CHARTER V.

EOCENE PERIOD.
Subdivisions of Eocene Formations.

|  | Phase | Sub-Phase or Formation. |
| :---: | :---: | :---: |
| $\begin{aligned} & \text { UPPER } \\ & \text { EOCENE. } \end{aligned}$ | ASHLEY-COOPER. | Ashley Marl. Cooper Marl. |
|  | MT. HOPE | Mt. Hope Marl. |
| MIDDLE EOCENE. | barn Well. | Barnwell Buhr-Sands. |
|  | Santer. | Santee Marl. |
|  | Warley hill. | Upper, or Warley Hill Marl. <br> Lower, or <br> Caw Caw Shales and Marls. |
|  | CONGAREE. | Buhrstone. Sands. Shales. |
| LOWER <br> EOCENE | black mingo. | $\begin{aligned} & \text { Lang Syne. (?) } \\ & \text { Upper, or } \\ & \left\{\begin{array}{l} \text { Williamsburg Pseudo-Buhr } \\ \text { Rhems Shale. } \end{array}\right. \\ & \text { Lower, or } \\ & \text { Black Mingo Shale. } \end{aligned}$ |

Upon the inauguration of the Lower Eocene the gradual successive subsidences of the coastal plain area west of the Carolinian Ridge caused the shore line to gradually advance northerly, from a zone south of the present coast line to a curved line now indicated by indurated argillaceous deposits which extend from a point near Georgetown, by Wedgefield, by Gaston to a point near Augusta; there is thus outlined a quadrant shaped basin with increased depth
converging towards Savannah. The coastal plain east of the Carolinian Ridge was slightly submerged during the Lower Eocene, but the crest of the Carolinian Ridge remained superior to sea level during the entire Eocene period.

The Lower Eocene closed with a decided subsidence of the deep areas and a co-ordinate upward tilting of the shoal areas of the Eocene sea. The shore line was thereby forced about twenty-five miles seaward, and the increased depth of the off-shore areas admitted waters congenial to the calcareous organisms which created the great marl beds of the Middle and Upper Eocene divisions. The Eocene period accordingly afforded three distinctive lithological features comprising respectively argillaceous formations, now indurated to shales, mixed yellow argillaceous and calcareous transition beds, and the thick white calcareous beds containing as much as 90 per cent. of calcium carbonate. The Lower Eocene phases and the Congaree phase represent a succession of repeated series, of which each succeeding phase probably overlapped the littoral line of its predecessor and extended its own shore line more northerly. Each series appears to have been formed as follows: As the land subsided, incident to the progress of the Lower Eocene and Congaree phases, the shore line was characterized by reworked marl or other materials from the successively encountered subjacent beds which were incorporated in stratified beds with gravel and argillaceous sediments. Then followed argillaceous sediments interstratified with thin seams of fine grained sand and mica. As silting decreased glauconitic deposits followed over the argillaceous deposits as far landward as was consistent with the depth of water necessary for the formation of glauconite. The glauconites thus incorporating the aluminous matter in the water appear to have cleared the way for the succeeding organisms which formed thin beds of shell marl.

Renewal of the land subsidence stimulated silting which not only extended the argillaceous deposits landward, preceded by sands, but in fouling the waters forced the glauconite and marl forming zones seaward. But as the silting waned the glauconites, sometimes followed by thin beds of shells, again advanced landward over the argillaceous beds which had preceded in the wake of the coarser beach materials. The subsequent alteration of the glauconites caused the partial silicification of the beds of sand, argillaceous sediments and shells. In series thus repeated the successive phases of the Lower Eocene and of the Congaree are lithologically similar, and in many cases difficult of differentiation. However, each extension
or additional phase not only extended more northerly over the western division of the Tertiary, but was characterized by a gradual advance in the life forms. The Lower Black Mingo phase or Black Mingo Shale incloses silicified layers of shells including the enclimatocerous Ulrichi; the Upper Black Mingo phase or Rhems Shale includes dark silicified layers with a small species of the venericardia planicosta, the Williamsburg Pseudo-buhrstone incloses a larger variety of the venericardia planicosta and the ostrea arrosis; the Congaree shales are characterized by the presence of very large species of the venericardia planicosta, the Congaree shales grade upwards through sands to the Congaree Buhrstone with its more varied and advanced forms of life pertaining to the Middle Eocene. The great calcareous beds then succeeded in the western division of the Tertiary in circumstances duly noted under Warley Hill, Santee, Mt. Hope and Ashley-Cooper phases.

## LOWER EOCENE.

## Black Mingo Phase.

Lowrr Black Mingo. Upper Black Mingo (Rhems and Williamsburg). Lang Syne?

Geographic Limits.-Western Division.-The observed exposures of the Lower Black Mingo formations are confined to Clarendon, Williamsburg and Georgetown Counties; along the Black River Valley from Brewington Lake to the Black Mingo River, along the Santee River from the lower part of Clarendon County to Wittee Lake, along the Sampit River above the head of navigation. The Upper Black Mingo formations are observed in Williamsburg County near Rhems, but more extensively as a mantle covering the ridge between Black River and Santee River; notably on the scarp of the swamp southwest of Gourdin Station and on the crest of the ridge three miles north of Salters. Beyond the latter place they extend northerly in Clarendon County. An old Eocene (?) formation not elsewhere observed is exposed at the base of Tomb Field Gulch on the Lang Syne plantation (Sur. No. 682), at the base of Warley Hill (Sur. No. 684), near Buckingham Landing, and possibly at Wedgefield Cut (Sur. No. 631) ; at all of the observed localities it underlies beds pertaining to the Congaree phase.
Eastern Division.-The Eocene littoral line along the eastern side of the Carolinian Ridge affords shales and pseudo-buhrstone with Eocene fossils, which are exposed in Florence County along the
westerly side of the Great Pee Dee River, interruptedly from Black Creek to Dewetts' Landing. They are interpreted as the probable equivalent of the Upper Black Mingo.

Physiography and Geognosy.-The Lower Black Mingo formations afford the first expression of the great land subsidence which caused the shore line to retreat inland at the beginning of the Eocene period. The type exposure is at Perkins Bluff on the Black River near its confluence with the Black Mingo River (Sur. No. 895). The Lower Black Mingo series rests on the Cretaceous marls (Burches' Ferry) ; it comprises light gray and dark gray laminated shales, capped with a layer of enclimatacerous marl about one foot thick. The enclimatacerous Ulrichi was the only fossil which could be definitely identified. The Upper Black Mingo was inaugurated by a renewal of sedimentation which afforded additional gray laminated shales inclosing a small variety of the venericardia planicosta, in the form of molds or casts; best exhibited at Rhems Landing on the Black Mingo River. A heavy mantle of red and yellow sands mixed with glauconite succeeded the shales; the alteration of the glauconite has irregularly silicified portions of the sands which now appear as interrupted ledges and inclose casts of venericardia planicosta, ostrea arrosis, etc. (best exhibited three miles above Salters). Along the Pee Dee River thin layers of stratified shales and sands overlie the silicified sand ledges. At Lang Syne and Warley Hill the Congaree shales rest on fine grained, black, slightly glauconitic, sands, and partly indurated gray sands, both of which contain tender casts of small shells. We shall refer to them as the Lang Syne beds.

Stratigraphically they belong below the Congaree shales, and are tentatively treated as a part of the Black Mingo, pending further investigations.

It is recognized that there is a faunal advance from the Lower to the Upper Black Mingo formations, but in so much as the latter are so intimately associated over a large area, without stratigraphic break, it has been decided that the distinction of Upper and Lower will prove satisfactory for the general discrimination of these beds.

The Upper Black Mingo comprises:
(a) The Williamsburg Pseudo-Buhr consisting of yellow-red sands which inclose a hard silicified ledge about two feet thick, in which casts of the ostrea arrosis and the venericardia planicosta occur. Characteristically exhibited at Dr. Boyd's place, three miles north of Salters and on scarp of Santee River 1.5 miles south of Gourdin Station.
(b) Rhems Shale. Light gray to black shale interlaminated with thin seams of fine grained sand and mica. Some layers partly silicified. Incloses small variety of venericardia planicosta. (See Rhems Landing.)

The Lower Black Mingo comprises a basal layer of reworked Cretaceous marl inclosing some probable Eocene forms. Gritty stratified shales succeeded and then a layer of silicified shells including the enclimatocerous Ulrichi; superimposed on the latter appear interstratified thin beds of shale and decomposed glauconite which has indurated the contiguous layers; an indurated glauconitic layer inclosing a few obscure shell forms probably constitutes the upper plane separating the supernatant Rhems shales.

For analyses, see Table No. 7.
For sections, see Marls and Fullers Earths, Sur. Nos. 682, 684, 727, 891, 892, 895, 898, 929, 936 .

## MIDDLE EOCENE.

Congaree Phase; Warley Hill Phase; Santee Phase; Barnwell Phase; Mt. Hope Phase.
Geographic Limits.-The littoral line of the Middle Eocene in South Carolina conforms to the littoral line indicated for the Tertiary. Its tongues which blanket the Cretaceous ridges attain the approximate limit of the fall line.

The southerly limit of the Middle Eocene, as inferred from the greatly obscured line along which it disappears below the valley lines, extends from the vicinity of Wadboo Creek (Berkeley County) northerly by Hell Hole Swamp, and thence east of Bonneau, whence it curves southwesterly along the Four Hill Ridge to a point near Givham's Ferry (below which the Edisto River channel exposes a tongue of the Warley Hill marl as far south as Sullivan's Bridge). From the point near Givham's Ferry the line probably extends westerly by the head waters of the Ashepoo River and thence passes near Fairfax, whence it proceeds to the Savannah River south of the mouth of Lower Three Runs, near Johnson's Landing.

Physiography and Geognosy.-The Middle Eocene was inaugurated with a pronounced renewal of the land depression which was inaugurated during the Lower Eocene; and the shore line was gradually extended over the Cretaceous sands and clays, to an elevation now within approximately 100 feet of the highest elevation occupied by the Coastal Plain formations; the surficial sands of the Cretaceous were in part rearranged by these Eocene waters.

The zone of silting gradually followed over the Black Mingo shales in the wake of the shore line as it advanced landward, and, thus extending far within the littoral line of the Lower Eocene imposed on the Cretaceous sands extensive beds of light gray fossiliferous shales, characteristically exhibited along the western tributaries of the Congaree River; this development is accordingly designated the Congaree Phase. As the zone of silting advanced inland it was accompanied by irregular accumulations of glauconite sands, and marine shells which were subsequently altered to buhrrock; this feature chiefly in the form of coarse ferruginous sandstones constituted the littoral aspect of the Congaree.

The Congaree Phase is abundantly exhibited in the western Tertiary division along a curved line extending by Aiken, Sandy Run (on the Congaree), Wedgefield, and thence down the eastern side of the Santee River; it is also characteristically exhibited along the belt extending from Wedgefield towards the Eastern Division north of the Carolinian ridge. East of the latter the Congaree Phase is probably exhibited in thin shales interlaminated with sands along the western bluffs of the Pee Dee River.

A slight elevation of the land probably inaugurated the formation of the Lower Warley Hill shales and marls in the Western Tertiary, with their shore line about 25 miles seaward from the littoral line of the Upper Congaree. Probably a coördinate depression of the sea bottom admitted deep waters to the line which irregularly extends from the Savannah River (opposite McBean Creek) to the Santee River at Stout's Creek and thence along the eastern side of the Santee River to the ocean. Within the quadrant thus partly circumscribed the great beds of Eocene marl accumulated. First. the Warley Hill Phase which constituted a highly glauconitic coarse green compact marl of great areal extent. The long continued development of the Santee marl within this limit gradually excluded from its marginal belt free access of the deep sea waters which are essential to the development of marls. The stratified fine grained sands, glauconites and associate ferruginous sandstones which had irregularly accompanied the shales of the Congaree Phase and extended to the upper limits of the Cretaceous, doubled back over their upper zone and over these Congaree sands and shales, and over the marginal belt of the Warley Hill and Santee formations, and yielded beds characteristically exhibited south of McBean Creek (Ga.) (Sur. No. 134) and along the upper line of Barnwell County (Sur. No. 43), by reason of which this development is denominated the "Barnwell Phase."

Accordingly it will be observed that with the suspension of silting those glauconites which were deposited anterior to the highly calcareous marls extended far up on the shoal areas where marls could not prevail; incident to the stagnation of the marl basin and to the retreat of the shore line seaward a second phase of the Middle Eocene glauconitic sands prevailed and extended over the Congaree glauconitic sands or buhr-rock; along the areas occupied in common by the sands of the Congaree and Barnwell Phases the latter are difficult of separation as both pertain to the Middle Eocene. Sir Charles Lyell pronounced the silicified Eocene glauconites, etc., as resting superior to the equivalent of the Santee marls, Mr. Tuomey saw them inferior to the Santee marls, and both were eminently right.

## Congaree Phase. Shale. Sands. Buhrstone.

Geographic Limits.-The Congaree Phase exhibits its littoral line along Hollow Creek near the Savannah River and proceeds with occasional tongues extended in conformity with the shore line indicated for the Tertiary. The main line proceeds from McBean Creek Valley (Ga.) by Beech Island, Aiken, Perry, Horsey's Bridge, and Gaston to the vicinity of Congaree Bluff (with tongues approximately extending respectively to Vaucluse, Seivern, Leesville and to the head of Congaree Creek). Thence it proceeds down the western scarp of the Congaree River and the embayments of its tributaries to Lang Syne and Warley Hill (with a narrow broken belt extending along the western scarp of the Wateree Swamp, and capping prominent elevations such as Cook's Mt. and as far north as Black Mt.).
From Warley's Hill the littoral line crosses the Santee River at the mouth of Fullers Earth Creek and proceeds thence by Wedgefield to Catchall, beyond which it is largely obscured northeasterly to the Eastern Division of the Tertiary. From Fullers Earth Creek, in Clarendon County, the shore line of the Congaree shales extended a branch southeasterly probably along the Santee River to the vicinity of Wittee Lake; but is now obscured by the overlapping of junior formations. From Wittee Lake it probably extended easterly and curved around the Carolinian ridge east of Georgetown, and thence entered the Eastern Division. (See Sur. Nos. I44, 165, 7, 252, 266, 257, 500, 503, $510,505,511,513,518,520,528,530,531$ ).

Eastern Division.- The Eocene littoral line along the eastern side of the Carolinian ridge finds no definite expression below Dewett's Blaff; above which it is, with wide intervals, exhibited near Cain's

Landing, Mill Creek, at Myer's Hill, McCorkle Bluff and at Mars Bluff (base excluded), all of which localities are in Florence County. If the Congaree Phase is represented at any of these localities it appears in the form of thin shales interstratified with sands, but without observed fossil forms. Along the south side of Black Creek it probably returns towards Sumter. The line delimiting this division on the north probably proceeds from Catchall by Bishopville, thence up the eastern scarp of Lynches River towards Stoke's Bridge, and thence northeasterly by Society Hill, where it probably proceeds south of Naked Creek to the North Carolina line; but east of Catchall no fossils of definite value to discrimination have been observed.

Physiography and Geognosy.-As the Black Mingo Phase waned renewed depression of the land inaugurated the Congaree Phase, and extended its shore line far up on the Coastal Plain. The silting zone was thus gradually withdrawn from the Black Mingo beds and overspread the Cretaceous sands and clays with a mantle of stratified fine grained alumino-siliceous silts (slightly calcareous), in various shades of gray, interlaminated with extremely thin seams of mica and very fine grained white sands; occasional layers of glauconitic matter were interstratified. The whole aggregates in places exceeding 60 feet and inclosed numerous fossils, chiefly the venericardia planicosta, now in the form of molds. (See illustrative section Sur. No. 684.) Following this landward movement of the silting zone glauconitic sands overspread and, upon the cessation of silting, overlapped the shales of the Congaree Phase and extended approximately to the fall line. The subsequent weathering of the glauconitic matter afforded solutions of silica, potash, etc., which in some places permeated the shales with effects varying with the character of the solutions. In some cases the carbonate of lime offered by the inclosed shells was replaced by silica thereby exquisitely perpetuating the forms of the original shells in a matted mass designated buhrstone. In other cases where the solutions were predominantly carbonic the carbonate of lime of the shells and of the minute particles inclosed by the shale were dissolved and removed, thereby leaving the shale in an extremely light porous condition, with hollows or molds preserving the most delicate details of the shape of the original shells. In other cases where the solutions of potassium silicate have saturated logs or other vegetable matter in an incipient state of decomposition the evolved carbonic acid combined with the potash and was thus eliminated in solution while the silica thus separated
replaced the disorganized vegetable cell. AH of these features are abundantly exhibited across the exposed belt of the Congaree shales. The Congaree Phase represents in part Mr. Tuomey's "Buhrstone" subdivision, but in so much as the Barnwell Phase, undifferentiated, was included in the "Buhrstone" which is herein indicated as separated from the Barnwell sands by the combined thickness of the Warley Hill and Santee marls, we will avoid the confusion which might result from the use of the term as originally applied.

For analyses, see Table No. 7.
For sections, see Marls and Fullers Earth, Sur. Nos. 7, if, 3r, 32,33, 169, 173, 257, 261, 262, 266, 267, 340, 502, 503, 505, 512 , 513, 518, 520, 530, 531, 631, 633, 637, 661, 681, 682, 685.
$\underset{\text { Warley Hill }}{\text { Phase }}\left\{\begin{array}{c}\text { Upper or Warley Hill (Marl). } \\ \text { Lower or Caw Caw (Shale and Marl). }\end{array}\right.$
Geographic Limits.-The littoral line of the Warley Hill Phase extends across the lower part of Aiken, the upper part of Barnwell, the upper part of Bamberg and the median part of Orangeburg Counties. The Warley Hill formations appear to be confined to the Western Tertiäry Division.
The marginal line of the Lower Warley Hill formations is exposed along a line extending from Shell Bluff (Sur. No. 220), by McBean Creek (Sur. No. 134), by Kennedy's Scarp (Sur. No. 42), by Binnaker's Bridge (Sur. No. 342), by Pooser's Hill (Sur. No. 344), by Warley Hill (Sur. No. 684), to Week's Landing (Sur. No. 693) on the Santee River, whence it curved southeasterly along the Santee Valley along which it is now obscured by junior formations.
The marginal line of the Upper Warley Hill formations is interruptedly exposed across the Edisto and Santee areas from Orangeburg, by Jenkin's Hill, Creston, Warley Hill, Week's Landing, Cave Hall, Poplar Creek, and near Pinckney's Landing, where it passes below the valley line. These localities are in Orangeburg County and are described under Survey Nos. 346, 349, 696, 684, 693, 7or, 705. This marl is exposed along, and approximately conforms to, low water level of the Edisto River, from near Orangeburg to Sullivan's Bridge, about 14 miles north of Jacksonboro (vid. Sur. Nos. 358 to 375 ). Its seeming equivalent is also observed immediately, underlying the bed of ostrea Georgiana (Santee Phase) at Ussery's Bluff (Sur. No. 52) in Barnwell County.
Physiography and Geognosy.-The close of the Congaree Phase appears to have advanced the shore line seaward by reason of a very slight elevation of the land area, and at the same time to have de-
pressed the seaward areas, and admitted deeper waters for the formation of the great marl beds, high in the content of carbonate of lime. The shore line of the Warley Hill Phase appears about twenty-five miles more seaward than the littoral line of the Congaree Phase. The lower Warley Hill formation lithologically represent a transition from the Congaree shales to the later marls and comprises both shales and marls, often intergrading. Faunally they are distinctively characterized by the first appearance of the ostrea sellaformis, in the South Carolina beds, and by the abundant association of the lutraria lapidosa. Succeeding a coarse glauconitic sand, a pea-green clay now in the form of a slightly laminated shale occupied the shoal areas, while pale yellow-green and gray marls formed in the deeper waters, and intergraded with the shales along their dividing zone. In some areas an irregular deposit of yellow to graycolored marls extended over the basal pea-green shales, but along the shoal areas renewed silting covered this broken bed of marl with a very fossiliferous pale yellow-green shale, in which casts of a large venericardia planicosta, lutraria lapidosa, ostrea sellæformis are found. At Kennedy's Scarp on Tinkers Creek this pea-green shale incloses a matted mass of soft shells, at the base of the scarp (Sur. No. 42). Some erosion, solution, or other degradation of the top shales of the Lower Warley Hill Phase occurred preliminary to the deposition of the Upper Warley Hill series. At some localities the Upper Warley Hill is represented by a bed of dark gray, slightly glauconitic, fine grained laminated shale ; it is coarse grained near its base and includes rounded gravel (See Marls, Sur. Nos. 42 and 220, Cox). Its greatest thickness is approximately 24 feet. The most extensive area of the Upper Warley Hill Phase exposes the characteristic Warley Hill glauconitic marl, which at Warley Hill may be seen resting on the slightly irregular surface of the Lower Warley Hill series (Sur. No. 684). It is exposed along the Santee Valley as far down as Pinckney's Landing, and along the Edisto River from Branchville to Sullivan's Bridge. Its greatest observed thickness does not exceed twenty-five feet.

The Warley Hill marl is of a dirty gray-green color, compact, hard, and very harsh to the touch; the latter feature is accentuated by the large angular grains of glauconite. At one locality small semi-spherical crystals of Wavellite appear to have been derived from the weathered glauconitic mass. (See Analyses of Marls. Table No. 6, Sur. No. 701).

The Warley Hill Phase closed with a gentle anticlinal fold, herein designated the St. Georges Anticline, with its axis extending approxi-
mately along the present valley line of the Edisto River from a point near Orangeburg to Sullivan's Bridge; this fold left on each side a deep parallel trough, respectively occupied now by the valleys of the Savannah and Santee Rivers, across the Coastal Plain. The Warley Hill marls appear to have survived in the Santee area more northerly than in the Savannah area; in the former the marginal line of the Warley Hill marl extends more northerly than does the succeeding Santee marl, whereas in the Savannah area the marginal line of the Santee marl appears to overlap the upper limit of the Warley Hill marl and rests on the pea-green calcareous shales which characterize in some localities the early aspect ${ }^{\circ}$ of the Warley Hill Phase.
No fossil forms in the dark dirty green glauconitic marl, which constitutes the crest of the St. George Anticline, have been found with such values as to conclusively confirm the identity of this marl with the Warley Hill marl. But by reason of its immediate proximity to the northerly limits of the definitely discriminated Warley Hill marl, and by reason of its definitely established position below the Cooper marl, and by the further reason of indistinguishable differences in physical and chemical features, the surface marl of the St. George's Anticline is regarded as the equivalent of the Upper Warley Hill marl. The St. George's Anticline served as the Eocene analogue of the Cretaceous ridge.

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 42, 52, 134, 220, 342, 344, 349. 358, 360, 361, 362, 365, 373, 374, 684, 679, 699, 70 r.

## Santee Phase.

Geographic Limits.-The Santee Phase prevailed on both sides of the St. Georges Anticline and presumably connected around its southerly limit; it possibly extended in a thin sheet across portions of the St. Georges Anticline, but no definite proof of same was observed. West of the anticline its marginal limit extends along a line from Shell Bluff (Sur. No. 220) by Kennedy's Scarp (Tinker's Creek) and thence by Lemon Swamp at the head of Salkehatchie, and thence by Ussery's Bluff and Baldock on Lower Three Runs to the confluence of the latter with Savannah River.
East of the anticline the marginal line of exposure extends from near Jenkins' Hill (Sur. No. 349) on Lime Creek, to Belle Broughton (Sur. No. 697) on Half Way Swamp, and thence by Week's Landing (Sur. No. 693), Cave Hall (Sur. No. 699), Poplar Creek (Sur. No. 701), Pinckney Landing (Sur. No. 705), Potato Creek
(Sur. No. 710), and Vance's Ferry (Sur. No. 707), and thence down the Santee River Valley east of Lenud's Ferry to the ocean.

Physiography and Geognosy.-The Santee marl rests along an undulating plane in immediate contact with the Warley Hill marl, from which it is sharply differentiated in color, texture and composition. At Cave Hall small rounded masses of the subjacent marl are inclosed by the Santee marl along the plane of contact. This marl is yellow-white in color and very compact to crystalline in texture, and high in calcium carbonate ( 80 to 95 per cent.). It occurs in numerous prominent bluffs enumerated under Geographic Limits; some attain the height of 24 feet above the base.

West of the St. Georges Anticline the most conspicuous fossil in the Santee marls is the ostrea Georgiana, the ostrea sellæformis being inconspicuous, whereas east of said line the ostrea sellæformis is very prominent and the ostrea Georgiana perhaps unknown.
If the marl of the St. Georges Anticline is of the true equivalence of the Warley Hill marl, then the Santee marl of South Carolina occupies on the east a trough between the Carolinian ridge and the St. Georges Anticline, and on the west it reposes on the slope which passes southwesterly under the Savannah River, both troughs therefore probably maintain a variably modified southerly dip.

That a pronounced ridge existed senior to the Santee Phase appears well attested by the relative elevations of the corresponding basal portions of the Santee marls exhibited respectively at Kennedy's scarp (Tinker's Creek) and Shell Bluff; and also in part by the confinement of the Oligocene beds to the west and south of the St. Georges Anticline.

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 42, 52, 54, 63, 220, 339 (?), 341, 349, 696, 697, 699، 701, 705, 706, 707, 710, 739, 740.

## Barnwell Phase.

Geographic Limits.-The littoral line of the Barnwell Phase irregularly overlaps the upper margin of the Santee and Warley Hill marls which extend from Shell Bluff (Sur. No. 220) easterly by Tinker's Creek (Sur. No. 43), Salleys (Sur. No. 272), Orangeburg (Sur. No. 346), Keitt Ravine (Sur. No. 688), and thence southerly along the eastern ridge of the Santee River; along some ridges this littoral line extends almost to the fall line.

Physiography and Geognosy.-The accumulation of the Santee marls over a wide coastal area appears to have gradually reduced
the depth of water, essential to their continued development, although continued land depression had extended the Middle Eocene shore line almost to the limits of the fall line. Consequently the glauconite and sand-making conditions obtained which characterized the Barnwell Phase. And it appears that while the Barnwell Phase prevailed over a broad shoal belt, which rested against the curved shore line extending from Beech Island on the Savannah River to the Santee Valley and thence along the Carolinian ridge to the ocean, that the Mt. Hope marl was being formed along the deep sea margins.

The Barnwell Phase was incident to the latter part of the Middle Eocene when the land depression in the western Tertiary area of South Carolina admitted the activity of waters along the shore. In addition to the irregular beds of glauconites and shells there were deposited extensive beds of extremely fine grained sands of yellow and reddish color with delicate whorls of very fine white sand ; these sands in some localities are fossiliferous. (Sur. Nos. 343, 344, 345.)
Deposits of the fine grained sands, the ferruginous sands, and glauconites irregularly extended over the greater part of the Cretaceous sands and clays which were exposed north of the line of the Santee marls. The subsequent weathering of the glauconites contributed solutions of silica, potash and iron. The siliceous solutions have cemented fine sands and silicified their included shells in irregular masses; the surface of the underlying limestone in certain localities has been almost entirely converted to silica. The underlying shales which were probably marly shales appear to have had the calcareous particles and shells almost entirely dissolved and removed, and the residual mass is remarkably light and porous and incloses excellently preserved molds of shells.
The ferruginous solutions have in some places cemented sands and clays, in others these solutions of iron have invaded beds of shells where the iron upon exposure has become insoluble and thus formed beds of limonite inclosing exquisite molds of Middle Eocene shells, the calcareous substance of the shell having disappeared in solution; at still other localities the iron, becoming insoluble upon exposure, has formed beds of limonite ores.
The combined iron and siliceous solutions, resulting from the alteration of small quantities of glauconites admixed with the marginal sands, cemented the latter to form an inferior red sandstone which is observed in patches scattered across the upper region of the Coastal Plain. Some of these sandstones afford traces of cobalt.

For sections, see Fullers Earth and Marls, Sur. Nos. 7, 32, 43. 272, 344, 345, 513, 528, 53I, 684.

## Ma. Hope Phase.

Geographic Limits.-In the vicinity of Eutaw Springs (Sur. No. 712) and thence along the Santee River Valley, and southerly to the crest of the ridge crossed by the Santee Canal, the marls which characterize this phase appear; notably at Pond Bluff (Sur. No. ${ }^{713}$ ), Mt. Hope (Sur. No. 715), and Warley's Landing (Sur. No. 717) on the western bank of the Santee River.

Physiography and Geognosy.-The Mt. Hope marl consists of a matted mass of spines and plates of echini, fragments of corals, occasional shells of the ostrea sellæformis and other forms. The color is yellow-white; it exhibits ledges which are very hard and partly crystalline, with thick intermediate zones of somewhat softer and more porous, but otherwise similar material. Its thickness as exhibited by borings at Pond Bluff is 16 feet, of which 13.2 feet extend above the zero water level ( 24.8 feet M. L. T.), the underlying material comprises il feet of sands and then "rock" (report of well borer); this "rock" is probably the hard Santee marl the equivalent of which is exhibited about two miles above Pord Bluff on Eutaw Creek.

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 713, $715,720$.

## Ashley-Cooper Phase

Geographic Limits.-The line which delimits the exposure of the Cooper marls probably starts near the head of Owendaw Creek in the eastern part of Charleston County and proceeds northerly by Hell Hole Swamp, and north of Bonneau, where it curves and proceeds along the Four Hole Ridge to the Edisto River. From the Edisto River the margin of the Ashley-Cooper marls is obscured by sands, loams, and Oligocene shales. The southwesterly line, along which it passes under the Oligocene, is not susceptible of sharply drawn distinction, but it appears to pass from Givham's Ferry southwesterly to the head of Chechessy Creek (middle branch of Ashepoo River), beyond which it passes below the level of tide, which also affords the approximate southwest limit. The southerly limit of exposure of the Cooper River marl is generally obscured by sands, and by Miocene marls, and by the overlapping margin of the Ashley marl. The easterly marginal line of the Ashley marl probably extends
along the westerly slope of the dividing line between the drainage systems of the Cooper and Ashley Rivers. This marl extends along the Ashley River from Bee's Ferry to Schultz's Lake. From the Ashepoo River it passes southwesterly under the Miocene and Oligocene formations.
Physiography and Geognosy.-The Cooper marl is green-drab in color and slightly plastic when wet, and yellow-white when dry. It is high in calcium carbonate, and low in calcium phosphate, of which it generally contains less than two per cent. East of the projected line of the St. Georges Anticline it appears to have formed in deep water on the seaward slope of the Mt. Hope marl; its upper exposure along the Edisto River is probably near Givham's Ferry, where it possibly rests immediately on a thin bed of the Santee marl. It is prominently exposed along the Cooper River from its head to Strawberry Ferry, below which it gradually dips below tide level.
This marl incloses few fossils; the most abundant form being the pecten Claibornensis; it is firm but easily susceptible of being shaped by the saw or other cutting tools when newly quarried, but upon exposure to the air it becomes hard and serviceable for structural purposes.

The Ashley marl rests conformably on the Cooper marl, but a plane of division is indicated by a line emphasized by occasional rounded black quartz and phosphate pebbles. This marl is graygreen and semi-plastic when wet and drab when dry. It incloses many small dark particles of phosphate of lime. Analyses indicate this marl as containing as high as 15 per cent. of phosphate of lime, with a minimum of 3 per cent. towards its base. At many localities it can with difficulty be discriminated from the Cooper marl excepting by its increased content of phosphoric acid. Fossils are very rarely included. It is probable that thin beds of this marl occurred in limited patches of the Cooper River drainage area.
The Cooper and Ashley marls were deposited in deep water; the Cooper probably represents the expiring expression of the Eocene. The Ashley is slightly suspected of Oligocene antecedents, but appears destitute of fossils of specific value to refined discrimination; the underlying layer of pebbles suggests the product of the depression with which the Combahee Phase terminated.
The preponderance of similarities, however, indicates that it is very closely allied to the Cooper marl, the chief difference consisting in the gradual increase of phosphoric acid towards the upper surface, and therefore that it is competent to group them as the AshleyCooper marl, excluding the thin capping layer of Miocene marl
(Edisto) which was formerly included as a part of the Ashley marl. For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 396, 398, 400, 402, 403, 404, $405,4051 / 2,406,407,410,411,4111 / 2,414,418,419,423,424,425$, $427,428,429,432,435,44 \mathrm{I}$ ², $, 444,456,458,460,474$.

## CHAPTER VI.

## OLIGOCENE PERIOD.

King's Creek Phase; Brier Creek Phase; Combahee Phase;
Parachucla Phase
Kings Creek Phase.
Geographic Limits.-Along the banks and escarpments of the Savannah River successive phases of the Oligocene are interruptedly exposed from Johnson's Landing (Sur. No. 58) near the mouth of Lower Three Runs (S. C.) to a point on the Georgia side slightly north of Purysburg (S. C.). The more prominent exposures are exhibited along the Georgia side, notably at Brier Creek (Sur. No. 230), Hudson's Ferry (Sur. No. 233), Marl Lake (Sur. No. 236), Porter's Landing (Sur. No. 234), and thence at Sister's Ferry and Ebenezer Landing. Proceeding easterly from the Savannah River this formation (as exhibited by borings) passes under the Hampton clays and sands, but again appears in part along the Big Salkehatchie River near the Barnwell line and is interruptedly exposed down the river to tide level near the head of the Combahee River (Sur. Nos. 386, 387). While limited exposures of the Combahee shales are observed approximately extending to the Edisto River no indications of the Oligocene shales have been observed east of the St. Georges Anticline.

The southeasterly and southerly line of delimitation extends greatly obscured from Raysor's Bridge (Sur. No. 366) southerly along the Walterboro Ridge to Huspa Creek (Sur. No. 486) near Sheldon, and thence to Dawson's Landing (Sur. No. 496) on the Coosawhatchie and thence to the vicinity immediately north of Purysburg on the Savannah River.

Physiography and Geognosy.-The King's Creek Phase involved a vast depression southwest of the St. Georges Anticline which probably inundated a large portion of the Georgia Coastal Plain southwest of McBean Creek. Johnson's Landing (Sur. No. 58) comprises ledges of highly siliceous rock inclosing many spicules of sponges and other forms now silicified. The surface of the high ground extending from this locality to a point immediately south of King's

Creek and about one mile west of the river road is in places strewn with small masses of chalcedony of many hues of white, red and blue; at the King's Creek locality a moderately prominent knoll is well shingled with this material, specimens of which exhibit silicified corals and other fossil forms studded with minute crystals of silica. Some specimens suggest the structure of small stalagmites.

This formation passes under the Brier Creek marls. Its probable equivalent is exhibited capping the high hill immediately south of McBean Creek near McBean Station.

Much of this material appears to have been used by the Aborigines in the production of their arrow heads as is abundantly attested at one of their old chipping grounds at "King's Creek Landing" on the Savannah River.

For sections, see Marls, Sur. Nos. 134(?), 230, 231.
Brier Creek Phase.-This phase succeeded the King's Creek Phase south of the line of Cohen's Bluff near the upper line of Hampton County. It is typically exhibited along Brier Creek near Jacksonboro, Ga., where it has been investigated by Vaughn and others. It comprises a high grade marl of a pale yellow color. In a silicified form it is probably represented on the western scarp of the Coosawhatchie River near Gifford Station.

For analyses, see Table No. 6.
For sections, see Marls, Sur. No. 355 .
Combahee Phase.-A probable re-elevation of the formations in the Mississippi embayment is supposed to have greatly increased the suspended matter in the waters which found their way through the Suwannee Straits but which were arrested in their easterly progress by the St. Georges Anticline, along the southwesterly embayment of which silts were deposited and subsequently hardened to form the Combahee shales, prominently exhibited at Hudson's Ferry (Sur. No. 233), Porter's Landing (Sur. No. 234), Broxton Bridge (Sur. No. 386), Toby's Bluff (Sur. No. 387), one mile south of Raysor's Bridge (Sur. No. 367 ), etc., etc.

It comprises a poorly stratified gray and yellow shale with occasional pockets of glauconite; it incloses casts and moulds of shells and along its littoral margin (Sur. No. 233) impressions of the dwarf palmetto.

With the close of the Combahee Phase it appears that a change of elevation brought in a quantity of quartz pebbles, rounded by subsequent wave action to the discoidal shape. These were freely incorporated by the succeeding Parachucla marl. It is conceived that the pebbles which sparsely appear along the plane separating

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45-R. & E.-(600)
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the Ashley and the Cooper marls may have been derived from this source, but the great scarcity of fossils in the Ashley marl has not yet admitted of its definite faunal separation from the Cooper.

For analyses, see Tables Nos. 6 and 7.
For sections, see Marls and Fullers Earths, Sur. Nos. 233, 234, 375, 386, 387 .

Parachucla Phase.-This phase is made to comprise a marl and its immediate overlying shales. The Parachucla marl has been definitely discriminated at two points: Porter's Landing (Sur. No. 234) and Marl Lake (Sur. No. 236). It consists of approximately five feet of a light yellow porous marl which includes numerous discoidal quartz pebbles, and fossil shells (notably the carolia Floridana). It rests on the undulating surface of the Combahee shales.

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 234, 235.
The Parachucla Shales.-This formation is exposed along the west bank of the Savannah River interruptedly from Marl Lake to the vicinity of Purysburg. It is well exhibited at Porter's Landing (Sur. No. 234) overlying the Parachucla shales and underlying the Mark's Head marl on which is superimposed the Edisto Phase of marl. The Parachucla shales constitute an alumino-siliceous shale more or less indurated by siliceous solutions, and slightly stratified; in color they range from dove to dark gray. The mass includes indurated portions with a concentric structure. No fossil forms sufficiently defined for discrimination have been observed.

For analyses, see Table No. 7.
For sections, see Marls and Fullers Earths, Sur. Nos. 234, 236, 240, 24I, 486, 496.

## CHAPTER VII.

MIOCENE PERIOD.
Mark's Head Phase; Edisto Phase; Salkehatchie Phase (?); Goose Creek Phase; Pee Dee Phase (Lower); Pee Deb Phase (Upper); Waccamaw Phase (Mio-Pliocene).

The Miocene was introduced by a land subsidence which, although not as profound nor protracted nor extensive as the Eocene subsidence, involved to a greater extent the Carolinian ridge and the Eastern Tertiary Division. The portion of the Eastern Tertiary north of the present shore line of the Atlantic Ocean and exclusive of the Dorchester Strait does not appear to have been submerged during the Miocene time until the end of the Edisto Phase, which
does not appear underlying its junior formations which are extensively exposed in the Eastern Division. The Miocene subsidence does not appear at any phase to have extended north of the Dorchester Strait which consisted of a depression or a series of depressions which occupied a curved narrow belt extending across portions of Hampton, Colleton, Dorchester, Berkeley, Clarendon, Sumter, Darlington, Florence, Marion and Horry Counties; the Dorchester Strait thus probably extended north of an Archipelago which comprised the Dorchester Ridge, the Carolinian Ridge and subordinate insular bodies of land probably separated in part by pronounced embayments of the sea and in part by mud flats. While its extremities are occupied by marls of probable Chesapeake equivalence its main length of line is interruptedly characterized by the Upper Pee Dee marls of very late Miocene equivalence, corresponding to which no marls are observed on the seaward slope of the ridges south of the Dorchester Strait in the Western Tertiary. It therefore appears that the Dorchester Strait, although an inland depression (if not waterway), afforded the last belt of distinctly Miocene marls to be elevated above the sea level. Immediately subsequent to the Goose Creek Phase the Dorchester Ridge inaugurated an emergence of the seaward Miocene formations in the western Tertiary division; the castern Tertiary does not appear to have followed until after the formation of the Upper Pee Dee marls when incident to the final emergence of all Miocene formations (inclusive of those of the Dorchester Strait) the coast line was advanced seaward to the line of the valley of the Waccamaw River, along which the Mio-Pliocene or transition phase of marl was formed.

Geographic Limits.-While the formations of some of the Miocene phases are confined to the eastern the greater number prevail in both the eastern and western divisions of the Tertiary, with the greater areal distribution in the latter. They were delimited on the north along the narrow belt designated the Dorchester Strait. The line of this assumed strait as indicated by Miocene deposits extended from Mark's Head (Sur. No. 235) on the Savannah River, by Raysor's Bridge (Sur. No. 366) on the Edisto River, by Walworth Plantation (Sur. No. 352) south of Eutawville, by Plowden's Mill (Sur. No. 888b) and Muldrow Plantation (Sur. No. 838) on Black River, by Sparrow Swamp (Sur. No. 835), by Darlington (Sur. No. 833), by Williamson Plantation (Sur. No. S27) on Black Creek, by Hodge's Mill (Sur. No. 916) near the Little Pee Dee River, by Gallivant's Ferry (Sur. No. 917) east of the Little Pee Dee River,
by Lake Swamp (Sur. No. 947), and thence by the mouth of Little River to the ocean.

The Dorchester Strait belt comprises the Mark's Head and Upper Pee Dee phases of marl, both of which consist of great varieties of shells in a sandy semi-plastic blue matrix suggesting protection from immediate access of the sea. The contained carbonate of time is less than 30 per cent.

Eastern Tertiary Division.-The Miocene formations in this division, apart from those enumerated in the Dorchester Strait belt, are observed in three belts, the Winyah, the Florence and the Waccamaw. The Winyah belt was formed on the seaward side of the Archipelago; it now extends under the ocean along Myrtle Beach to Winyah Bay, where an arm which extended along the west side of the Carolinian Ridge is exhibited on Black River (Sur. No. 894) and along the bed of the Sampit River (Sur. No. 936) near the head of navigation; it appears thence to have swept around the westerly ridge of the Santee River and entered the Western Division. The Winyah belt comprises marl chiefly of the Edisto type, consisting of a hard yellow-white marl inclosing many irregular cavities, and bore-holes of the pholadx. It contains exceeding 60 per cent. of carbonate of lime, portions of which have been phosphatized. It was deposited along a slightly shelving bottom. The greater portion of this marl is east of the present shore line and was accordingly depressed below the sea level before the marls of the Florence belt were formed. The Florence belt of marls extends up the Pee Dee Valley and is successively exhibited near Allison's Ferry (Sur. No. 870), at Godfrey's Landing (Sur. No. 869), Davis Landing (Sur. No. 867), Bostick Landing (Sur. No. 863), and Myer's Landing (Sur. No. 862), all on the Great Pee Dee River, and thence by Anderson's Bridge (Sur. No. 993), on Lynches River, Timmons Lake (Sur. No. 992), McColl Place (Sur. No. 991), on Lynches River, to Sparrow Swamp. The Florence belt comprises Miocene marls of the Goose Creek and Lower Pee Dee equivalence. They consist of firm, pale yeliow marls which contain exceeding 60 per cent. of carbonate of lime. They appear to have been deposited in an open arm of the sea, created by a depression subsequent to the time of the Edisto Phase. Limited patches of the Upper Pee Dee Phase of marls appear along in the Florence belt. The Waccamaw belt extends along the Waccamaw River from the North Carolina line to the vicinity of Conway. It comprises a bed of firm granular dirty yeliow marl about 12 feet thick which incloses numerous varieties of shells of both the Miocene and Pliocene types; it is super-
imposed on the Burches Ferry marl, and is most characteristically exhibited at Tilly's Lake (Sur. No. 943), and at Nixon's Landing (Sur. No. 944).

Western Tertiary Division.-In addition to the marls of the Upper Pee Dee Phase which are exposed along the Dorchester Strait in Colleton, Dorchester and Berkeley Counties the Western Division of the Tertiary comprises a broad coastal belt of marls of the Goose Creek and Edisto Phases designated the Charleston belt of Miocene marls which extends from the head of the Wando River to the mouth of Port Royal Harbor; the included Goose Creek Phase appears to a comparatively limited extent. Extensixe embayments appear to have extended from the "Ashley-Junction Channel" up the depressions now occupied by the valleys of the Cooper, the Ashley, the Edisto, the Ashepoo and the Coosaw Rivers in which the Edisto and Goose Creek marls were deposited on the Ashley-Cooper marls; and where the Edisto marls were probably largely phosphatized before the Goose Creek marls were deposited. The latter were more prominently formed along the marginal line of the Ashley-Junction Channel, which line varied from to to 20 miles within the present shore line.

For the detail of the limits of the Edisto and Goose Creek marls refer to their separate descriptions hereinafter given. For characteristic sections see Givham's Ferry (Sur. No. 373), The Dividers (Sur. No. 378), Bolton Mines (Sur. No. 457), Cohen Place (Sur. No. $4111 / 2$ ), Yeaman's Hall (Sur. No. 441).
The Miocene marls of the Charleston belt are of a pale yellow color and contain exceeding 65 per cent. of carbonate of lime. They constitute thin beds deposited along the gently shelving margin of an open sea, with a considerable time interval separating the two. A second belt, of unconfirmed Miocene antecedents, occupies the Salkehatchie and Coosawhatchie valleys and is designated the Salkehatchie Belt. It comprises phosphatic and glauconitic sediments which inclose numerous vertebrate remains. It is suspected of having immediately succeeded the Edisto Phase and of extending over the same in a form now somewhat altered.

## Mark's Head Phase.

Geograptic Limits.-The line, assigned to the assumed Dorchester Strait, which extends from Mark's Head (Sur. No. 235) on the Savannah River, by Raysor's Bridge (Sur. No. 367), and thence below Mt. Hope (Sur. No. 715) on Santee River, northeasterly by

Muldrows (Sur. No. 838), by Sparrow Swamp (Sur. No. 835), by Darlington, and thence easterly by Mullins to the Atlantic Ocean, constitutes the northerly limit of the Miocene; and the zone along which the Mark's Head (Miocene) soft blue marls probably extend with greatly broken continuity.
Physiography and Geognosy.-The type name of this phase is borrowed from Mark's Head on the scarp of the Savannah River Swamp northwest of Porter's Landing; where this marl is exhibited, with characteristic bed of shells imbedded in a sandy blue mud matrix, approximately 18 feet thick, overlying the Parachucla shales and underlying the hard Edisto marl of the more advanced ecphora stage, which characterizes the southeasterly slope of the Dorchester Ridge. Mark's Head affords the only point where these two marls have been observed in contact.

For sections, see Marls, Sur. Nos. 234, 235.

## Edisto Phase.

Gcographic Limits.-This marl extends in a belt below sea level east of Myrtle Beach. It is next observed at Evans Bluff (Sur. No. 894) on Black River west of the Carolinian Ridge; its probable equivalent also appears in the bed of the Sampit River near the head of navigation (Sur. No. 936). Its most extensive occurrence comprises an irregular belt which extends southwesterly from the head of Wando River to the mouth of Broad River (west of Port Royal) chiefly in a form now altered to "phosphate rock." In its unaltered form it may be observed in the bed of Stono River near the mouth of Wappoo Cut, on the Edisto River at "The Dividers" (Sur. No. 378) and at Givham's Ferry (Sur. No. 373) and on the Savannah River at Porter's Landing (Sur. No. 234).

In its more or less altered form it may be observed within the following limits:

Interruptedly along a belt the lower limit of which extends along a meandering line from a point near the source of the Wando River to the mouth of Broad River; this line irregularly varies from 6 to 20 miles distant from the present coast line of the outlying "sea islands" located east of the Ashepoo River. From the Ashepoo to the Combahee Rivers an apparent gap occurs. From the Combahee River the southerly line extends by Morgan Island and St. Helena Island, beyond which the phosphate zone disappears under the ocean.

Physiography and Geognosy.-In its unaltered form the Edisto marl consists of a compact yellow-white marl in many places ramified
with tortuous cavities and inclosing many bore holes of the pholadx. It also incloses many fossil forms of the invertebrates, notably the ecphora quadricostata, and at Givham's Ferry, where it rests on the Cooper marl, the ostrea Haitiensis. Its greatest observed thickness is 5.9 feet. Along the Edisto River its elevation declines from 52.6 feet (M. L. T.) at Givham's Ferry to 0.0 feet (M. L. T.) at "The Dividers"; the air line distance being approximately 16 miles, with an extensive intervening area of the Edisto marl in a highly phosphatized form.

The phosphatized area of the Edisto marl maintains a general elevation of about 6 feet, but varies from - 6 to 12 feet (M. L. T.). In its typical form the phosphatized Miocene marl (or phosphate rock) appears in a more or less continuous sheet about one foot thick which is honeycombed with abundant irregular cavities; some of the cavities are as much as 4 inches in diameter and extend entirely through the rock; they are filled with a black sandy clay with which the phosphate bed is also slightly covered; this clayey matrix, high in phosphoric acid, contains many vertebrate fossils, but it is worthy of note that it contains no phosphatized invertebrate forms which are not assignable to the Miocene. It is to be further observed that the Goose Creek marl which at Givham's Ferry rests immediately on the unaltered Edisto marl incloses nodules of phosphate rock and highly phosphatized vertebrate remains. At the Cohen place (Sur. No. $4111 / 2$ ) the marginal exposure of the Goose Creek marl sharply delimits the bed of phosphate rock and incloses numerous lumps of this material. It is therefore assumed that the phosphatizing action occurred prior to the Goose Creek Phase, partly through the introduction of phosphoric acid by a highly fossiliferous ooze, perhaf identical with the Salkehatchie ooze. The Edisto and-Goose Creek marls at Givham's Ferry indicate an elevation of the Dorchester Ridge immediately subsequent to the time of the Goose Creek Phase, for no later Miocene or Mio-Pliocene formations are anywhere observed superimposed on either the Edisto or the Goose Creek marls west of the Santee River. In the Dorchester Strait belt, however, which extends along the north side of the Dorchester Ridge fossil forms are found near Raysor's Bridge (Sur. No. 366) 12 miles above Givham's Ferry and at other points which belong to the Upper Pee Dee Phase; the north side of the Dorchester Ridge therefore remained depressed longer than did the southerly slope. At many localities, notably along the margin of the Ashley-Junction channel, which was sculptured deep in the Ashley-Cooper marls, wave action has detached and rounded lumps of the phosphate rock and in some
instances admixed them with Pleistocene materials, which has induced some observers to assign to the phosphate beds a later origin than is herein indicated. Furthermore, while limited and disconnected thin patches are observed superimposed on the Goose Creek marl near the mouth of Fiddler's Creek they consist of the secondary form or the water-worn nodules dislodged from their original bed on the landward side. Some of these pebbles and nodules are observed high up in the Pleistocene where they characterize the Accabee gravels designated the "Flying Rock Bed" by the miners.

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 234, 366, 373, 378, 404, 405, $406,407,410,411 / 2,4411 / 2,453,456,457,458,460,474,894$.
(See Phosphate Beds, page 330 .)

## Salkehatchie Phase.

Geographic Limits.-The Salkehatchie ooze occurs along the valleys of both of the Salkehatchie Rivers (Sur. Nos. 386 and 387) and at the head of the Coosawhatchie River (Sur. No. 355). Its probable equivalent is also observed in the swamp of Captain's Creek, one of the sources of the Ashley River.

Physiography and Geognosy.-The Salkehatchie Phase comprises an approximate ooze consisting of a sticky dark gray-green mixture of phosphatic sediments and glauconites inclosing numerous vertebrate remains, such as the bones of the cetacæ, teeth of the squalidæ, dental plates of the mylobatus, etc. Its precise position in the geological scale has not yet been determined. The main body rests on the Oligocene shales of the Combahee and Parachucla Phases ; seemingly similar material in an altered form overlies and penetrates the cavities of the phosphate bed (Edisto Phase) and has contributed its numerous vertebrate fossils. It has not been observed anywhere overlying the formations of subsequent origin to the Edisto Phase, nor have any of these subsequent formations been phosphatized. It appears to have immediately succeeded the Edisto marls, in which event it probably largely contributed to their phosphatization.

For analyses, see Table No. 6, Sur. No. 335.
For sections, see Marls, Sur. Nos. 355, 386, 387, 393, 395.

## Goose Creek Phase.

Gcographic Limits.-The marl constituting this phase is exposed in both the Eastern and the Western divisions of the Tertiary. In the Eastern Tertiary it extends along the Pee Dee River from Bos-
tick Landing (Sur. No. 863) to the vicinity of Davis Bluff (Sur. No. 867).
In the Western Tertiary it extends along the margin of the Ashley Junction Channel and its embayments; it is thus observed near the head of Sander's Creek, at the Grove (Sur. No. 436) on Cooper River, at the mouth of Fiddher's Creek (Sur. No. 443), at Yeaman's Hall (Sur. No. 441) on Goose Creek, and at the Cohen place near Ashley Junction. Also on the Edisto River at Givham's Ferry.
Physiography and Geognosy.-The Goose Creek Phase comprises a firm but very porous yellow marl containing 83.9 per cent. carbonate of lime. (For complete analyses vid Table of Analyses of Marls No. 441). Its greatest observed thickness is about 12 feet. In the Eastern Tertiary the equivalent of the Goose Creek marl was formed in an embayment east of the Carolinian Ridge and is now exposed by the Pee Dee River superimposed on the Burches Ferry marl and underlying the marls of the Lower Pee Dee Phase. -Its most characteristic exposure is immediately south of the Bostick Landing (Sur. No. 863).
Western Tertiary Division-During pre-Miocene (?) time the Gulf waters scoured a deep channel in the Ashley-Cooper marls designated the Ashley Junction Channel. The inner margin of this channel appears along a line which extends along the Wadmalaw River and along the southerly side of the Stono River to the Cherokee Mines and thence south of Bee's Ferry and Ashley Junction and north of the U. S. Navy Yard, beyond which it proceeded near Cainhoy on the Wando River, and thence northeasterly ; the Edisto River and Cooper River basins afforded pronounced embayments to these waters.

The Givham's Ferry exposure (Sur. No. 373) exhibits it overlying the Edisto marl; at the Cohen Place (Sur. No. $4111 / 2$ ) an excavation in the swamp shows the phosphate bed sharply delimited on the south by the Goose Creek marl which near the margin incloses many nodules of phosphate rock. Fossils of this phase from the Smith (Yeamans Hall) and Grove places were exhibited by Messrs. Tuomey and Holmes in their "Pliocene Fossils of South Carolina."

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 373, $4111 / 2,436,441,862,863$, 867 (?).

## Lower Pee Dee Phase.

Geographic Limits.-The marl representing this phase is confined to the Eastern Tertiary Division. It extends along the western side of the Pee Dee River from Myer's Landing (Sur. No. 862) to

Allison's Ferry, with its most characteristic development at Davis Landing (Sur. No. 867). Along Lynches River it is interruptedly exposed from Effingham to Anderson's Bridge (Sur. Nos. 991, 992, 993).

Physiography and Geognosy.-This phase comprises two zones of marl. The lower is a firm but somewhat porous light yellow marl about 8.0 feet thick, and consists of a matted mass of shells of the chama congregata and the arca incile.

The upper is a very hard semi-crystalline yellow marl about 16.7 feet thick and incloses abundant fossil shells of the pecten eboreus, etc., etc.

In some localities marls of the Lower Pee Dee Phase rest immediately on the Burches Ferry marl, at others the Goose Creek marl intervenes; occasional patches of the soft blue marls of the Upper Pee Dee Phase rest upon the Lower Pee Dee marls. It therefore appears that the Goose Creek marl of the Eastern Tertiary was elevated subsequent to the elevation of the Goose Creek marl of the Western Tertiary in so much as the latter nowhere supports the equivalents of either the Lower or Upper Pee Dee marls.

The Lower Pee Dee marls which occur at an elevation of 36 feet M. L. T. aggregate a thickness of 24.7 feet.

The arca incile bed appears to be much more extensive than that of the pecten eboreus.
For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 350 (E), 363, 366, 827, 833, $835,838,842,862,863,867,868,869,888(\mathrm{~b}), 978,992,993$.

## Upper Pee Dee Phase.

Geographic Limits.-The marls of this phase occur along the line indicated for the Dorchester Strait, and are prominently exhibited at Raysor's Bridge (Sur. No. 366) on the Edisto River, near Walworth plantation (Sur. No. 350e) south of Eutawville, at the Muldrow Place (Sur. No. 838) on Black River, near Cartersville (Sur. No. 842) on Lynches River, on Sparrow Swamp (Sur. No. 835) at Darlington, and at the Williamson place (Sur. No. 827).

Physiography and Geognosy.-These marls from the above cited localities pertain to the latest Miocene time, but exhibit slight shades of difference in the fossils which they respectively contain. This might suggest that the assumed Dorchester Strait was not a continuous body of water, or, if so, that it was connected with the sea by several prominent embayments which respectively contributed
life forms to the Strait at slightly different times. Great uniformity of physical conditions characterized their deposition. Each of them consists of a profusion of shells in a dark blue soft clay matrix which incloses variable amounts of sand. They all appear to have been elevated subsequent to the elevation of the Goose Creek and Edisto marls in the Charleston basin, which appear to have been superior to the waters which deposited the Upper Pee Dee series of marls. At the close of the Upper Pee Dee Phase all of the Miocene formations west of the line of the Waccamaw River appear to have been elevated superior to the sea level.

## The Waccamaw Phase

Geographic Limits.-Confined to the Eastern Tertiary Division. Interruptedly exposed in Horry County along the Waccamaw River from a point near the North Carolina-South Carolina line to Nixon's Landing, and along some of the westernly tributaries of the Waccamaw River, above Conway.
Physiography and Geognosy.-As the Miocene approached its end the Dorchester Strait and all other distinctly Miocene areas appear to have emerged superior to the sea. The shore line in the Eastern Tertiary area accordingly advanced seaward to the line now occupied by the valley of the Waccamaw River. The Waccamaw marl was deposited along this shore, and included many life forms of both the Miocene and Pliocene; it therefore probably represented a transition phase, for the bivalves pertaining to both periods are distributed through the entire thickness of the bed, and many large specimens from each still combine both valves which probably would have been separated if this bed had been formed by "washed-in" shells from two separate Tertiary beds.

This marl rests upon the slightly undulating surface of the Cretaceous marl of the Burches' Ferry type (Ripley), and incloses near its base a few specimens of the exogyra costata derived from the surface of said underlying Cretaceous marl.
The material consists of approximately 10.5 feet of compact, granular marl, of which the upper 1.5 feet is brownish-yellow, and the subjacent part gray in color. It contains 64.90 per cent. of Calcium Carbonate and 0.53 per cent. of Tri-Calcium Phosphate.
For complete analyses, see Marls, Sur. No. 943.
For sections, see Sur. Nos. 943, 944, 946, 947, 952.
If an equivalent formation accumulated along the shore line of the Western Tertiary Division, it has been obliterated.

## CHAPTER VIII.

## PlioCene period- Waccamaw Phase (Mro-Pliocene).

 (Cheraw (Lafayette) Phase
## PLEISTOCENE PERIOD-

 Fresh Water.Hampton Clays.
Lafayette Sands.
Lafayette Cobbles.

Apart from the Waccamaw beds previously treated as a transition phase, the Pliocene exhibits no observed beds in South Carolina characterized by the distinctive Pliocene life conditions which are exhibited in some States.

The formation designated the Cheraw Cobbles, the equivalent of the Lafayette, has been variously assigned to the Pliocene and to the Pleistocene. It has apparently resulted from vast fresh water floods which extended over a great flat, constituted by the median three-fifths of the Coastal Plain, the character of whose waters excluded life forms from its deposits. These waters also extended up the greater valleys to the foot of the Blue Ridge Mountains.

Although Lafayette cobble beds have been traced under the glacial moraines, and are therefore eliminated as the immediate results of the glacial conditions which gave origin to these moraines, we must perhaps look for some previous glacial or other vast water-producing phase, whether in the Pliocene or Pleistocene, to account for the vast quantities of fresh water, which were involved, and perhaps for the origin of the cobbles which appear to have been transported over the saddles of the mountain system north of this State.

Some of even the most modest of the creeks in the Piedmont Region, streams with channels less than 25 feet wide, and 1,000 or more feet above the sea level, exhibit cross sections of their former beds 1,500 or more feet wide, which curve downward to levels very slightly superior to their present beds; their former beds are outlined by a layer of sub-angular rocks and gravels, underlying in places a considerable thickness of soil. This was the cause in which originated, in a large measure, the placer gold and monazite beds. These coarse deposits implied vigorous currents of large volumes of water in contradistinction to the sluggish flow which would have been imposed on the streams by an increased elevation of the sea (through the general depression of the land or otherwise).
Furthermore, the nature of the distribution of the Lafayette material south of the fall line, with reference to the sea level at that time, imposes limits to any possible subsidence as far short of the
probable requirements of the observed effects at greatly superior levels in the upper Piedmont Region.
At some time during the accumulation of the Lafayette materials (perhaps the Hampton Clays), within the great fresh water flats, it appears probable that the marine Pleistocene formations were accumulating along the seaward limit of an irregular barrier which probably in a large measure separated the fresh water deposits from the marine; and, that with the final recession of the flood waters, the Columbia Phase followed seaward over the Lafayette and in a modified form over the marine Pleistocene.

## Lafayette Phase.

The Lafayette Phase involves such varied features and widely separated exposures that the geographic limits will be indicated co-ordinately with the presentation of the physiographic and geognostic conditions. It comprises materials which were supplied by vast fluctuating floods from the mountain areas, incident to a very protracted period, during which the gradual advance of the shore line landward admitted the flood waters over the greater portion of the Coastal Plain. Probably during the early phase of this advance the alternate layers of very fine grained, vari-colored sands and thin seams of clay which formed Ten Mile Ridge were deposited from sluggish fresh water parallel to the shore line and served as an outlying reef or barrier which partly confined the Lafayette sediments to the vast flats within the said barrier, and at the same time largely excluded the free access of marine waters and its life forms. The eventual shore line, as indicated by the Lafayette sands and mottled clays, extended in contoured loops between the successive drainage systems, across Barnwell, Orangeburg, Richland, Sumter, Kershaw, Lee, Darlington, Chesterfield and Marlboro Counties; loops of cobbles extended along the scarps of the great tributary drainage systems to the foot of the mountains.
The inauguration of the great floods is marked in favored places by the survival of enormous deposits of more or less stratified sands and some mottled clays which followed the shore line as it retreated inland; then appear the sands and cobbles which were deposited high on the scarps of the inclosing ridges of the Savannah, the Congaree, the Wateree and the Great Pee Dee rivers along their courses from the mountains to and beyond the fall line. But let it be carefully observed that there are no marginal beds of cobbles along either the Edisto or Black rivers, whose waters originated in
the Coastal Plain; scattered pebbles are occasionally though very rarely observed, but there are no consistent beds such as should be expected if these cobbles had been distributed by the shore action of the sea, nor such beds as characterize the scarps of the Savannah, the Congaree, the Wateree and the Pee Dee flood streams. Lynches River, by reason of its comparatively short extent above the fall line, affords but a modest quota of the coarser Lafayette materials in its main manifestations near Kelly's Bridge, in the northwestern corner of Darlington County.

Each of these great flood streams left a trail of cobbles through the Crystalline Region wherever physiographic features obstructed the deeper degradation of the flood channels, and thereby created vast shoals above which occurred a great lateral expansion of the bed of the flood streams, along the margins of which more intense flood phases piled up beds of cobbles which have persisted; or perhaps in part where lateral obstructions narrowed the great channels of the flood streams, which, thus congested, spread far out over the neighboring upstream areas, and thus enabled possible ice floes to lodge on the high points and upon melting disgorge their contained burdens of cobbles, pebbles and sands which had been entangled in the mountain regions. In the Crystalline Region extensive occurrences of such deposits appear from 0.1 to 2.5 miles from the present channels, and at from 40 to 280 feet greater elevation; some of these beds extend to the foot of the mountains at the elevation of approximately $\mathrm{I}, 500$ feet. A noteworthy deposit of cobbles extends along both sides of the Seneca River (below Calhoun) with their marginal edges more than a quarter of a mile apart and at the elevation of 705 feet (M. L. T.), the river channel being 45 feet lower. At the head of the Saluda River (near Lima) vast beds appear to have been piled up at appreciable distances from, and much superior in level to the valley line; along the Wateree Valley an irregular basin several miles wide occurs above the line of Liberty Hill where a great intrusive mass of young granite crossed the line of Wateree River; high on the scarps of this basin beds of cobbles appear at an elevation of approximately 500 feet M. L. T.; on the ridge east of the Catawba River ( 5 miles N. W. Ft. Mills) at an elevation of 677 (M. L. T.), and about 300 feet above the river channel, a mantle of cobbles extends interruptedly for several miles.

The most accentuated points of disgorgement occurred along the margin of basins immediately below the fall line. Shell Bluff constricted the Savannah River, and created a northerly basin around which thick beds of cobbles occur as far as four miles from the
channel of the Savannah River and at the elevation of 480 feet, the zero water level of the river being 107 feet M. L. T. The Fort Motte Ridge with its tough Eocene backbone constricted the Congaree and Wateree Rivers, above whose point of confluence a pronounced band of cobbles and Lafayette sand occurs high on the northerly scarp of the basins between the rivers, at the elevation of 225.7 feet (M. L. T.), (Congaree zero water level iog. 6 feet.) The Pee Dee flood stream probably congested by the high ridge which crosses its course immediately south of Thompson's Creek disgorged its burden high up on the plateau at the Cheraw at the elevation of 144.0 feet M. L. T. Proceeding southerly these great flood streams attained the points where the Coastal Plain ridge lines declined below the level of their waters which were accordingly extended over the great intervening flood plains. The extension of the Lafayette materials appears to have progressed co-ordinately with the extension of the shore line inland, and not seaward as the shore line receded. There are, however, many instances in which the Lafayette cobbles and pebbles as well as other materials have been more or less disturbed and rearranged as the shore line receded seaward. The cobbles were probably deposited in ascending steps on the Coastal Plain ridges as the water gradually submerged their scarps and lower ends, and accordingly beds of these stones are observed along the ridges from near Luray in Hampton County, probably progressively deposited towards the Horse Creek Ridge in Aiken County.
Coarse sands, Lafayette cobbles and the Lafayette red sands and the white, and mottled red, white and yellow clays all followed the extension of the shore line up the Coastal Plain ridges which confined the flood streams. Along the approximate contours connecting the successive points of emergence of the ridges of the several flood systems, the coarser sediments in suspension extended irregular beds of pebbles, white sand, and Lafayette red sands, but no appreciable bodies of cobbles; these sands were similarly extended along the inclosing stream-scarps up to the several basins which characterized the access of the flood systems to the upper limits of the Coastal Plain; in the quiet waters within the reefs or barriers which excluded salt water the fine argillaceous silts deposited to form the white clays of the Hampton type, in favored localities, which constituted a belt extending from Garnet by Walterboro, by Summerville and thence easterly. While in the western area the Hampton white clays occur chiefly along a high ridge ( 60 to 100 feet M. L. T.) the eastern area affords similar matter, but in the form of third bottoms and in de-
pressed basins along the plateaus, at approximately corresponding elevations.

While these white clays accumulated in good bodies in elevated spots, along a favored zone, the argillaceous silts which were deposited more southerly appear in places inter-bedded in thin seams with fine, vari-colored sands.

The mantle of Hampton clay, mottled in highly contrasting pink, red, white and yellow designs, extends over the greater portion of the Lafayette area south of the littoral line, in conformity with the preëstablished topographic irregularities. Its extent may be observed from near Jamisons, in Orangeburg County, to Ladsons, in Berkeley County, a distance of approximately 69 miles. At this stage it is probable that the Marine Pleistocene beds were forming along the ocean beaches, afforded by the Ten Mile Sand Ridge which constituted an outlying barrier.

Upon the eventual retreat of the shore line from the fall line seaward, stimulated drainage and shore action effected various modifications in the form of the immediately preceding deposits which were in places greatly eroded; the coarse materials thus derived were progressively spread over the valleys of the Coastal Plain by the receding waters. The fine clayey materials of the loams progressively deposited in the quiet offshore and interfluvial waters, as the latter graduaily receded seaward, and at the same time the shore line followed with entrained sands over the loam of the plateaus and ridges; these sands variously disturbed by the winds represent the Columbia Phase.

Economic Deposits.-Cobblestones, "Cement Gravel," Brick Clays, and clays for plating sandy road-beds.

## CHAPTER IX.

## MARINE PLEISTOCENE.

Ten Mile Sands; Wadmalaw Shell-Marl; Bohicket GreenSand; Accabee Gravels; Wando Clays; Sea Island Loams.

## Ten Mile Sands.

North of Charleston a sand ridge varying in its surface elevation from 35 to 50 feet (M. L. T.) irregularly extends parallel to the coast and is characteristically exhibited at the water-works site below Otranto; also successively at the Ten Mile Hill, on CharlestonLanes railway (A. C. L. R. R.), and at Ten Mile Hill, on the Charleston-Branchville railway (S. C. R. R.), and at other localities
southwest and northeast of the type area. While the valley line at Nine Mile Bottom is at the elevation of io feet (M. L. T.) the surface at Ten Mile Hill attains the elevation of 47 feet (M. L. T.) and thence declines northerly to the Ingleside Flat, at io feet (M. L. T.) ; beyond which the mottled (Hampton) clays occupy the acelivity to Lincolnville ( 70 feet M. L. T.), thence by Summerville to Jamison, in Orangeburg County, and thence northerly along the ridge dividing the waters of the Edisto and the Congaree rivers.

The sub-surficial body of the Ten Mile Ridge is constituted of very fine grained, stratified, white, gray and pink sands with occasional thin horizontal lines of gray clay. It apparently afforded the littoral plain for the marine Pleistocene formations which appear along the southerly slope of this ridge; the northerly embayment which cut through this ridge to form Ingleside Flat (best observed near Otranto), introduced but few of the members of the elaborate series which occur on the ocean slope of the Ten Mile Ridge; the Accabee phosphate gravels are observed high on the northerly slope of Ten Mile Ridge.

Under the more elevated areas of the Ten Mile Ridge the stratified sands* rest on a yellow-red clay-sand without lines of stratification, the basal portion comprising water-bearing sands.

This ridge constituted the extreme outlying intermediary between the fresh water and the marine beds of the Pleistocene, and although grouped with the marine beds appears to have been predominated by fresh water antecedents. The surficial part of the ridge consists of a red clay-loam and clays which in places are capped with fine grained yellow and white sands which are of much more recent origin, for they extend southerly over the Bohicket sand marl, Wadmalaw marls, etc., and constitute parts of the sea island sands.

For section, see Marls. Sur. No. $441 / 2 / 2$.

## Wadmalaw•Marl.

Immediately overlying the Edisto marl, in the localities where phosphatized to form the great economic body of phosphate rock,

[^14]10-R. *R.-(500)
there occurs a bed of Pleistocene shells inter-bedded in fine grained, green-gray sands varying from nil to four feet in thickness. Its northerly limit appears at an elevation of about 5 feet (M. L. T.) to follow the upper margin of the submarine scarp scoured by the Ashley-Junction Channel. The succeeding Bohicket sand-marl into which it grades, overlaps the Wadmalaw marl and extends several miles more northerly.

The Wadmalaw marl is exhibited south of Bee's Ferry at the Faber place (Sur. No. 4II) and along the northerly shore of the Stono and Wadmalaw inland waterway at the Cherokee, Bolton and St. Andrews phosphate mines (Sur. Nos. 456, 457 and 458) and at the base of Simmon's Bluff (Sur. No. 464), also in the bed of Bohicket Creek and in depressions bordering Edisto Island.

Economic Deposits.-Shell beds offer a fairly good source of supply for agricultural marl.

For analyses, see Table No. 6.
For sections, see Marls, Sur. Nos. 456, 457, 458, 464

## Bohicket Marl-Sands.

Immediately overlying the Wadmalaw marl, and extending over a great portion of the phosphate area, there occurs a bed of exceedingly fine grained sands about five feet thick and similar to the matrix of the Wadmalaw marl into which it grades. The color is rendered gray-green and yellow-red by the fine glauconitic inclusions, portions of which have been more or less weathered with the effect of rendering the mass semi-plastic with residual clay; the iron has in part leached out, and cemented to "hard pan" a thin portion of the material immediately above the phosphate rock. Near Goodrich (Eight Mile Post) the Bohicket green-sand overlying the phosphate rock attains the elevation of 12 feet M. L. T. Its northerly or marginal limit rests on the southerly side of Ten Mile Ridge. As this stratum inclines seaward it becomes thicker. It is observed in Bohicket Creek near Rockville, extending in depth from 5 feet M. L. T. to 15 feet below M. L. T. where it grades to a thick bed of Wadmalaw marl. A blue-green color prevails at some localities.

The fine grained green-sand phase, as above described, is extensively exhibited overlying the phosphate beds at Goodrich near Nine Mile Bottom, and along the northerly flats of the Stono River, frequently with the Wadmalaw marls intervening. At Simmon's Bluff on Wadmalaw River the green sand phase, highly weathered, appears immediately superimposed on the Wadmalaw shell bed. The chem-
ical alteration of the Bohicket bed has formed at many places a ferruginous sandstone covering considerable areas below tide, which renders anchorage inconvenient. The phosphate rock in the bed of the Wando River is greatly ${ }_{e}$ mixed with similar ferruginous sandstone. This sandstone also appears near the mouth of North Edisto River, and in the Port Royal River.
The contour along which this sand-marl passes under tide level largely conforms to the southerly limit of the main inland waterway from Beaufort to Charleston, and thence by the Navy Yard northeasterly to the head of the Wando River and thence perhaps to the ocean.

The reworking of portions of the Bohicket marl-sands by more recent waters appears to have contributed the fine grained aluminous layer of loam which constitutes the soil of the Sea Island cotton, which does not appear east of the mouth of Santee River nor west of the estuary of Broad River. A narrow margin of material exposed directly to the ocean at Myrtle Beach suggests the equivalence of the Bohicket sand-marl.

Economic Deposits.-The lower portion affords marls which if obtainable would be of value for agricultural purposes.

For sections, see Marls. Sur. Nos. $411 / 2,256,457,458,464$.
Analysis of Bohicket Marl Sand (Survey No. 457).

| Lme. . . . . .. . 1.00 | Soda (Na2O) . . . . 1.19 | Sulphuric radical: . 47 |
| :---: | :---: | :---: |
| Magnesia.. .. .. . 11.91 | Potash (K2O) 1 Coj$)^{2.19}$ | Silica (and insolu- |
| Alumina. | Carbonic Acid (CO2) Phosphoric Acid | $\begin{gathered} \text { ble } \\ \text { Ignition........... } \\ 86.58 \end{gathered}$ |
| Titanic Oxide .. ${ }^{\text {a }} .36$ | (P2O6)........ . 10 | Molsture (ai $\left.100^{\circ} \mathrm{C}\right) \quad .5 .20$ |

## Accabee Gravels.

Resting on the Bohicket green sands a bed of coarse gravel ( $5 / 8$ inch diameter) occurs, and embraces rounded lumps of phosphate rock and numerous quartz pebbles ( $\mathbf{2}^{\prime \prime}$ ); its littoral line overlaps and extends more northerly than the Bohicket marl-sand. Along its northerly exposures it attains the elevation of 26 feet (M. L. T.). This bed, which is generally missing, attains in places the thickness of four feet, but ordinarily is quite thin; it affords the irregular seam of phosphate rock known to the miners as "flying rock." The Accabee Gravels entered embayments through the Ten Mile Sands and thus extended more northerly than any other marine Pleistocene phase and to greater elevations than any excepting the Ten Mile Sands.

The Accabee Gravels are well exhibited in a pit at Corn Hill near the Accabee Flats. Along the railway-cut a half mile north of Otranto a manifestation of this phase is observed in a thin layer of rounded phosphate rock, and pebbles, ascending with the valley surface from Goose Creek to the elevation of 21 feet (M. L. T.). On the northerly slope of Ten Mile Ridge these gravels are observed in a thin layer in the railway excavations of the Charleston-Lanes Railway (A. C. L. R. R.) ; they were admitted through the breach in the Ten Mile Ridge which connected Ingleside flat with the sea, and which now constitutes the Goose Creek basin.

At Liberty Hall (Foster's Creek) this plase is prominent. A pit on the Campbell place on Chechessy Creek exhibits this phase in its selations to the preceding and succeeding phases. The distinct "flying rock" phase extends brokenly over several of the phosphate areas, notably north of the Stono River in the vicinity of the Bolton mines.

The analysis of this upper phosphate rock varies with the composition of the more or less remote portion of the main phosphate bed from which it was transported and therefore does not necessarily conform to the composition of the immediate underlying phosphate bed.
Economic Deposits.-Affords in places limited supplies of phosphate rock, which are not of much importance.

For sections, see Marls, Sur. Nos. 394(S), 412, 44 ( S ) $=$ (Tem Mile), 457.

## Wando Clays and Sands.

White sands and a layer of drab clay (frequently stained red) successively overlie the Accabee gravels. This sequence is estabfished at Corn Hill above the Accabee Flats on the Ashley, and elsewhere; it occurs most extensively developed along Foster's Creek and Wando River. The base of the drab clay, along its upper limits on the Cooper, attains the elevation of 5.0 feet (M. L. T.) which declines to low tide level at Dean Hall, and is exhibited near tide level along Foster's Creek and Goose Creek, from which area it probably sweeps around by Accabee Flats, on the Ashley, and prooceds irregularly to the southwest, while from the Cooper exposures it extends northeasterly.

The clay formation is generally missing, but the Wando sands are widely distributed. They are characterized by the abundant ineloure of fine black particles, as may be observed at Simmons' Bluff
and at the base of the bluff along the southerly side of Wappoo Cut.
Economic Deposits.-The Wando clays have been extensively utilized in the manufacture of brick.

## Sea Island Loams.

The Sea Island loams extend from a point near McClellanville to the mouth of Broad River along a curved zone which approximately conforms to the inland waterway. They feather out on the Ten Mile Ridge in a progressively impoverished state. On the seaward side they are delimited by a barrier of sands, which are probably senior to the Sea Island loams; the extreme seaward border consists of recent sea sands largely accumulated through eolean forces.

It is worthy of note that the most highly developed Sea Island loams are along the zone of the Bohicket marl sands, which the writer has never observed in other terranes than the one above indicated, excepting, possibly, a limited occurrence at Myrtle Beach. It appears that the fine grained Sea Island loams were derived from the Bohicket marl sands by accentuated action of waters, which partly reworked the latter and deposited them over the Wando sands in the form of a fine glauconitic silt mixed with fine sands. Glauconite, consisting of a greenish granular sand composed of silica, alumina, iron, potash and phosphoric acid in chemical union, is readily disorganized by weathering agencies. Thus the alumina separates as a more or less plastic clay and thereby stiffens the soil, the iron is converted to yellow and red oxides, which afford the warm color to the soil, the potash and the phosphoric acid remain to become slowly available as plant food under the influence of the products of decaying vegetation. The resulting physical and chemical conditions appear essentially adapted to the development of the Sea Island cotton.
(See Bohicket Marl Sands for analysis.)
For section, see Marls, Sur. No. 412.

## RECENT PERIOD.

The recent formations consist of irregular beds of unconsolidated material which have accumulated since the cessation of the pronounced regional oscillations in the level of the earth's surface. They also include deposits which have formed where recent local subsidences have occurred, principally along the coast. They comprise: eolean sands; tide water sands, shell beds, and alluvium; fresh water alluvial deposits notably in the form of first bottoms; lacrustine or pond deposits; peat; and some soils. There are no recent volcanic scorias in South Carolina.

## CHAPTER X.

## GLOSSARY OF SCIENTIFIC TERMS.

Accessory.-A term qualifying the presence of those minerals which occur in rocks in subordinate quantities.

Acidic.-A term distinguishing igneous rocks containing more than 60 per cent. Silica ( $\mathrm{SiO}_{2}$ ) from the "Basic" rocks which contain less.

Allotriomorphic.-A term applied to those minerals in igneous rocks which are without independent crystal faces or boundaries, because they conform to the outlines of the spaces between the other minerals present.

Alluvial.-Relates to deposits of sediment usually derived from flood waters, or overflows; subordinately from lakes as lacrustine deposits.

Amorphous.-Applied to such dense mineral matter as is without crystal texture ; glass, etc.
Amygdaloidal.-Cellular structure in lavas in which the cavities are almond-shaped; caused by steam bubbles in the originally viscid mass.

Anisotropic.-Term applied to crystals which afford double refraction, or the property of resolving transmitted light into two rays vibrating in planes at right angles. This property extends in varying degrees to a large number of minerals in all crystal systems except the isometric. Vibration, in the number of directions in which the optical characters are symmetrical, divides these minerals into. (1) Uniaxial and (2) Biaxial.

Anticline.-Formation comprising strata constrained to a form convex to the atmosphere, or like a ridge. The line along the crest of the ridge is designated the anticlinal axis. Degradation frequently obliterates the ridge, but the subjacent mass exhibits the strata on the opposite sides of the axis with opposite dips.

Aphanitic.-Dense, fine, crystalline texture, comprising individual minerals too small to be distinguished with the unaided eye.

Aplite (or Haplite).-A textural distinction, discriminating the crystalline granular from the fine grained felsitic mixtures of quartz and orthoclase.

Aqueo-Igneous Action.-A metamorphic force, expressing the influence of water on minerals and rocks at high temperatures and under great pressure.

Arenaceous.-Containing sand. or fragments of hard rock smallerthan one-quarter of an inch. in diameter.

Barysphere.-Heated interior of the earth, too deep seated for direct observation. Supports successively the lithosphere, hydrosphere and atmosphere.
Basaltic.-Descriptive of a group of dark basic rocks; basalts; augites; diabases; melaphyres.
Basic.-A term descriptive of igneous rocks containing less than 60 per cent. Silica ( SiO 2 ).
Basis.-Vitreous amorphous aggregates resulting from consolidation of fused rock magma.
Batholith.-Plutonic rocks consolidated at depths, and subsequently exposed by erosion.
Bathymetric.-Relates to measurement of depths; usually applied to the ocean.
Bedded.-Applied to rocks resulting from consolidated sediments, and accordingly exhibiting planes of separation designated bedding planes.
Buhrstone.-A silicified limestone, cellular with the molds of fossil shells. Term applied by Tuomey to comprise certain lower phases of the Eocene.
Calcareous.-Containing carbonate of lime.
Clastic.-Sedimentary material, or the detritus of older rocks, which now appears both loose and consolidated.

Concretion.-An aggregation of concentric layers of mineral matter resulting from successive precipitations or depositions from solution; appears in spheroidal or discoidal or other approximately rounded forms, frequently in clusters.

Crenitic.-Mineral deposits from ascending springs.
Crustification.-A form of vein structure comprising successive crusts or layers of minerals or ores deposited from solution.
Crypto-Crystalline.-A form of texture presented by aggregates of crystals of a fineness so great as to be with difficulty discerned with the unaided eye.
Crystallinic Metamorphism.-A molecular change which renders an amorphous mineral body crystalline; as limestone to marble.
Detritus.-Loose fragments of rocks in unconsolidated beds formed by accumulation from adjacent high ground or by deposit from currents of water; may therefore be either angular or waterworn.
Dike.-Rocks injected from below, in a molten state, into fissures in the earth's crust.

Diluvium.-Sorted and unsorted glacial deposits.

Discoidal.-The form of a disk, quoit, or ordinary biscuit.
Drift.-Unsorted glacial deposits.
Dynamic-Metamorphism.-Metamorphic action in rocks inaugurated by physical or mechanical forces; frequently attended with chemical action.

Epigene.-Term applied to forces originating on the surface of the earth, in contradistinction to hypogeic or deep-seated forces.

Eruptive-A term ordinarily applied to igneous rocks.
Extrusive.-Applied to molten rocks effused in a mantle over a portion of the surface of the earth, and subsequently consolidated.

Extinction.-A term in microscopy relating to the extinction, by thin crystal sections, of rays of light received through a Nicols prism when the planes of vibration of the thin crystal line (at which this extinction occurs) express the extinction angle; of great service in certain microscopic identifications.

Felsitic.-Micro-crystalline texture typified in the felsites.
Foliated.-A schistose or laminated structure produced by metamorphism. The planes are frequently parallel to bedding planes.

Formation.-An extensive body of mineral matter, persistent in character.

Fragmental.-See Clastic.
Geodes.-Hollow mineral bodies; frequently spheroidal.
Granitoid.-Granular-crystalline texture; typified in common granite composed of minerals of approximately the same size, but rarely with crystal boundaries.

Groundmass.- The finer crystalline portion of a porphyritic rock which incloses the phenocrysts.

Holocrystalline.-Composed entirely of crystallized minerals.
Hypogeic.-Descriptive of deep-seated in contradistinction to the shallow or epigene forces operating on the earth's crust.

Idiogenites.-Ore deposits contemporaneous in origin with the wall rock.
Idiomorphic.-Relates to a component mineral exhibiting its definite characteristic crystal faces. When all the component minerals are respectively idiomorphic the rock is designated panidiomorphic. When some of the respective component minerals are idiomorphic and some are not the rock is described as hypidiomorphic.

Intrusize.-A generic term comprising igneous rocks which have consolidated as dikes, laccolites and batholites.
Laccolite.-Lateral extensions between sedimentary strata from dikes of molten igneous rock.
Laminated.-Consisting of thin plates, leaves or scales.

Lithosphcre.-The portion of the earth's crust subject to our observations through natural exposures and artificial openings.
Magma-Molten mass of igneoss rack, with a wide range of composition, affording dikes, batholiths, laccoliths, and effusive manties.

Marmorization.-The Grystallinic Metamorphism, or change of limestone, dolomite, etc., to marble or crystal forms.

Metachemic Metamorphism.-Change in composition and crystalline form without the substitution or addition of other mineral matter; largely an aqueo-igneous process. Feldspar to mica or hydromica, etc.

Metemorphism.-Reates to processes by which minerals in the earth's crust undergo certain changes in form, texture, or composition through pressure and stresses, through heat in conjunction with aqueous vapors, and through mineral solutions and gaseous bodies. Thus we have regional and local metamorphism both of which include in varying degrees, Dynamic and Statical Metamorphism, which in turn comprise "Crystallinic," "Paramorphic" and "Metachemic" or "Metasortatic" Metamorphism; treated in Glossary under their respective heads.

Metasomatism.-"The process by which a mineral has suffered, through chemical processes, a partial or complete change in its chemical composition", (Lirdgren).

Monocline.-Inclination or dip of a belt of rock in a single direction, without the counter-dip essential to either a syncline or an anticline.

Oolitic.-Aggregation of small rounded concretions resembling fish roe.

Orographic.-Relates to the crustal movements incident to folding and mountain making.

Paragentsis.-The orther of succession in which minerals were formed.

Pryanorphic Metamorphism.-Relates to change of physical state, or crystallographic system, without change of composition; as in case of pyroxene to hornbiende.

Pegmatite.-Formerly conceived to signify intrusive bodies of granite exhibiting prominent individual crystals of quartz, feldspar and mica, but now regarded as including simitat masses due to vein Formation, and to aqueo-igneans metarnorphism; in the latter sense extensive pegmatization occurred in the Archean rocks.

Pmeplain.-An area of geological formations whose surface has been reduced by erosion to an approximate plain.

Phenocrysts.-The crystals of prominent size in a porphyritic rock.

Pleochroism.-"That property which all anisotrophic minerals have, to a greater or less extent, of absorbing certain colored rays in certain directions, thereby showing different colors in different directions of transmitted light," (Luquer). Uniaxial and Biaxial minerals show respectively two and three differences in color.

Plutonic.-Term applied to igneous rocks consolidated at great depths, and therefore under great pressure, which induced a granitoid texture.

Pneumatolitic.-Relates to action through which minerals in igneous rocks were segregated by heated aqueous vapors which probably induced a semiplastic condition subsequent to the first consolidation of the magma; also applied to mineralization directly due to gases and vapors.

Poicolitic.-Speckled or mottled lustre of a crystal face due to minute inclusions of other minerals.

Porphyritic.-A term descriptive of the texture of rocks which comprise large crystals in a groundmass, which may be granitoid or vitreous.

Pseudomorph.-Mineral in a false form derived either from the chemical alteration of the original mineral, or by reason of its entire removal and replacement by new mineral matter from solution. Paramorphic pseudomorphs result from change of crystallographic system without change of composition.

Pyroschists.-Sedimentary rocks impregnated with bituminous matter.

Regional.-Extending over large areas in contradistinction to local or restricted areas.

Schillerization.-The process by which poicolitic texture is produced along some crystal planes by partial solution and subsequent infiltration.

Schlieren.-Applied to the smaller individual minerals the edges of which gradually merge into the groundmass of some igneous rocks in which they afford striking contrasts.

Schists.-Rocks in which metamorphic action has caused the constituents to recrystallize or rearrange themselves in thin laminx along the planes of which they split with more or less ease.

Slaty.-Descriptive of a distinct cleavage independent of any bedding planes.

Spherulites.-Small rounded aggregates formed in acidic volcanic rocks.

Statical Metamorphism.-The process affecting change in the form or texture of minerals in the earth's crust by virtue of the superimposed weight. Term used in contradistinction to dynamic metamorphism which involves stresses principally due to thrust.
Structure.-Comprises the larger physical features of rocks such as massive, stratified, gneissoid, etc., as distinguished from the minute physical aspects treated under texture.
Syncline.-Formation with the strata constrained concave to the atmosphere or in the form of a trough. The basal line along the trough is designated the synclinal axis.
Terrain (or Terrane).-A limited part of the earth's surface; frequently applied to the surficial area of some consistent geological series.
Texture.-Texture relates to the minute physical aspects of rocks such as porphyritic, granitoid, glassy, etc.
Till.-Unsorted glacial deposits.
Tuff.-The fine material ejected by volcanoes, and subsequently cemented to form rocks, or distributed as sediments by water.
Vitreous.-Dense glass-like texture.
Zonal Structure.-Descriptive of the structure of crystals formed in zones or layers of different chemical composition; the zone gradations are frequently almost insensible.

## WHOLESALE LIST PRICES ORES AND MINERALS—1007



Fire Brick:
Best American. . . . . . . . .f. o. b. shipping point-1,000 - $\$ 30.00$ to $\$ 40.00$
St. Louis No. 1. . . . . . ..f. o. b. shipping point-1,000 - $\$ 16.00$
Fire Clay. . .. . . .. . . . .f. o. b. shipping point-2,240 lbs.- \$2.50
Fluor Spar-lump. . . . . . . f. o. b. shipping point-2,240 lbs.-\$8.00 to \$10.00

## Fullers Earth:

Lump-per quality. . . . . . . . . . .f. o. b. N. Y. - $\mathbf{2 , 0 0 0}$ lbs. $\mathbf{\$ 9 , 0 0}$ to $\$ \mathbf{r 6 0 0}$
Granite:
Dimension--per quálity. . . . . . ..f. o. b. Quarry-cubic ft. - $\$ 0.35$ to $\$ 1.00$
Jetty Stone. . . . . . . . . . . . . ..f. o. b. Quarry-2,000 lbs.-\$ 0.65 to $\$ 1.00$
Crushed to $21 / 2$ inch size. . . . . ..f. o. b. Quarry-2,00 lbs. $-\$ 0.80$ to $\$ 1.00$
Crushed to $3 / 4$ inch size. . . . . ..f. o. b. Quarry-2,000 lbs.-\$ 1.00 to $\$ 1.25$
Graphite:
American Ore. . . . . . . . . . . . .f. o. b. N. Y.- 100 lbs.- $\$ 1.00$ to $\$ 1000$
Artificial. . . . . . . . . . . . . . . .f. o. b. N. Y.- 100 lbs.- $\$ 6.00$
Infusoril Earth:
American-(best ground). . . . . . .f. o. b. N. Y.-2,000 lbs.- $\$ 17.00$
Kaolin :
China Clay. . . . . . . . . . . . . . . .f. o. b. N. Y.-2,240 lbs.- $\$ 9.00$ to $\$ 12.00$
Ball Clay. . . . . . . . . . . . . . . . f. o. b. N. Y. $-2,240$ lbs. $-\$ 8.00$ to $\$ 10.00$
Lead:
Metal. . . . . . . . . .. .. .. ..f.o.b. N. Y.- 100 lbs.- $\$ 6.00$
Manganese:
Ore- $80 \%$ to $85 \%$. . . . .. . . . . ..f. o. b. N. Y.- $\mathbf{2 , 0 0 0}$ Ibs. $\mathbf{\$ 3 5 . 0 0}$ to $\$ 45.00$ Powdered-( $70 \%$ dioxide)... .. ..f.o.b. N. Y.-2,000 lbs.— $\$ 6.00$
Marble :
Georgia. . .. . . .. .. .. .. .. ..f. o. b. Quarry-cubic ft. -\$ 1.50 to $\$ 4.00$
Vermont. . . . . . . . . . . . . . . . .f. o. b. Quarry-cubic ft. - $\$ 2.00$ to $\$ 12.00$
Mica :

VALETE OF GHEET MICA．
The Price List Established for Cut India and Sheet Mica is ds Fohows：

| Bise． Inchees | Price Per Pound． | Size． Inches． | Price Per Yound． | Blize． Inches． | Price Per Pound． | size． Inches． | Price Par Pound． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \＄1．15 | $2 \times 24$ |  |  |  |  |  |
| $1 \times 41 / 2$ | 1.40 | 2 $\times 2$ | ．85 | 2129 $2 \times 10^{9}$ | 7．75 | $31 / 4 \times 6$ 3 | 8.75 |
| $1 \times 5^{1 / 2}$ | 1.75 | $2 \times 2$ 㐌 | ． 95 | 2 $2 \times 11$ | 8.8 | $3{ }^{31} \times 7 \times{ }^{1 / 2}$ | 8.80 |
| $1 \times 51 / 2$ | 2.15 | $2 \times 3 \times$ | 1.00 | 2 宕×12 | 10.28 | 36×8 | 9.25 |
| $1 \times 6$ | 3.65 |  | 1.05 | 2\％x $2 \%$ | 3.80 | $8 \frac{8}{4} \times 9$ | 9.50 |
| 1 1 $\times 7$ | 3.25 4.25 | （1）$\times 18$ | 1.15 | 2为× ${ }^{2}$ | 2.00 | $3 \frac{1}{4} \times 10$ | 10.75 |
| $1 \times 7$ | 4.25 4.25 | $2 \times 3 \%$ | 1.25 | $28 \times 31 / 4$ | 2.25 | $3{ }^{3} \times 11$ | 12.00 |
| $1 \times 8$ | 8.00 | $2 \times 414$ | 1.46 1.50 | $2 \times 3 \times 3$ | 2.50 | $3 \% \times 12$ | 13.00 |
| $1 \times 8 \%$ | C． 50 | $2 \times 4 \%$ | 1.65 | $2 \% \times 4$ | 3.25 | $4 \times 416$ | 7.09 |
| $1 \times 9$ | 6.00 | $2 \times 4$ \％ | 1.75 |  | 3.50 | $4 \times 5$ | 7.75 |
| $1 \times 16$ | 7.28 | $2 \times{ }^{-1}$ | 3．00 | $28 \times 48$ | 4.00 | $4 \times 51 / 2$ | 8.60 |
| $11 \% \times 1$ | 1.16 | $2 \times 5 \%$ | \％． 65 | $2 \% \times 4 \%$ | 4.50 | $4 \times 6$ | 9.00 |
| $113 \times 48$ | 1． 40 | $2 \times 6$ | 3.25 | $2{ }^{2} \times 5 \times 5$ | 5.25 | $1 \times 614$ $\times 1$ | 9.25 |
|  | 1.75 2.15 | 2 $\times 141 / 2$ | 3.75 | 2\％$\times 514$ | 5.50 | $4 \times 7$ 4 $\times 18$ | \＄9．50 |
| $12 \times 51 / 2$ | 2.15 | $2 \times 7$ | 4.75 | $24 \times 5 \%$ | 5.75 | $4 \times 8$ | 9.75 |
| 14×6818 | 3.68 | 2 $\times 7 \%$ | 5.00 | $88 \times 6$ | 6.25 | $4 \times 9$ | 10.00 |
| 14× 7 | 4.25 | $2 \times 8$ $2 \times 83$ | 6.25 6.00 | 2\％$\times 6.1 / 2$ | 6． 7.00 | $4 \times 10$ | 11.00 |
| 18×71／2 | 4.75 | $2 \times 8$ | 6.00 6.50 | 24x ${ }^{2} \times 1 / 4$ | 7.00 | 4 4 4 $\times 12$ | 12.00 13.00 |
| $14 \times 8$ | 5.00 | $2 \times 91 / 2$ | 7.25 | $2 \% \times 8{ }^{2 / 2}$ | 8.00 | $416 \times 4 \%$ | 7.50 |
| $14 \times 8 \%$ | 5.50 | $2 \times 10$ | 7.75 | $28 \times 81 / 2$ | 9.00 | $48 \times 5$ | 8.25 |
| $13 \times 9$ | 6.00 | $2 \times 11$ | 8.50 | $2 \% \times 8$ | 9.25 | $41 / 2 \times 1 / 2$ | 8.75 |
| $14 \times 10$ | 7.25 | $2 \times 12$ | 9.50 | $28 \times 91 / 2$ | 9.75 | $41 \times 6$ | 9.25 |
| $14 \times 8$ | ． 85 | $23 / 4 \times 23 /$ | 85 | $2{ }^{2} \times 10$ | 10.25 | $415 \times 61 / 2$ | 9.50 |
| $1{ }^{14} \times 2.4$ | ． 85 | $23 \times 2$ | ． 90 | $25 \times 11$ | 11.25 | $416 \times 7$ | 9.75 |
| 12．${ }_{1} \times 24$ | ．85 | $2 \% \times 2 \%$ | ． 95 | $2 \% \times 12$ | 11.75 | 4158 | 10.00 |
| 13\％${ }^{13 \%} \times$ | ．85 | $24 \times 3$ <br> 24 <br> 14 | 1.25 | $8 \times 8$ | 2.75 | $414 \times 9$ | 10.25 |
| 13x ${ }^{8}$ | .85 .90 | 21\％ $2 \times 314$ | 1.40 1.65 | 3 3 | \＄3．00 | $4{ }^{4} \times 10$ | 11.25 |
| $12 \times 3$ \％ | ．95 | 24×3\％ | 1.65 |  | 3.50 4.00 | 4\％$\times 11$ | 12.00 13.00 |
| 14×3\％ | 1.00 | $21 \times 4$ | 1.85 | $3 \times 4$ | 5.00 | $5 \times 5$ | 8.50 |
| $14 \times 4$ | 1.15 | $21 \times 44$ | 2.00 | $3 \times 44$ | 5.25 | $5 \times 53 / 2$ | 9.00 |
|  | 1.25 | $21 \times 414$ | 2.25 | $3 \times 4 \%$ | 6.00 | $5 \times 6$ | 9.50 |
| $14 \times 4 \%$ | 1.40 | $24 \times 4 \%$ | 2.50 | $3 \times 4 \%$ | 6.50 | $5 \times 61 / 2$ | 9.75 |
| 1305 | 1.75 8.15 | $24 \times 5$ $24 \times 54$ | 3.00 3.10 | $3 \times 5$ $3 \times 54$ | 7.00 | $\begin{array}{lll}5 & \times & 7 \\ 5 & \times & \\ 5 & 8\end{array}$ | 10.00 |
| $1{ }^{1 \%} \times 68$ | 2．16 | 24× $51 / 4$ | 3．10 | 3 3 $\times$ | 7.50 | 5 5 5 $\times 8$ | 10.26 |
| $11 / 2 \times 6 \%$ | 3.25 | $24 \times 6$ | 3.65 | $3 \times 612$ | 8.25 | 5 | 11.00 |
| $14 \times 7$ | 4.26 | $21 / 4 \times 61 / 4$ | 3.90 | $3 \times 7$ | 8.50 | $5 \times 11$ | 12.00 |
| $17 \times 71 / 2$ | 4.75 | $81 \times 6 \%$ | 4.15 | $3 \times 8$ | 8.76 | $5 \times 12$ | 13.60 |
| 13×8 | 5.00 | 24×7 | 5．00 | $\begin{array}{ll}3 & \times \\ 3\end{array}$ | 9.00 | $51 / 2 \times 53$ | 9.25 |
| 13x ${ }^{3}$ | 6.50 6.00 | 214×73／2 | \＄5．25 | 3 3 | 10.50 12.00 | $5 \% \times 6$ <br> 6 | 9.75 10.26 |
| $13 \times 94 / 2$ | 6.75 | 2\％×81／2 | 6.50 | 3 $3 \times 12$ | 12.50 | 6．$\times 8$ | 10.50 |
| $13 \times 10$ | 7.25 | $23 \times 9$ | 7.00 | $81 / 6 \times 814$ | 12.50 3.50 | 6\％${ }^{6} \times 8$ | 10.75 |
| 13011 | 8.00 9.00 | 2\％$\times 14 \%$ | 7.75 | $314 \times 38$ $34 \times 36$ 34 | 4.00 | $5 \frac{1}{4} \times 10$ | 11.50 |
| 13\％${ }^{1} \times 12$ | 9.00 .96 | 2\％$\times 10$ | 8.25 | $3 \% \times 3 \%$ | 4.50 | $5{ }^{5} \times 11$ | 12.00 |
| $18 \times 34 / 4$ | 1.00 | $24 \times 12$ | 8.75 | 34．$\times 414$ | 5.25 | $51 / 2 \times 12$ $\times 8$ | 13.50 10.00 |
| $18 \times 34$ | 1.10 | $2 \times 2 \times 1$ | 110 | $34 \times 4 \%$ | 6.00 | 6 $\times 61 / 2$ | 10.25 |
| $18 \times 3 \%$ | 1.25 | $2{ }^{5} \times 2 \times 2$ | 1.25 | $31 \times 4 \times$ | 6．50 | ${ }^{6} \times{ }^{1}{ }^{2}$ | 10.50 |
| 14×4 | 1.85 | 24×3 | 1.50 | $31 \times 5$ | 7.25 | $6 \times 8$ | 10.75 |
| $13 \times 4$ | 1.40 1.50 | 2\％$\times 314$ | 1.60 1.75 | $34 \times 514$ $34 \times 5$ | 7.50 | 6 <br> 6 | 11.00 |
|  | 1.65 | 2退× | 1.85 | 34×6\％ | 7.75 8.60 | $\begin{array}{ll}6 \\ 6 & \times 10 \\ 6 & \times 11\end{array}$ | 11.60 12.00 |
| $1{ }^{1} \times 5$ | \＄2．00 | $21 \times 4$ | 2.00 | $3 \mathrm{x} \times 7$ | 8.75 | 6 1 1 $\times 12$ | 14.00 |
| $18 \times 51 / 2$ | 2.40 | $2{ }^{2} \times 4 \times$ | 2.25 | $34 \times 8$ | 9.00 | 1 7 $\times 7$ | 10.75 |
|  | 8.00 | $210 \times 48$ | 2.75 | $34 \times 9$ | 9.50 | $7 \times 71 / 2$ | 10.75 |
| $\begin{aligned} & 1661 / 2 \\ & 14 \times 7 \end{aligned}$ | 8.60 | $28 \times 46$ | 3.25 | $31 \times 10$ | 10.50 | $7 \times 8$ | 11.00 |
| $\begin{aligned} & 18 \times 7 \\ & 16 \\ & 1 \end{aligned}$ | 4.50 4.75 | 214 $\times 5$ | 3.75 3.85 | $3 \times 14$ | 12.00 | 7 7 $\times 10$ | 11.25 |
| $13^{3} \times 8$ | 4.75 5.00 |  | 3.85 4.00 | $31.4 \times 12$ | 12.50 | $\begin{array}{r}7 \times 10 \\ \hline\end{array}$ | 12.00 12 |
| 13x83 | 5.75 | $23 \times 6$ | 4.60 | $3 \mathrm{x} \times 3 \times$ | 5.00 | $8 \mathrm{8} \times 8$ | 12.00 |
| $18 \times 9$ | 6.25 | $26 \times 61 /$ | 4.75 | $31 / 8 \times 4$ | 6.00 | 88 | 12.50 |
| $14 \times 34$ | 7.00 | $2{ }^{2} \times 7$ | 5.25 | $314 \times 4 \%$ | 6.25 | $8 \times 10$ | 13.00 |
| $14 \times 10$ | 7.50 8.25 |  | 5.50 | 3\％ 314 | 6.50 |  |  |
| ＊$\times 12$ | 8.25 | $83 \times 8 \%$ | 6.75 | 3 $3 \times 5 \times 4$ | 7.50 |  |  |
| $\times \mathrm{m}$ | ． 85 | $2 \% \times 9$ | 7.25 | 3\％．$\times 1 /$ | 8.25 | special | prices， |

From the above list there is a discount which fuctuates from 50 per cent． to 75 Per cent．
Molybdenum .f.ab. N.Y.- roolbs.- $\$ 170.00$
Monazite:
Guaranteed $97 \%$. . . . . . . f. o. b. Gaffney, S. C.- roo lbs.-\$10.00 to \$18.00Nickel :
Metal. f. o. b. N. X.- $100 \mathrm{lbs} .-$ $\$ 45.00$
Phosphate Rock. f. o. b. mines, So. Ca $-2,240 \mathrm{lbs}$. $\$ 5.00$ to $\$ 6.00$Pyrite (furnace size) :
Domestic-( $50 \%$ sulphur). . ..f. o.b. Charleston-2,000 lbs.- $\$ 5.00$ to $\$ 5.50$Imported-(50\% sulphur) . . . .f. o. b. Charleston-2,000 lbs.-\$5-50 to \$6.50Quartz:
Ground .f. o. b. N. Y. $-2,240$ lbs. $\$ 13.00$ to $\$ 15.00$
Lump Quartz. ..... f. o. b. N. Y.-2,240 lbs.-\$ 2.50 to $\$ 400$
Glass Sand .f. o. b. N. Y.-2,240 lbs.- ..... \$ 275
Talc. .f. o. b. N. Y $-\mathbf{2}, 000$ lbs. $-\$ 15.00$ to $\$ 25.00$Tin:
Ore-( $75 \% \mathrm{tin}$ ) ..... $\$ 28.00$

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## SUPPLEMENT

## MATERIAL: GOLD. SURVEY NO. 1985.

Area: Savannah.
Sub-Area: Hard Labor Creek. Location: Greenwood County; Bradley Mine; 2.5 miles Ver 0.9 mile east of Greenwood-Augusta railway.

Name of Owner or Representative (?): Maj. J. P. Ligon, Greenwood, S. C.
OBS-Abbeville-York Zone. This property is said to present an encouraging prospect from which an appreciable amount of free gold has been taken.

## ERRATA

Page 26 , line 19 , word 9 , should be "prior."
Page 335, line 16, add-venus (Artena) undulata, venericardia granulata, pecten Clintonius, balanophyllia ( Sp ).

Page 338. Figures should be numbered respectively 13 and 14.

## THIRTY-NINTH ANNUAL REPORT

OF THE

# STATE SUPERINTENDENT <br> OF EDUCATION 

OF THE

State of South Carolina

## LETTER OF TRANSMITTAL.

State of South Carolina, Department of Education, Columbia, S. C., Deeember I, 1907.

To His Excellency, M. F. Ansel, Governor of South Carolina:
In compliance with the law, I have the honor to transmit to the General Assembly the Thirty-ninth Annual Report of this Department, with accompanying documents, the same being for the scholastic year ending June 30, 1907, and including the receipts and expenditures of this office for the fiscal year ending December 3r, $1907 . \quad$ Respectfully submitted,
O. B. MARTIN, Superintendent of Education.

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## CHAPTER I.

## Reports and Recommendations.

## REPORTS AND RECOMMENDATIONS.

Gentlemen of the General Assembly:
Twenty-five years ago State Superintendent Hugh S. Thompsonwas closing his term of office after having done some very successfulfoundation and building work for a public school system in SouthCarolina. In order to accomplish results it was necessary then forhim to encounter a great deal of opposition. The statistics in hisreports of his last term of office show marked development con-trasted with conditions when he first assumed the position. Thisyear's statistics are very interesting when contrasted with those ofa quarter of a century ago. The following items are worthy ofattention :
1882. ..... 1907.
145,974. . . . Total Enrollment ..... 314,399
101,816....Average Attendance ..... 222,189
\$373.597.95....Total Expenditures ..... \$1,415,724.29
2,781. ....Number of School Houses. ..... 3,786
\$470,600.00. . . . Value \$2,120,000.00
3,413....Total number of Teachers ..... 6,044
7.... No. of Local Tax Districts ..... 501
$\$ 28,600$. . . . Amount raised by Local Taxation ..... \$326,072,96
None reported.Libraries ..... 1,007
None reported. No. of books in Public School Libraries. ..... 200,000

The appropriation, at the last session of the Legislature, of $\$ 50,000$ for State aid to high schools will mark an epoch in the progress of our school system. In addition to the development which has occurred in the public schools, the facilities for higher education have been very greatly improved.
Twenty-five years ago the Citadel and the South Carolina College had just been reopened and were getting fairly started, after the war and reconstruction. The denominational and private colleges were just beginning a new era of prosperity. It would be a conservative estimate to say that at least $\$ \mathrm{r}, 000,000$ have been added either in equipment or buildings to the colleges which were furnishing higher education to the boys and girls of the State in the early
eighties. The increase in endowments would approximate the same amount. Besides this, the State of South Carolina, during that period, erected three new State institutions, viz : Clemson, Winthrop and the State Colored College. The plants of these three institutions are easily worth one and a half million dollars. Private and denominational enterprises have erected Converse, Lander and Columbia Colleges during the same period. These, with the private academies and high schools which have been erected within the last few years, would add at least three-fourths of a million dollars to the total value of the educational property in South Carolina. Of course these figures do not indicate the full development which has taken place. The greatest improvement of all is found in the sentiment which supports the work, and in the desire which the people manifest for continued progress.
There are some points in the statistics of this year in contrast with last year which are favorable, and some which are not. The total average attendance last year was 218,862 . The total this year is 222,189 . This is especially encouraging in view of the fact that the enrollment did not increase. There was a decrease in the enrollment. The enrollment last year was 318,075 . The enrollment this year was 314,399 . In a number of counties the session was shortened, presumably because of a reduction in funds. Some counties miss the funds, which they have received from the dispensary, more than other counties. This is especially true in poorer counties. I believe that the Legislature will soon see the wisdom of making a State appropriation which will guarantee a certain per capita per child in the counties where the funds are smallest. If a general appropriation of $\$ 100,000$ or $\$ 200,000$ were made, providing first for deficiencies by counties, and afterwards for general distribution, it would have the effect of helping to strengthen the weak places and of aiding those who really need it most.

It will be noticed that the average length of the term has been very materially shortened in some counties. It will be necessary very soon to provide additional revenue from some source. The Legislature is the only body which can furnish the relief. Such relief should be furnished before the suffering becomes any greater. It is exceedingly appropriate that the State do more for the schools. It is a remarkable situation that South Carolina, as a State, does not do more for the elementary schools. The constitutional three-mill tax is a county and not a State tax. The poll tax and dog tax are district funds. Under the present arrangements dispensary funds are county
funds. And of course local taxes are district funds. The only help which the State gives is the appropriation for high schools and libraries. In several of our neighboring States the main funds are distributed as State funds. This gives a child in a poor county as good advantages as are given to a child in a rich county. The situation in our State can not be relieved by local taxation in the various districts, because some of the districts are too poor to raise sufficient money, even if they tax themselves to the limit of the law. I am sure that the appropriation would be well invested if the Legislature were to make an appropriation of as much as $\$ 200,000$ to be expended as above suggested.

## SCHOOL IMPROVEMENT ASSOCIATION.

The work of the School Improvement Association has attracted attention in other States. There are constant requests from various parts of the country for the plans of the organization and work of this active and patriotic association.' The report of the President, Miss Mary T. Nance, will be found in Chapter II of this Volume. In that report will be found many helpful and practical suggestions to communities which are striving to better school conditions.

This association now has more than 3,000 members and an organizer and organization in all the counties except two. It is expected that these counties will soon be organized, and then the work will be pushed more and more into local communities. The President of the School Improvement Association has issued several leaflets and bulletins giving information and directions in regard to beautifying the interior and exterior of the school houses. Special attention has also been given to the improvement of grounds. If this work can be sufficiently extended to the schools that need it most the good results will be incalculable.
One of the most interesting things done by the association was the awarding of $\$ 1,000$ in cash prizes to fifteen schools in various parts of the State which had made the most material improvements in a given length of time. This offer brought to the headquarters of the association a large collection of written descriptions and photographs of school houses "before and after taking," which would make angels both weep and rejoice. They would also give to any one a greater desire for the improvement of our country schools.
The work of this association has been made possible, first, by the desire for service on the part of the members, and second, by the liberality of the Peabody and Southern Education Boards. I think
it would be appropriate for the Legislature to give some recognition to this work. The association has already secured some funds for next year, but will need more. I shall suggest a plan which will not require any additional appropriation. It is this. The normal development of the library work does not demand as large an appropriation, as was necessary, for the establishment of that work, consequently, part of the library appropriation is returned to the treasury at the close of each year. It seems to me that it would be well to authorize the State Board of Education to use the unexpended balance, at the close of the year, in adding to the cash value of the prizes which are now accomplishing such good results. If this is done the association can guarantee at least one prize to every county and a few prizes to the State at large. This would give a great incentive to the county organizations.

This legislation could very appropriately come in as an amendment to the library law, because the various school improvement associations have for one of their objects the establishment and improvement of libraries.

## LIBRARIES.

More than a thousand libraries have been established in the State as a result of the enactment of the library law four years ago. In many communities the establishment of a library has been the entering wedge which has led to more and larger improvements. There is a restriction in the library act, which, I think, might now be re moved. It provides that schools which have special districts shall not be entitled to the benefits of the Act. Only the schools which operate under the general free school law of the State are eligible. Inasmuch as the appropriation is sufficient, and inasmuch as any rural school can get a library, at any time, I think it would be well to amend the Act as above suggested.

## HIGH SCHOOLS.

The progress in high school development, during the past year, has been remarkable in view of the difficulties attendant upon that work. On account of the vast and far reaching importance of this work, it is well that the progress has been gradual. When the foundations are more fully established by the amendment and improvement of the law, the development will be more rapid. Attention is invited to the very strong report to the High School Board by Mr.
W. H. Hand, Professor of Secondary Education in the University of South Carolina, and State Inspector of High Schools. This report, and his splendid year's work, are great contributions to the history of education in South Carolina. I believe that the Legislature, at the coming session, will be glad to make the necessary changes in the high school act, which was passed a year ago. Great caution was exercised by the committee which.drew the bill, and by the Legislature itself. The restrictions put upon the communities wishing to establish high schools, however, were too severe. We have found from experience and from investigation in other States, that the two main requirements should be that at least 25 children be assembled in one place for high school training, and that they must be well taught by at least two teachers. If the inspector finds that the community is able to qualify upon these two points, then the appropriation should be made. I think, too, that the appropriation should be a definite amount regardiess of whether the community is rich or poor. A slight difference might be made between a four-year high school and a three-year high school, or between a three-year high school and a two-year high school, but the basis should be uniform. For instance, if the Legislature were to provide $\$ 500$ for a two-year high school, $\$ 600$ for a three-year high school, $\$ 700$ for a four-year high school, then a three-year rural high school with thirty students in its high school department, would get the same amount as a three-year high school in a city of 20,000 and with 200 students. The Legislature manifested a commendable desire to aid rural and small town communities. Under such an arrangement as I am now suggesting the cities would not obtain the lion's share of the appropriation, but they would secure enough to get the advantages of being a part of the State's high school system. They would also give back great advantages to communities which are not able to establish high schools. In several of the larger towns the doors of the high schools have been thrown open to the country children, and in a great many cases these advantages are being eagerly utilized.
It will be far better to have the Act fix a definite appropriation for the high schools of the various classes. The State High School Board has found it very difficult to devise regulations which will meet differing conditions in various localities. There has been some misunderstanding as to just how much a school is entitled to under the Act. Some communities do not discriminate between the basis and the limit. Some also got the impression that the aid amounting to 50 per cent. of the funds raised locally means that they will receive
$\$ 1.00$ every time they raise $\$ 1.00$, instead of $\$ 1.00$ for $\$ 2.00$. If all of them can know in advance just how much aid to expect, and how much to work for, I believe the results will be better.

If amendments conforming to the above suggestions are adopted there will be a healthy and vigorous demand on the part of enough communities, in all parts of the State, to use up the entire $\$ 50,000$ appropriation. I believe there will soon be more than that.

## KINDERGARTENS.

Allow me to call attention to the very excellent discussion of kindergarten principles and the need of a kindergarten law in this State, by Miss Minnie Macfeat of Winthrop College. This discussion will be found in Chapter IV of this report. At the same place will be found a copy of the Florida law on this subject. The Kindergarten Association of South Carolina, of which Miss Marion Hanckel of Charleston is the President, is very anxious for a similar recognition in this State to that which is given to the kindergarten by the Florida Legislature. I believe that their request is fair, reasonable and equitable. If such a law were passed in this State it would allow children in the kindergarten to be counted in the public school enrollment. This would only apply where as many as twenty-five children should be assembled in one place, and where the principal of the kindergarten should be properly accredited and certificated. Cotton mill communities would get the main benefits. It would result in improving kindergartens already established, and also in the establishment of a great many new ones. Several of the women's colleges in the State are preparing kindergartners, so that it will not be difficult to get a supply of trained teachers. In mill communities many of the larger children of school age can not go to school because they have to work. In many cases, too, the mothers have to work, so that it will be both equitable and advantageous for the small children to be enrolled in the kindergarten, and to be properly cared for there.

The question of the constitutionality of such a law may arise. The Constitution provides that the General Assembly must provide schools for all children between the ages of 6 and 21. It does not restrict or prohibit the Legislature from providing for children who are under 6 years of age. I have visited kindergartens in various communities in the State, and have noted the progress of the children from year to year. The development of children who have such advantages is phenomenal. I certainly hope thet the Legislature will pass an Act similar to the Florida law.

## IMPROVEMENT IN COURSE OF STUDY.

A great deal has been dorie recently by way of improving and enriching courses of study. This is especially true with regard to industrial and commercial branches. .Some of the most progressive school men in the State have visited schools in other States, which have complete industrial courses from the kindergarten through the high school. Some of the schools are having marked success with commercial branches. A few are getting started with elementary agriculture and horticulture. The underlying principles and methods of this work are splendidly set forth in an address delivered by Dr. Seaman A. Knapp, who has charge of the Farmers' Co-operative Demonstration Work in this and other States for the United States government. This address was delivered before the State Teachers' Association at Chick Springs. It is highly desirable that the teaching of agriculture be pushed, but a proper foundation must be laid. It has been difficult to get teachers trained for this work. Now that the Agricultural Department at Clemson has a large enrollment, and these subjects are being well taught at Winthrop, we may soon expect to have them extensively introduced into public schools. The same is true in regard to various forms of mechanical training.

The following letter was recently issued to the County Superintendents in regard to the teaching of agriculture in the regular public school course of study:

October 28, 1907.

## To the County Superintendents of Education.

My Dear Sir: I wish to call your especial attention to the importance of teaching elementary agriculture in the public schools.
"Teach the great masses of the people how to produce something, as well as how to speak and write something, and we have filled an aching void which has long existed in our educational system."

Without the intelligent development of our agricultural resources, we cannot hope to permanently and satisfactorily build or maintain any of the other great industries of institutions so necessary for our intellectual progress and material prosperity. Taxation is based upon wealth, wealth is based upon our ability to produce, and our ability to produce is based upon our knowledge of mother earth, her highways and byways, whence comes all wealth primarily.

Will you not make a special effort to introduce this subject in all your public schools?

Hunnicutt's "Agriculture for the Public Schools" has been adopted by the State Board for use in the public schools, and wherever it has
been introduced it has proved interesting and helpful, not only in the school room, but very beneficial to people of the community. Sincerely yours,

O. B. MARTIN,<br>State Superintendent of Education.

## COUNTY SUPERVISION.

The best business men frequently find that it is necessary to invest more money in order to save investments previously made. I believe that it would be good business judgment, on the part of the Legislature, to spend more money on County supervision in order to get full value of the money annually invested in that work. The salaries of the majority of our County Superintendents do not justify the Superintendents in devoting their entire time to their official duties. Many of them do not devote more than two days in the week to their work. They advertise Saturdays and salesdays as their office days. In addition to this they do some field work, but they are forced to devote a good part of their time to making a living for themselves and families. This is not only dividing time, but worse than that, it is dividing interest and attention. To be a successful County Superintendent it is necessary for a man to be engrossed in that work. He must think about it while he is in the office and also while he is outside. I do not believe that it is possible for a man to serve conflicting interests at the same time.

There has been considerable improvement in salaries of Superintendents during the past few years. Still we are far behind some of the other States in this respect. The salaries of the Superintendents in the various Counties are as follows:
Abbeville ..... $\$ 700$
Aiken ..... 700
Anderson ..... 900
Bamberg ..... 5
Barnwell ..... 800
Beaufort ..... 400
Berkeley ..... 400
Charleston ..... 1000
Cherokee ..... 600
Chester ..... 600
Chesterfield ..... 500
Clarendon ..... 625
Colleton ..... $\$ 500$
Darlington ..... 800
Dorchester ..... 450
Edgefield ..... 600
Fairfield ..... 500
Florence ..... 900
Georgetown ..... 700
Greenville ..... 700
Greenwood ..... 600
Hampton ..... 550
Horry ..... 400
Kershaw ..... 700
Lancaster ..... 600
Laurens ..... 750
Lee ..... 600
Lexington ..... 000
Marion ..... 800
Marlboro ..... 700
Newberry ..... 800
Oconee ..... 700
Orangeburg ..... 850
Pickens ..... 700
Richland ..... I 200
Saluda ..... 450
Spartanburg ..... 1200
Sumter ..... 900
Union ..... 500
Williamsburg ..... 600
York ..... 800
In Bamberg the Auditor is ex-officio Superintendent. Leaving out Bamberg the average salary of the Superintendents in the State is $\$ 684.371 / 2$. A man who is fit to be County Superintendent can easily make more than this in some line of business, or on the farm. If this is generally true of the average, it must be strictly true in the instances that fall below the average.
On October 8th I addressed a letter to the various State Superintendents of the United States, asking the following questions:

1. What is the average salary of your County Superintendents?
2. What part of their time is devoted to their work?
3. Has your State made any recent improvement in its laws on supervision?
4. How are your County Superintendents chosen?
5. Is any educational qualification required?

I shall select some replies from ten typical cases.
In reply to the question, "What is the average annual salary of your County Superintendents?" the replies are as follows:
Colorado . . . . .. .. .. . . . . .. .. .. .. .. .. .. . .\$1062.71
Florida, more than . . . . . . . . . . . . . . . . . . . . . . . .. 1000.00
Iowa . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1250.00
Indiana . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1400.00
Maryland . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1304.00
Minnesota . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . II00.00
Mississippi . . . . . . . . . . . . . . . . .. . . . . . . . . . . .. 1000.00
North Dakota .. .. . . .. .. . . .. .. . . .. .. . . .. .. 1300.00
Wisconsin . . . . . . . . . .. . . . . . . . . . . . . . . . .. .. 1000.00
West Virginia . . . . . . . . . . . .. . . . . . . . . . .. .. 850.00
Some of the States have still higher salaries.
Of course it will be remembered that in some of these States the counties are smaller than ours.

In response to the second question, "What part of their time is devoted to their work?" the answers from the same States were as follows: Seven of the above named States said all of the time of the Superintendent is devoted to his work. Two of the others said three-fourths, and one said that all Superintendents getting over $\$ \mathrm{l}, 000$ per year devoted all their time, while the others devoted threefourths.

The replies to the third question indicated that some of the Superintendents have been paid very good salaries for several years, while in other cases improvements have been made recently. This is especially true of the Southern States.

The fourth question, "How are your County Supedintendents chosen ?" revealed the fact that a majority of the County Superintendents are elected by popular vote. Some of them are elected by Boards of Education, who are themesives elected by the people. A few of them are elected by appointive boards. Most of them hold office for four years. A bill was introduced in our Legislature at the last session to make the terms of office of the County Superintendents and Supervisors four years instead of two. It is to be hoped that this
bill will receive favorable consideration at the coming session. It seems to me that there is as much reason for a four-year term for these officers as there is for other officers who now hold for four years. A County Superintendent gets his work only started in two years. The people do not understand his plans and purposes. In four years' time, if he is wise and aggressive, he can show some results which will meet with approval. If he has to stand for election every two years, a great deal of his valuable time is taken up with a political campaign which might be devoted to educational work.

The answers to the fifth question show that about half the States have an educational qualification for County Superintendents. I do not believe that we can provide such a qualification with our present system of examinations, because the County Superintendent telps conduct the examinations. He would be required to examine his opponents. This would be embarrassing, to say the least.

A bill is now pending in the Legislature providing for a change in the salaries of the County Superintendents. This bill provides pay in accordance with the number of days' work done. The total number of days is limited in proportion to the size of the County, and to the number of children enrolled in the schools. This bill may require some slight amendment, but I believe that the principle of it is correct. If such a law is enacted it will mean much for the schools. A County Superintendent is the key to the whole situation. If he is a leader, the schools will develop. If he is not, he blocks the efforts of others. Improvements in this line will mean improvements in all lines of endeavor.

## IMPROVEMENT IN THE METHOD OF CONDUCTING TEACHERS' EXAMINATIONS.

There is an urgent need for improvement in our method of conducting teachers' examinations. This demand has been expressed by some members of the Legislature, both in conversation and in bills. The State Board of Education also appointed a committee to make investigations along this line. The County Superintendents' Association, two years ago, passed a resolution suggesting just such a plan as I shall outline below.
I have recently investigated the methods of conducting teachers' examinations in the different States of the United States, and I am confident that some similar method to the one used in a majority of the States is the best one. I, therefore, recommeend the passage of a
bill which will provide that the examination shall be conducted by the various County Boards of Education upon questions prepared by the State Board of Education, as is now done, but with the following differences:

Each applicant to be required to put his name in a sealed envelope to be filed in the office of the County Superintendent of Education, and then use numbers only on his papers. The County Board would then forward the papers to the State Board by numbers, and the members of the State Board would not know whose papers were being examined. The marks would be returned to the County Board still using the numbers. The County Board would pass upon the applicants' qualifications as to character and professional experience. The County Board would also issue the certificates, supplying the names from the sealed envelopes. I believe that this method will conduce to system and uniformity. It would make it easier for certificates to be recognized in one county although issued in another. Some counties now refuse to recognize certificates from other counties. This plan would not work any hardship. Merit would certainly win. I do not believe that there would be fewer certificates than we have under the present system. In Horry County at the October examination there were forty applicants and only nine certificates were issued. This ratio would not vary so much in the other counties. There were 833 applicants in the whole State at this same October examination. Of course it will appear at once that this would put a great deal of work upon the members of the State Board of Education. They could do it more easily than anybody else because they prepare the questions under the present system. Some plan would be necessary in order to give additional remuneration for this work. The appointive members of the State Board of Education get less than $\$ 75.00$ per year apiece, and out of this pittance they pay their expenses back and forth to Columbia several times during the year. They should be allowed the same per diem which they get now for a limited number of days in which to examine these papers. This money could be provided, either by appropriation, or by charging a small fee for the privilege of standing this examination. The customary fee in other States is $\$ 1.00$, in some it is more than that. Such a fee would provide sufficient funds to pay the additional expense and at the same time have a deterring effect upon floating applicants who simply practice from year to year upon the County Boards. It would require them to study and prepare. I believe that if this plan is enacted into law that it will have a beneficial effect upon our schools.

## COMPULSORY ATTENDANCE.

In order to get information upon the subject of compulsory attendance, the following letter was sent to all of the Superintendents of States and Territories in the United States:
"Columbia, S. C., June 8, 1907.
"Dear Sir: Please answer the following questions at your earliest convenience, and oblige,

> "Sincerely yours,
> "O. B. MARTIN, "State Superintendent of Education:
"r. Have you a compulsory attendance school law in your State?
"2. If so, is it thoroughly enforced?
" 3 . What is the approximate annual cost of the enforcement of your law?
"4. Do you have truant officers?
"5. If so, how are they appointed?
"6. Do you think that it is practicable or possible to enforce a compulsory attendance law without truant officers?
" 7 . What was the increase in your attendance last year?
" 8 . What was the percentage of increase?
" 9 . Does your law apply alike to the whole State or is there a local option feature to it?"
Forty-five replies were received. Of this number thirty-three gave an affirmative reply, and twelve a negative as to the existence of a compulsory law in their respective States.
Only 32 of the Superintendents answered the second question in regard to the thorough enforcement of the law. Fourteen answered simply "Yes," and to "No." The others gave various answers, such as the following: "It is well enforced in the cities." "No good in the country districts." "Great effort is being put forth by the administration to enforce it." "Not in all sections." "Never has been enforced." "No good, pay no attention to it." "Fairly well."
The answers varied greatly as to the annual cost of the enforcement of the law. Nineteen Superintendents reported that they had no way of knowing, because the money was paid out by local or county authorities. One Superintendent reported \$25,000. Another State, Indiana, $\$ 53$,145.19. Another said $\$ 2.00$ per day for each officer for each county. Another gave $\$ 500$ to $\$ 700$ per county. Another gave $\$ 25.00$ to $\$ 50.00$ per month for each officer. New York State has 1,400 truant officers.

The fourth question. "Do you have truant officers?" Twenty-six answered "Yes" and five answered "No." It is noticeable that all of these five reported that the law was not thoroughly enforced in their States. The answers to this question were modified by such statements as the following: "We have truant officers in towns of more than 25,000 people." "We have from one to five truant officers in eack county." "Under the old law the chairman of the board was charged with the enforcement. Under the new law we have truant officers." One Supérintendent reported "Truant officers in the cities and the County Superintendent acting as truant officer in the country."

Nineteen States reported that truant officers are appointed by local boards. Eight say that they are appointed by local boards in the city and county boards in the country. In one State truant officers are appointed by the County Superintendent and are responsible to him. In another State they are appointed by the Probate Court. In one State the sheriff and deputies act as truant officers.

Thirty-six Superintendents answered the question as to whether it is practicable or possible to enforce a compulsory attendance law without truant officers. Thirty answered "No." Six answered "Yes," but qualified their answers with such statements as "It depends upon the community." "But is is better with them." "I think it is." "I think so in rural districts." It is noticeable that these six replies come from States which have never had any experience with compulsory attendance laws. Not a single Superintendent in any State where there is a compulsory attendance law says that such a compulsory law can be enforced without truant officers.

Of course the answers varied greatly as to question No. 7 in regard to increase in attendance. A great many of the Northern States show no increase or very slight increase. It is noticeable that the Southern States, which have no cumpulsory laws, are increasing in attendance much more rapidly than any other States anywhere in the country. This is attributable more to the rapid development and prosperity of the country. For instance, the increase in Georgia was 37,000 , while the increase in New York was about 22,000 . The increase in South Carolina was 18,000 , while the increase in New Jersey was only 600.

Answers to question No. 8 simply showed percentages in conformity with the figures in question No. 7.

Only 28 replies were received to question No. 8. Twenty-three showed that the law applies to the entire State. Two show a local
option feature which allows people to yote as to whether the law will take effect. Three have a feature which makes it optional with local boards as to whether they shall appoint truant officers.

After making this investigation, I find that I reach the same conclusion which I reached last year. We need to systematize our school organization more than we need a compulsory attendance law. In fact I do not see how it is possible to enact and to enforce an effective compulsory attendance law until our school organization is strengthened. If I had my choice between a bill to improve our system of supervision and a compulsory attendance bill, I should not hesitate to vote for the supervision bill. We need to raise our standard of qualification for teachers. I believe that this will have to be done before a compulsory attendance law will be effective. I really believe that a compulsory attendance law will do more harm than good in the present condition of our school system.

## CONSOLIDATION AND TRANSPORTATION.

In many sections of the State there is a gradually growing public sentiment in favor of strong centralized schools rather than weak scattered ones. There are a great many instances of consolidation of districts and more of consolidations of schools. In many instances transportation follows consolidation logically. Transportation at public expense, or by local co-operative effort, will be adopted more generally as soon as the public realizes its advantages and the small cost attached to it. An ordinary farm wagon can be arranged so as to be well adapted for this work, by putting spiral springs under the body, and by putting on a cover similar to that used on an ordinary delivery wagon. One of the larger boys can act as driver, and the wagon follows a regular schedule on the public road, similar to that made by the rural free delivery, in the mail service. The children come out to the public road to meet the wagon at a certain time. It can be arranged also to work the horses during school hours, and in this way the expense can be reduced to a minimum.

Children get far better advantages in a centralized school, with three or four teachers and one hundred pupils, than they do in small one-teacher unclassified schools.

The following letter was received from Supt. McCullough, of Williamsburg. It is an excellent description of a healthy growing public sẹntiment for consolidation:

# County Superintendent of Education, Williamsburg County, <br> Kingstree, S. C., Nov. 25, 1907. 

Supt. O. B. Martin, Columbia, S. C.
Dear Sir: Replying to your circular letter of Nov. 16, or that part of it referring to "Striking instances of consolidation within the last year." It usually takes more than one year, sometimes several years, to bring about a satisfactory state of consolidation of schools in a community. A number of communities in Williamsburg County are just now in the consolidation process, but the work is not finished. In several communities we have the finished instances of Prospect, Johnsonville, Union, High Hill, Cedar Swamp, all with special tax, and well equipped buildings. In the incomplete stage we have Pergamos, Indiantown, Scranton and others, where they expect to put in nice buildings the coming year. As Cedar Swamp School, District No. 28, is the most recent finished instance of consolidation, I call your attention especially thereto. Three years ago, in a territory of 20 square miles, were four whtte schools and one negro school, with a white attendance of about 55 . The consolidation sentiment began to grow, and a large majority of the patrons were in favor of a single school centrally located in the neighborhood. The territory interested being in old School Districts, Nos. 7 and 8, each with nearly 100 square miles and 8 or 10 schools, difficulties in establishing such 2 joint school arose which made the desired arrangement impracticable, if not impossible. A petition was made for a new school district and unanimously signed by the patrons. A special four-mill tax was voted without opposition. During the last year the patrons raised, in festivals and other entertainments, including hauling of lumber, etc., $\$ 500$ towards a building, and procured from the County Board of Education onehalf that amount. They have now a neat building worth $\$ 800$, ceiled, painted and furnished, centrally located on 1 1-2 acre lot and paid for. The total fund this year for this school is about $\$ 700$, and the present enrollment 80 . Every child of school age in the district is attending. The average attendance is far better than formally, and parents have not near so much difficulty in getting their children to go to school on bad days-the little fellows want to go even in weather too bad for them.

With best wishes,
Yours very truly,

J. G. McCULLOUGH.

## BETTERMENT OF SANITARY CONDITIONS.

A committee from the State Board of Health appeared before the State Board of Education at its meeting at Chick Springs in June and asked for the co-operation of the board in securing systematic irspection of sanitary conditions in the various public school buildings in order to prevent the spread of contagious diseases. They also advocated the examination of children with a view of detecting troubles with eyes, ears, noses and throats. Some of the leading States in the United States have very valuable legislation along these lines. The State Board of Education passed the following resolution in regard to this work:

Resolved, That we, the State Board of Education, unanimously approve the movement on the part of the State Board of Health looking to the betterment of sanitary conditions in the public schools, and that we pledge our hearty support to the recommendations presented to this body by the committee on the sanitary inspection of schools State Board of Health.

## SUMMER SCHOOLS.

Inasmuch as there was some doubt about the appropriation for Summer Schools, and because many teachers wished to attend the Jamestown Exposition, it was thought best not to undertake any Summer Schools during the past year.

Summer Schools have been conducted regularly in this State for the last eight years and they have accomplished a great deal of good, not only in giving the teachers technical instruction, but also in bringing teachers together from various sections of the State and enabling them to get the advantages which come from comparison and association. Heretofore these schools have been run with Peabody money, dispensary money and the income from the permanent school fund. There is no prospect now of getting any funds from the two first named sources. If the Summer Schools are to be continued upon a basis somewhat similar to those of recent years, it will be necessary to provide additional appropriations. The income from the permanent school fund could be assigned to the State Summer School, and County Boards might be authorized to set aside a limited amount of funds for district or county schools.

It is highly desirable that special training be given to the teachers of the various high schools. Some special provision ought to be
made for this work. It will mean a great deal to the unity of development if these teachers can be brought together for at least a month each summer.

For the past several years the State Superintendent of Education has actually conducted the State Summer School. It has taken an enormous amount of time before, during and after the school. This makes it impossible for the Superintendent to give proper attention to the numerous other matters which should claim his attention. It seems that it would be better for State Summer Schools hereafter to be conducted by one of the State colleges, subject to the supervision of this department only in a general way. It may be necessary to conduct schools at different places, in different years. This department could have something to say as to the location of the school, and after that the institution would be responsible.

## NEEDS OF THIS OFFICE.

Some time ago I addressed a letter to some of the neighboring State Superintendents asking some questions in regard to salaries and expenses in their offices. I submit the replies:

In answer to the question: "What is the salary of the State Superintendents?" the following results are shown: Alabama, $\$ 3,000$; Georgia, $\$ 2,000$; Florida, $\$ 2,500$; North Carolina, $\$ 3,000$; Tennessee, $\$ 2.500$; West Virginia, $\$ 3,000$. South Carolina pays $\$ 1,900$, which is one of the very lowest in the United States. Several of the above named States have recently raised the salaries to the figures indicated.

Another question was: "How many clerks or assistants are provided for your office?" The replies were as follows: Alabama, 4; Georgia, 2; Florida, 3; North Carolina, 3; Tennessee, 2; West Virginia, 5. As to the salaries of these assistants, Alabama pays $\$ 1,800$, $\$ 1,500, \$ 1,500, \$ 750$; Georgia, $\$ 1,200$ and $\$ 900$; Florida, $\$ 1,500$, $\$ 1,200, \$ 720$; North Carolina, $\$ 1,500, \$ 900$; Tennessee, $\$ 1,500$ and $\$ 900$; West Virginia, $\$ 1,800, \$ 1,500, \$ 1,200, \$ 900, \$ 900$. South Carolina pays $\$ 1,200$ and $\$ 600$ for this work.

In the important matter of printing, the Alabama Superintendent is unlimited, Georgia the same, Florida allows $\$ 2,000$, North Carotine "whatever is needed." Tennessee $\$ 5,000$ and West Virginia $\$ 9,000$. South Carolina allows $\$ 1,000$, and out of this a register must be furnished to every teacher in the State, which is not the case in some other States. In the above named States the Superinten-
dents are allowed $\$ 500$ to $\$ \mathrm{I}, 000$ for traveling expenses. In South Carolina the limit is $\$ 300$.

The printing account has also been exhausted for some time and the requests from schools for needed blanks and pamphlets must be denied. The other accounts of this office are correspondingly small, and, worst of all, there are no permanent office rooms. Consequently the records and files of the department can not be properly classified and preserved.

From my experience and knowledge of the needs of the office, I do not hesitate to urge that the salaries of the State Superintendent and assistants be raised somewhat in conformity with the amount of work done. The accounts for printing, stationery and traveling expenses should also be increased, as the work is handicapped by the smallness of these appropriations.

It is impossible to conduct the work as effectively and systematically as it should be conducted without permanent office rooms. The failure to make this appropriation will be more and more injurious as the years go by. I had a case in point not long ago. In planning a teacher's register to be used by all the teachers in the State, I tried to find copies of all of the registers which had been devised by former State Superintendents. I could not go back further than to one prepared by Supt. McMahan, my immediate predecessor. Of course, it was desirable that I include the good features of all of them. The same is true in regard to filing reports from other States. There will be many similar matters in other lines of the work unless office rooms are provided with space enough for the proper filing of extensive records. It is impossible for me to urge the importance of this matter too strongly.

## CONCLUSION.

For the past several years the Legislature has done something at each session for the encouragement and improvement of our schools in some way. I hope that this session of the Legislature will be especially productive of good along these lines.-

Respectfully submitted,
O. B. MARTIN, State Superintendent of Education.

## CHAPTER II.

## Association for the Improvement of Rural Schools.

## REPORT OF THE PRESIDENT.



## A REVIEW OF THE WORK OF THE ASSOCIATION FOR 1907.

The South Carolina School Improvement Association held its annual meeting for 1906 at the College for Women, in Columbia, S. C., from December 31 to January I, 1907. The program that was carried out at this meeting was very instructive and helpful.

Nearly every county in the State was represented by at least one delegate. The delegates brought written reports of the conditions and needs of rural schools in their respective counties. Much time was devoted to the reading and discussion of these reports, from which we feel that great good resulted. At this meeting the following subjects were ably treated:
"The Relation of the College to the Improvement of Rural Schools." Dr. D. B. Johnson, of Winthrop College.

[^15]The outlook for 1907 was bright, but the results that have been obtained this year, over the entire State, through the efforts of the noble women who are banded together for the betterment of the rural schools of our State, have far exceeded the hopes of every one.

The membership of the Association has been increased by nearly 2,000, and many county school improvement associations have been organized in different parts of the State. Where there was already an active county teachers' association the school improvement association was organized as a department, but where there was no teachers' association in the county the school improvement associations have been organized independently. Hundreds of local associations have been organized throughout the State whose purpose it is to unite all the people of the community for the improvement of their school: (I) by placing in the school facilities for health, comfort and education, together with objects of beauty ; (2) by planting trees, shrubs and flowers in the school grounds; (3) by encouraging the establishment of a library in the school; (4) by making the school a center for the community by furrishing instructive amusements. These associations have been established in every part of our State, and wherever they have been established the community has become interested in its school and children; it has taught the few to subordinate personal advantages to the welfare of the whole; it has discouraged those two most bitter and most fatal foes to educational progress, local prejudices and neighborhood misunderstandings.

The real work of the organization must necessarily be done by the local associations, therefore an effort should be made to have an active, progressive, untiring local association in each district for the betterment of its own school. The achievements of the association have assumed enormous proportions during this year, and we feel that these achievements have been made possible through the cooppration of the citizens with the teachers.

The State association has received the coöperation and support of all the educational forces of the State, and I would mention specially the help that the Department of Education has given our organization.

An interesting departmental session of the State Teachers' Association was held by the School Improvement Association during the annual meeting of the Teachers' Association which met at Chick Springs in June.

The School Improvement Association was represented by two delegates at the annual meeting of the State Federation of Women's Clubs, which met at Orangeburg in May. One of the delegates was elected chairman of the educational committee of the Federation.

A bulletin of general interest to teachers and all public-spirited citizens was issued by the School Improvement Association during the spring of 1907 , and another will be issued before December 15 th.

Fifteen prizes were offered to the rural schools of the State for the most decided material improvements made from the ist of January to 15 th of November. Five of the prizes were $\$ 100$ each, and ten were $\$ 50$ each. These prizes were given under certain regulations. There were almost sixty applications for these prizes, and difficult indeed was the task of the executive committee in deciding upon the fifteen best schools.

The $\$ 1,000$ available for these prizes came from the Peabody Fund for South Carolina, and we hope that a like amount will be put at the disposal of our Association next year.

The president of the Association appointed this year an organizer for the School Improvement Association for each county. Most of the women who hold these positions have done much towards organizing their respective counties. Through their efforts and the efforts of our State field worker, we hope soon to have every community in the State organized for better school conditions.

An excellent program for the annual meeting of the Association, which will be held in Columbia on December 30th to 3 1st, has been arranged, a copy of which will be given later in this report.

Many matters of very vital importance to the educational interests of our State will be brought up for discussion at our annual meeting.

MARY T. NANCE, President School Improvement Association.

## OBJECT.

The object of this Association is the betterment of rural schools in South Carolina.

There are three branches of this organization: 1 , The State Association; 2, The County Association; 3, The Local Association.

State Association.-The State Association has undertaken to have an association in each county and through these it is endeavoring to interest a volunteer association in the neighborhood of every public school house which will help to beautify the premises by planting trees and flowers, placing pictures on the walls, or otherwise improving the school environment of our future citizens. Any white woman who will pledge herself to do at least one thing for the improvement of at least one rural school some time during each session is eligible to membership. No fee is required-only service. Men become associate members upon the payment of a fee of $\$ 1.00$ annually.

County Associations.-The purposes of the County Associations are:
I. To arouse the interest of the people of the county in the improvement of their schools.
2. To establish a local association in every school district in the county. There are two meetings held each year. One in the fall to make plans for the year's work, and one in the spring to secure reports of what has been accomplished.

Local Associations.-The purpose of local organizations is to unite all the people of the community for the improvement of their school: (i) by placing in the school facilities for health, comfort and education, together with objects of beauty; (2) by planting trees, shrubs and flowers in the school grounds; (3) by encouraging the establishment of a library in the school ; (4) by making the school a center for the community by furnishing instructive amusements.

These associations can have new school houses built or the old one repaired and painted; rough and comfortless benches exchanged for good desks; floors scrubbed, stoves polished and windows washed; shades or curtains added to windows; pictures placed on walls; libraries started and kept growing; a reading table; improvements made on school grounds by having stumps removed, grass and flowers planted and play grounds laid off; finally, it can uphold the hands of the teacher; and through this work the community will become interested in its school and its children.

## LEADING SUGGESTIONS FOR 1908.

(a) County Work.

First-Organization of county.
Second-Extension of work to local organizations.
Third-Arrange two meetings during each session-one in the fall to plan work for the year, and one in the spring for the purpose of getting a report of what has been accomplished by the local association.

Fourth-Suggest ways in which interest may be aroused, and give addresses of places where school furniture, pictures, etc., may be purchased.

Fifth-The purpose of this Association shall be: (1) To arouse the interest of the people of the county in the improvement of their schools. (2) To establish a local association in every school district in the county.

## (b) Local Work.

First-If you haven't an association for the improvement of your school, organize.

Second-Keep before your organization a reasonable ideal of what its school should be.

Third-Enlist all teachers, club women, parents and public-spirited people in the local work, and extend your work beyond your community, if possible.

Fourth-Arrange one or two public meetings each session for the discussion of school needs and to formulate plans for work.

Fifth-The purpose of this organization shall be (i) to unite all the people of the community for the improvement of the school. (2) To coöperate with the principal and teachers of each school in securing the regular and punctual attendance at school of all children of educable age, but especially of those who are in poor and neglected homes, and in providing for the destitute and helpless such material aid as may be required in order that they may avail themselves of the benefits of the schools. (3) Always and invariably to render the teachers of the schools sympathy, encouragement and support, to the end that all the agencies of the school may be economically and effectively devoted to the well-being of each individual child, and to the conservation of the social, civil and moral welfare of the community and of the State: Provided, That the purposes and methods of the association shall always be coöperative and constructive, and in nowise conflicting or interfering with the rights, duties and obligations of the legal and duly constituted school authorities.

## PRIZES.

## Announcement for 1907.

The School Improvement Association has decided to offer fifteen prizes to the schools of the State for the most decided material improvement made during a given length of time. Five of the prizes are to be $\$ 100$ each, and ten are to be $\$ 50$ each. Regulations concerning the fifteen prizes that are to be awarded by this Association are as follows :
I. Improvements must be made between January I and November 15, 1907.
2. Prizes will be awarded to schools where the most decided material improvements have been made during the time mentioned.
3. Under material improvements are included local taxation, consolidation, new buildings, libraries, interior decorations, beautifying yards, and better general equipment.
4. No school can compete for any of these prizes unless it is a rural school. No town or city with more than 500 population shall be eligible to the contest.
5. All who wish to enter this contest must send names and descriptions of schools, before improvements are made, to the president prior to October Ist.
6. All descriptions, photographs and other evidences showing improvements must be sent to the president before November ist.
7. Prizes will be awarded in checks sent by December ist. The prizes are to be used for further improvements in the schools receiving them.

The schools that won the $\$ 100$ prizes are as follows:
Name of County. Name of School.
Horry . . . . . . . . . . . . . . . . . . . . . . . . . . . . Spring Branch Lancaster . . .. .. . . . . . . . . . . . . . . . .. .. . . . . . . . Elgin
Laurens . . . . . . . . . . . . . . . . . . . . .. . . .. .. Green Pond
Orangeburg .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. Jamison
Williamsburg . . . . . . . . .. . . . . . . . . . . . . Johnsonville
Those that won the $\$ 50$ prizes are as follows:
Name of County. Name of School.
Horry . . . . . . . . . . .. . . . . .. .. .. .. .. . . . . . Athens
Laurens . . .. .. .. .. .. . . . . . . . . . . . . . . Trinity Ridge
(Consolidation.)
Marion .. . . . . . . . . . . . . . . . . . . . .. . . Britton's Neck


Just after the decision of the executive committee was rendered, the president sent out a circular letter to the winners of the prizes, making suggestions as to ways in which the money could be well spent. She said:
"I am suggesting some improvements that might be made, viz.: Libraries, patent desks, pictures, window shades, reading tables, subscriptions to daily papers, fences, painting exterior and interior of houses, blackboards, door mats, outbuildings, lamps to light halls for public exercises, dusting brushes, flower seed, stove polish, United States flags, globes, maps, charts, dictionaries, encyclopedias, good wells, wash basins, towels and soap. As soon as money has been expended, please file an itemized statement of same with me."

## HOW SOME OF THE PRIZE MONEY HAS BEEN EXPENDED.

The following reports were placed on file during January and February of this year, showing how some of the money was expended by schools receiving prizes in November, 1906:

The Trinity School, Clarendon County, expended the $\$ 100$ as follows:

Paint and painting . . . .. . . . . . . . . . .. . . 7600
Interior building material . . . . . . . . . . . . . . . 10 oo
Chairs . . . .. .. .. .. .. .. . . .. .. . . .. .. 1000
Cash on hand of this fund . . . . . . . . . . . . . .. 400
$\$ 10000$
This report came from the Oakley Hall School, Chester County :
"We have bought a new heater, which makes the room very comfortable.
"We have also bought a splendid revolving office chair. We have bought paint for the house, and expect to have it painted as soon as the weather permits. We have ordered a library. A wash basin and towels have been placed in our school. We expect to secure a teacher's desk with the rest of the money."
The following statement came from the Wallace Lodge School, Laurens County:
Pump .. .. .. .. .. . . . .. .. .. .. .. .. .. 1565
Stove . . .. .. .. .. .. .. .. .. .. .. .. .. .. 865
Teacher's desk .. .. .. . . .. .. . . .. . . . . .. 1065
Globe .. .. .. .. .. . . .. .. .. .. .. .. . . .. 725
Teacher's chair .. .. .. .. .. . . .. .. .. .. .. 500
Chairs . . . .. .. .. .. .. .. .. .. .. .. .. .. 1400
Pictures . . .. .. .. .. . . .. .. .. .. . . .. .. .. 1056
Books . . . . . . . . . . . . . . . . . . . . . . . . . . . .. 1500
Blackboards . . . . . . . . . . . . . . . . . . . .. .. .. 485
Bucket . . .. .. .. .. .. .. . . .. .. .. .. .. .. 60
Erasers . . . . . . . . . . . . . . . . . . . . . . . . . . . 20
Ball for boys . . . . . .. . . . . . . . . . . . .. .. 100
Improvement in yards .. .. . . . . . . . . . .. .. 500
United States flag . . . . . . . . . . . . . . . . . . . .. I 69
$\$ 10000$
The Guthriesville School made the following report:
Library books . . .. .. . . . .. .. . . . . .. $\$$ 10 00
Pictures . . . . . . . . . . . . . . . .. . . . . . . .. .. 300
Teacher's table and chair .. .. . . . . . . . . .. .. 500
Dusting brush . . . . . . . . . . . . . . . . . . . . . . . 25
Flower seed . . . . . . . . . . . . . . . . . . . . . . . .. 50
Stove polish . . . . . . . . . . . . . . . . . . . . . . .. 10
Entertainment supplies . . . . . .. .. .. .. .. .. I 15
Building fund .. .. .. . . . . . . . . . . . . .. .. 8000
$\$ 10000$

## SPECIMEN REPORTS.

Jamison, S. C., September 5, 1907.
Miss Mary T. Nance, Columbia, S. C.
Dear Madam: We, the Jamison Graded School, in Orangeburg County, wish to enter the contest for one of the prizes offered by you for greatest improvement in rural schools, and to make the following statement as to condition of school before and after improvements were made:

First-Interest in education was at a very low ebb. The people were contented with a school house of one room set on a corner of the church lot. They had literally followed the old New England idea of having church and school house on the same hill. In this little cabin one teacher presided over from twenty-five to thirty pupils. The blackboards were inadequate; scraps of sheepskin served for erasers; no maps; no charts or globes; windows without shutters and with numerous panes lacking; the desks, while patented, were unable to seat the pupils; in other words, the old Jamison school house was a fit specimen of the old-time country school.

Second-From this state of inactivity and rest the people were awakened, and a glance at the paralleled columns appended will show the relative value of school house and property before and after the awakening. The new building is thoroughly modern in every particular. Three rooms, well furnished with patented desks, blackboards, erasers, stoves and wall pictures, curtains, maps and globes, make the inside very attractive. The building, valued at $\$ 1,100$, is neatly painted inside and out. The grounds are well terraced, and numerous flowers have been planted.

Third-The people, hitherto satisfied with a most humble school, now point to the new building with pride and refer to it as the greatest improvement in the town.

Fourth-The Superintendent of Education of Orangeburg County, who delivered the commencement address this year, said in his experience of years as teacher and school superintendent he had never seen a more marked improvement.

The following photographs were taken before and after improvements:

[^16]
## Contrast Before and After Improvement.



Yours truly,
JNO. W. INABINET, Principal


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## APPLICATION.

Union Graded School, Rome, S. C., October 4, 1907.

Miss Mary T. Nance, Columbia, S. C.
Dear Miss Nance: We wish to enter this school in competition for one of the prizes offered by your association.

We are rural in the deepest sense, being twenty-four miles from Georgetown and twenty-eight from Kingstree, our railway points. School has been formed by consolidation of petty schools. This year we have made several hundred dollars' worth of improvements.

Very truly yours,

> O. M. MITCHELL.

Before Improvements Were Made
The enclosed picture shows Union Graded School, January I, 1907, before improvements were made-a plain two-story building. On the first floor are two recitation rooms, separated by a corridor extending through building. The second floor contains the auditorium, the stairway leading from the corridor below.

Furnishings are as follows: 30 patent desks, 175 chairs, about 200 feet of hyloplate blackboard, and a second-hand piano valued at $\$ 150$.

The grourds are not enclosed and are covered with undergrowth, logs and stumps, with exception of small area in front of building.

Respectfully submitted,
O. M. MITCHELL.

## After Improvements Were Made.

The pictures enclosed are of Union Graded School after improvements were made-between January I and October 15, 1907.

These improvements are:
The addition of a vestibule o' $^{\prime}$ xi $8^{\prime}$, three stories high, containing the stairway and entrance to the auditorium.

A movable partition placed in the auditorium, making a third recitation room and a music room; the removal of the partition leaves the auditorium in one room.

An artesian well, 405 feet deep, bored and fitted.
Grounds to the extent of three acres have been enclosed with Ellwood wire fence and gates; undergrowth and logs have been cleared off from the three acres.

Fifteen new patent desks have been added; a new piano purchased and partially paid for; 240 feet of hyloplate blackboard have been purchased.

These improvements, completed, cost as follows:
Vestibule on building, partition . . . . . . . . . . . $\$ 40000$
Artesian well and fittings .. .. . . .. .. .. .. .. 15000
Fifteen new desks .. .. .. .. .. .. .. .. .. .. 5500
Hyloplate blackboard .. .. .. .. .. .. .. .. .. 2550
New piano (\$465-less old one, \$150) .. .. .. .. 31500
Wire fence and gates . . . . . . . . . .. .. . . .. 4685
Work on grounds . . . . . . . .. . . .. .. .. .. II 30
Total value improvements . . . . . . . . . . . . . . . $\$ 1,003.65$
Respectfully submitted,
O. M. MITCHELL, Principal.

October 19, 1907.

before and after improvements.

Venters, S. C., July II, 1907.
Miss Mary T. Nance, Columbia, S. C.
Dear Miss Nance: I am sending you by mail today photos of our old and new school buildings. Our new building has just been completed at a cost of $\$ 2,000$. We expect to put desks in by October ist, which will add about $\$ 300$ more to the cost. We consolidated three schools about four years ago and laid out a special school district, with 3 mills special tax. We rented the building (old), which was an old store house. We opened school in this building with two teachers. We ran with two teachers two years. The third year we found that we needed at least another teacher and a music teacher. We therefore secured a music teacher, two other lady teachers, together with the principal, made four teachers. With the increase of teachers and pupils we found that our funds and building were insufficient to meet the demands of the school. To relieve the needs for paying teachers, we voted on a tax, by special act of Legislature, of 9 mills in addition to the 3 mills already levied, making a total special tax of 12 mills.

After getting our tax levy on, we then went to work to get a new building, which has been completed this year and will be ready for us to move in next session.

We followed plan No. 12, suggested by the State Board. It is 70 feet long, 54 feet wide, and contains four class rooms, a library and an auditorium with a seating capacity of 500 .

At present we are using old desks, but new ones, to the value of $\$ 300$, have been ordered and we expect them soon.

Since April ist we made our last payment on a piano valued at \$300.00.

A new grade has been added to the course this year, making nine grades in all.

After getting our tax levy on; we then went to work to get a new building, which has been completed this year and will be ready for us to move in next session.

We beg to ask your consideration of our statement as to tax and also as to improvements in building, which is from an old rented store house to a $\$ 2,000$ building, which when seated will be worth $\$ 2,500$. Any further information you wish will be cheerfully given by either of the other trustees or myself.

Our principal of last year was elected for next session.
Yours very respectfully,

> C. J. ROLLINS, Clerk Board of Trustees, Johnsonville Graded School.


ELGIN SCHOOL-OLD.


ELAIN- NEW.

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## SPECIMEN QUOTATIONS FROM COUNTY SUPERINTENDENTS.

Superintendent Prince, of Horry, says: "I believe the $\$ 150$ your association has placed in our county will be worth $\$ 1,500$ to us next year."

Superintendent Nash, of Laurens, said in a recent letter to the president of the association: "I am certainly delighted to know that Green Pond and Trinity Ridge schools succeeded in winning prizes offered by the association. The other nine schools from Laurens didn't win, but they worked hard, especially Copeland, Bailey and Sandy Springs. Although they failed to secure a prize, they have the satisfaction of knowing that they have better school houses and better equipments than they had before entering this contest."

## MORE MONEY NEEDED.

The president of the association has been offered $\$ 500$ from the Peabody Fund for next year on condition that $\$ 500$ be raised by the association. As we do not charge our women members any fee, it will be almost impossible to raise this amount unless the members of the General Assembly help us. I wish it were possible for us to have at least two or three thousand dollars at our disposal for pushing the work of the association by offering prizes and in other ways that the executive committee might deem wise, and I believe if the members of the General Assembly will give attention to the part of this report that shows results that have been accomplished through the small amount of money that we have had at our disposal for the last two years they cannot fail to make an appropriation for this noble cause.

## MEMBERSHIP.

Article III of the Constitution of the State School Improvement Association is as follows:
"Section I. Any white woman interested in the betterment of rural schools in South Carolina shall be eligible to active membership.
"Section 2. Ten members of the association shall compose a quonum for the transaction of business.
$\qquad$


SECTION OF COPELAND SCHOOL, LAURENS COUNTY.
"Section 3. All persons who cannot give their time to active work, but who wish to become associate members, may do so by paying an annual fee of $\$ \mathrm{r} .00$."

Article III of the County Constitution is as follows:
"Section I. Any white woman interested in this work may become an active member without the payment of any fee; any white man may become an associate member upon the payment of a fee of fifty cents."

Article III of Constitution of Local Association is as follows:
"Section I. Any white woman interested in this work may become an active member without the payment of any fee; any white man may become an associate member upon the payment of a fee of twenty-five cents.

## Pledge

"I do hereby pledge myself to do at least one thing for the improvement of at least one rural school some time during this year."

## COUNTY ORGANIZERS.

The president of the association has been able to appoint an organizer in almost every county in the State. These organizers are expected to have the general supervision of the work in their respective counties and to make reports semi-annually to the State Association. County organizers are urged to report to newspapers all interesting descriptions of entertainments and lectures given under the auspices of local or county organizations. In the counties where no appointments have been made it has been impossible to get recommendations from the County Superintendents.

## List of County Organizers.

Abbeville-Miss Lois Crawford, Abbeville, S. C. Aiken-Mrs. M. C. Robertson, Aiken, S. C.
Anderson-Miss Lillian E. Erwin, R. F. D., Pendleton, S. C. Bamberg-Mrs. S. L. Baker, Olar, S. C.
Barnwell-Mrs. Dora Dee Walker, Appleton, S. C.
Berkeley-Miss Essie Harvey, Monck's Corner, S. C.
Beaufort-
Charleston-Miss Katherine B. Mazyck, James Island, S. C. Chester-Miss Florence Bradford, Chester, S. C.


IMPROVED INTERIOR OF RURAL SCHOOL, GREENWOOD COUNTY.


Chesterfield-Miss Sallie Ousley, Middendorf, S. C.
Clarendon-Miss Fannie Davis, Manning, S. C.
Colleton-Miss Carrie Weekley, Salkehatchie, S. C.
Cherokee-Miss Bonnie McCluney, Wilksville, S. C.
Darlington-Miss E. Ellis, Darlington, S. C.
Dorchester-Miss Caroline L. Dickinson, Summerville, S. C.
Edgefield-Miss Hattie Newson, Edgefield, S. C.
Fairfield-Miss Katherine Patrick, White Oak, S. C.
Florence-Miss Lalla Hepburn, Florence, S. C.
Georgetown-Mrs. Mattie Price, Georgetown, S. C.
Greenville-Miss Flora McKelvey, Pelzer, S. C.
Greenwood-Miss Fannie Creighton, Greenwood, S. C.
Hampton-Mrs. M. R. Gooding, Hampton, S. C.
Horry-Miss Lettie Harrelson, Nichols, S. C.
Kershaw-Miss Alice Dunn, Camden, S. C.
Lancaster-Mrs. T. M. Belk, Lancaster, S. C.
Laurens-Miss Bessie Hudgens, Laurens, S. C.
Lee-Miss Edith McCutchen, Bishopville, S. C.
Lexington-Miss Sue H. Corley, Lexington, S. C.
Marion-Miss Bertha Reaves, Mullins, S. C.
Marlboro-Miss Mattie Covington, Bennettsville, S. C.
Newberry-Miss Pinckney Lee Estes, Newberry, S. C.
Orangeburg-Miss L. T. Tatum, Cope, S. C.
Pickens-
Richland-Miss Mildred Tillinghast, Eastover, S. C.
Saluda-Miss Ruth Etheredge, Saluda, S. C.
Spartanburg-Miss S. A. Nabers, Spartanburg, S. C.
Sumter-Miss Mildred Renick, Oswego, S. C.
Union-Mrs. C. Murphy, Union, S. C.
Williamsburg-Miss Helen Scott, Kingstree, S. C.
York-Miss Nora Williamson, Guthriesville, S. C.

## EXTRACTS FROM REPORTS OF DELEGATES.

The following extracts are taken from reports given by some of the delegates at the annual convention, which was held in Columbia, S. C., December 31, 1906, and January 1, 1907:
"At the close of the County Summer School we organized a County Association with nineteen members. Three more have been added to the membership. The improvement in county schools
NEW EUILDING-YOUNGS.

Google
during the past year has been marked by a steadiness of purpose that betokens better teachers, better salaries, and better results in work.
"Several teachers reported improvements in decoration and furniture. Two schools have established libraries, three more have applied for libraries, and one has added new volumes to the library. Three new school buildings with modern equipments have been built this winter. All these improvements can be traced directly or indirectly to the influence of the Association for Improvement of Rural Schools."

before the new desks arrived.
"Four years ago the value of the best school house in the county was about $\$ 200$; today the value of the best is about $\$ 6,000$, and the average value is about $\$ 250$.
"Four years ago only ten or twelve school houses were ceiled; today nearly all of them are ceiled.
"Four years ago only four county school houses were painted; today about twenty-five are painted.
"Four years ago patent desks had been placed in only four county school houses; today they have been placed in over forty.
"Four years ago only two districts had special tax; today fifteen have special tax."
"Our greatest need is a deeply-rooted public sentiment for better school houses, better equipped school rooms, and more beautiful school grounds. In short, many of our rural districts need to learn that the really beautiful is the really useful."
> "There are thirty school districts now that have the special local school tax and fifty-one schools that now have the established library and nice bookcase. The Olivet school building, which resulted from the consolidation of three schools, was awarded one of the $\$ 100$ prizes offered to the ten schools making the greatest improvement. Much is also being done in our rural schools toward securing better teaching apparatus and beautifying both the exterior and the interior of the buildings. There are also two County Teachers' Associations. These are well attended and very helpful to the teachers."

"During the past year our county has done something in the way of material progress. Twelve school houses have been built, sixteen school houses have been equipped with patent desks, fourteen librories have been established, several of the ones established before have been increased, eight districts have voted special local tax, and several of the school buildings have been repaired and painted. This places, with few exceptions, a comfortable school building, seated with comfortable desks, in reach of almost every child in the county.
"At our spring meeting interesting .papers were read, showing good results where the Association had taken root. More attention is being paid to Arbor Day.
"Libraries are coming into schools where they had not existed, and where they were already established new books are being added.
"One lady reported a library for her school, and said that she had secured one the year before for a neighboring school before she joined the Association. She said the spirit of the work was with her always.
"One school under the leadership of a good director raised forty of fifty dollars toward school improvements."

[^17]
"These schools are crowded during December, January and February, and poorly attended the rest of the term. I know one of these at the foot of the mountains six miles from the State line and ten miles from a railroad station. There is only one child in school whose parents attended college, and to balance that there are several whose parents cannot read or write. The children are bright. They have their first pictures on the walls and rose bushes in the yard this year. This is a result of the work of the School Improvement Association."
"Nearly every school has a State library. I know of one school where the parents raised ten dollars, and rather than take the other ten from the district, raised it also, making a sum of twenty dollars. The books were read by old and young."
"I asked the children to bring pennies or eggs to buy something for the school room, and they chose a blackboard.
"Occasionally I had a contest of some kind, and each child would pay a nickel to take part.
"Finally, I decided upon an entertainment to raise money for a fence. Wishing to draw all the people into this, I chose 'The Family Album,' in which the parts were taken by the people of the community from a child of five years up to an old gentleman of seventy. There was only one speaking part, the rest representing pictures. This required but one rehearsal, and was a great success. The people generously contributed ice cream and cake, which we sold."

## FIELD WORK BY PRESIDENT OF STATE ASSOCIATION.

Under the direction and with the financial support of the State Educational Campaign Committee, Miss Mary T. Nance, President of the State School Improvement Association, has been enabled to give her entire time since June to the work of the Association. She visits any town or community upon request in the interest of the schools. She has reached personally about one-half of the counties of the State already and hopes to visit all within the next six months. The work accomplished by her in Horry County during the months of August and September is worthy of special attention and is 2 specimen of what has been done in other counties.



AFTER TMPROVEMENTS WEXE MADE

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The State of September 27th has the following to say of her impressions of Horry:
"Miss Mary T. Nance returned yesterday from a four weeks’ stay in Horry and Marlboro counties, where she has been at work in the rural schools. While in Horry County she traveled over 200 miles over dirt roads, made 27 addresses to large crowds of people, and organized ig local school improvement associations.
"Miss Nance speaks in the very highest terms of the peaple of Horry County, and she believes the county has as wonderful possibilities as any part of the State. In speaking of the schools, Miss Nance said: 'I found fairly good school houses in some parts of the county, very dilapidated ones in other parts, and in a few sections of the county found as good rural school houses as you would find in any part of the State. One school that I visited was fifteen miles from a railroad station and is one of the most attractive school buildings I have seen anywhere.
"'The house is well built and is a model of cleanliness and beauty. The plans and purposes of the local school improvement association have been fully carried out. The grounds are wired in, there are beautiful flowers growing in the yards, many trees have been planted and play grounds have been laid off. Inside of the school house I found books, magazines, papers, pictures of famous men, and many copies of masterpieces that were nicely framed with frames that were made by one of the pupils of the school.
"'I cannot describe the school fully now,' said Miss Nance, 'but I do want to say that the teacher of this school has the children, fathers, mothers, and, in fact, everybody in the entire community, working for the school. She has secured the coöperation of every patron in carrying out the plans of the local school improvement association.'"

## CO-OPERATION OF STATE FEDERATION OF WOMEN'S CLUBS.

The South Carolina Federation of Women's Clubs and the School Improvement Association are closely bound together since the School Improvement Association has been officially placed on the roll of the Federation, and each should prove of inestimable value to the other. The greatest good that will come from this affiliation is the personal touch of club women with the teachers in the School Improvement

Association, affording an opportunity of bringing about a closer relation between parents and teachers.
The South Carolina Federation has among its special departments one devoted to education, which arouses the club women of the State to an active interest in all educational matters; working for compulsory education, manual training in the public schools, better teachers, better salaries for teachers, and better equipment in public schools. This department is in charge of a graduate of a high-grade college, and has at its disposal scholarships in Converse College, Spartanburg, S. C.; College for Women, Columbia, S. C.; Chicora College, College for Women, and Greenville Female College, Greenville, S. C., and the Confederate Home College and the South Carolina Kindergarten Association, Charleston, S. C.

The Federation is also actively interested in civic work and claims among its members a number of civic clubs, civic leagues and village improvement associations. The civic department of the Federation directs the work of these clubs and leagues, and in many cases these organizations are already working with the public school authorities for the improvement of the school grounds, or the decoration of the interior of the school building. What is better civic work than school improvement?

The Federation also has in its possession 130 traveling libraries consisting of from 50 to roo books each, which may be sent free to any club or school upon application. All of the railroads in the State have given free transportation to these libraries, and the books are in cases, conveniently arranged and catalogued. Any community may keep a library as long as it pleases, and another will be sent when requested. In these cases are also a number of current magazines which are sent for general distribution.

The Federation also owns a traveling art gallery, which may be secured upon application, and which has proven a great help in stimulating an appreciation of good art.

The reciprocity bureau of the Federation is also at the disposal of all members of the Federation. In this bureau are programs, outlines of study, and specially prepared papers and articles, which may be secured upon application to the bureau. This interchange of programs keeps the various organizations in touch with each other's work, and promotes greater activity in all directions.

These are some of the material benefits that may accrue to the School Improvement Association by holding membership in the South Carolina Federation, but the greater benefits cannot be put
into words. Who can count the good that will come from active, earnest, cultured women working together for the upbuilding of South Carolina along the line of art, civics and education?

The South Carolina Federation will hold its annual meeting in Orangeburg, May 6-9, 1907, and while the School Improvement Association is entitled to only two delegates on this occasion, all of its members will be welcomed guests. A special time has been set aside on the program for the report of the work of the School Improvement Association, and who can estimate the good that will come from this report, when read before picked representatives from 3,000 club women from all parts of the State?

It is only by attending one of these annual conventions, and by coming in personal touch with the leaders among the club women, that the real value of the Federation can be measured, for women's greatest power, after all, lies in her influence.

PROGRAM FOR THE ANNUAL MEETING OF THE STATE SCHOOL IMPROVEMENT ASSOCIATION, COLUMBIA, S. C., DECEMBER 30-3I. Reception December 30, 4:30-6:30 p. m., Wright's Hotel.

## First Session.

Monday, December 30, 8:30 p. m.
1-Call to Order.
2-Address of Welcome. Hon. Martin F. Ansel, Governor of South Carolina.
3-Response to Address of Welcome. Dr. D. B. Johnson, President Winthrop College.
4-Address. President of Association, Miss Mary T. Nance, Columbia, S. C.
5-Address. Mrs. J. Lindsay Patterson, President Interstate School Improvement Association, Winston-Salem, N. C.

Second Session.
Tuesday, December 3I, io a. m.
1-Prayer.
2-Minutes.
3-Reports of Officers.

4-Announcement of Committees.
5-Reports from Delegates.
(Adjournment to attend meeting of County and City Superintendents.)

## Third Session.

Tuesday, 3 p. m.-Business Session.
1-Report of Committees on
(a) County Associations.
(b) Local Association.
(c) Membership.
(d) Articles for Newspapers.
(e) Necrology.
(f) President's Recommendations.
(g) Constitution.
(h) Resolutions.

2-Report of Executive Committee. Miss Louisa B. Poppenheim, Chairman, Charleston, S. C.
3-New Business.
4-Election of Officers.

## Fourth Session.

Tuesday, 8 p . m.
1-The Value of Industrial Education to the Rural Community. Superintendent E. S. Dreher, Columbia City Schools.
2-Address: Twenty-five Years with Rural Schools. Superintendent Lawton B. Evans, Augusta City Schools.
Introduced by Hon. O. B. Martin, State Superintendent of Education.
D. B. JOHNSON CHAPTER OF SCHOOL IMPROVEMENT ASSOCIATION.

Last year there was organized at Winthrop College a local School Improvement Association with about one hundred and forty members. This Association was organized for the purpose of studying the needs and conditions of the rural schools of South Carolina and for formulating plans whereby the organization might render assistance. The members of the Association have worked diligently and great good has been accomplished.

Recently Miss Mary T. Nance, President of the South Carolina

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School Improvement Association, offered, through the D. B. Johnson Chapter, a medal for the best practical essay on rural schools. This medal was won by Miss Margaret Blaine, of Blackstock, and is considered one of the best ever submitted along that line.
The essay is entitled "An Earnest Teacher's Work for School Improvement," and is given here in full:

## An Earnest Teacher's Work for School Improvement.

When Elizabeth Miller decided after graduation that she would accept a small country school, her friends were shocked. They had all prophesied a brilliant future for her in the professional world. They upbraided her for burying her talent, but, without replying, she simply got ready and was at her place of work two weeks before the opening of school. On her arrival in Brownsville she went immediately to the school house. Her heart sank within her. Perhaps some who have no acquaintance with the conditions of most of the country schools a few years ago, and of many at the present time, will think I exaggerate in the following description; but if it errs on either side, it rather fails to give the full measure of poverty and ugliness.

The school house was a little log cabin at the cross roads. The crevices between the logs were filled in with mortar made of red mud. This was not'very durable and the wind whistled through the cracks. Worse still, the floor 'had been laid while the lumber was unseasoned, and there were cracks about half an inch between the planks. The desks were long benches without backs, except a few rather roughly made in imitation of patent desks. The walls were cut and marked in every conceivable way, and studded with nails.

The "little school teacher," as she had already been dubbed, felt like sitting down in the midst of it all and crying. But that was not what she had come for, and her quick eye noted the chances for improvement, both inside and out. The grounds, for instance, though badly kept, were full of possibilities. Knowing that success in her undertaking would depend upon the interest which the patrons and trustees would take in the school, she determined to get them interested. She visited as many of the homes as she could, and everywhere won the hearts of parents and children by her attractive manner. Her earnestness and evident devotion to her work, and her love for children, showed that she would do her part; and the parents, who had been accustomed to teachers who had taught

[^18]because they had to do it, promised their hearty support. A meeting of the trustees was held in the school house, and in a simple way Miss Miller told them what she would like to do. The trustees said that things had been good enough for the other teachers, but, if she wanted a little money they could give her some, because they had not spent any on the school house since it was built, and now they had a nice little surplus.
"Then, why can't we have a new school house?" asked Miss Miller. The answer came quickly, "Why, the children don't come to this one. Soon there will not be any school here at all." "That's going to be changed. But then let us make this room more comfortable."

## Improving the Building.

The first thing was to stop up the cracks in the floor and walls. Those in the walls were not such a hard problem, for the upper logs were very nicely fitted together, and the crevices between the lower ones were easily filled in with mortar that would last. After covering the walls with a layer of newspapers, which the children brought from their homes, they covered it all with a pretty wall paper which they bought for two cents a yard, the total cost being $\$ 2$. This work was all done by the teacher and pupils out of school hours, the calculations having served as lessons in mathematics. There were four windows and two doors, and after leaving room for the blackboards, the space to be papered was not so large after all. One of the patrons who had a saw mill gave some planks to be used for the blackboards. Miss Miller nailed strips across the ends to keep them from warping, then placed about twelve layers of newspapers on this. Over this she stretched tightly a thin cloth, and last the lapileum cloth, which can be purchased quite cheaply. This makes a lasting and satisfactory board.

The cracks in the floor were a more serious matter. The only thing to do was either to get some kind of a carpet or have the floor relaid. On consultation with the trustees, they agreed to take up the floor and relay it on the following Saturday. Now, at last, the room could be comfortably warmed by fire in the large fireplace at one end of the room. It was too warm at the beginning of school, for fires, so the children gathered cedar branches and banked them in the fireplace. In a large jar which had lost its bottom, and which the children covered with tinfoil they had saved from tobacco boxes. they planted beautiful grasses. This was placed on the hearth. Around the narrow mantel she tacked a lambrequin of white oil-
cloth. A small clock, the property of the teacher, was placed on the mantel. She had also brought with her, for her own room, several of her favorite pictures. Should she keep them for her own pleasure, or hang them where they might inspire noble thoughts in the young minds she was to train? The struggle ended in the hanging of the "Head of the Christ Child" over the center of the mantel, and the "Angelus" opposite the door. For years she had been saving pictures from magazines, even advertisements, much to the amusement of her friends. Now these came in most opportunely. Enlisting the help of the larger children, she gathered more pictures, which, with good mountings and good home-made paste, were made suitable for decoration. It is well to tell you right here that this enterprising young lady had been saving the backs of catalogues and pamphlets. These were of soft gray or brown heavy paper, and made fine mounts when themselves mounted on a heavy cardboard. A border above the blackboard was made of pictures of celebrated men and women. In a small space between two windows she tacked a piece of plain dark paper which had been given as a sample. This looked very neat when framed in with a molding which the boys made with their knives. Four oblique slits were made at different points for holding in the penny Perry pictures, which were suitable for different lessons or special occasions. These could be easily changed.

## Interest Inside.

Since the school house was built at the joining of the public roads, it was impossible for the children to resist the desire to keep a strict account of passersby. Miss Miller knew that it was of no use to scold them for this, and she had little hope of getting their interest centered on their work when more exciting things could be seen outside. When she spoke to the trustees aobut it, they suggested that the lower window panes be stained, but Miss Miller, knowing that this would not look well, and that the children would immediately know the reason for the staining, told them she would rather have sash curtains. She bought some dainty white goods at eight cents per yard and curtained the four windows. The girls helped to make the curtains, and the boys trimmed long rods which were used to hang them. The dainty curtains gave a homelike appearance to the room, and the children were very proud of the effect. Before they were hung, the whole school joined in a scouring brigade, and the floor, desks and windows fairly shone. Everything else looked so clean and inviting, they decided that the small table must not be
neglected. Two yards of white oil-cloth made a pretty covering for this, and cost only thirty cents. Another yard covered the water shelf, which was on the porch, and the children and teacher enjoyed the fresh towels and basin which were always there.

Since the nails had been taken from the walls, provision had to be made for hats and bonnets. Miss Miller had a plank put up in the most obscure corner. Into this nails were driven, and it served as a very good substitute for a hat rack. A large box, placed on its side and fitted up with shelves, served as a good receptacle for overshoes. This was kept on the little porch. Each shelf was divided by small partitions marked with a child's name.

Although the new library law had been in effect for some time, no effort had been made to secure a library for this school. In order to get the ten dollars required of the school, Miss Miller trained the children and gave a little entertainment, for which she charged a small admission fee. The school house was crowded, and all seemed to enjoy it. They had no trouble selling the ice cream, for which the ladies of the neighborhood had furnished the cream and eggs. They cleared twelve dollars. The handsome case of books was an ornament to the room. The children were proud of it, for they felt that they had done something toward getting it. This, after all, was the true secret of Miss Miller's success-allowing the children to help. This aroused their interest, and through them the parents became interested. It was the delight of the children, when their parents visited the school, as the teacher urged them to do, to have some of their work on the bulletin board. This board had been put up to place the best work upon, in order to spur the children to greater effort. It was a yard and a half of green burlap, which cost fifteen cents, and was worth its cost many times over.

Before Miss Miller came to teach the school, the playground of the school was mainly the road close by. The parents had never taken the trouble to clear away the underbrush near the building, so that the children might have a suitable playground. At first Miss Miller had the children bring tools to clear off the level place near the grounds, which was not thickly grown up. This made a very nice playground. But it was her wish to have the adjoining grove made more inviting for the children. It was a rather low, swampy place and required a little draining. At length she decided to celebrate Arbor Day by clearing off the school grounds, since it was not necessary to plant trees. Every one in the neighborhood was invited. The men were asked to bring axes, rakes, etc., and some strong
hands. The county superintendent of education and another promiment gentleman were invited to be present and address the people. The children sang some appropriate songs and had a few recitations. When the crowd left that afternoon, marvelous improvements had been made. Some vines were planted around the old $\log$ cabin house to cover its ugliness.

## Things Have Changed.

Miss Miller's prediction had been realized-things have changed. Not only the school building and the school grounds have changed, but the spirit of the pupils and the spirit of the community have changed. The children are eager to attend school, to take part in the improvements that are being made, and the parents are more interested than the children. They are all planning now some way to enlarge the library, and to buy a small organ for the school. From present appearances, it will soon be necessary to have a modern school building to accommodate all the pupils who wish to attend this progressive school taught by this progressive teacher.

## SOME PRACTICAL SUGGESTIONS.

In the Sun.-Paint a cream green, or cream buff color, with olive green blinds' and olive green shingles.

In the Shade.-Paint a cream white, with olive green blinds and shingles.

Keep the yards and front garden as attractive as possible. Have a small flower bed and well-mowed grass plot in front.

Appoint monitors-one to see the flowers are watered daily, another to sweep the yard, others to wash the blackboard daily, put away charts, books, etc. Every child, even to the youngest, should be responsible for a certain part of the housekeeping, even if it is the care of one's own desk.

Special attention should be paid to the windows. See that they are kept clean and bright. Avoid crooked and torn shades. Have a dainty fern or flower at each window. If a wooden flower box is used, let some hanging vine grow over it.

Avoid cheap prints and pictures on the walls. Have a few good prints of the world's famous pictures. (These may be obtained at twenty-five cents each.) Teach the children to appreciate these and
write compositions about them. Pictures relating to one subject should be grouped together. Hang pictures flat against the wall. Do not hang them too high. Small ones should be hung about the eye level. Unframed pictures should be pasted on cardboard of suitable color (usually gray), leaving a margin all around. Hang pictures by two wires instead of one. Do not pin specimens of children's work all over the room. It will show to much better advantage and avoid the look of confusion in the room if grouped and mounted on gray cardboard.
Avoid pure white plastered walls. This not only looks cheerless, but is very bad for the childron's eyes. Cream tones are the softest and best. A very, very little red, yellow, green or blue mixed with the plaster will kill the effect of "dead white."

The interior wood trimmings should be of some neutral colorbrowns or grays. Be sure that the light comes from the back and left of the room.

If the outside walls are in poor condition, and no money is at hand, plant fast-growing vines. The same may be done to hide an ugly fence. Have trees about the school house. Have a variety if possible-nut and fruit trees, berry trees to attract the birds, shade trees.

Get the children interested in the appearance of things, and they will soon take a pride in their school house.

## CHAPTER III.

## High Schools.

## REPORT OF HIGH SCHOOL INSPECTOR.

## To the State High School Board:

Gentlemen: I have the pleasure of submitting to you my first report of the High Schools of South Carolina.
The present high school law of South Carolina was approved February 19, 1907. For several months prior to its passage an active campaign had been carried on for the establishment and improvement of the high schools of the State. Since its passage the campaign has been pushed even more vigorously. Wherever high schools already existed the effort has been to increase their effi-ciency-by adding to the teaching force, by adding to the length of the course of study, and by adding to subjects in the course. Where no high schools existed the effort has been to establish them.

It has been a physical impossibility to visit more than a small proportion of the many communities of the State. As a matter of definite information, I have visited more than one hundred different places in the State between February 19th and December 1st, of this year. To a large numbber of the places I have been the second time-for different purposes. In some of the counties the high school movement has met with marked encouragement; in none has it met with opposition beyond that to vote an additional tax to support the high school. This opposition to vote an additional tax is not to be wondered at when we remember that we have yet in our State a few short-sighted people who are opposed to any kind of public education. Nor need it surprise anyone to be told that those communities which have the most inferior high schools are among those most difficult to interest in their improvement.
It is to be remembered that the appropriation made by the State for the aid of high schools was not available until July 1, 1907. Therefore the law has been in practical operation only five months. It seems to me that the net results are more than were to be expected. Here they are: Established under the high school law and entitled to receive the State aid are fifty-eight high schools, as follows: Allendale, Batesburg, Bamberg, Brunson, Blacksburg, Chesterfield, Cross Hill, Cross Anchor, Cavins, Central, Center Township (Oakway), Clinton, Denmark, Dillon, Easley, Fort Mill, Fountain Inn,

Gaffney, Hampton, Heath Springs, Jonesville, Johnston, Jefferson, Kershaw, Laurens, Little Mountain, Latta, Loris, Lancaster, Marion, Mullins, McColl, Mountville, Mauldin, Ninety-Six, North Augusta, Olar, Prosperity, Pendleton, Pickens, Rafting Creek Township (Hagood), Ridgeway, Ruby, Renno, Saluda, St. George, Springfield, Simpsonville, Sardis, Seneca, Summerville, Timmonsville, Townville, Union, Williamston, Winnsboro, Westminster and Zoar (Saluda County). Several other places have made earnest effort to establish the high school under the law, but have been unable to meet all the requirements. This matter will be discussed more fully in its proper place.

The fifty-eight high schools established under the high school act are distributed among twenty-eight counties, leaving thirteen counties that have not availed themselves of any portion of the State aid. The thirteen are: Abbeville, Beaufort, Berkeley, Charleston, Chester, Clarendon, Colleton, Darlington, Georgetown, Kershaw, Lee, Richland and Williamsburg.

These high schools represent in the aggregate one hundred and nineteen school districts and six townships voting the high schools. Of the total fifty-eight high schools, twelve of them levy a special tax for the support of the high school. Twenty-eight of these high schools are located in rural communities or in towns of fewer than 500 inhabitants; fifteen of them are in towns of more than 500 and fewer than 1,000 inhabitants; eleven of them are in towns of more than 1,000 and fewer than 2,000 inhabitants; while only four are in towns of more than 2,000 inhabitants. Early in the year the impression went out that a town of more than 1,000 inhabitants is debarred from enjoying the privileges of the high school act. Such towns, as towns, cannot establish high schools under this act, but the act cannot be construed to prevent such towns from co-operating with surrounding districts to establish high schools. The act specifically says that any county may become a high school unit, that any township may become a high school unit, and that any aggregation of adjoining school districts may become a high school unit. Certainly any town within any one of these units is a part of that unit. None of the framers of the bill ever dreamed of trying to prevent a town of any size from co-operating with a sufficient number of adjoining districts to establish a high school better than any one of them could maintain alone.

The appropriations made by the State Board under the high school act amount to a little more than $\$ 28,000$, ranging from $\$ 222$ to
$\$ 800$ to each of the fifty-eight schools. Every school receiving the State aid has in some way increased its efficiency-by additional teaching force, or by additions to the course of study. Almost without exception the high school attendance has been increased, because the tuition is free to any high school student in the county. In several instances the high school attendance has increased fifty per cent., and in a few it has doubled. This does not take into account recently established schools where none previously existed.

In the smallest of these high schools-those with the minimum of 25 high school pupils, there are at least eight hours of teaching being done, and that teaching must come up to a reasonable standard of excellence or the appropriation will be withdrawn. The very fact that these schools are subject to inspection without any notice as to the time, is an incentive to a higher order of work. Each principal and each teacher has a pride in the standing of his school.

The colleges of the State have been lending an earnest and intelligent aid to the State in the effort to improve the high schools. A joint committee composed of a committee appointed by the State Teachers' Association of South Carolina and one appointed by the Association of Colleges and High Schools of South Carolina made a report at Chick Springs last June on the Relation of the High Schools to the Colleges. The report, which is given here in full, received the unanimous vote of both committees.

## REPORT OF THE COMMITTEE.

"We recommend to the State Board of Education that in organizing a system of accredited public high schools they proceed according to the following methods:
" 1 . That they adopt what may be called the unit system in placing a valuation upon the work of such schools.
" 2 . That the unit adopted be, in each subject, recitation work for five weekly periods of not less than forty minutes each for thirty-six weeks.
" 3 . That no school be accredited as a whole, but each school be accredited in each subject according to the number of the units of the work done.
"4. That the contents of the units for which work is to be selected for high schools be as follows :
"English-Rhetoric and Composition, I unit; American Literature and Prescribed Readings, I unit; English Literature and Prescribed Readings, I unit.
"Mathematics_Algebra to Quadratics, I ; Algebra, Quadratics and beyond, i ; Plane Geometry, I.
"Latin-Forms and Prose Composition, 1 ; Four Books Caesar, or equivalent, 1; Six Orations Cicero, or equivalent, I; Four Books Virgil, or equivalent, I .
"History-Greek and Roman History, 1 ; Medieval and Modern History, 1 ; English History, 1 ; American History and Civics, 1.
"Science-Physiography, I ; Agriculture, I ; Physics, I; Chemistry, I ; Botany, 1-2 ; Physiology, I-2.
"Greek, 2.
"Modern Language, 2.
"Bookkeeping, I.
" 5 . That the Accredited High Schools of the State be classified into three grades:
"a. Two-year, or eight unit, high schools.
"b. Three-year, or twelve unit, high schools.
"c. Four-year, or fifteen unit, high schools.
"EIGHT UNIT HIGH SCHOOLS.
Required: English ..... 2
Mathematics ..... 2
History ..... I
Science ..... I
Elective: ..... 2
TWELVE UNIT HIGH SCHOOL:
Required: English ..... 3
Mathematics ..... 3
History ..... I
Science. ..... I
Elective: ..... 4
FIFTEEN UNIT HIGH SCHOOL:
Required: English ..... 3
Mathematics. ..... 3
History ..... I
Science ..... 1
Elective: ..... 7
"In a twelve unit school the four electives might he Latin 3, and German or French i ; Latin 3, and Science 1 ; Latin 3, and History 1 ; Modern Language 2, History 1, and Science I ; Latin 3, and Greek i; or any similar combination. In a fifteen unit school the seven electives units would provide for a four-year course in Latin. two years in Modern Language, and an extra unit in History: and numerous other combinations to suit the needs of any community.
" 6 . We recommend to the colleges: (1) That no college admit to the freshman class any student who presents from an accredited school less than six units of essentials, viz: English 2, Mathematics 2, History I, Science I, and two units of electives. making a total of eight units. (2) That when a graduate of a twelve or fifteen unit high school shall apply for admission to a college whose entrance requirements shall consist of fewer units, such student shall be credited on his college course with the part of the work which he shall have done in the high school, provided that the character of such work shall meet the college standard."

If these recommendations are faithfully carried out, it is not difficult to see how far they will go toward aiding in the establishment of an excellent system of high schools in this State. To those who know the loyalty and integrity of the college presidents of this State, the future is promising. The work of building up the high schools is barely begun. The school officers are to be the chief agents in this constructive work, and the law is to be the chief instrument. I wish to discuss very briefly some of the defects of our high school law, and in passing make a few suggestions. However, to do so intelligently requires that I first point out the weaknesses in our high schools themselves. I am undertaking to point out the defects in the law and in the high schools themselves because I am sure some amendments will be offered at the meeting of the General Assembly in January next.

It would in a way be a matter of ancient history to recount here the high school situation in the State. The number is yet comparatively small, and the average high school is very inefficient, as judged by modern standards. In this brief discussion I am not confining my remarks to the fifty-eight high schools established under the recent law, but am speaking of the whole system of secondary schools in the State. Not a few communities, both rural and urban, seem to think that they have high schools, when in fact they have nothing that approaches a standard modern high school. The twoteacher school of fifty pupils ranging from first reader to the begin-
ning of algebra and Latin is yet frequently called a high school and so regarded. The town graded school of nine grades under the most liberal interpretation has but two years of high school, yet such school is entirely satisfactory to a large number of towns, while the school of ten grades is about all that any of our towns think they need-or at any rate all that they are willing to support. A lack of the proper conception of what a high school is, and the popular indifference to high school education are responsible for their inefficiency. Our people are well able to afford better, if they desired better; the people would desire better, if they fully realized the inefficiency of what they have.

Our high schools suffer most from lack of teaching force. A large number of these schools are attempting an unreasonable amount of work for their number of teachers. In many instances one teacher is given the entire work of two high school grades. Several high schools undertake to run a four-year course with but two teachers, to say nothing of the dozen or more places where one teacher is trying to do the impossible-trying to teach properly an eighth, minth and tenth grade. A very little arithmetic will convince any one that one teacher cannot properly teach two high school grades. Any pupil pretending to do high school work ought to be given not fewer that four 40 -minute recitations a day, or twenty such recitations a week. To teach two grades with even this small allotment of recitation time would require eight 40 -minute periods a day, which cannot be given between 9 o'clock and 2 o'clock, making no allowance for recesses. As a matter of fact it is no uncommon thing to find a teacher attempting to teach six and even seven subjects to one class. To find room for this medley of subjects he must cut short some of his recitations with but 20 or 25 minutes-almost a frittering away of his time and that of his pupils.

It is with extreme reluctance that I undertake to speak of the next element of weakness to be found in many high schools. However unpleasant it may be even to reflect upon, those who are in a position to know must admit that many high school teachers are poorly equipped for their work. Some are deficient in scholarship; some are so inaccurate and uncertain about what they do know that they are ineffective ; others have the scholarship but have no idea about how to teach what they well know; while others have neither scholarship nor a knowledge of how to teach. I should much prefer not saying this; I should much rather give utterance to that colorless platitude so often heard before teacher bodies-the reference to all teachers as
hard-worked, ill-paid, ill-supported, loyal, self-sacrificing men and women. But I am admonished that the efficiency of our schools, the integrity of our education, and the rights of the children are at stake, and that this is no time to waste words in sentimentalisms. Indeed it is high time for those who have it in their power to better conditions to do so by facing the facts. A high school cannot make itself felt, except as a burden, when not a few of its teachers are unable to go into the classroom and teach a subject instead of a book. When one sees the history recitation reduced to an inferior reading lesson, algebra and arithmetic taught by means of undigested rules and mysterious formulas, Latin murdered in infancy, English literature converted into a biographical dictionary, and science teaching degraded to memorizing paragraphs in the text book, it is time to stop to consider the question of profit and loss. Certainly not all teachers are thus conducting their work, but some are, and we are making no distinction between them, but putting all upon one level at so many dollars a month.

Perhaps the time will never come when all teachers shall be good ones. Certainly not before the time when all lawyers shall be good ones, and all doctors successful ones, but it is safe to assert that the presence of so many inefficient teachers in our schools is due to the unwillingness of our people to pay reasonable salaries for competent men and women. .School boards and the people must not expect to secure the services of competent teachers at prices far below what the same men and women command in the business world. Sixty dollars a month will not secure and hold a man competent to teach a high school class for nine months in the year, when that man can command seventy-five dollars a month for twelve months in the year in almost any prosperous business. Again, if he goes into the school room and makes never so great success, at the end of three years of service the school board and the community regard him as unreasonable if he asks more than five or ten dollars advance. Whereas, the same man after three years in successful business is offered an advance of twenty to twenty-five dollars without asking it. Neither is it reasonable to expect to secure and hold a woman competent to teach a high school class at forty dollars a month.

This plain statement of facts need not in the least discourage those who yearn for better things in our high schools. The people are beginning to look at this whole matter in a new and hopeful light. I am persuaded that matters would have been made better long ago, had we seen the situation as it is, had we the courage to speak plainly
about what we did see, and had we determined to improve the situa tion.

One more serious weakness as to our high schools. The single course of study which most of them offer. When our people have provided a high school with a single course of study leading to college entrance, they regard the school as complete. They disregard the diverse needs of the students preparing to enter college, and utterly ignore the tastes, the capacities, the circumstances, and the ambitions of the hundreds of students in these schools, most of whom will never enter a college door, but who must go out from these schools to cope with the best trained men and women of their day. I am not contending for trade high schools, nor for technical high schools, to give boys and girls a trade, but I am contending for enough industrial training to give our young people a taste for industrial life, by giving them some definite knowledge and some skill for such life. I am conteding for at least enough industrial training to dignify manual toil in the eyes of our young South Carolinians, for on this fundamental principle largely depends our future prosperity.

A few high schools offer courses in bookkeeping, stenography, and typewriting, but only a very few offer a regular commercial course, including commercial geography, commercial law, mathematics. and English. The high school in Columbia is one of the very few. Here and there a high school offers the boys a little shop training. but not a high school in the State has a well-equipped industrial department for both boys and girls. Most of the schools offer nothing industrial to the girls. The public high school in Spartanburg has an excellent cooking department, but Spartanburg stands almost alone. The knowledge necessary to prepare wholesome food and to keep a home in a sanitary condition is just as essential as a part of an education as is the study of language and mathematics. Food and sanitation largely determine the health and happiness of a home, and every girl should have at least the opportunity to study these things. The boy who is to become a farmer, without the advantages of a college or technical training, has a need to study botany, chemistry, agriculture, and business methods, and they are just as important as his algebra and his Latin. It is just as necessary to teach a boy, who so desires, the use of tools as the use of his geometry.

Can our people remain oblivious to the imperative demand for such change in our educational ideals as will put more intelligence and skill into the labor of everyday life? Can we not see that some of our notions about education are not only faulty, but erroneous
and even silly? Can any well-informed man deny that we have at our very doors men who would go hungry rather than be seen earning their bread by manual toil? Who dares deny that we have socalled educated women who would restrict their eating to one meal a day before they would be seen cooking the other two? These persons are often called lazy, and I am not prepared to dispute the charge, but laziness is not the root of the trouble; these people have the notion that education is to keep them from toil, and that manual toil is degrading. If industrial training had been in the schools side by side with intellectual studies, such notions would never have taken possession of their minds. Let us better teach the next generation, by giving the boys and girls of to-day a longer time in the high school, by giving a wider range of subjects there from which any pupil may select a course to fit his taste and his needs, by putting intellectual training and manual training on the same level, by teaching these boys and girls that there is dignity in manual labor.

I promised to make a brief discussion of some of the defects of the high school law, and to make a few suggestions relative to it. These shall consume but little time, because a lengthy discussion here would be out of place, and because the committee which framed the original draft of the high school bill will meet on January 1 , 1908, to consider these defects, and perhaps to suggest some amendments to the General Assembly.

The defect that has given most trouble and most disappointment is the privilege given to a town of fewer than 1,000 inhabitants to establish a high school, while the privilege is withheld from a school district that includes that same town. Concrete examples: The town of St. Matthews had, in 1900, 758 inhabitants. Under the high school law the town could vote to establish the high school, and under the regulations of the State High School Board, the money already set aside to be used in the high school department could be regarded as income-about $\$ \mathrm{r}, 000$ in this instance. But St. Matthews (as are numbers of other towns) is situated not far from the center of a school district containing over forty square miles. The town could not use the money collected from the entire school district for a high school voted for only by the people of the town, while those living outside the town but inside the school district were debarred from voting to establish the high school, no matter how anxious they might be to do so. Had the law permitted the St. Matthews district to vote to establish the high school, it would have willingly done so, I think. It would have put its $\$ 1,000$ into the high
school, received $\$ 500$ from the State, doubled its teaching force, increased the efficiency of the school, and opened the high school free of tuition to every high school student in Orangeburg County.

Conway and Honea Path are situated as St. Matthews, inside school districts of considerable size. At both these places high school elections have been held and carried by large majorities, each place hoping that it could get at least one other district to unite in forming an aggregation of districts, as required by the law, but both have failed. Prosperity, Springfield, Jonesville, Saluda, Latta, and other small towns have had the same difficulty to overcome before they could establish the high school, while Ridge Spring failed to get any district to co-operate with it. I feel perfectly safe in asserting that this unfortunate restriction is responsible for our failure to have a State aided high school at Bishopville, Kingstree, Lake City, and other places similarly situated.
The law is equally defective in its debarring all towns of more than r,000 inhabitants, unless such towns are included in an aggregation of districts or in a township or county high school unit. This restriction shut out Barnwell. It is very patent that this restriction to towns of fewer than $\mathrm{I}, 000$ inhabitants was made in order to prevent the larger towns from getting an undue proportion of the State aid. I do not in the least find fault with the General Assembly for this precaution, but I feel confident that the General Assembly would not have made this restriction, had they been assured of the equitable regulations which your board later made in regard to the distribution of the State funds. Those regulations make it impossible for a city of ro,000 to get any more than a rural high school, if each offers the same advantages to its patrons. I have already called your attention to the fact that we have established these high schools in only four towns of over 2,000 inhabitants. There are forty-eight towns of over 1,000 in this State; we have high schools in only fifteen of them. We ought to have high schools in at least thirty-five.

I have worked diligently to establish high schools wherever the people were at all willing to undertake the establishment and maintenance of them. I fully appreciate the need of high school training for the country boy and the country girl, but I am fully convinced that it is unwise to undertake to restrict the State aid for high schools to rural communities and the small towns. If this plan is continued, its very purpose will in a large measure be defeated. I give you the very obvious reasons for so saying: Very few rural communities alone can furnish the required 25 high school pupils
under rigid inspection, or employ two teachers in the high school as required. Permit me to observe that these two requirements are, in my opinion, wise ones. To teach fewer than 25 high school pupils together is very expensive; no high school can be effective with less teaching force than the full time of two teachers. With our sparse white population it would be folly to undertake to maintain a high school in every fourth school district in the State. If the State were divided into high school districts each six miles square, we should have 800 high schools for fewer than 6,000 high school pupils. These schools must be established at convenient centers. . To establish by dint of special effort a weak high school that must from the beginning fight for an existence, is not wise, unless it is the only thing that can be done. The teaching force in it must be weak, the course of study short and narrow, and the attendance small. Such school is in constant dread of losing the State aid, and if the aid should be withdrawn, the school would die with it, and the community sentiment for high school education would be lower than if it had never been established.

With reference to the towns the same argument holds good. Very few towns of the State are supporting a standard high school of even three years with a reasonable number of elective courses of study. In most cases, as already pointed out, their teaching force is inadequate. Almost every town of any size in the State has a special tax levy for the support of its schools. A part of the proceeds of this levy is, under the general school law, used in the high school department, and some of these schools charge a tuition fee besides. What seems the only wise thing to do? Is it not for the town and the rural districts about the town to co-operate in maintaining a good high school for all? The town would be willing to give what it is now using for high school purposes to a township high school, and the rural districts would contribute their part through the State appropriation. Then let both levy additional taxes to bring up their school to the highest efficiency. Such school would be worth maintaining. Laurens, for instance, has 23 high school pupils from rural districts. Small high schools can never offer enough courses of study to make them attractive to pupils from outside the immediate community. What we need above everything else in the way of high schools is the school of at least three teachers and a four-year course of study-not on paper, but actually taught. A high school of four teachers could offer, in addition to the usual academic studies,
some good courses in bookkeeping, industrial training, and dometic science.

Most small towns and rural districts find that one good high schood teacher is about all that they have the money to pay for, after providing for the common school pupils. In such places the second high school teacher is paid for out of the $50 \%$. State aid. This makes the second teacher's salary too small to secure efficiency. I suggest as a remedy that State aid to the extent of $100 \%$ of the local income be given to all high schools maintained entirely by rural districts, of in any high school unit where there is no town exceeding 1,000 inhabitants, while to all other places the present basis or its equivalent be retained. The present appropriation would meet the calls for next year. State aid should not be given without local effort.

Finally, the law relative to the number of high school trustees and to the eligibility of members of the common school boards to places on the high school board should be made clearer than it now is Unless it is amended, complications will arise. A small school board is always to be preferred to a large one.

Very respectfully,
W. H. HAND, Inspector.

## WHAT IS A HIGH SCHOOL?

W. H. Hand, University of S. C.

Issued by The Educational Campaign Committee of South Carolina.
"The prevailing usage nowadays in the United States, assigns eight years to the elementary school, followed by four years in the secondary school. * * * The pupil is supposed to begin his secondary schooling at about the age of fourteen."-Hon. E. E. Brown, U. S. Commissioner of Education.
"Education must, then, like industry, become diversified, for a single type of educational institution no longer adequately meets the needs of a State so highly devoleped."-Dr. Charles DeGarmo, Cornell University.
"The pretended democratic school with an inflexible programme is fighting not only against nature, but against the interests of democratic society."-Pres. Eliot, Harvard University.
"The programme must contain certain prescribed studies, and also a considerable range of electives."-Dr. Paul H. Hanus, Harvard University.

## WHAT IS A HIGH SCHOOL?

1. A high school is a school for boys and girls who have really mastered the common school branches of study, at least through the seventh grade, or seventh school year.
2. To enter a high school a pupil should have completed geography and grammar school arithmetic, and should have a good start in history and English grammar. A good start in algebra or Latin, if not in both, is desirable.
3. In a high school such subjects as advanced arithmetic, English grammar and composition, algebra, history, and Latin are met in the first year of the course of study.
4. A high school is a school for pupils who have reached at least their fourteenth year of age, and have been to school from fifty to seventy months, or have done an equivalent in study.
5. It is a school for pupils old enough and trained enough to begin to do some independent thinking in their studies.
6. A school in which the pupils are studying for the first time
percentage in arithmetic, have recently begun formal English grammar, and are yet studying elementary history and common school geography, cannot in any sense be called a high school.
7. A school of forty pupils ranging from first reader to the beginning of algebra and Latin, is not a high school.
8. A school of young immature boys and girls studying three or four grammar school studies and just beginning one or two high school subjects, is not entitled to be called a high school.
9. Ten and twelve-year old pupils are not, as a rule, able to grapple with high school work.
ro. A high school is a school in which the teachers have had training in some school of higher grade than a village or town graded school.
II. It is a school in which the teachers have mastered the subjects they offer to teach before they have classes in these subjects.
10. It is a school in which the course or courses of study are regularly laid down and systematically followed.
11. A school that has a class of beginners in Latin one year, two or three pupils in algebra the next year, and a pupil in geometry the third year, is not a high school, nor would it be correct to say that it has a high school department.
12. A high school is one in which the recitation periods are long enough to permit some systematic work. The State Board of Education rightly puts the minimum at forty minutes. High school work cannot be done in recitation periods of fifteen and twenty minutes.
13. A high school, like any other school, must have in it enough teachers to do the required work. For one teacher to undertake to teach a three-year high school is absolutely impossible; for one teacher to undertake to teach a four-year high school is utterly absurd.
14. A standard high school offers four years of work to its pupils. However, a good three-year high school is better than an inferior four-year course.
15. An efficient high school fully prepares its pupils to enter any of the regular courses in any college of standard grade, or it prepares those not going to college to enter some vocation with some degree of special fitness. A pupil well-prepared in a two-year higb school may enter some college course without conditions. That means that that college is doing high school work-either from necessity or from choice.
16. A good modern high school, in addition to full preparatory courses for college entrance, offers courses preparatory to entering industrial, commercial, and domestic life. The large majority of our high school boys and girls will never go to college ; these pupils need high school courses fitting them to enter life, as much as the other pupils need courses fitting them for college.
17. A good modern high school must fit a few for college entrance, and must fit all in some degree for vocational life and for good citizenship.
18. A high school with an adequate range of courses of study will attract and hold the boys as well as the girls.

## RESOLUTIONS OF STATE BOARD OF EDUCATION.

Whereas, we, the members of the State Board of Education, as the State High School Board, have had special opportunities to study the high school law and observe its operation; and, whereas, we have noticed certain defects in the same, therefore, be it resolved: That we unanimously recommend to the Legislature
1st. That the limitations of the High School Act with reference to large towns and cities, be amended so as to allow any district containing an incorporated town or city to establish a high school, provided such district can qualify in other important particulars.
2nd. That the main requirements and minimum qualifications for securing aid to a high school be an enrolment of twenty-five pupils in the High School Department, and said pupils to be taught by at least two well trained teachers. Appropriations by the Board to be made only after careful inspection.

3rd. That the amounts to be assigned to schools of different classes be definitely named in the Act, so that a two-year high school shall receive at least $\$ 500$; a three-year high school $\$ 600$; and a four-year high school $\$ 700$. This provision will enable a rural or small town high school to receive the same amount of aid as that given to a larger and stronger school.
4th. That the provisions as to trustees be shortened and simplified. 5 th. That the Legislature be requested to continue the $\$ 50,000$ appropriation.
Columbia, S. C., Dec. 13, 1907.

## HIGH SCHOOL ACT DISCUSSED.

## To the People of South Carolina :

The enactment of the High School Law at the recent session of the Legislature will mark an epoch in the history of education in this State. It is a distinct effort to complete the outlines of an educational system. Considerable interest has already been manifested throughout the State in the provisions of this Act. There have also been misunderstandings in regard to what such provisions actually mean. This pamphlet is issued with the hope that it may help communities understand the law, and also that it may aid them in starting the operations of the law in their midst.

There are four distinct operations necessary before a High School can be aided under this Act, viz:

An Election,
An Application,
An Inspection, and
A Confirmation.
Care should be taken, in the beginning, to interest people in a territory large enough to support a High School properly. Section I of the Act allows a county, a township, or several townships, an aggregation of school districts or an incorporated town of less than r,000 population to form a High School District. It will be seen at a glance that a single district cannot become a High School District unless it happens to be an incorporated town of less than one thousand population. A town of that size will probably be too weak to support a High School, so a High School District will necessarily be composed of at least two or more common school districts. It is a matter of co-operation to do this work right.

This office will furnish the County Superintendents with a petition form, which will aid communities in calling elections. After an election is held and the Trustees appointed, the Clerk of the Board should fill an application blank, which will also be furnished to the County Superintendents by this Department. The County Superintendent. will verify the application, keep a duplicate in his office and forward a copy to the Secretary of the State High School Board. When the High School Board receives the application it will send an Inspector to the proposed district. This Inspector will gladly give any aid and advice, which will enable such district to qualify under the Act. When the High School District qualifies, the State High School Board will make the appropriations indicated under the first part of Section 14 of the regulations. This does not mean that the

High School may not receive more than the amounts specified. There will likely be a handsome balance at the close of the fiscal year, which is to be distributed to the schools which have built up a good attendance.

Inasmuch as this Act guarantees free tuition to the boys and girls in the State-aided High Schools, it is just that a school with a large enrollment, representing considerable territory, should receive substantial aid.

It will mean much to the future of South Carolina if the provisions of this Act are generally sought and generously applied. The prospects are that such will be the case. Let us all co-operate in this laudable effort.

Sincerely,

> O. B. MARTIN, State Superintendent of Education.
Columbia, S. C., April 5, 1907.

## HIGH SCHOOL ACT.

An Act to Provide High Schools for the State.
Section r. Be it enacted by the General Assembly of the State of South Carolina, That it shall be lawful for any County, or for any township, or any aggregation of adjoining townships, or for any aggregation of adjoining school districts, or any incorporated town or city within the State of not more than one thousand inhabitants under the last preceding United States Census, to establish a High School in the manner and with the privilege herein given.
Sec. 2. That any High School territorial unit mentioned in Section 1 of this Act may establish a High School by an election to be held in said proposed High School District upon the question of establishing the same; said election to be conducted in all other respects, including the requirements of those who are allowed to vote therein, as elections are now conducted under Section 1208 of the Civil Code of 1902, in reference to special levies for school purposes. If a majority of the votes cast shall be "For High School," and not "Against High School," the High School shall be established, and become a body corporate under the name and style of High School District No. ——, of County (the State Board to insert the number in order of its establishment in the particular County, and also the name of the proper County), whereupon the County Board of Education shall appoint for said High School a board of Trustees, composed of five regular members: Provided, That the five Trustees for said High School shall be appointed for six years, one of whom shall
serve for only two years, two for only four years, and two for six years, the tenure of each to be determined by lot: Provided, further, That the Chairman of each School District Board within the High School territory be ex officio a member of the High School Board: Provided, further, That the Trustees of any special district in any incorporated town or city operating under a special Act of the General Assembly, shall be ex officio Trustees of the High School in that town or city, every vacancy by expiration of tenure to be filled for six years and all unexpired terms to be filled by appointment of said County Board, except in special districts otherwise provided.
Sec. 3. That the Board of Trustees of every High School so established is hereby authorized to levy annually for the support of such High School, not exceeding two mills on the dollar in addition to the levy now allowed by law, of all taxable property within such High School District, the tax to be collected in the same manner as special levies are now collected under Section 1208 of said Code: Provided, That the right to make it a levy merely for conducting the High School for the then next current scholastic year as now defined in Section 1232 of said Code may be voted down for that year in the same manner as now provided for in said Section 1208 with reference to voting upon special levies for School District purposes.
Sec. 4. That any public High School already established, or any number of High School Grades in a public school already estab-lished-provided it shall be organized and adopted as a High School by special election as prescribed in Section 2 of this Act-in any High School territory above described, may claim the privilege of this Act: Provided, It conforms to the provisions thereof: Proizded, further, That nothing in this Act shall be construed as a repeal of any of the privileges granted them in the special Acts of the General Assembly.
Sec. 5. That a High School maintaining a four years' course of study beyond the branches of learning prescribed to be taught in the common schools of the State, and embracing not fewer than seven grades or school years, shall be known as a four-year High School; a High School maintaining a three years' course beyond the common school course, shall be known as a three-year High School; and one maintaining a two years' course beyond the common school course, shall be known as a two-year High School: Provided, That any and all High Schools established under authority of this Act shall include in the course of study instruction in manual training, especially in respect to agriculture and domestic science.

Sec. 6. The State High School Board shall provide for the inspection and classification of High Schools under this Act. In doing this, it may invite the assistance of such members of the Universities and Colleges of this State, as they may select, and their actual expenses shall be paid out of the fund hereafter appropriated from year to year while actually engaged in the duties devolving upon them.

Sec. 7. That the State Board of Education, as now constituted, shall constitute the State High School Board. The State High School Board shall provide rules for the apportionment and disbursement of the State aid to the High Schools, giving due recognition to the number of years of High School work, to the number of courses of study offered, to the enrollment of pupils, the amount of industrial training given, and to such other matters of local merit as may appear to the Board after a careful examination of each High School: Provided, That no school shall receive more than fifty per cent. of the amount raised annually by taxation, subscription or otherwise: Provided, further, That no school shall receive aid unless it has at least twenty-five pupils and two teachers in the High School department: Provided, also, That no school shall receive more than twelve hundred dollars annually from the appropriation provided in this Act: Provided, further, That no County shall receive more than five per cent. of the annual appropriation provided for under this Act.

Sec. 8. The funds raised in the various Counties by taxation, subscription, or otherwise, for High School purposes, shall be placed in the County Treasury, together with any appropriation received from the State Board of Education, and shall be paid out only upon the order of the Board of High School Trustees, duly approved by the County Superintendent of Education. Both the Treasurer and the County Superintendent of Education shall keep accurate accounts of this fund, as is provided for other public school funds.

Sec. 9. That each of the High School Districts so established is hereby authorized to receive and use gifts, transfers, bequests or devises of property for corporate purposes, whether they be otherwise conditional, or whether absolute in their terms; and also to issue coupon bonds within the constitutional limit and to dispose of the same to raise money for the purpose of purchasing sites and the erection of buildings thereon, or for the purpose of purchasing improved property, suitable for school, or dormitory, or mess hall purpose: Provided, That the question of amount of issue, and the rate of
interest, and the time or times of payment of the principal, shall first be submitted to the qualified electors within the said High School District who return real or personal property for taxation, at an election to be held in the same maner as elections for special levies for School District purposes are now required to be submitted under said Section 1208 of said Code: Provided, That a petition for such election be first addressed to the Board of Trustees of said School District signed by a majority of the freeholders therein: And provided, further, That an annual interest on said issue shall not exceed six per cent., and that the sale shall not be for less than par and accrued interest.

Sec. 10. That the sum of fifty thousand dollars ( $\$ 50,000.00$ ), or so much thereof as may be necessary, for each of the school years, beginning July $\mathrm{I}, 1907$, be, and the same is hereby, appropriated to carry out the provisions of this Act, and the Comptroller General is hereby authorized to draw warrants upon the State Treasurer for such amounts, upon the order of the State Board of Education, duly signed by the Governor, as Chairman, and the State Superintendent of Education, as Secretary: Prozided, That tuition shall be free in every school receiving aid under this Act to all pupils in the County where the school is located: Provided, further, That nothing in this Act shall be construed to mean that pupils of different races shall attend the same school.

Approved February 19, 1907.

## REGULATIONS OF STATE BOARD OF EDUCATION.

1. In a High School District where there are no special school districts, five Trustees shall be appointed by the County Board of Education, at the regular time provided by law for the appointment of Common School Trustees. When a High School is organized, and new Trustees appointed, their terms shall be arranged to expire at the regular time for the appointment of Trustees.
2. School Trustees, after they have apportioned sufficient funds for the proper maintenance of the seven Common School grades, may transfer any surplus, or part thereof, by warrant on the County Treasurer, in favor of the High School Trustees, which sum so apportioned shall be considered a part of the High School income.

In all Boards of High School Trustees it shall be competent for the Chairman and Secretary thereof to sign pay warrants when authorized to do so by a majority of the Board in regular meeting.
3. Application for State aid to a High School must be submitted
to the Secretary of the State Board of Education, through the County Superintendents of Education. Applications must be filed prior to October Ist, but for this year (1907) the State High School Board may extend the time if the conditions present sufficient reasons for doing so.
4. After the application has been received, an inspection and examination shall be made of each school, and the condition of each High School District, by a High School Inspector. If such High School Inspector makes a favorable report, the school may be received by the Chairman and Secretary of the High School Board, subject to the approval of the said Board, and the aid shall then be disbursed as provided in the High School Act and the regulations of the State High School Board.
5. The High School Inspector or Inspectors shall also make an annual inspection of each school, and any school may be dropped from the list of those receiving State aid whenever such school falls below the requirements of the High School Law and the regulations based upon the same. State aid may be withheld from any High School whenever it becomes evident to the Board that the teaching in said school is inefficient. The local High School Board shall receive at least two months' notice before such withdrawal of aid.
6. In determining the amount of money raised locally for High School support, one-third of the supervising officer's salary shall be counted as a part of the High School funds unless he devoted more than one-third of his time to teaching in the High School Department. In such case the part of his salary counted shall be in proportion to his actual teaching.
7. Funds from regular school incomes (such as the three-mill tax, and special taxes already voted, etc.), set apart for High School support, as provided for in Section 2 of these Regulations, may be counted in determining the income of the High School. The extra two-mill tax, or any portion thereof, provided for in the High School Act, shall be given full credit in estimating a High School's resources. In no case will aid be given to a High School unless that District makes adequate provision for the grades below the High School.
8. No aid shall be given a High School unless all of the teachers, in the High School Department, hold first grade certificates, except in the case of special teachers for the industrial and commercial departments.
9. There must be at least two teachers in the High School grades. There shall be a total of eight hours work, each day, by the teachers
in the High School Department. Where there are only two teachers, it shall be competent for one teacher to teach more than four hours, and another less than four hours in order to make the total of eight hours.
10. High Schools receiving aid shall continue in session at least thirty-two weeks, in each year, provided the State High School Board may give aid for a school running for as much as twenty-eight weeks, if the circumstances justify the same. In each and every year's work in any class of High School, at least four separate studies must be offered. Not fewer than sixteen recitations a week, of not less than forty minutes each, shall be accepted by the Board. Studies under this Regulation may include industrial and commercial branches.

1I. The course of study adopted by the State Board of Education for High Schools, or its equivalent, shall be used by the school receiving aid under the Act. In all cases the course of study must be approved by the State High School Board.
12. Pupils who have completed the regular Common School course of study, adopted by the State Board of Education, or an equivalent course, shall be admitted to the High School. Such students may present certificates approved by their teachers and countersigned by their County Superintendents, and be admitted without an examination. Other students may be admitted to the High School classes by standing an examination on the Common School branches.
13. A careful record shall be kept of the progress of all students in the High School Department, and when such students have satisfactorily completed the entire course, they shall receive certificates of graduation.
14. High School Districts which have the requisite number of students and teachers, provided for in the Act, and which have sufficient income to justify the same, under said Act, shall receive aid upon the following basis:
An approved two-year High School shall receive $\$ 600$; an approved three-year High School, $\$ 700$; an approved four-year High School, $\$ 8.00$ : Provided, That in each case the above amounts shall not be more than $50 \%$ of the annual income of such High Schools: Provided, also, That schools which meet the Requirements of the Act and these Regulations, in regard to courses of study and number of teachers, but do not have annual incomes double either of the above amounts, shall receive $50 \%$ of their annual incomes available for High School purposes: Provided, further, That for each additional fifty High School students above the first one hundred of
enrollment, a High School shall receive $\$ 100$ of additional aid, and that an approved High School having at least $\$ 300$ worth of equipment for teaching industrial or commercial branches shall receive an additional $\$ 100$ of aid each year, provided that such additional aid does not cause the total aid to exceed $50 \%$ of the annual income of any High School District. If there is an unexpended balance at the end of the year, the State High School Board reserves the right, after having given due recognition to any special matters of local merit, as provided in the Act, to apportion such balance upon the basis of enrollment to the schools which have not received as much as $50 \%$ of their annual income for High School purposes.

## CHAPTER IV.

## Kindergarten Discussion.

## KINDERGARTEN.

By Miss Minnie Macfeat, of Winthrop College.

The State should undertake the support of kindergartens. First, because the State is pledged to educate its future citizens. In order to do this successfully it should begin that education as soon as possible.
It has been proven that the kindergarten is invaluable in its training during the most impressionable, because of the most plastic, years of a child's life, that it sends the child to school with a foundation, a basis, a sum of living germs in the life material it has gathered.
There is at present a great waste and expenditure of public school money upon a child of six years who comes into the first grade to take his first steps in learning, as we say, but the process is more that of unlearning. More time is frequently spent in undoing than in doing.

The child, moreover, is totally unprepared for the new life with its strict laws and discipline. No where in nature or in life do we find so sharp, cruel and unnatural transition from freedom to coercion. At home the child runs, skips and jumps, laughs and talks at will. Suddenly he is ushered into the "sit still, keep quiet, don't talk," atmosphere of the school room. Quite as suddenly the most unexpected demands are made upon the undeveloped mind of the child. Reading, writing, arithmetic and other abstract sciences are presented to him, and his mind, lacking the experience and preparation which would have made him easily assimilate them, cannot take them in without much waste of time and effort. The teachers of the first grade writes "undeveloped" opposite the names of perhaps one-half her class. What is to be done with these unfledged human beings? The school which pays for an equipment and a teacher to be used where they cannot possibly accomplish their purpose, is as wise as one which would invite the deaf to listen to music or put the ordinary printed page before the eyes of the blind.
These children who cannot take in the instruction of the primary grade are taking the time and attention of the teacher who ought to
spend all her efforts on those who are ready to receive the instruction. For these undeveloped children, no matter what their age may be, there should be the kindergarten with its developing methods.

The kindergarten bridges the gap between home and school most naturally and most happily. It gives to the child experiences which furnish a basis, a foundation for knowledge and ethical culture.

It gives the child also his first lessons in good citizenship. He has his place in this republic of childhood-he learns to adapt himself to the larger social environment in which he finds himself-he learns also that important lesson that his rights end where another's begin.

The kindergarten retains the home atmosphere, but blends with it the training which the child will find most helpful in adapting himself by and by to the restraints of the school room.

Because kindergarten is education in the truest, best sense, the education that fits best the little child, then every child, irrespective of race, wealth or social position, has a right to it. The child from the richest homes, as well as those from the poorest, stand equally in need of it, This has been recognized in very many States all over our commonwealth. The kindergarten has become an integral part of the public school system in these States.

In South Carolina what has been done? Here, as elsewhers, philanthropy has led the way and has given us, here and there, object lessons in kindergarten which we cannot overlook. In many mill villages the kindergarten has paved the way for the school. It was so in the mill districts of Columbia. There were well established kindergartens at the Olympia, Richland and Granby Mills before a school house appeared. It was so at Arcade and Victoria Mills, of Rock Hill, and many other villages, and the verdict of school superintendents at these points is this: That in those villages where the kindergarten has preceded the schools it is an easy matter to keep up the school attendance. Often in other mill villages, to get the child to school is a serious problem. The children from the kindergarten pass naturally as a matter of course into the school. Through its mother clubs and in other ways the kindergarten brings about a sentiment in favor of education. This in itself is a great work. A public sentiment in favor of education is what we need to make our schools as efficient as they should be.

The kindergarten very quietly and unobstrusively is bringing this about here in our own State. Instances could be given of families remaining at certain mills restraining their great desire to move
about, because the kindergarten was at work keeping a hold on the little ones.

A father of a large family addressed a kindergartner thus: "Say ! we'd a been gone from this here place long ago, if it hadn't been for that there kindergarten of yours-the old woman and the children set such store by it, that I can't git them away."

It has been proven beyond doubt that the kindergarten has a place in the education of the child. It should not, therefore, be left to the uncertain, precarious support of philanthropy.

The little child from three to six has as much right to the financial help of the mother State as the child of fourteen; indeed, more helpless, more at the mercy of its environment than it ever will be.

Let the State see to it that its babes are not left out of the great scheme of education which it is planning for its children. The kindergarten has passed the experimental stage in South Carolina-it has come to stay. Its results can already be felt upon the life of the State, wherever it has set up its banner.

A member of the National Welfare Work from the North was sent down not so long ago to investigate our mill conditions. In an interview with the President of one of our cotton mills, she said: "I see you have the kindergarten; what has been your experience with it?" "I am not prepared," said he, "to discuss it from its educational standpoint. I do not understand the system well enough for that, but it has made a great difference in the life of the village. The boys in this district used to throw stones at us as we drove through; now they take off their hats."

There is a recognition on the part of the State of the value of the kindergarten work, inasmuch as the State Normal College provides training for kindergarten teachers.

Let us go a step further and put the kindergarten in the public schools.

## FLORIDA KINDERGARTEN LAW.

An Act Empowering County Boards of Public Instruction and Trustees of Special Tax School Districts to Establish Kindergartens Under Certain Conditions.

Be it enacted by the Legislature of the State of Florida:
Section 1. That any County Board of Public Instruction or Board of Trustees of any Special Tax School District is hereby empowered to establish and maintain kindergartens in communities guaranteeing the attendance of twenty-five (25) kindergarten pupils.

Sec. 2. That every kindergarten established under this Act shalt be a part of the public school taught in the same community, and shall be under the direction and control of the principal of the said public school.

Sec. 3. That no person shall be employed to teach as principal of a kindergarten department who does not hold a certificate of graduation from a reputable kindergarten training school.

Sec. 4. That all laws and parts of laws in conflict with the provisions of this Act be, and the same are hereby, repealed.

Sec. 5. This Act shall become a law immediately upon its approval by the Governor.

Approved May 31, 1905.

## CHAPTER V.

## Improvement of Rural Conditions.

## ADDRESS TO STATE TEACHERS' ASSOCIATION.

By. Dr. Seaman A. Knapp, of United States Department of Agriculture.

What can the teacher do to improve rural conditions?
What is the present status of rural conditions?
In general they may be outlined as follows:
First. A very much lower earning capacity of the rural toiler than of his equal in the city and a consequent dissatisfaction upon the part of the farm wage earner.

Second. A lower and more hazardous return from farm investments than from those in commercial transportation lines and a consequent disinclination to hold country property.
Third. In the past half-century, rural improvement has not kept pace with civic, and social conditions upon our farms have declined by the removal of many old and cultured families to the city. The progress of our cities has been so phenomenal that they have attracted people of education and refinement to the detriment of the country.

Fourth. The increase of rural lawlessness and crime has driven the families of many farmers to the town or city for greater security.

Fifth. The gradual increase of tenant farming, till it now represents about 40 per cent. of the total and the marvelous advance of cities in population, wealth and political power, are parts of the current history which indicate radical changes in our commonwealth not gratifying to lovers of a broad liberty.

Sixth. Our large cities are danger places on the map of our republic. Homes are so costly that only the rich can own them-the poor and even those of considerable earning power are tenants at will. The industrial enterprises are vast and it requires enormous wealth to handle them. Each supports an army of employes-all dependent upon a managing will.

In New York there are at least roo,000 men so completely dependent for a day's bread upon a day's toil that they are compelled to cast their votes for a job, and there is another hundred thousand unavoidably influenced by their jobs. This we may call mass compulsion. There is also, where great numbers are aggregated, a mass leadership regardless of wealth. Generally this represents organized and predatory poverty.

The prosperity in cities, so far as it relates to the masses, is illusory.

The number of toilers who finally acquire a reasonable reserve for old age in the country as compared with the same class in the cities, is as ten to one, taking the whole country into account.

While the wages is high in the cities, the cost of rents and living are in proportion. The multiplied attractions induce a habit of liberal spending, not conductive to economy. The small farmer may earn less, but he can save more.

The true representative of liberty is the man who owns his farm home in the country. He is not obliged to vote for his job and his segregation breaks the spell of mass leadership. He stands for an independent political unit instead of the mass units of cities.
The problem is: How can we increase and strengthen this individualism so essential to our national life?
First. The income of the farm can be increased three to five fold by the use of improved methods.

Second. The farm must be made valuable by the improvement of the soils, by the planting of valuable timber, and by placing on the land substantial improvements.

Third. The farm must be made a place of beauty, so attractive that every passing stranger inquires: "Who lives in that lovely home?" The house is of minor consideration-the gorgeous setting of trees and shrubbery holds the eye.

Another most valuable work to be accomplished is a great increase in the quality and quantity of home education. Rural improvement must be made to equal the demands of an enlightened rural population.

Fundamental to all this and infinitely more important is the crop of boys and girls in the country; the kind of men and women born, raised and molded under rural conditions. Shall they be great, strong, earnest, true and potential characters, or shall they be weak and trifling?

Some families have been intellectual and vigorous for generations; some nations inherit and transmit potency. Are these due to accident, or training, or climate, or inheritance? Blood and racial characteristics are a wonderful heritage, but training is the great item which fashions a race. The seed of the cotton may be thoroughbred and of the choicest selection-it will not produce the fleecy bolls if the plant is allowed to stand in the grass. The blood of a noble ancestry goes down before inherited wealth and a dissolute training
as the tender grass before the whetted scythe. We must have the richest training. The greatest schools for the human race are our homes and the common schools-not our colleges and universitiesgreatest in amount and value of the knowledge acquired. A country home, be it ever so plain, with a father and mother of sense and gentle culture, is nature's university, and is more richly endowed for the training of youth than Yale or Harvard.

## TRIBUTE TO MOTHER.

Peerless among all teachers is that high priestess of the home, whom we know as mother. She inspires as well as instructs. Next to her in work and worth are the common school teachers. They supplement the home training and lay the foundations of knowledge along the lines of wisdom. The greatest event in human life is the awakening of the infant intellect. It has been ascertained with reasonable certainty that the extraordinary per cent. of weak-minded and idiotic children in foundling haspitals is due to the lack of a mother's care. The loving eye, the cooing, the encouraging smile, and the chucking under the chin are necessary to the awakening and arousing of that intellect. They pour the very wine of a strong and loving soul into the weaknesses of the dawning intelligence and give it strength. No after-care can make amends for failures or misdirection at this initial stage.

Some people are dull all their lives. What is the matter? They were never fully awakened. That great man sought to be governor of his State and he attributed his failure to a lack of votes. He was mistaken-what he lacked was another mother's chuck under the chin.

The six years next succeeding this period are generally devoted to growth without regard to mental expansion. What a mistake. For this acquisition of knowledge and for mental direction these six years are worth any other period of twelve years in human life. This is the absorbing period. The Japanese understand it and the infant, instead of a cradle and a morphine dope, is given the open air and a chance to see things. On the back of the mother or sister or brother the young child is constantly in the open air, and unless asleep is always observing and absorbing. What an iron constitution is built up! What a fund of knowledge is acquired! What brightness of intellect is induced!

## 848

Years since I entered a home where the mother believed in education by absorption. Two small children were playing on the floor with letter blocks. The younger could neither walk nor speak a word, but he knew each letter and would creep and bring it at request, or he would make up a train of cars and place the engine in front. To test the child's knowledge, I removed the cowcatcher from the engine and attached it to a rear car. The older child said, "You can't fool babe." Sure enough, in a few minutes that creeping midget had the cowcatcher back in the proper place. In after years he became one of the most skillful engineers in the country-but he never knew when he learned. In many families it is not unusual for children of six years to speak three languages. They absorbed them. One of the greatest mistakes of our common schools is that the learning by absorption is arrested and the instruction by books is substituted. As far as possible in the common school the instruction should be by object lessons.

Contact with other children is just as necessary to strengthen and broaden child life as contact with men is helpful in forming strong and manly characters. The child raised in seclusion and schooled by private tutors has not had a fair chance for the battle of life. The sidewalk urchin is his superior in real knowledge of men and things. It is just as important that a boy learn to test his strength with his fellows, to stand for his rights and to take hard usage good naturedly, as to learn anything else. The common school is the greatest of training places for American children.

The criticism that I pass on them is that there appears to be in some sections an organized effort to make them uncommon schools. A common school should be the place where boys and girls are fitted for the common duties and responsibilities of life. Our primary and secondary schools should fit the youth for the ordinary vocations of the commonwealth.
We all recognize the great value of higher education and believe in colleges and universities. They have their work and it is noble; but it is just as out of place to put part of a university into a common school as to put a common school into a university. A university can only be a tandem attachment-what is needed is to widen the common schools by broader instruction in common things. The young farmer who breaks his harness upon a lonely road blesses the teacher who taught him to always carry an extra string. Any quantity of Roman history in the head is not equal to a string in the pocket for mending broken harnesses. A landlord sometimes
attempts to supplement deficiencies in food and service by a band of music, but there is no music for a hungry man like a well-cooked meal.

It is assumed that the instruction in the branches usually taught in the common schools of the country will be thorough and satisfactory; my object here is to call attention to lines of instruction neglected but very important.

## COMMON SENSE WANTED.

The greatest of all acquisitions is common sense. Common sense is simply a wide and perfect knowledge of common things and how to use them. It is absorbed knowledge and not book instruction. The best work of the teacher is to cultivate the observation and thus increase mental absorption.

In a school room of 40 pupils are 40 pieces of complicated human machinery of wonderful power and marvelous possibilities subject to the manipulation and skill of the teacher. No greater mistake can be made than for the teacher to attempt to make a Clay, a Calhoun or a Webster out of such material. The world is not in need of the exceptional. It is in need of more great common people. We need an inspiration in the schools that impels every pupil to excel in the line which he or she is to follow.

How are such men and women to be trained unless it be done in our common schools? There ought to be an hour every day devoted to that much neglected study-the study of common things-and every pupil should be made familiar with all that relates to the home, the farm, the garden, the orchard, the forest, the animals, the birds, the insects and the fish. There is a world of information in the stores and in the shops to be sought and explained. All that relates to the common phenomena of nature furnishes chapters of absorbing interest. One day it is an object-lesson on the leaves of the common trees and their offices; another, it is a chapter on root development and how plants feed; again, it is the marvelous story about seeds; the next day the horse or the cow is the topic.

Dr. Beal once related to me his experience as a student of Agassiz. He had graduated at college and studied science for a year or more when he concluded to take a course of lessons under Agassiz. He called on the distinguished scientist and explained his object. Agassiz took down a shell about half an inch across and said, "You may look at this, see what you find and report to me tomorrow." He examined
and thought he saw everything about it, but upon hearing his recitation, Agassiz said, "You have seen some things, but not all. You may look further and report tomorrow." This was repeated daily for three weeks, till Mr. Beal mastered the story of the shell; then Prof. Agassiz said, "Mr. Beal, you have tenacity of purpose. Most young men would have left in disgust. You will make a scientist whether you remain with me or go elsewhere." He had acquired the great lesson that wisdom lies in knowing a subject thoroughly.

This is folk lore. The knowledge of common things is child lore; and whoever does not acquire it in childhood will be either lacking in common sense or dull in apprehension of it.

One of the most radical and practical innovations in common schools is the introduction of nature studies and the school garden. Formerly many of our educational methods were erroneous. We tried to extract knowledge from books-an impossibility. Pages of names in the sciences were committed without knowing for what they stood. Just as if we should commit to memory the names of a thousand people in a given city and then some time try to fit the person to the name. Nature studies and the school garden aim to correct these erroneous methods, but they must be real nature studies and not nature studies in a book. The book should be secondary and never opened till the observations have been made. The garden is simply a great slate. The book helps to systematize this knowledge and place it in retentive form. The object of education should be to fit the individual to his environment and give him the knowledge and power to master it instead of allowing it to overcome him. For some years in my earlier life I was a teacher and I conceived it to be my duty to try to make every student who came under my influence dissatisfied with his environment and fill him with the hope of becoming a great man in law, or medicine, or scholarly attainments. I see now what wreckage I made.

I recall the case of a young man who attended my school years since. Through my influence his widowed mother sent him to college. He ultimately studied law and became a lawyer, briefless and unknown. All his forebears were farmers. There was not a particle of his gray matter that was adapted to the law.

If much can be done for boys to interest and instruct them in their life work, more can be done for girls. Teach them to mend and sew and cook; how to doctor; how to dress a wound or make a ligature; how to adorn the simple home and make it appear like a palace; how by a simple arrangement the environment of the home
can be transformed into a place of beauty. In the United States the art of cooking is mainly a lost art. There are communities where not to be dyspeptic is to be out of fashion. If we could have some lessons on how to live royally on a little; how to nourish the body without poisoning the stomach; and how to balance a ration for economic and healthful results, there would be a hopeful gain in lessening the number of bankrupts by the kitchen route.

Our greatest need being a wider knowledge of common things, the teacher who really enters into country life and seizes its opportunities for developing the resources of the country, for increasing the harvests, improving the landscapes, brightening the homes and flooding the people with knowledge about helpful things, will never want for friends nor for places to teach. How joyfully will such a teacher be welcomed! The sound of her footstep on the approaching walk will be sweeter music to the cottage inmates than ever came from organ or piano even under the touch of genius.

## MECHANICAL SKILL.

Everywhere throughout the country there is a shocking lack of mechanical knowledge and skill. It is shown in the buildings, the fences, in the general farm arrangements and in the machinery. For success upon the farm a knowledge of mechanics is second in importance only to a knowledge of agriculture. Mechanical knowledge and skill should come like common sense through absorption by placing engines, machinery and tools in the hands of children. Some of the most skillful engineers and carpenters and blacksmiths never consciously served an hour of apprenticeship. No farmer can afford to send for a mechanic to attend to the minor repairs-they must be done by the men on the farm. Attached to every country school house should be a room for the practice of mechanics. The use of tools is a necessary part of a common education. It will give mental direction as well as skill. Most boys cannot tell the width or heighth of the average door through which they daily pass, nor the proper proportion of windows to the room. Their eyes were never opened to see industrial things. They may be able to talk learnedly about the Acropolis, or the Parthenon, or the dome of St. Peter, but to know about the house in which they live, this would be vulgar. There is no place for such rot in this utilitarian age. Not to know the things with which we come in daily contact is dense ignorance.

I know a professor, who for twelve years walked through a small
pasture where a choice herd of Jersey cattle grazed, and never noticed an animal. At the end of that period he inquired of a friend what kind of cattle they were and who owned them. He probably would never have noticed if he had not run against a cow.

## FINANCIAL SENSE.

There is another great field for instruction in common thingsfinancial sense, the value of a dollar and its conservative uses. It is acquired in the same way as common sense and mechanical senseby early practical training. This gift may become a family or a State or a national characteristic, according to the training. The Chinese, as a people, are thrifty, eager to learn and prudent in expense. They live within their means, pay their debts and lay away something in store for the future. The Fillipino, the Malay and the Hindoo are unthrifty. They delight in festal days, in storing nothing for the future and in spending the wage before it has been earned. The teacher should give practical lessons in thrift and show the importance of saving the pennies and wisely investing them.

I know a man who saved all his nickels and dimes till he was twenty years of age. They amounted to enough to purchase a choice farm of eighty acres, and he made the investment. In a few years the State wanted a man for a position of trust and selected him because of his reputation for thrift. Most of the rich men of the United States were born poor. They rose above their fellows, not by superior genius, but by greater thrift. The average wage in Japan is about one-sixth the amount paid in the United States for the same class of labor, yet Japan has not one-tenth of the beggars and the evidences of desperate poverty that there are in the United States. They all work and live simple lives; they are all mechanics.

## PROMPT AND ALERT.

The introduction of the military system into common schools has served a beneficent purpose. It has taught attention and prompt obedience. In daily life, the greatest elements of success are alertness and immediate action. Do today what might possibly be deferred till tomorrow. Tomorrow will bring its full responsibilities Training can do much towards making a people so prompt and alert that the baneful word tomorrow will cease to be a part of business language.

Another lesson of great value the teacher can impress upon the
our highest ideals each individual, in all the classes, occupations and pupils, and that is the necessity of labor and its dignity. I am ashamed of the young man who is afraid of toil, and I pity the girl who keeps soft, white hands. Let the young man glory in his rugged physique and let the young woman be proud of the common things she can do and not of her delicate hands.

We are rapidly becoming a nation of idlers. In the towns more than half the population does nothing towards earning a support if we count all the men, women and children who could do something. These half-grown boys and girls could make a garden and raise the fruit and poultry to support the family if they would. It might brown their skins and soil their hands, but it would help them to do something and to know something. It would aid the family pocketbook and help the family character. There is no sufficient reason why every American family should not own a good home and have a snug sum laid by for a rainy day, except our laziness, our lack of thrift or possible sickness, and nine-tenths of all sickness is due to malnutrition, which is another name for ignorance.

Teachers! You must help create sentiments of thrift and establish habits of industry or this nation will drift to wreckage. The greatest opportunity in the history of the world for the molding of a strong people and the establishment of a mighty nation will culminate in disaster if we discard such cornerstones as labor and thrift. Idleness and lack of thrift will undermine intellect, weaken physical vigor and personal courage, and waste the fairest heritage that ever fell to the fortunes of man.

In the elder day children were taught politeness. Politeness is the material expression given to human kindness. It is one of the most valuable of all acquisitions and no young man or woman, ambitious for great success, can afford to be without it. I know an eminent banker who banks on politeness. It gives him capital and influence and power.

For a quarter of a century there has been much discussion about improving rural highways. This discussion has, in my judgment, lacked definiteness, and the servants of the people eager to obey have tried to construct, to mend, to patch and to please everybody. The result is a vast amount of money has been expended and but little good accomplished. Our main highways should be Roman roads, graded and bridged with the same care as railway lines. This would give the people cheap and rapid transit and prepare the way for rural mail and parcel delivery and telephone service which must become
universal. Where is the money to be obtained to defray this enormous expenditure? Save the waste and the vast sums expended for liquor and tobacco and in five years the entire country from Canada to the Gulf of Mexico, from the Atlantic to the Rocky Mountains, could be thickly checked with Roman roads. What is needed is a reconstruction of public opinion in favor of bettering our conditions. Public opinion rules our country. The teachers are the natural initiative and reconstructing force in public opinion.

I have no sympathy with the unrest of our rural population. We are upon the eve of radical changes for the betterment of country conditions. Today the safest place for investment is the farm. Land values will advance rapidly with increasing population. They will more than double in thirty years. Already the abandoned farms of New York and New England are being sought by capitalists for investment. There is many a man planning to sell his paternal acres in the country for a pittance and invest the proceeds in a cottage in the town-and then earn the support of his family by daily toil. It is the act of an irrational man. He does not stop to think that that farm will give him a home and support and soon quadruple in value. He fails to note the possibilities of rapidly increasing his wealth by the planting of valuable trees, and he voluntarily exchanges the rights of a king and the privileges of a freeman for a daily wage and the badge of service.
I have tried to make clear the importance of an education in common things for common people as opposed to the exceptional and the remote and the extraordinary. If we have no more time than necessary to become perfect in the knowledge of one country, let that country be our own. Study the history, the language, the soil, the climate, the animals, the birds, the plants and all the conditions that make for home success and comfort. If still there be inclination, leisure and means, then extend the researches into foreign lands. We are on the wrong line. We have tried to master ancient history without knowing modern. We have attempted to translate the classics and have failed for lack of English; our ten-story buildings without foundations or lower stories have not proven even good air structures. A great nation is not the outgrowth of a few men of genius, but the superlative worth of a great common people. Few will attempt to controvert this statement. Our differences appear when we undertake to outline a course of study essential to the making of a great common people. We are agreed, however, that to meet professions of our commonwealth, must be strengthened and devel-
oped in his life work to the extent of his capacity. Chemistry, botany, entomology, biology, mechanical conditions of the soil, plants, mechanics, etc., must be taught to the extent required in the vocation to be followed, and with special adaptation to it. At present they are taught on the iron bedstead plan, the same for all.

What can you, teachers, do to help our rural conditions? Everything. You are an essential part of the greatest of all universitiesthe home. You have charge of the extension courses. You can inspire in youth a love of knowledge and make all its avenues look delightful. You can unlock the books, which are treasure houses of human wisdom, and give them a golden key. You can cause the soil to become more responsive to the touch of industry and the harvest more abundant to meet the measure of a larger hope. You can add to the comforts of the home, shape its environment into lines of beauty and increase its attractiveness, till the home shall become the greatest magnet of our people.

You can create a love of investigation and give it direction. You can enlarge the knowledge of the people in common things and thus lay the foundation of common sense. At your instance, fingers will touch the lines of deftness, mechanical skill will become universal, and thrift and alertness will transform the toilers into captains of industry.

Your mission is to make a great common people and thus readjust the map of the world. The keystone of American civilization is the home ; by some mysterious social convulsion it has become loosened; you can reach it from the pedestal of the common school, push it to its place and cement it in a way that will be enduring.

Hamilcar took the youthful Hannibal and made him swear at a sacred altar eternal enmity to Rome. Teachers, on bended knee and with uplifted hand, at the altar of liberty, swear eternal enmity to ignorance, vice and crime! The trumpet calls to battle.
"Soldiers: Go, but not to gain mouldering spoils of earthborn treasurel
Not to win a vaunting name, Not to dwell in tents of pleasure-

Dream not that the way is smooth,
Hope not that the thorns are roses,
Cast no longing eyes of youth where the sunny beam reposes;
You have sterner work to do,
Hosts to cut your passage through.
Close behind you gulfs are burning,
Forward! There is no returning."

## CHAPTER VI.

## Teachers' Reading Circle Course and Libraries.

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## TEACHERS' READING CIRCLE COURSE AND LIBRARIES.

## To Superintendents and Teachers:

This is the third year of the Teachers' Reading Circle. Those who began with the first year and who finish the work for 1907-08 will receive ten-year State certificates signed by the Governor and State Superintendent of Education as officers of the State Board of Education. Those who begin this year for the first time will be entitled to a renewal of first-grade certificates. The course may be begun at any time and completed in three years. Many teachers took the course of $1906-07$. This work will be open until September rst. A simple examination is required of each year's work. The questions are sent direct to the members of the Reading Circle and they are allowed to write the answers at their homes.

Allow me to call your special attention to the Reading Circle Course for the coming year. I have read these books recently, and I believe that any teacher in the State will be helped and improved by reading them. The books are-

Thorndike's Principles of Teaching.
Kern's Among Country Schools, and
Moran's English Government.
You will notice that two of these books are professional and one is intended for general culture. I have found it advantageous to carry the whole course along at once. However, you may purchase and read one book at a time. The examinations on the course for the coming year will be sent out earlier than usual, in order that certificates may be renewed for those who desire it. By adoption of the State Board of Education and special arrangements with the Educational Publishing Co., 12-16 Trinity Ave., Atlanta, Ga., these books may be ordered for the school libraries at reduced prices. This company will also send these books direct to the teachers for their personal libraries.

The following prices are quoted:
Price to Teachers
Pub. Price. and Trusters.
Moran's English Government ..... $\$ 1.50$
$\$ 1.10$Kern's Among Country Schools1.2597
Thorndike's Principles of Teaching 1.35 ..... 85Charges prepaid if sent with library orders; if sent by mail or ex-press, ten cents per copy extra.
Sincerely,
O. B. MARTIN, State Superintendent of Education.
Columbia, S. C., Aug. ist, 1907.
The following teachers have successfully completed the Reading Circle Course:
Courses.
Miss Katherine B. Mazyck, James Island, S. C. . .. .. .. . . 2 years
Miss Conyers Allen, Central, S. C. . . . . .. .. . . .. .. . . 2 "
Miss Greta Gaines, Central, S. C. . .. .. . . .. .. .. .. .. 2 "
Miss Nora Dalton, Grove, S. C. . . . . . . .. . . . . . . .. .. 1 "
Mr. A. J. Sherman, Loris, S. C. . . . . . . . . . . . . . . .. . . 1
Miss Gertrude Youmans, Stafford, S. C. . .. .. . . . . .. . . 1 "
Miss Aline Kearse, Olar, S. C. . . . . . . . . . . . . . . .. .. ${ }^{\prime}$
Mr. L. E. Childress, Greenville, S. C. . . . . . . . . . . .. .. I "
Miss Ava Stuckey, McBee, R. 2, S. C. . .. .. .. .. .. ..I "
Mrs. S. L. Baker, Mt. Pleasant, S. C. . . . . . . . . . . . . . . .i "
Mr. Jas. G. Spivey, Venters, S. C. . . . . . . .. .. .. .. .. I "
Miss Rebecca Curray, Columbia, S. C. . .. .. .. . . .. .. .. ${ }^{\prime \prime}$
Miss Scotta M. McCaskill, Cassatt, S. C. . . . . . . . . . . . . I "
Mr. W. J. McGarity, Richburg, S. C. . . . . . . . . . . .. .. I "
Miss Fannie Marshal, Morrisville, S. C. . . . . . . . . .. .. I "
Miss Lessie Porter, Sampit, S. C.․ . . . . . . . . . . . . . . . . . . I
Miss Mamie Burnett, Wellford, S. C. . . .. .. . . .. .. .. I "
Miss B. Louise Mallard, St. George, S. C. . . . . . . . . . . . I
Miss Ellie Boyd, Trio, S. C. . . . . . . . . . . .. .. . . . . . .
Miss Annie Miller, Rock Hill, S. C. . .. . . .. .. . . .. ..
Miss Jessie Carter, Timmonsville, S. C. . . . .. .. .. .. ..I "
Miss Posie C. Hardin, Clifton, S. C. . . . . .. .. .. .. ..I "
Miss Cora T. Carter, Timmonsville, S. C. . .. .. .. .. ..I "
Miss Annie W. Shuler, Elloree, S. C. . . . . . . . . . . . . . .
Miss Susan S. Gourdin, Salter's, S. C. . . . . . . . . . . . . . .I "
Miss Marie Kearse, Ulmer, S. C.
Miss C. L. Dickinson, Summerville, S. C ..... "
Mrs. Ida Looper, Greer, S. C.
Mrs. Ida Looper, Greer, S. C. ..... \% ..... \%
Miss Alice McQueen, Hartsville, S. C
Miss Alice McQueen, Hartsville, S. C ..... " ..... "
Miss Lola M. Smith, Scranton, S. C.
Miss Lola M. Smith, Scranton, S. C. ..... 3 ..... 3
Miss Vera Anderson, Timmonsville, S. C
Miss Vera Anderson, Timmonsville, S. C ..... I ..... I
Mrs. W. J. Chandler, Church, S. C.
Mrs. W. J. Chandler, Church, S. C. ..... I ..... ICourses.
Libraries Established to November 20, 1907.
ABBEVILLE.
R. B. Cheatham, Superintendent.
(Established, 15 ; Enlarged, 3.)

No. of District.Name of School.
Due West. ..... 38
Antreville ..... 27
Willington ..... II
Buffalo ..... 14
Mt. Carmel ..... 10
McCormick ..... 13
Smithville ..... 32
Lowndesville ..... 3
Sharon ..... 20
Broad Month ..... 44
Stone Ridge ..... 36
Cold Spring ..... 30
The Latimer ..... 7
Fern Cliff ..... 19
Bordeaux ..... 14
AIKEN.
A. W. Sanders, Superintendent. (Establlshed, 19 ; Fnlarged, 3.)

No. of District.
5
Burcaloo
34
Monetta
60
Wagner.
Na. or
Name of School. ..... Dtetrict
Mt. Calvary ..... 37
Talatha ..... 57
Warrenville ..... 62
Graniteville ..... 22
Vaucluse ..... 22
Langley. ..... 29
Bath. ..... 29
Bodie. ..... 24
North Augusta. ..... 66
Perry ..... 42
Clear Water ..... 48
Kathwood ..... 27
Adamsville. ..... 48
Ott ..... 67
Bethea ..... 2
Beulah ..... 3
ANDERSON.
R. E. Nicholson, Superintendent.
(Entablished, 85 ; Enlarged, 20.)
No. of
District. Name of School.
4
4
St. Paul.
St. Paul.
47
Orr Mill.
Belton ..... 12
Honea Path. ..... 34
Zion ..... 2
Pendleton ..... 24
Neal.s Creek ..... II
Union Grove. ..... 21
MeLee's ..... 52
Eureka. ..... 25
Carswell Institute ..... 14
Townville ..... 40
Walker-McElmoyle. ..... 50
Ridge Spring ..... 5
Oakdale. ..... I
Starr. ..... 37
Shiloh. ..... 49
Iva. ..... 44

863
No. of
No. of
Name of Echool. District.
Friendship ..... 35
Peizer ..... 22
Bishop's Branch ..... 28
Triangle ..... II
Lebanon ..... 27
Woodland ..... 12
Hopewell ..... 7
Riverside ..... 47
Ebenezer ..... 45
Brogan Mill. ..... 6
Greenwood ..... 38
Melton. ..... 51
Williamston. ..... 20
Barker's Creek ..... 16
Midway ..... 7
Belton Mills. ..... 12
Mayfield. ..... II
BAMBERG.
R. W. D. Rowell, Superintendent.
(Established, 12 ; Enlarged, 1.)
No. of
Name of School. ..... District.
Olar ..... 8
Denmark ..... 21
Ehrhardt ..... 22
Govan ..... II
Flat Pond ..... 13
Hampton. ..... 3
Bamberg Graded School ..... 14
Hunter's Chapel. ..... 16
Oak Grove. ..... 20
St. John's ..... 4
Salem. ..... 9
White Point ..... 4
BARNWELL.
B. M. Darlington, Superintendent.
(Eftabllshed, 20 ; Enlarged, 3.)

No. of District.
Name of School. ..... 2
Seven Pines
I
Buddenville
6
Hickory Grove
48
Barton
Fairfax ..... 44
Long Branch ..... 8
Galilee ..... 15
Appleton ..... 5
Ulmer's ..... 31
Healing Springs ..... 10
Martin ..... 6
Pleasant Hill ..... 13
Ashley ..... 24
Conyer's ..... 13
Dunbarton ..... 12
Fair Pond ..... 8
Sycamore ..... 51
Richland ..... 26
Cave's ..... 36
Hercules. ..... 23
BEAUFORT.
B. H. Boyd, Superintendent.
(Established, 8 ; Enlarged, 3:)

No. of District

Name of School.
Ridgeland ..... 3
Beaufort Colored School ..... I
Beaufort White School ..... 1
BERKELEY.
C. W. Sanders, Superintendent.(Establlshed, 9 ; Enlarged, 5.)No. ofDistrict.Name of School.
12
Pinopolis Academy
16
Eutawville Graded School
No. of Dintrict.Dintrict.
Monck's Corner ..... IO
Long Ridge ..... 22
Holly Hill ..... 18
Russelville. ..... 7
St. Stevens Graded School ..... 6
McBeth ..... 8
Appii ..... II
CHARLESTON.
E. P. Waring, Superintendent.
(Established, 18 ; Enlarged, 9.)
No. of District.
Name of School.
I
McClellansville Graded School (white)
3
James Island (white)
Mt. Pleasant Academy (white) ..... 5
Society Corner (colored) ..... 3
Cut Bridge (colored) ..... 3
Victory Point. ..... 6
Three Trees (colored) ..... 3
Central (colored) ..... 13
Lofton (white) ..... 8
Borough (colored) ..... 13
The Borough (white) ..... I3
The High School ..... I3
Rockville High School (white) ..... 12
Graham ..... 7
Stono (white) ..... II
Seaside (colored) ..... 13
Belvidere (white) ..... II
Moss Swamp (white) ..... 9
CHEROKEE.
J. L. Walker, Superintendent.
(Established, 15 ; Enlarged, 2.)
Name of School.Dlstrict.
Piney Grove. ..... 2
Grassy Pond ..... II
Wilkinsville. ..... 20No. of
Name of School. District.
Williams ..... 15
Grassy Pond ..... I
Buffalo ..... 6
Jeffries ..... 18
Blacksburg ..... 9
Farmville ..... 17
Central Graded ..... 10
Cherokee Avenue ..... 10
Corinth ..... 28
Fairview ..... 24
New Pleasant ..... 15
Colored Graded ..... 10
CHESTER.
W. D. Knox, Superintendent.
(Established, 16 ; Enlarged, 8.)

No. of District.
Name of Bchool.
Sunshine8
Poplar Spring ..... 5
Fort Lawn ..... 17
Cedar Shoals ..... 18
Halsellville ..... 16
Cornwell ..... 7
Oak Hill ..... 7
Blackstock ..... 7
Jordan ..... 3
Harmony (white) ..... 13
Mt. Pleasant ..... 12
Edgemoor ..... II
Bethel ..... 6
Rossville ..... 6
Pleasant Grove ..... 2
Wylie's Mill ..... 13
CHESTERFIELD.
K. Rivers, Superintendent.
(Rstablished, 22; Enlarred, 4.)
No. of

District.
Name of Bchool.
21
Bay Spring.
29
Ruby High School
6
Pleasant Grove
Middendorf ..... $3^{8}$
Jefferson. ..... 9
Wexford ..... 30
Bethel ..... 25
Pine Grove ..... 17
Vaughan ..... 8
Ousley ..... 5
Macedonia ..... 20
Cheraw Graded ..... 6
Center Point ..... 19
Snow Hill. ..... 3I
Britt ..... 23
Green Hill ..... 4
White Oak ..... 15
Bear Creek. ..... 12
Union ..... IO
Mangum ..... I
Five Forks ..... 34
Dudley ..... I
CLARENDON.
S. P. Holladay, Superintendent.
(Established, 21 : Enlarsed, 10.)

No. of District.
Moses Levi Memorial Institute
19
Paxville.
3
Panola

Summerton ..... 22
Sardinia ..... 15
Pinewood ..... 25
Greenock ..... 23
Enterprise ..... 12

## 868

Jordan ..... 5
Sammy Swamp ..... 2
Grange Hall ..... 2
Oak Grove ..... 7
McFadden ..... 24
Hicks. ..... 21
Pineland ..... 3
Pine Grove ..... 20
The Holladay ..... 10
New Zion ..... 15
Davis' Station ..... 26
Trinity ..... 27
Oakland ..... 18
COLLETON
H. W. Black, Superintendent.
(Established, 16 : Enlarged, 2.)
No. of District.
Name of Bchool.
I
Dry Branch
20
Buckhead
Smoak's ..... 5
Rice Patch ..... 6
Cottageville ..... 23
Williams. ..... 3
Lodge ..... 30
Beling ..... $3^{6}$
Ashton ..... 28
Young's Island ..... $3^{6}$
Pine Grove ..... 24
Snider's ..... 27
Bethel ..... 40
Weimer ..... 21
Strickland ..... 4
Omega ..... II

## DARLINGTON.

## H. C. Burn, Superintendent.

(Erablabled, 27 ; Entarsed, 11.)
No es Diatrict
Reynolds ..... 3
Newman Swamp High School ..... 4
Lamar High School ..... 6
Philadelphia ..... 20
Echo High Schoot. ..... 22
Clyde High School (No. I) ..... 28
Burnt Branch ..... 29
New Providence High School ..... 31
Hartsville Graded School. ..... 32
Newman Swamp ..... 4
High Hill ..... 12
Palmetto ..... 21
Anderson. ..... II
Swift Creek ..... 8
Linwood. ..... 12
Jasper. ..... I9
Linhurst ..... 24
Epworth ..... 15
Mechanicsville ..... 7
Montclare ..... 7
Clyde (No. 2) ..... 5
Indian Branch. ..... 23
Plummer. ..... 9
Dovesville High ..... 30
Williamson ..... 21
Bethlehem ..... 17
Kelley Town. ..... 10
DORCHESTER.
J. J. Howell, Superintendent.
(Entabliabed, 8; Enlarged, 1.)

No. of Distrlet.
Name of School.
5
5
St. George's Graded School
St. George's Graded School ..... 9
Pine Grove ..... 7
56-R. \& R $-(500)$
Name of school.
Ne. of
District.Long Branch.19
Stallsville ..... 16
Ridgeville ..... 12
Summerville. ..... 18
Grover ..... 4
EDGEFIELD.
W. D. Holland, Superintendent.
(Entablished, 15 ; Enlarged, 2.)
No. of

District.
Name of School.
22
Brunson
27
Trenton
7
White Town
15
Plum Branch
8
McKendree
I
LimestonePine Grove1
Parksville. ..... 26
Bethlehem ..... 19
Mountain ..... 1
Long Branch ..... 20
Collier ..... 5
Oak Grove ..... 24
Red Hill. ..... 3
Johnston Graded ..... II
FAIRFIELD.
T. M. Jordan, Superintendent.
(Established, 27 ; Enlarged, 8.)
No. of
Name of School. ..... District.
Poplar Spring ..... 4
Jenkinsville ..... II
Ridgeway ..... 16
Mitford ..... 20
Blair ..... 21
Morgantown ..... 26
Ridge ..... 28
Douglas ..... 2

## 871

No. of
Name of School.

District.
Feasterville ..... I
Crosby ..... I
White Oak ..... 3
Monticello ..... 15
Lebanon Graded School ..... 12
Lemmon ..... 23
Blythewood ..... 30
Mossydale ..... 17
Salem ..... 25
Greenbriar, Graded ..... 9
Woodward ..... 2
Union ..... 10
Pine Grove ..... 29
Twenty Creek ..... 31
Long Town ..... 22
Hop. ..... $2 I$
Pine Grove ..... 19
Smallwood ..... 8
Turkett ..... 32
FLORENCE.
A. H. Gasque, Superintendént.
(Entablehed, 24 ; Eniarged, 2.)
No. of
Dintrict.
Name of Behool.
21
Bethlehem
7
Trinity
14
Bannockburn
13
Ebenezer.
2
Douglas
2
Woodville.
26
Mt. Zion ..... 26
Hyman ..... 18
Center. ..... II
Sardis ..... 12
Oak Ridge ..... 5
Hannah. ..... 18
Cartersville ..... 38
Elim ..... 37
Magnolia ..... 15

## 872

Na:y of Elehool. Ho pht
Tan's Bay ..... 14
McLaughlin ..... 14
Liberty Chapel. ..... 4
Gibbs ..... 6
Enon ..... 10
Evergreen. ..... 17
Bay Branch ..... 7
Friendship. ..... 4
Mars Bluff ..... 4
GEORGETOWN.
J. Doar, Superintendent.
(Eratablinhed, 6; Enlarged, 1.)
Name of school.
10
10
Rome.
9
Snow Mill
8
The Oak Greve
3
The Sampit Bridge.
8
8
The Bethel.
The Bethel. ..... I4
GREENVILLE.
James B. Davis, Superintendent.
(Extahllehed, 30 ; Ehilarged, 4.)
Na. of
Distriet.
Name of Echool
$6 d$
Reedy River
50
Poplar Springs
Simpsonville ..... 54
Fork Shoals ..... $2 b$
West Dunklin. ..... Id
Tigerville. ..... I3b
Poe Mill. ..... 86
Fountain Inn. ..... 3b
West Gants. ..... 6
Berea ..... $10 t$
Ebenezer ..... 189
Glassy ..... 146
Taylor's. ..... و

## 873

No. of Dintrict. Nather of Echool. .....
40 .....
40 ..... se
Woodville
Grove
Grove
3 a
Holly Grove
6
East Gantt ..... 6
Sampson Mill ..... 8b
Old Hundred ..... 22
Mills Mill ..... 8
Greer ..... 9h
Lickville ..... 2 C
Flat Rock ..... If
Chandler ..... Ie
Golden Grove ..... $4 g$
Sandy Spring ..... 4 f
Gowensville ..... 14d
Tyger ..... $13 j$
Piedmont ..... 4d
High Land ..... 13d
GREENWOOD.
J. F. Wideman, Superintendert.
(Retablished, 26 ; Enlarged, 6.)

No. of District.
Name of School
2
2
Jones
Jones ..... 14
Greenwood ..... 18
Calhoun ..... 19
Ninety-Six ..... 13
Cokesbury ..... 7
Robinson ..... 28
Phonix ..... 37
Dykes ..... 12
Edis ..... 6
Kirksey's ..... 34
Hodges ..... 4
Quarry ..... 17
Lebanon ..... 16
Mountain Creek ..... 35
Verdery ..... 21
Chappell ..... 8

## 874

No. of
Distriet
Name of School. ..... 3
Troy ..... 27
Coronaca ..... 9
Fellowship. ..... 39
Salem ..... 20
Moss Hill ..... 36
Pine Grove ..... 11
Bold Springs ..... 32
Oak Grove ..... 41
HAMPTON.
S. J. Fitts, Superintendent. (Fatabliahed, 10 ; Fniarged, 1.)Na. of
District. Name of School.
Hampton ..... 15
Church Branch ..... 13
Crockettville ..... 19
Ridgeland ..... 20
Estill. ..... 18
Ridgecut ..... 4
Rice Hope ..... 3
Gifford ..... 17
Varnville ..... 16
The Yemassee (white) ..... 5
HORRY.
W. A. Prince, Superintendent.
(Eatablished, 20 ; Eniarged, 8. )
Na. of
Name of Bchool. ..... Diatriet
Burroughs ..... 19
Zion ..... 27
Sandy Plain ..... 5
Socastee ..... II
Inland. ..... I
Camp Swamp ..... 66
Green Sea ..... 7
Toddville. ..... 37
Alma ..... 20
No. of

District.
Name of School. ..... 13
Withers
9
Little River
14
Centenary
80
Spring Branch
45
Tilly Swamp.
77
Strawfield
67
Pisgah
33
Finkler
6
Athens
48
Eight Mile
Grassy Bay ..... 36
KERSHAW.
W. B. Turner, Superintendent.
(Estabilahed, 22 ; Eniarged, 18.)
No. of District.
Name of School.
2
Cleveland
2
Old Field
26
Sand Hill
26
Bethune Graded School
2
Lime Academy
Liberty Hill. ..... 10
Gum Springs ..... 2
Russell Place ..... IO
Westville ..... 8
Cantey ..... 19
Beaver Dam ..... 18
Ridge Side ..... 17
Camden Graded School ..... I
Lugoff ..... 12
Timrod ..... 6
Beaver Dam ..... 4
Oakland ..... 25
Central ..... 5
Providence ..... 9
Cedar Creek ..... 20
Blaney ..... 12
Cureton's Mill ..... 12

## 88

LANCASTER.
W. M. Moore, Superintendent.(Eatabllshed, 22 ; Eniarged, 2.)
No. of
Betrict.
Oakhurst ..... 39
Tabernacle ..... II
Rich Hill ..... 24
Heath Springs ..... 38
Antioch ..... 49
Van Wyck ..... 5
Bethiehern ..... 18
New Cut ..... 10
Crenshaw ..... 45
Unity ..... 48
Carnes ..... 19
Six Mile ..... 3
Fork Hill ..... 25
Pleasant Hill ..... 31
Tabernacle ..... 12
Caston ..... 32
Jones' Cross Roads ..... 30
Dixie ..... 17
Carmel ..... 29
Pleasant Plain ..... 33
Taxahaw ..... 27
Kershaw ..... 40
LAURENS.
R. W. Nash, Superintendent.
(2etablished, 47 ; Enlerged, 20.)

Na. of Diditet.
Name 0 Behool.
5
Gray Court
14
Waterloo ..... 4
Trinity ..... 7
Sandy Springs ..... 4
Roplar Springs ..... 3
Byrd's. ..... 2
Eden ..... 2
Long Branch ..... I
No. of
Diatrlet. Name of School.
I
Chestnut Ridge
Huntersville ..... 4
Oak Grove ..... 6
Lanford ..... 10
Friendship ..... 6
Rock Bridge ..... 3
Hurricane ..... 15
Wallace Lodge ..... 8
Rabun Creek ..... 4
Bailey High School ..... 4
Dials ..... 7
New Harmony ..... 4
Ebenezer (Young's Tp.) ..... I
Flemming ..... 5
Grays ..... 5
Barksdale ..... 6
Belfast ..... 7
Mountville ..... 16
Princeton ..... I
Copeland. ..... 5
Lisbon ..... I
New Prospect ..... 2
Hendersonville ..... 5
Ekom ..... 3
Shiloh ..... 3
Mt. Pleasant ..... 6
Merna. ..... 8
Pine Grove ..... 3
Central. ..... 6
Lortg View ..... I
Young's (Hunter Tp.) ..... 8
Pine Grove ..... 4
Rock ..... 5
Sardis. ..... 3
Old Mountville ..... 6
Ora ..... 12
Clinton ..... 5
Wadsworth ..... 4
Cross Hill ..... 13
878
LEE.
McD. Davis, Superintendent.
(Brtablinhed, 18 ; Enilarged, 8.)
No. of
Name of 8chool. District.
Sylvan ..... 10
Hebron ..... 18
Magnolia ..... 13
Hebron ..... 9
St. Charles ..... II
Hickory Hill. ..... 8
McDonald ..... 12
Wisacky ..... 25
Black River. ..... 10
Herriot's ..... 24
Smithville. ..... 6
Rural ..... 7
St. Charles ..... II
Schrock's Mill ..... 4
Bishopville. ..... I
Antioch ..... 5
Cypress ..... 16
Sardis ..... II
Una ..... 17
LEXINGTON.
J. E. R. Kyzer, Superintendent.
(Kistablished, 14 ; Enlaryed, 1.)
No. of
District. Name of School.
64
Smith Branch
66
Chapin
57
Peak
59
Midway
St. Michael's. ..... 46
Leesville ..... 15
Brookland. ..... 29
Oak Grove. ..... 2
St. Andrews ..... 4
Lexington ..... I
No. ofDistrict.
Name of School.
Pelion ..... 25
Piney Woods. ..... 50
Red Bank ..... 69
Irmo ..... 45
MARION.
James R. Williams, Superintendent.
(Ertablished, 65 ; Enlarged, 23.)
No. of

District.
Name of Bchool.
21
21
Dalcho. ..... I3
Union
20
Latta
26
Fork
50
Oakton.
34
Mullins
33
Pleasant Hill
0
Reedy Creek.
5
St. Cross.
Centenary ..... 44
Spring Branch. ..... 30
Kemper. ..... 16
Kentyre ..... 12
Hamer ..... 7
Palmer. ..... 46
Page's Mill. ..... 14
Seller's. ..... 28
Cedar Grove ..... 37
Bethel. ..... 54
New Holly ..... 10
Nebo ..... 47
Colored School ..... 44
Scotch ..... 57
Little Rock. ..... 4
Lower Woodbery ..... 53
Friendship. ..... 45
Pine Hill. ..... 35
Mars Bluff. ..... 42
Manning ..... 18
Mt. Andrew ..... 19
Carolina ..... 2
No. of
Nampe of Bchool. ..... Dutrict
Nichols ..... 25
Hillsboro ..... 23
Dillon ..... 8
Buck Bay ..... 44
Zion ..... 3I
Temperance ..... 27
Millers ..... 32
Richardson ..... 48
Davis ..... 55
Old Ark ..... 52
St. James (Colored) ..... 44
Eureka ..... 41
Marion Mills ..... 36
Oakland ..... 3
Midway ..... 38
Dee Dee ..... 25
Olivet ..... 54
Bakersville ..... 40
Buck Swamp ..... 26
Oak Grove ..... 22
Indian Pot ..... 24
Gapway ..... 39
Sister Bay ..... 35
Britton's Neck ..... 49
MARLBORO.
A. L. Easterling, Superintendent.
(Establlshed, 22 ; Enlarged, 10.)No. atDlastrict
Name of Behool
2
Drake
4
Red Bluff
5
Marlboro High School
6
6
Edgewood
1
1
Brightsville
Brightsville
33
33
Beauty Spot
Beauty Spot
29
29
Pleasant Hill
Pleasant Hill
21
21
Dunbar
Dunbar
30
30
Harmony .....
${ }^{8} 8$ .....
${ }^{8} 8$
Willis
Willis
12
12
McColl High School
No. of
District.
Name of Bchool. .....
II .....
II
Boykin
BoykinHebron19
Parnassus. ..... 13
Palnietto ..... 16
Ebenezer ..... 25
Attedale. ..... 17
Clio High ..... 9
Brownsville Academy ..... I
Antioch ..... 37
Oak Ridge ..... 9
Salem ..... 26
NEWBERRY.
J. S. Whreler, Superimtendent.(Entabilahed, 24 ; Enalarged, 6.)
Name of School.
No. of
District.
Pressley ..... 59
Big Creek ..... 20
Chapel's ..... 39
Excelsior ..... 35
Trinity ..... 45
Old Town ..... 40
Jalapa ..... 48
Wheeland ..... 31
Mt. Pleasant ..... 29
Ridge Spring ..... 40
Prosperity Graded School. ..... 14
Monticello ..... 17
Saluda ..... 15
Utopia ..... 10
Swilton ..... 19
New Hope ..... 25
Whitmire ..... 52
Hartford. ..... II
Little Mountain ..... 30
Garmany ..... 27
Central. ..... 21
Pomaria ..... 26
O'Neall. ..... 16
St. Lakes ..... 13

## OCONEE.

## C. L. Craig, Superintendent. <br> (Established, 26 ; Enlarged, 2.)

No. of Distriet.
Name of School.
2
Tokeena
4
Return.
19
Richland
61
Damascus
8
Retreat.
47
Picket Post
67
Union.
45
Tamassee.
64
Brewer
17
Westminster.
20
Bounty Land
30
Shiloh
5
Bethel
Double Springs ..... 54
Whetstone ..... 53
Nevill. ..... 25
Salem ..... 42
Bear Swamp. ..... 72
Fort George ..... 66
Tugaloo. ..... 13
Flat Shoals ..... 46
Wolf Stake ..... 35
Ebenezer ..... 69
Long Creek ..... 59
Providence. ..... 3
Pulaski ..... 62
ORANGEBURG.
S. R. Mellichamp, Superintendent.
(Entablished, 88 ; Enlarged, 9.)
Name of School.

No. of
District.
Limestone High School. ..... 27
Springfield ..... 36
Woodford ..... 64
Cardova ..... 75
No. of

District.
Name of Echool. ..... 54
Bowman (White) ..... 65
The Corner ..... 51
St. Matthews Graded School ..... 8
Center Hill ..... 31
Rocky Pond ..... 42
The Corbett ..... 37
Dantzler ..... 73
Stilton ..... 28
North High School ..... 34
Bryan ..... 47
Dry Swamp ..... 50
Oak Grove ..... 62
Cameron ..... 67
Pine Hill ..... 41
Pine Grove ..... 4
Rowesville Graded School ..... 20
Inabinet ..... 59
Norway Graded School ..... 71
Salem ..... 64
Cope. ..... 46
Jamison ..... 28
North Providence ..... 72
Trinity ..... 32
Hebrard ..... 76
Elloree Graded ..... 70
Hickory Grove ..... 10
Middlepen. ..... 22
Providence ..... 12
Carson ..... I3
Chinquapin ..... 16
Belleville ..... 7
Goodby's ..... II
Livingston ..... 40

## 84

## PICKENS.

## R. T. Halluy, Superintendent. <br> (Betabisised, 22 ; Enlartich, 4.) <br> Name of Behool. <br> Mo. $\times$ pexraf

11
Liberty
20
Bethlehem
Johnston's ..... 10
Cedar Rock ..... 19
Glassy Mountain ..... 32
Flat Rack ..... 4
Maynard ..... 18
Dayton ..... 2
Pickens ..... 31
Central ..... 9
Vineland ..... 16
Mile Creek ..... 41
Oolenoy ..... 36
Gates ..... 22
Grove ..... 49
Praters ..... 28
New Town ..... 55
Rock Knob ..... 3
Cateechee ..... 10
Croswell ..... I
Reunion ..... 12
Mauldin ..... 14
RICHLAND.
S. M. Clarkson, Superintendent.
(Establiahed, 42 ; Enlarged, 49.)

No. of Butrict.
Name of Behool.
5
Brown's Chapel
12
Bethel
3
Gadsden
10
Jackson Creek
12
Epworth
12
Edgewood ..... 
Olympia ..... 12
Eastover ..... 4
Name of gehool.
No. of
Dintriet.
Bellwood ..... 3
Horrell Hill ..... II
Hopkins ..... 2
Mill Creek ..... 15
New Hope. ..... 13
Fair Mount ..... IO
Cross Roads ..... 11
Wateree ..... 4
Sligh ..... 9
Wayside ..... 9
Speer's Creek ..... 7
Shady Grove ..... 6
Hampton ..... 12
Hyatt Park ..... 13
Killian ..... 10
Palmetto ..... 4
Waverly ..... 12
Macedonia ..... 7
Hiwassee ..... 6
Carlisle ..... 7
Bell View ..... 8
Spring Dale ..... 12
Thornwell ..... 10
Gill Creek ..... 17
Level. ..... 8
Central ..... 9
Fair Lawn ..... 8
Hood's Plateau ..... II
Cool Springs ..... II
Frost ..... 9
Mt. Pleasant ..... 7
Palmetto Mills ..... 12
Shandon ..... 12
Midway ..... 9
SALUDA.
J. N. DeLoach, Superintendent.
(Extablished, 14 ; Enlarged, 0.)
No. of
Dlatrict.
Higgin's Ferry ..... 5
Centennial ..... 13

Name of Echool.
No. of
DistrietFruit Hill.23
Batesburg ..... 34
Delmar ..... 10
Saluda. ..... 7
Ridge Spring ..... 3
The Saluda ..... J
Pleasant Grove ..... 12
Hope ..... 4
Bethlehem ..... 27
Ward ..... 17
Ridge Branch ..... 3
Corinth ..... 6
SPARTANBURG.
E. C. Elmore, Superintendent.(Entablushed, 11 ; Enlerged, 6.)
No. of
Name of School. District
Thompson ..... $7^{2}$
Carlisle ..... 57
Roebuck ..... 18
New Pisgah ..... 4
Clifton No. 3 ..... $3^{8}$
Clifton No. 2 ..... 38
Clifton No. 1 ..... $3^{K}$
Cross Anchor ..... 15
Wingo ..... 52
Arrow Wood ..... 13
Cedar Springs ..... 77
Philadelphia ..... 20
Rich Hill ..... 68
Fairmount ..... 24
Arkwright ..... 74
Campton ..... 4
Piedmont ..... 14
Louise ..... 14
Glendale ..... 39
Cherokee Springs ..... 62
Saxon Mills ..... 70
Center Point ..... 30
No. of phatelct. Name of Echool.
33
Woodruff
Woodruff
Moore ..... 22
Pacolet Depot ..... 47
Liberty ..... 56
Fair Forest ..... 2
Victor ..... 55
Inman Mills ..... 26
Shoally ..... 36
Victor Mills ..... I
Arcadia ..... 70
Center Point ..... 59
North Pacolet ..... 76
Liberty Hill ..... 59
Monk Institute ..... 49
Gramling ..... 31
Duncan ..... 75
Mountain View ..... 63
Landrum Graded ..... 45
Rural Academy ..... 28
SUMTER.
S. D. Cain, Superintendent.(Eatablished, 25 ; Endarged, 4.)

No. of Dlatrict.
Name of School.
18
Mayesville
7
Dalzelle
7
Brown
19
Fraser
Winn ..... I
Red Hill ..... 14
Shiloh Graded School ..... 14
St. James ..... 7
Jordan. ..... I
Bethel ..... 3
Jennings ..... 7
Tabernacle ..... 14
Gen. Sumter Memorial School ..... 6
Ingram ..... 3
Gorden ..... 2
Name of Echool.
5
Wedgefield
8
Line Academy
15
Shadyside.
Oswego ..... 16
Bossod ..... 19
The Wilder ..... 1
Norwood ..... 13
Myer's Line. ..... 9
Stateburg Graded ..... 10
Rafting Creek High ..... 8
UNION.
D. B. Fant, Superintendent.
(Fatabliahed, 18 ; Eniarged, 5.)
No. of
Name of School. ..... Distriet.
Cohen ..... 5
Santuck ..... 3
Bethlehem ..... 4
Kelton ..... 4
Carlisle ..... 2
Lockhart. ..... 4
Jonesville ..... 12
Monarch ..... II
Sardis ..... 5
Carlisle ..... 2
Cross Keys. ..... 10
Buffalo. ..... 8
Padgett Creek ..... IO
Gregory ..... 6
Sedalia ..... 10
West Spring ..... 67
Prospect ..... 10
Oak Grove ..... 5
WILLIAMSBURG.
J. G. McCullough, Superintendent.
(Eatabliched, 12 : Enlarged, 1)
So. of
Name of School. ..... Dictrict.
Wilson ..... 24
O'Bryan ..... I
No. of
District.
Name of Bchool.
23
23
Graded School
Graded School ..... 5
Providence
3
Lake City ..... 15
Spring Gully ..... 5
Hebron ..... 19
Greeleyville Graded School ..... 22
Cedar Swamp ..... 28
Cades ..... 25
Cedar Creek ..... 4
YORK.
T. E. McMackin, Superintendent.
(Established, 80; Etnlarged, 2.)

No. of District.
Name of School.

7
India Hook ..... 7
Friendship ..... 5
Bell Creek ..... 8
Bullock's Creek ..... I5
Fodder ..... 31
Massey's ..... 4
Miller ..... 8
Cain's Springs ..... 8
Oak Ridge ..... I
Wilkerson ..... 9
Bethany ..... 2
Sutton ..... 8
McElwee ..... 5
Clover ..... 37
Bethel ..... 3
Hickory Grove ..... 40
Philadelphia ..... 33
Sharon ..... 20
Shiloh ..... 5
Union ..... 8
Blairsville. ..... 10
Guthrieville ..... 6
Filbert ..... 21
Shady Grove ..... 10

## 890

Na. 9 DistrictName of School.DistrictGold Hill ..... 8
Bowling Green ..... 22
Oakley ..... 5
York Cotton Mill ..... 8
Catawba Church ..... 5
Ogden ..... 14

## CHAPTER VII.

Directory of School Officers.

## DIRECTORY OF SCHOOL OFFICERS.

## STATE BOARD OF EDUCATION.

His Excellency, M. F. Ansel, Governor, ex-officio Ch'm'n. .Columbia O. B. Martin, State Superintendent of Education, ex-officio
Secretary ; W. H. Barton, Chief Clerk; Miss Sarah
Swaffield, Stenographer
Columbia
Appointed by the Governor, April 26, 1904, for four years:
W. K. Tate-First District . . . . . . .. . . .. .. . . .. Charleston
H. F. Rice-Second District . . . . . . . . . . . . . . . . . . . . . . Aiken
D. W. Daniel-Third District . . . . . . . . . . . . . . Clemson College
A. G. Rembert-Fourth District .. .. . . .. .. . . . . Spartanburg
A. R. Banks-Fifth District . . . . . . . . . . . . .. .. . . Lancaster
W. J. Montgomery-Sixth District .. .. . . . . . . . . . . . Marion
A. J. Thackston-Seventh District . . .. . . .. . . . . Orangeburg

## LIST OF COUNTY SUPERINTENDENTS FOR 1908-1909.

Abbeville-R. B. Cheatham, Abbeville.
Aiken-A. W. Sanders, Aiken.
Anderson-R. E. Nicholson, Anderson.
Bamberg-R. W. D. Rowell, Bamberg.
Barnwell-B. M. Darlington, Barnwell.
Beaufort-B. H. Boyd, Beaufort.
Berkeley-C. W. Sanders, Monck's Corner.
Charleston-E. P. Waring, Charleston.
Cherokee-J. L. Walker, Gaffney.
Chester-W. D. Knox, Chester.
Chesterfield-Kirby Rivers, Chesterfield.
Clarendon-S. P. Holladay, Manning.
Colleton-H. W. Black, Walterboro.
Darlington-Henry C. Burn, Darlington.
Dorchester-John J. Howell, Georges.
Edgefield-W. D. Holland, Edgefield:
Fairfield-T. M. Jordan, Winnsboro.
Florence-A. H. Gasque, Florence.
Georgetown-Josiah Doar, Georgetown.

Greenville-James B. Davis, Greenville.
Greenwood-J. F. Wideman, Greenwood.
Hampton-S. J. Fitts, Hampton.
Horry-W. A. Prince, Conway.
Kershaw-W. B. Turner, Camden.
Lancaster-W. M. Moore, Lancaster.
Laurens-R. W. Nash, Laurens.
Lee-McDonald Davis, Bishopville.
Lexington-J. E. R. Kyzer, Lexington.
Marion-James R. Williams, Marion.
Marlboro-A. L. Easterling, Bennettsville.
Newberry-J. S. Wheeler, Newberry.
Oconee-C. L. Craig, Walhalla.
Orangeburg-S. R. Mellichamp, Orangeburg.
Pickens-R. T. Hallum, Pickens.
Richland-S. M. Clarkson, Columbia.
Saluda-J. N. DeLoach, Saluda.
Spartanburg-E. C. Elmore, Spartanburg.
Sumter-S. D. Cain, Sumter.
Union-D. B. Fant, Union.
Williamsburg-J. G. McCullough, Kingstree.
York-T. E. McMackin, Yorkville.

## MEMBERS OF COUNTY BOARDS OF EDUCATION.

Revised to December 1, 1907.
Abbeville County-P. L. Grier, Due West; W. R. Bradley, Abbeville.

Aiken County-T. R. Morgan, Aiken; W. L. Brooker, Aiken.
Anderson County-E. C. McCants, Anderson; L. M. Mahaffey, Anderson, R. F. D.

Bamberg County-E. H. Hall, Denmark ; M. W. Brabham, Bamberg.

Barnwell.County-W. M. Jones, Williston ; R. B. Cote, Barnwell.
Beaufort County-Geo. Waterhouse, Beaufort; W. J. Thomas, Beaufort.

Berkeley County-W. P. Russell, St. Stephen ; E. A. Shingles, Holly Hill.

Charleston County-W. M. Whitehead, Charleston ; R. E. Seabrook, Charleston.

Cherokee County-R. C, Sarratt, Gaffney; J. C. Jeffries, Gaffney. Chester County-J. R. Dye, Chester; J. E. Nunnery, Wylies.
Chesterfield County-B. S. Funderburk, Chesterfield; G. Wells Vaughan, Chesterfield.

Clarendon County-J. C. Daniel, Manning; E. J. Browne, Manning.

Colleton County-W. W. Smoak, Jr., Walterboro; C. J. T. Caldwell, Lodge.

Darlington County-A. J. A. Perritt, Lamar; F. A. Miller, Hartsville.

Dorchester County-C. E. Owens, Grover; J. O. Reed, Georges.
Edgefield County-G. F. Long, Trenton; W. Prescott, Edgefield.
Fairfield County-S. D. Dunn, Winnsboro; J. H. Thornwell, Jr., Ridgeway.

Florence County-J. F. Pearce, Clawson ; N. W. Hicks, Florence.
Georgetown County-J. A. Bruerton, Georgetown ; M. W. Pyatt, Georgetown.
Greenville County-L. E. Childress, Greenville, R. F. D.; H. B. Dominick, Fountain Inn.

Greenwood County-N. M. Salley, Greenwood; A. B. Sample, Greenwood.

Hampton County-J. J. Nix, Roy ; W. H. Dowling, Hampton.
Horry County-E. J. Sherwood, Conway; M. W. Bullock, Fair Bluff, N. C.

Kershaw County-L. T. Mills, Camden; N. P. Gettys, Lugoff.
Lancaster County-H. E. Coffey, Lancaster; W. C. Hough, Lane. Laurens County-R. A. Dobson, Laurens; L. D. Ellege, Alma. Lee County-T. L. Cole, Bishopville; R. E. Dennis, Lucknow.
Lexington County-T. W. Dreher, Irmo; W. E. Black, Lexington.

Marion County-W. W. Nickles, Dillon; W. F. Stackhouse, Marion.

Marlboro County-R. L. Freeman, Clio; R. S. Fletcher, McColl.
Newberry County-S. J. Derrick, Newberry; E. O. Counts, Prosperity.

Oconee County-D. F. Nicholson, Seneca ; J. P. Stribling, Richland.
Orangeburg County-I. W. Bowman, Orangeburg; C. J. Rast, Cameron.
Pickens County-I. M. Mauldin, Pickens; S. W. O'Dell, Liberty. Richland County-D. T. Kinard, Columbia ; W. F. Scott, Hopkins.

Saluda County-J. A. Rauch, Dupler; J. A. Unger, Saluda.
Spartanburg County-T. L. Shippey, Spartanburg; H. T. Shockley, Spartanburg.

Sumter County-S. H. Edmunds, Sumter ; H. G. Osteen, Sumter.
Union County-Davis Jeffries, Union; J. H. Hope, Union.
Williamsburg County-T. M. Gilland, Kingstree; C. W. Wolfe, Kingstree.

York County-J. W. Thomson, Rock Hill ; E. P. Castles, Yorkville.

## CITY SUPERINTENDENTS.

Abbeville-L. W. Dick.
Aiken-W. L. Brooker.
Allendale-C. F. Brooks.
Anderson-E. C. McCants.
Bamberg-H. G. Sheridan.
Barnwell-S. W. Carwile.
Batesburg-H. A. Brunson.
Beaufort-Lueco Gunter.
Belton-L. W. Courtney.
Bennettsville-E. P. Miller.
Bishopville-G. P. Parrott.
Blacksburg-E. A. Montgomery.
Blackville-R. B. Hartzog.
Branchville-W. C. Martin.
Brunson-J. C. Eagerton.
Camden-R. M. Kennedy.
Campobello-J. C. Ingram.
Carlisle-Miss M. E. McMekin.
Central-J. R. Lyles.
Charleston-H. P. Archer.
Cheraw-B. C. McIver.
Chester-W. H. McNairy.
Clinton-J. G. Colbert.
Clio-M. K. Meadors.
Columbia-E. S. Dreher.
Converse-
Conway-P. W. Bethea.
Cowpens-R. S. Rogers.
Cross Hill-W. S. Hough.

Darlington-Nathan Toms.
Denmark-E. H. Hall.
Dillon-W. W. Nickels.
Due West-
Easley-R. C. Burts.
Fairfax-T. H. Campbell.
Florence-J. L. Mann.
Fort Mill-J. H. Witherspoon.
Fountain Inn-H. B. Dominick.
Gaffney-J. T. Spears.
Georges-J. Y. Bryson.
Georgetown-W. C. Bynum.
Graniteville-Graves L. Knight.
Greenville-E. L. Hughes.
Greenwood-N. M. Salley.
Gray Court-
Greer-J. M. Moore.
Hartsville-S. W. Garrett.
Heath Springs-J. A. Stoddard.
Honea Path-J. B. Watkins.
Hampton-J. W. Rouse
Inman-A. C. Daniell, Jr.
Jefferson-R. D. Marsh.
Jonesville-H. A. Wise.
Johnston-W. C. Zeigler.
Kershaw-E. M. McCown.
Kingstree-P. P. Bethea.
Lake City-T. C. Covington.
Lancaster-A. R. Banks.
Landrum-F. W. Moore.
Langley-S. H. Brown.
Latta-H. W. Ackerman.
Laurens-R. A. Dobson.
Lexington-W. E. Black.
Liberty-W. C. Taylor.
Little Mountain-J. W. Ballentine.
Lowndesville-W. C. Ariail.
$\mathrm{McColl}-\mathrm{W}$. B. Owen.
McCormick-
Manning-Jno. C. Daniel.

Marion-T. C. Easterling.
Mauldin-L. E. Childress.
Mayesville-Guy L. Warren.
Mountville-W. P. Culbertson.
Mullins-A. T. Helms.
Newberry-W. A. Stuckey.
Ninety-Six-W. F. Scott.
North Augusta-J. F. Thomason.
Olar-W. M. Oxner.
Orangeburg-A. J. Thackston.
Pacolet Mills-F. B. Woodruff.
Pelzer-Jno. B. Bonner.
Pendleton-G. H. Ligon.
Pickens-J. W. Swittenburg.
Piedmont-M. C. Barton.
Prosperity-E. O. Counts.
Reidville-M. C. Foster.
Ridge Spring-J. A. McCoy.
Ridgeway-D. R. Riser.
Rock Hill-J. C. Cork.
Ruby-W. P. West.
Salley-W. E. Law.
Saluda-A. B. Connor.
Santuc-L. E. Kirkley.
Sardis-W. Joyner.
Seneca-D. F. Nicholson.
Simpsonville-R. H. Willis.
Spartanburg-Frank Evans.
Springfield-W. P. Coker.
St. Matthews-G. S. Goodgion.
Summerton-H. A. C. Walker.
Summerville-J. T. Coleman.
Sumter-S. H. Edmunds.
Swansea-Miss E. Duckett.
Timmonsville-D. L. Lewis.
Trenton-G. F. Long, Jr.
Union-Davis Jeffries.
Walterboro-L. S. Betty.
Williamston-W. K. Carswell.
Williston-F. Parker.
Winnsboro-J. H. Thornwell, Jr.
Walhalla-J. L. Kennedy.

Waterloo-W. S. Wertz.
Woodruff-Thos. F. Jones.
Westminster-M. E. Brockman.
Yorkville-D. J. Brimm.

## COLLEGE PRESIDENTS.

Chicora College-S. C. Byrd, Greenville, S. C.
Clemson College-P. H. Mell, Clemson College, S. C.
South Carolina University-Benjamin Sloan, Columbia, S. C.
Citadel Academy-Asbury Coward, Charleston, S. C.
Winthrop College-D. B. Johnson, Rock Hill, S. C.
Clifford Seminary-B. G. Clifford, Union, S. C.
Charleston College-Harrison Randolph, Charleston, S. C.
Columbia College-W. W. Daniel, Columbia, S. C.
Confederate Home College-Harriett F. Ronan, Charleston, S. C.
Converse College-R. P. Pell, Spartanburg, S. C.
South Carolina Co-Educational Institute-F. N. K. Bailey, Edgefield, S. C.

Erskine College-J. S. Moffatt, Due West, S. C.
Furman University-E. M. Poteat, Greenville, S. C.
College for Women-A. S. Townes, Greenville, S. C.
Greenville Female College-E. C. James, Greenville, S. C.
Leesville College-L. B. Haynes, Leesville, S. C.
Limestone College-L. D. Lodge, Gaffney, S. C.
Newberry College-J. A. B. Scherer, Newberry, S. C.
Presbyterian College of South Carolina, Clinton-R. A. Adams, Clinton, S. C.

College for Women-Miss Euphemia E. McClintock, Columbia, S. C.

Lander Female College-John O. Willson, Greenwood, S. C.
Wofford College-H. N. Snyder, Spartanburg, S. C.
State Institution for Deaf, Dumb and Blind-N. F. Walker, Cedar Springs, S. C.

> College Presidents-Negro.

Colored Normal and Industrial, Agricultural and Mechanical College of South Carolina, Orangeburg-Thomas E. Miller.
Allen University, Columbia-David H. Johnson.
Avery Normal College, Charleston-
Benedict College, Columbia-A. C. Osborne.
Claflin University, Orangeburg-L. M. Dunton.

## CHAPTER VIII.

## Receipts and Disbursements.

# RECEIPTS AND EXPENDITURES OF THE OFFICE OF THE STATE SUPERINTENDENT OF EDUCATION. 

## PEABODY FUND.

| December 14, 1906-For Winthrop College. . . 2,000 00 January 25, 1907-For Winthrop College. ... 1,000 00 February 25, 1907-For Rural Schools. ..... 1,000 00 June 5, 1907-For Winthrop College. . . . . . . . 1,000 00 June 6, 1907-For Winthrop College........ 50000 |
| :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Total Peabody receipts for 1906-07...... $\$ 5,72209$
Paid D. B. Johnson, for Winthrop College.... $\$ 4,50000$
Used in Rural Schools. . . . . . . . . . . . . . . . $\quad 1,00000$
Used in Summer Schools (additional 1906).
8000

|  | \$5,722 09 | \$5,580 00 |
| :---: | :---: | :---: |
| Balance |  | 14209 |
|  | \$5,722 09 | \$5,722 09 |

PEABODY FOR RURAL SCHOOLS.
Received from Peabody Fund . . .. . . . . . $\$ 1,00000$
Spring Branch School . . . . . . . . . . . . . . . . \$ 10000
Elgin School 10000
Green Pond School . . . . . . . . . . . . . . . . . . 10000
Jamison School . . . . . . . . . . . . . . . . . . . 10000
Johnsonville School . . . . . . .. .. .. .. . . .. 10000
Lynhurst School . . . . . . . . . . . . . . . . . . . 5000
Union Graded School (Georgetown) .. .. .. 5000
Luray School . . . . . . . . . . . . . . . . . . . 5000
Athens School .. .. . . .. .. .. .. .. .. .. 5000
Trinity Ridge School . . . . . . . . . . . . . . . 5000
Britton's Neck School . . . . . . .. .. .. . . . . 5000
Salem School . . . . . . . . . . . . . . . . . . . . . 5000
Gen. Sumter Memorial Academy ..... $\$ 5000$
Cross Anchor ..... 5000
Phœnix ..... 5000
$\$ 1,00000$ $\$ 1,00000$
CONTINGENT FUND.
bills attached to warrants.
Appropriation .....  \$ 20000
Office boy and porter ..... \$ 52 51
Telephone rent and long distance messages. ..... 2986
Mimeograph and typewriter supplies ..... 965
Telegrams ..... 790Express, freight, paper, twine and other officesundries and refund to stationery and stamp
$\$ 20000$ $\$ 20000$
OFFICE RENT.
bills attached to warrants.
Appropriation ..... $\$ 4000$
National Loan and Exchange Bank $\$ 4000$
$\$ 4000$ \$ ..... 4000
PRINTING.
bills attached to warrants.
Appropriation . 1,00000
The State Company-Reports and Directories$\$ 31000$
R. L. Bryan Company-
Bulletins, Folders, Programs, High School Acts, etc. ..... 24826
S. C. Day Pamphlets, etc., H. S. Bulletins, Petitions, etc., Application Blanks ..... $373^{2}$
Walker, Evans \& Cogswell Company- 7,000 Registers ..... $4044^{2}$
$\$ 1,00000$ ..... $\$ 1,00000$
STATE BOARD OF EDUCATION.Bills Attached to Warrants.
Appropriation ..... $\$ 50000$
January meeting ..... $\$ 7510$
March meeting ..... 12730
June meeting ..... 15820
July meeting of Committee. ..... 2030
September meeting ..... 10070
Examination questions and postage. ..... 1840
$\$ 50000$ $\$ 50000$
TRAVELING EXPENSES OF STATE SUPERINTENDENT OF EDUCATION.
bills attached to warrants.
Expenten.
Miles.
Traveled
\$ 550 ..... 372
Rock Hill and Anderson trips ..... 6665
Columbus, Ga., and visiting Tuskegee, Ala. ..... 1425 ..... 752
W. H. Barton, Chief Clerk, to Pinehurst. ..... 1295
Pinehurst trip (Superintendent Education) ..... 1920
Latta trip ..... 175 ..... 204
Trips to Greenville and Clemson, returning • via Anderson ..... 575 ..... 290
Jefferson trip ..... 520 ..... 144
Georgetown trip. ..... 845 ..... 166
Cross Hill, Mountville and Little Mountain trips ..... 300 ..... 160
McColl trip ..... 450 ..... 196
Ridgeway trip ..... 52
Ward's trip ..... 92
Wofford and Clemson trips ..... 250 ..... 296
Charleston and Jacksonboro trips ..... 625 ..... 231
Chick Springs trip (State Teachers' Asso.) ..... 600
W. H. Barton, Chief Clerk, Chick Springs (State Teachers' Association) ..... 11 6i
Lamar trip ..... 69
Mileage books ..... 12500
Mileage to be traveled to Dec. 3I, 1907 ..... 2,045
$\begin{array}{llll}\$ 300 & 00 & \$ 300 & 00 \\ 5,000\end{array}$

## CHAPTER IX.

Statistics.

gUMMARY NO. 1.-BHOWING FAOTS BY COUNTIES.-Continued.


## 9II

| Name of County. | Recelpte. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { 불 } \\ & \text { 를 } \end{aligned}$ |  | Puma Srusuadera | $\frac{5}{3}$ | $\begin{aligned} & \text { H } \\ & \text { bo } \\ & \text { b } \end{aligned}$ |  |  |
| Abbeville.. | \$5777 92 | \$4850 00 | \$15786 69 | \$3278 48 | \$10171 65 | \$1100 00 |  | \$40400 74 |
| Aiken.. .. | 1399172 | 606000 | 3055981 | 585428 | 509101 | 186200 | 26877 | 6428709 |
| Anderson.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. | 1369687 | 869200 | 3500505 | 448198 | 1409261 | 1024103 |  | 8705064 |
| Bamberg.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. | 363656 | 289400 | 800088 | 208092 | 737384 | 81200 |  | 2484670 |
| Barnwell. . . . . . . . . . . . . . . . . . . . .. .. .. .. .. .. .. .. . | . 394874 | 492800 | 1632291 | 281456 | 948626 | 182100 | 5866 | 3887813 |
| Beaufort.. | 515393 | 377386 | 988756 | 72788 |  | 84982 |  | 2039255 |
| Berkeley.. ... .. .. .. .. .. . | 240327 | 371793 | 994716 | 209266 | 106815 | 95650 |  | $\begin{array}{r}2018567 \\ \hline 19719810\end{array}$ |
| Charleston.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. . . . | 2985905 | 727586 | 6533598 | 520770 | 1808548 | 23060 | 118253 | 12712810 |
| Cherokee.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. | 465465 | 800570 | 1276221 | 1818.88 | 666031 | 102380 |  | 3061500 |
| Chester.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. | 2706200 | 421748 | 1668251 | 288389 | 848858 | 142665 | 165155 | 6286201 |
| Chesterfield.. .. .. .. .. ., .. .. .. .. | 1471644 | 299000 | 794495 | 545875 | 378579 | 104376 |  | 3523469 |
| Clarendon.. | 228246 | $\begin{array}{lll}1641 & 36\end{array}$ | 1106791 | $\begin{array}{llll}3056 & 38 \\ 66158 & 68\end{array}$ | 8051 9469 97 | $\begin{array}{ll}1217 & 37 \\ 1827 & 96\end{array}$ | 1579 64200 | 31795 <br> 83813 <br> 88 |
| Colleton. | 468009 | 453802 | 1200850 | 685868 | 246927 | 182786 | 64200 | 8331382 3649840 |
| Darlington.. .. .t .. ... .. .. .n .n .. .. . ... . . . . . . . | .. 5391 07 | 520500 | 1853860 | 252554 | 865261 | 90000 | 28058 14698 | 3640840 |
| Dorchester.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. r | $\cdots 115930$ | 216011 | 799426 | 98703 | 359183 | 70028 | 146993 | 1806274 |
| Edgeflield.. .. .. .. .. .. .. .. .. .. .. . . .. .. .. .. .. .. | 130541 | 364100 | 1084270 |  | 280973 | 151815 | : . 1816 \% 89 | 1969199 |
| Fairfield. | 688811 | 419877 | 1218095 | 258200 | 453218 12909 | 140122 5501 | 181689 | 8150437 |
| Florence. . .. ., .. is .. | 433612 | 448500 | 1346168 | 906714 | 1289028 | 5501 <br> 700 <br> 00 |  | 4275069 <br> 60889 <br> 18 |
| Georgetown. . .. .. .. .. .. .. .. .. .. .. .. .. .. .. | 405963 | 492900 | 1110092 | 165800 | 4088803 | 70000 | 3545205 | 6988918 |
| Greenville. . . . . .. .. .. .. .. .. .. .. .. .. .. .. | 629514 | 710200 | 3571204 | 1810310 | 1594868 | 167750 | 15088 | 7999528 |
| Greenwood. . .. .. .. ., .. .. .. ., .. ., .. .. .. .. . . | .. 556090 | 418300 | 1956266 | 110382 | 560702 | 183150 | 18448 | 3758233 |
| Hampton.. .. .. .. .. .. .. .. .. .. | 846759 | 242900 | 1152643 | 2561106 | 337020 | 59900 | 11568 | $2900988$ |
| Horry.. .. .. | 222309 | 430900 | $\begin{array}{r}6370 \\ \hline 19729\end{array}$ | 635100 | 179065 | 1635 676 20 |  | 22769 <br> 81709 <br> 88 |
| Kershaw.. | 474540 | 299400 | 1212900 | 173000 | 9524 7510 88 | 67650 081 0 |  | 8170078 3008151 |
| Lancaster.. .. .. .. .. .. .. .. .. .. .. .. ... .. .. .. .. .. .. . | . $\quad 679412$ | 356300 | 10es7 60 | 158264 | 754005 | 98190 | 32 20 | 3008151 |
| Laurent. . . . . . .. .. .. .. .. ... .. .. .. .. .. .. .. .. | 611692 | 5458 <br> 200 | 1667000 | 6388 2814 17 | 8779 6525 85 | 108850 81695 | $\begin{array}{r}340 \\ 8851 \\ \hline 81\end{array}$ | 4483689 23299 |
| Lee, . .. .. .. .. .. .. .. ... .. .. .. .. .. .. ... .. . | 1414 5901 98 | 3049 <br> 5083 <br> 00 | 798916 13746 | 2814 1509 51 | 652585 262610 | $\begin{array}{r}81695 \\ 1589 \\ \hline 180\end{array}$ | 8851 111621 | $\begin{aligned} & 2329972 \\ & 8112580 \end{aligned}$ |
| Lexington. . Marion. | . 5391 98 <br>  8981 68 | 506800 542500 | 1374600 17540 1180 | 159951 139920 | 262610 1504482 | 1588 <br> 1185 <br> 180 | 111621 664013 | 8112580 5616588 |
| Marlboro. | 314958 | 312400 | 1162853 | 173850 | 802580 | 188220 |  | 3044820 |
| Newberry. . . . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .\| , | .. 756587 | 472900 | 1915894 | 283648 | 644187 | 142300 | 39664 | 4254475 |
| Oconee.. .. .. .. .. .. . . . . . . . . . . . . . . . . . . . . . . . , | 1. 1394479 | 388000 | 1215810 | 172773 | 750941 | 98550 | 99709 | 4120262 |

SUMMARY NO. 2.-SHOWing receipts and expenditures by counties.-Con.

| Name of County. | Heceipts. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% 7 \% |  | - | ¢ ¢ \% | \% |  |
|  | ${ }^{811629988}$ | *0321 00 | *28737 09 | \$11940 64 |  |  |  |  |
| Prickens.. .. ... ..: ..: .. ... .. .. ... .. ... ... .. .. .. ... ... .. .. | 1041897 | 481900 | ${ }^{11102000}$ | ${ }^{29717} 125$ | 8500500 | 129700 | ${ }^{475} 89$ | 882087 |
|  | 6704 <br> 1547 <br> 183 <br> 83 | 8832 <br> 2897 <br> 000 | 50502 56157 500 | 6336 789 74 | 18148 <br> 1135 <br> 18 | 700 1200 189 | (708184 | 0640878 14438 |
| Spartanburg... .. ... ... ... ... ... ... ... ... ... .. ... ... ..: .. .. .. | 2662748 | 1083081 | 4782088 | 270808 | 1984811 | 16558 |  | 1182808 |
|  | - 89890 |  | 19209353 | (1465 36 |  |  |  |  |
| williamsburg. . ... .. ... ... .. ... .. ... ... ... ... .. ... ... ... ... .. | 43857 | 464200 | 1293230 | 201824 | 519204 | 180950 |  | 84147 |
| York.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. | 898822 | 620329 | 2353210 | 347107 | 888190 | 189681 | 28718 | 5882885 |
| Total. | 882220858 | 8197e29 17 | 872849230 | \$139928 78 | \$32807296 | ${ }^{96310814}$ | *82188 69 | \$1848871 68 |

## 913



914
SUMMARY NO. \&-GEOWING REGMPTS AND EXPENDITURES BY OOUNTIRS.-Com.


915

| Oomaty. | $\begin{aligned} & \frac{4}{4} \\ & \frac{1}{6} \\ & \text { 1 } \\ & \text { i } \end{aligned}$ | Watio. |  |  |  |  |  | Namb |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Tocal Number of Echoole |  |  | Averace Number of Weelch |  |  | Total Number of Sobools. |  |  | Avernge Iumber of Wollis. |  |  |
|  |  | Town. | Country. | Total | Town | Country. | Coumty. | Tow. | Country. | Total. | Town. | Oountry. | County. |
| Abberille:, .. .. .. .. .. .. .. .. .. .. | 52 |  | 01 |  | 84 | 21 | 82 |  |  |  |  | 17 | 16 |
| Aiken.. .. .. .. .. .. .. .. .. .. .. .. | 68 | 8 | 76 | 80 | 88 | 28 | 24 | 7 | 76 | 88 | 17 | 16 | 16 |
| Anderson.. .. .. .. .. .. .. .. .. .. .. | 57 | 21 | 88 | 9 | 88 | 24 | 25 | 6 | 64 | 70 | 28 | 16 | 17 |
|  | ${ }_{50}$ | 8 | ${ }_{88}^{25}$ | 80 | ${ }_{85}^{84}$ | 28 | $\stackrel{\text { 20 }}{ }$ | 8 | ${ }_{68} 98$ | 83 | 17 | 11 | 18 |
| Benutort.. ... .. .. ... ... .. | 21 | 4 | 2 | 28 | 86 | 24 | ${ }_{88}$ | 8 | 78 | 77 | 88 | 11 | 18 |
| Berkeley.. .. .. .. .. .. .. .. .. .. .. | 25 | 8 | 68 | 56 | 88 | 24 | 25 | 8 | 68 | 01 | 26 | 18 | 14 |
| Charleston.. .. .. .. .. .. ... .. .. .. . . | 15 | 6 | 28 | 20 | 9 | 89 | 88 | 5 | 47 | 62 | 88 | 28 | 24 |
| Cherokee.. .. .. .. .. .. .. .. .. .. .. | 28 | 5 | . 81 | 68 | 86 | 18 | 27 | 8 | 97 | 29 | 86 | 8 | 88 |
| Cheater.. .. .. .. .. .. .. .. .. .. .. .. | 18 | 4 | 49 | ${ }^{68}$ | 82 | 28 | 29 | 8 | 47 | 50 | 20 | 18 | 17 |
| Chesterfield. . .. .. ., .. .. .. .. .. .. .. | 45 | 4 | 50 | $\infty$ | 58 | 18 | 19 | 4 | 88 | 87 | 18 | 9 | 10 |
| Clarendon.. .. .. .. .. .. .. .. .. .. .. | 28 | 8 | 48 | 51 | ${ }^{34}$ | 18 | 18 | 8 | 68 | 71 | 21 | 9 | 10 |
| Colleton., .. .. .. .. .. .. .. .. .. .. | 43 | 4 | 90 | 04 | 84 | 11 | 18 | 2 | 68 | 70 | 29 | 10 | 11 |
| Darlington. . .. .. .. .. .. .. .. .. .. .. | 33 | 8 | 88 | 41 | 34 | 27 | 88 | 8 | 40 | 48 | 27 | 18 | 19 |
| Dorchester.. .. .. .. .. .. .. .. .. .. .. | 24 | 10 | 29 | 89 | 81 | 20 | 28 | 6 | 8 | 40 | 21 | 10 | 11 |
| Edgeffeld ., .. .. .. .. .. .. .. .. .. .. | 93 | 5 | 48 | 51 | 25 | 19 | 20 | 2 | 67 | ${ }_{68} 8$ | 20 | ${ }^{9}$ | 10 |
| Fairfipld. . .. .. .. .. .. .. .. .. .. .. .. | 82 | 4 | 45 | 49 | 25 | 29 | 28 | 8 | 65 | 58 | 20 | 15 | 16 |
| Florence.. .. .. .. .. .. .. .. .. .. .. . | 41 | 2 | 66 | 58 | 36 | 23 | 24 | 2 | 48 | 45 | 86 | 18 | 14 |
| Georgetown.. .. .. .. .. .. .. .. .. .. | 18 | 1 | 48 | 49 | ${ }_{88}^{88}$ | 29 | 28 | 2 |  |  |  | 28 |  |
| Greenville.. ., .. .. .. .. .. .. .. .. .. | 108 | ${ }_{6}^{6}$ | 125 | 181 | 21 | 20 | 20 | 2 | 68 | 65 | 18 | ${ }^{18}$ | 18 |
| Greenwood.. .. .. .. .. .. .. .. .. .. | 48 | 6 | 81 | 87 | 30 | 27 | 28 | 2 | 48 | 45 | 28 | 23 | 94 |
| Hampton.. .. .. .. .. .. .. .. .. .. .. | 23 | 7 | 64 | 71 | 30 | 22 | 28 | 7 | ${ }^{61}$ | 68 | 14 | -18 | 18 |
| Horry.. .. .. .. .. .. .. .. .. .. .. .. | 82 | 2 | 108 | 108 | 24 | 18 | 14 | 2 | 15 | 17 | 18 | 13 | 18 |
| Kershaw, .. .. .. .. .. .. .. .. .. .. | 40 | 8 | 49 | 58 | 40 | 19 | 20 | 2 | 41 | 43 | 40 | 15 | 16 |
| Lancaster.. .. .. .. .. .. .. .. .. .. .. | 51 | 5 | 62 | 57 | 29 | 21 | 22 | 2 | 45 | 47 | 12 | 10 | 11 |
| Laurens.. .. .. .. .. .. .. .. .. .. .. .. | ${ }_{97}^{67}$ | $\stackrel{9}{8}$ | ${ }_{88}^{68}$ | 78 | 89 | 24 | 26 | 6 | 73 | 79 | 28 | 18 | 14 |
| Lev.ringtion.. '. ... .. .. .. ... .. .. .. .. .. .. ... | 27 | 2 | 46 | 48 | 33 | 21 | 29 | 1 | 88 | ${ }^{39}$ | 24 | 12 | 18 |
| Lexington.. .. .. .. .. .. .. .. .. .. .. .. .. | 82 | 16 | 68 | 88 | 20 | 18 | 19 | 10 | 45 | 55 | 16 | 8 | 9 |
| Marion... .. .. .. ... .. ... .. ... .. ... .. | 57 87 | $\stackrel{9}{5}$ | 65 <br> 37 | 84 | ${ }_{38} 3$ | 20 | $\stackrel{29}{ }$ | 5 | 61 | 56 | 27 | 12 | 14 |
|  | 87 59 | 7 | ${ }_{58} 87$ | 60 | 38 81 | 21 97 | ${ }_{28}^{23}$ | $\frac{1}{7}$ | ${ }_{68}^{4}$ | 48 60 | 24 18 | 11 | 118 |
| Oconee.. .. .. .. .. .. .. .. .. .. .. | 76 | 11 | 69 | 80 | 29 | 19 | 20 | 8 | 88 | 41 | 16 | 12 | 18 |
| Orangeburg.. .. .. .. .. .. .. .. .. .. | 87 | 18 | 90 | 106 | 38 | 25 | 28 | 17 | 105 | 122 | 20 | 14 | 18 |
| Pickens.. .. .. .. .. .. .. .. .. .. .. | 65 | 6 | ${ }^{68}$ | 69 | 24 | 22 | 22 | 5 | 29 | 27 | 12 | 16 | 14 |
| Ríchland.. .. .. .. ... .. .. .. .. .. .. | 15 | 6 | 89 | 46 | 86 | ${ }^{28}$ | 29 | 2 | 65 | 67 | 88 | 17 | 18 |
|  | 45 | 5 | 48 | 48 | 27 | 16 | 17 | 8 | 4 | 50 | 11 | 8 | 8 |
|  | 86 | 67 | 79 | 146 | 88 | ${ }_{80}^{29}$ | 24 30 | 27 | ${ }_{86}^{49}$ | 76 68 | ${ }_{80}^{84}$ | 15 | 18 |
| Union.. .: .. .. .. ... .. ... .. ... .. ... | 67 | 6 | 80 | 66 | 88 | 20 | 22 | 3 | 87 | 40 | 20 | 15 | 16 |
| Williamaburg . .. .. .. .. .. .. .. .. .. | 28 | 5 | 86 | 00 | 80 | 18 | 19 | ${ }_{7}^{8}$ | 77 | 89 | 16 | 10 | 11 |
| York.. .. .. .. .. .. .. .. .. .. .. | 40 | 9 | 84 | 93 | 82 | 24 | 25 | 7 | 89 | 90 | ${ }_{8} 8$ | 16 | 17 |
| Total.. .. .. . | 1849 | 305 | 2347 | 2862 | 82 | 22 | 23.3 | 205 | 2188 | 2848 | 29.7 | 18.8 | 14.8 |

table no．4．－Enrolment and average attendance，by races，in town and country sohools．

| $\begin{aligned} & \text { ó } \\ & \text { ü } \\ & \text { y } \\ & \hline \end{aligned}$ |  | эouvpuว <br> $-3 \mathrm{y} \cdot \mathrm{Ay} 0 \cos ^{2} \mathrm{~N}$ $\left[\begin{array}{ll} \\ {[10 \mathrm{~L}} \\ \hline\end{array}\right.$ |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \dot{B} \\ & \text { B } \\ & 0 \\ & 5 \end{aligned}$ | Triols |  |
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|  |  |  |  |  |
|  |  |  | ${ }^{\text {Pryol }}$ | ¢\％ |
|  |  |  | －149 |  |
|  |  |  | －Suy |  |
|  |  |  |  |  |
|  |  | 85588 | $\mathrm{THPO}^{\text {L }}$ |  |
|  |  |  | Mrio | 문 |
|  |  |  | － Cog |  |
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|  |  | EE0B | T－70． |  |
|  |  |  | \＄1！ |  |
|  |  |  | ＋ $\mathrm{Cog}_{0}$ |  |
|  |  | TETO，L |  |  |
|  |  | E | अ＋19 |  |
|  |  | 5 | cioril |  |
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|  |  |  | TEFios | - |
|  |  |  | 8170 |  |
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917
table no. 4.-ENROLMENT AND AVERAGE ATTENDANGE, BY RACES, DN TOWN AND COCNTRY gChOOLS.-Oontinued.


918
TABLE NO. $\operatorname{b}$.-GITY AND TOWN 8OHOOLS.

table no. s. -City and town gohools.-Continued.

TABLE NO. 5.-CITY AND TOWN SCHOOLS-ADDITIONAL FACTS.


92I

TABLE NO．Q－NUMBER OF PUPILS ETUDYING THE VARIOUS BRANOHES．－WHITE．－Continued．

| Nume of County． |  |  | $\begin{gathered} \text { 定 } \\ \text { 空 } \\ \frac{1}{5} \end{gathered}$ | 范 | $\begin{aligned} & \text { 苟 } \\ & \text { 品 } \\ & \text { 点 } \end{aligned}$ | 㝓 总 | $\begin{aligned} & \text { 官 } \\ & \frac{\ddot{H}}{5} \end{aligned}$ |  | 蝺 | $\begin{aligned} & \dot{8} \\ & \text { 宽 } \\ & 0 \\ & 0 \end{aligned}$ |  |  | $\begin{gathered} 0.0 \\ 0 \\ 0 \\ 0 \\ 0 \end{gathered}$ | \％${ }_{\text {\％}}^{\text {\％}}$ | 㐌 | 息 | 宫 | 容 | 名 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Epartanbars． | 8450 | 2080 | 1725 | 1525 | 800 | 8240 | 5490 | 6510 | 1210 | 5280 | 4042 | 450 | 180 |  |  |  |  |  | 410 |
| Sumter．． | 300 | 214 | 245 | 187 | 201 | 2428 | 2014 | 8000 | 244 | 325 | 825 | 45 | $\bigcirc 00$ | 200 | 800 | 85 | 1480 812 | 600 | 110 |
| Union．．．． | 710 | 680 | 672 | 500 | 808 | 2010 | 1806 | 1625 | 350 | 1350 | 1775 |  | 108 | 155 | 10 |  | 250 | 210 | 8 |
| Williamaburg | 910 | 570 | 520 | 438 | 260 | 3000 | 8115 | 2843 | 234 | 1288 | 1328 | 215 | 252 | 889 | 144 | 7 | 700 | 800 |  |
| Yort．．． | 472 | 646 | 802 | 972 | 884 | 4480 | 4008 | 3562 | 1210 | 2907 | 1808 | 1102 | 624 | 2819 | 402 | － | 700 | 1081 | 100i |

TABLE NO．6．－NUMBER OF PUPILS 8TUDFING THE VARIOUS BRANCRES．－NEGRU．

| течวияя дачзо |  |
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|  4s！${ }^{2}$ ）ug |  |
| лошшия पร！${ }^{\text {sug }}$ |  |
| ＇Sydez8oap |  |
| ＇uqusiv |  |
| －ทุวแนวมู |  <br>  |
| ＇Sunfu |  <br>  |
| －Muniods |  <br>  |
| 2эрез |  |
|  4 亿nos |  |
| тарғаи p．ty．L |  |
| xapery $_{\text {proses }}$ |  |
| coproy 3603．4 |  |
|  |  |

TABLK No. Q.-NUMBER of PUPILS stUdying the various branches-NEGRO.-Continued.

TABLE NO．4．－ENROLNENT AND AVERAGE ATTENDANCE，BY RACES，IN TOWN AND OOUNTEY SOHOOLS．

| County． | WHITE． |  |  |  |  |  |  |  |  |  |  |  |  |  | NEGRO． |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Enrolment． |  |  |  |  |  |  | Average Attendence． |  |  |  |  |  |  | Enrolment． |  |  |  |  |  |  | Average Attendence． |  |  |  |  |  |  |
|  | In Towns． |  |  | In Country． |  |  |  | In Townit． |  |  | In Country． |  |  |  | In Towns． |  |  | In Country． |  |  |  | In Towns． |  |  | In | Country， |  |  |
|  | 命 | $\frac{x}{4}$ | $\frac{\pi}{0}$ | 縕 | 送 | $\stackrel{\rightharpoonup}{\mathrm{E}}$ |  |  | $\frac{a}{L}$ | $\begin{gathered} \frac{1}{3} \\ \frac{1}{2} \end{gathered}$ | $\begin{aligned} & \text { sic } \\ & \end{aligned}$ | 亲 | $\begin{aligned} & \frac{1}{3} \\ & 0 \\ & \hline \end{aligned}$ |  | $\frac{\dot{\sim}}{\dot{\sim}}$ | $\frac{\text { 首 }}{3}$ | $\begin{aligned} & \text { Ei } \\ & \frac{5}{0} \\ & \mathrm{H} \end{aligned}$ | 定 | $\frac{\text { af }}{\mathbf{4}}$ | $$ |  | 宅 | $\frac{\frac{d}{t}}{0}$ | 惑 | 岳 | 는 | 考 |  |
| Abbeville． | 520 | 504 | 1084 | 827 | 924 | 1521 | 2895 | 275 | 408 | 778 | 544 | 710 | 1254 | 2032 | 500 | 746 | 1：236 | 2202 | 2511 | 4713 | 6048 | 327 | 563 | 890 | 1571 | 1110 | 2681 | 3571. |
| Aiken．． | 417 | 447 | 804 | 1451 | 1465 | 2919 | 8788 | 201 | 243 | 443 | 341 | 1017 | 1958 | 2401 | 277 | 300 | 667 | 1915 | 2366 | 4987 | 4918 | 232 | 340 | 572 | 1158 | 1562 | 2715 | 3287 |
| Anderson． | 1557 | 1485 | 2092 | 3240 | 3015 | 0285 | 0877 | 938 | 051 | 1884 | 1105 | 1671 | 8296 | 5180 | 506 | 761 | 1266 | 1183 | 2992 | 4276 | 5541 | 300 | 504 | 804 | 1060 | 1887 | 2397 | 8201 |
| Bamberg． | 862 | 337 | 609 | 371 | S6s | 784 | 1888 | 254 | 241 | 496 | 200 | 216 | 416 | 911 | 346 | 420 | 768 | 981 | 1165 | 2146 | 2012 | 241 | 283 | 524 | 675 | 973 | 1648 | 2172 |
| Barnwell | 432 | 472 | 904 | 916 | 044 | 1879 | 2783 | 364 | 424 | 788 | 702 | 884 | 1536 | 2424 | 307 | 1682 | 1259 | 1453 | 1523 | 2976 | 4235 | 455 | 510 | 965 | 643 | 805 | 1448 | 2418 |
| Beaufort | 100 | 175 | 275 | 125 | 228 | 358 | 628 | 100 | 125 | 225 | 115 | 185 | 300 | 525 | 176 | 225 | 400 | 1000 | 1188 | 2188 | 2588 | 150 | 200 | 350 | 600 | 1400 | 2000 | 2350 |
| Berkeley | 150 | 160 | 310 | 735 | 851 | 1585 | 1800 | 181 | 167 | 288 | 718 | 798 | 1516 | 1804 | 253 | 800 | 553 | 1620 | 1587 | 8807 | 8760 | 231 | 279 | 510 | 1600 | 1650 | 3250 | 3760 |
| Charleston | 2364 | 2367 | 4731 | 126 | 169 | 26.5 | 5006 | 1525 | 1478 | Sn03 | 136 | 117 | 253 | 3256 | 2189 | 2493 | 4682 | 2112 | 2348 | 4460 | 9142 | 1378 | 1637 | 3065 | 1238 | 1386 | 2625 | 5690 |
| Cherokee． | 300 | 400 | 700 | 800 | 1200 | 2000 | 9700 | 200 | 301 | 600 | 650 | 900 | 1550 | 2050 | 200 | 500 | 700 | 800 | 000 | 1700 | 2400 | 175 | 400 | 576 | 700 | 750 | 1450 | 2025 |
| Chester | 320 | 3836 | 656 | 88 | 735 | 1563 | 2219 | 257 | 278 | 635 | 437 | 418 | 845 | 1390 | 396 | 594 | 990 | 1618 | 1787 | 3400 | 4800 | 271 | 453 | 724 | 804 | 962 | 1763 | 9490 |
| Chesterfield． | 200 | 267 | 476 | 1296 | 1611 | 9707 | 8183 | 181 | 200 | 386 | 701 | 749 | 1540 | 1926 | 126 | 106 | 202 | 739 | 763 | 1502 | 1734 | 97 | 89 | 186 | 491 | 390 | 881 | 1067 |
| Clarendon | 260 | 253 | 513 | 750 | 601 | 1416 | 1929 | 179 | 183 | 362 | 451 | 452 | 903 | 1205 | 201 | 367 | 548 | 1923 | 2282 | 4205 | 4750 | 103 | 225 | 388 | 1278 | 1678 | 2056 | 3344 |
| Colleton． | 186 | 208 | 894 | 1800 | 1788 | 3086 | 3480 | 127 | 158 | 285 | 830 | 838 | 1048 | 1058 | 60 | 60 | 120 | 1000 | 1647 | 3147 | 8267 | 60 | 40 | 100 | 700 | 949 | 1649 | 1740 |
| Darlington． | 375 | 452 | 827 | 971 | 048 | 1914 | 2741 | 346 | 388 | 684 | 672 | 008 | 1275 | 1959 | 869 | 457 | 826 | 1448 | 1736 | 8184 | 4010 | 219 | 299 | 518 | 805 | 1360 | 2165 | 2683 |
| Dorchester | 121 | 202 | 418 | 408 | 637 | 1050 | 1448 | 98 | 216 | 814 | 393 | 413 | 806 | 1120 | 189 | 306 | 445 | 527 | 1050 | 1577 | 2022 | 91 | 201 | 292 | 318 | 718 | 1030 | 1822 |
| Edgefield． | 345 | 301 | 736 | 576 | 762 | 1387 | 2078 | 315 | 300 | 675 | 484 | 685 | 1160 | 1844 | 00 | 80 | 140 | 1006 | 2110 | 4084 | 4224 | 64 | 73 | 127 | 1502 | 1972 | 3584 | 8661 |
| Fairfield． | 170 | 138 | 358 | 668 | 719 | 13887 | 1745 | 136 | 150 | 286 | 543 | 658 | 1201 | 1487 | 280 | 280 | 510 | 2539 | 2500 | 5120 | 5038 | 187 | 230 | 417 | 1918 | 2110 | 4028 | 4445 |
| Florence．． | 325 | 388 | 713 | 1242 | 1497 | 3649 | 8362 | 295 | 350 | 645 | 1030 | 1146 | 2176 | 2828 | 247 | 161 | 408 | 1560 | 1378 | 2988 | 830 | 210 | 150 | 340 | 1132 | 1045 | 2177 | 2517 |
| Georgetown． | 184 | 105 | 379 | 456 | 557 | 1018 | 1392 | 105 | 181 | 346 | 307 | 484 | 881 | 1227 | 209 | 306 | 005 | 601 | 714 | 1315 | 1920 | 271 | 300 | 571 | 680 | 682 | 1202 | 1838 |
| Greenville | 982 | 1230 | 2912 | 3003 | 4208 | 7206 | 0508 | 712 | 986 | 1608 | 2002 | 2868 | 4864 | 6502 | 538 | 591 | 1129 | 1076 | 2973 | 840 | 4578 | 308 | 304 | 762 | 718 | 1582 | 9800 | 3002 |
| Greenwood | 566 | 600 | 1156 | 698 | 758 | 14.56 | 2612 | 898 | 487 | 885 | 432 | 491 | 023 | 1758 | 461 | 500 | 961 | 2115 | 2374 | 4489 | 5450 | 206 | 206 | 472 | 1241 | 1490 | 2731 | 3208 |
| Hampton． | 281 | 207 | 578 | 867 | 828 | 1689 | 2207 | 189 | 218 | 407 | 633 | 572 | 1205 | 1612 | 200 | 224 | 424 | 1239 | 1841 | 2580 | 3004 | 83 | 107 | 100 | 867 | 1321 | 2188 | 2378 |
| Horry ， | 109 | 168 | 887 | 2504 | 2800 | 4804 | 5141 | 174 | 173 | 347 | 1400 | 1392 | 2792 | 8139 | 05 | 04 | 180 | 382 | 882 | 764 | 05 s | 05 | 94 | 180 | 348 | 382 | 689 | 874 |
| Kershaw， | 250 | 346 | 606 | 650 | 053 | 1608 | 2190 | 185 | 275 | 460 | 415 | 680 | 945 | 1405 | 260 | 819 | 579 | 972 | 1500 | 2472 | 8051 | 215 | 260 | 475 | 725 | 1025 | 1760 | 8225 |
| Lancaster | 514 | 554 | 1068 | 1197 | 1348 | 2540 | 3608 | 443 | 528 | 977 | 1020 | 1191 | 2211 | 3182 | 802 | 420 | 722 | 1067 | 1196 | 2293 | 2986 | 250 | 236 | 495 | 1108 | 1849 | 2447 | 3942 |
| Laurens．． | 612 | 601 | 1118 | 1112 | 1429 | 2547 | 3051 | 497 | 505 | 996 | 984 | 1223 | 2207 | 3203 | 306 | 548 | 044 | 1780 | 2357 | 1187 | 6081 | 254 | 888 | 659 | 1047 | 1568 | 2005 | 82.67 |
| Lee． | 294 | 220 | 454 | 6 | 778 | 1467 | 1911 | 148 | 150 | 293 | 481 | 618 | 1040 | 1342 | 188 | 187 | 870 | 1160 | 1667 | 2587 | 8097 | 121 | 119 | 240 | 464 | 683 | 1097 | 1837 |
| Texington | 800 | 788 | 1588 | 1434 | 1448 | 2879 | 4467 | 754 | 737 | 1491 | 923 | 094 | 1917 | 3408 | 375 | 394 | 769 | 902 | 850 | 1752 | 2521 | 316 | 305 | 021 | 826 | 876 | 1702 | 8828 |
| Marlon， | 700 | 749 | 1442 | 1424 | 1600 702 | 2024 | 4386 | 420 | 432 | 862 | 854 | 801 508 | 1715 | 2507 | 571 | 500 | 1071 | 1705 | 1684 | 8389 | 4400 | 205 | 800 | 595 | 812 | 801 | 1613 | 2208 |
| Marlboro． | 478 587 | 498 | 900 1080 | 691 | 702 | 1898 1688 | 2388 2718 | 801 419 | 396 | 787 898 | 852 467 | 528 508 | 1075 | 1889 | 187 488 | 14 | 278 | 1719 | 1728 | 3447 | 3728 | 118 | 107 | 220 | 1814 | 1894 | 2688 | 2858 |
| Newberry．－ | 762 | 755 | 1589 | 149 | 1756 | 1682 | 2718 4708 | 425 | 485 | 880 | 768 | 917 | 1670 | 1803 2589 | 207 | 478 | 432 | 1851 <br> 505 | 2052 569 | 3508 1184 | 488 108 | 3929 | 419 | 78 | 808 | 1152 | 1000 | 9708 |
| Orangeburg－， | 904 | 1206 | 2010 | 1650 | 1681 | 3221 | 6241 | 778 | 980 | 1708 | 1320 | 1862 | 2672 | 4380 | 1260 | 1676 | 9820 | 3072 | 4620 | 7609 | 10588 | 1380 | 1100 | 801 2840 | 2883 | 380 3490 | 760 6340 | 1070 0180 |

TABLF, NO. 4.-ENROLMENT AND AVERAGE ATTENDANGE, BY RACEA, in TOWN AND COUNTRY GCHOOLS.-Contidued.


918
table no. b. -otity and town sohools.

Digitized by GOOgle
TABLE NO. 6.-CITY AND TOWN Bohools.-Oontinued


| - Sqradoy ${ }^{2}$ попви!" $\AA$ | possossy |  |
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|  | ${ }^{\circ} \mathrm{OH} 3 \mathrm{y}$ |  |
|  | วทฺ¢ |  |
|  | ${ }^{\circ} \mathrm{OL}{ }^{\text {a }} \mathrm{N}$ |  |
|  | 'วリル |  |
|  | $\cdot 0.880 \mathrm{~N}$ |  |
|  | 2314 |  |
|  | ${ }^{20} 8^{3} 3^{3}$ |  |
|  | วมี4 |  |
| $\begin{aligned} & \text { g\%uping } \\ & \text { 10040 } \\ & \hline \mathrm{o}^{2} \end{aligned}$ | * 0.85 |  |
|  | วुलू |  |
|  | 0 |  |
|  | -29!4x | : 0 ¢ |
| $\operatorname{syol}_{\operatorname{sys}^{20} \mathrm{SA}^{10} \cdot \mathrm{on}^{2}}$ | -0.as. N |  |
|  | -23!4 11 | : : ¢¢¢ |
| sория <br> jo daquins | ${ }^{01897}$ |  |
|  | 231481 |  |
|  | - |  |

$921$

table no. 6.-NUMBER OF PUPILS BTUD Ying the various branches.-White.

tablie no．a－NUMBER of pUPILS biUdyina the vabious branoher．－White．－Continued．

|  | 䒜： |
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| apirn puse Atoloplyd |  |
| vmatavisy | 888 |
| 20ヶ¢ |  |
| ${ }^{-1202718}{ }^{\text {s }} \cdot \Omega$ | Fi¢k |
| $\cdot \mathrm{KiO75}!\mathrm{II} \cdot \mathrm{~S}$ | ㅇ8\％오유ㅇㅜㅜㅇ |
| амาระวา！7 $4 ⿻]^{2 \mathrm{ar}}$ |  |
|  | 우ㅇㅜㅑN： |
| －iqdusiono |  |
| ＊q9331\％ |  |
|  |  |
| －2uprm |  |
| －7umbeds | 웄영웅율 |
| －зррия <br> प7クI |  |
|  |  |
| ＇гррия P3！ |  |
| －20prog $_{\text {prooss }}$ | 長島免운영 |
| －10prox 7arn |  |
|  |  |

TABLE NO. 6. $\rightarrow$ NUMBER OF PUPILS STUD YING THE VARIOUS BRANCABS.-NEGRU.

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| -Aydersoon |  |
|  |  |
|  |  |
| - รับม! ${ }^{\text {a }}$ |  |
| Supliods |  |
|  |  |
|  |  |
|  |  |
| 'ториэม puoras |  |
|  |  |
| $\begin{aligned} & \text { a } \\ & \text { E } \\ & \text { 号 } \\ & \text { 2 } \end{aligned}$ |  |


| Name of County． |  |  |  | 苞 |  | 苞 空 | 空 |  | 突 |  |  |  | $\begin{aligned} & \dot{8} \\ & \text { 曷 } \\ & \text { 安 } \\ & \text { o } \end{aligned}$ | 8 0 B B 0 0 | 暒 | $\begin{aligned} & E \\ & \frac{E}{E} \\ & E \\ & E \end{aligned}$ |  | 兑 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Spartanburg | 1150 | 1008 | 906 | 690 | 589 | 5900 | 1875 | 1210 |  | 1110 |  |  |  |  |  |  |  |  | 28 |
| Sumter．．． |  | 434 | 312 | 248 | 375 | 1940 | 4013 | 3500 | 80 | 450 | 450 | 20 | 400 | 600 | 120 |  | 140 | 80 |  |
| Union．${ }^{\text {Willa }}$ | 775 | 630 | 842 | 238 | 160 | 2080 | 2410 | 2010 | 30 | 650 | 812 |  | 75 | 110 |  |  | 45 |  |  |
| Williamaburg | 1160 | 630 1550 | ${ }_{102}$ | 327 1288 | 100 | ${ }_{5681} 9$ | 3640 | 3017 |  | 890 | 1028 |  | 190 | 178 |  |  | 408 | 278 | ．．．．．． |
| York．．．． | 1024 | 1550 | 1191 | 1258 | 800 | 5681 | 4819 | 8508 | 1619 | 2360 | 1401 | 142 | 462 | 940 | 188 |  | 807 | 281 | ．．．． |

$920$


| Name of County． |  |  |  |  |  |  |  |  | $\begin{gathered} 8 \\ 8 \\ \frac{8}{8} \\ \text { 志 } \\ \text { 荅。 } \end{gathered}$ | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pickenf．， | 81058362 |  | 810168 | \＄635 41 | 460480 | 180 | \＄1382 00 | 80288 | 825461 | \＄2274488 |
| Richland．，．，．．．．．．．．．．．．．．．．．．．．．．．． | 4204776 | 30100 | 88781 | 29090 | 19835 | 68411 | 82620 |  | 851477 | 6400780 |
| Saluda．．．．t ．．．．．．．．．．．．．．．．．．．．．．．． | 902493 | 1800 | 6184 | 15180 | 4956 | 2000 |  | 30850 | 14816 | 1030779 |
| Spartanburg－．．．．．．．．．．．．．．．．．．．．．．．．． | 6920595 | 16100 | 41700 | 80798 | 80820 | 83508 | 29497 | 518800 | 121921 | 6800745 |
|  | 1882500 22890 000 | 42750 | 49620 137500 | 99716 870 | 252 500 76 | 24400 | 27500 | 77856 <br> 680 <br> 00 | 234 15 | 2482781 2671500 |
|  | 1901830 | 21000 | 12000 | 13135 | 1114 | 82710 | 1479 | 177512 | $280 \%$ | 214310 |
| York．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 3227871 |  | 19004 | 32650 | 8870 | 8821 | 5250 | 101292 | 28884 | 3558282 |
| Total．．．．．．．．． | \＄090726 74 | \＄2301 63 | 22524751 | \＄11935 16 | \＄15573 42 | 8318037 | \＄9738 87 | \＄40839 34 | 18893207 | 811487411 |


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TABLE NO. 7.-EIPRNDITURES FOR NEGRORRS-Continued.


930
TABLE NO. 8.-HIGYER EDUCATIONAL INSTITUTIONS,


93 I
TABLE. NO. 8.-HIGHER EDUOATIONAL INSATIUTIONS.-Continued.

$\dagger$ Report 1908.
TABLE NO. 9.-COLLEGE DIRECTORY.

| NAME. | Location. |  |  | Chartered by | Religious verumination. | $\begin{gathered} \text { For } \\ \text { Men } \\ \text { or } \\ \text { Women, } \end{gathered}$ | Degrees Authorized to Confer. | Name of President. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| State Colleges for Whites: <br> Chicora College.. | Greenville. . | 1804 | 1808 |  | Presbyterian. | Women. |  |  |
| Clemson Agriculturil and Mechan. Coi. | clemson. - | 195 | 1889 | Legislature |  | Men. . | B, S.. ..... . . | P, H. Mell. |
| Univeralty of South, Carolina. . .. .. | Columbia, | 1805 | 1801 | begistature |  | Both. | A. B., B. S., A. M., LL. B., | Benj. Sloan. |
| South Carolina Millary Acadumy Winthrop Normal and Industrial College | Charlcston Rock Hill | 1862 1505 | 1812 180 | Legislature Legislature |  | Men. | B. | sbury Coward. B. Johnson. |
| State Colleges for Negrocs: <br> Colored N. \& I., A. \& M. Col. of B. C. | Orangebuirg. | 1806 | 1896 | $1 \times$ |  | Both. . | Usual.. .. .. .. .. .. .. .. .. .. | homas E. Miller. |
| Private and Denominational for Whiter: Clifford Seminary. | tinion. | 1881 | 1884 | Clerk of Court., | Presbyterian. | Women. | Usual Degrees for Wo | G. Clifford |
| College of Charleston., :, .. .: | Charlegton Columbia | 1785 1854 | 1785 | Legislature : . ' | Non-bectaria Methodist. | Women. | B. A., B. S., M. A. B., B. S., A. M | arrison Rand <br> , w. Daniel. |
| Contederate Home Colloge.. | Charleston : | 1867 | 1900 | See. of State.. | Non-bectarian | Women | No Degrees.: . ${ }^{\text {. }}$ | Harriet F. Ronan, Prin. |
| Converse College. | Spartanburg Due West | 1870 | 1889 | Legisiature | Non-sectarian | Women | A. B., B. L., B. S., etc. |  |
| Erakine College...... | Due West. | 18 | 1839 | Legislature . | A. $\ddot{\text { R }}$ Prcaby ${ }^{\text {a }}$., | Both. | sii College Degrees.. | J. s. Moffatt. |
| Furman University | Greenville | 1851 | 1850 | Legislature | Baptist. | Men. | All College Degrees.. | E. M. Poteat. |
| Greenville College for Women.. | Greenville | 1804 | 1894 | Clerk of Court.. | Non-sectarian | Women. | All College Degrees. | A. S. Townes. |
| Greenville Fernale College.. .. .. .. | Greenville. | 1804 | 1854 | Legislature . | Baptist. ${ }^{\text {Methodist. }}$ | Women. | B. L., B, S., B, A., | E. C. James. |
| Lender College., .. .. .. .. .. .. .. | Greenwood | 1881 | 1805 | Legisature Sec. of State. | Methodist ${ }^{\text {Non-sectarian }}$ | Both. . | B. An, B, $\mathrm{S}_{\text {, }}$ | L. B. Haynes. |
| Limestone College.. | Gaffney. | 1845 | 1894 | Legislature | Baptist. . | Women. | A. B, A. M | L. D. Lodge. |
| Newberry College.. | Newberry | 1856 | 1856 | Legislature | Lutheran. | Both. | All College Degrees.. | J. A. B, Scherer. |
| Presbyterian College of S. O.. . . . | Clinton. | 1880 | 1880 | Sec. of State.. | Presbyterian. | Woth. | B. A., M. A... . | E, Spencer. |
| Presbyterian College for Women.. <br> g. C Co-Educational Institute.. | Columbia. Edgeffeld. | $\begin{aligned} & 1890 \\ & 1801 \end{aligned}$ | $\begin{aligned} & 1800 \\ & 1505 \end{aligned}$ | Legislature. Sec of State., | Presbyterian. Non-sectarian | Women. | B. B., B. S., B. | N. K. Bail |
| Wofford College.. .. .. .. .. .. .. .. | Spartanburg : | 1854 | 1851 | Legislature. | Methodist. | Both. | All College Degrees.. .. .. .. .. | H. N. Snyder. |
| Private and Denominational for Negroes: | Columbia. | 1880 | 1880 |  |  | Both. | B, S., A. B., B. D., L. IL, LL. B. | Inam |
| Avery Normal College... ... .. ... .. .: | Charleston | 1865 | 1802 | Clerk of Court,: | Congregationa | Both. | No De | 有 |
| Benedict College.. ... | Columbia | 1871 | 1804 | Sec, of State.. | Baptiet. | Both. | A11 College Degre | A. C. Onbor |
| Claflin Univerality.. .. .. .. .. .. ... . | Orangeburg. | 1800 | 1800 | Legislature. | Methodist. | Both. | All College Degrees.. .. .. ... | L. M. Dunton. |
| Modical and Theological Instituten: Pouth Carolina Medieal Colleme.. Bouth Carolina Theologleal Seminary., | Charleston Columbla. | $\begin{aligned} & 1882 \\ & 1828 \end{aligned}$ | 1832 | Leglalature : . . | Prombyterlan. | Both. . Men. | M. D., Ph. G., Phat. D. B. D. | Francla L. Parker, Dean. W. M. McPbeeters, Ch.Bd. |

## TOTAL EXPENDITURES FOR PUBLIC SCHOOLS．

## Compiled by Bupt．A．R．Banks under the dtreetion of the Department of Immigration and Africulture．

This table shows the development of the Public School in South Carolina eince their entab－ froment im 1809．The fieuref for the first two or three yeara are not accurate，as the syatem was new and reports irresular．During the years $1878-80$ there ir apparently a decrease in fund because of the deficiency from J．K．Jilson＇s administration as State Superintendent of Educa－ tion．Otherwise the marked increate in attendance，expendituren，and number of teachera and ercoole is apparent．

| Year 18＊8－9． |  | $\begin{gathered} \text { 䓪 } \\ \text { 曷 } \\ \text { 员 } \end{gathered}$ | 苞 | Number of Teachers |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 邑 | $\begin{aligned} & \text { 息 } \\ & \text { 夏 } \end{aligned}$ | $\begin{aligned} & \text { 窵 } \\ & 0 \\ & 0 \\ & \mathbf{0} \end{aligned}$ |  |  |  |  |
| 1800．0． | 168，810 | 28，409 | 28，441 | 256 | 273 | 628 | 80 | 467，821 | \＄77，949 | 630 |
| 1856－1． | 197，170 | 45，436 | 80，448 | 863 | 381 | 734 | 80 | 112，970 | 172．050 | i06 |
| 1871.2 | 200，610 | 75，626 | 68，056 | 1，185 | 718 | 1，898 | 80 | 201， 215 | $27-91:$ | 1.639 |
| 1872－3． | 200，376 | 94，842 | 76，822 | 1，868 | 828 | 2，185 | 100 | 288，092 | 820，451 | 1，019 |
| $1873-4$. | 230，102 | 100，448 | 85，804 | 1，884 | 928 | 2，310 | 100 | 838，790 | 809，433 | 2，082 |
| 1814－6． | 232，121 | 125，846 | 100，719 | 1，625 | 1，002 | 2，627 | 100 | 385，023 | 448，252 | 2，868 |
| 1875 －6． | 289，264 | 110，984 | 110，416 | 1，723 | 1，082 | 2，865 | 100 | 369，086 | 426，463 | 2，580 |
| 1876－7． | 237，971 | 123，085 | 101，065 | 1，914 | 1，154 | 3，068 | 100 | 877，920 | 423，872 | 2，776 |
| 18778. | 237，971 | 102，398 | 45，879 | 1，639 | 1，035 | 2，674 | 60 | 212，581 | 226，021 | 2，483 |
| 1878－9． | 228，128 | 116，230 | 104，239 | 1，844 | 1，273 | 3，117 | 62 | 261，180 | 816,197 | 2，028 |
| 1879 －0． | 228，128 | 129，463 | 09，463 | 1，934 | 1，232 | 3，166 | 67 | 284，952 | 810，320 | 2，D01 |
| 1880－1． | 288，128 | 134，072． | 102，345 | 1，887 | 1，294 | 3，181 | 70 | 258，555 | 361，417 | 2，973 |
| 1881－2． | 281，664 | 133，458 | 98，476 | 1，904 | 1，345 | 3，243 | 75 | 809，856 | 352，910 | 3，057 |
| 1828. | 281，664 | 146，974 | 101，816 | 1，940 | 1，473 | 8，413 | 80 | 849，095 | 873，508 | 8，183 |
| 1883. | 281，664 | 173，095 | 110，996 | 2，000 | 1，494 | 8，494 | 80 | 841.177 | 389，884 | 3，269 |
| 104－b． | 281，684 | 185，619 | 114，144 | 2，115 | 1，569 | 3，684 | 80 | 843，674 | 423，473 | 3，489 |
| 1085． | 281，664 | 178，0231 | 122，083 | 2，119 | 1，604 | 3，773 | 70 | 874，257 | 428， 119 | 3，562 |
| 1800－7． | 281，604 | 183，906 | 126，608 | 2，091 | 1，744 | 3，835 | 70 | 873.641 | 425，902 | 3，660 |
| 18878. | 281，684 | 175，017 | 126，531 | 2，227 | 1，767 | 3，994 | 72 | 368，581 | 424，426 | 3，581 |
| 18.29 .9. | 281，644 | 193，434 | 130,557 | 2，242 | 1，961 | 4，203 | 72 | 385，257 | 430，610 | 8，822 |
| $1890-0$. | 281，644 | 194，264 | 136，358 | 2，210 | 2，040 | 4，250 | 68 | 306，333 | 460，434 | 8，948 |
| 1900－1． | 281，664 | 203，140 | 147，799 | 2，163 | 2，210 | 4，364 | 09.6 | 384，814 | 460,399 | 3，610 |
| 1901－2． | 281，684 | 209，560 | 148，603 | 1，967 | 2，182 | 4，150 | 70.2 | 892，856 | 419，858 | 3，809 |
| 1894．s． | 281，604 | 208，749 | 148，761 | 2，043 | 2，355 | 4，398 | 73.2 | 422，590 | 485，839 | 3，487 |
| 18084. | 281，664 | 223.150 | 182．300 | 2，114 | 2，421 | 4，535 | 74.1 | 443,865 | 456,103 | 3，408 |
| 12045. | 281，084 | 226，766 | 165，116 | 2，141 | 2，453 | 4，594 | 86 | †474，294 | 532，747 | 8，508 |
| 1285－6． | 281，064 | 223，021 | 169，254 | 2，140 | 2，425 | 4，565 | 70 | 470，084 | 563，744 | 3，792 |
| 1808－7． | 281，684 | 232，397 | 172，201 | 2，028 | 2，419 | 4，407 | 72 | ${ }^{*} 536,643$ | 601，389 | 4，298 |
| 18978. | 281，684 | 232，337 | 172，201， | 2，028 | 2，419 | 4，407 | 72 | －737，700 | 671，075 | 4，288 |
| 1898－ | 450，200 | 258，183 | 182，559 | 2，245 | 2.728 | 4，973 | 83.8 | 706，264 | 803，575 | 4，848 |
| 1809－0． | 404，085 | 275，889 | 205，407 | 2，2022 | 2，960 | 6，242 | 90.2 | 728，771 | 897，588 | 4，465 |
| $1900 \cdot 1$. | 464，055 | 281，891 | 201，205 | 2，422 | 3，142 | 5，504 | 88.2 | 827，013 | 980，683 | 4，880 |
| 1901－2． | 411，200 | 285，208 | 208，114 | 2，636 | 3，278 | 5，814 | 88.2 | 960，418 | 1，184，029 | 4，718 |
| 19098. | 476，840 | 279，443 | 208，378 | 2，687 | 3，296 | 5，832 | 88.8 | 962，188 | 1，211，092 | 4，712 |
| 1000－4． | 483，386． | 288，713 | 209，389 | 2，588 | 3，369 | 6，947 | 93 | 1，191，963 | 1，565，136 | 4，800 |
| 1904－6． | 490,214 | 282，115 | 214，133 | 2，596 | 3，290 | 6，816 | 96 | 1，304，629 | 1，681，600 | 4，911 |
| 1900－6． | 490.882 | 318，075 | 218，882 | 2，692 | 3，452 | 6，044 | 88 | 1，404，474 | 1，740，400 | 5，024 |
| 100－7 | 311，896 | 814，899 | 222，189 | 2，540 | 8，088 | 6，228 | 98 | 1，415，725 | 1，853，672 | 4，806 |
| Total |  |  |  |  |  |  |  | ，749，200 | 23，479，806 |  |

State Colleges $\$ 212,645.84$ ．Only onc report for two years owing to Conititutional Con－ rention．

TABLE 12-PUBLIO EI(HF BCHOOLS.

| Name of High School. | Name of Superintendent. |  |  |
| :---: | :---: | :---: | :---: |
| Allendale.. .. .. .. .. | C. F. Brooks. . .. .. .. ... .. 3 | 81,000 | \$003 00 |
| Bamberg.. .. .. . . . . | H. G. Sheridan.. .. .. ... ... 3 | 1,840 | 67300 |
| Batesburg. . .. .. .. .. . | H. A. Brunson.. .. ... .. .- 3 | 1,810 | 05300 |
| Blacksburg ., .. .. .. .. . | E. A. Montgomery.. ... ... .. 2 | , 005 | 58500 |
| Brunson.. .. .. .. .. .- | J. C. Eagerton.. ... .. .. .. | 1,600 | 53000 |
| Central. . .. | J. R. Lyles.. .. .. .. .. .. 3 | 1,000 | 383 |
| Chesterfield. | F. Q. Barbee. . . . . .. .. .. | 1,150 | 43300 |
| Clinton.. .. .. .. .. .. . | J. G. Colbert. . .. .. .. .. 3 | 1,200 | 57009 |
| Cavins. |  | 008 | $2200$ |
| Cross Hill. . .. .. .. .. | W. S. Hough.. .. .. .. .. ${ }^{\text {W }}$ | 1,080 | 41600 |
| Cross Anchor., .. . | W. M. Melton.. .. | 900 | 38000 |
| Center Township.. .- .. | Mi11 | 000 | 35000 |
| Denmark.. .. .. .. .. . | E. H: Hall.. .. .. .. .. | 1,791 | 64760 |
| Dillon.. .. .. .. .. .. . | W. W. Nickels.. .. .. .. .. ${ }^{3}$ | 2,175 | 70000 |
| Easley. | R. C. Burts. . .. ... .. ... .. ${ }^{\text {I }}$ | 1,850 | 50000 |
| Fort Mill. . .. .. .. .. . | J. H. Witherspoon.. .. .. .. 3 | 1,860 | 50000 |
| Fountain Inn.. .. .- .. | H. B. Dominiek. . .. .. ... 4 | 1,100 | 51600 |
| Gafney.. .. .. .. .. | B. J. Wells. . .. .. .. .. .. | 2,008 | 70000 |
| Hampton. . .. .. .. .. . | J. W, Rouse.. .. .. .. .. .. 2 | 1,200 | 450 ou |
| Heath Springs.. .. .. .. | J. S. Stoddard. . .. .. .. .. 2 | 1,060 | $40800$ |
| Jonesville.. . . .. .. .. . | H. A. Wise. . . . . . . . . .. 3 | 1,665 | 60500 |
| Johnston. . | V. O. Zeigler., . ${ }^{\text {V }}$. .. .. 8 | 1,205 | 48100 |
| Jeflerson.. | R. D. Marsh.. | 1,300 | 48300 |
| Kershaw.. | E. M. McCown. | 1,130 | 42000 |
| Laturens.. . | R. A. Dobson.. .. .. ... | 8.020 | 72800 |
| Little Mountain.. .. .. . | J. W, Ballentine.. .. ... .. 8 | 760 | 80300 |
| Latta.. . . .. .. .. .. .. | H. W. Ackerman.. ... .. .. | 1,260 | 470 on |
| Lancaster.- | A. R. Banks.. .. .. .. .. 4 | 2,410 | 80000 |
| Marion.. | T. C. Ensterling.. ... .. .. .. 8 | 2,048 | 70000 |
| Mullins. . | A. T. Helme.. .. .. ... .. 4 | 1,575 | 57500 |
| McColl. | W. B. Owens.. .. .. .. .. 3 | 1,675 | 60800 |
| Mount ville. | W. P. Culbertson.. .. ... ... 4 | 890 | 34300 |
| Mauldin.. .. .. .. .. . | I. E. Childress.. .. .. .. .. 8 | 770 | 80600 |
| Ninety-Six.. | W, F, Scott. . .. .. .. .. .. 3 | 1,860 | 50800 |
| North Augusta. . .. .. . | J. F. Thomason.. .. .. .. .. | 1,500 | 57000 |
| Olar. . .. .. .. .. .. .. . | W. M, Oxner. . . . . . .. .. .. 3 | 1,815 | 48800 |
| Prosperity | E. O. Counts. . .. .. .. .. 8 | 1,215 | 45500 |
| Pendleton. | G. H. Ligon. . .. ... .. .. .. | 1,080 | 51000 |
| Pickens.. | J. W, Swittenburg.. .. .. .. 3 | 1,350 | 50000 |
| Rafting Creek (Hagood, S. | . $\mathrm{D}^{\text {H }}$ "... .. .. .. .. .. .. 2 | 840 | 33000 |
| Bidgeway.. .. .. .. ... .. | D. R. Riser. . .. ... .. .. .. 2 | 1,080 | 41000 |
| Ruby | W. P. West. . . . . . . . . .. 4 | 090 | 88000 |
| Saluda. . .. .. .. .. .. .. | A. B. Vonnor.. .. ... ... .. 8 | 1,200 | 45000 |
| St. George. . .. | J. Y. Bryson.. .. .. .. .. 4 | 2,895 | 80000 |
| Springfleld., .. .. .. .. | W. P. Coker.. .. .. .. .. ... 3 | 1,260 | 17000 |
| Simpsonville. | R. H. Willis. | 805 | 81800 |
| Sardis.. .. .. .. .. .. . | W. Joyner.. .. .. .. .. .. 1 | 1,160 | 48600 |
| Sencen++ .- .. .. .. .. .. | D. F. Nicholson.. .. .. .. .. 2 | 1,275 | 47500 |
| Summerville.. .. .. | J. T. Coleman.. .. .. .. .. | 1,170 | 44000 |
| Timmonsville. . | D. L. Lewis.. . . . . . . . . .. 2 | 1,460 | 53700 |
| Townville., . | W. C. Ariail. | 840 | 85000 |
| Union | Davis Jeffries.. .. .. .. .. | 2,255 | 70000 |
| Willementon. | W. K. Carswell.. .. .. .. .. 8 | 1,720 | 68300 |
| Mt. Zion (Winnaboro).. .. | J. H. Thornwell, Jr.. .. .. | 1,735 | 09800 |
| Westrilnster.. .. .. .. .. | M. E. Brockman.. .. ... .. | 1,539 | 36000 |
| Zoar. . . . . . . . . . . | T. E. Dorn.. | 720 | 29000 |
| Total High School Aid. |  |  | \$297,900 00 |

## LOCAL TAX STATISTICS.

## DISTRICTS THAT HAVE AN EXTRA LEVY FOR SCHOOLS, WITH THE NUMBER OF MILLS EXTRA LEVY.

ABBEVILLE (11).


## AIKEN (8).

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
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|  |  |  |  |  |  |  |

ANDERSON (16).
Anderson, District 17 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. $21 / 2$ mills

Hunter, District 24 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Gantt, District 34 . . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. 8 mills
College .. .. .. .. . . . . . . . .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Good Hope . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 4 mills
Walker McElmoyle .. .. .. . . .. .. .. .. .. .. .. .. .. .. .. .. 4 mills
Melton .. . . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 8 mills
Bishop's Branch .. . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. 4 mills
McLee's, No. 52 . . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. 4 mills
Zion, No. 53 . . . . . . .. . . . . . . . . .. . . . . . . . . . . . . . . . . .. 3 mills
Lebanon, District 27 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 4 mills
Starr, District 37 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. $21 / 2$ mills
Cownville, District 40 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
fva, District 44 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Piercetown, District 54 . . .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Broyles, District 57 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills

## BAMBERG (18).


Heyward District ..... 2
mills
Hunter's Chapel, District 50 ..... 23 mills
Cuffe Creek, District 56 ..... 2
Mddway ..... 2 ..... milla
Hampton
Kirkland ..... mills ..... mills
BARNW ELL (80).
Calvary .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 ..... mills
Great Cypress, District 4 ..... mills
Seigling, District 18 ..... mills
Blackville, District 19 ..... mills
Double Pond, District 20 ..... mill
Edisto, District 21 ..... mill
Allendale, Digtrict 22 ..... mills
Hercules, District 23 ..... mills
New Forest, District 25 ..... mills
Monie, District 26 ..... mills
Elko, District 28 ..... mills
Williston District ..... mills
Lees, District 32 ..... mill
Barberry Branch, District 33 ..... mills
Brownwell, District 34 ..... mills
Cedar Grove, District 35 ..... mill
Cave, District 36 ..... mills
Oak Grove, District 38 ..... mill
Friendship, District 39 ..... mills
Tinkers Creek, District 40 ..... mill
Morris, District 42 ..... mills
Columbla, Distrlet 43 ..... mill
Falrfax, District 44 ..... mills
Barnwell, Dlstrict 45 ..... mills
Crane, Savannah ..... mills
Healing Springs ..... mills
Sycamore ..... mills
Hickory Hill ..... mills
BEAUFORT (1).
Ridgeland ..... malls
BERKELEY (7).
St. Stephen, District 6 ..... mills
Moncks Corner, District 10 ..... mills
Pinopolis, District 12 ..... mills
Holly Hill, District 18 ..... 3 milis
Bowyer, District 19 ..... mills
Long Ridge, District 22 ..... mill
New Hope, District 23 ..... millsCHARLESTON (1).
City, District 14 ..... 1 ..... mill
CHEROKEE (9).
White Plains ..... 1/4 mill
Blacksburg, District 9 ..... zilla
Gaffney. District 10 ..... $8 \%$ mills
Pacolet ..... $21 / 2$
Macedonia ..... 2
Beaver Dam ..... 2 mills
Gowdysville ..... mills
Midway ..... 2 mills
Corrinth mills
CHESTER (6).
Courthouse, Distrlct 1 mills
Wlise, District 8 ..... 23 mills
Wilksbury, District 14 ..... mill
F't. Lawn, District 17 2 mills
Bascomville, District 18 ..... mills
Richburg ..... 24 mllls
CHESTERFIELD (22).
Wamble Hill ..... mills ..... mills
Palmetto, District 16
Palmetto, District 16
Cross Roads, District 44 ..... mills
Jefferson, Special District 9 ..... mills
Union, District 10 ..... mills
Shlloh, Dlstrict 11 ..... mills
Bear Creek, District 18 ..... mills
Bethesda, District 14 ..... mills
White Oak, District 15 ..... mills
New Hope ..... mills
Chesterfield ..... mills
McBee ..... mills
Rose Hill ..... mills
Wallace ..... mills
Marbury ..... mills
Rooty Branch, District 16 ..... mills
Long Branch, District 20 ..... mllls
Bay Spring, District 21 mills
Plains, District 24 ..... mills
Orange Hill, Dlstrict 36 ..... mills
Juniper Creek ..... mills
Mt. Croghan mills
CLARENDON (18).
Davis Station ..... mills
Concord, District 7 ..... mills
Manning, District 9 ..... mills
Pudding Swamp, District 16 ..... mills
Paxville, District 19 ..... mills
Pine Grove, District 20 ..... mills
Douglass, District 21 ..... mills
Summerton, District 22 ..... mills
McFaddin, District 24 ..... mill
Pinewood ..... mills
Calvary ..... mills
Sammy Swamp ..... mills
Brewington ..... mills
Santee ..... mills
New Zion ..... mills
Sardinia ..... mill
Trinity ..... mills
Mt. Zion ..... mills

## COLLETON (8).

Rum Gully, District 2 ..... mills
Williams, District 3 ..... mills
Walterboro, District 19 ..... mills
Lodge, District 30 ..... mill
Cottageville ..... mills
Bethlehem ..... mills
Swift Creek ..... mills
Bethel ..... mills
DARLINGTON (23).
Darilngton, District 2 .. .. .. .. . . . . . . . . . .. .. .. .. .. .. 31/2 mills
Reynolds, District 8 ..... mills
Newman Swamp, District 4 ..... mills
Plummer, District 9 ..... mills
Society Hill, District 18 ..... mills
Hebron, District 18 ..... mills
Philadelphia, District 20 ..... mills
Echo, District 22 ..... mills
Lynches River, District 24 ..... mills
Una, District 25 ..... mills
Union, District 27 ..... mills
Clyde, District 28 ..... mills
Burnt Branch, District 29 ..... mills
Dovesville, District 30 ..... mills
New Providence, District 81 ..... mills
Hartsville, District 38 ..... mills
Antioch ..... mills
Swift Creek ..... mills
Anderson mills
High Hill ..... mills
Bethlehem ..... mills
mills
DORCHESTER (10).
St. George, Special District 5 mills
Harleyville, District 9 ..... mills
Dorchester, District 16 ..... mills
Joint ..... mills
Reevesville ..... mills
Indianfields ..... mills
Ridgeville ..... mills
Summerville. ..... mills
Grover, District 4 ..... mills
Sand Ridge ..... mills
EDGEFIELD (8).
Johnston, District 11 ..... mills
Edgefield, District 25 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 1 millsFAIRFIELD (15).
Feasterville, District 1 ..... mills
Greenbrier, District 9 ..... mills
Horeb, District-17 millsSmallwoodmills
Ridgeway ..... mills
Longtown ..... mills
Mossydale, Diatrict 18 ..... mills


## FLORENCE (16)

Florence, District $1 . .$. .. .. .. .. .. .. .. .. .. .. .. .. .. .. $24 / 2$ mills

Timmonsville, District 16 .. .. .. .. .. .. .. .. .. .. .. .. .. .. $21 / 4$ mills
Cane Branch, District 18 .. .. .. .. .. .. .. .. .. .. ... .. .. .. 2 mills
Beulah, District 21 . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Hyman .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 8 mills
Evergreen . . .. . . . . .. .. .. .. .. .. .. .. . . . . .. .. .. .. .. 3 mills
Jeffreys .. . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Eet:.e! .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. ? ri: ;
Cartersville . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 milns
Elim . . . . . . . . . . . . .. .. . . . . . . . . . . . . .. . . . . .. .. 3 milla
Wayside .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Coward . . . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Sardis, District 12 . . . . . . . .. .. .. .. . . . . . . . . . . . . . . 6 mills
Ward, District 41 . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. $\quad$ mills
Tabernacle .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Hebron .. . . . .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
GEORGETOWN (3).


GREENVILLE (11).
Fountaln Inn, Dlstrict 3 B .. .. . . .. .. .. .. .. .. .. .. .. .. 4 mills
Poplar Springs, District 5 B .. . . . . .. . . .. .. .. .. .. . . . .. 2 mills
Simpsonville, District 6 D .. .. .. .. .. .. .. .. .. .. .. .. .. .. mills
Union, District 8 A .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Kills Mill, District 8 C . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2 mills
Taylors, District 9 B .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Lima, District 15 A . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2 mills
Greenville, District 17 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. $21 / 2$ mills
Greers .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Tyger .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 3 mills
Lobanon .. .. . . .. .. .. .. .. .. . . .. .. .. .. .. .. .. .. .. .. 3 mills
GREENWOOD (2).

HAMPTON (8).
Brunson, District 14 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Hampton, Special District 15 .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Varnville, District 18 . . . .. .. .. .. .. .. .. .. .. .. .. .. . 2 mills
Rice, District 17 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Estill, District 18 .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Crocketville, District 18 .. .. .. .. .. .. .. .. .. .. .. .. .. .. 2 mills
Ridgeland . . . . . . . . . .. .. .. .. .. . . .. .. .. .. . . . . . . . 2 mills
Garnett . . . . . . . . . . . . . . . . . . . .. . . .. .. .. .. .. .. .. 2 mills

## HORRY (14).

Floyd's ..... mills
Loris ..... mills
Green Sea ..... mills
Wannamaker ..... mills
Wampee ..... mills
Centenary ..... mills
Savannah Bluff ..... mills
Powell ..... mills
Athens ..... mills
Burroughs, District 19 ..... mills
Socastee ..... mills
Harper ..... mills
Zion ..... mills
Spring Branch ..... mills
KERSHAW (14).
District 1 .. . . .. .. .. .. .. .. .. .. .. .. .. .. .. . .. .. .. .. 3 mills
District 2 ..... 1/8 mllls
District 4 ..... mills
District 7 ..... mills
District 10 ..... 2 mills
District 11 mills
District 12 ..... mills
District 13 ..... mills
District 17 ..... mills
District 18 ..... mills
District 18 ..... wills
District 22 ..... mills
District 27 ..... mills
LANCASTER (14).
Lancaster, District 14 mills
Jones Cross Roads, Diatrict 30 ..... 8 mills
Heath Spring, District 38 ..... mills
Oakhurst. Distrlct 39 ..... mills
Kershaw. Distriet 40 ..... mills
VanWyck ..... mills
Russell ..... mills
Dixie, District 17 ..... mills
Primus, District 24 ..... mills
Caston, District 32 ..... mills
Pleasant Valley, Dlatrict 3
Tradeaville ..... mill:
St. Luke ..... mills
Taxahaw ..... mills
LAURENS (21).
Dial, District 5 ..... mills
Laurens, District 11 ..... $23 / 2$ mills
Laurens, District 3 ..... 2 mills
Laurens. District $B$ ..... mills
Dial, District 3 ..... mills
Dial. District 6 ..... mills
Waterloo, District 2 ..... mills
Waterloo, District 3 ..... mills
Cross Hill. District 13 ..... 24 mills
Waterloo, District 14 ..... 2 milla
Mountville, District 16 $21 / 2 \mathrm{mflls}$
Hunter, District 5 ..... mills
Olar, No. 12 ..... mills
Lanford, 10 ..... $2 y$ mills
Laurens, 1 ..... mills
Laurens, 2 ..... mllls
Laurens, 6 ..... mills
Dials, 1 ..... mills
Sullivans, 1 ..... mills
Sullivans, 6 ..... mills
LEE (7).
Bishopville, District 20 mills
St. Charles ..... mills
Oakland ..... mills
Shrock's Mill ..... mills
Reedy Branch ..... mills
Spring Hill ..... mills
Herriot ..... mills
LEXINGTON (8).
Batesburg, District 18 mills
Swansea, District 37 ..... 2 mills
Athens ..... mills
Pellon, District 25 ..... mills
Leesville, District 16 ..... mills
Hulon, District 18 ..... mills
Macedon ..... mills
Calvary ..... mills
MARION (23).
Carolina ..... mills
Union ..... mills
Pages M1ll ..... mills
Millers ..... mills
Little Rock, District 4 ..... mills
Hamer, District 7. ..... mills
Dalcho, District 21 ..... mills
Todds, District 35 ..... mills
Nichols, District 25 ..... mills
Pleasant. District 56 ..... mills
Centenary, District 44 ..... mills
Latta, District 20 ..... mill
Hew Holly, No. 10 ..... mills
Bingham, No. 11 ..... mills
Kentyre, No. 12 ..... mills
Bermuda, No. 17 ..... 23 mills
Pleasant Hill, No. 33 ..... mills
Palmer, No. 46 ..... $21 / 2$ mills
Britton's Neck, No. 49 ..... mills
Olivet, No. 54 ..... mills
Scotch, No. 57 ..... mills
Britton's Neck, 49 ..... mills
Nebo ..... mills
MARLBORO (16).
Hebron, District 19 ..... mills
Ebenezer, District 28 ..... mills
Kollock, District 28 ..... 24 ..... mills
Beauty Spot, District 88 mills
Antioch, District 37 ..... mills
McColl, No. 12 ..... mills
Tatum, District 5 ..... mills
Brightsville, District 7 ..... 81/2 mills
Clio, District 9Bennettsville, District 104 mills
Boykin, District 11 ..... $21 / 2$ mills
Lester, District 14 ..... 2\% mills
WIllis, District 18 ..... mills
Harmony, District 20 ..... mills
Salem, District 26 ..... mills
Pine Grove, 16 ..... mills
NEWBERRT (10).
Newberry, District 1 mills
Utopia, District 10 ..... mills
Prosperity, District 14 ..... mills
Big Creek, District 20 ..... mills
Little Mountain, District 80 ..... mills
Excelsior, District 35 ..... mills
Chappels, District 39 ..... mills
Jalapa, District 48 mills
Whitmires, District 48 mills
Zion, District 56 ..... mills
OCONEHE (18).
Ebenezer, District 69 mills
Walhalla mills
Providence, District 3 ..... mills
Bethel. District 5 ..... mills
Fair Play, District 6 ..... mills
Mt. Tabor, District 10 ..... mills
Bounty Land, District 20 ..... mill
Wolis Stake, District 35 ..... mills
Midway, District 36 ..... mills
Westminster ..... mills
Richland, No. 19 ..... mills
ORANGEBURG (48).
E. Union, 47 ..... mill
E. Liberty, District 55 mills
South Pine Grove, District 4 ..... mills
North Pine Grove, District 5 ..... mills
West Amelia, District 7 ..... mills
North Providence, District 18 ..... mills
St. George, District 74 ..... mills
Joint, District 83 ..... mills
South Amelia, District 8 ..... mills
Branchville, District 18 ..... mills
North New Hope, District 20 ..... mills
East Middle, District 22 ..... mills
Orangeburg, District 26 ..... mills
West Orange, District 27 ..... mills
West Goodland, District 36 ..... mills
South Hebron, District 40 ..... mills
West Liberty, District 41 ..... mills
East Willow, District 43 ..... mills
West Willow, District 44 ..... mills
Bowman, District 65 ..... 2
mills
East Lyons, District 86
West Lyons, District 67 ..... 4
Neeseton, District 682Elloree, District 703
Norway, District 71 ..... 8Cordova, District 75Limestone, District 783
North Zlon, Dlstrict 48North Goodley, District 102
Gouth Goodley, District 11 ..... 2
E. Providence, District 18 ..... millsmillsN. Orange, District 28 ..... 3
N.
N.
N. Edisto, District 84 ..... 8
B. Goodland, Dlstrict 87
N. Goodiand, District 882
E. Liberty, District 42 ..... 2
E. Union, District 66
Dry Branch2
M. Elizabeth, District 64 ..... 2
W. Middle, 21
W. Union, 463
N. Zion, 48
N. Providence. 72
PICKENS (13).
Central, District 9 .. .. .. .. .. . . .. .. .. .. .. .. .. .. .. .. 2 mills
Johnston, District 10 ..... $11 / 2$ mills
Lberty, District 11 8 m mills
Easley, District 13 ..... mills
Farr, District 16 ..... mills
Codar Rock, District 19 ..... 2 mills
Long Branch, District 28 mills
Pickens, District 31 ..... mills
Grove, District 49 ..... 2
Calhoun, District 8 mills
Keowee ..... 2
Central ..... mills
Meuldin mills
RICHLAND (1)
District 1 ..... 2
mills
SALUDA (6).
Providence ..... 4
mills
galuda, District 1 ..... mills
Wards, District 17 ..... mills
Ridge Spring, 3 ..... 4 mills
Unlon, 4 ..... 2 mills
Watson, 26 mills
gPARTANBURG (24).
Pacolet, District 47 ..... 8
Victor, District 55 ..... mills
Greers, District 79 ..... mills
District No. 4 ..... mills
Fairforest, District 2 ..... 4
Gramilng, District 81 mills
Woodrufi, District 83 ..... mills
Spartanburg (Clty), District 34 ..... 2\%
Landrum, District 45 ..... 3 milla
Welford, District 48 ..... mills
Campobello, District 49 ..... mills
Cherokee, District 62 ..... milla
West Springs, District 87 ..... $2 \%$ mills
Oakland, District 7 ..... 2 mills
Duncans, District 75 ..... mills
Disputants, District 27 mills
Cowpens ..... mills
Roebuck ..... millis
Reidville ..... mills
Valley Falls, District 37 ..... mills
Thompson, District 72 ..... mills
Innman, District 26 ..... mills
Cross Anchor ..... mills
Berry ..... mills
SUMTER (14).
Sumter, District 1 mills
Concord, District 2 ..... mills
Privateer, District 3 ..... mills
Manchester, District 4 ..... mills
Middieton, District 5 ..... mill
Mt. Clio, District 12 ..... mills
Swimming Pens, District 16 ..... milis
Sumter (City), District 17 mills
Mayesville, D
Stateburg, 11 ..... mills ..... mills
Magnolia, District 22 ..... mills
McDonald, District 23 ..... mills
Rafting Creek ..... mills
Wedgefield ..... mills
UNION (8).
Carlisle, Special District 2 mills
Santuck, Special District 3 ..... mills
Rocky Creek ..... mills
Union, Special Distrlct 11 ..... mills
West Springs, District 67 ..... 24 mills
Venters ..... mills
Wilson ..... mills
Cedar Hill ..... mills
WILLIAMSBURG (14).
Venters, 23 ..... mills
Lake City, District 15 ..... mills
Kingstree, District 16 ..... mills
Union, District 18 ..... mill
Hebron, District 19 ..... mills
Heyward, 27 ..... mills
Cedar Swamp ..... mills
High Hill, District 20 ..... mills
Cameron. District 21 ..... mills
Cades, 25 ..... mills
Prospect, 26 ..... mills
Pergamos. 27 ..... mills
Greeleyville, 22 ..... mills
Wilson, 24 ..... mills

## YORK (10).

Hickory, District 9 mills
Yorkville, District 11 ..... mills
Rock Hill, District 12 ..... mills
Riverside, District 26 ..... mills
Philadelphia, District 33 ..... mills
Tirzah, District 36 ..... mills
Gold Hill, District 39 ..... mills
Bethesda, District 29 ..... mills
Wilkinson, District 9 ..... mills
Sharon ..... $21 / 2$ mills
LIST OF COU̇NTY SUPERINTENDENTS FOR 1908-1909, AND NEW BUILDINGS CONSTRUCTED IN 1906-1907.
Abbeville-R. B. Cheatham, Abbeville ..... 2
Aiken-A. W. Sanders, Aiken ..... 6
Anderson-R. E. Nicholson, Anderson ..... 3
Bamberg-R. W. D. Rowell, Bamberg ..... I
Barnwell-B. M. Darlington, Barnwell ..... 3
Beaufort-B. H. Boyd, Beaufort ..... o
Berkeley-C. W. Sanders, Monck's Corner ..... I
Charleston-E. P. Waring, Charleston ..... 2
Cherokee-J. L. Walker, Gaffney ..... 2
Chester-W. D. Knox, Chester ..... 2
Chesterfield-Kirby Rivers, Chesterfield ..... I
Clarendon-S. P. Holladay, Manning ..... 2
Colleton-H. W. Black, Walterboro ..... o
Darlington-Henry C. Burn, Darlington ..... o
Dorchester-J. J. Howell, Georges ..... 3
Edgefield-W. D. Holland, Edgefield ..... I
Fairfield-T. M. Jordan, Winnsboro ..... 2
Florence-A. H. Gasque, Florence ..... 4
Georgetown-Josiah Doar, Georgetown ..... 4
Greenville-James B. Davis, Greenville ..... 3
Greenwood-J. F. Wideman, Greenwood ..... o
Hampton-S. J. Fitts, Hampton ..... 4
Horry-W. A. Prince, Conway ..... 5
Kershaw-W. B. Turner, Camden ..... 2
Lancaster-W. M. Moore, Lancaster ..... 4
Laurens-R. W. Nash, Laurens ..... 7
Lee-McDonald Davis, Bishopville ..... 4
Lexington-J. E. R. Kyser, Lexington ..... I
Marion-James R. Williams, Marion ..... 3
Marlboro-A. L. Easterling, Bennettsville ..... 2
Newberry-J. S. Wheeler, Newberry ..... 4
Oconee-C. L. Craig-Walhalla ..... I
Orangeburg-S. R. Mellichamp, Orangeburg ..... 9
Pickens-R. T. Hallum, Pickens ..... 0
Richland-S. M. Clarkson, Columbia ..... I
Saluda-J. N. DeLoach, Saluda ..... 5
Spartanburg-E. C. Elmore, Spartanburg ..... 3
Sumter-S. D. Cain, Sumter ..... 7
Union-D. B. Fant, Union ..... 3
Williamsburg-J. G. McCullough, Kingstree ..... 7
York-T. E. McMackin, Yorkville ..... 5
Total new buildings ..... II9

## CHAPTER .X.

## Reports of State Institutions.

## ANNUAL REPORT

## OF THE

## BOARD OF TRUSTEES

## OF THE

## SOUTH CAROLINA COLLEGE,

TO THE

## General Assembly,

FOR THE

Scholastic Year Ending June 30, 1907.

## REPORT.

President's Office, University of South Carolina, Columbia, S. C., November 27, 1907.
Hon. O. B. Martin, State Superintendent of Education, Columbia, S. C.

Dear Sir: Herewith is submitted the annual report of the Board of Trustees for the year ending June 11, 1907, and also the Treasurer's report for the same period.

## NUMBER OF STUDENTS.

The total number of students enrolled was 285. Academic Students, 175; Graduate Students, 14; Teacher Students, 64; Law Students, 32. In the total enrolment there were 19 women. The enrolment for the session $1907-1908$ is 273.

## GRADUATING CLASS.

The following students were graduated with the grades and degrees indicated, June 11, 1907:

Master of Arts.-Highly Distinguished: Henry Campbell Dayis. Distinguished: William Elbert Fendley, Wilson Plumer Mills, James Harvey Rogers, Miss Jean Hain Witherspoon. Proficient: Elbert D. Easterling.

Bachelors of Arts.-Distinguished: Francis Wright Bradley, Addie Melton Burney, Vernie Cook, John Schreiner Reynolds. Proficient: Leon M. Green, John Samuel Harris, Nathaniel Barnwell Heyward, Albert Henry Jarecky, Alexander Baum Kohn, Richard Dozier Lee, Jr., John Rainsford, Victor Elliott Rector, Margaret Rion, Simpson J. Zimmerman.

Bachelors of Science.-Distinguished: Allen Jones, Jr., James Harvey Rogers. Proficient: Maston Thomas Carlile, Daniel Archer Carmichael, Theodore Marion DuBose, Jr., Walter V. Parrott.

Bachelors of Law.-Distinguished: Marvin Hardin, Wade C. Hughs, Walter M. Scott. Proficient: Wm. D. Aiken, Jr., R. Pringle Clinkscales, L. E. Croft, Jerry M. Hughes, David Hamilton, Dibert Jackson, L. B. Singleton, C. C. Smith, Ashley C. Tobias, Jr.

Licentiates of Instruction.-Distinguished: Kurt R. Schoenburg. Proficient: S. A. Hatchell, J. C. Hungerpiller, J. D. Lanford, E. S. McKown, Clarence J. Sawyer, C. L. Shealy.

## FACULTY AND OFFICERS.

Benjamin Sloan, Ll. D., (West Point)
President, and Professor of Physics and Astronomy.
William B. Burney, Ph. D., (Heidelberg)
Professor of Chemistry.
Edward S. Joynes, M. A., LL. D.,
Professor of Modern Languages.
Joseph Daniel Pope, A. M., LL. D., Professor of Law and Dean of Law Faculty.

> Patterson Wardlaw, A. B., Professor of Pedagogics.

Charles W. Bain, M. A., Professor of Ancient Languages.
F. Horton Colcock, C. E., Professor of Mathematics.

George A. Wauchope, M. A., Ph. D., Professor of English Language and Literature.

Andrew C. Moore, A. B., Professor of Biology.

Rev. Gordon B. Moore, A. B., Th. M., D. D., Professor of Philosophy.

Yates Snowden, Professor of History and Political Science.

Mayville W. Twitchell, Professor of Geelogy and Mineralogy.

Edwin L. Green, A. M., Ph. D., Associate Professor of Ancient Languages.

M. Herndon Moore, A. B., LL. D.,
Professor of Law.

John P. Thomas, Jr, Professor of Law.

* Reed Smith, M. A., Adjunct Professor of English.

> William H. Hand, Professor of Pedagogics.

Leonard 'T. Baker, A. M., Associate Professor of Pedagogics.
A. Courtenay Carson, B. S., Associate Professor of Physics.

George McCutchen, A. B., Ll. B., Adjunct Professor in History and Political Science.

Elbert D. Easterling, A. B., Adjunct Professor of Mathematics.

F. G. Porrs, A. B., - Instructor in Modern Languages.

F. W. Bradley, A. B., Instructor in Modern Languages.

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$$
\begin{gathered}
\text { Miss K. C. Bollinger, } \\
\text { Miss A. J. Selby, } \\
\text { Miss E. T. Swaffield, } \\
\text { Miss C. E. Thomas, } \\
\text { Instructors Teachers' Department. } \\
\text { Eugene McCarthy, } \\
\text { Physical Director. } \\
\text { Rev. Gordon B. Moore, } \\
\text { Chaplain. } \\
\text { L. T. Baker, } \\
\text { Secretary. } \\
\text { Miss Margaret H. Rion, } \\
\text { Librarian. } \\
\text { Miss Ann Allston Porcere, } \\
\text { Assistant Librarian. } \\
\text { Miss Sarah F. Fickling, } \\
\text { Treasurer. } \\
\text { E. J. Wannamarer, M. D., } \\
\text { Plysician in Charge of Infirmary. } \\
\text { William Weston, M. D., } \\
\text { Assistant Physician. } \\
\text { M. C. Dyches, } \\
\text { Marshal. } \\
\text { Mrs. Addie Madden, } \\
\text { Matron of Infirmary. }
\end{gathered}
$$
\]

The University takes great interest in the efforts now being nude to promote the establishment of high schools throughout the State, for it feels that its highest success depends largely upon the establishment and maintenance of such schools. Professor William H . Hand, of the Department of Education of the University, has been doing, and continues to do, vigorous and excellent work throughout the State for this purpose. Attention is called to the "High School Manual," edited by him and published under the auspices of the University.

Copies of this manual have been widely distributed among all who are known to be interested in the cause of education, and already the fruit of it in systematizing and elevating the work of the schools is apparent and most gratifying.

## APPROPRIATIONS.

For the year 1907 the appropriations for the support of the University by the General Assembly are as follows:
Support of Schools . . . . . . . . . . . . . . . . . . . . . . . \$43,838 93
For Building Three Professors' Houses .. .. .. . . .. 10,000 $\infty$
For Re-covering Four Buildings . . .. . . . . . . . . .. 2,800 $\infty$
For Insurance .. .. . . . . . . . . . . . . . .. .. . . .. 3,300 00
.For Normal Scholarships .. .. .. .. . . . . . . . .. 4,100 $\infty$
Total . . . . . . . . . . . . . . . . . . . . . . . . . .. .. \$64,038 93
See Treasurer's report herewith subnitted.
Very respectfully,

> Benjamin Sloan, President.

## UNIVERSITY OF SOUTH CAROLINA. <br> Treasurer's Report.

Summary of Receipts and Expenditures for the Scholastic Year Beginning July 1, 1906, and Ending June 29, 1907.

RECEIPTS.
Balance of Appropriation for 1906 .. .. .. $\$ 21,85157$
Part of Appropriation for 1907 .. . . . . .. $\quad 26,484$ 21
Fees:
Tuition . . . . . . . . . . . . . . . . . . . . $\$$ 3,970 00
Term . . . . . . . . . . . . . . . . . . . . .. 3,187 50.
Diploma . . . . . . . .. .. . . . . . . . . . 15900 7,316 50
Lights and janitor service (students) .. .. $\quad \mathrm{I}, 444 \mathrm{Co}$
Lights (professors) .. .. .. . . . . . . . . . 19866
Infirmary board . . . . . . . . . . . . . . . .. 26850
Miscellaneous receipts . . . . . .. .. . . .. $\quad 7400$
Balance from last scholastic year . . $\therefore$. . 4,119 20
Total receipts . . . . . . . . . . . . . . $\$ 61,75664$
cxpendituris
Salaries:
President ..... $\$ 2,50000$
Ten professors ..... 19,50000
Professor of Law ..... $1,400 \times 0$
Professor of Law ..... 1,700 00
Professor of Law (ten months) ..... 1,416 68
Associate Prof. Anc. Langs. (3 mos.) ..... 20004
Professor of Secondary Education ..... 5000
Associate Professor of Pedagogy ..... 1,250 00
Associate Professor Ancient Languages ..... 1,350 00
Associate Professor of Physics ..... I,I50 04
Adjunct Professor of English ..... 1,200 0
Adjunct Professor of History ..... 1,000 04
Instructor Mathematics ..... 60000
Instructor Mathematics ..... $200 \infty$
Instructor Modern Languages $680 \infty$
Instructor Modern Languages ..... 30000
Four Practice Teachers (\$90 each) ..... $360 \infty$
Librarian ..... 97500
Assistant Librarian ..... 64000
President's Clerk and Treasurer ..... 85777
Marshal ..... 72000
Matron Infirmary ..... $480 \infty$
Athletic Director ..... $800 \infty$
Mail Clerk ..... 7500
Bell Ringer ..... 7500
Total salaries ..... \$39,479 57
Miscellaneous ..... 2,26954
Repairs ..... 2,293 03
Infirmary ..... 2,138 57
Fuel and lights ..... 1,23754
Advertising ..... 61697
Postage ..... 15963
Printing ..... 98300
South Caroliniana ..... 48128
Normal scholarships ..... 1350
Wages ..... 1.81914
Fees refunded ..... 1000
Rent, professors' houses ..... $1,023 \infty$

957
Trustees ..... \$ 16828
Centennial records ..... 56438
Covering four buildings ..... 1,131 46
Alumni records ..... 101 10
Departments:
Library ..... $\$ 1,23687$
Physics ..... 95000
History ..... 7500
Psychology ..... 27500
Biology ..... 13472
English ..... 4200
MathematicsGreek
2500
Education ..... 10000
Geology ..... 2500
Chemistry ..... 5000
Gymnasium ..... 531 II
$\$ 3,69470$
Appropriation for Contagious Ward (In-
firmary) not used and returned to StateTreasurer
50000
\$58,684 69
3,071 95
\$61,756 64
S. F. Fickling, Treasurer.

# ANNUAL REPORT 

OF THF

## BOARD OF VISITORS

OF THE

# S. C. Military Academy 

FOR THE

Academic Year

1906-1907

## Report of Chairman of the Board of Visitors South Carolina Military Academy.

$$
\text { Charleston, S. C., October 29, } 1907 .
$$

Hon. O. B. Martin, State Superintendent Education, Columbia, S. C.
Dear Sir: The Board of Visitors of the South Carolina Military Academy has the honor to submit its annual report for the year ending 3oth June, 1907.

## GRADUATING EXERCISES.

In compliance with the action of the Board the closing exercises of the year occurred at the Jamestown Exposition, near Norfolk, on the 27th day of June last, when nineteen (19) cadets received their diplomas as graduates of the Academy and also degrees of Bachelor of Science. This visit was well calculated to impress upon the minds of these youths the important historical event connected with the locality as well as the significance attached by the English-speaking race to this birthplace of Anglo-Saxon civilization on the Continent of America. This visit to the Exposition was a substitute for the annual encampment. Under the requirements of the Exposition management the Battalion of Cadets was exercised twice each day, appearing in the afternoons with other military bodies on dress parade.

## ANNUAL ELECTION OF FACULTY.

The annual election of the members of the Faculty occurred without any change in the personnel of its members.

## ANNUAL INSPECTION OF CORPS BY UNITED STATES WAR DEPARTMENT INSPECTOR.

The annual inspection of the Corps of Cadets and the Academy by an officer of the War Department of the United States was made on the 23d of May by Captain Michael J. Lenihan, of the General Staff; whose report, equally satisfactory to the friends of the Academy as that of any of his predecessors, is included in the "Official Register" for 1907. It is indeed gratifying to see these annual endorsements of the conduct of the school by the highest authority of the country-the War Department of the United States Government.

## REPAIRS OF THE BUILDINGS.

The appropriation of $\$ 3,000$ by the last General Assembly for the repairs of the buildings of the Academy has, under the direction of the Board of Visitors, been judiciously and economically expended by Captain Raines, the Quartermaster. The roof of the east wing has been thoroughly overhauled, the ceiling of the chapel renewed in metal, new floors laid, where needed, in the galleries, new doors to the cadet rooms have been placed, and other improvements introduced as was found practicable with the limited funds at command.

## OLD POLICE STATION.

In the matter of the Old Police Station, bought by the State, no steps for delivery of same have yet been taken by the city. The new Station building is well on the way to completion, and will probably be delivered by the contractor during the coming winter, when the old Station house will be abandoned and probably delivered to the State for the uses of the Academy.

## APPROPRIATION FOR CONVERTING OLD POLICE STATION TO USE OF ACADEMY.

Necessary appropriation for the adaptation of this building to the uses of the Academy ought to be made at the approaching meeting of the General Assembly. In the meantime the Board of Visitors will obtain the advice of architects as to the changes to be introduced and the cost of same.

## OFFICIAL PUBLICATIONS BY THE ACADEMY.

The official publications issued by the Board for the government of the Academy consist in a book of "Regulations for the South Carolina Military Academy," a "Blue Book for the Interior Discipline and Police of the South Carolina Corps of Cadets," "The Official Register of the South Carolina Military Academy," and "The Circular of Information."

## CAPTAIN SIMONS, COMMANDANT.

The Board feels itself indebted to Captain Wm. H. Simons, Commandant of Cadets, for the great industry, intelligence and interest manifested in the well ordering and classification of this work, and

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they herein make their acknowledgment, fully endorsing the language of the report of Superintendent Coward, whose appended report gives all necessary details of operation.

## REQUEST FOR APPROPRIATION.

Pending the work necessary to obtain the information attending the cost of adaptation of the Police Station building to the uses of the Academy, and upon which the Board will make special report to the Legislature at their annual meeting in December, application is now made for the usual annual appropriation for the support of the Academy for the ensuing year.
For the support of the Academy. . . . . . . . . . . . . . . . $\$ 25,000$ 00
For general repairs. . . . . . . .. .. . . . . . . . . .. .. .. 1,000 00
For additions to Library . . . . . . . .. . . . . . . . . .. .. 25000
Total. . . . . . . . . . . . . . . . . . . . . . . . . . . . $\$ 26,25000$
In closing this report the Board of Visitors acknowledge the valuable services of the several members of the Faculty; services rendered at times under very trying circumstances.

> C. S. GADSDEN, Chairman, for Board of Visitors.

One member of the Board of Visitors, whose term expires in 1908, must be elected by the General Assembly.

## Official Register of the South Carolina Military Academy, Charleston, S. C., July, 1907.

Organisation.
BOARD OF VISITORS.
Col. C. S. Gadsden, Chairman. Charleston, S. C.

Col J. J. Lucas, Society Hill, S. C.

Col. W. W. Lewis, Yorkville, S. C.

Maj. E. M. Blythe, Greenville, S. C. Orlando-Sheppard, Esq., Edgefield, S. C.

Ex-Officio:

The Governor of the State.
The Adjutant and Inspector-General of the State.
State Superintendent of Education.
Chairman Military Committee of the Senate.
Chairman Military Committee of the House of Representatives, Columbia, S. C.

The annual meeting of the Beard of Visitors is held at the Citade, in Charleston, on the second Tuesday in December.

## ACADEMIC BOARD.

Col. Asbury Coward, LL. D.,
(s. c. m. A.)

Superintendent and Professor Political Science.
Capt. Wm. H. Simons, 6th Inf. U. S. A.
(s. c. м. A.)

Commandant of Cadets, and Professor Military Science and Tactics.
Maj. St. James Cummings, M. A., (univ. of tenn., johns hopkins univ.)
Professor English Literature and History.
Maj. R. G. Thomas, C. E., (с. м. І.)

Professor of Mathematics and Engineering.
Maj. O. J. Bond, B. S., (s. c. м. A.)

Professor of Drawing and Astronomy, Associate Professor of Mathematics.

Maj. P. B. Winn, B. S., C. E., Professor of Physics.

Maj. Charles Walker, M. A., Ph. D., (univ. of tenn., clark univ.) Professor of Chemistry and Geology.

Maj. L. L. Dantzler, B. A., M. A., (wofford college, vanderbilt univ.)

Professor of French and German.
Capt. J. W. Moore, B. S., (s. c. м. A.)

Assistant Professor of English.
R. S. Cathcart, M. D., Surgeon.
Capt. Henry E. Raines, B. S., (s. c. м. A.) Quartermaster.
Pror. F. P. Valdez, Physical Director.

## REMARKS.

The South Carolina Military Academy was originally established December 20, 1842, and continued in operation until the close of the War between the States, in 1865 . It was reopened by the Board of Visitors October ist, 1882, under the authority of an Act of the General Assembly, approved January 3 Ist, 1882.

## CLASSIFICATION OF CADETS.

The Cadets are arranged in four distinct classes, corresponding with the four years of study. The Cadets employed on the first year's course constitute the Fourth Class; those on the second year's course the Third Class; those on the third year's course the Second Class; and those on the fourth year's course, the Fibst Class.

The Academic Year commences on the last day of the Annual Encampment. On or before that date, the result of the Annual Examination, held in June, is announced, and Cadets are advanced from one class to another. At no time shall a Cadet be advanced from one class to another, unless prevented by sickness, or authorized absence, from attending at the aforesaid examination, in which case a special examination shall be granted him; but in no case shall a Cadet be advanced from one class to another without having passed a satisfactory examination by the Academic Board.

## NOTE.

Those Cadets marked (*) are officially selected for publication, conformably to a regulation which requires the names of the most distinguished Cadets, not exceeding two in each class, to be reported for this purpose at each Annual Examination.

## MERIT ROLLS.

The mark on which the merit rolls are made are obtained by taking the sum of the monthly marks received in each department and dividing by the number of marks, to get the average, then by multiplying by the "weight" of the department as established. Theaggregates of these "final averages," with the Conduct Mark added in, determine the relative class standing of the Cadets. Elective studies are not counted in the final grading for graduation.

Weights. The weights given the various subjects are proportional to the time assigned them in the schedule of recitations.

In the First Class, the elective and non-elective studies each count as 50 per cent. of the aggregate.
Corduct Mark. The value of the Conduct Mark is fixed at 5 per cent. of the Academic aggregate.

Academic Standard. A minimum average of 50 per cent. is required in each department, and a "general average" of $662-3$ per cent. of the aggregate,-not including the Conduct Mark,-is required for advancement to a higher class and for graduation.

## CONDUCT ROLL.

P. 53. Rolls exhibiting the relative standing of the Cadets in Conduct shall be formed by the Superintendent, at the June examination for the whole Academic Year, in the following manner:
ist. Merits. Merits shall be awarded to the Cadets upon the following basis:
For perfect conduct for one week.............................1/2
2d. Demerits. To all the recorded delinquencies of the Cadet shall be affixed a number, not exceeding io, corresponding to the degree of criminality.

3d. The degree of criminality for the various offenses shall-be fixed by the Superintendent, subject to the revision of the Board of Visitors.

> | Offenses of the ist Class by 10 |
| :--- |
| Offenses of the 2d Class by |
| Offenses of the 3d Class by |
| Offenses of the 4 th Class by |
|  |
| Offenses of the 5 th Class by |
| Offenses of the 6th Class by |
| Offenses of the 7 th Class by |

4th. In determining standing on the "Conduct Roll," Merits and Demerits shall have correlative value.
P. 54. Deficiency in Conduct. When any Cadet shall have a number expressing his Demerits on the General Conduct Roll greater than 200 for his Fourth Class Year, 170 for his Third Class Year, 150 for his Second Class Year, 130 for his First Class Year, such Cadet shall be declared deficient in Conduct, and be immediately suspended, and reported to the Board for action at its next meeting.

Cadets of the South Carolina Military Academy, Arranged in Order of Merit in their Respective Classes as Determined at the Annual Examination in June, 1907.

FIBST CLASS-20 MEMBERS.


ENGINEERING SECTION.


ENGLISH SECTION.


PHYSROS SEOTION.


OHEMISTRY SECTION.

NOTE-The mumbers give the relative manding of the Cadeta in the various departments

## 969

SECOND CLASS- 20 MEMBERS


THIRD CLASS-47 MEMBERS.


FOURTH CLASS－89 MEMBERS．

| $\begin{aligned} & \text { 픙 } \\ & \text { 흥 } \\ & \text { ㅁ } \end{aligned}$ | NAMCES． | COUNTY． | $\frac{\stackrel{3}{y}}{\frac{y}{n}}$ | Class-May or Benefic's |  |  |  | Mer |  |  | 岩 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ＊J．D．Kelly． | Charleston． | S，C． | P | 16 |  |  | 1 |  | 316 | 97.18 | 3.00 |
|  | －V．T．Lawton． | Bibb．． | Ga． | p | 16 |  | 4 | 516 | 16.1 |  | 05.80 | 4.36 |
|  | H．H．Bouson．．． | Charleston． | S．C． | P | 17 |  | 1 | 32 | 210 | 19 ）33 | 97.32 | 1.84 |
|  | A．S．Isaacs，．．．． | Passaic． | N．J． | P | $16$ | 5 | 2 | 24 | $4{ }^{4} 1$ | 146 | 07.18 | 0．78， |
|  | P．A．Clarke． | Anderson．．．． | 8．C． | B | 18 | 11 | 6 | 13 | 39 | 920 | 95.45 | 2.22 |
|  | I．R．Forney ．．．． | York．．．．．． | ＂． | B | 17 | 3 | 5 | 811 | 14.5 | 515 | 94.59 | 3.04 |
|  | R．C．Williams．．． | Kershaw．．．．． | 4 | B | 16 |  | 9 | 410 | 10.16 | 16.9 | 03.08 | 3.34 |
|  | B．C．Riddle．． | York．．．．．．．．． | ＂ | B | 18 |  |  | 9.5 | 513 | 1310 | 92．06 | 3.83 |
|  | W，R，Conolly ．．． | Greenwoor | it | B | 17 | 71 | 18 | 617 | 173 | 36 | 21.78 | 8.53 |
| 10 | W．W．McIver．．． | Spartanbia | " | P | 16 | 9 | 715 | 15.24 | 24.90 | 294 | 91．02 | 1.12 |
| 11 | W．H，Langford．． | Hampton． | $*$ | B | 18 | 171 | 1811 | 118 | 829 | 295 | 88.51 | 3.60 |
|  | E．H．G．Huff．．． | Greenville． | ＂ | B | 19 | 141 | 117 | 1711 | 1136 | 367 | 88，59 | 8．47 |
|  | W．C．Wylie．．． | Chester． | ＂ | B | 17 | 81 | 10.5 | 5115 | 155 | 5180 | 88.86 | 2.82 |
| 14 | W．8，Lykes． | Richland | ＂ | B | 17 | 15.23 | 23 I0 | 1013 | 1394 | 2428 | 88.17 | 2.29 |
| 15 | C．P．Cornwell． | Chester． | ＂ | B | 18 | 13 | 82 | 29 83 | 3345 | 45.23 | 87.73 | 2.67 |
|  | G．O．Rogers．．．． | Charleston． | a | P | 17 | 242 | 2612 | 127 | 78 | 813 | 87.00 | 3.98 |
| 17 | F．R．Sessions．．．． | Charleston． | $\cdots$ | B | 16 | 831 | 101 | 1310 | 1019 | 192 | 84.81 | 4.18 |
| 18 | Jacob Rosenbaum． | Greenwood． |  | S | 17 | 193 | 3518 | 18.23 | 23137 | 3719 | 85.33 | 2.85 |
| 19 | H．A．Woodward，． | Richmond． | Ca． | P | 19 |  | 10 is | 186 | 640 | 1030 | 87.37 | 0.62 |
| 20 | A．T．Corcoran．．． | Charleston． | S．C． | P | 16 |  | $1418$ | 1818 | 189 | 917 | 84.47 | 2，97 |
| 21 | 8．L．Duckett．．．． | Greenville． | Fl | B | 16 | 20.2 | 2025 | 2584 | 8412 | 12 14 | 83， 62 | 3.00 |
|  | Li G．Powell．．．． | Bradford． | Fla． | P | 18 | 223 | 38.20 | 20.45 | 4504 | 24 4 | 82.44 | 8.63 |
| 23 | W．Q．Claytor，．． | Richland．． | S，C． | P | 16 | 213 | $30 / 2$ | 23.30 | 3014 | 1412 | 88.69 | 8.29 |
| 24 | J．B．Grimball．．． | Charleston． |  | P | 16 | 271 | $1578$ | $879$ |  |  | 82.34 | 2.67 |
| 25 | J，M，Diven． | Charleston． |  | P | 16 | 26.3 | $329 n$ | 3n 40 | 40.5 | 5122 | 80.67 | 9.72 |
|  | J．K．，McCown，．． | Darlington．．， |  | ${ }^{8}$ | 17 | 31.3 | 3312 | 2429 | 2969 | 52 18 | 79.81 | 2.93 |
| 27 | J．D．Parks．．． | Spartanburg－． |  | B | 17 | 18.3 | 3484 | 8498 | 98） 22 | 29.39 | 80，88 | 1.42 |
|  | A．B，Gross，．．． | Berkeley．．． |  | B | 16 | 123 | 3740 | 40.25 | 25.38 | 18.43 | 80.72 | 1.29 |
|  | D．IV．Gaston． | Afken．．．． | S，C． | P | 17 | 80.4 | 4827 | 2727 | 2747 | 17.3 | 77，52 | 8．69 |
| 30 | C．W．Reeves．．． | Laurens．．－ | U． | B | 18 | 2511 |  | 8891 | 21.50 | 5030 | 79.01 | 2．08 |
| 81. | S，S．Tison．．．．． | Barmwell．．．． | Ga | P | 17 | 40 | 36 21 | 21.21 | 2118 | 1851 | 80.48 | 0.60 |
| 83 | T．C．Parker． | Bibb．．．．． | Ga． | P | 16 | 38. | 2011 | 1651 | 5119 | 19 20 | 78.15 | 2.82 |
| 83 | E．D．Smith．．．， | Richland．－． | 8．C． | P | 18 | 231 | $17+$ | ＋9288 | 3849 | 4935 | 78，43 | 1.63 |
| 34 | J．E．Cannon．．．． | Darlington． |  | P | 16 | $34 \mid 2$ | 2s 37 | 37818 | 4317 | 1725 | 70.46 | 2.59 |
| 85 | D．F．Fishburne．． | Charleston． |  | P | 18 | 48 ？ | 2130 | 3612 | 12.24 | 426 | 75.90 | 2.54 |
| 88 | J．W．Wallace．．． | Newberry．．． | ＂1 | B | 16 | 44. | 29 35 | 35187 | 37 P2 | 211 | 74，47 | 3.80 |
| 37 | G，C．Blount．．． | Barnwell． | ＂ | P | 17 | 39 | 4531 | 3135 | 15511 | 1136 | 76.02 | 1.60 |
| 28 | Jacob Blatt．．．． | Barnwell． | ＂ | P | 16 | 375 | 50 | 4020 | 20.48 | 1849 | 74.95 | 0.64 |
| 39 | H．Q．DuBobe．．．． | Darlington．． | ir | P | 17 | 498 | 8930 | 3030 | 3015 | 15 122 | 73.46 | 1，08 |
| 40 | C．W．Calhoun．．．． | Barnwell． | U | P | 16 | 89 \％ | 2552 | 52.42 | 42：30 | 10.45 | 74.30 | 0.06 |
| 41 | E．L．Skipper．． | Lancaster． | ＂ | P | 16 | 368 | 8153 | 5381 | 81.24 | 437 | 72.74 | 1，46 |
|  | T．W．Martín． | Barnwell． | ＂ | B | 16 | 28.4 | 424 | 4048 | 4863 | 4347 | 73，25 | 0.77 |
| 43 | E．J．Tighe． | Dorchester． |  | B | 17 | 295 | 5150 | 5046 | 46.41 | $41 / 4$ | 72.11 | 1.68 |
| 44 | H．C．Smith． | Union． |  | P | 16 | 472 | 284 | 4852 | 5228 | 8897 | 70.05 | 2.46 |
| 45 | B．Q．Gregg．． | Florence． |  | P | 17 | 514 | 4028 | 2845 | 45 61 | 6138 | 70，60 | 1.45 |

FOURTA OLASS-80 MRMBERS-Continued.


OONDUOT ROLI OORPS OF CADEIS－176 MESPERS－Jume $28,1007$.

| $\begin{aligned} & \frac{8}{7} \\ & \frac{\mathbf{4}}{8} \\ & \hline \end{aligned}$ | NAMPE | $\left\|\begin{array}{\|l\|} \hline 1 \\ \hline 0 \end{array}\right\|$ |  | 站 罢 垵 |  | nambes | 嶅 | 宕 <br> 晨 <br> d |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
|  | Myers． |  | 481／4 |  | 52 |  |  | 388\％ |
|  | Mikell． |  | ${ }_{3016}^{40}$ |  | ${ }_{54}^{53}$ |  |  | ${ }_{48}^{41 / 2}$ |
|  |  |  |  |  | 55 | Porcher．：．：．：．．：．：．：．．：．： |  | 483／ |
|  | Bethei， |  | 85 |  |  | Forney．．．．． |  | 44\％ |
|  | Rumell． |  | ${ }_{8816}^{34}$ |  |  | Kelly ${ }^{\text {K }}$ ．．．．．．．．．．．．．．．．．． |  | ${ }_{481}^{48}$ |
|  | Charles． |  | ${ }_{28}^{2838}$ |  |  | Corcoran．：．． |  | 47\％ |
|  | Brigs | 2 | 2836 |  |  | McCown．．．．．．．．． |  | 49\％ |
|  | Hunt | 1 |  |  | 61 | Evans．．．．．．．．．．．．． |  |  |
| 12 | Busb | 2 | 244\％ |  |  | Rosonbiaum．．．．．．．．． |  | $531 / 2$ |
|  | Lawt | ：${ }_{1}$ | 24 |  |  | Parker．：．：．：．．：．：．：．：．：．．．．： |  | ${ }_{55}$ |
| 14 | Hair． |  | 1515 |  |  |  |  |  |
|  |  |  |  |  |  | Diven．：．．．．${ }^{\text {Duldrow }}$ ．． |  |  |
| $\underset{18}{17} \mid$ | $\underset{\text { Workman }}{\text { Roinford }}$ | 3 | ${ }^{11} 10 \%$ |  | ${ }_{68}^{68}$ | Mornwell．． M ．：．．．．．．：．．．．．．．．．． |  | ${ }_{63}^{68}$ |
|  | Townee． |  |  |  |  | Grimball．．．．．．．．．．．．．．．．．． |  | 63 |
| 20 | Garrie | ．${ }_{2}$ | ${ }_{3}^{71 / 8}$ |  |  | Cannon．．．．．．．．．．．．．．．．．． |  | ${ }_{70} 87$ |
| $\begin{aligned} & 21 \\ & 98 p \\ & 08 \end{aligned}$ | Wampbeil | 2 |  |  |  | Mmith，H．：．：．：．：．：．：．．．．．：．： |  | 74 |
| 23 | Willia， | ${ }^{2}$ | 2 |  |  | Laurens．．．． |  | 80 |
| 888 | Crome | 2 |  | 8 |  |  |  |  |
| 88 | Hut | 1 |  | 84／2 | 78 | Haynesworth．：．．．．．．． |  | 013 |
| $\begin{aligned} & 278 \\ & 88 \end{aligned}$ | MeM | ${ }^{1}$ |  | ${ }_{10}^{10} 1$ |  | Pilgram．：．：．：．：．：．：．．．．：．．． |  |  |
| $2_{0}^{20}$ | Bart | － 3 |  | 12 | 79 | Osbome．．．．．．．．．．．．．．．．．．．． |  | 943 |
| $80$ | Powe | $\therefore 4^{4}$ |  |  |  |  |  |  |
| $82$ | Padge |  |  | ${ }^{16}$ |  | Murdoch． |  |  |
|  | Pate |  |  |  |  | Bouson． |  |  |
|  | Pand |  |  | 1818 |  | Willie，w．．．．．． |  | ${ }_{1012}^{1007}$ |
| $\begin{gathered} 86 \\ 86 \end{gathered}$ | Brown |  |  |  |  |  |  |  |
|  | Nohr | ： 2 |  | 22 | 86 | Tighe． |  |  |
| $85$ | Huff． | 4 |  |  |  | Ehrlich．．．．．． |  |  |
| $880$ | Wallace |  |  | 23 |  | Smith，E．．．． |  | 1116 |
| ${ }_{41}^{40} \mid$ | Martin， | ， |  | ${ }_{27}{ }^{212}$ | ${ }_{91}$ | Brouson．： |  | ${ }_{118} 1$ |
|  | Wilila |  |  | 2812 |  | Murray．．． |  | 1193 |
| $\begin{aligned} & 48 \\ & 44 \\ & 4 \end{aligned}$ | Riddie． | 1 |  | ${ }_{80}^{29}$ | － 93 | Rearden Clarke， j |  |  |
| $\begin{aligned} & 70 \\ & 40 \\ & \hline 10 \end{aligned}$ | Wallace | 4 |  | 31 |  | Skipper．． |  | 125\％／2 |
| $\begin{aligned} & 46 \\ & 48 \end{aligned}$ | Chaytor． | 4 |  |  |  | $\xrightarrow{\text { Gregk }}$ Calhoun， |  |  |
| 48 |  |  |  |  |  | Parks．．．．．．．．．．．． |  |  |
|  | Bryan． |  |  | ${ }_{841 / 2}^{34}$ |  |  |  | $1128{ }^{127 / 2}$ |
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## 974

OONDUCT ROLL，CORPS OF CADETS－176 MEIGBERS－June 2s，1907．－Conthned

| $\begin{aligned} & \text { gin } \\ & \text { 妾 } \end{aligned}$ | Names． |  |  |  | 容 | NAMES | 管 |  |
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| 101 |  |  |  | 130 |  |  |  |  |
| 10 | Smith，${ }^{\text {W }}$ |  |  |  |  |  |  |  |
| 103 |  | 4 <br> 4 <br> 3 |  | $1381 / 2$ |  | Connor，0．．．．．．．．．，．．．．．． |  |  |
| 105 | Link． |  |  | 14412 |  | Davis．． |  |  |
| 1106 | Stickley | 3 |  | 146 |  | Ewing．．．．．．．．．．．．．．．．．．．． |  |  |
| 1108 | Milea． | 4 |  | 1484 |  | Gumble．：：．．：$: . .:$ ： |  |  |
| 100 | Riley． |  |  | 1492／2 |  | Gosett．．．．．． |  |  |
| 111 | Cree． |  |  | ${ }_{15216}^{151}$ |  |  |  |  |
| 112 | Rhett． | 8 <br> 3 |  | 156 |  | Jacknoon．：．：．．．：．． |  |  |
| 113 | Sethea， | 3 <br> 4 <br> 3 |  | ${ }_{15836}^{157}$ |  | $\underset{\text { Jeffords．．}}{\text { Lilcs．}}$ ． |  |  |
| 115 | Sturgeon |  |  | 160 |  | Lylen， P ． |  |  |
| ${ }^{116}$ | Isaacs． |  |  | $1801 / 2$ |  | McAlister． |  |  |
| 1118 | （Martin， | 4 |  |  |  | Mahon．： |  |  |
| 119 | Blatt． |  |  | $167 \%$ |  | Mayffeld．．．．．．．． |  |  |
|  | Woodw | 4 |  | $1883 / 2$ |  | Mulloy．．．． |  |  |
| 122 | Spirene | 4 |  | ${ }_{170}^{109}$ |  | Nritchard．：．：．．．： |  |  |
| 122 | Stewart | 3 |  | 170 |  | Rambeur．．．．．．．．．．．． |  |  |
| 122 | Dirube | 4 |  | 178 |  |  |  |  |
| 128 | Anderson | 4 |  | 18015 |  | Rosenberg．：．．．．．．：．．．．．．．．： |  |  |
| 127 128 | Rowton | 4 |  | 1817／20 |  |  |  |  |
| 129 | Harvey，E |  |  | ${ }_{196}$ |  | Seibela．．．．．．．．．．．．．．．．．．．．．．．． |  |  |
| 130 | Gunn |  |  |  |  | Sloan．．．．．．．．．．．．．．．．．． |  |  |
|  | Alexander． |  | ＂： |  |  |  | ＂ |  |
|  | Allen． |  | ． |  |  |  |  |  |
|  | Anerumite Beatie． |  |  |  |  | （itanton．． |  |  |
|  | 俍 $\begin{aligned} & \text { Bethees，} \\ & \text { Bolger：}\end{aligned}$ |  | ＂̈ |  |  |  |  |  |
|  | ${ }_{\text {Buck }}$ |  | ＂ |  |  |  | $\because$ |  |
|  |  |  |  |  |  | Yarborough．．．．．．．．．．．．．．．． |  |  |

975
FIRST CLASS－GRADUATED JUNE 27， 1007.

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| $\begin{aligned} & \text { 品 } \\ & \text { 总 } \end{aligned}$ |  |  |

NOTE．－Cadeta Martin，Clarke，and Cromer entered the Third Clams．Their totala，therefore，are for three yeara，the maximum being 815.

## 



| Names. |
| :---: |

## BATTALION ORGANIZATION.

Adjutant-Hammond. Sergeant-Major-McGee.

Quartermaster-Roper.
Quartermaster-Sergeant-Nohrden.

| COMPANY A. | COMP | COMPANY C . |
| :---: | :---: | :---: |
| Capt.-Benson, ${ }^{1}$ | Bethea, J.: | Rusell, |
| Heuth-Mkell, ${ }^{1}$ | Martin, B. | Hutson, |
| Hunter, Plowden, ${ }^{7}$ | Bradham, | Oonnor, ${ }^{\text {s }}$ |
| 1st Sergt.-Willis, R. ${ }^{1}$ | Palmer, | Myers, ${ }^{3}$ |
| Bergta-Wilking ${ }^{\text {a }}$ | Townes, | Porcher,' |
| Charles, ${ }^{4}$ | Padgett, ${ }^{\text {P }}$ | Bryan, ${ }^{\text {a }}$ |
| $\begin{aligned} & \text { Bater, } \\ & \text { Brigg, } \end{aligned}$ | Pate,' | Campbell,* |
| Cple-Rainstord, ${ }^{\text {c }}$ | Smith, F. ${ }^{\text {a }}$ |  |
| Harris, ${ }^{7}$ Evane ${ }^{8}$ | Bunbee, ${ }^{\text {a }}$ | Watson ${ }^{\text {c }}$ |
| Evane ${ }^{8}$ Lyles," | Hair ${ }^{8}$ | Rhett, 12 |
| Laurent, 14 | McKie, | Mruneon, |
| Free, ${ }^{15}$ |  | Rigby, ${ }^{18}$ |

Color Guard—Sergeant Wilkins, Privates Cromer and Hodges.
"Star of the West" Medal.................................Corcoran
Prize Company......................... Company B, Captain Bethea
Recommendations for appointment in the Army-Benson, Bethea, J., and Russell.

## CADETS MOST DISTINGUISHED IN THEIR RESPECTIVE CLASSES, JUNE, 1907.

## First Class:

J. S. Bethea-Engineering, Drawing, German, Geology, and Astronomy, and Bookkeeping.
W. W. Benson-English, Geology and Astronomy, and German.

## Second Class:

R. H. Willis-Mathematics, Physics, Chemistry, German, and Drawing.
D. M. Myers-English.

Third Class:
T. Rainsford-Mathematics, English, and Military Science.
W. S. Workman-Mathematics, Chemistry, and French.

Fourth Class:
J. D. Kelly-Mathematics, Physics, and French.
W. T. Lawton-Military Science.

## COURSES OF INSTRUCTION.

The branches of study taught at the South Carolina Military Academy are grouped under the following departments:
r. Mathematics and Engineering-Comprising Algebra, Geometry, Trigonometry, Surveying, Descriptive Geometry, Analytical Geometry, Calculus, Military Engineering, Civil Engineering, Drawing, Bookkeeping.
2. Physical Science-Comprising Physiology and Hygiene, Natural Philosophy, Chemistry, Mechanics, Mineralogy, Geology, Astronomy.
3. History, Belles Lettres and Ethics-Comprising English Grammar, History of England, General History, English Literature, Rhetoric, Logic, Mental and Moral Philosophy, Political Economy, Constitutional Law, Elocution and Composition.
4. Modern Languages-Comprising usual course in French and German.
5. Military Science and Tactics-Comprising Principles of Military Science, and their application to the art of War and the Tactics of the Infantry Arm of the Service.

## COURSE OF STUDIES.

## FIRST YEAR-FOURTH CLASS.

Mathematics-Stone-Millis Higher Algebra; Gore's Plane and Solid Geometry.

Physics-Martin's Human Body ; Thwing's Physics.
English—Larned's English History; Webster's English Grammar and Composition; Myers' Ancient History (begun) Themes.

French-Whitney's French Grammar Reader.
Military Science-U. S. Infantry Drill Regulations.

## SECOND YEAR-THIRD CLASS.

Mathematics-Crockett's Plane and Spherical Trigonometry ; Raymond's Surveying with Field Practice, Lectures; Theory of Equations.

Chemistry-General Inorganic Chemistry; Laboratory Work . throughout the year ; Remsen's Introduction to Chemistry; Remsen's Chemical Experiments; Jones' Qualitative Analysis.

English—Myers' General History ; Creighton's Logic ; Newcomer's Rhetoric; Lectures; Written Exercises.

French-Whitney's Grammar continued; Reading from French Texts.

Drawing-Mechanical Drawing; Topographic Drawing.
Military Science-Guard Manual and Firing Regulations.

## THIRD YEAR-SECOND CLASS.

Mathematics-Tanner and Allen's Plane and Solid Analytical Geometry; Taylor's Differential and Integral Calculus; Lectures on History and Philosophy of Mathematics.

Chemistry-Chemistry (Organic) ; Remsen's Introduction to the Compound of Carbon.

Physics-Ames' Theory of Physics. Laboratory Work.
English-Fullerton's Intellectual Philosophy; Johnson's English and American Literature, with Lectures; Arden Edition of Shakespeare; Essays.

Grammar-Joynes' Meissner's Grammar ; Reader.
Drawing-Low's Elementary Machine Drawing and Design.
Military Science-Field Service Regulations.

## FOURTH YEAR-FIRST CLASS.

Engineering Electives-Integral Calculus, Analytic Mechanics, Hydromechanics, Mechanics of Materials, Roofs and Bridges, Elements of Sanitary Engineering, Drawing. Use of Surveying Instruments. Lectures on Roads and Pavements. Building Construction.

English Electives-English Literature, Special Authors, 2,000 pp. per month minimum required; Analysis by Cadets; Lectures by Professor; Orations; Commercial Law.
Physics Electives-Electricity and Magnetism, Electrical Measurements, Laboratory Work.

Chemistry Electives-Qualitative and Quantitative Analysis, Industrial Chemistry, Mineralogy.

First Class Non-Electives-Military Engineering, Laws of War, Practice of Courts Martial, International Law, Political Economy, State and Federal Constitutions, Geology, Astronomy, German, Bookkeeping.

## APPORTIONIENT OF BENEFICIARY CADETSHIPS AND VACANOLES FOR 1007－1008．

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| Abbeville．．．．．．．．．．．．．．．．．． |  |  | Horry ．．．．．．．．．．．．．．．．．．．．．． |  |  |
| Alken．．．．．．．．．．．．．．．．．．．．． | 2 | 1 | kershaw．．．．．．．．．．．．．．．．．．．．． | 1 |  |
| Anderson．．．．．．．．．．．．．．．．．．．．．． Bat $^{\text {abberg．．}}$ | 3 | 2 | Lancaster．．．．．．．．．．．．．．．．．．．．．．．． | 1 <br> 2 | 1 |
| Barnwell．．．．．．．．．．．．．．．．．．．． | 2 | 1 | Lee．．．．．．．．．．．．．．．．．．．．．．．．．． | 1 |  |
| Besuufort．．．．．．． | 2 | 2 | Lexington．．．．．．．．．．．．．．．．．． | 1 | 1 |
| Berkeley．．．．．．．．．．．．．．．．．．．． | 2 | 1 | Marlboro．．．．．．．．．．．．．．．．．． | 1 | 1 |
| Charlestou．．．．．．．．．．．．．．．．．．．．．．．．． | 1 | 2 |  | 2 | 1 |
| Chester．．．．．．．．．．．．．．．．．．．．．．．． | 2 |  | Oconce．．．．．．．．．．．．．．．．． | 1 |  |
| Chesterfild．．．．．．．．．．．．．．．．．．． | 1 | 1 | Orangeburg．．．．．．．．．．．．．．．．．．． | 3 | 1 |
| Clarendon．．．．．．．．．．．．．．．．．． | 1 | 1 | Pickens．．．．．．．．．．．．．．．．．．．． | 1 | 1 |
| Colleton．．．．．．．．．．．．．．．．．．．． | 2 | 1 | Richland．．．．．．．．．．．．．．．．．．．． | 2 |  |
| Darlington．．．．．．．．．．．．．．．．．．．． | 2 |  | Saluda ．．．．．．． Spartanburg．．．．．．．．．．．．． | $\frac{1}{3}$ |  |
| Edgefield．．．．．．．．．．．．．．．．．．．．．．．．．． | 1 |  | Sumter．．．．．．．．．．．．．．．${ }^{\text {a }}$ ．${ }^{\text {．．}}$ ．．．．． | 2 |  |
| Fairfleld．．．．．．．．．．．．．．．．．．．． | 2 | 2 | Union．．．．．．．．．．．．．．．．．．．．．． | ， | 1 |
| Florence．，．．．．．．．．．．．．．．．． | 1 |  | Williamsburg．．．．．．．．．．．．： | 2 | 1 |
| Georgetown．．．．．．．．．．．．．．．．．．．．．． | 1 | 1 | York．．．．．．．．．．．．．．．．．． | 2 |  |
| Greenwood． <br> Hampton | 1 |  | Totals | as | 27 |

## Annual Report of Inspector-General, U. S. A.

> War Department, Office of the Chief of Staff, Washington, May 23, 1907 .

## To the Adjutant-General, U. S. Army:

Sir:-I have the honor to submit the following report of inspection of the Military Department of The South Carolina Military Academy, made April 5-6, 1907.
I. Is this institution essentially a military school, or is the military instruction merely a single feature of the course? If the latter is the case, what degree of importance is attached to the military instruction by the faculty, and what prominence is given to it? It is essentially a military school.
2. Does the curriculum cover fully the subjects in which a candidate for appointment as second lieutenant from civil life is examined? If not, what additions should be made to the course? Yes.
3. Is the department of military science and tactics graded equally with the other important branches of instruction, and is proficiency in that department a requisite for securing a diploma? (Par. $\mathrm{I}_{3}$ G. O., ioi, War Department, 1905). Yes.
4. Is the officer on duty at the college cordially supported by the faculty in the matter of military instruction and discipline? Give explicitly your reasons for arriving at this conclusion. Yes. Conversation with President and Military Instructor, and my own observation.
5. Are the students required to be continuously in uniform and do -they lead, as far as the surrounding conditions can reasonably be expected to permit, a military life? In other words, are the conditions such as to impress them constantly with a sense of being under military discipline? Yes.
6. To what extent, if at all, is the true military spirit developed and nurtured? To a very great extent.
7. With what degree of zeal is military duty performed? All military duty is performed with great zeal.
8. How did the appearance of the Cadets at inspection compare with what you would reasonably expect in a similar organization of regular troops? Favorably.
9. Has the practical military instruction been carried out on broad practical lines, or has it been limited to drill? On broad practical lines.
10. Are the requirements of Par. 21, G. O., ior, War Department, 1905, as to time allowed the Military Department, fully complied with? Yes.
II. Has the course of instruction prescribed in Pars. 22 and 23, G. O., ror, War Department, 1905, been carried out? Yes.
12. Is the military instruction of such extent and thoroughness as to qualify the average graduate for a commission as a lieutenant of volunteers? Yes.
13. Personally interview the students of the graduating class, reported as having shown special aptitude for military service, and state your opinion as to their qualifications as far as you can ascertain the same from suitable questions in the course of conversation with them. Avoid giving this conversation the appearance of an examination, but state to the military instructor you desire to meet these cadets, and in the course of the conversation endeavor to form a general idea as to their fondness for military life, the extent of their military and historical reading, and their general intelligence, neatness, and good manners. Do not report them individually, but give your impression of these selected cadets as a whole. Are fond of military life. Have had little opportunity for military reading. Are intelligent, neat, and well-mannered gentlemen. They impressed me very favorably.
14. Is there a cadet, or are there any cadets, at this institution whom you would recommend for appointment as second lieutenant in the Army, having in view solely the interest of the military service? If so give names. Yes. Cadet Captain W. W. Benson, J. S. Bethea, and T. C. Russell, appear to be worthy of consideration as far as $I$ could judge from one day's acquaintance.
15. Is the military professor eligible for this detail? (Pars. 6 and 7, G. O., IoI, War Department, 1905). Yes.
16. Is he satisfactory to the college authorities? Entirely so.

ADDITIONAL QUESTIONS BY DIRECTION OF THE SECRETARY OF WAR LETTER 1223186, MARCH 18, 1907.
ra. Is any change in the War Department classification desirable, either to higher or lower class? No.
rb. If not already classified, what classification should be made?
3a. Do credits received for proficiency in the military department count in the fulfilment of the requirements for securing a degree? Yes.

11a. Is there an annual encampment held during which military instruction is given exclusively? Yes.
irb. If so, for how long, and at what season? The last two weeks in June, usually.

IIc. Is the efficiency in infantry drill and training, small arms firing and knowledge of guard duty sufficiently advanced to warrant devoting time to instruction in artillery drill, cavalry drill, or signaling instead of infantry work? It is, but it is deemed best to confine instruction to infantry drill and training, and not take up artillery, cavalry or signaling.

16a. Is there a retired non-commissioned officer on duty at this institution? No.

16b. If so, are his duties satisfactorily performed, and should his detail be continued?
16 c . Do the conditions warrant the continuance of the detail of an officer as professor of military science and tactics at this institution? Yes.

## GENERAL REMARKS.

I was courteously received by the Superintendent, who afforded me every facility for making my inspection.

The military exercises consisted of battalion parade, review, inspection, battalion and company drill in both close and extended order, and bayonet exercise. All exercises were performed with accuracy and precision. The cadet officers understand the infantry drill regulations thoroughly.

Arms and accoutrements were clean and in good condition, clothing in excellent condition, uniforms neat and well fitting.

A practice march and encampment of two weeks duration are held annually during the latter part of June, at which time practical field instruction, and target practice are conducted.

A blue print of the road sketch of last year's march made by a cadet using the cavalry sketching case was shown me. The work was creditable.

The barracks were as neat and orderly as it was practical to make them. They are in a very bad state of repair. The City Police Station whose undesirable proximity to the barracks was commented upon by previous inspectors has been purchased from the city by the

State and turned over to the Academy. This building will be renorated and connected with the barracks.

There is a very good gymnasium.
The cadets are a fine appearing, well set-up body of young men.
The discipline of the Academy is excellent.
MICHAEL J. LENIHAN, Captain, General Staff Inspector.

## Report of Superintendent.

$$
\text { Charleston, S. C., June 29. } 1907 .
$$

## To the Chairman of Board of Visitors:

Dear Sir:-I have the honor to submit the following report, with accompanying papers, relative to the affairs of the Military Academy for the Academic year now ending.

This year has been signalized by two facts of very opposite natures ;-the first very gratifying, and the second very regrettable.

The enrollment for the year, as shown in my report at your annual meeting in December last, is the largest since 1882, and gives assurance that the public appreciation of the work of the institution is steadily increasing. On the other hand, the large number of casualties for the year is considerably above the average of the preceding twenty-four years. The whole number, as shown in accompanying list, is forty-nine (49), of which number twenty-four (24) were dismissals or expulsions for grave breaches of discipline, and the other on account, mainly, of inability to keep up with the strenuous academic work.

It may be found on the completion of the gradings that a few others of this class will be added to the list. Such additions, if any. will appear in the Official Register, which will be made up on our return to Charleston. The number of dismissals and expulsions, with the exception of two beneficiary Cadets dismissed for deficiency, was, I am glad to state, confined to a clique, which by your firm action in supporting the Academic authorities, has been, I think, entirely eliminated from the Corps. In order to the proper disposal of some of these cases, two extra meetings of your Board were deemed necessary. This necessarily involved considerable cost to the Academy. As these extra meetings of the Board are based on appeals for reconsideration and reversals of the action of the Academic officers and are for the anticipated benefit of the appellants. and not for that of the institution, it would seem but just that the expenses of these meetings should be borne by those making the appeal whenever granted.

With the exception of the clique above referred to, the discipline and subordination to authority of the Corps has been commendable.

## HEALTH.

The report of the Surgeon (December 9) shows a gratifying record for this department. Not only has the health of the Corps
been unusually good throughout the year, but the disposition to abuse hospital privileges has been decidedly abated. Two beneficiary Cadets it was found necessary to dismiss, one on account of developed tubercolosis, and the other for mental disorder, both evidently the result of hereditary taint. Both of these had been exce.llent Cadets.

## ACADEMIC WORK.

The Academic work has been satisfactorily done in all departments. Some friction naturally showed itself in the beginning of the year consequent upon the change of professors in three of the departments; but not enough to cause any serious detriment to work planned out. The reports of the several professors are herewith submitted.

In my own department the work was creditably accomplished, notwithstanding the many interruptions which prevented my meeting my class regularly at the appointed hours. These interruptions, incident to my duties as Superintendent, caused the omission of several lectures and recitations on text book matter heretofore given. Nevertheless, the monthly examinations resulted in satisfactory grades, and all the members of the class were found worthy to receive the diploma.

## THE BUILDINGS.

Beyond improving the mess hall equipment and service, and repairing the plumbing, and other small matters, the property is in about the condition inspected by you last winter. The more extensive repairs authorized by you could only be undertaken during vacation. As soon as the Corps is furloughed, the work will be started.

I cannot close this brief report without some expression of my admiration for the loyalty, intelligence, industry and firmness which has characterized the services of Captain Simons with this institution. He has perfected a card system of keeping a record of every matriculant of the institution; he drafted the copy of Cadet Regulations, which he has lately rearranged and improved as the "Blue Book" of the Academy, like the "Blue Book" at West Point; he has carefully revised and prepared for the printer the General Regulations of the Academy, as accepted by the committee of your Board, and he has voluntarily done much other clerical work connected with the administration affairs of the Academy. All of this is entirely outside of the duties incumbent upon him, under his detail from the

> War Department. His ready coöperation with me in all matters of administration and discipline, his alacrity in undertaking anything calculated to benefit the Academy, his self-control and clear-sighted common sense have rendered him my most valued coadjutor.
> For the last three years the institution has enjoyed the benefit of his valuable services without any cost or consideration beyond the use of two rooms as quarters, and now that his detail has been extended for another year, I take the liberty of suggesting that some recognition of his services by the Board be made, not only by resolution, but also in some substantial way.
> I submit, also, the Superintendent's Report of the Receipts and Expenditures, showing that the institution is in sound financial condition.
> ASBURY COWARD, Superintendent.

## RECAPITULATION.

On rolls June 30, 1906 ..... 93
Recruits admitted in October ..... 89182
Dismissed ..... 22
Honorably discharged ..... II
Retired ..... 12
Resigned ..... 2
Expelled ..... I
Drowned ..... 49
Remaining on rolls June 12, 1907 ..... 133
Absent from Academy June 12, 1907:
Without leave (Bell) ..... I
With leave (Wall) (Bonson) ..... 2
Suspended (Yarborough) ..... 4
Present at Academy June 12, 1907 ..... 129

989
suprrintendents annual bepport of reoripts and expenditurbs of the bouth carolina mittary aoddemy, from july 1, woon


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## EIGHTEENTH ANNUAL REPORT

OF THE

## BOARD OF TRUSTEES

or

## CLEMSON

# AGRICULTURAL COLLEGE 

TO THE

General Assembly of South Carolina.

## LETTER OF TRANSMITTAL.

Hon. O. B. Martin, Superintendent of Education of the State of South Carolina, Columbia, S. C.
My Dear Sir: In submitting to you, and through your hands to the representatives of the State of South Carolina, as required by law, this, the Eighteenth Annual Report of the Board of Trustes of the Clemson Agricultural College, I feel that the eminent services rendered by Col. R. W. Simpson, as Chairman of the Board of Trustees, deserve more than a passing notice from me. The faithful and efficient service rendered to the State of South Carolina by this honest and earnest public servant has taken eighteen of the best years of his life, and the college, its buildings, equipment, its curriculum, and the work that it is doing for the youths of the State of South Carolina are in a large measure the product of his brain, and has placed the Board of Trustees, the youths, and the entire citizenship of the State, who earnestly hope for the up-building of education and an enlightened citizenship, under lasting obligation to him, -one that material considerations can never repay. I trust that he shall always receive the well-done of his fellow-citizens as he surely does of the Board of Trustees, whom I have the honor to represent.

I am much pleased to state that we still have him as a member of the Board of Trustees to help us in the difficult task of guiding the affairs of this great institution.

> Respectfully,
> ALAN JOHNSTONE, President Board of Trustees.

## The Eighteenth Annual Report of the Board of Trustees of the Clemson Agricultural College of South Carolina.

In submitting this, the eighteenth annual report, it is deemed proper to call attention again to the law which requires the College year to begin July ist, and end June 3 oth of each year. The State Treasurer, in his financial report to the General Assembly concerning the receipts of money from the fertilizer inspection tax, covers the year from January ist to December rst. This statement is intended to explain the apparent conflict in the report of the College and that of the State Treasurer, to avoid the liability of confusion in the minds of the legislators.

In the Board of Trustees' report for the scholastic year ending June 30,1906 , it was stated that preparations were being made to build additional barracks. A building containing 108 rooms was ready for occupation at the opening of the College on September 1 , 1907. The cost of this building, with the necessary equipment, such as heating, lights, water, and the erection and equipment of the necessary water-closets, was $\$ 45,506.8 \mathrm{r}$, all of which has been paid except $\$ 2,500$.

A power plant has also been constructed in which are installed the boilers and machinery required for generating power and lights, and also for heating purposes. This building, with its equipments of all kinds, including the connections with other buildings for heating and power purposes, cost the sum of $\$ 30,328.92$, which has been paid.

To meet the increased demands of the College for water, the Trustees found it to be necessary to erect an additional pumping station on a larger stream passing through the property, and this station was completed September 1, 1907.

In addition to the summary in the report of the Treasurer, showing the receipts and disbursements, there is attached hereto a detailed statement of all expenditures for the College during the current year. On account of its great length, we have had to pay for the printing thereof.

By reference to the Treasurer's report, it will be seen that the total amount handled by the College during the current year was
$\$ 241,348.26$. From this sum should be deducted all the expendituresordered by legislative enactment, to wit:
Expenses of the Fertilizer Inspection and Analysis . . . . $\$ 21,628$ 50 Beneficiary Scholarships. ..... 10,553 88
Coast Experiments ..... 1,652 38
Entomological Inspection ..... 56409
Veterinary Inspection ..... 1,624 28
Farmers' Institutes ..... 2,958 71
Printing Popular Bulletins. ..... 78684
Making a total of. ..... \$39,768 68

This sum, $\$ 39,768.68$, taken from the above amount of $\$ 241,348.26$, leaves a balance of $\$ 201,579.58$, which was expended in the manner shown in the detailed statement attached; and further it will be seen that $\$ 60,911.77$ was expended for permanent improvements, and this sum subtracted from $\$ 201,579.58$, leaves $\$ 140,667.81$, which represents the actual expenses of the College proper. The annual cost to the State, therefore, for educating each student at Clemson College is \$213.

Additional legislation has provided for expenditures of considerable sums of money, and when these laws are complied with, the income of the College will be still further reduced.

The Finance Committee of the Board of Trustees are required to examine the Treasurer's books every quarter. This Committee has performed this duty, and reports that the books are properly kept.

The reports of the President of the College, the Secretary and Treasurer, the Chemist, the Secretary of the Fertilizer Department, the Veterinarian, and the Entomologist are herewith attached.

In conclusion, the Board will call the attention of those interested in the College to the great work it is doing for the young men of the State. The practical education given here enables young men, immediately upon graduation, to hold positions for which they are fully qualified, and to do work of value to the community in which they live at prices remunerative to themselves. Many a poor boy, for lack of capital, whose early education has ill-fitted him for the battle of life, by means of the training given him at Clemson College, becomes a useful, self-supporting citizen of the State, of advantage to himself and of use to those with whom he comes in contact. With such patent results of the good accomplished by Clemson College,
surely no citizen would be willing to do anything which would tend in the slightest degree to limit the extent of its work, or to curtail the benefits which it confers.

The list of students who pay tuition and those who do not, will be found in the report of the President of the College, as required by law.

Very respectfully,
ALAN JOHNSTONE, President Board of Trustees.

# Annual Report of the President of the College. 

Col. Alan Johnstone, President Board of Trustees, Clemson Agricultural College.

Sir: In accordance with law, I submit through you to the Board of Trustees my annual report, showing the condition of the Clemson Agricultural College during the year ending June 30, 1907. The work of the College has been carried on with uniform faithfulness on the part of the officials in charge, and I have, therefore, the privilege of reporting a successful year in the administration of the affairs of the institution. Accompanying this report are documents from the Secretary and Treasurer, the Secretary of the Board of Fertilizer Control, State Chemist, State Entomologist, and State Veterinarian. A careful reading of these documents included in the paper I herewith submit to you will indicate that the authorities of Clemson College have a wide range of important duties committed to their charge.

## Faculty.

There have been but slight changes in the personnel of the faculty during the year, and it gives me pleasure to report that the gentlemen comprising this body have entered heartily and faithfully into the discharge of the obligations placed upon them. They have pressed with due vigor the teaching of the young men in their classes, and in the reports made to me at regular intervals during the session, the expression of satisfaction with the progress of the classes has been uniform.

At the close of the year, Capt. Chas. D. Clay, who was filling the position of Commandant in the College, was detailed by the War Department to take up the duties of a recruiting officer in Arkansas. He tendered his resignation, which was accepted by the Board, and the War Department was requested to make another detail before the opening of the session $1907-08$. The War Department very promptly and readily acquiesced in this request, and it gives me pleasure to report to the Board the appointment of Capt. J. C. Minus, a native of South Carolina, a former student of the South Carolina Military Academy, and a graduate of West Point. Captain Minus comes to the College very highly endorsed both by the War Department and by prominent citizens of South Carolina. I feel confident that the interests of the institution in his hands will be carefully guarded, and the duties will be faithfully discharged.

## Health and Care of the Cadets.

I have the opportunity again to report the gratifying healthy condition of the young men committed to my charge. There have been no serious cases of sickness during the session, and with the exception of a few colds and slight fevers, the boys have been in very good condition and have missed but little of their work because of indisposition.

Of course in such a large gathering of youths, there will be now and then a disposition to disobey the rules and regulations of the institution, and there have been a few isolated cases, but the Discipline Committee have been able to take charge of all such violations, and the general good deportment of the College has been manifest throughout the year.

## Matriculation and Classification of Students.

The total enrollment for the session of $1906-07$ was 659 . The applicants who failed to enter numbered 236 , making a total of 895 . All of the counties in the State are represented in the corps of cadets. The 659 students who matriculated were divided among the classes and courses as follows:

| COURSES |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| classes. Agri. | Mechs. | C. Eng. | Metallurgical | Textile. | Total. |
| Senior . . . . . 30 | 29 | 15 | 0 | 2 | 76 |
| Junior. . . . . . 72 | 24 | 20 | 2 | 0 | 118 |
| Sophomore. . . . 54 | 40 | 33 | 5 | 1 | 133 |
| Freshman... . . 66 | * 150 | * | 0 | * | 216 |
| Preparatory. | . . | . | . | . | 100 |
| Special Text. | . | . | . | 7 | 7 |
| Special Agri. . . 2 | . | . | . | . |  |
| Irregular. . . . . . . | . | . | . | . | 7 |
| - | - | - | - | - |  |
| 224 | 243 | 68 | 7 | 10 | 659 |

The Graduating Class consisted of sixty-nine members, who were awarded the Degree of Bachelor of Science at commencement, June 9, 1907.

[^21]
## MORAL CONDITION OF THE STUDENTS.

During the past year a very strong wave of Christian influence passed over the institutions of learning throughout this country, largely due to the work of the Young Men's Christian Association. Clemson College has not been behind in reaping the benefits from this elevating influence of Christian life. In a pamphlet published by the International Committee of the Young Men's Christian Association, called "A Campaign for Fifty Thousand College Men in Bible Study for the Year 1907-08," the following facts are culled: In 595 institutions in Canada and the United States, there were last year 34,494 young men in Bible study classes. In studying the work of these thousands of young men, the International Committee have mentioned fourteen institutions, among which Clemson College is placed, representing the colleges giving the highest number of boys belonging to the Association. It is quite gratifying to note that Clemson College, in absolute numbers, stands sixth in this list of colleges in the United States and Canada. It is very much more gratifying, however, when we make out the proportion of young men engaged in Christian work to the total number of students present in the institutions, to see that Clemson College stands at the head of the list. The table is given to bring out this fact clearly:

| Universities and Colleges. |  |  |  |
| :---: | :---: | :---: | :---: |
| Iowa State College. | 656 | 1,331 | 49.2 |
| University of Toronto. . | 645 | 2,500 | 26. |
| University of Illinois. . .. | 599 | 4,300 | 15. |
| Yale University.. | 550 | 3,200 | 17. |
| Kansas A. \& M. College. | 402 | 1,690 | 24. |
| Clemson Agri. College.. | 346 | 659 | 49.5 |
| Oberlin College.. |  | 1,750 | 14. |
| Dartmouth College. |  | 1,134 | 18. |
| U. S. Military Academy.. | 190 | 476 | 40. |
| Purdue University. . . | 182 | 2,125 | 08. |
| Virginia Poly. Institute. . . | 169 | 619 | 27. |
| Massachusetts Inst. Tech. . | 148 | 1,466 | 10. |
| Lafayette College.. . . |  | 401 | 35. |
| Virginia Military Academy.. | 79 | 308 | 26. |

There can be no question raised by any serious thinking man that the work of these boys in their study of the Bible and their endeavor to lead better lives will produce a wonderful effect upon the entire college in all of its departments. We are feeling very strongly the influence and work of these Christian young men in the development of a better college spirit and a higher moral tone among the entire student body. It is with great gratification, therefore, that I call the attention of the Board of Trustees and the General Assembly to this most excellent condition, and I say, with a great deal of pride, that this Christian work has been from the young men and for the young men. The faculty have simply stood by ready to help, but they have brought no undue influences to bear. This is a very healthy sign.

## THE DEPARTMENTS OF THE COLLEGE.

## AGRICULTURAL DEPARTMENT.

College Work.-The law authorizing the establishment of scholarships in agriculture has been of great value to this Department in the increased number of students and also in opening a way for poor worthy boys from the farms to get an agricultural education. The careful preparation of the courses in agriculture not only affords a broad education, but has helped to make this Department popular with the people. The Director of the Agricultural Department reports to me that 224 students pursued courses of work under his faculty during the session just closed. Many of these young men were earnest and faithful, and it is confidently believed that the farming of the future in the State will be greatly benefited through the agricultural education secured by these young men. It is gratifying to note in this connection that Clemson Agricultural College stands among the first institutions in the country giving an agricultural education, and that a very large proportion of the boys are preparing themselves to enter upon a life of farming. There is a constant and growing demand for young men trained in the sciences on which agriculture is founded. This demand comes largely from the United States Department of Agriculture, the State Experiment Stations, the A. \& M. Colleges, Secondary Schools of Agriculture, corporations, and from many companies of business enterprise. It is most encouraging to note, however, that a fair percentage of the young men graduating in this Department are engaged in practical agriculture, and most of these are finding it remunerative.

State Experiment Station.-The Station has been greatly strengthened financially by the income from the Adams' Act, passed by the last Congress. The members of the Station staff are required, under the provisions of this Act, to plan and carefully carry out researches into new knowledge for the benefit of the farmers; and to publish the results of experiments from time to time as rapidly as new facts can be discovered. The benefits to the people of the State should be greatly multiplied as the years come and go.

The Coast Region Experiment Station has been removed from Charleston, where it has been in successful operation for several years, to land consisting of 300 acres donated to the State by the Southern Railway, and located near Summerville, S. C. During the coming year this land will be equipped with the necessary buildings and outfit to permit of successful research work and the solution of agricultural questions which are peculiar to the coast region.
The annual report of the work of the Experiment Station is submittted to the General Assembly under a separate cover.

Farmers' Institutes.-The Southern Railway has continued to place the people of South Carolina under obligations by furnishing two coaches and transporting them from point to point, free of cost, to facilitate the institute work. The use of these coaches has greatly aided the officials of the College in reaching the farmers throughout the State with assistance and valuable information. This kindness on the part of the Southern Railway has been enjoyed by the people for two years, and it would be difficult to estimate the financial value it has been to the entire State.

These coaches are equipped by the College with appliances and apparatus. Specimens of the products from the farm, cotton mill, and shops are placed in the car and competent men are put in charge ready and willing to give the people all of the information and assistance in their power for a higher civilization and for the development of happy homes.

In this connection it will be interesting to notice the opinion concerning the value of the Station and the Farmers' Institutes to the people of the State taken from a statement made by Mr. Wm. B. DesPortes, who is gathering information through the South for the use of the English cotton spinners. He has traveled in all portions of the Southern and Western States to gather statistics on the agricultural and manufacturing condition of the country. This information is to be embodied in an elaborate report for submission to the Industrial and Economic Association of Manchester, England. In an
article published in The Southern Cultivator, he makes the following comments: "I find that the best farms and the most systematic, and by far the most thrifty and economic administration of the farm unquestionably is to be found in South Carolina. Here the cultivation of the soil is regarded as a lifetime pursuit, and in the majority of instances I have found the farmer, whether landlord or tenant, a close student of the branches of science which enable him to know the wants of the soil and the proper means of supplying these wants. The Clemson Agricultural College has been a real blessing to the farmers of South Carolina. Under its tutorage young men have discovered that the cultivation of the soil is the noblest and by far the most profitable occupation they can enjoy."

I submit herewith a list of the towns and places in the State where Farmers' Institutes were held the past year, giving also the number of farmers attending these institutes:
Attend- Attend-ance.Place.ance.
Leesville 300 Cheraw ..... 270
Ridge Spring 165 Chesterfield ..... 240
Johnston 135 Liberty ..... 42
Graniteville 150 Greenville.
Montmorenci 145 Standing Spring Schoolhouse ..... 42
Williston 200 Grove Station. ..... 125
Blackville 125 Pelzer. ..... 42
Springfield. 250 Honea Path ..... 67
Barnwell. 165 Greenwood ..... 61
Allendale 225 Newberry ..... IIO
Hampton 230 Alston ..... 47
Beaufort 100 Jenkinsville ..... 300
Meggets 95 Carlisle. ..... 54
Young's Island 30 Union ..... 209
Summerville iro Jonesville ..... 38
St. Georges 170 West Springs ..... 200
Branchville. 145 Pacolet ..... 60
Orangeburg 375 Spartanburg ..... 78
St. Matthews 65 Gaffney ..... 330
Sumter. 105 Blacksburg ..... 147
Manning. 180 Sharon ..... 800
Foreston 115 Yorkville. ..... 115
Georgetown 35 Rock Hill ..... 91
Kingstrce 175 Fort Mill. ..... 60
Lake City 60 Pleasant Valley ..... 219
Florence 210 Antioch Schoolhouse. ..... 600
Marion 180 Lancaster ..... 90
Nichols 30 Elgin ..... 1300
Homewood 40 Kershaw ..... 125
Conway 375 Bethune. ..... 8I
Darlington 505 Camden.
Hartsville. 540 Oakland ..... 300
Winnsboro. 78 Greers ..... 120
Blackstock 90 Pickens ..... 78
Chester. Westminster.
Prospect Church 700 Oakway.
Inman ..... 300Total attendance, 13,398 .

## Chemical Department.

The Director of this Department has submitted, in another portion of this report, a full and satisfactory account of the work committed to his charge. In addition to the items he gives thercin concerning the chemical analyses of fertilizers, minerals, waters, etc.. he gives additional information concerning his academic work. The several classes have about completed the prescribed course of instruction in Chemistry as outlined in the College catalogue. The work on the whole has been satisfactory.

The number of chemists in this Department has been somewhat increased because of the gradual enlargement of the duties imposed upon the Director in the State work, but it is believed with the present outlook that the requirements of the law can be satisfactorily complied with under the Director's wise control and supervision. A careful reading of his report, found elsewhere in this document, is solicited, and it is confidently believed that it will be shown therein that a valuable contribution is made for the benefit of the people in the work undertaken by these gentlemen.

## Mectanical and Electrical Department.

Taken as a whole, the condition of and work in this Department is satisfactory. There have been no important additions made to the equipment during the past session, but the officials have been
kept very busy properly instructing the large number of students who have taken the course in Mechanical and Electrical Engineering. In addition to the students in Mechanical and Electrical Engineering, they have been called upon to give instruction to the Agricultural, Textile, Civil and Metallurgical students in the Freshman and Sophomore classes, particularly in the forge and wood shops and in free-hand drawing.

There were graduated in the course of Mechanical and Electrical Engineering twenty-six young men, and practically every one of them had a position before graduation, and, so far as it is known, these young men all have employment in the lines of their profession. There has been an unusually great demand for the graduates in the Mechanical and Electrical Department, and it is believed that the Director would be able to place even a larger number than are now being graduated.

## Textile Department.

During the session ending June ith, the instruction covered in full the course laid out in the catalogue. More atttention than heretofore was giyen to special lines of handling cotton fiber and in producing fine grades of cloth. The regular work in the Weaving Division was supplemented by the designing and weaving of linen and wool. The Director reports that he was able to place a student for the summer vacation in the Union Bleaching and Finishing Company of Greenville for experience in a commercial way, thus supplementing the course in bleaching and dyeing.

The Department has been fully represented on both of the extension trips, looking to educating the people at large, and efforts were made to get in touch with the manufacturers to interest the employees in their work.

There has been introduced into the Department a course to prepare young men in the handling of cotton to determine its quality, and thus educate the farmers' sons so that they will be able to grade the cotton before their fathers place the same on the market. There has been considerable complaint on the part of the agriculturalists over the country that their cotton has not been properly handled by the expert graders, and the Director of the Textile Department is endeavoring, therefore, to reach this demand by introducing into his course a system of education along the line of testing the cotton fiber before it is placed on the market. I believe that much of
great value will come to the farmers in the instruction of their sons upon this important subject.

## Academic Department.

This Division of the College is very well manned by competent teachers in the literary subjects of the College, and these gentlemen have been in every way faithful in giving the boys a foundation for a general education, thus preparing them for entering upon their special professions. The work has been thorough, and I am pleased to report that the students as a rule have done well.

## Civil Engineering.

In connection with the Academic Department there has been established for a number of years a Civil Engineering course in charge of the Senior Professor of Mathematics, assisted by his co-laborers. The popularity of this course has steadily increased, until now we have sixty-eight young men who are preparing themselves to follow the profession of Civil Engineering. The time has come when the Board will have to provide a special professorship of Civil Engineering to take care of this steadily increasing demand upon the mathematical faculty.

## Preparatory Department.

By the orders of the Board of Trustees, effort has been put forth this past year greatly to reduce the size of this Division of the College. The Board do not desire to interfere in any way with the work of the high schools and the advanced courses offered by the public schools in those portions of South Carolina where the character of education offered is far enough advanced to prepare boys for the Freshman class, and we do not intend that any young men from these sections shall enter our Preparatory Class. The size of the class, therefore, has been materially reduced. As fast as the high schools, authorized by the recent law, are developed in the different portions of the State, we will cut down the Preparatory Class. The Board intend that this portion of the College shall be used only for boys from those sections where they are unable to reach the advantages of high school work, so that the entire people may have the opportunity of reaching Clemson College and reaping the benefits of the education offered here. I trust that another year the Preparatory Class will be still more materially reduced.

## Farming Department.

In addition to the farming operations carried on in the Department of Agriculture looking to the discovery of new knowledge in agriculture, we have a large tract of land set aside by the Board of Trustees for the purpose of general farming operations. The purpose of this Division of the institution is to provide forage for the stock and the large number of hogs, horses, and mules belonging to the departments of the institution, and to furnish a support for the convicts and to provide means for the transportation of the freight and express from the neighboring depots. There are 320 acres used for this farm, and the report of the Farmer shows the following products raised and used by the institution during the past year:

Three thousand two hundred and seventy-five bushels of corn, 581 tons of hays, corn stover and ensilage, 500 bushels of oat seed, 15 tons of oat straw bedding, 6,860 pounds of pork, 240 bushels of meal.

In the herd belonging to this farm there are 44 milch cows, 32 dry cows, 26 heifers, and 4 bulls. There are 27 mules.

In addition to the work of the farm, as stated above, all of the hauling from the depot is conducted by this department, consisting of $\mathrm{I}, 810$ tons of coal, the entire supplies for the mess hall in the student boarding department, all of the machinery and apparatus and other appliances used for the equipment of the College. In connection with this work also, the Farmer is required to take care of the 32 convicts given the College under the law of the State, providing these prisoners with food and clothing.

## Student Garden.

Under the care and direction of the Horticulturist of the Agricultural Department, the Board of Trustees have set aside eighteen acres of land upon which the Horticulturist is required to raise all of the needed vegetables to supply the table of the mess hall or boarding department of the College. Last session during the season from two to four kinds of vegetables were offered each day the steward of the mess hall department by the Horticulturist, so that there was ample provision made in supplying the students' table with quite a variety of standard vegetables.

## College Corporation.

With the exception of a few minor offenses, the property under the control of the Board of Trustees has been free from flagrant
violations of the laws of the State. The Justice of the Peace has been diligent in taking in charge the parties who have committed petty offenses, and he has been faithful in his efforts to enforce carefully the laws of the commonwealth.

It has come to my knowledge during the year that efforts were made on several occasions to smuggle in whiskey in order to debauch the cadets. These cases were promptly taken charge of and the attempts were frustrated. For this purpose the Governor of the State has appointed a constable, whose duty it is to ferret out the violation of the law in the counties in the neighborhood of the College. We have, therefore, I believe, ample provision against the violation of the laws of the State, and every proper effort is put forth carefully to protect the large number of young men committed to our charge.

In closing my report to the Trustees it gives me pleasure to say that in my association and dealing with the officials of the College I have uniformly received courteous treatment and hearty support. I do not believe that the College has ever been in better condition nor the people of the community in better spirits than during the session just closed. We have had a very harmonious year, and it is largely due to the persistent and honest effort on the part of the officials in charge of the work of the institution to faithfully discharge their cluties. It gives me pleasure, therefore, to testify to this fact. Respectfully submitted,
P. H. MELL, President.

## Report of State Chemist.

Clemson College, S. C., Nov. 6, 1907.
President P. H. Mell.
Sir: I respectfully submit the following report of the work oncommercial fertilizers, waters, etc., done at the Station for the Boardof Fertilizer Control during the year ending June 30, 1907:
Summary.
1905-'06. 1906-'07.
Official samples of fertilizers ..... 743
Farmers' samples of fertilizers ..... 48 ..... 43
Waters ..... 89
Ores and minerals ..... 14
Phosphate rocks ..... 5
Marls ..... 2
Miscellaneous ..... 4
Marls, rocks and ores for the State Geologist ..... 39 ..... 4I
818 ..... 941

Five official samples of fertilizers were analyzed which are not included in the foregoing summary. One of these was received this year, but was collected after the goods had been emptied from sacks. The others were received as duplicates last season, but the analyses were not requested until after the Bulletin for the year had been published.

## Official Samples of Fertilizers.

The analyses are given in full in Bulletin No. 126.

## Classification.

1906. ..... 1907.
Complete fertilizers ..... 390
Acid phosphates ..... III
Acid phosphates with potash ..... 72
Cotton seed meals. ..... 99
Kainit ..... 30
Nitrate of soda ..... 20
Muriate of potash ..... 13

## 1008

Sulphate of potash ..... I
Nitrate of soda with potash ..... 3
Tankage. ..... 2
Dried blood ..... II
Miscellaneous ..... 2 ..... 3
Total ..... 655743

## Deficient Samples.

Of the 743 samples reported, 74 fell below the commercial value based upon guarantee, and of these 25 fell 3 per cent. or more below that value.

In addition to these, there were 153 samples below the guarantee in one or more constituents, the deficiency, however, being made up by an excess of other constituents. They are as follows:
In available phosphoric acid.31
In ammonia and potash ..... 7
In ammonia ..... 81
In potash ..... 34
Total. ..... 153

The extent to which they fell below guarantee is shown in the fotlowing table:


AVERAOES OF ANALYERS.

|  | 1906. <br> Per Cent. |  | 1907. <br> Per Cent. |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Found. | Graranteed | Found. | Guaranteed. |
| ACID PHOSPHATES. <br> Soluble phosphorie acid. | 11.71 |  |  |  |
| Reverted phosphoric acid................. | 3.24 |  | ${ }_{8.78}^{11.17}$ |  |
| Available phosphoric acid................. | 14.95 | 14.08 | 14.05 | 14.10 |
| Insoluble phosphoric acid................ | . 60 |  | 1.68 |  |
| Total phosphoric acid....................... | 15.55 | , | 15.61 | .............. |
| ACID PHOSPHATES WITH POTASH. |  |  |  |  |
| Soluble phosphoric acid.................. | 7,80 |  | 7,62 |  |
| Reverted phosphoric acid................. | 3.17 |  | 3.14 |  |
| Available phosphoric aeid............... Insoluble phosphoric acid.............. | 10.07 | 9,97 | 10.76 | 0.91 |
| Total phosphoric acid.................... | 11.63 |  | 11.72 |  |
| Potahh soluble in water....... | 3.30 | 8.15 | 3.21 | 3.11 |
| COMPLETE FERTILIZERS, |  |  |  |  |
| Soluble phosphoric acid................... | 6.54 |  | 6.27 |  |
| Reverted phospheric acid................ | 2.80 |  | 2.64 | - 7 |
| Available phosphoric acid................ | 9.34 | 8.21 | 8,91 | 7.02 |
| Insoluble phosphoric acid................ | 1.39 |  | 1.45 |  |
| Total phosphoric acid..................... | 10.73 |  | 10.36 |  |
|  | 3.26 | 3.23 | 3.29 | 3.24 |
| Potasi s soluble in water. | 2.08 | 2,74 | 8.20 | 2.71 |
| COTTONSEED MEALS. <br> Avallable phosphoric acid.................... | 2.42 | 1.47 | 2.08 |  |
| Ammonla ............................... | 7.61 | 7.11 | 7.32 | 6.91 |
| Potash soluble in water.................. | 1.57 | 1.00 | 1.6) | 1.00 |
| Potash soluble $\begin{aligned} & \text { KAINITS. } \\ & \text { in water................. }\end{aligned}$ | 12,83 | 12.00 | 12.78 | 12.00 |
| MURIATE OF POTASH. <br> Potash <br> soluble in water. | 50.05 | 48.50 | 51.52 | 48.75 |
| SULPHATE OF POTASH. <br> Potash soluble in water.............. | 49,57 | 68.00 | 48,20 | 48.00 |
| $\begin{gathered} \text { NITRATE OF SODA. } \\ \text { Ammonia (equivalent)........... } \end{gathered}$ | 18,67 | 18.21 | 18.40 | 18.26 |

Only one sample of sea island meal was analyzed this year. It yielded 5.06 per cent. of ammonia, 5.00 per cent. being guaranteed.

The following table shows the yearly average of fertilizer analyses from the time the Board of Trustees of this College took charge of the Station work down to the present time:


In this table，as in the preceding ones，the ammonia yielded by the nitrogen in fertilizers is given instead of the nitrogen itself，as in the trade goods are still bought and sold on the ammonia basis．The per cent．of nitrogen is readily calculated，as fourteen－seventeenths of the ammonia is practically the weight of the nitrogen it contains．

## Grades．

In the following table the number of acid phosphates，acid phos－ phates with potash，and complete fertilizers of each grade，according to the guarantee，is placed side by side with the number found by analysis to belong to that grade，fertilizers having commercial values equal to those of schedule grades being classed in those grades：

|  | High． |  | Standard． |  | Low． |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Claimed． | Found． | Clalmed． | Found． | Claimed． | Found． |
| Complete fertilizert $\ldots$ ．．．．．．．（300） |  |  | 167 88 | 187 | 16 | 4 |
| Acid ploaphuten with potach．（78） | 87 105 | 63 103 | ${ }_{6} 8$ | 8 |  |  |
|  |  |  |  |  |  |  |
| Total ．．．．．．．．．．．．．．．．．．．．（573） | 340 | 118 | 208 | 154 | 16 | 4 |

These results are due to the following changes in grades ascer－ tained by analysis：

|  | $3^{\text {3墨 }}$ | \％㕊 |  |  | 容 | 㫛言 | 者 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Oomplete fertilizers． $\qquad$ $\qquad$ <br> Acid phoephatet with potain $\qquad$ （890） <br> Acld pbompates． $\qquad$ （ili） | ．．． | 12 | 11 20 | 1 | ．．．．．．． | 2 $\cdots$ $\cdots$ | $\begin{gathered} 838 \\ 101 \\ 101 \end{gathered}$ |
| Total ．．．．．．．．．．．．．．．．．．．．．．（bis） | 2 | 12 | 71 | 7 |  | 2 | 479 |

This shows that out of 573 samples， 479 were of the grade claimed for them， 85 were of a higher grade，and 9 of a lower grade than that claimed for them．Last year out of 506 samples， 412 were of the grade claimed for them，81 were of a higher grade，and 13 of a lower grade than that claimed for them．

## Farmers＇Samples of Fertilizers．

In addition to the samples of fertilizers collected by the official inspectors，there have been analyzed this year 43 samples for indi－ vidual purchases as provided for in Section 1540 of the law respect－ ing commercial fertilizers．

## Water.

There have been made this year 89 analyses of water from different parts of the State. Of these 70 were sanitary examinations, the rest mineral water analyses.

## Ores, Minerals, and Rocks.

Analyses or assays have been made of 25 specimens, but a large number of samples have been tested for determination of species of mineral or kind of rock.

## Analyses for the State Geologist.

Analyses of 41 samples of marls, rocks, and ores have been made for the State Geologist. These analyses were made as provided for in paragraph 14, Section I, Act of the General Assembly, No. 605, approved February 22, 1902.

## Distribution of the Work.

The analyses of fertilizers were made by Messrs. C. C. McDonnell, B. F. Robertson, W. E. Dickinson, J. H. Mitchell, and T. E. Keitt. Mr. McDonnell resigned his position March 19th. Up to the time of his resignation he had charge of the laboratory supplies and the preparation of samples for analysis; he verified the valuation calculations and aided in the preparation of reports. These duties have since been assigned to Mr. Robertson, who has also made the analyses for the State Geologist. Mr. T. E. Keitt was appointed an Assistant Chemist March 1gth. Mr. Henry, in addition to his duties as Assistant Professor, has made the analyses of waters and the assays of ores. Dr. R. N. Brackett, Associate Professor, has made all mineral determinations and has given constant and valuable aid in the office duties. It gives me pleasure to refer to the interest these gentlemen have taken in the work and to the efficient service they have rendered the Department.

Very respectfully, M. B. HARDIN, Chief Chemist.

## State Entomological Inspection:

November 27, 1907.<br>Hon. L. A. Sease, Chairman South Carolina State Board of Entomology.

Sir: As heretofore, my principal work has been the inspection of the nurseries of the State for insects and diseases injurious to fruit trees. The following nurserymen were given certificates declaring the inspected stock apparently free from the San Jose scale and other dangerous insects and plant diseases: W. D. Woods, Darlington; Vann Nursery Company, Columbia ; W. D. Woods, Columbia ; W. T. Bearden, Oakway ; G. W. Mattison, Honea Path; D. A. Madden, Honea Path ; J. N. Holland, Greenville ; A. Horne \& Son, Ridge Spring; G. C. Arve, Long Creek, and J. B. Hall, Storeville. Inspections were made of other premises, but certificates have been withheld until the infested trees can be treated or destroyed.
The inspection of commercial greenhouses has been inaugurated with the view of assisting the florists in fighting insects and diseases.

Beside the inspection of the local nurseries, every effort is made to prevent the introduction of injurious insects and plant diseases. Outside nurserymen are required by law to fumigate their nursery stock before shipping it into the State. Each separate box, bundle or package in a shipment must be labeled with two tags. Upon one is printed the certificate of inspection furnished by the official ento mologist of the State in which the stock is grown, and upon the other the official acceptance of this certificate of inspection by this Board. The attachment of the latter tag signifies to the purchaser that the shipment is authorized by the State Board of Entomology. As a further precaution shipments of nursery stock are inspected at the transfer points of the transportation companies.

During this season fifty-eight nurserymen residing without the State are shipping within our borders. To them 8,600 tags have been issued:
On September in, 1907, the Board of Trustees of Clemson College separated the office of the State Entomologist from the chair of Zoology and Entomology in Clemson College, and elected me to take charge of the State work in entomology and to continue the investigations which I had under way in rice. On October 11, 1907, the office of the State Board of Entomology was opened in Columbia.

The enlargement of the State work, which has been contemplated for some time, is made possible by this separation. The treatment or destruction of infested orchards can now be carried forward on a larger scale, a piece of work that will be highly valued by the commercial orchardists who are striving to keep clean and healthy trees, but who do so at a great loss and annoyance because of the indifference of his neighbors who own infested trees. These individuals, who are so unconcerned about the loss of fruit through the destructive work of insects and diseases, are a menace to the horticulture of the State, and rigorous measures should be used to force them to clean up their infested premises.

By the request of the South Carolina Cotton Seed Crushers Association, and under your instructions, I am preparing a Bill, for presentation to the next Legislature, that will provide for a more effective quarantine against the Mexican cotton boll weevil.

Very respectfully, CHAS. E. CHAMBLISS, State Entomologist.

## 1015 <br> Report of State Veterinarian.

Clemson College, S. C., July I, 1907. To the Veterinary Inspection Committee, Board of Trustees of the Clemson Agricultural College.
Dear Sirs: I have the honor to submit the following report of the State Veterinary work performed during the fiscal year ending June 30, 1907:

More outbreaks of contagious or infectious diseases have been reported to this office for investigation during the year just closed than during the previous year, and there has also been a great increase in the number of letters of inquiry received concerning animal diseases. This is believed to be due not so much to any greater prevalence of disease among the domestic animals of the State as to a more general knowledge of the functions of this office. A statement in some detail of the investigations made during the year follows. A report of the arrangements made for the work of tick eradication will also be found below.

Glanders.
This disease was reported seven times from six counties, but in only three instances were the reports found to be true. The worst outbreak within recent years occurred in Orangeburg County, where nine horses and mules were lost out of twenty-three. In this case the disease had been present for several months before this office was called on to make a diagnosis and apply preventive measures. Since then, with the exception of one animal, which was already infected when the preventive measures were introduced, there have been no further losses. It could not be positively determined whether the disease was introduced by a horse shipped in from Montana or by a horse or mule from the surrounding country.

In Hampton County the disease developed in a newly purchased mule shipped in from the West. There were five other horses and mules in the same stable, but the disease was diagnosed and proper measures taken in time to save the other animals from infection.

On a plantation in Sumter County four out of nine horses and mules were affected. The disease was introduced by a horse which had been kept alone on a neighboring plantation for several years, and which had had a chronic nasal discharge for a long time. This case illustrates the danger of disregarding a nasal discharge in a horse or mule.

It is gratifying to note that none of these outbreaks could be traced to any of those cases of glanders which occurred in the previous
year. This shows that the measures applied for the suppression of this disease are successful, and that its reappearance each year is due to the introduction of new cases.

As to the other four reports of glanders, the suspected animals were-found to be affected with nasal catarrh in one case, nasal tumor in another, and distemper in a third. In the other case the animal had been dead too long to make a diagnosis possible.

## Texas Fever.

In the investigation of diseases of cattle Texas fever was found four times, one outbreak each in Anderson, Abbeville, Saluda, and Richland Counties. In Anderson County, at the time of the investigation, there were seven dead, eighteen sick, and thirty-seven exposed to infection with the disease; in Abbeville County, four dead, one sick, and twenty exposed; in Saluda County, seven dead, four sick, twenty exposed ; in Richland County, nine dead, four sick, thir-ty-seven exposed. In three instances the development of the disease was due to the fact that tick-infested animals were introduced into a pasture containing animals that had not been rendered immune to the disease by being exposed to fever ticks in early life. In the other case the disease resulted from a few ticks getting into a pasture in some manner unknown.

## "Staggers" (Leuco-encephalitis.)

The name "staggers" is applied by the laity indiscriminately to any disease in which the gait is irregular or staggering. There are several diseases affecting the horse and mule in which this symptom may appear. One of them is leuco-encephalitis, an affection of the brain, which is manifested by irregular movements, such as turning to the right or left in a circle, staggering, falling, walking into objects, pressing the head into a corner or against a wall; partial loss of control or complete paralysis of the limbs, usually the posterior ; delirium, and stupor. This disease, which was epizootic in South Carolina in the fall and winter of 1902 and 1903, appeared again in several localities last fall but, fortunately, it did not prevail to nearly the same extent as on the previous occasion. Three cases were investigated in Hampton County, one in Pickens, and one in Oconee, and correspondents reported three cases in York County and several in Marion. The cause of this disease is believed to exist in the stables, or in the feed, especially if unsound, or in contaminated water. Therefore, in every case where investigation developed the presence
of the disease it was recommended that the stable and surroundings be cleaned and disinfected, the stable left vacant for three or four months if possible, and the surviving animals given a change of feed and of water also, if it was at all likely to be contaminated. Where these measures were properly carried out no additional cases of the disease developed.

## Mycotic Stomatitis.

This disease prevailed rather extensively last August, September, and October. Several cases were investigated in Abbeville, Greenville, and Anderson Counties, and reports of other cases were received from sixteen correspondents in various parts of the State. The disease is caused by fungi and usually appears during abnormally wet seasons, such as last summer and fall, the excessive dampness favoring the growth of the fungi on the grass. These fungi produce ulcers on the tongue, gums and mucous lining of the lips and cheeks, and also on the soft skin about the claws. In some cases the ulcers also appeared in the skin covering the udder. The presence of the sores in the mouth and about the feet caused this trouble to be commonly referred to as "foot and mouth disease." This term should not be applied to this affection, as it is commonly used to designate a very contagious and much more serious disease which, if it existed in this country, would cause all other nations to quarantine against our cattle. When the affected animals were removed from the pasture and given proper care and medical treatment a rapid recovery occurred.

## Stomach Worm Disease.

The unusually wet season last spring and summer seemed to favor the development of this disease and to make it extraordinarily severe on the affected animals. Several correspondents reported their calves and young cattle dying with this trouble, and a number of requests were received for the Bulletin published on the subject. Such assistance was given as could be rendered in the present state of our knowledge of this disease. The coal tar creosote treatment, which gave such satisfactory results in the two previous years, did not prove as efficacious this year, probably because the infection was much more severe.

## Tuberculosis.

Four herds, containing 165 cattle, were tested with tuberculin, and four cows were found to be infected with the disease. Compared with the conditions existing in some other States, this is a small percentage, but the results of these tests, taken in connection with the well demonstrated fact that milk from tubercular cows is one of the sources of tuberculosis in man, especially children, show the necessity for applying the tuberculin test to all dairy cattle, but more especially the commercial dairy herds.

## Contagious Garget.

This disease appeared in one herd, affecting five animals, but its further spread was checked by isolating the affected animals and cleaning and disinfecting the barn. The use of a milk tube to draw the milk from the cows that were hard to milk, appears to have been the means of spreading the disease. This case illustrates the advisability of separating a cow with a diseased udder from the remainder of the herd and of exercising care not to contaminate the udder of the healthy cows with the discharge.

## Tick Eradication.

Under the authority of the Act approved February 13, 1907, the Board of Trustees, on May 7th last, adopted rules and regulations for the prosecution of the work of tick eradication in Oconee, Pickens, Anderson. Greenville, and part of Spartanburg Counties, and provided for the employment of four local inspectors for this work, beginning July ist, and also provided for a co-operative arrangement with the United States Bureau of Animal Industry. The rules and regulations, as well as the laws under which they were adopted, have been printed and are now being distributed, and the following local inspectors have been appointed to begin work on July ist: W. F. Gaillard, Anderson; Gregg T. Mauldin, Pickens; E. E. Verner, Richland, and M. D. James, Greers.

The United States Bureau of Animal Industry appointed the following local inspectors, who began work on June 24th: B. D. Carter, Bamberg ; H. W. Moore, Seneca; J. F. Williams, Easley; AlexJ. Query, Wellford, and M. D. Moore, Simpsonville. Dr. W. A. Myers, veterinary inspector, has also been sent here by the Bureau from Georgia.

Very truly yours,
LOUIS A. KLEIN. State Veterinarian.

## Annual Report of Board of Fertilizer Control.

Hon. W. D. Evans, Chairman of Board.
Dear Sir: I respectfully submit the following report of the work of this Department for the year ending June 30, 1907:

The fertilizer trade, as indicated by sales of tags past season, represents an investment by the agriculturists of this State of at least $\$ 11,000,000$, around which this Department has used its best efforts to protect the farmers in "what they buy," and at the same time protect honest manufacturers in competition against any less scrupulous.

As appears from the tabular statement below, the fertilizer trade was less than the previous year by $3 \mathrm{r}, 655$ tons, while we refunded to the manufacturers and dealers $\$ 5,586.14$ for unused tags returned us at the close of the fiscal year.

During the past season it was found necessary to employ eleven ( II ) inspectors, one to each judicial circuit and one additional to the City of Charleston, being port of entry to most fertilizing materials imported, and the location of many manufacturing plants. Then we find the increase of trucking industry in the coast counties makes this inspection necessary for longer term, if not the entire year.

These inspectors are enjoined to be constantly on duty, vigilant to see that all fertilizers are properly branded with the name and guarantee of the manufacturers, and to exercise great care to insure accuracy of sampling every grade found on the market.

The number of samples thus collected and analyzed was greater than any former year. These analyses were published in twenty-two weekly bulletins and sent out rapidly as made, so as to place them in the hands of purchasers while the fertilizers were being sold. An increase of over 3,000 names to our mailing list and the numerous inquiries and letters received show these purchasers are buylng intelligently by guarantee and analysis, while manufacturers and dealers show an increased interest and care to have their goods measure up to their guarantee. The results of all these analyses are collated in General Bulletin No. 126, and are further classified in the full report of Colonel Hardin, Chief Chemist.

The following is a tabular statement of the work of this year, and for comparison the corresponding figures of last year, viz.:

|  | 1905-'06. | 1906-'07. |
| :---: | :---: | :---: |
| Number tons fertilizers (other than meal) <br> sold. . . . . . . . . . . . . . . . . . . . . . . . 566,187 541,665 |  |  |
| Number tons cotton seed meal sold | 96,501 | 89,368 |
| Number official samples collected | 986 | 1,03I |
| Number official samples analyzed | 655 | 744 |
| Number official samples deficient (3 per cent.) | 30 | 25 |
| Number farmers' samples analyzed. | 48 | 43 |
| The following shows the expenses of this Department this past year and the year previous, viz.: |  |  |
|  | 1905-'06 | 1906-'07. |
| Salaries of Chemists and Secret | \$7,392 00 | \$8,870 65 |
| Miscellaneous labor and janitor. | 84427 | 62519 |
| Postage and stationery | 17431 | 161 06 |
| Inspectors' salaries and expenses | 4,843 99 | 5,397 63 |
| Freight and express. | 44787 | 46253 |
| Furniture, equipment and supplies | 4204 | 6940 |
| Chemical apparatus and supplies.. | 1,279 85 | 1,615 10 |
| Travel. | 5979 | 765 |
| Cost of inspection tags. | 1,876 75 | 1,883 78 |
| Printing, machinery, etc. | 1432 | 70418 |
| Unclassified, lumber and making boxes, | 24835 | 92552 |
| Envelopes for bulletins (Station).. | 40305 | 23400 |
| Litigation fees. |  | 22500 |
| Total. . . . . . . . . . . . . . . . . . . . $\$ 177$,626 59 \$21,628 50 |  |  |

Respectfully submitted, H. M. STACKHOUSE, Secretary,

## Treasurer's Report.

Finamefal Statement of P. H. Fh Slonn, Secretary and Treasurer, Clemmon 1806.

July 1. To Cash on hand to be used for current expenses of College up to January 1, 1907.
$\$ 62,33403$
To Cash from Clemson bequest. . .. .. .. .. .. .. 3,512 36
Cash from Land Serip.. .. .. .. .. .. .. .. 5,754 00
Cash from Morrill fund. . .. .. .. .. .. .. .. .. 12,500 00
Cash from interest on deposits.. .. .. .. .. .. 1,46815
Cash from tultion from cadets. . .. .. .. .. .. 2,272 00
Cash from heat, light and water department.... 31366
Cash from rents. . .. . . . . . . . . . .. .. .. 22250
Cash from chemical department.. .. .. .. .. .. 2461
Cash from sales dairy products. . .. .. .. .. 26530
Cash from sales farm products. . . . . . . .. .. 39840
Cash from sales farm herd products. . .. .. .. 1,09788
Cash from sales drugs, veterinary division.. .. 13735
Cash from sales waste, textile department.. .. 380
Cash from sales milltary department. . .. .. 1835
Cash from fines, police magistrate.. .. .. .. 7200
Cash from insurance, return premiums.. .. .. 7985
Cash from other sources, claims, rallroad, etc. . 2754
Cash from check. retd. overpaid Nat. Museum. 3200
Cash from meals, Farmers' Institutes.. .. .. 49120
$\$ 28,69075$
Cash from inspection tax. . .. .. .. .. .. .. $\$ 156,90154$
Loss tax tags refunded. . .. .. .. . . .. .. .. .. 5,578 06
150,32348
Showing total amount handled by College during the year.
$\$ 241,34826$
From this amount the following expenditures must be deducted as ordered by the State of South Carolina:
Expenses fertllizer inspection and analyses.. .. .. $\$ 21,62850$
Expenses beneflciary scholarships.. .. .. .. .. .. 10,563 88
Expenges coast experiments.. .. .. .. .. .. .. .. 1,65238
Expenses entomological inspection.. .. .. .. .. .. 56409
Expenses veterinary inspection. . .. .. .. .. .. .. 1,62428
Expenses farmers' institutes.. .. .. .. .. .. .. 2,95871
Expenses printing popular bulletins.. .. .. .. .. .. 78684

This left an amount avallable for college expenses of
$\$ 201,57958$
Of which there was expended by College, as per detalled statement up to June 30, 1907

177,072 88
Leaving cash on hand to be used for current expenses of College up to December 31, 1907.

24,506 60
PERMANENT IMPROVEMENTS.

| By | Greenhouse. | \$378 20 |
| :---: | :---: | :---: |
|  | Prof. Riggs' house. . .. .. | 1,195 85 |
|  | Prof. Riggs' servant house .. | 4806 |
|  | Central power plant. . . | 27.22024 |
|  | Barracks No. 3.. | 22,480 00 |
|  | Addition to Hook house.. | 13550 |
|  | Fertilizer bullding.. . . | 5,948 73 |
|  | Furnace for President's house | 50568 |
|  | Drilled wells.. .. | 94229 |
|  | Closet installation.. .. | 3832 |
|  | New water supply.. | 1,685 14 |
|  | Miss Wannamaker's room.. .. | 1574 |
|  | Sewer system extension.. . | 27109 |
|  | Lumber shed.. .. .. .. .. .. .. .. .. .. . | 1655 |

## MILITARY DEPARTIEANT.

| Expenses of office and band. . .. .. .. .. .. .. $\$ 1,00412$ |
| :--- |
| Salary offcer and assistanit. . . . . . . . . . . . . . |
| 1,66657 |

$\$ 2,676$ 38

## AGRICULTURAL DEPARTMENT.

|  |  | Current Expenses. | Equipm |  |
| :---: | :---: | :---: | :---: | :---: |
| By | expenses agricultural division. | \$74 06 | 88185 | \$15541 |
|  | expenses soll physics.. | 1840 | ....... | 9640 |
|  | expenses geology and mineralogy. | 4500 | 21616 | 26116 |
|  | expenses horticultural division. | 49865 | 24000 | 78865 |
|  | expenses veterinary division. | 27482 | 18000 | 40482 |
|  | expenses campus division.. | 96190 |  | 96190 |
|  | expenses entomologlcal division. | 18141 | 16700 | 29841 |
|  | expenses botanical division. | 8173 | 21200 | 29373 |
|  | expenses animal husbandry.. | 78679 | 40200 | 1.18879 |
|  | expenses director's office.. | 30258 | 42100 | 72358 |
|  |  | \$3,253 34 | \$1,869 50 | 36,122 84 |
| Salartes one director and nine professors |  |  |  | 6,378 79 |
| \$11,601 68 |  |  |  |  |

MECHANICAL DEPARTMENT.


CHEMICAL DEPARTMENT.


THXXTILD DFHPARTMAENT.


## MISCELLLANEOUS DEPARTMENT.

By expenses heat, Hght and water.. .. .. .. .. \$7,849 83
expénses farm. . .. .. .. .. .. .. .. .. .. .. 4,839 04
expenses farm herd. . . . . . . . . . .. .. .. .. .. 2,893 85
expenses President's office.. .. .. .. .. .. .. 43357
expenses Treasurer's offlce. . . . . . .. .. .. .. .. 12328
expenses IIbrary.. .. .. .. .. .. .. .. .. .. 1,634 46
expenses convicts. . .. .. .. .. .. .. .. .. .. 3,068 63
expenses repairs to roads .. .. . . . . .. .. .. .. 5316
expenses dues Association Agricultural Colleges and Stations.

6587
expenses automatic telephones.. .. .. .. .. .. 27594
expenses Trustees' medal.. .. .. .. .. .. .. .. 2500
expenses lectures.. .. .. .. .. .. .. .. .. .. 40000
expenses Treasurer's bond.. .. .. .. .. .. .. .. 7500
expenses adding machine. . . . . .. .. .. .. .. 37500
expenses chapel.. .. .. . . . . . . . . . . . .. .. .. 1,090 48
expenses catalogues and postage.. .. .. .. .. .. 61563
expenses construction and repair .. .. .. .. .. 3,782 98
expenses contingent.. .. .. .. .. .. .. .. 1,50731
expenses insurance. . .. .. .. .. .. .. .. .. .. . 91447
expenses night watchmen.. .. .. .. .. .. .. 90000
expenses janitors.. .. .. .. .. .. .. .. .. .. .. 37200
expenses frefght and express messenger .. .. .. 48000
expenses maintenance and equipment barracks 2,425 18
expenses Trustees* expenses. . .. .. .. .. .. .. 1,137 68
expenses fumigating purposes .. .. .. .. .. .. 26801
expenses gymnasium..... .. .. .. .. .. .. .. .. 19946
expenses museum. . .. .. .. .. .. .. .. .. .. 97834
expenses printing annual report.. .. .. .. .. 33276
expenses Y. M. C. A... .. .. .. .. .. .. .. .. .. 50000
expenses dyke litigation. . .. .. .. .. .. .. .. .. 6417
expenses preliminary to power plant.. .. .. .. 13200
expenses advertisements.. .. .. .. .. .. .. .. 66071
expenses printing. . .. .. .. .. .. .. .. .. .. 21183
expenses repairs to houses. . .. .. .. .. .. .. .. 19322
expenses visit of Leglslature.. .. .. .. .. .. .. 46363
expenses dyke legisiative investigation.. .. .. 89890
expensen lce and tollet mupplies.. .. .. .. .. .. 1460
$\$ 9,38974$
$\$ 1,45000$

## RECAPITULATION.

Permanent improvements \$60,911 77
Military department ..... 2.67039
Agricultural department ..... 11,501 68
Mechanical department ..... 21,371 53
Chemical department ..... 4,043 89
Textlle department ..... 6,01186
Academic department ..... 20,075 99
Clerlcal department ..... 9,389 74
Salary farm manager ..... 1,450 00
Miscellaneous department ..... 89,64588

## REPORT

OF THE

## Board of Trustees

OF THB

# WINTHROP Normal and Industrial College OF SOUTH CAROLINA 

TO THE

General Assembly

1907

## REPORT.

## Winthrop Normal and Industrial College, Rock Hill, S. C., December 9, 1907.

## Hon. O. B. Martin, State Superintendent of Education.

Dear Sir: I have the honor to submit the following report of Winthrop Normal and Industrial College for the scholastic year, July I, 1906, to July 1, 1907, as required by law.

The year was a successful one in every way-in numbers enrolled, in work done, and in progress made.

The total number of students admitted to the College classes during the whole session was $509-310$ old and 199 new. There were 907 applicants for admission, and many more, therefore, could have been enrolled if there had been dormitory room at the College for them. Of those not admitted, a number could not meet the entrance requirements and were thus shown to be not prepared for college work. There are many evidences that Winthrop College has grown in public favor at home and abroad during the past year.

The State authorities of California have notified the President that Winthrop's diploma will hereafter be accepted as a life license to teach in that State. This recognition of the College, together with that of the State of New York previously noted, and with the admission of our graduates by Columbia University to full postgraduate study, are gratifying indications of the growing appreciation of the work of the College. The recent visit to the College of a committee from the State of Arkansas, commissioned to report upon plans for the building of a similar institution for that State, is another evidence of the estimate put upon its equipment and organization by outsiders.

The Legislative Committee appointed to examine the State colleges, in its report to the General Assembly of January 24, 1907, among other things said of the College: "We can say truly and emphatically that this institution deserves the support its past and present achievements justify, and all who have the interests of the State at heart can feel with pride that every dollar devoted to the erection, expansion, and maintenance of this College will return rich results, not only to the individual homes, but in a cleaner, better citizenship for the State." All of this indicates the position Winthrop
has gained for herself, and should be gratifying to all who have had a part in bringing it about. With this position and the impetus gained through the past years of effort and struggle, Winthrop should go on to higher and greater things with increasing rapidity and strength each year, provided reasonable provision is made for the increasing demands upon it as they arise.
Every county in the State was represented in the enrolment in College classes last session as follows:
Abbeville 15 Hampton ..... 2
Aiken 12 Horry ..... 3
Anderson 21 Kershaw ..... 9
Bamberg 8 Lancaster ..... 13
Barnwell II Laurens ..... 25
Beaufort 3 Lee ..... 9
Berkeley 7 Lexington ..... 10
Charleston I3 Marlboro ..... 5
Cherokee 8 Marion ..... 12
Chester 8 Newberry ..... 12
Chesterfield 4 Oconee ..... 7
Clarendon 5 Orangeburg ..... 30
Colleton 6 Pickens ..... 10
Darlington 17 Richland ..... 7
Dorchester io Saluda ..... 6
Edgeficld 2 Sumter ..... 8
Fairfield 16 Spartanburg ..... 15
Florence. 15 Union ..... 14
Georgetown 5 Williamsburg ..... 9
Greenville ..... 92
6 York
Greenwood
Enrolment by States:
South Carolina ..... 500
North Carolina ..... 5
Virginia ..... I
Georgia ..... 2
District of Columbia ..... I
Enrolment in Industrial Studies:
Stenography and Typewriting ..... 39
Millinery ..... 8

## 1009

Floriculture ..... 6
Cooking ..... 193
Dressmaking ..... 2
Sewing ..... 222
Drawing and Designing ..... 222
Manual Training ..... 187
Enrolment by Classes:
Seniors ..... 66
Juniors ..... 107
Sophomores ..... 109
Freshmen ..... 164
Specials ..... 63
509
Enrolment in Model School (children) ..... 85
Enrolment in Kindergarten (children) ..... 32
Total ..... 626
There was no sub-Freshman Class in the College, but some stu-
dents did work preparatory for admission to the Freshman Classin one or two studies, as follows:
In Mathematics ..... 8
In Latin ..... 30
In English ..... 25
The number of students in the Normal Department was ..... 419
The number of students in the Literary Department was ..... 27
Over 59 per cent. of the students enrolled would not have attended any other college than Winthrop, according to their own written statement, if they had not been admitted to Winthrop.
The average age of the students was nineteen years and one month-over four years above the age requirement for admission.
One hundred and forty-four students were admitted from accredited schools. Of all the students enrolled, 283 were graduates of graded and high schools, and 32 had taught school. Of the 66 members of the Graduating Class last year, 64 were normal students and 2 literary. All of these graduates had training in industrial branches, and 15 other students completed the special industrial and music courses.

From answers to the question concerning the occupation of fathers, it is interesting to note that we had in the College last year the daughters of

183 Farmers.
43 Merchants.
Io Ministers.
17 Lawyers.
23 State, county, and municipal ' officers.
I Manager Telegraph Co.
2 Manufacturers.
4 Cotton buyers.
2 Contractors.
II Railroad men.
4 Superintendents of mills and factories.
I Mill secretary.
2 Music dealers.
I Dairyman.
I Butcher.
2 Druggists.
2 Machinists.
9 Physicians.
7 Bookkeepers.
I Laundryman.
3 Mechanics.

9 Teachers and professors and school superintendents.
2 Night watchmen.
I Jeweler.
I Fruit grower.
I Secretary of college.
6 Clerks.
2 Real estate agents.
I House mover.
12 Insurance agents.
3 Brokers.
2 Horse dealers.
7 Drummers.
2 Newspaper men.
I Mine superintendent.
3 Engineers.
I Bottling man.
3 Carpenters.
1 Lumberman.
I Miller.
I Inspector of agencies.
3 Bankers.
I Undertaker.

The students not answering this question had widowed mothers or no parents living.

Winthrop College has begun this present session, its thirteenth at Rock Hill, most auspiciously. The enrolment in the College classes since the opening, September 18th, is $497-348$ old and 149 new students. A gratifying feature of the enrolment is the large number of old students returning.

There were 982 applications for admission, the greatest number in the history of the school, and many more, therefore, could have been enrolled if there had been dormitory accommodations for them. AID of the available room in the two dormitories was assigned long before the opening of school. In the assignment of rooms, old students are provided for first, and then scholarship students, and after these
all other South Carolina applicants who comply with our entrance requirements in the order of their application.

Of the new students admitted, only nine are under sixteen years of age, notwithstanding the fact that students are admitted at fifteen years of age, and these nine are full Freshmen in everything. Of the 485 applicants failing of admission to Winthrop this year, 282 failed to pass the entrance examination and were, therefore, unprepared for college work.

The students admitted to College reported promptly for duty, and the whole student body was put to work more promptly than ever before.

The enrolment in the Model School and Kindergarten thus far this session is 148 , making the total number in all departments cared for by the College 645.

Every county in the State is represented in the enrolment this session, as last.

The Senior Class, with an enrolment of 90 , is the largest in the College's history. The next largest Senior Class is that of last year, which numbered 66 .

There is no sub-Freshman Class in the College, but some few students are doing work in Latin preparatory for admission to the Freshman Class in that subject. No general entrance examination is held in Latin, and after students come to the College some of them are found unprepared for the Freshman Class in that subject.

The number of students in the Normal Bepartment receiving professional training for teaching is 429 . The number in the Literary Department is 15 .

The average age of the students is 18 years, 4 months, and II days -greater than it was at this time last year and over three years above the age requirement for admission.

Ninety-five of the new students admitted this year are from accredited schools.

Of all the students enrolled, 271 are graduates of graded and high schools, and 39 have taught school.

Of the 90 members of the Senior Class, 86 are normal students and 4 literary.

Additional Dormitory Needed.
It is a matter of great regret that so many poor, deserving girls fail to gain admission to Winthrop each year for lack of dormitory accommodations. With our present organization 'we could teach
some $\mathbf{2 0 0}$ more students with comparatively little extra expense, and our usefulness would be greatly extended and the money already invested in Winthrop by South Carolina be made to pay a much greater dividend to the State if we had more dormitory accommodations. Many of the young women who fail of admission to Winthrop are unable financially to attend any other college. Over 63 per cent. of the students admitted this year state that they would not have attended any other college if they had not been admitted here.

The demand for greater provision for the higher education and training of the young women of the State has now reached a point where it must be met. The interests of the State demand it, and if the sentiment of the people could be registered, it would be found that they demand it.

There are as many girls in South Carolina needing, deserving, and eagerly seeking a higher education as boys, and yet the State has provided dormitory accommodations for some 1,400 young men in its higher institutions of learning, and has done well in so doing; but it has provided dormitory accommodations at its college for women for only 432 young women. Young women need and deserve as much consideration by the State, to say the least, as young men in this matter of provision for higher education and training. The women do the primary and elementary teaching-lay the foundation for the education of the people-and they make the homes upon which rests the civilization of a country. There is no good reason why the girls of South Carolina should not have equal educational opportunities with the boys. The women of the State are as necessary to its welfare as the men, and, in all fairness and justice, should have an equal showing with the men for preparation for life's duties. The present discrimination will not be allowed to stand in the face of the pressing need which now exists for more accommodations for the higher education of girls when the people wake up to the situation.

The immediate demand could be met at comparatively small cost at Winthrop by the erection of another dormitory and the employment of a few additional assistant teachers. Of the 485 applicants failing of admission to Winthrop this year, only 203 were eligible for admission, as the other 282 were unprepared for college work, as shown by their failure to pass the entrance examination. The building of another dormitory to hold 200 students would thus meet the present needs. With the completion of the Model School, recitation
room will be secured in the main building for some $\mathbf{2 0 0}$ or more students.

The two dormitories at Winthrop now accommodate 432 girls, so that, with 200 more students, we would have only 632 students in dormitories, and not more than 700 altogether. This would not make too large a school for thoroughly good work and satisfactory management. A college of 700 students is not large. It is about as easy to manage and teach 700 students as 500 . Vassar, Bryn Mawr, Smith, and Wellesley, the best women's colleges in the country, enroll every year between 900 and 1,200 students each. The State Normal School of Emporia, Kansas, has 2,100 students, and that of Cedar Falls, Iowa, 2,700, and other normal schools in that section which are doing fine work have a still larger enrolment. Coming nearer home, the State Normal School of Virginia has nearly 600 students, and is planning for more. The Normal and Industrial College of Mississippi has 780 students.

We have waited for seven years now before making any attempt to provide for the overflow of students, which has been growing larger each year, in order to establish the fact that there was a permanent overflow and that we might move safely and conservatively. The College has thoroughly assimilated the increase in attendance resulting from the increase in dormitory room seven years ago, and is now fully prepared for another step forward. All progressive institutions are moving for increased accommodations-the Virginia State Normal School, the North Carolina Normal and Industrial College, and others; Clemson College has built a new dormitory to accommodate 200 more boys within the past year; the Legislature has provided recently for increasing the dormitory accommodations at the Citadel.

What Winthrop has already done for the common schools and young women of the State is a guarantee of what it can and will do if given adequate accommodations for the young women earnestly seeking the practical and professional instruction it gives. The common schools need the teachers and the young women want the training for teaching. Why not give it to them? There is every reason for it, and no good reason against it.

It appears that a part of the high school appropriation and the Jamestown Exposition appropriation will be turned back unused into the State Treasury this year, and for this reason this seems an opportune time, after long delay, for making this much needed addition to Winthrop, and thus taking a step toward providing adenuate educa-
tional facilities for the young women of the State dictated by every consideration of justice, good policy, and patriotism.

At the prevailing prices for labor, material, and furniture, a dormitory complete in every particular sufficient for our needs would cost $\$ 60,000.00$.

## Scholarship and Entrance Examination.

This examination was held last July 5 th at every county courthouse in the State. There were 506 young ladies present at the examination. Two hundred and seventy-seven of these failed to pass. Only nine students appeared for an entrance examination at the opening of the session, and five of these failed to pass, making in all 282 applicants who failed to pass our entrance examination.

The examination questions are prepared by the teachers of the College, and the papers are examined by them by number and not by name. A teacher does not know whose papers she examines.

The vacant scholarships were awarded by the State Board of Education upon the results of this examination-those making the highest averages securing the scholarships, provided the highest were not failures, and provided, also, those securing the highest averages were eligible financially, as determined by the beneficiary scholarship blanks passed upon by the Board.

The examination is held to award scholarships, and also to determine the preparation of applicants for college work. It is held upon the whole of Arithmetic, Algebra, through simultaneous simple equations (Wentworth's New School Algebra or the equivalent), Grammar and Composition, Geography, United States History, Spelling and Writing-subjects provided for in the course of study adopted by the State Board of Education for the common schools of the State. It will thus be seen that the examination is within the reach of all good, earnest students who take advantage of properly taught common schools and complete certain classes in those schools provided for by the school law.

## Winthrop High or Fitting School.

A number of fine, earnest young women, mainly from the country, fail of admission to Winthrop College every year because of insufficient preparation, due to lack of good school facilities in their neighborhoods.

With a fitting or high school for boarders, conducted by Winthrop College, with expenses to the student reduced to the minimum, many of them could be taken care of, and they could be quickly prepared for college on account of the earnestness, strength, and maturity which they would bring to their work, and, at the same time, the College would be relieved of all students not thoroughly prepared for real college work. By such an arrangement the standard of admission to the College could be raised without hardship to any one, still better prepared material for college work secured, and the efficiency of that work enhanced. We have no recommendation concerning this matter at this time, but, having seen this great need in the conduct of the College, as appointees and representatives of the Legislature, we felt it our duty to call the attention of the General Assembly to it. This fitting school could be made entirely selfsustaining, in our judgment. It would serve, not only the best interests of the College, but also of the State. The high school is at this time the great and pressing need of the educational system of the State.

## Health.

The health of the college community thus far this session is good. The physical examination of students was made as usual by our resident physician at the opening of the session. She reports that she was much impressed with the good health of the students as a whole, but especially of the Seniors. She found that not one of the Seniors had been sick during the summer. She thought this spake well for the physical training at Winthrop. All pupils who are physically able are required to take the physical training work and to exercise in the open air and sunshine every day when the weather permits. The resident physician reports, as sanitary officer, that the sanitary condition of the College in all departments is good.

In accordance with the rule of the Board, every one connected with the College has been vaccinated this session, except those successfully vaccinated within the past five years.

The drinking water of the College was examined as usual, before the opening of school, bacteriologically and chemically, by Dr. Wm. Royal Stokes, of Johns Hopkins University and the State Board of Health of Maryland, and he reports it as good. We have the dairy herd regularly examined to guard against tuberculosis.

The College sewer beds are doing pretty well, but are not all that could be desired. We feel that we should supplement the beds with
a large septic tank and make provision for caring for the sewage of a community of 1,000 people. We have a community of over 700 now. The septic tank had in mind has been tried in this State and has given satisfaction. It would cost about $\$ 2.000$ installed, and could be enlarged when necessary.

Dr. W. J. Burdell, Chairman of the Committee on Sanitary Inspection of Schools of the South Carolina State Board of Health, went to Winthrop on October 15, in pursuance of his duty, and inspected the College. He has made his report, from which we quote as follows:
"On October 15 th I inspected this institution (Winthrop College), covering in my inspection the heating, ventilation, plumbing, sewerage, lighting, water supply, and the general sanitary condition of the institution. The diningroom, kitchen, classrooms, halls, dormitories, infirmary, library, laundry, and dairy farm were thoroughly inspected, and I found nothing to criticise, but much to commend. I do not see that the sanitary condition of the institution could be better. I would say a few words in special commendation of the infirmary, the dairy farm, and the water supply.
"The infirmary is a model one in every respect, and I doubt if there is a better constructed or cleaner infirmary in the country.
"The dairy farm is as clean and sanitary as such a place can be kept.
"The water supply is very good, and one feature of this that I would mention is a pump, by which water fresh from the wells is kept flowing through the pipes, the overflow being collected into a tank for fire purposes. This insures a supply of fresh running water for drinking purposes. The water is obtained from a series of artesian wells.
"The temptation is strong to give a detailed statement of the many excellent features of this institution from a sanitary standpoint, but it can be all told in a very few words. The conditions at Winthrop could scarcely be improved, and I doubt very much if there is such an institution in the country that is in a better sanitary condition than Winthrop College. The State may well point with pride to this College, from a sanitary standpoint."

## Courses of Study.

At the National Education Association last summer, one of the most inspiring addresses of all the stimulating and instructive addresses made was that of the President of the Department of Normal

Schools. The central thought of the address was that Normal School education should include the culture represented in the best college education as well as the practical and professional training which it usually includes. His argument was that a college atmosphere is necessary to make a good teacher of any school and every school. His conclusion was, "The greatest issue seems to be whether Normal Schools shall remain in static condition while all the world moves or assume an attitude of eager and inquisitive expectancy, constantly anticipating a wider horizon, greater difficulties, more responsibilities, and higher efficiency."

It is our endeavor to have Winthrop College become more efficient and meet more thoroughly and satisfactorily each year every demand upon it. It is our purpose to make the best womanhood possible at Winthrop, mentally, physically, spiritually.

We make some improvements in the course of study each year. This year we have made provision for the teaching of elementary agriculture, feeling that the work of an institution to be most helpful to a people must be related to the life of the people. Instruction in elementary agriculture is given in the College classes and in the Model School to train student-teachers in methods of teaching it, and is made practical through the use of a propagation house and a school garden.

The importance of training teachers to teach agriculture is so generally recognized that there is a strong movement throughout the country to have Congress appropriate a large sum of money annually to the State Normal Schools to encourage instruction in this subject. The President of Winthrop, as President of the Association formed at Chicago in 1906 to advance the interests of such legislation, has been asked to plan for a meeting of the association at Washington, D. C., during the meeting of the National Superintendents' Association there in February. With the approval of the Board, he has accepted leadership in this undertaking, and there is hope that something practical may be accomplished.

Every student is required to keep her own room in order, and is given directions by the matrons in this part of housekeeping. The students do the waiting in the diningroom, and, in connection with the work in cooking, are taught how to care for a diningroom.

During the past year we have fitted up a model bedroom in the north dormitory for instruction of all the students in the care of a bedroom. It has proved a great help in the housekeeping training of the girls and will prove a still greater help hereafter. We hope
in the near future to have a model home, where girls may be made responsible for every detail of housekeeping, even to the buying of provisions and managing of servants, if servants are employed at all, so that they may receive that practical training and experience in housekeeping that will enable them to manage a home smoothly and successfully.
Y. W. C. A.

The Young Women's Christian Association is our strongest and most helpful students' organization. It is specially helpful in the College's social and religious life. It receives the unqualified commendation of the people whose daughters are with us. Parents are glad to have their daughters in a college pervaded by the strong moral and religious influences exerted by a Y, W. C. A.

The Association has had a remarkable growth during the past session and this session and has done a much greater work than usual, largely through the efforts of the regular Y. W. C. A. Secretary employed with the help of the Board. The membership includes nearly all the girls in the dormitories, being 406 out of a possible 432. It is not convenient for students living in town to join.

The Association helps with money and work in the maintenance of the Mill Kindergarten of Rock Hill, supports an orphan in India, sends delegates to the Summer Conference of the Y. W. C. A. at Asheville, N. C., every summer, gives receptions to the new students, holds regular prayer meetings and Bible classes and missionary meetings, and carries on other social and Christian activities in the College. A social settlement class has been organized for the purpose of studying mill and mountain conditions in the South. Members of this class help with a mill Sunday school near the College. It is raising money to build on the College campus a Y. W. C. A. hall.

At the invitation of the Association, seconded by the ministers of the city, the Interstate Y. W. C. A. Convention of North and Soath Carolina met in Rock Hill on the 28th of November. There were some 165 delegates present from the College and City Associations of the two States, and much good was accomplished from the coming together of so many earnest, devoted Christian young people. The influence for good of the Convention upon our own student body is sure to be very great.

## Library.

The new Carnegie Library is serving its purpose admirably. Besides furnishing handsome and commodious quarters, it has enabled us to use space in the main building heretofore used as a library for much needed recitation rooms. We have made four good recitation rooms out of the space heretofore devoted to the library.

In connection with the new library, courses of study in library methods are being taught. The Freshmen are given instruction once a week in the proper use of a library, and will be enabled by it to get much more benefit from the library throughout their whole college course than they would otherwise be able to do. The Seniors are given instruction the second term of the session in the selection and care of a library, in order that they may be prepared to organize and manage a library in connection with the schools they may be called on to teach. The Librarian has fitted up a model school library, comprising the books of the State library list, to be used by the students in all the practice work given in this course. We finished up and furnished this past summer a large lecture room in the basement of the library for this work, which was left unfinished up to that time because not needed until this session.

It was feared when the library was moved from its central location into the new building that it would not be used so much by the students; but statistics prove that it has become an even more vital factor in the life of the students than heretofore. The circulation for the year shows an increase of more than a thousand volumes over the circulation of any year in the history of the library. The number of those who come to the library to read has almost doubled.

The work of shelf-listing, re-classifying, and re-cataloguing was begun in 1903. It has all been finished now.

The number of volumes in the library, not including the United States Government publications, is 8,492 .

The library has been made a public depository by the United States Government, and every book and pamphlet printed by the Government is sent to it. There are over 6,000 Government publications in the library at this time.

## School Improvement Association.

During the past year the students organized among themselves a School Improvement Association for the study of methods of sclool improvement work, to be used wherever they might be called
upon to teach, and also to assist the authorities at Winthrop in keeping the grounds and buildings clean and in good order and free from the mutilation and defacement so often seen at colleges. It is also the purpose of the Association to help country schools and teachers with advice, suggestions, and in other ways that may present themselves.

Miss Nance, a Winthrop graduate, and President of the Woman's School Improvement Association of South Carolina, offered a medal to the member of the Association writing the best story on the subject of rural school improvement. This medal was won by Miss Margaret Blaine, of the Senior.Class, whose story was printed and distributed throughout the State to help in the rural school improvement work.

## Uniform.

The uniform at Winthrop is one of its best features. It promotes economy and does away with all distinctions that would otherwise exist from different conditions. The richest girl in our school cannot be distinguished from the poorest by her dress. There is much trouble and labor in carrying out the uniform requirements, but it is worth all the trouble it gives.

## Model School.

The Board proposed to the General Assembly at its last session to raise $\$ 25,000.00$ for a Model School for Winthrop, if the Legislature would appropriate $\$ 20,000.00$ for that purpose. The proposition of the Board was accepted by the Legislature and $\$ 20,000.00$ was appropriated, to be paid in two instalments, $\$ 10,000.00$ in 1907 , and $\$ 10,000.00$ in 1908, provided the Board should raise an additional $\$ 25,000.00$ to the satisfaction of the Governor, the Comptroller-General, and the State Treasurer.

This additional $\$ 25,000.00$ was raised by last April 19th, and, upon the presentation of a certificate from the cashier of the National Union Bank of Rock Hill that the money was on deposit in that bank to the credit of the Model School, the Governor, the Comp-troller-General, and the State Treasurer gave the President of the College a written statement certifying that the terms of the Act had been complied with.

After securing the money required by the Act of the Legislature there was not time to carefully plan and complete the building for use this past fall. For this reason and also to avoid the necessity of
borrowing $\$ 10,000.00$ to complete the building in anticipation of the half of the State appropriation not available until the latter part of February, 1908, the Board thought it wise to put much time and thought on perfecting the plans and specifications for the building before beginning its construction. To this end model schools throughout the country have been visited and inspected and the advice of some of the best school architects in the country has been secured.

Such a building as we are planning must be model in every par-ticular-in arrangement of rooms, in heating, lighting, ventilation, and equipment; in lavatory, playground and gymnasium accommodations; in provision for the teaching of manual training, industrial arts, and nature study work; and in design and finish. It must be a complete school, providing for the best teaching of a model course of study, beginning with the kindergarten and going through the high school grades, so that it may be of genuine help to the State in the solution of its elementary and secondary educational problems. It takes time to work out all the details of such a building, but time and money and thought expended in perfecting plans are the best expenditures made upon it.

It is fortunate that we did not let the contract for building the Model School last summer. The price of all building material has been reduced very much since then, and the prospect is that we shall secure a much better building for the same money by waiting than we would have done.

We shall complete our plans and let the contract for the building in ample time for it to be completed for use for next session.

## Farm and Grounds.

The Board, after twelve years' trial, have divided the management of the farm and the grounds, and expect in this way to secure a more satisfactory management of each. The management of both seemed to be too much for one man.

The Foreman of the farm has been made Superintendent at a small increase in his salary, and the teacher of Elementary Agriculture has been placed in charge of the grounds.

The farm of 144 acres, within less than a mile of the College, is maintained to supply the College with vegetables, fruit, milk, butter, and meat, and for securing to it an unfailing supply of fresh, pure food. The ordinary market in a small town is very uncertain, and it
would be impossible to run properly the boarding department of a great institution like Winthrop without a farm to depend upon.

A landscape architect of fine reputation and successful experience in the South has been secured, at reasonable cost, to make plans for the future improvement of the College grounds. With such plans the Trustees expect all work done on the grounds to be done with a special purpose, and to secure as a result in the coming years beautiful lawns and walks and drives, all laid out artistically and in harmony with the buildings and the purposes they may be designed to serve.

For the use of the landscape architect and for the use of the College, a map has been made of the grounds, showing the location of every building, drive, walk, fence, flower bed, and tree, with size of houses, width of walks and drives, and size of trees, and the comparative elevation of all objects on the grounds. A second map shows all elevations and grades and the location of all the College pipes steam, water, sewer, and drain.

In addition to the regular routine work and ordinary repairs since our last report, a number of improvements have been made about the College plant, such as painting all tin roofs, overhauling all plumbing, making new cow stalls at the dairy barn, staining the floors of the halls and some of the dormitories, furnishing the kitchen with new range, and new tea and coffee urns and other equipment needed, furnishing laundry with new wash wheel and elevator, moving the Cherry house, putting down a cement pavement the whole length of the front of the campus, finishing up the basement of the library, and putting in a system of electric secondary clocks and signals.

The winter's supply of coal and wood was put in during the summer.

## Water Supply.

Plenty of pure water is an absolute necessity for the proper running of the College. To make the College secure in its water supply, even in time of drought, and to enable us to abandon the present wells when the purity of the water should be endangered by the proximity of many dwellings, the Board asked the Legislature in 1906 for an appropriation of $\$ 1,500.00$ to drill some deep wells on the campus and the appropriation was made. The drilling of these wells, four in number, and supplying altogether 97,920 gallons of water in twenty-four hours, has been going on during the past year.

They were completed and turned over to the College last fall. The wells are located on the campus near the power house, where they can be pumped at very little expense, and where the water is beyond all chance of surface contamination. We shall have to ask the Legislature at this session for money to equip these wells with deep well pumping apparatus. From estimates made, we find that it will require $\$ 3,000.00$ to secure the apparatus needed.

It seems that we shall complete our arrangements to abandon our present wells none too soon. There are a number of negro houses built around them now, and it is proposed to erect a mill and build a mill village between the wells and the College in the near future.

## Mill Next to College.

But, even though we do abandon our present wells, we shall regret very much to see a mill and a mill village built alongside the College, and we shall put forth every effort to prevent it. Any thickly populated settlement such as this, for many reasons, would be a very undesirable next door neighbor for a girls' college.

## Insurance.

The three years' insurance on all of the College property will expire next August 3 Ist, and we shall have to ask for money at this session of the Legislature to re-insure it for three years. It will require $\$ 2,659.82$ to do this for the amounts now placed on it.

The property is now insured for amounts as follows:
Main building. . . . . . . . . . . . . . . . . . . . . . . . . . $\$ 100,000.00$
Main building furniture. . . . . . . . . . . . . . . . . . . . . . 5,000 00
North dormitory. . . . . . . . . . . . . . . . . . . . . . . . . . 24,000.00
North dormitory furniture. . . . . . . . . . . . . . . . . . .: 2,000.00
South dormitory. . . . . . . . . . . . . . . . . . . . . . . . . 29,500.00
South dormitory furniture. . . . . . . . . . . . . . . . . . . . 5,500.00
Library, building, broks, and equipment. . . . .. .. .. 32,500.00
Power house, boiler, and engines. . . . . . . . . . . . . . . . 3.000.00
President's residence. . . . . . . . . . . . . . . . . . . . . . . . 2,600.00
George B. Green house . . . . . . . . . . . . . . . . . . . . . . $1,200.00$
Cherry house . . . . . . . . . . . . . .. . . . . . . .. . . .. 1,200 00
Infirmary building. . . . . . . . . . . .. . . . . .. .. .. 3,000.00
Infirmary furniture. . . . . . . . . . . . . . . . . . . . . . . 500.00
Blacksmith shop and contents. . . . . . . . . . . . . . . . 500.00

| Pumping house. | \$350.00 |
| :---: | :---: |
| Farm buildings, co of all kinds. . | 7,130.00 |
| Boiler insurance. | 10,000.00 |
| Total | 27,980.00 |

The cost of the College buildings and equipment up to this time has been $\$ 365,000.00$.

According to a new law recently passed by the General Assembly we shall have to place with the State a certain percentage of all the insurance on the College property.

## Exhibit at thé Jamestown Exposition and the State Fair.

The College made an exhibit at the Jamestown Exposition and at the recent State Fair, October 28-3I. These exhibits showed the work of the College in all departments.

The News and Courier had the following to say of the exhibit at the State Fair in its issue of November 2d:
"The interest that South Carolina people take in Winthrop has been clearly set forth this week.
"Each day an interested throng has hung around the exhibit, and there has been little of the usual idle, passive curiosity manifested by the casual observer.
"For the most part, those who have examined the exhibit have shown a real interest in the different lines of work. Educators from all over the State-parents who have daughters at the College, young women who have graduated at the College, have all been around. And truly the exhibit was one of which any institution might be proud. It was broad and comprehensive, showing the different lines of work in which the College is engaged.
"A few years ago Winthrop made a similar exhibit at the fair which aroused much interest throughout the State. To the many who examined it then it seemed that the College had reached the high-water mark of excellence.
"The exhibit this week proves that Winthrop has not been at a standstill, but that there has been steady growth in all lines of work. Some new work has been opened up which is evidence of progress.
"The President of the State Fair Association appointed a committee to examine the exhibit made by Winthrop College. That committee made the following report:

، 'G. A. Guignard, President State Fair Association, Columbia, S. C. "'Dear Sir: On behalf of the committee appointed to inspect the Winthrop College exhibit, I beg to report that we have performed our pleasing daty.
""We find it admirabie in every respect-in breadth, extent, compheteress, and gerveral excellence.
"'The exhibit indicates that the College is doing a great work for the schools and the women of the State.
"'It covers industrial, literary, and normal instruction, and all departments of education-kindergarten, common school, and college.
"'We reoommend that 2 medal be awarded the College for its full and admirable and beautiful extibit.'"

A room in the basement of the library has been set apart as a permanent exhibit and museum room, and the exhibits made at Columbia and Jamestown have been placed there. We have long felt the need of an exhibit or museum room, and, already simce we bave made this beginning, we have had the offer of some very valuable relics for it . With the beginning made and a room set aside for the purpase, we believe that we shall soon have a most interesting and helpful museum. With an exhibit room to assemble work of the different departments during the session, we shall be able to make a better exhibit at the next State Fair with less expenditure of time, thought, and money than was required for the recent exhibit.

## Bulletins.

With this session the College has begun to issue regular bulletins. The first bulletin was issued last September. It was on Plain Cookery, and was prepared by Miss Mulligan, head of the Department of Domestic Science. It has been sent to the homes of the people all over the State, and has been received with much favor. A great number of requests have been received for it, and it seems to be accomplishing much good. Copies of this bulletin were also given out to the people in connection with our exhibit at the State Fair.

A progressive educational leader in a neighboring State, in acknowledging the receipt of the bulletin, has written, "I wish to thank you for the attractive pamphlet as to the work of Winthrop College. The book on Cooking issued by such a school marks an epoch in the educational progress of the South."

## List of Students for General Assembly.

In compliance with the law requiring all State colleges to report to the General Assembly annually the names of all students, with postoffice address of each, and whether such students are pay, beneficiary, or scholarship, we have prepared the list and submit it herewith. There are 104 pay students, 124 with scholarships, and 269 with free tuition.

## Trustees' Terms of Office Expire.

The terms of office of the following members of the Board of Trustees expire at this session of the Legislature: Col. Wilie Jones, Columbia ; Hon. J. E. Breazeale, Anderson. These gentlemen have served the State as Trustees of Winthrop long and faithfully.

## Finances.

The financial report of the Treasurer of the Board for the scholastic year, July 1, 1906, to July 1, 1907, with the report of the Finance Committee of the Board, is appended to this report.

The balance of the State appropriation for the support of the College, $\$ 35,330.6 \mathrm{I}$, undrawn at the date of the financial report, July 1, 1907, is not included in the receipts of the College in this report, nor is the special appropriation of $\$ 10,000.00$ for the Model School. That balance is drawn out of the State Treasury as needed, and, together with the balance reported in the College treasury, July 1, 1907, $\$ 3,153.03$, and the receipts from students at the beginning of this session is used for running the College up to the next appropriation by the Legislature some time in February, and will be accounted for in the next annual report.

In the total receipts of the College we have included the money paid by students and teachers for board and the scholarship fund, which, however, do not go to the general support of the institution, but to the boarding department. These amounts are not reported in the financial statements of other colleges.

The cost of conducting the College proper for the past scholastic year, including all salaries, improvements, repairs, etc., apart from the boarding department, was $\$ 78,945 \cdot 32$, and the total receipts, not including money paid for board and the scholarship fund, $\$ 82,098.35$.

An itemized statement of the receipts and disbursements of the College has been filed with the State Superintendent of Education, as required by law.

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The Treasurer of the Board gives a bond, which is deposited with the State Treasurer.

## Estimates for Next Session.

A careful estimate of expenses, based upon the experience of last session and a thorough consideration of the necessities of the College with its present enlarged scope and work unimpaired, shows that we shall need the following amounts for running expenses, equipment, repairs, etc., for the coming year:

## Summary of Estimates. <br> Ordinary Expenses.

Salaries of officers, teachers, and employees now fixed this session as follows:
D. B. Johnson. . . . . . . . . . . . . . . . . . . \$3,000 $\infty 0$
J. W. Thomson. . . . . . . . . . . . . . . . . . . 1 ,900 00
J. P. Kinard. . . . . . . . . . . . . . . . . . . . . $1,900 \infty$
E. C. Coker. . . . . . . . . . . . . . . . . . . . 1,90000
T. O. Mabry. . . . . . . . . . . . . . . . . . 1,600 oo
A. O. Baurer. . . . . . . . . . . . . . . . . . . .. 1,900 $\infty$
C. E. Johnson. . . . . . . . . . . . . . . . . .. 1,20000

Miss A. E. Jones. . . . . . . . . . . . . . . . . 95000
Miss A. M. Moudy. . . . . . . . . . . . . . . 95000
Miss M. G. Powell. . . . . . . . . . .. . . . . 950 oo
Miss M. M. Isles . . . . . . . . . . . . . . . . . 950 oo
Mrs. B. W. Birdsall. . . . . . . . . . . . . . . . 950.00
Miss E. R. Hughes. . . . . . . . . . . .. .. 95000
Miss C. A. Mulligan. . . . . . . . . . . . . . . 950 oo
Miss J. I. Whitham. . . . . . . .. . . . . . 95000
Miss M. F. Wickliffe. . . . .. . . . . . . . 950 oo
Miss M. G. Pope. . . . . . . . . .. . . . . .. 70000
Miss E. Newman. . . . . . . . . . . . . . . . . 70000
Miss M. R. Harmon. . . . . . . . . . . . . . . 70000
Miss F. Watkins. . . . . . . . . . . . . . . . . 60000
Miss N. Wysor. . . . . . . . . . . .. .. .. 70000
Miss M. F. Dickson. . . . . . . . . . . . . . . . 600 oo
Miss F. Evans. . . . . . . .. . . . . . .. 70000
Miss A. V. Dunn. . . . . . . .. .. .. . . . 70000
Miss L. B. Able. . . . . . . . . . . . . . . . . 700 oo
Miss P. Jones. . . . . . . . . . . . . . . . . . 70000
Miss G. Gardiner $\$ 80000$
Miss E. C. Schutt ..... 60000
Miss S. S. Battle. ..... 60000
Miss L. V. Avery ..... 60000
Mise M. Crosby ..... 60000
Mise S. M. Jenkins ..... 50000
Mim S. Withers ..... 95000
Mise L. A. Russell ..... $7 \infty 0$
Miss S. I. Grant 70000
Miss C. C. Martin ..... 80000
Miss M. Macfeat 95000
Miss E. Steele ..... 18000
Miss E. Willfong ..... 35000
Miss W. Parks ..... 70000
Miss A. P. Atwood ..... 70000
R. B. Cunningham ..... 1,50000
H. P. Stuckey ..... 1,000 00
Mrs. L. M. Richards. ..... $800 \infty$
Mrs. L. Shumate 60000
Dr. Lois Boyd ..... 95000
E. R. Rivers 1,500 00
Mrs. E. V. J. Cobb ..... 95000
Miss F. M. Calhoun ..... $500 \infty$
Miss I. J. Dacus. ..... 90000
Miss E. N. Smith ..... 50000
Mrs. J. A. Sims ..... $440 \infty$
Miss Hannah Neel ..... 27000
Miss M. Martin ..... 31500
Miss A. Pinckney ..... 36000
Miss M. Parker ..... 27000
Miss S. E. Anderson ..... 27000
J. R. Poag 78000
Mrs. M. M. Davis ..... 95000
\$51,335 00 ..... \$51,335 0
Salaries last year as per financial report, \$47,155 88.The following itemized statement of salaries last year will showby comparison what new or increased salaries are being paid duringthe present session, as authorized and provided for at the last sessionof the Legislature:

Salaries of officers, teachers, and employees for last session:
D. B. Johnson. . . . . . . . . . . . . . . . . . . $\$ 2,70835$
J. P. Kinard. . . . . . . . . . . . . . . . . . 1,80000
J. W. Thomson. . . . . . . . . . . . . . . . . . . . 1,80000
E. C. Coker. . . . . . . . . . . . . . . . . . . . . r,800 00
T. O. Mabry . . . . . . . . . . . . . . . . . . . 1,50000
A. O. Bauer. . .. .. . . .. .. .. .. .. .. 1,80000

Miss A. E. Jones. . .. . . .. . . . .. .. 90000
Miss A. M. Moudy. . . . . . . . . . . . . . . 900 oo
C. E. Johnson. . . . . . . . . . . . . . . . . . . 90000

Miss M. G. Powell. . . . . . . . . . . . . . . 90000
Miss E. S. Whaley. . . . . . . . . . . . . . . 90000
Mrs. B. W. Birdsalt. . . . . . . . . . . . . . . . 90000
Miss A. Burnett. . . . . . . . . . . . . . . . . 90000
Miss C. A. Mulligan. . . . . . . . . . . . . . . . 90000
Miss J. I. Whitham. . . . . . . . . . . . . . 90000
Miss M. F. Wickliffe. . . . . . . . . . . . . . 90000
Miss M. G. Pope. . . . . . . . . . . . . . . . . 67500
Miss A. H. Lewis. . . . . . . . . . . . . . . . . . $775 \infty$
Miss B. A. Macmiłtan. . . . . . . . . . . .. 575 oo
Miss F. A. McCormick. . . . . . . . . . . . . . 675 oo
Miss F. Watkins. . . . . . . . . . . . . . . . . 57500
Miss N. Wysor. . . . . . . . . . . . . .. . . 675 ©
Miss M. F. Dickson. . . . . . . . . . . . . . 57500
Miss F. Evans. . .. .. . . .. . . . . . . . 675 o
Miss L. B. Able. . . . . . . . . . . . . . . . . $675 \infty$
Mires: M. M. Isles. . . . . . . . . . . . . . . . . . 675 oo
Miss P. Jones. . . . . . . . . . . . . . . . . . . 67500
Miss M. A. Jones. . . . . . . . . . . . . . . . . $\quad 775 \infty$
Miss E. C. Schutt. . . . . . . . . . . . . . . . . . 575 00
Miss S. S. Battle. . . . . . . . . . . . . . . . . 575 o
Miss S. M. Jenkins. . . . . . . . . . . . . . . 42500
Miss S. Withers. . . . . . . . . . . . . . . . 90000
Miss E. Willfong. . . . . . . . . . . . . . . . 10500
Miss E. A. Russell. . . . . . . . . . . . . . . 67500
Miss S. I. Grant. . . . . . . . . . . . . . . . . . 675 o
Miss A. A. Dunbar. . . . . . . . . . . . . . . 675 oo
Miss M. Macfeat. . .. .. .. .. .. .. .. 90000
Miss A. P. Atwood. . . . . . . . . . . . . . . 67500
Miss L. V. Avery. . . . . . . . . .. .. .. 575 oo
Mirss M. Crosby. . . . . . . . . . . . . . . . 575 oo
R. B. Cunningham ..... $\$ 1,39500$
H. B. Buist ..... 1,128 00
Mrs. L. M. Richards ..... $800 \infty$
Mrs. L. S. Shumate. $500 \infty$
Dr. M. Buck ..... 90000
Miss A. P. Starke ..... 80000
E. R. Rivers ..... $1,200 \infty$
Mrs. A. B. O'Bryan ..... 60007
Mrs. E. V. J. Cobb ..... 625 ©
Miss I. J. Dacus. ..... 84170
Miss E. N. Smith ..... 40000
Mrs. J. A. Sims ..... $350 \infty$
Miss H. Neel ..... $270 \infty$
Miss Mary Martin ..... 22500
Miss May Martin ..... 27000
Miss A. W. Smith ..... 15276
Miss M. Parker ..... 18000
Miss A. Oates ..... $180 \infty$
J. R. Poag ..... 60000
\$47,155 88
Religious services (actual cost last year- see financial report) ..... $\$ 53050$Labor (carpenter and helpers, night watch-man, janitors, mail carrier, power househands)(Actual cost last year-see financialreport:)
Carpenters, janitors, mail carrier, night watchman, door maid. ..... 2,659 86
Power house and pump station ..... 1,523 50
\$4,183 36
Care and improvement of grounds. ..... 1,683 20
(Actual cost last year-see financial report:)
Labor, fertilizers, seeds, plants, etc. . 1,683 io
Electric power for lighting, pumping, and laundry, and for repairs and improve- ments on electric equipnient ..... 3.25092

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(Actual cost last year-see financial report:)
Electric lighting and power. \$3,000 00
Electric machinery, lines, and equip-ment25092
$\$ 3,25092$
Fuel6,000 00
Last year-see financial report ..... 5,858 70
Current repairs and improvements to build-ings, machinery, plumbing, heating plant,and to all College property and ordinaryreplenishing of equipment and furnishingsActual cost last year was greater-seefinancial report:
Repairs and improvements to College buildings and machinery 2,500 00Repairs and improvements farm anddairy2,39564
Furnishing and equipment, including pianos, manual training, furnishings, laundry machinery, etc ..... 6,877 18\$11,772 82
Library, books, periodicals, and binding ..... 2,000 00
(Actual cost last year was $\$ 2,047.76$ - see financial report:)
Advertising scholarship examination, etc. ..... 85772
(Actual cost last year-see financial report:)Postage, stationery, and printing (includingcatalogue)1,672 28(Actual cost last year-see financialreport:)
Trustees' and President's expenses ..... 52358(Actual cost last year-see financialreport:)
Miscellaneous, including commencement,etc.84596(Actual cost last year-see financialreport:)
Care of sewer beds and sanitation ..... 23170

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(Actual cost last year-see financial report:)
Drugs and supplies for infirmary ..... $\$ 43143$(Actual cost last year-see financialreport:)
Total ordinary expenses $\$ 81,54555$
This amount may be reduced by the following re-ceipts of the College (estimated on last year-see finan-cial report), as follows:
Tuition fees. $\$ 3,300$ oo
Music 8,619 00
Elocution and Art and Sewing Class ..... 12300
Medical fees ..... 2,376 0
Matriculation fees ..... 2,495 00$\$ 16,91300$Reduced by refund of fees to withdrawingstudents (refunded last year). . . . . . .. 26267\$16,650 33
Rock Hill Graded School ..... 360 oo
\$17,010 33 \$17,010 33$\$ 64,53522$
Amount needed for ordinary expenses
Special Expenses.
Septic tank for sewerage ..... $\$ 2,00000$Premium on three years' insurance an atl Colbege property 2,65982Equipment for new deep wells-machinery, piping,changes in power house to provide for now atrange-ment, etc3,000 00
Appropriation required ..... \$72,195 04

This estimate includes some pressing special items, sewerage, izsurance, and waterworks equipment, which must be provided for this year. Without these items our estimate of the amount needed for ordinary expenses is $\$ 64,535$.22, only $\$ 2,371$. 52 more than the
amount appropriated by the Legislature for ordinary expenses last year, including the slight increases salaties then provided for by the Legislature; and this notwithstanding the growth of the College and the extra work being done.

Our estimates do not include the scholarship fund as a resource of the College, because that fund is paid, not ta the Coltege, but to the students individually, to help them defray their expenses, according to the Act approved February 25, 1904. The College acts as agent for the students in drawing the money from the State Treasury.

A comparison with similar institutions will show that the amount requested by the Board to rua Winthrop College, with its large enrobment and its varied work for a year is reasonable, and that strict economy must be practiced to conduct it properly on that amount. North Carolina is now appropriating $\$ 95,000.00$ a year for its Normal and Industrial College for girls; Alabama, $\$ 86,0,0,00$ a year for four years, and Florida, $\$ 102,500.00$ a year for two years, exactly the same amount as that appropriated for the State College for boys.

The cost to the State of running Winthrop College last year, including the cost of scholarships, was not more than $\$ 147.00$ per capita. Respectfully submitted,

M. F. ANSEL, Governor and Chairman Board of Trustees.

## FINANCLAL BTATEMENT OF WINTHROP NORMAL AND INDUSTRIAL COLLEGE OF GOUTE CAROLNA JULY 1, 1000, TO JULY 1, 1907.



The above report is for the scholastic year, July i, 1906, to July i, 1907, as required by law.

The balance of the State appropriation for the support of the College, $\$ 35,330.61$, undrawn at the date of the financial report, July I , 1907, is not included in the receipts of the College in this report, nor is the special appropriation of $\$ 10,000.00$ for the Model School. This balance is drawn out of the State Treasury as needed, and, together with the balance reported in the College treasury, July i, $1907, \$ 3,153.03$, and the receipts from students at the beginning of the session, is used for running the College up to the next appro-

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priation by the Legislature some time in February, and will be accounted for in the next annual report in accordance with the law.
In the total receipts of the College we have included the money paid by students and teachers for board and the scholarship fund, which, however, do not go to the general support of the institution, but to the running of the boarding department. These amounts are not usually reported in the financial statements of other colleges.

The cost of conducting the College proper for the past scholastic year, including all salaries, improvements, repairs, etc., apart from the boarding department, was $\$ 78,945.32$, and the total receipts, not including money paid for board and the scholarship fund, which is paid to the students to help them defray their expenses (according to Act approved February 25, 1904), was $\$ 82,098.35$.

An itemized statement of the receipts and expenditures of the College has been filed with the State Superintendent of Education, and of expenditures with the Comptroller-General, as required by law.

Respectfully submitted,
D. B. JOHNSON, President and Treasurer.

Rock Hill, S. C., Nov. 26, 1907.
To the Board of Trustees of Winthrop Normal and Industrial College of South Carolina.
Gentlemen: Your Finance Committee wishes to report that they have examined the books and vouchers of the Treasurer of the College up to November 1, 1907, and find the same correct and the books kept in first-class manner.

WILIE JONES,
D. W. McLAURIN,
A. M. LEE,

Finance Committee.

## ELEVENTH ANNUAL REPORT

OF THE

## BOARD OF TRUSTEES

OF THE

# Colored Normal, Industrial, Agricultural and Mechanical College 

OF SOUTH CAROLINA,

## ORANGEBURG, S. C.

1907. 

## REPORT.

## Office of the Secretary of the Board of Trustees, Orangeburg, S: C., November 9, 1907.

To the Honorable O. B. Martin, State Superintendent of Education of South Carolina:
The Board of Trustees of the Colored Normal, Industrial, Agricultural and Mechanical College of South Carolina respectfully submit the following report through you to the General Assembly of South Carolina :
Herewith is submitted the annual report of the President of the College over which your honorable bodies have made us stewards.

By reviewing the appended report you can judge how faithfully the President and the corps of teachers have performed their duty. Every year shows improvement in the work, and we are sure that great good is being accomplished in the uplift of the negro race and for the whole State. We believe the present corps of teachers is the equal of any similar college corps in the country, when their faithful and unselfish work for the upbuilding of their race is considered. The teachers are competent, industrious, and well fitted for the departments in which they work.

The industries are taught with care by competent and painstaking instructors; and from the different departments there are sent out yearly many young men who support themselves independently at their trades.

The President calls attention to the good work done in the woodworking, iron-working, painting, harnessmaking, and sewing departments. This is all endorsed by the Board.

Each year we find that more interest is manifested in the system of farming as taught; and more classes are instructed than in former years.

The bricklaying department is under the supervision of James A. Brown, a graduate of the College. His work is excellent, and much progress is shown.

For protection against fire five hundred feet of hose have been purchased, a hose wagon has been built by students, fire escapes have been erected at the dormitories, and fire drills are given as to the use
of the hose and the manner of escaping from the building by the ladders.

Bradham and Morrill halls are being painted by student-labor under a very competent foreman.

The President's cottage, for which an appropriation was made at the last session of the Legistature, is in course of erection, and will, when completed, be an ormament to the campus and a comfortable home for the head of the College.

We again urge the installation of an electric dynamo and plant of sufficient power to light the buildings and the campus, and also to provide instruction in electric engineering for those students who may desire to learn.

The following are the needs:
Industrial expenses (as per last year).. .. .. .. .. .. \$2,10I 37
Incidental expenses (as per last year) . . . . . . . . .. . . 4,609 35
Current expenses (as per last year) . . .. .. .. .. .. .. 1,990 64
Fuel and lights. . . . . . . . . . . . . . . . . . . . . . . . .. 1,19975
Physician and clerical expenses. . .. .. .. .. .. .. .. 70000
Trustees' expenses. . .. .. . . . . . . . . . . . . . . . . 16220
Total miscellany.. .. .. .. .. .. .. . . .. .. . . . $\$ 10,76331$
Salaries of teaching force. . . . . . . . . . . . . . . . . . . . . $12,500 \times 0$
Need of mules . . . . . . . . . . . . . . . . . . . . .. . . . . 40000
Dynamo and plant. . .. . . . . .. .. .. .. . . .. .. .. 1,000 00
Laundry and equipment. . . . . . . . . . . . . . . . . . . . . . 2,000 00
Furniture and refitting dormitories. . .. . . . . .. . . .. 2,700 0
Total. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $\$ 29,3633^{1}$
Reduced by income (Morrill and Land Scrip Funds). . 18,254 00
Appropriation requested. . . . . . . . . . . . .. . . . . . $\$ 11$,109 31
Respectfully submitted,

> M. F. ANSEL,

Governor and Chairman.
D. J. BRADHAM,

Chairman Executive Committee.
W. R. LOWMAN. Secretary Trustees.
A. L. DUKES,

Member Executive Committee.

## President's Report.

Orangeburg, S. C., Nov. 2, 1907. To the Honorable Board of Trustees of the Colored Normal, Industrial, Agricultural and Mechanical College of South Carolina.
Gentlemen: I most respectfully submit this my eleventh annual report, showing (1) the number of students by classes for the school year ending May 8, 1907; (2) the number of students enrolled by classes this school year; (3) the condition of the College, and the work done; (4) the buildings and their value; (5) the receipts of funds from all sources, specific disbursements made, together with all other information pertaining to the management of the College.
(1) Students by classes for the school year ending May 8, 1907. Enrollment by Department and Classes.

## COLLEGE DEPARTMENT.

MALES. FEMALES. TOTAL.


## NORMAL DEPARTMENT.



## PREPARATORY DEPARTMENT.

MALES. FEMALES. TOTAL.

Third year. . . . . . . . . . . . . . . 24 22
Sccond year. . . . . . . . . . . . . 44 4488
First year. . . . . . . . . . . . . . 31 4I 72
Preparatory total. . . . . . . . 216
68-R. \& R.-(500)

## PRACTICE SCHOOL.


Practice School Total ..... 223
Grand total ..... 600
ENROLLMENT BY DENOMINATIONS.
MALES. FEMALES. TOTAL.
Baptist ..... I30 ..... 160 ..... 290
African Methodist Episcopal ..... 75 ..... 200
Methodist Episcopal. ..... 30 ..... 87
Presbyterian ..... 5 ..... 7 ..... 12
Episcopalian ..... 4
Congregationalist ..... 2
Catholic. ..... 1
A. M. E. Zion ..... 2
Not known ..... 1 ..... 2
Total 246 ..... 354 ..... 600
ENROLLMENT BY COUNTIES.
Abbeville ..... 4
Aiken ..... 3
Anderson ..... 16
Bamberg. ..... 15
Barnwell ..... 10
Beaufort ..... 10
Berkeley ..... 12
Charleston ..... 12
Cherokee ..... 4
Clarendon ..... 8
Colleton ..... 9
Chesterfield ..... 12
Chester ..... 4
Darlington ..... 19
Dorchester ..... 7
Edgefield ..... 6
Fairfield ..... 8
Florence ..... 7
Georgetown ..... 7
Greenville ..... 5
Greenwood ..... 10
Hampton ..... 4
Kershaw ..... 8
Laurens ..... 6
Lee ..... 3
Lexington ..... 6
Marlboro ..... 14
Newberry ..... 20
Orangeburg ..... 210
Uconee ..... 2
Pickens ..... 5
Richland ..... 12
Saluda ..... 4
Spartanburg ..... 20
Sumter ..... 44
Union ..... 10
Williamsburg ..... 25
York ..... 6
Total ..... 600
STATES.
South Carolina ..... 590
North Carolina ..... 4
Georgia ..... 3
Tennessee ..... I
New York ..... I
Florida ..... I
Total ..... 600
1064
INDUSTRIAL DEPARTMENT.
INDUSTRY. MALES. FEMALES. TOTAL.
Architectural Drawing ..... 15 ..... 45
Mechanical Drawing ..... 30 ..... 50
Wheelwrighting ..... 5
Woodworking ..... 37
Masonry ..... 75
Painting ..... 6
Dairying ..... 4
Cheesemaking ..... 410 ..... 14
Agriculture ..... 20 ..... 20
Domestic Economy ..... 145 ..... 145
Instrumental Band, Orchestra ..... 20 ..... 34
Harnessmaking ..... 20 ..... 20
FARM.
The farm has produced on $803 / 4$ acres as follows:
Corn ( 30 acres) 600 bushels, at 90 cts ..... $\$ 54000$
Oats ( 25 acres) 625 bushels, at 60 cts ..... 37500
Cotton ( $123 / 4$ acres) in bales ..... 68569
Cotton seed, 6 tons, at $\$ 21$ ..... 12600
Rape ( x acre) 8 tons, at $\$ 6$ ..... 4800
Hay, 70,000 lbs. at 75 cts ..... 52500
Stock increase, 6 calves, at $\$ 10$ ..... 6000
Stock increase, i sow pig ..... 1500
$\$ 2,37469$

## HEALTH.

Under the excellent services and direction of Dr. Lin Shecut the health of the College has been exceedingly good; there has been no death on the campus, and the sickness that we have had is that which is common to the locality from which students come.

## ADMISSION.

Boys below the age of fifteen, and girls below the age of fourteen, are not received in the College dormitory. Students applying for admission must be of good health, must present testimonials of good character, and must have knowledge of the common branches of an English education.

## DEPARTMENTS.

Three times a week all boys over fourteen years are regularly drilled in the Military Department. Our buildings have been equipped with fire escapes; and for protection and discipline, fire drills have been instituted.

The Agricultural Department is making progress; more classes are being given instruction than formerly in this department, and a greater interest is manifested in the system of farming as carried on.

Better work has been done this year in the Preparatory Department, and in the Model School. In the Normal course much stress is placed upon pedagogy and civics, and in this course all pupils have made progress.

Good work is being done in the Ironworking and Woodworking Departments. The students manifest great interest in their trades, and show improvement.

Progress is made also in the Painting Department. All our painting about the buildings is done by students, and we are preparing to paint all our buildings, during vacation, with student labor under one competent workman.

Miss Clara C. Davis manages the Sewing Department in a most excellent manner, giving instruction daily to a class of girls. One day in the week is devoted by each girl in the College to plain sewing and dressmaking.

Our Harnessmaking Department is well equipped, and the students attending have made good progress.

Since our last report we have erected excellent fire escapes on both Morrill Hall and Bradham Hall.

Ground has been broken, work has begun and is progressing well on the President's cottage for which the last Legislature appropriated.

Ten years ago the farm and campus were fenced in with boards, nine-tenths of which have rotted. There is little or no permanent fence upon or around the farm of more than one hundred acres. It will require not less than eight hundred dollars to furnish the wire, staples, and posts, and to build all the necessary fences upon and around the farm.

I, therefore, ask you gentlemen to take under consideration this matter of fences and cross fences that are needed upon farms of an agricultural college.

In last year's report I called your attention to the need of money to purchase mules. The want has not been supplied. Hence I
again ask you to consider the need of four hundred dollars to buy mules.

Our buildings are now lighted with actelyne gas, which is not satisfactory, is injurious to the eyes of the pupils, and is very expensive. I therefore beg you to make provisions for purchasing a dynamo to light our buildings. This can be done at the cost of about one thousand dollars.
During ten years of our existence we have been using an old wood-shed as laundry. It is in a dilapidated condition, and we have outgrown its size and usefulness. I therefore most respectfully ask you to consider our needs for a laundry and appliances, to cost about two thousand dollars.

The furniture in the girls' and boys' dormitories is mostly of a crude kind. It is necessary to refurnish washstands, tables, chairs, and bedsteads. We need for these items the sum of fifteen hundred dollars.

Bradham Hall is still in an unfinished condition, and we need twelve hundred dollars for finishing twelve rooms on the fourth floor of this hall.

These are, then, our needs in addition to the $\$ 5,000$ to be appropriated by the State for the running expenses, to wit:
One pair mules. . .. .. . . .. .. .. . . .. .. . . . . .. .. $\$ 40000$
A dynamo to generate light for the college plant. . .. .. 1,00000
A laundry and equipment. . . . . . . . . . . . . . . . . .. .. 2,000 00
For finishing twelve rooms in Bradham Hall. . . . . . . . . . I,200 00
For refurnishing dormitories. . . . . . . . . . . . . . . .. .. 1,500 00
The large balance appearing in this report will be used in the painting of the buildings, and construction of the President's house, and will scarcely be enough.

## Receipts.

Balance June 30, 1906. ..... \$1,635 $3^{2}$
State appropriation ..... 7,800 00
Land scrip ..... 5,754 00
Morrill Fund ..... 12,893 30
Sale of farm products ..... 92934
Total ..... \$29,011 96

## Disbursements.

Salaries.
Thos. E. Miller ..... \$I,800 00
N. C. Nix ..... 90000
R. S. Wilkinson ..... 90000
J. C. Whittaker ..... 90000
H. P. Butler ..... 90000
W. H. Adams ..... 36000
C. H. Uggams ..... 39375
Nellie V. Gallman ..... 37500
Lillian C. Mack ..... 34375
Louisa Blanding ..... 3125
Katie Cardoza ..... 37500
J. Amelia Coleman ..... 2000
Ada Martin ..... 2000
Lucile Stewart ..... 18750
S. D. Frasier. ..... 36000
Wm. Gruber ..... 30000
Clem S. Dominique ..... 281 25
Jas. A. Brown ..... 37494
S. M. Boston ..... 49992
Louise B. Fordham ..... 55000
Clara C. Davis ..... 34375
Pansy E. Miller ..... 37500
W. C. Lewis ..... 37000
D. L. Mingo ..... 24000
Cornelia J. Gregg ..... 37500
Farm labor. ..... 89733
Freight and express ..... 66913
Masonry-labor. ..... 24770
Woodworking Department ..... 32196
Ironworking Department. ..... 7445
Painting ..... 1310
Campus, buildings, furnace work ..... 1,107 73
Fuel ..... 71975
Laboratory supplies ..... 5376
Lumber ..... 1,607 60
Bricks ..... 17500
Carbide ..... 48000
Hardware ..... 480 I4
Printing ..... 12005
Fertilizers ..... 43859
Hauling ..... 6295
Work on fire escape ..... 5020
Firing ..... 8400
Work on President's house ..... 18478
Painting buildings ..... 22429
Water, rent, etc ..... 4425
Paints ..... 44689
Hose (fire) ..... 34250
Fire escapes-equipment ..... 50000
Drains ..... 12930
Lime ..... 12267
Stock-bought ..... 9000
Physician and clerical service ..... 70000
Trustees' expenses ..... 16220
Current expenses ..... $1,94^{6} 39$
Total \$25,072 82
Balance on hand June 30, 1907 ..... \$ 3,939 14Very respectfully submitted,T. E. MILLER, President.
Examined and approved:
M. F. ANSEL, Governor and Chairman.Secretary.

## FIFTY-NINTH ANNUAL REPORT

OF THE

## South Carolina Institution

FOR THE

# Education of the Deaf and the Blind, 

Cedar Spring, S. C.
1907.

## BOARD OF COMMISSIONERS.

T. J. Moore, Chairman.
O. B. Martin, ex-officio.
G. W. Heinitsh.
J. F. Cleveland.
J. D. Cappelmann.

## LETTER OF TRANSMITTAL.

South Carolina Institution for the Education of the Deaf and the Blind, Cedar Springs, S. C., Dec. 16, 1907.
Hon. O. B. Martin, State Superintendent of Education, Columbia, $S . C$.
Dear Sir: We beg herewith to present the annual report of the Superintendent of the Institution for the Education of the Deaf and the Blind, which is entirely satisfactory to the Board of Commissioners, and we hope will, after a careful reading, prove so to you.

We recommend for the next fiscal year the following appropriations, viz.:

For support. . . . .. . . . . . . . . . . . . . . . . $\$ 26,50000$
For repairs. . . . . . .. . . . . . . . . . . . . . . .. 50000
For insurance (three years).. .. . . . . . . . . .. 1,44698
For water supply and sewerage. . . . . . . . .. 1,00000
$\$ 29,44698$
Respectfully submitted,
T. J. MOORE,

Chairman Board of Commissioners.

## OFFICERS AND TEACHERS OF THE INSTITUTION.

Superintendent, N. F. Walker.<br>Matron, Mrs. V. E. Walker.<br>Physician, G. W. Heinitsh, M. D.<br>Teachers of the Deaf, W. L. Walker, B. A., Principal. T. H. Coleman, B. A., Mrs. I. M. Thomason, Miss T. E. Gaillard, Miss M. L. Cotton, Miss Margaret Surber, Miss L. W. Wood.<br>Teachers of the Blind, J. E. Swearingen, B. A., Miss S. B. Bledsoe, Miss Josephine Biggar.<br>Teacher of Drawing and Painting, Mrs. G. D. Coleman.<br>Music Teachers, W. W. Donnald, Miss Daisy Wilson.<br>Teacher of Physical Culture and Gymnastics, Miss Josephine Biggar.<br>Instructor Industrial Department for Blind Girls, Miss Daisy Wilson.

1073

## Instructor Industrial Department for Deaf Girls, Miss Belle Rogers.

Master of Shoe Shop,
A. B. Locklier.

Foreman of Printing Office, J. M. Frierson.

Master of Shop for Blind Boys, H. W. Estes.

Foreman of Wood Shop, W. C. Swink.

## Department for Colored Pupirs.

Teachers of the Deaf, J. M. Frierson, C. M. Miller.

Teachers of the Blind, H. W. Estes, Miss A. B. Wright.

Matron, Mrs. M. Mills.

## SUPERINTENDENT'S REPORT.

## To the Board of Commissioners of the Institution for the Education of the Deaf and the Blind.

Gentlemen: This report covers the fifty-ninth year of the history of this school, and I am pleased to be able to say that it has been one of the most successful years of the school. Nothing has occurred to interfere materially with the progress along all lines of our work. The health of our entire household has been good. No death has occurred. The average cost per pupil, for the school year, for medical attention and medicines was forty-five cents.

One hundred and seventy-six pupils were enrolled during the school year-100 deaf, and 75 blind, and I blind-deaf; 132 white and 44 colored.

The following list shows names of pupils and counties from which they come:

> Blind—Males.
H. Weathersbee ..... Aiken
J. Sanders ..... Aiken
D. Jones ..... Abbeville
E. Fant ..... Anderson
G. W. Irby ..... Anderson
T. Williams ..... Anderson
S. Tucker ..... Anderson
G. Wolbright ..... Cherokee
B. Moore ..... Cherokee
T. Gray ..... Clarendon
B. Norman ..... Cherokee
C. Miller ..... Chesterfield
J. Blocker ..... Colleton
E. Dodd ..... Colleton
N. Minus ..... Colleton
J. L. Shaw ..... Edgefield
W. H. Beaty ..... Fairfield
J. H. Street ..... Greenville
A. F. Gregorie ..... Hampton
L. R. Gregorie Hampton
T. A. Willis Laurens
J. L. Knight ..... Laurens
C. R. Davis ..... Lee
M. L. Derrick Lexington
J. K. Metts. ..... Lexington
P. F. Bauknight ..... Lexington
F. F. Livingston ..... Newberry
W. A. Joyner
J. P. McCarey ..... Oconee
C. CreasonW. F. EmorySpartanburg
F. Crawford
S. Norton ..... Williamsburg
M. Wylie. ..... York
Blind-Females.
W. Branyon Anderson
B. Breazeale Anderson
C. Stone Anderson
N. MillerA. BakerFairfield
M. Baker ..... Fairfield
T. Catoe. Kershaw
H. Copeland Lancaster
L. C. Derrick Lexington
M. Bledsoe Lexington
K. Goodwin Lexington
A. B. Cannon Newberry
L. A. Metts Newberry
C. Pennington Spartanburg
E. Flynn Spartanburg
A. Phillips Spartanburg
I. Linder Spartanburg
I. Adair Spartanburg
M. Plemmons .Spartanburg
H. M. Mobley Union
T. Lee. Union
E. Wylie ..... York

## Blind-dear.

Dewey H. Cantrell. . .. .. . . . . . . . . . . . . . . . .Spartanburg
Deap-Males.
I. Wilson. . . . . . . . . . . . . . . . . . . . . . .. .. . . . .Anderson
J. M. Fant. . . . . . . . . . . . . . . . . . . . . .. . . . . . . . .Anderson
L. J. Fant. . . . . . . . . . . . . . . . . . . . . . . .. . . . . . .Anderson
D. Moss. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Anderson
T. Creech. . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . Bamberg
C. Ayer. . . . . . . . . . . . . . . . . . . . ... . . . . . . . . . . . Bamberg
T. Haselden. . .. . . . . . . . . . . . . . . . . . . . . . . . . Berkeley
R. H. McCarrell. . . . . . . . . . . . . . . . . .. .. . . . .Charleston
M. Strickland. . . . . . . . . .. . . .. .. .. . . .. .. . . . .Colleton
H. R. Glover. . . . . . . . . . . . . . . . . . . . . . . . . . . . Colleton
J. A. Barnes. . . . . . .. .. . . .. .. . . .. .. .. .. .. ..Colleton
E. Rhodes. . . . . . . .. . . . . . . . . . . . . . . . . . . . . Darlington
C. Rogers. . . . . . . . . . . . . . . . . . . .. .. . . . . . . . .Florence
L. Duncan. . . . .. . . . . . . . . . . . . . . . . . . . . . . . . .Greenville
H. Wilson. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Greenville
B. Phipps. . . . . . . . . . . . . . . . .. . . .. .. . . . . .. . . Horry
R. Cartin. . .. .. . . . . . . . . . . . . . . . . . .. . . . . . . Lexington
H. Dozier. . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . Marion

DeWitt King. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Oconee
P. Allen. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Oconee
A. B. Mauldin. . . . . . . . . . . . . . . . . . . .. .. . . . . . .Pickens
E. E. Gaston. . . . .. .. . . .. .. .. .. .. .. .. . . . . . .Richland
S. T. Clarkson. . .. .. .. .. .. . . .. .. .. .. .. .. . .Richland
M. Sadler. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Richland
B. Jones. . . . . . .. .. . . . . .. .. . . .. .. .. . . .. . . . Saluda
O. Edwards. . .. .. . . .. .. .. . . .. .. .. . . .. .. . . ..Saluda
O. A. Darby. . . . . . . . . . . . . . . . . . .. .. . . . . . . . . Sumter
V. D. Smoak. . . . . . . . . . . .. .. . . . . . . . . . . . .Spartanburg
A. J. Tinsley. . . . . . . . . . . . . .. .. . . .. .. .. . . Spartanburg
C. Foster. . . . . . . . . . . . . . . . . . . . . . . . . . . . . Spartanburg
R. Ward. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Spartanburg
J. Cook. . . . . . . . . . . . . .. . . . . . . . . . . . . . . . Spartanburg
J. Holder. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Spartanburg
H. Fowler. . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . .Union
J. B. James. . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . .Union
P. Smoak. . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . .York
C. Parrott. . . . . . . . . . . .. .. . . . . . . .. .. .. . . . . . . . .York

## Deaf-Females.

L. Odell Anderson
M. Brooks ..... Anderson
M. Rogers Anderson
C. Buffkin ..... Bamberg
N. Jones ..... Cherokee
M. Ingraham ..... Chesterfield
F. A. Ackerman ..... Colleton
F. S. Bagnal Clarendon
A. Yarley Dorchester
S. H. Hoy ..... Fairfield
M. Price ..... Florence
V. Rector ..... Greenville
E. Lawrence Greenville
D. L. Johnson ..... Greenville
C. Riggs ..... Greenville
B. Richardson ..... Horry
R. Richardson ..... Horry
M. E. Hudson Lancaster
A. Arrowood ..... Laurens
G. Rogers ..... Marion
B. Bridges ..... Marion
C. Bowyer ..... Marlboro
A. P. Crisp. ..... Oconee
K. Robins ..... Oconee
R. Lee ..... Oconee
L. Hardy ..... Oconee
E. Clarkson. ..... Richland
J. Charles ..... Richland
E. Edwards. ..... Saluda
M. Edwards ..... Saluda
W. Edwards ..... Saluda
B. R. Clark Spartanburg
V. Narramore Spartanburg
A. L. Dwight ..... Sumter
M. Smith ..... Sumter
B. Smoak ..... York
J. Smoak ..... York
M. C. Parrott ..... York

## DEPARTMENT FOR COLORED PUPILS.

## Deaf-Males.

H. Miller ..... Charleston
L. Jones ..... Clarendon
A. McFaddin ..... Clarendon
J. Hiers ..... Colleton
H. Thomas ..... Fairfeld
T. Chiles ..... Greenville
F. Sanders ..... Lexington
J. Gibson ..... Lexington
J. Irvin. Newberry
W. Mason ..... Newberry
J. Allgood Pickens
C. Robinson ..... Richland
S. Benjamin ..... Sumter
J. Kernedy ..... Sumter
H. Hughes ..... Union
W. Harris. ..... York
Deaf-Females.
O. Mance Abbeville
L. Washington Berkeley
I. Banks .....  Colleton
C. Mobley Edgefield
L. Wideman ..... Greenwood
L. McGhee ..... Greenwood
V. Rice ..... Newberry
J. Dean ..... Spartanburg
Blind-Males.
P. Merritt. ..... Aiken
J. Taggart ..... Anderson
E. Bibbs ..... Abbeville
C. Nowell.E. Murry.Clarendon
I. Dunlap ..... Florence
W. Robinson ..... Greenwood
F. Blassingame ..... Greenville
C. Rosemond Greenville
W. RembertE. Hoge. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Spartanburg
S. Johnson. ..... Union
C. Seley ..... York
Blind-Females.
A. Williams Anderson
M. L. Rice ..... Barnwell
M. Griffin ..... Greenwood
E. Jackson ..... Greenwood
G. Garrett ..... Laurens
H. SmithI. Vaughn. . . . . . . . . . . .. . . . . . . . . . . . . . . .SpartanburgDewey Cantrell, our blind-deaf boy, is making satisfactoryprogress and is gradually being brought out from his dark and silentlife into touch and communication with the outside world.The last Legislature made the following appropriations for thisschool :
For support ..... \$25,400 $\infty$
For repairs. ..... 500 oo
For kitchen, etc. ..... 4,30000

The appropriation for repairs has been expended in placing waterclosets in the boys' dormitory, building pasture fences, repairs to plastering, and covering exposed steam pipes.

The appropriation for erecting kitchen, storerooms, and equipping same, has been expended for that purpose. The amount was found to be sufficient to pay in full for same. We have now a commodious and well-equipped kitchen, and storerooms well suited for storing and protecting our food supplies.

The current expenses for support from July I, 1906, to December 31, 1906, amount to $\$ 11,408.64$, and from January I, 1907, to June 30, 1907, $\$ 14,248.31$, making a total of $\$ 25,656.95$ for scholastic year ending June 30,1907 , as shown by the following statment:

## RECEIPTS.

From appropriations for support ..... \$24,347 37
From other sources ..... 42945
Balance on hand July I, 1906 ..... $880 \quad 13$
1080
EXPENDITURES.
Salaries ..... \$9,309 64
Groceries and provisions ..... 5,757 06
Wages ..... 3,796 73
Wood and coal. ..... 1,680 60
Furniture and household goods ..... 1,159 26
Improvements and repairs ..... 72036
Feed of stock ..... 68928
Gasoline engine and motor. ..... 44225
Books, stationery, etc ..... 37514
Laundry ..... 374 61
Shops ..... 31951
Traveling expenses ..... 21885
Grounds ..... 10958
Express, telegrams and freight ..... $973^{8}$
Postage ..... 8735
Tools, blacksmithing, etc ..... 8I 31
Medical attention and medicines ..... 7916
Lights and fixtures ..... 7500
Commercial fertilizers ..... 7470
Clothing ..... 7264
Telephone, etc ..... 4200
Wagon, harness, etc ..... 6875
Miscellaneous ..... 2579
$\$ 25,65695$
Repairs:
Received appropriation, 1907 ..... $\$ 50000$
Paid plumbing, etc ..... \$310 62
Paid pasture fence ..... 13078
Paid plastering and pipe covering ..... 5860
$\$ 500$ o
Kitchen and equipment :
Received appropriation, 1907 .....  $\$ 4,30000$
Paid contract price, extra work, and equipment ..... \$4,300 00

The following appropriations will be necessary for the proper maintenance of the institution for the next fiscal year, viz. :

$$
\begin{aligned}
& \text { For support. . . . . . . . . . . . . . . . . . . . . . . . } \$ 26,50000 \\
& \text { For repairs. . . . . . . .. . . . . . . . . . . . } \\
& \text { For insurance (three years) . . . . . . . . . . . . . } \\
& \text { 1,446 } 98 \\
& \text { For water supply and sewerage . . . . . . . . . . . } 1,00000
\end{aligned}
$$

From the foregoing it will be seen that an increase of $\$ 1,100$ is asked in appropriation for support. This addition is necessary on account of the increased cost of living and of the general administration of the school.

The annual appropriation of $\$ 500$ is necessary to keep up the general repairs and improvements of the buildings and grounds.

Our insurance policies expire in February. The amount named ( $\$ 1,446.98$ ) will renew the policies for three years. Under a recent Act of the Legislature one-tenth of said amount will be paid to the State Insurance Department, and nine-tenths to old line insurance companies.

Our sewerage system, which was installed several years ago, being at the time temporary, needs changing and perfecting in order to secure the continued healthfulness of our location. The motor and pump for delivering water from the spring to the tank have been in use for a number of years, and are liable to break down at any time. A careful estimate shows that the perfecting of our water supply and sewerage system will cost the sum of $\$ 1,000$.

The financial statement for support contained in this report is for scholastic year beginning July 1, 1906, and ending June 30, 1907, and does not, therefore, give the financial status of the school for the entire fiscal year, but only to June 30 , 1907.

Respectfully submitted,

> N. F. WALKER, Superintendent.

December 14, 1907.

## TERMS OF ADMISSION.

ist. Persons desiring to procure the admission of pupils should apply by letter, or otherwise, to the Superintendent of the Institution for instructions as to the manner of procedure, and no pupils should be sent to the Institution until such instructions shall have been fully complied with.
2d. All are required to come provided with an adequate supply of good, comfortable clothing, embracing suitable articles for both summer and winter wear, in such quantity as to admit of the necessary changes for washing and repairing, the whole to be neatly packed in a good trunk, with good lock and key.

3d. Each article of clothing should be distinctly marked with the owner's name, in order to prevent confusion or loss, and must be sent in good order and condition, not only upon the first entrance of the pupil, but also at each subsequent return from home after the vacation.

4th. A small amount of money will be required to be deposited with the Superintendent for the benefit of the pupil, should need require.

5th. Pay pupils charged $\$ 150$ for session of nine months.
6th. Except in cases of sickness, all pupils are expected to remain at the Institution from the commencement to the close of each session, at which time parents or friends should be prepared to take them home to spend the vacation.

7th. The scholastic session commences on the first Wednesday in October and closes on the last Wednesday in June.

8th. No person of imbecile or unsound mind, or confirmed immoral character, or incapacitated by physical infirmity for useful instruction, will knowingly be received into the Institution; and in case any pupil shall, after trial, prove incompetent for useful instructions, or wilfully and persistently disobedient to the regulations of the Institution, such pupil will thereupon be discharged.

## LOCATION.

The South Carolina Institute for the Education of the Deaf and the Blind is located at Cedar Springs, Spartanburg County, four miles south of Spartanburg Courthouse, and one mile west of Cedar Spring Station, on the Spartanburg and Columbia Railroad, and occupies a healthful and pleasant site.

# FIRST ANNUAL REPORT 

OF THB

## AUDUBON SOCIETY

OF

## South Carolina

January 1st, 1908

## LETTER OF TRANSMITTAL.

To His Excellency M. F. Ansel, Governor of South Carolina.
Sir: The treasurer of this Society is required by law to make an annual report to you of the receipts and expenditures of the Audubon Society of South Carolina, and we beg leave to hand same to you, together with a report of the Society's work for the year ending January ist, 1907, and such recommendations as appear to us judicious or necessary in the way of legislation.
B. F. TAYLOR, President.

## REPORT.

## ORGANIZATION.

On March 16th, 1907, there went into effect the statute creating the Audubon Society of South Carolina, with powers of a State Game and Fish Commission. On April 9th, the incorporators held a meeting in Columbia, and the following officers were elected:

President, B. F. Taylor.
Vice-president, Dr. H. N. Snyder.
Temporary Secretary, George S. Heyward.
Treasurer, A. R. Heyward, Jr.
The following were elected to constitute the Board of Directors:
Neils Christensen, Beaufort ; O. B. Martin, Columbia ; Dr. P. H. Mell, Clemson College; C. P. Wray, Ridgeway; D. H. Coker, Hartsville; Mrs. Augustine Smythe, Charleston; A. F. Lever, Lexington, and R. I. Manning, Sumter.

## EXISTING CONDITIONS.

Immediately after this meeting, the President began gathering all information available regarding the exact condition of game and fish protection in the State. He soon ascertained that in many sections but slight attention was paid to any of the game and fish protective laws. Game birds and deer were constantly killed out of season, and in some quarters a large traffic of their dead bodies whs carried on for market purposes. Fish were being slaughtered in immense numbers by means of traps and dynamite. Song birds were shot indiscriminately and many were trapped to be shipped North. The beautiful sea-birds, which nest in colonies along the coast, were constantly robbed of their eggs each summer. The license law, which formerly required every non-resident hunter to pay $\$ 25$ for shooting license, had been systematically avoided. Under the old law, fourteen county Game Wardens had been appointed. Letters to all these Wardens brought out the fact that, owing to inadequate pay, lack of State supervision, and for other causes, they had been practically inactive, one of them only reporting two convictions for violation of the Game Laws for the year previous. On the other hand, from all over the State, letters began
to pour in, asking for help from the Audubon Society, showing that large numbers of people were interested in bird and fish protection, and hailed with much joy the fact that the State had at length taken an interest in preserving these valuable assets to the commonwealth.

## LAWS DISTRIBUTED.

One of the first things to claim the attention of the Audubon Society was the publication in pamphlet form of the State Game Law known as the "Audubon Law." Fifteen hundred copies were printed and distributed throughout South Carolina, and the more important features have been printed frequently in the public press of the State. The importance of this work can hardly be underestimated, as there is no doubt that many people violate the Game Laws through ignorance of the statutes. More than five thousand pamphlets, with plates showing the wild birds in their natural colors, have been distributed in the schools, among farmers, and elsewhere. These were furnished by Mr. William Dutcher, President of the National Association of Audubon Societies.

## APPOINTMENT OF WARDENS.

The work of revising and enlarging the warden force at once began. Some of the officers who displayed most interest were recommissioned by the government as State Wardens, and a number of additions have been made. The following is a list of the names of the Wardens appointed and serving up to December 15, 1907:
I. E. Rutledge, Lancaster.

George A. Malloy, Cheraw.
W. L. Samson, Cross keys.

Gcorge W. Hazzard, Cat Island.
William Elliott, Yemassee.
D. J. Salley, Orangeburg.

William Lykes, Lykesland.
S. M. Rice. Jr., (E. U.) Union.

John N. Bates, Spartanburg.
John D. W. Watts, Laurens.
J. H. Robinson, Greenville.

John Weiking, Charleston.
Kajitan E. Kremser, South Island. Victor E. Thelming, McClellanville.

Theo. S. Johansen, Frogmore.
Charles Anderson, Port Royal.
Richard Stonebridge, Savannah, Ga.
E. Y. Ferguson, Enoree.
E. A. Sessions, Ridgeway.
J. W. Wilson, Conway.

Frank E. Johnstone, South Island.
W. S. McKaskill, Conway.
W. Fletcher Smith, Gaffney.
C. W. Boykin, St. Stephens.
S. P. Holliday, Pineville.

W, S. McClelland, Pineville, N. C.
H. Warren Richardson, Garnett.

Thomas B. Earle, Anderson.
Halvor S. Svendsen, Charleston.
Charles Johnson, South Island.
James E. Swan, Mt. Pleasant.
Frederick H. Bruggeman, Hilton Head.
Robert Sisson, Savannah, Ga.
K. S. Villepigue, Camden.
W. H. Wylie, Rock Hill.
J. H. Hook, Clemson College.

Dr. L. H. Russell, Greenwood.
The warden force is being enlarged as rapidly as funds will permit, and it is expected that before long there will be two or more active officers in every county. It has been found hard to get wardens in a number of the counties, because they are required to work, and because, in some instances, they do not wish to make cases against their friends.

## WARDENS' DUTY AND PAY.

It is the duty of a Game Warden to acquaint the people of his territory with the character of the laws for the preservation of the wild game and fish; to see that the $\$ 10$ non-resident hunter's license, now required by law, is paid, and to arrest and prosecute all persons found guilty of infractions of the game laws. Wardens work under the direction and control of the State Audubon Society, and are required to make reports of their activities to the Columbia office. It is hoped that soon arrangements can be made to put a number of these officers on a regular salary, but at the present their
remuneration consists of fees for work actually aceomplished, viz: $\$ 10$ for each conviction which they secure, and $\$ 2.50$ for each nonresident license they may be the means of collecting.

## WORK OF WARDENS.

Although the law has been in operation but a short time, its efficiency has already been demonstrated. In addition to an immense amount of educational work, the Wardens have found it necessary to bring prosecutions in a number of instances. As a result of their activities, convictions have been secured in the following cases:

$$
\begin{aligned}
& \text { Killing quail out of season.......................... } 4 . \\
& \text { Dynamiting fish........................................ } \\
& \text { Hunting without licenses............................... } 4 \\
& \text { Killing non-game birds............................... } 2
\end{aligned}
$$

Eight cases are now pending in the courts. One Warden has destroyed over thirty traps in one stream which were illegally set for catching fish. The dynamiting of fish has already been stopped in many places, and hurdreds of irresponsible people have been taught that the Fish and Game Protective Laws must be respected. On the faithfulness and activity of these officers must depend much of the lasting good for which the Audubon Society is working. Many of the Wardens have but recently been appointed and as yet have not had sufficient opportunity to show their abilities.

## SECRETARY RICE.

The secretary, James Henry Rice, Jr., has been in the field a large part of the time since May ist, soliciting members for the Society, selecting Wardens, and performing other duties of similar character. He has already visited over half the counties in the State. Mr. Rice has, however, been forced to give his attention to other duties than those of the Society, as his pay is not sufficient from this source alone to maintain him. We hope the income for the coming year will warrant the appointment of a man to give his whole time and attention to this work. His services in the field have been satisfactory, but with more funds with which to keep him active, much more of the territory could have been covered. He finds in his visits throughout the State that the unanimous opinion of the people is that the Society is greatly needed and that the Game Protective Laws should be made more adequate by
amendments in a number of instances. These changes are suggested later in this report.

## GOVERNMENT CO-OPERATION.

By ditection of the National Government, the lighthouse keepers on the coast have been instructed to protect the sea-birds and to cooperate with the Audubon Society. We have had all the eight keepers appointed Game Wardens, with the understanding that their duties as Wardens must not interfere with their duties as light keepers. Already we have obtained from these gentlemen much valuable information regarding breeding colonies, and their constant trips from their stations to Charleston, Georgetown, Beaufort, and Savannah, will enable us to prevent many depredations on islands during the breeding season. The United States Department of Agriculture has also furnished the Society with several hundred copies of their publications of "Game Laws" and the "Value of Birds to Agriculture." These have all been distributed in the State.

## THE OUTLOOK.

The outlook for the Audubon Society work in South Carolina is very promising. Already a very substantial membership has been enrolled and this will increase as the objects and purposes of the Society become more widely known. There are hundreds of people in the State who enjoy the sport of hunting or angling; these should all be interested in its work. The owners of private game preserves, whether residents or non-residents of the State, will doubtless gladly co-operate with the Society, as, indeed, some of them have already signified their willingness of doing. Every farmer in South Carolina should be a loyal friend of the Society, which is laboring to preserve the valuable insect-eating and weed-dstroying birds, by whose efforts in field and grove his lands are enabled to produce their annual yield. And then the outlook is bright because the movement is a good one and is founded on good, sensible principles. In thirty-seven States in the Union, Audubon Societies exist, and everywhere they are having an enormous influence for good.

> B. F. TAYLOR, President.

## 1090

## Treasurer's Report.

> December 19, 1907.
> His Excellency M. F. Ansel, Governor of South Carolina.
> Sir: I beg to report the following as my receipts and disbursements to date, as treasurer of this Society:

Receipts.
Membership dues:

$$
\begin{aligned}
& 113 \text { at } \$ 600 \\
& \$ 678 \text { oo } \\
& 4 \text { at } \$ 5 \text { oo. } \\
& 2000 \\
& \text { i6 at } \$ \mathrm{I} \infty \text {. } \\
& 1600
\end{aligned}
$$

$\$ 71400$
Advanced by B. F. Taylor. $\therefore . . . . . . . . . . .$. ... 14135
Advanced by National Association............ 20000
$\$ 1,05535$
Disbursements.
Secretary's salary from April 23............. $\$ 25519$
Secretary's traveling expenses................. . . . 60469
Exchange on checks........................... 1 . 0
Game Wardens' expenses....................... 65 เо
Stationery and printing...................... 2430
Compiling Audubon Law..................... 10 . 00
Badges ........................................ 19 50
Express ....................................... 90
Payment on typewriter by secretary.......... 2250
\$1,003 18
Balance on hand..................................... $\$ 5217$
Yours very truly,
A. R. HEYWARD, JR. Treasurer Audubon Society of South Carolina.

List of Members of Audubon Society of South Carolina.
E. P. Alexander South Island, S. C.
P. N. Buckingham. Barnwell, S. C.C. N. BurkhalterBarnwell, S. C.
C. J. S. Brooker Bamberg, S. C.
M. O. Dantzler Orangeburg, S. C.
R. L. Montague Charleston, S. C.
R. P. Tucker. Charleston, S. C.
A. S. Winslow Inman, S. C.
A. L. White Spartanburg, S. C.
Fred Bryant Spartanburg, S. C.
R. H. Nesbit Spartanburg, S. C.
Arthur Irwin Spartanburg, S. C.
Warren DuPre Spartanburg, S. C.
H. T. Crigler Spartanburg, S. C.
T. E. Screven Spartanburg, S. C.
Dr. DeFoix Wilson. Spartanburg, S. C.
C. E. Fleming Spartanburg, S. C.
A. M. Law Spartanburg, S. C.
J. B. Lee Spartanburg, S. C.
J. F. Floyd Spartanburg, S. C.
G. F. Heidt Charleston, S. C.
J. A. Wyman. Bamberg, S. C.
J. F. Bamberg. Bamberg, S. C.
E. G. Seibels Columbia, S. C.
J. J. Seibels Columbia, S. C.
C. W. McCreery Columbia, S. C.
G. A. Guignard . Columbia, S. C.
John Ambler Timmonsville, S. C.
Otranto Club Charleston, S. C.
W. D. Gaillard Charleston, S. C.
C. C. Twitty Hartsville, S. C,
C. E. Danner, Jr. Beaufort, S. C.
W. R. Hale Greenville, S. C.
T. P. Cothran Greenville, S. C.
J. A. McCullough Greenville, S. C.
Dr. H. M. Perry. Greenville, S. C
J. J. Cowart Greenville, S. C.
Lewis \& Hartzog Greenville, S. C.
Will Schade Greenville, S. C.
W. G. Sirrine Greenville, S. C.
W. M. Fishburne Columbia. S. C.
Dr. H. E. Heinitsh Spartanburg, S. C.
Frank Gilliland Spartanburg, S. C.
S. J. Nichols Spartanburg, S. C.
Isaac Andrews. Spartanburg, S. C.
Geo. W. Gage Chester, S. C.
W. A. Neal. Atlanta, Ga.
W. H. Andrews Georgetown, S. C.
J. B. Johnson Georgetown, S. C.
N. H. Blitch ..... Charleston, S. C.
L. W. Boykin ..... Boykins, S. C.
J. D. Going ..... Union, S. C.
S. M. Rice, Jr Union, S. C.
Allan Nicholson Union, S. C.
W. Fletcher Smith. ..... Gaffney, S. C.
W. J. Roddey Rock Hill, S. C.
J. T. Roddey Rock Hill, S. C.
W. H. Wylie Rock Hill, S. C.
W. W. Boyce Rock Hill, S. C.
J. B. Johnson Rock Hill, S. C.
Pride Ratteree Rock Hill, S. C.
B. M. Fewell Rock Hill, S. C.
Dr. W. W. Fennell Rock Hill, S. C.
Jno. G. Anderson Rock Hill, S. C.
C. W. F. Spencer Rock Hill, S. C.
G. H. Greene Lancaster, S. C.
A. R. Craig. Marion, S. C.
W. J. Montgomery Marion, S. C.
E. A. Gasque Marion, S. C.
W. F. Stackhouse Marion, S. C.
E. T. Wilcox Marion, S. C.
C. A. Woods Marion, S. C.
Will Stackhouse ..... Marion, S. C.
D. F. Miles Marion, S. C.
D. K. Davis Marion, S. C.
E. B. Wheeler Marion, S. C.
Heary Mullins ..... Marion, S. C.
Henry Buck Marion, S. C.
J. M. JohnsonMarion, S. C.

Mrs. H. E. Ravenel Charleston, S. C.
C. P. Wray Ridgeway, S. C.
P. H. Mell Clemson - College, ..... S. C.
D. R. Coker Hartsville, S. C.
S. H. Hay .Clover, S. C.
R. I. Manning Sumter, S. C.
R. B. Herbert Columbia, S. C.
A. F. Lever Peake, S. C.
Neils Christensen, Jr. Beaufort, S. C.
R. A. Lancaster Columbia, S. C.
Z. Carwile Ridge Spring, S. C.
F. G. Asbill. Ridge Spring, S. C.
J. J. McSwain Greenville, S. C.
T. L. Parker Greenville, S. C.
Frank Owens Rock Hill, S. C.
W. E. Johnson. Camden, S. C.
The above members paid $\$ 1.00$ each.

We have a large list of members from whom dues have not been collected which is not included in this report. Some of these members have paid their dues since the date of the Treasurer's report.

## 1095

## Secretary's Report.

Work began for the Society on April 23, last, and I have visited nearly every county in the State. In most places there was interest, more or less active. The result of the work may be seen partly in the President's and Treasurer's reports; but this will give hardly more than a general notion of the field covered and of the work done.

## Two Important Points.

Two things impressed me from the outset, and with understanding and emphasis of these two, the rest ought to be fairly easy. The first is that the game of the State is being exterminated and that extermination is going on very rapidly. An old hunter, who is perfectly reliable, told me that, up to a few years ago, he killed about a thousand summer ducks every year. For several years past he has not killed more than a hundred a season and frequently less. From a great many rivers the summer duck has disappeared; this duck is on the verge of extinction. The statement is equally true of the woodcock. Over wide areas partridges (quail) have ceased to exist in quantities sufficient to furnish a day's shooting. Turkeys alone appear to be increasing. What is true of game is equally true of fish in the rivers, such destruction having been made among them, especially among bream and redbreast perch, as to warrant the belief that these fish will disappear from the streams of South Carolina within a comparatively short time, unless rigorous measures are undertaken for their protection.

These statements are based on aetual observation and on testimony of men known to me to be reliable and to have first-hand knowledge of the subject.

The second fact that impressed me was that negroes and other vagrant hunters are responsible in large measure for the disappearance of game. A case is known where thousands of ducks have been killed in one day by rice field negroes and these ducks were sold to markets and shipped. Around many towns are negro pothunters, who supply town patrons with game in return for ammunition and other supplies furnished. This goes on to an extent that no one would suspect that had not investigated the subject as the Audubon Society has done.

It has been a subject of serious inquiry and discussion on the part of the South Carolina Audubon Society to learn how to meet this case, for manifestly, owing to the great number of idle field hands in the fall and winter and their wide dispersion over the State, it would be impracticable to reach them in the ordinary way. I suggest, for consideration, the laying of an annual tax of one dollar ( $\$ \mathrm{I} .00$ ) on every shotgun in the State, exempting rifles from taxation; as these might be needed for protection in many cases. Such a tax would add a fund to the schools or roads, over and above anything that might be required for enforcing the law, of several thousand dollars in each county. The tax on the shotgun would be better than a hunter's license, as the evasion of it would not be easy.

These irresponsible gunners shoot song and insect birds indiscriminately at all seasons, and create especial havoc with summer ducks, when the old duck is caring for her brood along the rivers. If the condition of affairs is only considered and the rapid extinction of game viewed in the true light, then some such tax will be laid, and the Society can look after its enforcement.

## Game Srason.

In making recommendations as to close and open seasons for game, the Society is especially solicitous that uniform laws be enacted. One of the greatest embarrassments now facing operations is the multiplicity of laws. There is no real reason why laws for shooting partridges should differ in different parts of the State. The pairing and nesting time is the same on the seashore and in the mountains. This is true of all kinds of game considered in these recommendations. The Society is of the opinion that the laws should aim rather at the protection and preservation of the game than at the convenience of the sportsman.

With this in view, the following recommendations have been made:

Open Season for Game.
Deer-November I to January I.
Partridges and turkeys-November ito April 1 .
Doves-August I to January 15 .
Woodcock-August 1 to February 1 .
Summer duck-September ito February 1.

Marsh hens and rails-September I to March I.
Willett-November 1 to March 1 .
Blackbirds-October i to March I.
Squirrel-September 1 to April I.
All classes of edible ducks should be listed as game birds, as should snipe, plover and curlew.

The Society's experience is convincing that if there were sufficient funds with which to pay Wardens there would be no difficulty in enforcing the laws. With the machinery once set in motion, the non-resident license and other licenses laid would be sufficient to carry on the work, but until provision is made for this, the Society can operate only under great difficulty and embarrassment.

Our observation is, that as a rule there is but little disposition to kill the non-game birds except through ignorance, and we hope to inform the people as to their value and in this way put a stop to such useless destruction. The most usual violations seem to be the killing of nighthawks or bull bats and of smaller birds by negro boys and ignorant persons.

## STATEMENT FROM THE SECRETARY.

In making the recommendations embodied in the report as to seasons for various kinds of game. President Taylor and myself have tried to ascertain the facts as to the habits of game in South Carolina. In addition to long personal experience in the field in every part of the State, I have consulted hunters in every county visited, some of them men of thirty years' experience, and even more. Difference of opinion was to be expected in a matter where opportunity for observation varied with individual experience. But on one point there was remarkable unanimity among all classes of sportsmen. They agreed as to the rapid disappearance of game from areas once teeming with birds and animals. It is true some attributed the fact to different causes; but not one disputed the fact that the game was going fast, and that, unless immediate action were taken, some classes of game would disappear entirely. Among the classes threatened with extinction are the summer duck and the woodcock, both among the finest game birds and formerly found in great numbers in their natural habitat.

The destruction of woodcock takes place usually during February and March and is due to the flights of these birds during hard freezes. The swamps becoming frozen, woodcock fly down the
rivers seeking warmer latitudes. They are weakened and emaciated by their flight and fast, hence they are easily slaughtered, and in many cases they are killed with sticks. Such birds are useless for the table for the most part, but they furnish something to shoot at and are sacrificed to this insane spirit of slaughter. What makes the case worse is the fact that woodcock are nesting at this season, or have finished nesting and have their young with them. For which reason, since woodcock lay in February, the killing of them ought to be prohibited after the first day of that month. Thus a double purpose will be served. Slaughter will cease and the birds will receive protection during the nesting season.

In the case of the dove the greatest destruction comes during the months of February and March, since at this season the doves are half starved for lack of food and will draw easily to bait. Fields are baited, sometimes for a week, with peas or corn and the field surrounded by a number of fine wing shots. In one case I noted the killing of $\mathrm{r}, \mathrm{I} 80$ doves in a single day by one party of about twenty men. As many birds fly on and fall dead, where they are not retrieved, it follows that the actual number slain far exceeded the total bagged. The dove has finished nesting by August and is ready to be shot and eaten. It is impossible at this season of the year to kill doves in great quantities, and hence the season has been set out as from August I to January I. If this recommendation is carried out there will be an increase in the number of doves in a short while, as they raise several pair of young during the early months of the year.

It is my personal opinion that partridges ought not to be shot before December I, as there are many young birds during the month of November, but inasmuch as the Society is cultivating a sentiment which it is hoped will fruit in a more enlightened public opinion, and many sportsmen are opposed to the change, it has been recommended that the season begin November 15 for the present and end April I. It can not be too strongly urged that this law ought to be uniform throughout the State. There should be no exceptions, for one of the greatest difficulties in enforcing a law lies in confusion as to its terms. The partridge stands at the head of the world's game birds. None other surpasses it, either in the sport furnished or in the delicate flavor of its flesh, justly esteemed wherever known. Not very long ago any part of South Carolina could furnish abundant partridge shooting, but this has become a thing of the past except where lands have been preserved or in the
large areas of the coastal region. It is merely a question of whether the partridge shall be preserved or destroyed. He is going fast. This is due to lack of enforcing the laws, to multiplication of hunters and especially of market hunters, who know no compunction as to how birds are killed nor in what numbers. Last fall great. numbers of partridges spoiled in refrigerators in the city of Charleston, so great was the supply brought in from surrounding regions. The difficulty is to make the public realize how much of this goes on. If the real condition were known there would, we are sure, be speedy action.

With respect to deer, I have no hesitancy in saying that, taking the State as a whole, deer are raidly diminishing. In some small areas, sedulously protected by paid Wardens there is said to be increase. But for several seasons past a species of murrain, called black tongue, has raged among the deer and they have died in great numbers. I have seen many of them dead in the woods. At the same time the numerous lumber companies along the coast have been cutting out the swamps, and opening up areas, hitherto inaccessible, with railroads and tram-roads. This has driven deer from their natural fastnesses into the open woods, where they fall victims to the all-devouring hunter. The slaughter is especially heavy when the rivers are in freshet, and the does, great with young, lie along the shore to rest. Here they are shot down ruthlessly, with no regard to the humanity which ought to be called forth by their condition. The laws should forbid, under heavy penalty, the killing of does at any season of the year. One month is long enough in the present condition of the deer and more ought not to be allowed until they have regained ground lost during the last decade.

The season for the summer duck has been set down as from September I to February I, and this might even go further and prohibit their killing at all for two or three years, until they have had opportunit to replenish their sadly depleted numbers.

In order not to make this report too long, it may be concluded here with a few general observations.

The game of the State is the natural heritage of the people of the State, and all wild birds, whether resident or migratory, are held to belong to the State and not to the individual. This is an allimportant point and is sufficient answer to the claim by many landowners that they can do what they please on their own lands. Such sentiments are not worthy of a civilized country. In conceding a man's right to keep any and all parties off his lands, even without

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previous notice, the State has gone a great way toward securing the land-owner in the enjoyment of his possession. That the State should go further and permit the land-owner to violate the criminal statutes at will is preposterous; yet it is widely maintained in South Carolina.

## Hunting Clubs.

There are many hunting preserves along the coast, held, in the main, by Northern sportsmen. Some of these clubs own their lands; other hold them under lease, and still others simply buy the shooting privileges. The gentlemen composing the clubs are anxious to comply with State laws and have assured me that they stand ready to co-operate in any way in the enforcement of law.

Among the more prominent clubs may be mentioned the following: Hollins and Chelsea Clubs in Beaufort county ; the Okatie Club in Beaufort and Hampton counties; the Pallachucola, Pineland and Belmont Clubs in Hampton county. These clubs together hold about one hundred thousand acres of land, the largest holder being the Okatie Club, with sixty thousand ( 60,000 ) acres.

The Oakland Club, west of St. Stephens, in Berkeley county, has a holding of sixty thousand ( 60,000 ) acres. Then in Georgetown county are the Santee Gun Club, with ten thousand ( 10,000 ) acres and the Annandale that controls the duck shooting in the marshes of North Inlet. This latter club had a twenty-year lease that expires with this year, and their holding will be taken over by the present owner of the property, Mr. B. M. Baruch, of New York. These comprise the principal hunting clubs of the interior; there are others on Hilton Head island, and some on smaller islands around Beaufort, and in addtion to the clubs there are private preserves held by non-residents. In all, there are certainly at least several hundred thousand acres of land held in this way.

The game of the State should receive equal consideration with the shellfish and migratory fish interests, as many times as many people are interested and the area affected is too much larger to institute any comparison. The Audubon society needs help to perfect its organization and to get its machinery going. Once established it should be, and we believe would be, not only self-supporting, but would return a considerable revenue to the State.

We find that most of the laws directed towards the protection of non-migratory fish apply only to certain localities and that there is
absolutely no protection afforded in many of the counties. In these very counties where there is no protection the best of the fish have become almost extinct, but we believe that with adequate protection the streams in the upper and middle counties will soon be populated again with these valuable species. In addition, we would suggest that by application to the government for fry the streams could be stocked and kept stocked if protected. The President of the Society has, with the recommendations of Mr. A. F. Lever, secured quite a number of fry of different kinds for distribution around Columbia, and any citizen can do the same by application to his Congressman if the government has the fry to supply and if the conditions justify the plant of fish.

We think that a bill covering the protection of fish should be passed, and with this in view we have carefully studied the laws of quite a number of States on this subject and have prepared a bill which we think will cover the points discussed.

Yours very truly,

> JAMES HENRY RICE,
> Secretary.

## REPORTS RECRIVED FROM GAME WARDENS THAT HELD COMOMGSIONS PRIOR TO MARCH, 1907.



REPORT OF GAME WARDENS WORKING UNDER THE AUDUBON EOCLETY TO DECEMBER 15, 1907.


## INDEX

## VOLUME I

PÁGE
Report of Comptroller-General, Part I, Pension ..... I
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Report of Audubon Society ..... 1083


[^0]:    *February written in brackets is an error in the Act, and should be frot Monday th Maroh.

[^1]:    Abercromble, John A., Fasley (Co. C. 3d reg.), age 60.
    Bagwell. F., Fasley (Co. K, Orr's), age 60.
    Chapman. Josephus. Hazel (Co. G. 12th reg.), age 61.
    Childs. T. J.. Plckens (Co. H. Whitc's Bat.), age 78.
    Chappell, A. W., Hazel (Co. K. 62d reg.). age 66.
    Canh. Marvel, Liberty (Co. H, Palmetto reg.), age 60.
    Fortner. H. M., Rock (Co. H, 2d reg.), age 61.
    Grimn. Henry, Fasley (Co. K. Hampton's Leglon), age 0 .
    Gasamay. 8. J., Klngs (Co. D, 22d reg.), age 71.
    Morgan, G. H., Knob (Co. FE, Bth N. C. C.), age 73.
    Relos, J. H., Loopers (Co. E. $62 d$ N. C.), age 66.

[^2]:    Anderson, Henry, Mt. Wllling (Co. F, 19th reg.), age 77.
    Attaway, E., Blg Creek (Co. K, 7th reg.), age 65.
    Barnes, H. A., Blg Creek (Co. M, 7th reg.), age 71.
    Berry, Danlel, Denny (Co. B, 14th reg.), age 64.
    Black, David, Delmar (Co. I, 46th Miss. reg.), age 68.
    Bowles, H. W., Ridge Spring (Co. F, 20th reg.), age 80.
    Coursey, J. F., Wards (Co. C, I. B. C. V.), age 62.
    Crouch, D. R., Butler (Co. G, 7th reg.), age 65.
    Crooch, William, Denny (Co. B, 14th reg.), age 67.

[^3]:    -Mined but not shlpped. †Mine recently opened.

[^4]:    19-R. \& R.-(600)

[^5]:    2-R $\&$ R-(500)

[^6]:    20-R. * R.-(500)

[^7]:    $\mathbf{s a - R} \& \mathbf{R}-(500)$

[^8]:    - Fanghen collected 40 apeciea from thia horizon: Venericardia planicoata, Venericardia altscontata, endopachy Macluri, pteropis lapidoma, corbula oniscm, turbinoliz phareta, meealis obruta, eto

[^9]:    The important geological relations of thin locality were discovered by the writer, May. 1904; subbequently etudied in detail in conjunction with Dr. Burne, of the Bmithmonian Inot. Jube, 100.

[^10]:    -For deacriptions of the clayy herewith Listed, mee "A Preliminary Report on the Clays of South Carolition.

[^11]:    -- (C. D. Bhepard, Jr., analyst.)

[^12]:    -Survey No. 727, Williamsburg County, 1.8 miles S. W. of Gourdin, on scarp,

[^13]:    (*As discriminated by Fontalne from the Tuscaloosa and Rarltan.)

[^14]:    -Incident to the earthquake of 1886 vibration caused the supernatant mass of vari-colored mands to crack and at the same time settle more oppressively upon the quderlying water-bearing gands, from which the water was thus squeezed out and forced up through the mult-colored sands whose degree of nnemens varies somemhat with the color. The water gushed through the surface and spread radially with a velocity decreasing as it progressed; this variation in the velocity exercised orting actlon. which deposited the sedment accordlag to the sise of its particley and, therefore, according to color. These gediments ware separately collected and placed to mail rlasa cyilndery in auccessive layers, ranging in colors from white难rocest the jellowa, the reda, the graym and gray-blean, and thus contributod extenalvely to the morbld passion for calemity relics.

[^15]:    "Expenditures on Rural Schools an Investment." Prof. W. H. Hand, University of South Carolina.
    "Ways in Which Rural Schools May be Graded." Prof. W. K. Tate, Charleston, S. C.
    "Coöperation of Parent and Teacher." Mrs. A.' F. McKissick, Greenwood, S. C.

    Each person who was fortunate enough to attend this meeting returned to her home feeling stronger and better prepared for a new year's work.

[^16]:    ist-Old County School, Jamison, S. C.
    2d-New Graded School, Jamison, S. C.
    3d-Principal's Class Room, New Graded School, Jamison, S. C.
    4th-Student-body, New Graded School, Jamison, S. C.
    5th-Grounds, looking South, New Graded School, Jamison, S. C.

[^17]:    "Notwithstanding what has been done, there are in the county schools whose pupils are ignorant that there is such a thing as a school library.

[^18]:    2-R. \&. R.-(600)

[^19]:    - Profemor B. C. Davis was granted a year's leave of absence, whthowt pay, to attend the Unlveraity of Cblcago, and Profemsor Smith takea hla place.

[^20]:    1 have examined and found correct this atatement.
    Charleaton, Auguat $1,1007$.

[^21]:    *The studies in the Freshman Class for all the Engineering Courses are the same, and hence the differentiation cannot be clearly made between the courses until the beginning of the Sophomore year. The division between the Civil and Mechanical Courses is the present preference of the students. The Agricultural Freshman Class is more clearly defined by the character of the studies.

