OFFICIAL PAPERS

ON THE MEDICAL STATISTICS AND TOPOGRAPHY

OF

MALACCA AND *PRINCE* OF *WALES ISLAND*

AND ON THE PREVAILING DISEASES

OF THE

TENASSERIM COAST.

1830

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MEDICAL STATISTICS AND TOPOGRAPHY

OF

MALACCA

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Prince of Wales' Island

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ON THE PREVAILING DISEASES OF THE

Tenasserim Coast.

BY

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AND

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ASSISTANT SURGEON MADRAS ESTABLISHMENT IN CHARGE OF THE GARRISON AND GENERAL HOSPITAL FORT CORNWALLIS.

PINANG.

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PREFACE.

Four of the following Papers were originally intended to be presented to the Medical and Physical Society of Calcutta; but—as the Honorable Court of Directors had, in their public letters, complained of the total want of information on the Medical Statistics and Topography of the Stations in the Straits of Malacca, and called for documents elucidatory of these subjects,—they, along with one expressly drawn up for the occasion, were forwarded to the Government of Fort Cornwallis, with the hope, that a plain statement of facts might in some degree supply the existing deficiency, and tend to remove the vague and erroneous reports that have gone abroad respecting the insalubrity, especially of Prince of Wales' Island. Government was pleased to form a favourable opinion of the communications, and ordered a limited number of copies to be printed for transmission to the Honorable Court, and for distribution among the friends of the respective parties.—As an instance of the ideas entertained by some regarding the unhealthiness of this Island it may be sufficient to remark, that in a popular standard-work (Hamilton's E. I. Gazeteer Ed: 1828*) it is stated seemingly as a matter of surprise, that a Governor should have withstood the baneful effects of the climate for three years!*

Circumstances have prevented the printing of a Paper on the Topography and Diseases of Singapore, drawn up by a talented Medical Officer of the Madras Establishment, who has been stationed there some time; but this is to be the less regretted, as these subjects have been already ably elucidated by Mr. Crawfurd, *himself a professional man, in his "Embassy to the Court of Siam and Hue."—Since he wrote, great improvements have been made in the town and roads: and a new cantonment has been established for the troops, on a dry and elevated situation, about a mile to the N. W. of the town. To Europeans, tho' the appearance of the Island would seem to argue against its salubrity, Singapore has hitherto proved remarkably healthy.—Natives, as might be expected from the similarity of the climate, and other circumstances influencing health, suffer equally, and from the same diseases as at Malacca and Pinang; and the observations contained in the following pages will in most instances be applicable to the station now in question.*

Pinang,
30th June, 1830.

ERRATA AND ADDENDA.

In the Preface, after "*Singapore has hitherto proved remarkably healthy*" add "*which may be attributed to the swamps in the neighbourhood of the town being overflowed at each tide.*"

In the Contributions to the Medical Topography of Malacca, Page 2 line 23, for *especially* read *especially;* in note at bottom for *Thurnberg* read *Thunberg.*

Page 4th line 13 from bottom, for *in they* read *in the* and for *the cultivate* read *they cultivate.*

Page 5th line 10 from bottom; for *melongena* read *melongena.*

Page 12th line 8, for *solanun* read *solanum.*

IN THE NOTES ON THE PHAGEDÆNIC ULCER &c.

Page 6th line 2 from bottom, dele *as.*

Page 7th line 12 from bottom for *evacutions* read *evacuations.*

Page 8th line 13 from bottom, for *threathened* read *threatened.*--line 15 for *Ipecachuanhæ* read *Ipecacuanhæ;* bottom of the page, after *anodynes* add *emollient enemata and Castor oil. Diarrhœa soon yielded to anodynes and Oleum Ricini or to the Pulv. Ipecac: Com-*

Page 9th bottom note for *circincetus* read *circinatus.*

Page 11th line 7 for *grs.* read *gr.*- line 20 after *ounce* add 1. line 31 for *ommid* read *omnia.*

IN THE CONTRIBUTIONS TO THE MEDICAL TOPOGRAPHY OF PRINCE OF WALES' ISLAND.

Page 4th line 11 from bottom for *obout* read *about.*

Page 20th line 30 for *Maismata* read *Miasmata.*

Page 23d remove the † after *respect* in line 4, and place it after *heat* in line 5.

Page 25th line 33 for *Ciminals* read *Criminals.*

Page 31st line 11 for *speedy* read *speedily,* and for *deaths* read *death.*

Page 39 line 16 from bottom for *name* read *mane.*

Page 43d line 14 for *inflamation* read *inflammation.*

Page 45th line 11 from bottom, for *disease* read *diseases.*

Page 47th line 1st for *Survy* read *Scurvy.*--line 10 from bottom, for *greater* read *greatest.*

IN THE OBSERVATIONS ON THE REMITTENT FEVER OF PRINCE OF WALES' ISLAND.

Page 2d line 15 for *this is* read *constituting.*

Page 8th line 6 from bottom dele *morbid.*

Page 18th line 30 for *practise* read *practice* for *Diarrhæ* read *Diarrhœa.*

IN THE OBSERVATIONS ON THE ULCERS OF RANGOON &c.

Page 3rd line 6 from bottom for *Magosa* read *Margosa,* line 1st from bottom for *Hy-drag.* read *Hydrarg.*

Page 9th line 11 for *fatility* read *fatality*—line 39 remove the comma after *party* and place it after *attacked.*

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ERRATA.

In the Paper on the Medical Topography of Malacca P. 5, bottom note, for *horiss* read *horis*; for *procdat*, read *procedat*.

In that on the Topography of Prince of Wales Island, P. 1. 8th. line from the bottom, for *taken* read *takes*---page 31st 8th. line from the top, for *tropicpl* read *tropical*.

In Table XV. For *Natives* in the General Hospital read *Europeans*, and vice versa.

N. B.---A few typographical errors, notwithstanding the most careful correction, can scarcely be avoided, with native compositors; the reader is requested to mark these if any, in the course of perusal.

CONTRIBUTIONS

TO THE

*Medical Topography of Malacca,**

By T. M. WARD, *M. D.*—MADRAS ESTABLISHMENT.

MEDICAL TOPOGRAPHY, is at all times and in all countries intimately connected with the preservation of health. That of the different stations of our troops, Native as well as European in India, is of especial importance, as the nature of the prevailing diseases, and the mode of treating them so much depend on the various circumstances of soil, climate and situation. This importance is increased, when in any district, it is found, that there prevail endemic or epidemic maladies, which frequently prove fatal; as it is only by a correct knowledge of causes, that we can guard against the occurrence of disease, or remove it by remedies when once it has appeared. Malacca is interesting from its antiquity, and its history; from its being resorted to by invalids from other stations in India, and from its being the only garrison we possess in the whole Malayan peninsula. What applies to it, will be found to apply equally to this extensive tract, great part of which is as yet untrodden by Europeans. The town has at various times been occupied by the English, but I am not aware of any existing description of its climate and other circumstances which may affect the health of its inhabitants, or any account of the diseases which prevail there. Trusting that the following notes, drawn up in 1828, may in some measure supply the deficiency, and that my desire to be useful, even in a slight degree to those who may hereafter be employed professionally in the Straits, will be my excuse for any defect in style or arrangement, I submit them to the Honorable Members of this Government.

The earliest account we have of Malacca is in A. D. 1252, when the Malays driven from Singapura by the King of Java, migrated northwards and founded the town. In 1290, we find the Arabs, people of great influence in the peninsula, and the Malay inhabitants converted to Mahommedanism. It soon became a place of importance, and the emporium of trade in the East, whither flocked Arabs, Indians from the Coast of Coromandel and Chinese, with the merchandize of their various countries. The exact date of the first settlement of the two latter tribes is now unknown, but from all accounts, it was at a very early period. In 1509, the riches of the town attracted the notice of the Portuguese, and in 1511 it was taken by them under Albuquerque. This nation continued its rulers until 1642, when it was taken by the Dutch, who were in their turn deprived of it by the English in 1795.†

The town of Malacca is situated on the Malayan peninsula, in Lat. 2° 12.' N. and Long. 102° 10'. E. distant from Prince of Wales Island, (the seat of Government,) about 300, and from Singapore about 150 miles. It is

* Detached portions of this paper have already appeared in some numbers of the Prince of Wales Island Government Gazette, 1828-29.

† Vide Crawfurds Indian Archipelago, *Vol.* 2 *Page* 482, 558, and his Embassy to Siam.—*passim.*

bounded

bounded on the S. by the Sea, the coast running N. W. and S. E. and on the East, and North by the Malacca river. The area which it occupies is about 500 yards in length, and 400 in breadth; the streets are regularly built, intersecting each other at right angles: the principal one is broad, open and airy, containing the houses of the opulent Dutch inhabitants. The original proprietors seem to have studied convenience, more than elegance in the situation of these, as their backs and the numerous out buildings, attached to each house, are towards the sea, and give a mean appearance to the place when approached in this direction. The northern part of the town is occupied principally by Malays, Klings and Chinese; the dwellings are almost all of brick, and two stories in height; the streets narrow, more confined, and less clean than in the Southern quarter. The Fort occupying an area of about 1,200 yards in circumference, is situated a little to the Southward of the town, from which it is separated by the River to be afterwards described. It was formerly a place of considerable strength, but the works were destroyed by the English in 1807, the ditches were all carefully filled up with the debris of the razed walls and the only remains now are a few bastions in a dilapidated state. In the centre of the area rises St. Paul's hill, about 70 or 80 feet above the level of the sea surmounted by the ruins of a church, said to have been built by Albuquerque, within and around which are the graves of the former Portuguese and Dutch inhabitants. The hill is on all sides rather steep, and is constantly clothed with verdure; many handsome houses have been erected round its base; and the gardens attached to these, espepecially on its eastern side rise half way up the acclivity. It is in this quarter, the most airy, open, and healthy of the town, that the Sepoy lines, and hospitals are situated. Close to these is the European burial ground—but the small number of graves in it, renders it less a nuisance than might be imagined from its proximity to the town, in a warm climate. The most populous parts of Malacca however are the suburbs, of which the principal are Trankera, situated to the West; Bandar Eeleer, to the East; and Boongah Rayah to the North of the town. In all these, the houses are much meaner than those in the town itself, being mostly constructed of wood or *Coolycoy*,* and thatched with *atap*.† *Trankéra* forms a broad airy street extending about a mile along the sea shore, with numerous narrow crowded lanes branching off from it. These are of course ill ventilated, and it was remarked that when the Epidemic Cholera prevailed, it proved more fatal here than in any other quarter of the town, probably from this cause. It is principally occupied by Portuguese and Klings. *Bandar Eeleer* also extends along the coast for nearly half a mile; the houses are of the same construction and appearance as above described, but situated for the most part in the thick belt of cocoa-nut trees which extends along the whole of the shore in the neighbourhood of Malacca, and the lanes are broader, cleaner, and more airy. The Portuguese, who are the principal occupiers of it, are said to be subject to fevers, and from the marshy nature of the country behind it, this might *ā priori* be presumed to be the case. *Boongah Rayah* is less extensive than the two former, the houses are more openly situated and it is principally occupied by Malays and Chinese. The bazaars are situated in a central part of the town, and are well supplied with all the common necessaries of life: contiguous to each other, are separate ones for rice, fish, vegetables, fruits, and buffaloe meat.

The population of Malacca, from the repeated revolutions of Government, to which it has been subject, and which have been already al-

* A corruption of *kulit káyoo*, literally the "bark of wood". The thick strong bark of a tree, dried in large pieces, and much used by the Malays in buildings.

† Entwined palm leaves, generally those of the Nipa palm, the Nypa fruticans of Thurnberg.—*Marsden.*

luded

luded to, is necessarily of a mixed character. The aborigines, some of whom are yet to be found in the deep forests of the interior, seem to have been of two distinct classes, one named *Pua Pua*, resembling the Negro, and similar to the present inhabitants of the Andaman Islands,—the other called Jákōng, approaching more nearly to the Caucasan race. The latter are most numerous, and sometimes, tho' rarely, are induced to make their appearance in the town itself. They live in a state of almost complete nudity, in rude buildings of wood and leaves perched on the summits of trees, subsisting principally upon fruit, and game which they dexterously kill by arrows blown from a long tube called sumpìtän. They are described as being rather a good looking race, bold and open in their address. Notwithstanding Dr. Leyden's assertion that there are only ten vocables in their language, which differ from the Malay, yet it is not generally understood by the latter people. The principal inhabitants of Malacca now are the Malays, and the descendants of the Indian, Chinese, Portuguese, and Dutch settlers. The first census of this settlement under the British Government was taken in 1827, and the result is contained in the following table, with the elements of which I was obligingly favoured by W. T. Lewis Esq. the Assistant Resident.

Abstract of the Census taken at Malacca, in 1827. *shewing the actual population of the Town and suburbs, and the proportion of Births and Deaths.*

Names of Tribes.	Adults. Males. Married.	Adults. Males. Single.	Adults. Females. Married.	Adults. Females. Single.	Children. Boys.	Children. Girls.	Actual population exclusive of slaves.	Born in 1826-27. Males.	Born in 1826-27. Females.	Died in 1826-27. Males.	Died in 1826-27. Females.	Total of Deaths.	Slaves and slave Debtors. Males.	Slaves and slave Debtors. Females.
Europeans and their descendants.	32	23	42	29	55	52	233	8	4	3	4	7	130	141 *
Malays.	676	556	758	545	701	657	3893	77	89	64	59	123	207	146
Klings. Mahommedan	277	204	295	220	242	240	1478	45	41	24	23	47	126	99
Klings. Hindoos.	150	139	264	101	138	113	805	21	21	16	13	29	67	56
Chinese.	588	960	702	636	616	487	3989	87	81	75	74	149	293	228
Portuguese.	413	346	465	346	397	322	2289	68	66	50	38	88	,,	,,
Totals	2,136	2,228	2,426	1,877	2,149	1,871	12,687	306	302	232	211	443	823	670

The actual population is Free People——12,687
Slaves——1,493.
14,180.

The small proportion of Females to Males, 94. 7 to 100 (4 per cent less than that of England) is easily explained by the constant influx of Chinese, who come here as manufacturers or cultivators, and who are not established as regular settlers. Accordingly, we find in this tribe 2164 males and only 1825 females, a proportion of one to the other of 84. 3 to 100. In the other tribes, the proportion is nearly equal to that commonly observed in Europe. The proportion of deaths $3\frac{1}{10}$ per cent is small, and argues much in favour of the healthiness of the station; that of the births over the deaths too is also deserving of notice. The slave system was introduced into Malacca by the Dutch, in imitation of the policy of that nation in their other colonies. The slaves themselves are a mixed race, descendants of Caffrees,

* These are the household slaves of the Dutch inhabitants. The greatest number in the column belonging to the other tribes are slave debtors.

Europeans

Europeans, and Malays, with the woolly hair and features of the negro, less marked however in some than in others, according to the degree of intermixture of the different varieties. As far as I have been able to judge, they are a well used and a contented tho' degraded class; patient and much attached to their owners.* Included in the same class in the Table, is a number of Malays and Chinese, who bind themselves to work for their creditors until their debts be liquidated, being entirely under the control, or indeed the slave of the latter, for that period. This system is of Malay origin, and in that language is called Eering or Mengiring: a more particular account of it will be found in Marsden's Sumatra, *Page* 212, 2d *Edition*.

The Europeans both English and Dutch, and their descendants of a mixed blood, retain all the customs of their respective countries; their houses are generally lofty, airy and comfortable; and that part of the town which they occupy, is always clean and neat. They are in general temperate, and seldom suffer from disease, at least not more frequently than people of the same class in Europe; most of the children are affected with worms, generated probably by indulgence in half ripe fruit. The Dutch and Indo-Portuguese in the Settlement in extreme cases call in the aid of the European Medical practitioner, but on ordinary occasions trust more to the native doctors, whose practice will be described hereafter.

The Portuguese, are so much degenerated by intermixture with the natives, as not to admit of their being classed with Europeans. With none of the warlike and enterprising spirit of their ancestors, the conquerors of Malacca, they may be described as a lazy, proud, ignorant and superstitious race. Most of them subsist principally on the produce of their fisheries, in which they extensively engage. Their houses are constructed in the native manner, their rooms small and unventilated, and not over great attention is paid to cleanliness either in them, or in their persons. As far as I have been able to ascertain, they are not subject to any particular diseases; many of them now living here have attained the age of ninety and upwards and their children have a healthy thriving look. There are a few well educated men among them of respectable characters, who adopt the customs of Europeans; the lower classes subsist principally upon fish and fruit.

The Malays of this station from long intercourse with Europeans, seem to have lost that ferocity of disposition which is generally assigned to their nation, and are a harmless peaceable race. They are finely limbed, active when pleasure is their object, as in the pursuit of game, or practice of gymnastic exercises, but indolent in the extreme, when comfort or profit are concerned. Those who do engage in any occupation, if on the coast, apply themselves to a sea life, either manning small Merchant Prahus, or fishing; if in they interior, the cultivate a small quantity of rice for the supply of the *dusun*, or village which they inhabit. Their houses are generally separate, constructed of wood amidst groves of fruit trees, especially the Jack or *arctocarpus integrifolia* They are subject to fevers and bowel complaints, and soon acquire the look of old age; their principal food is rice, fish and fruits, of various sorts: they are expert in hunting game and in the interior add to the above, the flesh of the Elk, different kinds of deer and antelope, and the beautiful little moschus, commonly called moose deer, which is abundant in all parts of the country. Medicine is in a very low state among them: every old woman and paunghooloo† consider themselves Doctors and qualified to decide upon the lives of their fellow creatures. Luckily for the patient, but few remedies are used. In most instances, the disease is left to the operation of nature, *aided* by the performance of the most

* Since the above was written, the slave holders have determined to abolish slavery in a limited number of years; and the system of slave debtors has been declared illegal, by the Government here.

† The head man of a village analagous to the Potail in India.

ridiculous

ridiculous ceremonies, founded on the grossest superstition. All medicines previous to administration, must undergo the operation of *tâwâr** or incantation, without which they are supposed to have no efficacy; simple water thus *tâwârd* according to form, into which the saliva impregnated with betel, has been ejected from the mouth of the privileged person, is dashed over the patient's body, and considered an unfailing remedy in many diseases. Even the better educated people among the Dutch and Portuguese sometimes lend themselves to these silly and disgusting practices. The Arabs at an early period along with their religion, introduced some knowledge of the healing art into the peninsula. Some of their books have been translated into the Malay language, under the title of " *teeb dâree pâda Lookmân* and " the name *tabeeb* or physician is of arabic origin. Lookmân, (perhaps the celebrated Arabian or Abyssinian philosopher and moralist, whose fables are still extant) is believed by the Malays to have been the father of the Medical Art, as Hippocrates is among Europeans. The *tabeebs* possess an imperfect knowledge of the different organs of the body, tho' they all seem totally unacquainted with physiology; the extent of their pathological acquirements, is to ascribe all diseases either to heat or cold, and the therapeutic indications thereon founded are to give cooling medicines in diseases arising from heat, and vice versâ. They are all ignorant of surgical operations; a few of them have a slight acquaintance with European medicine, communicated to them by the Dutch, but still giving them a claim to superiority over their less informed countrymen.† From time immemorial, they have adopted a practice in Fever and Small-Pox, which has only lately been introduced into Europe, that of cold affusion; the patient is carried to the first running stream, and water is plenteously poured over him, until the heat of the body be reduced, and this is repeated as long as the disease continues. However as it is not employed by them with proper discrimination, it may and does as often prove hurtful as beneficial. In Diarrhœa and Dysentery, they employ a decoction of the leaves of the common guava, the powder of coral (Carbonate of Lime) decoctions of the rind of the Pomegranate and Mangosteen, and of the *Majakannee, jelawèe* and *majee kling*, three kinds of astringent nuts, the plants producing which I had not an opportunity of examining. In Syphilis, Rheumatism, Asthma and many other diseases, they use the root of the Gadông or Smilax Chinensis, which seems a favourite medicine among them, as well as among the Chinese. In worms they give the juice of the Papaya tree, and of a plant called *song song-arvoo*. In Itch and other cutaneous diseases, they apply sulphur, the juice of various species of Fungus, called *Chindâwan*, the leaves of the pepper plant, of the solanum melongema, or egg plant, and of a herb called *bunâloo âpi*, and saffron. In Ulcer they use poultices of rice, and various leaves of plants, the names of which could not be ascertained. A Bezoar stone, obtained from the Porcupine, and called by them *Gooleega lândâq*, is used in almost all diseases, especially in poisons, to which they assert it is a never-failing antidote. The water in which it has been infused for some time, and to which it communicates an intensely bitter taste is administered to the patient, and said to produce vomiting, in which case it may occasionally prove useful. Bontius in his Medicina Indorum gives an account of the properties of this substance,‡ and expresses his surprise at the preference given to these stones

* Analogous to the *taboo* of the South sea islanders. This custom is founded on the idea, that all diseases originate in the workings of evil *spirits or hântus*.

† One old gentleman, enumerated 77 different kinds of Fever, including the nervous and bilious; seemed well acquainted with the articles of the European materia medica, and had great confidence in continued purgation which he asserted cured all diseases!

‡ " Infunditur hic lapis in vino adversum Choleram, quam mordexi hic insulani vocant, ac hic tantopere " timetur, quam pestis in Hollandiâ, utpote quæ hominem aliquando soleat occidere paucissimis horis. Prægnan- " tibus tamen hic lapis non benè datur, nam abortum provocare adeo certum est, ut fœminæ malitiosæ mihi " retulerint, ut siquando menstrua earum purgatio non bene procedat, si saltem hunc lapidem manu gestent, " juvamentum se inde sentire." Bontius de " Medecina Indorum." Animadversion in Cap. XLVI Fol. 168 Garcias ab Orta." p. 19.

extracted

extracted from brutes, while those taken from the bladder of man, a nobler animal, and more richly fed, are reckoned of no value! It appears to be a common biliary concretion; but so precious in the eyes of the Malays, as always to be bought for its weight of gold.

The Chinese were among the earliest settlers in the Peninsula, and now constitute a very considerable portion of the inhabitants of Malacca, of whom they are the most enterprising, the most opulent, the most industrious, and the most determined in the pursuit of wealth. They engross almost all the trade of the place; cultivation, at least with any degree of spirit is carried on entirely by them, and they are the principal artisans and manufacturers of the station. Annually, fresh immigrations take place, and those who have made their fortunes return to their native country, thus producing a constant influx and efflux of real chinese. By far the greatest proportion however, is of the mixed race of Chinese and Malays, originating in the policy adopted by the mother country of preventing the emigration of females. The Mongolian features are much less marked among these colonists; who still however retain the oblique eye, long hair, high cheek bones, and beardless face, sufficiently to denote their origin. They are a stout and finely made race, capable of bearing much bodily fatigue, tho' deficient in courage. The higher orders among them are neat, and comfortable, cleanly in their houses and persons, and fond of rich and high seasoned articles of food, which they use with the intention of producing a certain degree of corpulency, and by this means acquiring a claim to respectability in the eyes of their countrymen. All classes subsist principally upon Rice, Pork, Fish, and Poultry, with vegetables dressed in various, and very dainty forms. The lower orders, when they first arrive from China are subject to Phagedænic Ulcer, resembling that which affects the Indian Sepoys. The children of this tribe are very generally affected with Herpetic diseases. The Chinese are addicted to Gambling, and many of them smoke Opium, but the latter is by no means a common practice at Malacca; and those who follow it are men of bad character, presenting a picture generally of the most squalid wretchedness.

The chinese practitioners of Medicine at Malacca, have from want of regular education, neither the learning nor skill, which the Physicians of the mother country are said to possess. These even, in comparison with the progress which the healing art has made in Europe, are in a very low state. The Jesuits on their first visiting China, were struck with the acquirements of the people, in many arts which at that early period were in their infancy only in the west. Printed books had been in use among them from time immemorial, and the brilliancy of their dies, and beauty of their porcelain, were unrivalled in any part of the world. It is not surprising therefore to find in the writings of these religionists, many exaggerated statements of the extent of science among that strange people, and particular praise given to their " great and almost miraculous skill in medicine."* More extensive intercourse with the country however, and the great advance in Europe of every art and science since that period have made later writers on the subject draw a very different picture of the real state of learning among them. "The whole sience among them" says Du Halde, " consists in the knowledge of the pulse, and the use of simples, which they have in great plenty, and recommend as specifics in diverse diseases."† Barrow quotes the following opinion of the great Dr. Gregory, respecting their medical skill. " No such good medical aid can be obtained among the people of it (China) as a smart boy of sixteen who had been but twelve months apprentice to a

* Vide " Extrait d'une lettre de M. Amiot" " in the memoires concernant les Chinois"—*Vol. XV. 4. to p. vi.*

† Du Halde's description of the Empire of China. English translation,—*Fol. Vol. II. p* 104

good

good and well employed Edinburgh Surgeon, might reasonably be expected to afford."* Without questioning the patient, they pretend to discover the cause and nature of the disease and the requisite remedies for it by merely examining the pulse; and by it also they prognosticate the critical days, and favourable or unfavourable event.† In thus trusting to the pulse, they agree with other nations, in which the true science of medicine has made little progress; and many of the remarks in Du Halde's Chapter on the subject, are very similar to those of the Hindoo physician Aghastier, in his Nádi Vâghádám. There are five or six chinese practitioners in Malacca, very respectable men; enjoying the confidence of their countrymen, who assert that in the cure of internal diseases, they excel the European doctors. They however yield the palm to the latter in every thing connected with surgery, of which indeed they are utterly ignorant. With Anatomy or Physiology they have no acquaintance; their shops seem well stocked with medicines of various kinds drawn from the three kingdoms of nature. Their vegetable ones are principally *ginseng*, the root of the Panax quinquefolia; Rhubarb; and the *gádong* of the malays, the root of the smilax chinensis called by them *Kohogg*. In small Pox, they keep the patient in a hot unventilated apartment, from which circumstance, this disease is generally very fatal among them.

The Klings are so named from the circumstance of their ancestors having emigrated from the Coromandel coast, formerly called Telinga or Calinga. They are partly Mahomeddan and partly Hindoo; the former being of that class, which is known in the southern parts of India, by the name of Lubbay. Both retain in every particular, the well known customs of their progenitors and are an industrious, quiet race of people, mostly engaged in commerce; the lower orders in boating or fishing. We find among them, the same notions respecting disease, and the same remedies as among the natives of the Coromandel coast. An able account of both will be found in "Heynes tracts on India," and "Marshalls notes on the medical Topography of Ceylon."

Besides the five tribes above mentioned, there are various others resident in and around the town of Malacca as Arabs, Siamese, Burmese, Cochinchinese, Javanese, Bugis. &c. but the number of these is small and fluctuating, and they do not therefore demand any particular notice. Of the physical conformation of the different tribes, I have said nothing, as I had nothing to add to the account given by more able and more experienced men. A reference on this subject may be made to Crawfurd's Indian Archipelago *Vol. 1st. pp.* 17, 36. And to Finlayson's Mission to Siam and Hué *pp.* 224, 230.

The Country, in the immediate neighbourhood of Malacca is flat and occupied in parts by cocoa nut trees and paddy fields. Behind the suburbs of Trankera and Bandar Eeleer, but more especially the latter, the ground is marshy during the whole year, and I think I have been able to trace one or two cases of Fever to the effluvia arising from the stagnant waters, in which numerous vegetable productions are found. These cases however have been so rare that no conclusion respecting the healthiness of the climate can be drawn from them. Did miasmata even rise from these marshy spots, the frequent rains, and the violent winds to be afterwards noticed, would prevent their ever becoming noxious. About 1200 yards from the Fort, commences a group of low hills, five in number, denominated in the malay language *Bukit Cheence* or Chinese hills. They include a space of between three and four miles in circumference, and round them are excellent roads

* Barrow's Travels in China 4· *to p.* 354.

† They are shrewdly suspected by Barrow, of ascertaining from the attendants, previous to visiting the patient himself, both the nature and probable cause of the disease.—*Id. p.* 340.

kept

kept in repair by Government for the exercise and recreation of the inhabitants. The highest of the group does not exceed 200 feet in height; they are all covered with the curious horse shoe shaped tombs of the chinese, shaded by the Angsàna, the Casuarina and the Cashew tree. Most of the intervening valleys are in a state of cultivation; to the northward, the country seems one interminable forest, varied by chains of hills covered with wood to their summits. About 40 miles off. rises Mount Ophir or Gùnong ledâng to the supposed height of 7,000 feet.* The roads into the interior are generally in bad repair, but means we understand, are now in progress to improve their condition.

The River, called in the malay language Sùngei Maláka, which separates the Town and Fort, rises at the foot of the same large hills, about 40 miles in the interior, and during its whole course runs thro a jungly and hilly country. Near the town its breadth is between 25 and 30 yards, its bed and banks are of soft mud; the latter are left dry at low water, but from not being loaded with vegetable or animal depositions do not give out any noxious effluvia. On the contrary, it must add considerably to the health of the town, by removing at every tide, the filth which might otherwise accumulate to the prejudice of public health. At every ebb also, a very extensive bank of mud is left exposed along the shore; but for the same reason no prejudicial effect results from it. There is a plentiful supply of water in the town. Wells are attached to every house. It is in many of them brackish, containing a considerable portion of Muriate of Soda, Sulphate of Lime, and Sulphate of Magnesia. Very pure and very excellent water is obtained however from the wells at the foot of *bukit cheenee*, which is in common use among the inhabitants, and the carriage and sale of which give employment to a number of Chinamen and others. That diseases occasionally arise from the use of bad water is a common opinion among natives, especially Indian Sepoys; but I have never been able to trace any case, positively to this cause. The country around Malacca abounds in hot mineral springs. From the inspection of several and more especially that of *Ayer-Panas*, they seem to be weak solutions of saline matter, principally muriate of soda, impregnated with sulphuretted Hydrogen gas. The spring of *Ayer-panas* the malay name for hot water, is situated about 18 miles in an eastern direction from the town in swampy ground, surrounded on all sides by deep forests. The steam arising from it is perceptible at some distance; and the strong smell of gun washings in its immediate vicinity, indicates the nature of the water. A tub of *Cóoly coy* has been erected round it by the malays, for the purpose of collecting it in sufficient quantity for bathing.† The bottom of the Spring is not more than a foot below the level of the surrounding swamp; the water is quite transparent, and bubbles of gas are constantly escaping, giving it

* In September, 1828, W. T. Lewis, Esq. the Assistant Resident at Malacca, succeeded in reaching the summit of this mountain. As he is the second European who ever did so, the following remarks, which he communicated in a letter to me, may be interesting. He found the ascent exceedingly difficult, and the wind piercingly cold; the thermometer being 64° at 7 P. M. The top was composed of coarse grey granite, covered with low brushwood, rhododendrons, and hardy mountain shrubs growing in a rich black soil. There were no springs, tho' he found water collected in the hollows of the rocks. He determined the boiling point of water on the summit to be 201½° nearly of Fahr; while at the level of the sea it was 210°, making a difference of 5°. 9. of the centigrade scale. (This by a rough calculation founded on a rule in Biot's Precis elementaire de physique, *Vol. I. p.* 205. would make the height 6,000 feet nearly.) The day was cloudy, and the prospect confined. In the month of July following, he again ascended the mountain, accompanied by Captain Wiggins of the Madras Army, who published an entertaining account of the trip in the Penang *Government Gazette* of the 5th of September. He describes the view to be magnificent; states the thermometer to have been at 58° Fahr, at 8 A. M. and calculates the height above the level of the sea to be 6. 594 feet.

† A Government Bungalow has since been erected in the neighbourhood, which will afford accomodation to any desirous of trying the efficacy of the water.

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the appearance, as if it were boiling. A cold stream runs within two feet of its edge. The temperature of this spring is 134° of Fahr. It has no saline or other taste. The smell shews that it is strongly impregnated with sulphuretted hydrogen gas, but the exact quantity of this could not be determined. On slow evaporation in a sandbath, 1,000 grains of the water were found to leave a residuum of 8 grains of saline matter, principally Muriate of Soda, with a slightly bitter taste indicating the presence of sulphate of Magnesia. There are some other springs in the same neighbourhood, and throughout the country, which seem to resemble strongly the above in all their properties. The natives ascribe to them no medicinal virtues, nor, considering the small quantity of saline impregnation, is it to be reckoned that they would possess any From their sulphureous nature and temperature they might be found beneficial in cases of cutaneous disease.*

Among the domestic animals employed as food by any of the tribes composing the population of Malacca, we find neither sheep nor oxen. They are not indigenous in the peninsula, and the expence of conveyance and feeding has been a great barrier to their importation. They are seldom found therefore, except in the stalls of the richer European inhabitants. For this reason, the natives are deprived of the wholesome and nourishing food which they afford; and the Madras Sepoys especially, accustomed in India almost every day to either one or the other according to their caste, have suffered considerably from the want of it. They were forced to subsist in a great measure upon rice, dholl, and other vegetable productions. To this diet, are principally to be attributed, most of those cases of cutaneous diseases, ulcers, and diarrhœa, which prevailed among them, and the debility and dropsical effusions, which were frequently observed to follow even trifling derangements of health. A fair trial has never been made, of rearing these valuable animals in this part of the world; the rank vegetation of the interior has invariably proved prejudicial to the few, which have been allowed to feed upon it. I have little doubt however, of their thriving on the rich pasture of St. Pauls' hill, and other grassy spots around the town. The Buffalo is common in all the surrounding country. When young it affords a good article of food, but the flesh of the adult animal is tough and indigestible Once and sometimes twice a week, it may be had in the bazaars, and on all great occasions of festivity among the Malays, it is an indispensable part of the entertainment. From some unaccountable prejudice however, the natives of India whether Mussulmans or Hindoos, cannot be persuaded to use it. A large species of deer, called *Rusa* by the Malays, and Elk by the Europeans, the Cervus equinus of Cuvier † between 4 and 5 feet in height, is frequently brought into market from the surrounding jungles. The meat of it is an excellent substitute for beef, but it is not found in sufficient abundance to replace entirely that valuable and wholesome article of food. Pork is consumed in considerable quantity, more especially by the Chinese, who take great pains in rearing it, and the meat is generally firm and nutrient. The stout limbs of most of that tribe, and the " fat paunches" of many, would seem to contradict the assertion of Galen, that hogs afford little nourishment. ‡ It is sometimes used by the sepoys of the Hindoo persuasion; but the well known penuriousness of that class prevents their purchasing it in sufficient quality or frequently enough to benefit by its nutritious qualities. The *Peng-goling sisik* of the Malays, the Pangolin or Manis pentadactyla of Linnæus, is found in swampy

* In the " Malacca Observer," since the above was written, a case has been published of the efficacy of the water in Chronic Rheumatism. Warm bathing might have proved as useful, a name however operates wonders; let the spring of Ayer Panas enjoy the advantage of one.

† Griffith's translation of the " Regne Animal." Vol. IV. p. 112.

‡ " Porcelli merito minus nutriunt; nam alimentum humidius et distribuitur et discutitur celerius." Galeni de Aliment: Lib. III. cap. 2.

spots

spots near the sea shore, and hunted by the Chinese both as an article of food, and for its scales, which are employed by them in the composition of some of their medicaments. The flesh of an animal of the order Cetacea, called *Douyong* by the Malays, the Halicore Dugong of Illiger, " is held in " such high estimation, that it is reserved for the tables of the Sultan and the " Rajahs. * The flavour of it is said to be far superior to that of the finest beef which it resembles in other respects. Mention is made of it here more as an object of curiosity than of utility, as it is too rarely found, ever to form any important part of man's food. Besides the animals of the mammiferous class above enumerated, as affording nourishment, a great variety of others is found in the surrounding jungles. Twenty years ago, elephants were frequently seen close to the town, tigers infest all the deep forests in the neighbourhood, monkeys, bears, squirrels, sloths, civet and wild cats, antelopes and deer are in great abundance.

Of the amphibious class, the only animals used as food, are the *Biawak* of the Malays, the guana or Lacerta iguana of Linnæus, and some species of Turtle. The flesh of the former is reckoned a great delicacy, and supposed to possess highly nutrient powers, more especially by the natives from the peninsula of India. The principal species of turtle found here is the Testudo imbricata or Hawks bill, the flesh of which tho' much inferior to the West India green esculent is used by all classes. The eggs are also sold in the bazaar. In calm weather, hundreds of alligators may be seen swimming near the shore, or basking in the sun upon the rocks. Accidents however rarely or ever occur, tho' fishermen and others are constantly wading about within their reach.

The principal articles of food however, are derived from the class Aves, as ducks and fowls may certainly be considered the " staple commodities" of diet in the straits, and more especially at Malacca. They are here reared in great number by the Malays in the interior and are procurable at a cheap rate. The following is a list of wild birds, found in the neighbourhood, some of which are procurable in the bazaars, and almost all occasionally employed in diet. The Argus pheasant *Argus giganticus*, of magnificent plumage, flesh very delicate—the Pencil pheasant, *Phasianus nycthemerus* (rare)—the Malacca partridge *Cryptonix coronatus*, a very handsome bird with green plumage, and a deep crimson color'd Crest, the flesh greatly resembling that of the European partridge †— the Indian Quail, *Coturnix textilis*—the black Quail (rare)—the golden plover *Charadrius pluvialis*—the ringed plover, *Charadrius hiaticula*—the sand lark, *Arenaria vulgaris*—the lapwing, *Vanella gavia*,—the common bittern, *Botaurus stellaris* (rare)—the freckled bittern, *Bot: lentiginosa* (rare)—a species of Whimbrel, *Phœopus*—the common snipe, *Gallinago media*, (numerous)—the Jack snipe *Gallin: minima*, (rare)—the Water hen, *Porphyrio viridis*, *Ayam ayer* of the Malays—the purple Water hen *Porphyrio hyacinthinus*, a large and very handsome water bird of beautiful blue green and purple plumage, with red head beak and legs, ‡—the Teal or Widgeon, *Marecæ*—whistling teal—Wild Duck, *Anas boschas* (rare)—the Common pigeon, *Columba domestica*–the rock pigeon, *Col: œnas*—the turtle dove, *Col: turtur*—and the green pigeon the *Col: migratoriæ* spec: —Besides these, several hundred species of birds, of very various and handsome plumage, some of them too of new and undescribed genera have been collected by naturalists. The edible bird's nests, procured from the *Hirundo fucifaga*, § are used as an article of food and of luxury by the Chinese. They are highly nutrient being composed almost entirely of gelatin.

* Cuvier's Regne Animal, Vol. I. p. 274. Griffith's Translation of Do. Vol. IV. p. 446. Marsden's Sumatra. p. 122.

† Shaws General zeology—Vol: XI. p. 253.

‡ Do. Do. Do. Vol: XII. p. 255.

§ Do. Do. Do. Vol: X. p. 111.

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The abundance and cheapness of fish, of which nearly 200 Species are found in the bazars, induce the inhabitants to subsist principally upon them. This diet may contribute to the frequency of cutaneous affections among the lower orders. The Malays and inhabitants generally, are fond of using the smaller kind, in a half putrid state, mixed with condiments of different sorts—resembling caviare and called by them *Balachang*. There is also a small species of fish, called *ikan merah*, of a bright red color, which when preserved, equals in flavour the finest anchovies. The fish roes too of Malacca are in high repute.

A variety of Snakes and reptiles exists in the surrounding country; few however near the town; and accidents from bites of snakes are never heard of. In moist damp places, midst the decaying leaves of the forests, a small species of leech, the *Hirundo geometra* of Linnæus, is found, resembling those described by Dr. Marshall in his work on Ceylon. * They are neither so abundant however, nor so troublesome as in that Island. The medicinal leech of large size exists in great numbers in every pool, and marshy spot; and are procured by driving in Buffaloes or other animals, to the skin of which they readily adhere. Of the epizootic diseases of Malacca I can say but little. It has been already remarked that oxen and sheep do not thrive. The latter die from a disease resembling the rot. Horses are subject to inflamations. Buffaloes sometimes die, I am told, from diseased liver and a great mortality prevails occasionally among the poultry.

But it is in vegetable productions, that nature has been especially bountiful to the inhabitants of the Malayan peninsula. The country around Malacca is unrivalled perhaps in any part of the world, in the variety and abundance of fruit which it affords—yielded too without care or cultivation. Hence in a great measure arise the indolence of the Malays, and the low state of Agriculture among them—Rice is cultivated by them in many places of the interior, but the greatest part used in Malacca is imported.† As in other parts of the East, it is the principal article of food used by all classes. Some kinds of it, when new, are said to produce Diarrhœa and occasionally Dysentery. It is sometimes subject to blight, from the attack of a small species of Aphis, which rapidly spreads, and destroys the crop of a whole district. The natives ascribe it to the acrid exudations of the insect, and are unacquainted with any means of remedying or preventing it. Sugar cane is an article of food among the lower orders, and is supposed to be highly nutrient. The Bang koowang, a species of *Dioscorea*, and the Gadung *Dioscorea triphylla*, two kinds of yam—the Batata, *Convolvulus batates*, or sweet potatoe, and other species of the same genus, supply good substitutes for potatoes. Some are ground into a flour, resembling Arrow-root, and in that state converted into excellent bread and sweet cakes. The Malacca yam, or Ubi, the *Dioscorea alata* is famed in every part of the straits. Arrow-root, or more properly speaking Tapioca, equal to the best from the West Indies, is made from the root of the *Jatropha Manihot*, which grows abundantly in the interior, and is known by the name of Ubi Bengala. It is in the form of a fine, light, pure white, impalpable powder, possessing all the qualities of Arrow-root, and obtainable at a very cheap rate. Sago is manufactured in such quantity, as to supply not only the straits but to form a valuable export article. It is made from several species of Palm, but principally the Metroxylon sagu, the pith of which being powdered, repeatedly washed, and afterwards granulated, forms this well known nutrient substance. Maize, the jagùng of the Malays, is oc-

* Marshall's Notes on the Topography of Ceylon—p. 17.

† The culture of rice on high grounds call'd *Ladang* displays in a striking manner the indolence of the Malayan character. The trees covering the spot selected for the field, are first cut down, the larger branches are separated from the trunks, and are sometimes removed for timber, the smaller branches and leaves burnt, and their ashes left to serve as manure. The trunks are allowed to remain as they fall; the earth between them is loosened by a wooden hoe, and the seed thrown carelessly in.

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casionally cultivated—the seeds of the *Phaseolus max*, Kachang Kadala; of the *Phaseolus radiatus*, Kachang eejoo, from which according to Crawfurd, the Chinese prepare soy, and of the *Arachis hypogea*, the kachang tanah or ground nut are extensively used as food. Four species of gourd, or Cucurbita, called koondoor, laboo (the *Cuc: lagena ria*) laboo ayer and Mandikoo (the *Cuc: citrullus*)—a species of *momordica*, called Patola; three kinds of cucumber the Timoon danding, timoon batang, and timoon tikoos; and several varieties of trong, the *Solanun Melongena*, or Egg plant, with many other Indian Pot herbs, melons and pumkins, and most of the European vegetables cultivated by the Chinese are constantly to be found in the bazars. A species of sea-weed or Alga called agar agar is found abundantly on the rocks and Islands around; and when made into a jelly forms a light and agreeable nourishment for invalids, and an excellent substitute for animal jellies which are not always procurable.* In the appendix will be given a list of 100 different kinds of fruit obtainable at Malacca, which might be extended considerably, were varieties included. Some of the Linnæan names could not be discovered, as the plants were often with difficulty obtained in the flowering state. Others are derived from the best authorities, as Blume, † Jack, ‡ Marsden, § and the writers in the transactions of the Batavian Society.

The mineral productions are less diversified. The small hills in the neighbourhood of the town are formed of a conglomerate, the base of which is clay iron stone, containing imbedded portions of feldspar, in a state of decomposition (having all the properties of yellow ochre) and small grains of Quartz and iron glance scattered thro' its substance. The specific gravity of the rock is 2,536; when recently dug it is soft, can be easily cut, and readily stains the fingers; but after exposure to the air for some time it acquires such a degree of hardness, as to be broken with difficulty and its durability is shewn by the present state of the ancient buildings, which have stood uninjured for nearly 300 years. In its dry state it is porous, from the destruction of the ochreous particles by moisture and exposure to the air, resembling old lava in its external appearance. In all its properties it agrees exactly with the rock common on the Malabar coast and described by Dr. Buchanan, ¶ under the name of Laterite. The soil of the surrounding country is light and seems composed principally of the above rock in a state of decomposition, combined with sand. From specimens brought to me of the distant hills, they seem to be all of primitive origin; and to consist chiefly of grey granite Gneiss, and Quartz rocks. Gold and Tin mines are wrought within a few days journey of the town.

Malacca, in point of climate deserves the praise bestowed by Dr. James Johnson, generally upon that of the Malayan peninsula. "This," says "he from its being a narrow slip of land, washed on both sides and nearly en- "compassed by the ocean constantly covered with verdure and open to the "sea breezes, is blessed with a milder and cooler air than any continental part "of India between the tropics, and bordering on the coast."** It is exposed to the influence of the monsoons, and has its dry and wet seasons; tho' from its peculiar situation in the straits, these are consider-

* The following receipt for making moss jelly may be found useful. Take two handfuls of the moss; pick out all the stones, and wash it very clean; then put it into a saucepan, and cover it with water; boil for 2 hours, or until it will stiffen when tried in a wineglass; strain and add sugar to your liking; boil it again with white of eggs to clear it; strain again and when half cold add wine and lime juice to your taste and put it into jelly glasses.

† Bydragen tot de Flora van Nederlandsch Indie. Bat: 1825.

‡ Transactions of the Bencoolen Literary Society.

§ History of Sumatra.

¶ Buchanan's Travels in the Mysore. Vol. II. p. 440.

** Johnson on Tropical climates. p. 184.

ably modified, being later and less regular than they are in India. Whatever may be the prevailing wind, the sea breeze generally sets in from the Southward, between 10 and 12 o'clock in the forenoon, and continues until 6 or 7 in the evening, when after a short lull, the land wind begins to blow from the North East. So uniform, for the most part are these daily breezes that unless in a storm, or when the wind is higher than usual, the influence of the monsoon is scarcely perceptible The same circumstance was noticed at Bencoolen by Mr. Marsden.* Gentle showers fall almost every evening; heavier ones during the night, which tend to make the mornings delightfully cool and refreshing. Seldom a day passes without thunder, and lightning, both of the forked and sheet kind, the latter most frequently in still evenings preceding rain. The temperature of the whole year too, does not vary more than 14° or 16° degrees of Fahrenheit, being seldom higher than 88° and sometimes as low as 74° The medium temperature calcutated from a daily Register for three years was found to be 80°. This uniformity of climate, the constant alternation of land and sea-breeze, and its situation on the coast, must have contributed greatly to the well known fame which Malacca has acquired for healthiness.

The North-east monsoon commences about the end of November, or beginning of December, with squalls from the North East accompanied by heavy showers of rain, which continue without intermission for many days. The land and monsoon winds now agree; and from the circumstance of blowing over the inundated paddy fields and thick forests near the town, come loaded with moisture, and impress the sensation of chilliness on those exposed to their influence. At this time, mild remittent fevers, catarrhs and rheumatic affections are common. In 1827, many of the remittent fevers previously in hospital assumed the intermittent type; and tho' the number of admissions with phagedænic ulcer did not increase, yet those in hospital were longer in healing, many extended more rapidly, and some in which the process of cicatrization was nearly completed broke out afresh, the progress of sloughing being of course rapid in proportion to the weakness of the new skin. † Rain continues to fall in quantity in December and January, less in February and March, and then generally in the afternoons, having some connection with the change of the land and sea breezes. During these months, the sky is generally so overcast in the middle of the day, as to permit of takking exercise in the open air with impunity. The thermometer at this time rarely exceeds 84° and is most frequently lower—The months of April and May are noted for frequent squalls from the West, accompanied with much rain. The thermometer mounts to 88° and sometimes to 90° and the afternoons are generally close and sultry. In June, July and August, the South east monsoon prevails. It is generally preceded by variable winds principally however from the south and south west, then sets in steadily about the middle of May or beginning of June. During the above months, the weather is fine, clear and temperate. It is the great season for fruit, of which the various kinds enumerated in the appendix, are sold in the bazaars, and eaten in abundance by all classes. The Diarrhœas, Dysenteries, Colic, and other intestinal affections then prevalent, and even the occasional attacks of Cholera at this period, are all to be ascribed to the inordinate use of fruit. It was at this season, that the epidemic cholera first made its appearance at Malacca, and that the Phagedænic ulcer assumed an epidemic form among the troops in 1827. ‡ At this time also occur those violent storms called Sumatrans, from

* Marsden's History of Sumutra. p. 23.

† This disease is said by Dr. Waddell, to have *declined* at Rangoon on the *setting in* of the rains. Trans: Med. & Phys. Soc: C. Vol. III. p. 267.

‡ Memoirs of the Revd. W. Milne D. D. late principal of the Anglo-Chinese College, Malacca P. 72.

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the circumstance perhaps of blowing from the opposite coast of Sumatra. They generally come on in the middle of the night, being preceded by dense dark clouds and marked stillness of the sea and air. The wind from the South-west then suddenly becomes so high, as to perceptibly shake the houses exposed to it, and blows with great violence, and most appalling noise for several minutes. It is accompanied by tremendous peals of thunder, and vivid flashes of lightning, and followed by deluges of rain, which continues to fall for two or three hours after the storm is lulled. In the month of September, there is generally fine weather with a steady breeze from the South East. During the last five months of the year, the land wind is not so well marked as in the preceding ones, from the circumstance of the monsoon in some degree counteracting it. It always blows at this time from the East and by North. October and November are commonly squally and rainy with strong winds from the North West. Cholera also appeared in this season at Malacca in 1819. *

The following Table (No. 1.) tho' imperfect, will serve as a specimen of the Thermometrical and Ombrometrical changes during the year. The lowness of the daily and monthly ranges is the principal circumstance in it, which attracts attention. During the day the thermometer was kept within doors—but in the night, was freely exposed to the external air without cover; the former to counteract the influence of glare; the latter for the purpose of ascertaining the effect of the night air upon the sepoys and others exposed to it. The Table (No. II.) was drawn up by Colonel Farquhar, from a Register kept by him at Malacca in 1809, and published in the First volume of the Transactions of the Royal Asiatic Society of Great Britain and Ireland p. 585. His thermometer was kept in the old Government house, in which the rooms are large and lofty, and freely exposed to the land and sea breezes. This will explain the slight difference observable in the temperature of the two tables.

ABSTRACT OF THE WEATHER AT MALACCA FOR THE YEAR 1823.

Months.	Medium temperature of the Month. at 6 A. M.	at 3 P. M.	at 9 P. M.	Medium temperature of the whole month	Maximum.	Minimum.	Monthly Range.	Number of days on which rain fell.	Total Quantity of Rain during the month. in	dt.	p.	Greatest daily Quantity. in	dt.	p.	Prevailing Winds.
January,	75°	82°	78°	78 2/3	86°	73°	13°	27	10						N. E. & S. W.
February,	77	86	79	80 2/3	97	74 1/2	12 1/2	12	7	92		1	85		N. E. & S. W.
March,	77	84 1/2	79	80	87	74	13	19	9	8		2	78		N. E. & S.
April,	79	86 1/2	82	82 1/3	88	76 1/2	11 1/2	14	4	33		1	40		W.
May,	79	86 1/2	82	82 1/2	88 1/2	76	12 1/2	13	6	85		1	70		S. E.
June,	76 1/2	86 1/2	81	81	89	74	15	7	4			1	30		S. E. & W.
July,	77	84	81	80 2/3	87	74	13	12							W. & S. W.
August,	78	82	80	80	84	74	10	17	8	70		1	75		S. E.
September	76 1/3	82	78 2/3	79	84	75	9	15	12	50		2	75		S. S. W.
October,	78	86	81	81 1/3	86	75	11	14	9			2	25		N. W.
November	77	82	79	79 1/3	85	74	11	21	7	75		1	75		N. W.
December	75 1/2	82 1/2	78 1/2	79	85	72	13	20	5	25		1	35		N.

* Milne's Memoirs ut Supra p. 73.

TABLE II. FOR 1809 FROM A REGISTER KEPT BY COL. FARQUHAR.

MONTHS	Average of the Month.		Greatest Range.		Least Range.		Fair Days.	Rainy Days.	REMARKS.
	8 A. M.	4 P. M.	8 A. M.	4 P. M.	8 A. M.	4 P. M.			
January,	76 24/31°	79 23/31°	79°	83°	74°	75°	18	13	
February,	76 2/7	79 31/56	79	82	75	76	20	8	
March,	77 49/62	81 49/62	79	84	77	81	16	15	
April,	77 50/60	83 9/10	79	85	77	83	18	12	
May,	78 23/60	84 41/62	81	88	77	79	12	19	
June,	78 9/10	84 31/60	82	86	77	82	14	16	
July,	78 4/62	83 13/31	81	85	77	81	12	19	
August,	78 47/62	83 29/31	80½	86	76	82	13	18	
September,	80 8/60	83 1/10	80	85	75	80	18	12	
October,	76 32/62	81 47/62	80	85	75	80	23	8	
November,	75 4/5	80 1/30	78	84	72	74	20	10	
December,	74 33/62	79 27/31	76	85	72	77	20	11	

The distinguishing characters of the climate of Malacca then, seem to be its freedom from marshes; at least any of such extent, as to produce disease; the absence of all causes of putrid animal or vegetable effluvia; the constant thunder storms, which tend to clear the atmosphere; constant showers, which moderate the temperature; and the slight variation in the thermometer during the year. Many invalids have derived great advantage from a few months' residence at this station, and the climate is well adapted for convalescents from the common Indian diseases, such as Fever, Dysentery, and derangements of the Liver. In Pulmonary affections also tho' the great moisture would seem to be unfavourable, the purity of the atmosphere, and the low range of the thermometer, render it an eligible place of resort where circumstances prevent the patients' return to the temperate regions of Europe. The mornings, throughout the year, are delightfully cool, the land wind is pleasantly bracing; and the verdure of the hedges and freshness of the air, forcibly remind the invalid of a summer day in England. Houses are readily obtained at a moderate rent; and, as already mentioned, all the common articles of life, except beef and mutton, are to be obtained at a cheap rate. *

Of the ENDEMIC DISEASES, prevalent at Malacca, as in most places between the tropics, Fever may be reckoned the principal. The natives in the interior from all accounts seem seldom to suffer from any other. It is commonly of the mild remittent type, readily yielding to slight depletion and low diet. Europeans however, after exposure to fatigue, and to the miasmata from the deep forests of the neighbouring country, are occasionally subject to attacks of it in a more severe form, presenting in fact many of the symptoms of the remittent prevalent at Pinang, and now well known in the straits by the name of "Pinang Fever." The patient is seldom attacked, until about 8 or 10 days after his excursion, during which time the disease seems to remain dormant in the system; he has then slight head aches and occasional chills, but considering these as signs merely of a common bilious attack, he neglects himself for two or three days. Violent headache, great prostration of strength and partial chills rapidly succeeded by flushes of heat, first alarm him. His feet and legs are cold, while his face is flushed, his eyes swollen and his head sensibly hotter than usual. His pulse is quick, hard, bounding, occasionally irregular even in the early stage; the tongue is loaded, it has numerous inflamed papillæ at the margins, and there is frequently intense thirst. These symptoms continue for 6 or 8 hours, and are relieved somewhat by

* Since the above was written, Bungalows have been erected by Government at different stations in the neighbourhood, two of which might be resorted to with advantage by invalids, one at Ayer Panas already described; the other at Tanjong Kling, a romantic, beautiful and healthy spot 3 miles from Malacca. For an account of this, see a letter by an intelligent friend of the author in the *India Gazette* 11th Jan. 1830.

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the breaking out of a copious perspiration; in a few hours more however they return with increased violence and dispel the hopes the patient had begun to entertain of his recovery. If the disease be neglected or sufficiently active measures be not used at the early stage of the disease, symptoms of effusion in the brain occur on the fifth, sixth, seventh or eight days, and the patient dies comatose or completely worn out. Three well marked cases of it, occurred at Malacca in 1827-28. In one that of Serjeant Buckley, three days had elapsed before medical aid was sought; medicines then were of no avail, and the disease proved fatal. The appearances on dissection were a fleshy coagulum in the right auricle of the heart; the heart itself large, the internal coat of the large arteries of a light rose-red color; lungs healthy, liver healthy, abrasion and ulceration of the mucous coat of the intestines, especially of the larger; effusion into the base of the brain and into the ventricles—engorgement of the cerebral vessels; effusion into the spinal canal; and great engorgement of the vessels of the chord. In the second case, that of the Revd. Mr. H. copious bleeding both from the arm, and from the head by leeches, and clearing the primæ viæ, succeeded in quickly arresting the progress of the disease, and bringing it to a favorable termination. In the third case that of Lieut B. of the Artillery attended by Drs. Conwell and Geddes, copious depletion, both general and local, blisters to the head and spine, and evacuation of the alimentary canal, were followed by the same happy result From the symptoms above described, and from the appearances on the dissection of Buckley, the disease appeared to me to be congestive Fever, in its termination resembling typhus, with determination to the brain, spinal chord, and intestinal canal. In none of the cases which I observed at Malacca, did the liver seem materially affected. The treatment indicated by the foregoing examples, would be copious bleeding at the commencement of the disease, repeated until the balance of the circulation was restored, and constant care lest congestion should take place in any of the important viscera—to be immediately prevented by topical bleeding and blisters. Should the liver seem diseased, mercury of course, would be the requisite remedy, after depletion had been premised. It would be presumption to deduce from such a small number of cases any general view of the nature and causes of the disease, but in justice to the climate of Malacca it ought to be stated, that in none of the three instances above noticed, could the Fever be traced to the operation of Miasmata or Malaria. * Fatigue and exposure to the sun seemed in all to have been the exciting causes. A few cases of Quotidian and of tertian were admitted into hospital, but intermittents are by no means of frequent occurrence, and those which are occasionally seen, are not well marked. They were readily subdued by the usual treatment, evacuants followed by Bark.

Hepatitis, either in its chronic or acute form is very seldom seen among the natives, tho' the Europeans and their descendants in the settlement exposed to it's common exciting causes, are equally subject to it, here, as in the Peninsula of India

Diarrhœa and Dysentery are common affections among the inhabitants at all times, but more especially in June, July, August and September, when fruit of all kinds is abundant. The attacks however are seldom severe, readily yielding to a few doses of Castor oil, or to the treatment of the natives already alluded to.

Catarrh and Rheumatism are also frequent affections in the rainy and cool months of November, December and January. The latter disease, as in other parts of the world, is sometimes severe and obstinate.

Asthma, is a common disease among the Malays of the peninsula,

* "It is pleasing to state that no fever has *ever* occurred from a visit to the Peak" (Mount Ophir) "although the country passed thro' (alternate Jungle and swamp) looks the most feverish you can "imagine." Capt. W.s letter in *Pinang Govt. Gazette, 1st September* 1829.

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and is to be ascribed in some measure to the moisture of the climate. *

Cutaneous diseases have been already frequently alluded to, as common affections among the natives of all classes. Ulcers which occasionally appear in an epidemic form among the sepoys from India, have been described at length in another place.

The species of Leprosy called by Bateman Elephantiasis, by the Arabs juzam (جذام) and by the Malays kusta (كست) has been observed to affect some of the natives of Malacca, mostly those however of the lower classes of all tribes. About two years ago, the number of them increasing, and from their profession of mendicants, becoming a loathsome nuisance to the community, some charitable persons in the town entered into a subscription for their relief, established a lazaretto in an open airy spot on the sea shore about three miles from the Fort, for their reception, and furnished them with food, clothes and medicines. The medical charge of them was entrusted to the Revd. Mr. Humphreys, an intelligent Missionary, whose principal attention was directed to dressing their sores, as most of the cases were too advanced to allow any hopes of a cure to be entertained. The application he made to the sores, was what is commonly called *hot dressing*, consisting of resinous ointment and oil of Turpentine. For some time, he tried the root of the madar without effect. Since the first institution of the Lazaretto, ten patients have been admitted, four of whom have died. No circumstance has occurred to induce the opinion that the disease is of a contagious nature. It has been found only in detached cases, and supposed to owe its origin to uncleanly habits, and the use of gross innutrient food. A few more respectable people however, who could not have been exposed to such causes, have suffered from it, so that the real exciting cause of the disease must still be a matter of conjecture. It is supposed by many, that occupations in which the hands are often employed in scraping up the earth, sometimes lead to the disease. If such were true however, it might be expected to be more frequent than it has been observed to be. The malady, as it is met with at Malacca so exactly resembles that described by Bateman at p. 298 of his synopsis, that it will be necessary merely to refer to that work. The symptoms I had an opportunity of noting more particularly were the "*shining tubercles of a dusky red*"—"*the hoarse and obscure voice*"—*the cracking and ulceration of the tubercles--ulcers in the throat---destruction of the palate, and cartilaginous septum ulcers in the extremities --gangrene and separation joint by joint of fingers and toes.*" The peculiar redness of the tubercles in native countenances, resembles the flushings produced by intoxication, and might be mistaken for them, unless closely observed. One patient who had been affected with it for only a short period, complained of great debility and palpitation of the heart on the least fatigue, which was easily produced by any very slight exertion. The last stage of the disease, as already remarked, is what is commonly seen in the Lazaretto of Malacca and one in which medicine has hitherto been found to be of no avail. Government, we understand, has ordered the erection of a larger and more commodious building, upon the site of the present in which every attention will be continued to the comfort of the poor patients during their miserable existence. In addition to what has been above stated, it may be proper to remark, that there are other cases in the town besides those in the Lazar-house, and that the disease is sometimes confounded with the last stages of secondary syphilis known here by the name of Sakit besar (ساكت بسر).

Syphilitic complaints and Gonorrhoea are very rarely observed in Malacca, a circumstance which may be supposed to speak in favor of the morality of the inhabitants, notwithstanding the remark of Andrew de Faria,

* "Malays (in Ceylon) are liable to disease of the chest, particularly to pneumonia; as also to consumption and Asthma." Marshall's Med: Top: of Ceylon p. 78.

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an early portuguese traveller and historian, who describes the men of this town in 1511, as being very "*courageous*" and the '*women very wanton.*"* There is perhaps no place in the East, with an equal number of inhabitants, and which has been so many years under the sway of Europeans, with fewer of the "frail sisterhood" within its precincts.

The immunity of the straits, and the Indian Archipelago generally from attacks of Hydrophobia is worthy of notice, as it is a curious fact in the history of the disease. No case of it has ever been observed in this part of the world, tho' pariah dogs are equally numerous as in India, and feed on equally impure substances. May not the constant moisture of the climate and the moderate range of temperature have some effect in preventing its occurrence? However, until we are better acquainted with the remote causes of the disease, this subject must remain in obscurity.†

Among the EPIDEMIC DISEASES, with which Malacca has been occasionally visited, Cholera deserves the first notice. From all accounts, it reached this town in May or June 1819;* it appeared a second time in the same year in the month of December, when the mortality was very great;‡ it subsided about the middle of January 1820;† in 1823, it again made its appearance and paid a fourth visit in 1825 since which time it has not been seen in an epidemic form. From the absence of all official documents, relating to its occurrence, I have been obliged to trust in the above sketch of its appearance at various periods to occasional notices of it in Dr. Milne's Diary, as published by Dr. Morrison in the book referred to, and to private information; from the same cause too, it is now impossible to determine, whether it was imported by infected persons, "or borne on the wings of the wind" from the opposite peninsula. It seems to have run precisely the same course, to have exibited the same phenomena and to have been benefitted by the same treatment, as in India. Since its first appearance, it is supposed to have swept off between 700 and 800 of the inhabitants of the town alone, independently of its numerous victims in the surrounding country, whose numbers could not be ascertained. As already mentioned, sporadic cases of it occasionally occur, having some connection with the season of fruit, to the inordinate use of which it may in a great measure be owing.

Small-pox is another scourge, more severe even than the above, since it is more frequent in its attacks, and almost equally fatal. Scarcely a year passes without its appearance; and from the nature of the country, little hope of its eradication can be entertained, until civilization, and the consequent general introduction of vaccination shall be established. This "is a consummation devoutly to be wished"—but it must be the work of time. The Malays of the interior are strongly prejudiced against the practice from not having had sufficient proof of its efficacy. Many cases too of small pox, have occurred in those previously vaccinated, but, as the operation was performed some years ago, it is now impossible to ascertain either the nature of the virus, or the method employed of introducing it. Both may have been unfavourable, and the failure therefore in these cases is no argument against the practice of vaccination, tho' it has weakened the confidence of the inhabitants in its protecting power. Lately indeed there has been considerable difficulty in producing the real vaccine disease. Virus was procured from all quarters, and was employed according to the most approved methods; but the result has generally been either a slight spot of inflamma-

* Kerr's Collection of Voyages Vol. VI. p. 139.

† "The disease, even when of spontaneous origin, has appeared under, perhaps, every variety of "meteorological change and seems to be far less common in hot and sultry regions than in those of a "moderate temperature." Goods' Study Vol, III. p. 345.

‡ Memoirs of the Revd. W. Milne, D. D. jam citat *passim.*

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tion, or a spurious vesicle which has soon filled with pus.§ The cases of small pox after vaccination, even under these unfavourable circumstances have, with very few exceptions, been modified and rendered much milder.

The Cynanche parotidea or Mumps, sometimes prevails epidemically in this settlement. In the beginning of the present year (1828) scarcely a child escaped an attack and many adults were affected with it. The weather was moist and cool. The disease was ushered in generally, with a smart paroxysm of fever, which gradually subsided on the appearance of the swelling in the neck. The treatment consisted in opening the bowels, small doses of Calomel and Antimony, and the adoption of an antiphlogistic regimen. I am not aware of any case having proved fatal.

§ The same circumstance has occurred at Pinang and Singapore—the effect of the virus being similar.

APPENDIX.

TABLE OF THE FRUITS FOUND IN THE BAZAR, MALACCA.

N. B.—Buah, the Malay term for Fruit in general, is always prefixed to the specific name.

Malayan Names.	Linnean, &c. Do.	Remarks.
Angoor	Vitis vinifera	Grapes. Cultivated occasionally succesfully, but not abundant.
Assam gloogoor	Tamarindus indica	Principally used in the composition of curries, for which the Malays are famed. The fruit is also used, with water, as a cooling laxative drink in fevers.
—— kambing eejoo		
—— kundisun		
5. Babesāām	Morus indica	The Mulbery. Used by the Natives as a mild emollient.
Bāchang	Mangifera fœtida	The Horse mango. A very coarse fruit, of unpleasant odour.—Much eaten by the lower clafses, and producing Cholera, Diarrhœa and Dysentery.
Bāngkūdū	Morinda citrifolia	The leaves of this plant are used by the Javanese in various diseases, as astringents "Bontius mentions their use in Diarrhœa and Cholera. Internally they act as a mild emollient diuretic." Horsfield in Trans: Bat: Soc: Vol. VIII. p. 25.
Batee	*(Not ascertained.)*	
Beenjai	Mangifera cæsia of *Dr Jack.*	A very large oblong, brown color'd rather agreeably tasted fruit, like the common Mango.
10. Bidāra	Rhamnus jujuba	A subacid fruit of a bright yellow color about the size of a cherry the pulp enclosing an elliptical shaped seed. "The Bark of this tree is posfefsed of mild tonic virtues; it is recommended in weakuefs of the stomach, and in diseases of the intestines." Horsfield loc: cit: p. 23.
Bilimbing bisee	Averrhoa carambola	
—— būlū	—— bilimbi	Two well-known, pleasant tart fruits, resembling strongly unripe gooseberries.
Brāmbāng	*(Not ascertained.)*	A sour fruit, used for making chattnies and curry.
Brāngūn	Fugi *species*	In appearance and taste strongly resembling the European chestnut.
15. Chāmpādoo	Arctocarpus integrifolia	The Jack. Farinaceous, mucilaginous, and nutritive.
Chirimi	Averrhoa acida, or Cicca disticha	A pleasant tart fruit. "The root of the *Cicca disticha*, is said to be emetic, and great activity is ascribed to it." Hors: loc: cit: p. 33.
Dālima	Punica granatum	Pomegranate. The rind is used as an astringent, and the bark of the root as an Anthelmintic by the Natives.
Dōkōo	Lansium domesticum, Blume. "Bijdragen tot de Flora van Nederlandshe Indië" 4de stuk, p. 175.	This delightful fruit is the produce of a large tree. It grows in clusters—each is about the size of a cricket ball. The brownish thin skin being broken displays the pulp in six cloves, of a pleasantly acid taste, inclosing a greenish kidney—shaped seed. It is by many reckoned the finest fruit in the Peninsula. The month of July is the season at Malacca, in which it is had in greatest perfection.
Dōriān	Durio zibethinus	This fruit is well-known from the descriptions of Travellers. Those who have overcome the prejudice excited by the disagreeable fœtid odour of the external shell, reckon it delicious. From experience I can pronounce it the most luscious, and the most fascinating fruit in the universe. The pulp covering the seeds, the only part eaten excels the finest custards, which could be prepared either by Ude or Kitchener. Bontius says, it proves laxative, diuretic and carminative; but when eaten in too great quantities, that it predisposes to inflammatory complaints. The Natives consider it to posfefs aphrodisiac qualities. It is certainly in some measure exciting.
20 Gājoōk	*(Not ascertained.)*	The seeds used by the Indian boys as Marbles.
Gāyer	*Do.*	
1. Jamboo mērah	Eugenia Malaccensis	Some of these when in perfection, have a fine flavour—but in general they are insipid being in taste something between a good turnip and a bad apple. The first species is commonly called Jambuo Malacca, and is certainly the finest. The fourth goes under the name of Rose-apple.
2. —— āyer	—— aquea	
3. —— būlū	—— jambos	
25. 4. —— ayer mawar	—— rosea	
5. —— —— cheelee.	—— —— var.	
—— kling	Myrtus cumini.	

	Malayan Names.	Linnean, &c. Do.	Remarks.
	Jamboo krong	Anacardium occidentale	Cashewnut. Fruit coarse, not much eaten. Nut astringent.
	—— bijee or portugal.	Psidium pyriferum	Common guava.
30	Jintue jintue	*(Not ascertained.)*	A handsome looking jungle fruit—an orange pulp surrounds a small seed about the size of a pea, and the whole is enclosed in a trilocular capsule of a deep orange color, hanging in clusters from the branches. Taste sour.
	Kadondong	Phyllanthes Chrysobolanum of Marsden. Spondias. Horsfield.	The Bark of this is used by the Natives as an astringent.
	Kălăpa	Cocos nucifera	Cocoa nut. Of this Rumphius enumerates 13 varieties.
	Kămăng	*(Not ascertained.)*	A fruit of the appearance of a Mango—sour, used principally in curries.
	Kăpas	Bombax pentandrum	The fruit of the Cotton tree, taste sweetish, much eaten. Seeds occasionally eaten. The gum of the tree is astringent and sometimes given in bowel complaints.
35.	Kărkăă	*(Not ascertained.)*	
	Kărmunting	Myrtus tomentosa	A very common and rather handsome plant, bearing a dark purple color'd fruit, about the size of a *hip*; pleasant in tarts, or preserved.
	Kăra tănga	*(Not ascertained.)*	A very hard brownish black fruit, about the size of an egg, containing a farinaceous substance, boiled and eaten like Yam.
	Katăpăng	Terminalia catappa	A large tree—the fruit and Kernel being very like those of the common almond.
	Kayou kŏlit	*(Not ascertained.)*	A small brown color'd fruit, of sweet taste, common in the jungles.
40.	Khoorma	Phœnix dactilifera	Dates—mostly imported from Arabia.
	Kichănee	*(Not ascertained.)*	Resembling the Soontool in appearance. Pulp sweet, tough.
	Kiloor	Guilandinia moringa	Ben nuts of old authors. The whole tree is esculent—the seeds and leaves are aromatic, and used in curries. The root is an excellent substitute for Horse radish. It is a valuable external stimulant. Rumphius says in large doses, it produces strangury and abortion. "The leaves, are recommended in Gonorrhœa as a mild diuretic." Horsf: loc: cit: p. 20.
	Kitapan	Callicarpa japonica	
	Klădang	*(Not ascertained.)*	A small and very handsome fruit, consisting of an outer shell strongly resembling that of the Rambootan, of a bright red color, within which is the seed surrounded by a whitish pulp, the part eaten.
45.	Kolit lawang	Laurus kulit lawan	Small sweet jungle fruits, eaten by the children as hips and haws are in England.
	—— layoo	*(Not ascertained.)*	
	Kooeenee	*Do.*	A small subacid fruit, of the appearance of a Mango, with the same flavor and a very fine scent.
	Koriuchee	*Do.*	A small very dark brown fruit consisting of a hard outer shell, containing a flesh-color'd pulp, hanging in bunches. Sourish taste.
	Kras	Camirium cordifolium. The Juglans camirium of Loureiro	A fruit of the size and appearance of the Winter apple, resembling in all its qualities the walnut of Europe.
50.	Kŭmbŭt	*(Not ascertained.)*	The seeds of a large capitate flower, used in curries.
	Lagŭndee	Vitex trifolia	A small greenish subacid fruit growing in numerous clusters, excellent in tarts. "The root, and a bath or cataplasm of the leaves, is applied (by the Javanese) externally in Rheumatism and local pains in various parts." Horsf: loc: cit: p. 16. The leaves are said to cure intermittent fever, to promote urine, and relieve the pains of the cholic. Id: They are stimulant and aromatic.
	Lampănee	*(Not ascertained.)*	Small jungle fruit, eaten by the Malays.
	Langsĕ	Lansii domestici *var.*	A very pleasant, subacid and favorite fruit of the Malays and others. In appearance, it is like the Dookoo already described. The seeds of it are said to possess Anthelmintic properties.
	Lanjoot	Mangiferæ *species*	The oblong large, coarse looking, green color'd fruit of a variety of mango—rather prized by the Natives.
55.	Leemoo gădang	Citrus decumana	Pumplemoose or Shaddock—rind, a very agreeable bitter.
	—— mănis	—— aurantium	Several varieties of orange both indigenous and imported are to be met with.
	—— kustooree	Citri *variæ species*	Different varieties of Limes and Oranges, the list of which might be greatly increased. Some of them are made into excellent preserves.
	—— jambooa		
	—— japoon		
60.	—— neepus		
	—— soosoo		
	Lontar	Borassus flabelliformis	The seeds of the Palmyra tree form very good preserves, and are only used for that purpose.
	Malăka	Phyllanthes emblica	A handsome tree and fruit. From its abundance round the site of the town at the first arrival of the Malays, Malacca is supposed to have derived its name. The fruit has astringent properties.

APPENDIX CONTINUED.

Malay Names.	Linnean, &c. Do.	Remarks.
Mängis (or) Mängistän.	Garcinia mangostena	The far-famed Mangosteen. This fruit has been justly praised by all who have ever written upon it. It is too well known to require description—The *habitat* of it is extremely limited—We believe that it does not extend further to the northward than the old Fort of Tennasserim in Lat: 12° 40.—and all attempts to cultivate it on the continent of India have failed. The shell of the fruit is strongly astringent and decoctions of it are used by the Natives in bowel complaints.
65 Mangistan ootan	Embryopteris glutinifera.	Wild Mangosteen.
Manga dodol	Mangifera indica	Two varieties of Mango; the first of which is very excellent—but much inferior to the graft mangoes at Madras. The common coarse Mango is very abundant and much used.
—— jäo	—— amboinensis	
Mäta küching	*(Not ascertained.)*	A small fruit growing in thick bunches, consisting of a rough brownish color'd round shell containing a deep purple colored seed, surrounded with a whitish opalescent looking pulp like a cats eye, hence its Malay name—much prized.
—— pälandoq	*(Not a certained)*	A small sweetish tasted jungle fruit.
70. Nam nam	Cynometra cauliflora	A fruit of the size and shape of a kidney, of a brownish green color growing on the stem of the tree; the outer shell is the part eaten and when good has some resemblance to an apple.
Nanas	Bromelia ananas	Pine apple, very abundant and very cheap. "The unripe fruits are diuretic and employed as a remedy in Gonorrhœa." Horsf: loc: cit: p. 27.
Nanka	Artocarpus integrifolia	A variety of Jack Fruit—well known.
Nasee nasee	Phyllanthes alba	A small white sweetish fruit in clusters—not much prized
Neebong	Caryota urens	The small flat pulpy fruit of this palm is made into a good preserve for the table.
75. Nöna	Annona reticulata	The Bullock's heart, a much prized fruit.
Päla	Myristica moschata	Nutmeg. Made into a preserve, when in a half ripe state.
Päpäya	Carica papaya	A pleasant, well known fruit. The seeds are employed by the Natives as Anthelmintics.
Pinang	Areca catechu	Common Betelnut. Sometimes employed in decoction as an Astringent in Diarrhœa.
Pisang	Musa paradisea	The Plantain. Of this about 40 varieties might be enumerated. The best are the Pisang mas, P. raja, P. oodang, and P. medgi.—Decoctions of the root are used as emollient applications.
80. Poolasan	Nephelii *species*	A very delicate, and pleasant fruit.
Rämbootän	Nephelium lappaceum	Differs from the preceding in size, and in having long bristle-like processes on the outer shell.
Rambai	Lansii *species*	This pleasantly subacid fruit, about the size of a small plum, hangs in graceful clusters from the branches of a large tree. The pulp surrounding the seed is the part eaten.
Rambaya	Metroxylon sagu	From the pith of this tree Sago is prepared. The flattish fruit is made into preserves for the table.
Rookäm	Carissa spinarum	A common fruit, of a purplish color clustered round the stem, good in tarts, or making jellies,
85. Salak	Calamus zalacca	Fruit used as a preserve.
Santool	*(Not ascertained.)*	A fruit of a yellow brown color, about the size of a moderately large apple—consisting of a thick hard rind containing 5 or 6 cloves, resembling the Mangosteen; taste sourish.
Sapran	Cœsalpinia sappan	Little used.
Seri kaja	Annona squamosa	Custard apple. Well known.
Sika duduk	Melastoma	A common wild fruit—rather astringent, little prized.
90. Sookoon	Arctocarpus incisa	The Bread fruit. Little used.
Soongool ootän	*(Not ascertained.)*	
Soorbu räsu	*Do.*	A kind of mango—oblong, large, pulp surrounding the seed of a rich sweetness.
Soopoom	*Do.*	A sour fruit of the Mango kind, used in curries as in making chattinies.
Soorboot	*Do.*	A jungle fruit.
95. Sow, or säo	*Do.*	A handsome deep red jungle fruit, about the size of a hen's egg, consisting of a sweetish pulp surrounding 3 small brown seeds.
Tampang	*Do.*	This fruit exactly resembles, an overgrown strawberry; externally it is of a greenish color mixed with red; internally of a fine pink color.—Taste subacid.
Tanjong	Mimusops elengi	Of little value as a fruit. "The bark is a mild tonic; it has been found useful in fevers and as a general roborant; used in decoction."—Horsf: loc: cit: p. 39.
Tampoo,ee	Lansii *species*	A small subacid fruit.
Tampoonee	Arctocarpo *affinis?*	A fruit in external appearance like a small Jack, and like it also containing rows of seeds, but without kernels. The pulp of a yellowish color, is of an agreeably subacid taste, and is highly prized both by Natives and Europeans.
100. Tömi tömi	Flacourtia inermis	A small reddish fruit; used in making tarts and jellies.

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NOTES,

On the Phagedænic Ulcer, and other diseases prevalent among the Native Troops at Malacca, in the year 1827-28, *with Tables and Cases.*

BY T. M. WARD, *M. D.—Madras Establishment.*

IN February 1827, about 300 men of the 25th Regiment M. N. I. and 60 Native Artillery men were sent to Malacca, shortly after their arrival at Pinang from India, to relieve a detachment of Bengal Troops. In the month of May following, a re-inforcement of another Company arrived; and along with it, were fifteen patients affected with sloughing ulcers, which had been raging for some time at Prince of Wales Island, sent down for change of air. The number of sepoys in the Garrison, from June 1827 to July 1828, averaged about 400, the greatest number present at one time being 457, the lowest 342. From the smallness of the force and the variety of posts, duty was considered rather hard; the men being on guard every third or fourth day; and consequently frequently exposed to the vicissitudes of the weather.

The huts of the Sepoys are built, in the form of a regular street, on an open airy spot, at the N. E. end of St Paul's hill within 200 yards of the sea-a situation formerly occupied by the fosse now filled up by the *debris* of the old walls, giving it a hard and solid foundation. The dryness of the spot is ensured by ditches round each hut, with a gentle slope towards a small river running within thirty yards of their western extremity, thus facilitating the escape of water which might otherwise collect to the prejudice of the men's health. Each apartment, allotted to three sometimes four men, is about 12 feet by 14, constructed in the native manner of *Cooley coy* and *atap*. All the men slept on rattan cots, or on platforms raised two or three feet from the ground; a practice absolutely necessary in such a moist climate, and one which the Malays invariably adopt. So conscious indeed are the latter, of the dangerous consequences of sleeping on the ground, that their houses are generally raised at least five feet on piles. There was no circumstance then, either in the site of the barracks, or the accommodation of the men, that could have had any influence in increasing the Sick list. The Hospital for the reception of the Troops, Convicts and Patients in the Civil Department is situated on the Parade ground, within a few yards of the Sepoy lines. It consists of two houses attached to each other, divided into three wards, two on the ground floor, and one in the Upper story, the respective dimensions of which are as follows.

1st Ground floor 42 feet by 17 containing from 18 to 22 beds. 2d Ground floor 49½ feet by 25¾ containing 26 beds. 3d Upper story 42 feet by 17 (not including verandah's) holding 20 beds. There are besides sleeping apartments for the Medical servants, a Surgery, Cooking-houses, and other necessary accommodations.

The daily food of each sepoy supplied by the Commissariat, was one seer of rice, four ounces of dholl and two ounces of Ghee. Many limited themselves entirely to this allowance being too penurious to purchase more nutrient articles; others indulged themselves occasionally with fish, vegeta-

bles

bles and poultry; but animal food of a more nourishing description was so scarce and so expensive that few could afford to use it in sufficient quantity.

Ulcers were by far the most frequent Complaint among the troops here, and the one which proved most distressing both to the patient and the practitioner. They had been prevailing at Singapore and Pinang, for several months in the severest form of Phagedæna, and we had begun to flatter ourselves that there was some peculiarity in the climate of Malacca which rendered the men less liable to the disease than at the other stations in the Straits. These hopes soon proved fallacious; in the middle of May 1827, it appeared in an epidemic form. From this time up to May 1828 the number treated every month averaged about 47, out of a medium force of 420 men, the greatest number in Hospital in any one month being 65 the least 20. In the following Table No. 1. will be found a statement of all the cases admitted, and the result of the treatment adopted.

They appeared in two forms the Common and the Phagedænic, the former if not carefully watched however, frequently running into the latter. The characteristic of the Common form was the tediousness of cure, as they seldom affected the general system and required little more than local applications for their relief. They generally arose from neglected spots of itch, scratches or opened boils. They appeared in all the varieties of ulcer, enumerated by Sir Everard Home, and required the applications to be varied accordingly; but as they differed little from Ulcers occurring at other stations in India, any detailed account of them will be unnecessary.

The Second form or the Phagedænic Ulcer, will require more particular notice. About one sixth of the whole number included in Table First, were cases of this nature. It appeared in two distinct varieties, each running a different course, and requiring at least in the commencement different modes of treatment. These I have taken the liberty to denominate the Acute and Chronic Phagedæna.

The First or Acute variety commenced, if in a previously indolent ulcer, by a small circumscribed fiery spot; if on the sound skin however, by a minute, bright red irritable pimple, which on being scratched, was soon converted into an ulcer. The after course was in both cases the same. It extended rapidly with great pain and constitutional irritation, sometimes reaching the size of a half crown piece in less than 12 hours. There was little discharge from it, and when any, it was of an ichorous and acrid nature. The edges were raised, ragged, often deeply indented, resembling the outline of a map, and of a purplish or red color. In a few days it extended over a considerable portion of limb, involving in destruction, muscle, tendon and ligament which were soon converted into a black or brownish slough. In this respect, it somewhat resembled those cases described by Mr. Leslie in his paper on the sloughing Ulcers of Prince of Wales Island, published in the 3d Vol. of the Calcutta Medical and Physical Society's Transactions. The constitutional symptoms were considerable fever, white dry and loaded tongue, great irritability, restlessness and almost total sleeplessness. It generally occured about the ankles, or on the front of the tibia—in only one instance in the upper extremities, and that in an opened abscess. If the progress of the disease was not checked, the ulcerative process went on, the irritability and fever increased, and the patient died apparently worn out. In most instances however, when proper treatment was adopted early, the pain lessened, the slough began to separate, the edges became more regular, the constitutional symptoms decreased in violence, pus was thrown out and granulations commenced. In some, it put on the second or chronic form about to be described, when the cure was exceedingly tedious. In others, relapses took place, even from the slightest irregularity in diet or regimen, occasionally indeed without any obvious cause. In the milder

milder cases of it, the skin and cellular substance were the only parts that underwent sloughing, and in these when the healing commenced, the muscles and tendons were seen as distinctly, as if they had been dissected by the knife of the anatomist. During the prevalence of the disease, two cases occurred where it attacked a common sore on the penis. It could not be arrested and completely destroyed that organ in both instances. It occasionally also attacked blistered surfaces. The most severe case I witnessed, was one in which it affected the whole foot, gradually destroying the toes, which dropped off one by one, and lastly separating the foot itself at the ankle. The patient died exhausted from the discharge and long suffering.

The second or Chronic variety was more frequent than the foregoing, and equally destructive though slower in its progress. It occurred generally in weak sickly men, and seemed connected with a scorbutic state of the system. The pain and constitutional symptoms were much less violent than in the acute variety; indeed in the most severe cases least pain was complained of. There was much restlessness however, and great anxiety of countenance. The characteristics of this ulcer, were its slow progress, its raised, clear and regular, shining red edges, a circle of œdema for 3 or 4 inches round it, and a thick cream colored, yellowish or brownish yellow slough so tenacious frequently as to resist the scalpel. The discharges from it were intolerably offensive, so much so that no one could at first remain in the room appropriated to the patients affected with it, without nausea, and fumigations with nitrous acid, or benzoin were constantly necessary. It sometimes threw out greenish cauliflower excrescences, which covered the whole face of the sore, and rose considerably above the surface. The muscles when exposed were frequently considerably swollen, as if inflated, bulging out in the centre of the diseased mass. The ankle and back part of the leg were the parts most frequently affected; and in two or three instances the ulcer involved great part of the Gastrocnemius and Solens muscles, completely destroying the Tendo Achillis. When the slough began to separate, the tendons were frequently found hanging in clusters from the half destroyed muscles. No texture escaped its destructive influence; skin and cellular substance evidently suffered most rapidly; muscles next; then tendon, and lastly bone, which sloughed off in pieces, during the progress of healing. The Arteries or Nerves were rarely affected. The separation of the viscid slough; absence of the very offensive and very peculiar smell; a circle of healthy inflammation round the sore; increase of pain, and improvement of the general health indicated a favorable termination. The edges generally became clean first; and frequently in an extensive ulcer, one half would be throwing out granulations, and cicatrizing rapidly, while the other was still under the sloughing process. In the long continued cases, hectic fever was observed; and Diarrhœa was a frequent occurence.

In few cases, when severe, did either form terminate without loss of life or limb, or the destruction of such a considerable portion of muscle, as to render the patient unfit for further effective service. Amputation was performed in three—in two of them however, at such a late period of the disease, as not to succeed in saving the lives of the patients. Five in all died, including one, who expired the day after his arrival from Penang.

The Disease was evidently epidemic, depending either upon some peculiar state of the atmosphere; or upon some cause acting generally upon the whole body of troops. It seemed to attack the young and the old, the robust and the weakly, indiscriminately. Nothing occurred to create any suspicion of its being contagious, though for the sake of certainty, every precaution, such as supplying clean sponge to each patient, avoidance of contact, or crowding, and separation of the bad cases, from the more simple, was carefully taken. Independently

Independently of neglect of cleanliness, which, in the case of Phagedæna must be reckoned merely a predisposing cause, I am inclined to attribute the prevalence of Ulcer to two causes—some peculiarity in the Atmosphere, and want of proper nutrient food. Of the former little can be said, until the nature of Malaria be better understood. Great moisture however, seems to be that state of the air, which is principally concerned in the production of this disease; as we find that in all eastern countries, where the moisture of the climate is great, as on the Malabar coast, in Ceylon, Arracan and Ava, these ulcers prevail among Sepoys. In a Table of the weather at Malacca constructed from a Register kept by Colonel Farquhar in 1809* out of 365 days, we find 161 on which rain fell; and during the first six months of 1828, a total fall of 42 inches was indicated by the Pluviameter. In December too, which was a very rainy month, the Ulcers which had previously begun to heal broke out afresh, and simple ones quickly assumed the sloughing character, and one death took place in that month, one in January, and two in February. The natives of the country are seldom affected with it, Europeans never. It attacks the lowest class of Chinese shortly after their arrival from the mother country, but this may be ascribed to the scorbutic taint they may have acquired during a long and tedious voyage, much crowded, and with very indifferent food. This leads us to the second principal cause to which I am inclined to refer the prevalence of Ulcer among the Sepoys. Deficient nourishment lowers the tone of the system, lessens the vital power, creates languid circulation in the extremities, and in cases of slight solution of continuity, impedes that regenerative process which readily takes place in healthy subjects. The constitution becomes less capable of resisting disease; hence a scratch, an abrasion from friction of the slippers, a pimple or an opened boil, readily degenerates into an extensive ulcer. Hence also the tedious convalescence from even slight complaints, and the occurrence of Anasarca after febrile affections to be afterwards noticed. Many other circumstances too, in the life of a Sepoy on Foreign service, concur to render him more liable to disease. He is at all times a helpless creature—from folly or inexperience unable to take those precautions necessary to guard himself against the attacks of sickness. On night duty, he leaves his hot, close apartment bathed in perspiration, and exposes himself to the cold sometimes piercing land wind, blowing over immense tracts of jungly country; his boat cloak meant as a protection being thrown aside as an incumbrance. Absence from his home and his family, has a depressing effect upon his mind—his food, dressed by his own hand is often of an inferior description and scanty from penuriousness on his own part. His moral qualities become sometimes contaminated, and the abundance and cheapness of arrack allure him frequently to intoxication. As the following quotation from Dr. Marshall's, excellent Topography of Ceylon, applies in most respects to the disease under consideration as it appeared among the Troops at Malacca, and moreover supports what I have adduced above, respecting the cause of its prevalence, I have not hesitated to insert it here. "There are many circumstances" says he, "which may be assigned as tending to occasion the prevalence of Ulcers of a high degree of severity, among the Madras Sepoys; and perhaps to these phenomena, we should chiefly attribute their occurrence at this time. Sepoys possess but a limited share of vigour, either of body or mind: they are very susceptible of disease, particularly endemic fever. I would therefore ascribe the prevalence of Ulcer among these people to the above circumstance, as also to great change of climate they having been recently removed from the hot dry air of the peninsula of India to the comparatively cold and moist

* Trans. of the R. Asiat. Soc. G. B. & J. Vol. I. p. 385.

climate

climate of the hilly interior of Ceylon; to great fatigue; to exposure to variable weather; to their helplessness, perhaps to their indolence in regard to the means of preparing their food; to privations of various kinds in part arising from a disposition to hoard their pay, rather than to expend it, (when an opportunity offered) upon useful articles of diet &c. and to an inaptitude, from long acquired habits to conform themselves to the situation and circumstances in which the service in Ceylon frequently placed them."*

From whatever cause the disease originates, it only attacks men newly arrived, seldom however before two months exposure to the morbific influence of the climate; and it generally disappears, when the constitutions of the men have become assimilated to the change by a residence of from eight to twelve months duration in the straits. These facts are adduced from observations made at Pinang and Singapore, as well as at Malacca, on the occurrence of the disease at these separate stations, both among the Madras troops, and the Bengal ones who immediately preceded them. We may presume therefore, that every new corps on its arrival. will be liable to its attacks; in spite of every precaution; that in the first year the hospital will be crowded with cases of it; and that losses both of life and limb will be numerous. This circumstance shews the importance of investigating the nature and treatment of this affection; and has induced me to offer these remarks on it, hoping that the result of my experience may prove of some benefit to practitioners, who may be subsequently employed in the Straits.

The Treatment of the Phagedænic Ulcer varied of course according to the form which it assumed. In the first or Acute variety, Emetics of Ipecachuan and Tartrate of Antimony were invariably given, and sometimes with success at the commencement of the attack; great attention was paid to the state of the stomach and bowels; the strictest rest was enjoined, and the applications were mild and emollient. Local bleedings, by means of numerous and repeated incisions, thro' the raised and thickened edges, followed by warm fomentations, were practised in most instances and tended generally to relieve the pain and irritation, and forward the separation of the sloughs. When there was much fever, the nauseating solution of Tartar Emetic was diligently exhibited, with occasional purgative doses of Calomel and Antimony. When the pain was considerable, Opium at bedtime, combined with the above, always gave relief—When the violence of action in the ulcer subsided, and the sloughs began to form, the treatment was the same as that of the second variety, now to be described.

The second or Chronic variety of Phagedæna required the exhibition of stimulants and Tonics both internally and externally from the very commencement. The most useful stimulating external applications were the *hot dressing*, consisting of equal parts of oil of turpentine and unguent: resinosum—diluted, and pure nitric acid—Solutions of Nitrate of silver —Balsam of Peru— Powdered Bark—finely Powdered Rhubarb—Solution of Camphor in Spirit of Wine—Powdered Bark and Nitre—and powdered Nitre,—with common, fermenting, or charcoal poultices. Liquid applications were always preferred to unctuous ones, at least as long as the sloughs continued. Previous to the application of any of the above, free and numerous incisions were made thro' the thick, tenacious cream colored sordes, with a scalpel, until blood flowed. I am inclined to attach some importance to this practice. Little advantage is to be gained from acting on the slough itself; the surrounding and subjacent parts possessing life, are to be roused into activity; the remedies must be applied to them; and this, I think, is ensured in some measure by the deep incisions above recommended, which afford free access of the stimulating applications to the sound

* Marshall's notes on the Med: Topography of Ceylon p. p. 214, 215.

parts,

parts. Hence the superiority of liquid to unctuous dressings. After the scarifications, the whole surface of the sore was covered with the selected dressing, either spread upon or dipt into lint, sometimes copiously poured over it, and over all the poultice was applied and kept on by a loose bandage. Each of the above enumerated external remedies was occasionally found highly beneficial, but they required to be frequently changed, as no one seemed to retain its good effect more than five or six days. In the worst form of the disease, that with little pain, and thick cream colored or greenish sloughs, where there was evident want of action, the greatest benefit was derived from the application of pure nitric acid, by means of a feather, after scarifications thro' the sloughs followed by the use of the fermenting or Charcoal poultice. Finely powdered nitre sprinked over the sore was frequently found efficacious in detaching the foul and offensive sloughs. When these began to separate, and healing spots were visible, the Balsam of Peru was found highly beneficial. It soothed the pain, removed the offensive odour, and hastened the separation of the dead parts from the sound. When this last process was complete, recourse was had to simple dressing of either common or Turner's cerate; and when cicatrization was fairly established, gentle pressure, by means of adhesive straps, was applied to the limb, for some distance above and below the sore, as recommended by Baynton.

But both in the Chronic variety, and latter stage of the Acute, the principal confidence was placed in the use of internal remedies, and above all in the liberal use of Port wine, arrack, Bark or Sulphate of Quinine, and nourishing diet. Wine was abundantly supplied by the Government of Fort Cornwallis. During the year 44 dozens of Port were used in hospital, administered principally to those affected with Ulcers, and to this free exhibition of it, am I inclined to attribute the small proportion of fatal cases.*

Bark and acids were powerful adjuvants, and administered in almost every case. Opium in large doses was always given at bedtime when the restlessness and irritability of the patient indicated its use. The diet was of the most nourishing description, Beef Soup (to the Musselmans) Mutton, Jellies, Broths, and the free use of fresh fruit. In a few cases, where the liver seemed affected, denoted by yellowness of the skin and eyes, and deranged alvine evacuations, Calomel as a purgative was given with advantage; but from the scorbutic diathesis prevalent among the men, and its well known debilitating effect, seeming to contra-indicate its general employment, it was administered always with caution. The complete separation of the sloughing cases, from those of a more simple nature, is of some importance, not so much from fear of contagion, but that the patient might have the full benefit of free ventilation, and that those in hospital with other complaints might not be annoyed by the offensive smell from the putrefying ulcers. For these reasons, I early recommended the removal of all bad cases, to a well ventilated shed in an open airy part of the lines, and I think with advantage. Fumigations with nitro muriatic acid were diligently used, and during the dressing hours,—always three times a day, sometime oftener—Benzoin was regularly burnt, for the purpose of concealing the disagreeable odour. In the amputated cases, the stump was not affected with the disease; but in the successful one, the adhesive and healing processes were remarkably tedious.

With regard to prophylactic measures, little can be said. The bigotry of caste prevents any interference with the food of the native soldier, and even were it possible to overcome this, animal food, as has been already

* Five out of a total of 222.

remarked,

remarked, is too scarce and too expensive at Malacca, to be indulged in sufficiently often. The duty of the Sepoy may be made as easy as possible for the first six months after his arrival; exposure to the damp and cold of night may be guarded against by warm clothing, and especially by enforcing the employment of the boat cloak; the men ought to be warned of the danger of sleeping on the ground or in the open air, and to be recommended to use as nourishing and as stimulating food as they can afford. Their Sandals resembling the *soleæ* of the Romans, and of most awkward construction, very apt to produce abrasions of the cuticle which soon run into ulcers, ought to be dispensed with. The Havildar, or Native officer of each company should regularly inspect every man twice a day at roll-call, and send immediately to Hospital any one with even the slightest cut, or scratch or solution of continuity of any kind. By the adoption of these measures, if the disease cannot be altogether prevented, its severity may be much mitigated.

Fever, next to ulcer, was the most important disease treated at Malacca during the period included in the returns. As in other parts of India, it seldom had those strongly marked characters which it exhibits in European patients, and it was often difficult to decide whether a case should be described as one of the remittent or intermittent type. The prevailing type however at this station was the Remittent, with an exacerbation twice a day. There were also a few cases of Intermittent, and some of a mixed character to be noticed more particularly hereafter. Of continued fever no well marked instance occurred. In the intermittents, the cold stage was shewn, in most cases, by merely a slight feeling of chilliness over the body; the hot fit was most distinct; and the termination in sweating of short duration, leaving the patient comparatively free from disease. The whole paroxysm seldom lasted more than three hours. They readily yielded to emetics on admission, to the tartarized antimony solution during the hot stage, and to bark or sulphate of Quinine in the intervals. In the Remittents, slight heat of skin, debility and headache more or less continued during the whole period of the disease, without any positive apyrexia; and these symptoms increased in severity once or twice during the day, each exacerbation lasting from four to six hours. It appeared most frequently in young men previously healthy, after exposure to cold or wet while on guard. There were besides a few cases of Fever of a mixed kind, partaking both of the remittent and intermittent form, and occurring principally in old worn out, or weak sickly men. The patient complained only of general heat and uneasiness his expression was, when asked respecting his complaint, *ānk tamām garm hy;* * there was constant heat of skin, with an exacerbation of three stages, at some period, but irregularly, during the day, generally only once. The tongue was commonly pale and white; the evacutions morbid, though irregularity of bowels was not complained of. There was little thirst. The treatment adopted in the Remittents, and in the mixed cases, was nearly that recommended by Dr. Annesley in his "sketches of the Diseases of India" p. 266. If, on admission there was considerable action, a small quantity of blood was abstracted. This however was seldom found necessary. An ounce of solution of Tartrate of Antimony—6 grains to the pint of water—was administered every ten minutes, or quarter of an hour, until free vomiting was excited: the same was afterwards given every 4 or 5 hours, to keep up a constant moisture on the surface. A few grains of Calomel were administered at bed time, and a dose of Compound powder of Jalap, or oil, or infusion of Senna and Salts ordered next morning. This generally had the effect of cutting

* Meaning, "my whole body *appears* hot."

short

short the disease, when bark in substance or in decoction, or the Quinine was given to complete the cure. Out of 114 cases of the disease treated in this manner, only three deaths occurred, and one of these from supervening Phthisis pulmonalis.

In some cases, great debility and a train of very troublesome symptoms succeeded even mild attacks. Numbness of the hands and feet, probably from effusion in the spinal canal, anasarca and derangements of the digestive functions, were among the commonest of these. Blisters and stimulating frictions to the back were sometimes tried with success. In the derangements of the Primæ viæ, consequent to fever, denoted by want of appetite, by puffiness and sensation of fullness after eating, by the tongue being sometimes white, without fur, sometimes lobulated resembling the pancreas in appearance, sometimes deeply sulcated with the papillæ enlarged and the edges red; and by the nature of the dejections, which were generally frequent scanty and offensive, large doses of Pulvis Ipecachuanhæ from one scruple to a drachm at a time, were recommended by Staff Surgeon Conwell, and proved occasionally useful. It seldom produced vomiting, but excited nausea for several hours after administration. Its immediate effects were, increase of appetite after a few days' use, and a beneficial operation on the alvine discharges which became more feculent, and more consistent. Of its *modus operandi*, I can say nothing Dr. C. considered, that it acted directly upon the Ulcers in the mucous coat of the intestines, the existence of which in his opinion, created the train of symtoms above enumerated. The most effectual remedies however were nourishing diet, a full dose of Compound powder of Ipecachuan at bedtime, followed in the morning by an infusion of Chiraita and Rhubarb; and if possible, change of air.

Anasarca was rarely observed as an idiopathic affection. More frequently it was found to be the sequela of disease, particularly fever, for which the patient had been previously treated, and discharged from hospital. The fatal case, in its last stage, presented all the symptoms of well marked Beriberi. The treatment consisted principally in the exhibition of Tonics, drastic purgatives, and diuretics especially Digitalis. In one case where abundant effusion had taken place into all the cavities, nearly 400 drops of the Tincture were administered in the course of two days and two nights, with the most happy effect. The urine which had previously been very scanty, was discharged in quantities of, from six to eight pounds daily, and all the bad symptoms soon disappeared. The patient was carefully watched during the exhibition of the remedy; his strenth was supported by Gin-punch frequently given, and water in which Cream of Tartar was diffused, was his common drink. In desperate cases, such as the above, where life is threathened, perhaps larger doses of Digitalis might be ventured on, than are generally administered. In the generality of the cases however, milder means proved successful, though the cure was tedious.

Catarrh was a common affection during the cool and rainy months, especially in men exposed on guard during the night. It yielded readily to a few days' rest, depletion and diluents. Two well marked cases of Pulmonary Consumption proved fatal, one supervening on Catarrh, the other occurring after fever. An opportunity was obtained of examining the body of the latter, when the whole mass of lung was found studded with numerous abscesses and large portions of it entirely destroyed by suppuration.

Colic, Diarrhœa and Dysentery were of frequent occurrence, resulting generally from the use of half ripe fruit, or other indigestible substances. The former was treated in the usual way, by hot fomentations,

anodynes,

[illegible] enemata and Castor oil. [illegible] yielded to anodynes and Castor oil, or to the Pulvis Ipecac: Compositus, and Chalk mixture. When it became chronic, a combination of blue pill. Ipecachuan and Opium followed by a decoction of Chiraita and Rhubarb was found efficacious. The disease proved fatal to two worn out men. The cases of Dysentery were of so mild a nature, that little need be said of them here. It was seldom attended with any inflammatory symptoms; but when these occurred, leeches were applied to the abdomen with success. The plan of cure consisted in giving the following pill three times a day, and a dose of Oleum Ricini every morning, until the evacuations became regular. R. Pulv: Ipecach: grs. 2. Pil: Hydrarg: grs. 3. Opii puri gr. $\frac{1}{2}$ M ft. pilul: This treatment generally proved effectual in 5 or 6 days, when some light bitters were ordered. No case occurred of Scorbutic Dysentery.

ITCH from neglect of cleanliness, and the use of fish diet, was very common among the sepoys, for the first year after arrival. The forms in which it appeared were either the Scabies lymphatica, or Scabies cachectica of Willan. the latter being that commonly called Malabar itch the *koodis* or *kourap** of the Malays. Occasionally it became very distressing, resisting every means of cure, and in some cases if neglected or irritated by scratching, running into Phagedænic Ulcers. The usual remedy was Sulphur, both internally and externally, assisted by sea bathing and in the more obstinate cases, warm baths and alterative mercurial medicines.

RHEUMATISM was also a common affection, and exceedingly difficult of cure. It was generally of the chronic kind, and assumed every form, under which it is usually described, sciatica, lumbago, and burning of the soles of the feet. When it affected the extremities, wasting of the limb almost invariably occurred. In the long continued cases, the general system became affected, and the disease had evidently some connection with a scorbutic taint. All the usual remedies were tried, some with only partial success. Repeated blistering, shampooing, strong stimulating liniments, hot baths, and tartar emetic ointment were the principal external ones; while Dover's powder, nauseating doses of Tartrate of Antimony, Oil of Turpentine, Bark and Sarsaparilla were given internally. Contractions of the limbs and some degree of Anchylosis of the joints took place in one or two instances. From a want of any preparation of Colchicum no trial was made of that remedy. Independently of the numbers actually put down under the head "Rheumatism" in the Returns, many were affected with the disease, during their convalescence from other affections and these cases were generally the most obstinate.

SCURVY appeared about the end of the year 1827, in a few men debilitated by previous disease. The patients at first complained of great listlessness and general debility. Petechial spots broke out over the body, emaciation occurred; sores appeared on the limbs, discharging a thin ichor, occasionally bloody; the tongue became red, smooth and much sulcated; the gums sometimes tho' not always spongy. The appetite or excretions were seldom much deranged. The pulse was always somewhat accelerated, soft and rather full. Sometimes slight Diarrhœa accompanied the other symtoms. In the mildest form, it resembled the "*Purpura simplex* of Willan; in the most severe the *Porphyra hæmorrhagica*" of Good. Generous diet, portwine, vegetables, fruits, lime juice, Nitric acid, Nitrous vinegar, and the Nitro ammoniated mixture of Hillary, made by dissolving Nitre 1. scruple and muriate of Ammonia gr. XV in two ounces of water, given

* The term Courap. (كورڤ) used by Bontius, and understoood by Bateman in the note at p. 20[illegible] of his synopsis, to signify this disease, is applied by the Malays to the Common ringworm, the Herpes, circinnatus, of Willan—not the Impetigo figurata (See also Note at p. 247. of the Synopsis.)

twice

twice a day, generally proved successful.

Of Syphilis only fourteen cases occurred during the year, most of them as was found on enquiry infected by the same woman. The plan of cure adopted was partly mercurial, partly antiphlogistic. On taking charge of the hospital, I found one patient with well marked secondary symptoms in the form of deep circumscribed ulcers of the size of a shilling over the body; nodes of the bones; and affection of the palate, with extreme emaciation and debility. It yielded after some months to small doses of mercury, with a diligent and free use of Decoctum Sarsæ, and nourishing diet with a liberal supply of Port Wine. It has been already noticed that during the prevalence of the Phagedænic Ulcers the penis entirely sloughed off in two cases. The sores near the Pubis were ultimately healed by mercurial fumigations.

It was found necessary to transfer many of the long continued cases of sickness to Madras, for change of air; more especially those affected with dropsical complaints, scurvy, and rheumatism: and at this distant period I am enabled to say that the removal in most instances was attended with success. Whenever the constitution of a sepoy becomes seriously broken by any disease, he is seldom afterwards effective; he is continually in hospital, and a burden to himself and the regiment; perhaps lingers out a miserable existence and ultimately sinks into the grave. It becomes the duty of the medical officers to recommend, in all such cases, that the men be transferred to their native clime; as this offers the only chance of an ultimate recovery. The excellent advice given by John Bell in his Principles of Surgery, tho' on a different occasion, applies equally here, and I hope I shall be excused quoting it at this time. "Let him carry them (the patients) any where "but to their graves. No expence should be spared; for these are men "who have entitled themselves to care by every claim which men can have; "and no one will dare to check the surgeon in these his most important "duties. You would willingly expend your own fortune in such a cause; "then do not grudge to employ the revenue of the state, for it is employing "and not abusing it! this is not profusion, but the wisest and best econo-"my—" Prin: of Surg. Qto. 1801. p. 117.

In the selection of the following cases, even at the risk of being considered tediously minute, I have been guided by the principle that, to be useful they must be detailed. They will shew, it is hoped, the nature of the Phagedænic Ulcer and the practice which proved most successful at Malacca, better that any abstract statement could. The case of Pulmonary Consumption is given, as it is of rare occurrence among sepoys and offers some peculiarities worthy of remark.

CASES.

No. 1. ULCUS PHAGEDÆNICUM.

Condal raidoo, Sepoy 25th Regiment M. N. I. thin and of delicate habit of body.

18th June, 1827. 6. A. M. Admitted with an Ulcer about the size of a rupee above the outer ankle of the left leg; with inflamed raised and jagged edges, and foul sloughing surface; with considerable pain, and some degree of œdema of the limb. It made its appearance two days ago, in the form of a small pimple, which he scratched. Pulse is 96 soft. T. white. Bowels rather bound. R. Infus: Sennæ Comp: oz. 4 stat. sumend. Apply the simple poul-

tice

tice. Habt. vespere Calomel grs. 6. Pulv: Antimon grs. 5. M.

19th. Ulcer seems to spread. It continues so painful as to deprive him of sleep. Inflammatory symptoms not lessened. Bowels freely opened by the medicine.

Let free incisions be made with a scalpel thro' the edges of the sore, which is to be afterwards fomented with hot water. Habt. vespere Calomel grs. 5. Opii grs. 1 Rept. Infus: Sennæ Comp: manè.

20th. The incisions produced rather a copious flow of blood from the circumference of the Ulcer. After the fomentations, the pain and irritability were relieved for an hour or two. No rest last night. P. 90. Ulcer spreading; now about the size of a dollar; the basis covered with a thick creamy slough, which has a peculiarly disagreeable sour smell.

Apply the Charcoal poultice. Repeat the Calomel and Opium at bed time, and the Infusion of Senna in the morning.

21st. The charcoal poultice has produced no effect. The ulcer is somewhat larger. The slough now resembles dirty white paint with streaks of yellow in it. No rest last night. P. 100 small. Appte: bad. Much thirst.

Make several incisions through the slough, down to the healthy parts, and afterwards sprinkle the surface of the sore with the following powder, Rj. Pulv: Cinchon: ounce Nitrat. Potass oz ½ Carbonis ligni drs. 3 M. tere bene simul. Over all apply the fermenting poultice: Continue Opii grs. 2 h. s. and the infusion of Senna and Salts in the morning. R. Mist: Salinæ lb. Antimon: tart: grs. 4 M. a wineglassful to be taken every four hours.

26th. No change in the applications has been made since last report. Ulcer has been dressed regularly three times a day, and incisions have been frequently made thro' the slough. The internal remedies have also been continued. The sore is now double its former size, and discharges a thick yellow matter, of offensive odour. The skin immediately surrounding it is hard tense red and shining. The œdema extends half way up the leg. The slough is thick and tenacious. P. 110 small. Febrile exacerbation every evening. Nights restless. Thirst. Continr. ommia. Substitute the charcoal for the fermenting poultice. Four ounces of Port wine to be given daily, mixed with water

30th. Ulcer evidently increasing in size Discharge of yellow matter copious. He is considerably emaciated. The hectic symptoms continue. T. much coated. To continue all the remedies already recommended. The sloughs to be cut off with a pair of scissars at each dressing and the leg to be bandaged.

3rd. July 1827. Sore increasing. Slough in the same state. The present dressing seems to have lost its effect. He is feverish towards evening. Night restless. Much thirst. Limb round the ulcer œdematous, red, shining and painful. T. white. P. 100 small. Ommitt. Pulv: Comp. Cinchon. Nitrat potass &c. Admov. ulcer acid: nitricum diliutum—Afterwards dress it with the hot dressing and put over all the fermenting poultice. Continr. omnia a lia.

4th. The application of the acid gave no pain. In every respect as yesterday. Sore now nearly the size of the hand. Eight ounces of wine daily. Continue the other remedies as yesterday.

9th. The same dressing and remedies have been hitherto continued. Little improvement. The ulcer increases. Slough cauliflower-like, cream coloured, with yellowish and red spots here and there upon its surface. Emaciation and debility increase. To have kid and chicken for dinner and 10 ounces of wine daily. Continr. ommia alia.

11th. Sore increasing. Symptoms same in every respect. Ulcer about 4 inches in breadth, and 5 from angle to angle diagonally. Discharge of the thick greenish offensive matter copious. Slough puffed out.

 The

The extensor muscles exposed and puffy. Pain considerable. No rest at night. Emaciation increasing.

Continue every external and internal remedy.

18th. The pain of the limb and sore is less than it was formerly. He still has accessions of fever towards evening but thinks he sleeps better at night. His mouth is slightly affected by the calomel he has been taking occasionally. B. regularly open. T white. Th. less. Appt. bad. Emaciation and debility considerable. No change in the appearance of the Ulcer. Continue the Infusion of Senna oz. 2 in the morn. Continue 12 ounces of Port wine daily. Dress the ulcer with the " Warm Dressing", and the Charcoal poultice. Two grains of Opium to be given every night. Omit the Calomel, the Antimoniated saline mixture, and the dressing with diluted nitric acid.

21st. Debility and emaciation seem to increase. Ulcer and constitutional symptoms, same. Give 3 grains of sulphate of Quinine 4 times a day.

24th. The extensor muscles are bared, and puffy; protruding nearly an inch from the surface of the ulcer. P 100 small. T. white coated. Thirst less considerable. Continue the remedies as before. Cut freely thro' the puffy muscles with a scalpel.

31st. Ulcer not extending. The edges have not that irritable look which they had. The slough is more easily separated, and a patch or two of red have appeared at the edges. T. white furred. P. 96 small. Thirst less urgent. Slight improvement in the appetite. Sleeps better. Continr. omnia remedia externa et interna.

3rd. August 1827. Slough is now peeling off. There is a considerable portion of it removed by the scissars at each dressing. There is now a space of about a quarter of an inch in breadth, along the upper part of the sore, cleared from slough Strength and appetite increasing. No fever last night. Little pain. Sleeps well. P. 86. Continue all the remedies as before.

9th. About the breadth of an inch on the upper margin of the Ulcer is now cleared from slough, and covered with healthy granulations. The remaining part of the sordes has assumed a cauliflower appearance, and is of a greenish yellow color. The fibula is in part exposed, and a small part of it shews a tendency to exfoliate. Where the granulations are, apply simple ointment. Dress the sloughing part with diluted nitric acid, and " *warm dressing.*" Apply to the denuded bone some Tincture of Myrrh, twice a day. Continue the Quinine, 10 ounces of Port wine daily, the Opium at night and black dose in the morning.

16th. The upper half of the Ulcer is covered with granulations which are rather too luxuriant. The lower half still continues covered with the cauliflower looking slough. A small piece of the Fibula black, and likely to exfoliate. The Peronei muscles bulge out still. General health much improved. Apply the solution of sulphate of copper to the granulating surface. Continue the rest.

20th. The swelling of the muscles diminishing. Limb much emaciated, but he has the perfect use of it. Continr. Vini uncias 7. in die. Ommitt. Acid: Nitric: Continr. alia

21st The dead portion of bone has exfoliated. The cauliflower excrescences are diminishing. Granulations healthy. Continr. omnia.

30th. Had a smart attack of fever two nights ago—which left him, after taking a dose of Calomel and Antimony, followed by some Infusion of Senna and Salts in the morning. General health nearly re-established. Ulcer doing well. Granulations extending. The lower third of the sore is still covered with slough with less of the cauliflower appearance. Swelling

of

of the muscles has subsided. Small portions of bone come away occasionally. Slight œdema of the leg continues. Let a Bandage be applied moderately tightly, from the toes to above the knee. Continue 6 ounces of Wine daily, and the other remedies.

3rd. September 1827. Cicatrization advances in the upper, and the sloughing is clearing away in the lower part of the sore. General health good. Continue the Quinine; 6 ounces of wine daily; the Infus. of Senna every morning; the *warm dressing*; the Bandage and the application of Tinct. Myrrhæ to the bone.

15th. Ulcer healing fast. Slough entirely removed; granulations cover the whole surface and cicatrization is advancing. Continr. omnia.

25th. Granulations abundant, rising above the surface. Slight œdema of the leg around the sore. Apply the Solution of Sulph. Cupri at each dressing.

30th. Ulcer diminished one third. The remainder looks healthy. General health good. Continue.

October 1st——31st He is now convalescent. The ulcer has gone on healing slowly during the month without any untoward event. His general health is completely restored. He has a perfect use of the limb. Slips of adhesive plaster, according to Baynton's plan have been regularly kept on the limb for the last month. They are to be continued. His diet is to be nourishing, and he is to have some wine daily.

Discharged convalescent.

No. 2. ULCUS PHAGEDÆNICUM.

Iroolandy, Sepoy, No. 9. Grenadier Company 25th Regiment M. N. I.

11th. December 1827. Has since his arrival in the straits, been frequently affected with Ulcer on the right leg. He came down here from Pinang, for change of air, in May last, with a large sloughing sore. By the use of the common remedies, it was healed up, and he was discharged cured on the 14th of July. He was again admitted—and again cured—but kept on the convalescent list to prevent his being subjected to exposure. Three days ago a small spot appeared upon the old cicatrix, which shewed a disposition to slough. He was immediately brought to Hospital. A foul ulcer of a very unhealthy appearance, now occupies the place of the old scar. It is nearly circular, about $3\frac{1}{2}$ inches in diameter, and has raised, hard and jagged edges. The Peronei muscles are completely exposed, and covered with a dirty yellowish green slough, from which the discharge is very offensive. Fever continued very high all last night. P. 130 small. T. very deeply coated with a white fur. Skin warm. Much thirst. Appetite moderate. Took two grains of opium last night, which procured him sleep for a short time. R. Hydrarg: submur: grs. v. Antim: grs. 3. opii grs. 2. M. ft. pilul: 3. tia qqa hora sumend: Let free incisions be made thro' the slough. Apply the fermenting bran poultice four times a day. Sponge the body frequently with cold vinegar and water. Let him drink Saline Mixture ad libitum.

12th. mane. He slept a few hours last night. Fever continued all yesterday. Has taken the remedies prescribed. Skin is less hot. P. 130 small regular. T. very foul. Ulcer not improved. The slough over the peronei muscles is about $\frac{1}{4}$ of an inch thick—very hard, of a greenish color—and exhaling a most offensive odour. Much thirst. Continue the pills every 4th hour Contr: alia u. a.—Vespere. Fever has been high all day. P. 140 small, soft. Skin cooler. Much pain in the limbs. Th: considerable. Vomits occasionally, T. much coated. One stool this morning. Ulcer in the same state. Continue—sprinkle cold water on the limb occasionally.

13th

13th. Says he feels a little better this morning. P. 130 small. He is very weak, and vomits his food. Ulcer in a horrible state about 4 inches in diameter. Muscles exposed evidently disorganized. Ommittr. Calomel. Habt. Opii gr. 1. *ter in die.* Continr. alia.—Vespere. Ulcer worse—one mass of putrefaction. P. 140 very small, scarcely perceptible. Vomits now every thing he takes, and says what he rejected has a sour taste. He obstinately refuses amputation, which has been repeatedly proposed to him. Let him have two grains of opium every 3rd hour Apply a blister to the Epigastrium, and let him have a drachm of Magnesia. Pure Nitric acid to be applied to the sore.

14th. Vomited only twice since he took the Magnesia, and had the blister applied. Complained much during the night of pain in the sore. Slept a few hours. Took the wine and opium regularly. P. 124 small weak. T. less coated, still white. Took some food which he retained. Much thirst. Skin hot. Two natural evacuations during the night. The Ulcer is in the same state 5 inches long and 5 broad, nearly circular, with raised and everted edges. The muscles are converted into a mass of greenish grey sloughy matter.—Continue the ounce of wine every hour. The opium every 4 hours.—Continue the Nitric acid and effervescing poultice. The saline mixture and subacid fruit ad libitum. Vespere. No vomiting during the day. Does not now complain of pain in the sore.—Great debility, slept a little during the day. P. 130 small. Continue the wine regularly and opium every 6 hours.

15th. Slept pretty well during the night. Took his wine and opium regularly. P. now 125, stronger than it was yesterday. Skin cool. No vomiting. There is a margin now of about half an inch in breadth, very well marked round the Ulcer—of a lighter color than the neighbouring skin. The muscles have been cut into and found completely disorganized, being converted into a tenacious greyish green mass.—The pure Nitric acid produces no effect on his sensations. Continue every remedy as already prescribed, sprinkle the bandage with Tincture of Camphor.

15th. vespere—Vomiting recurred four times. Sore in the same state. P. 140 small weak—Continue.

16th, Dozed during the night. P. is now scarcely perceptible at the wrist. Fluttering in the region of the heart. B. open. Th: considerable. Ulcer in statu quo—Another band of a lighter colour has appeared on the outside of the one mentioned yesterday. The acid has converted the slough into a red colour'd mass. The limb above and below it is œdematous.—Continue the wine only.

17th, He lingered out till ½ past 1 this morning, when he expired.

The sanction of his friends for the inspection of the Body could not be obtained. Muscles of the leg examined after death, found for some inches above and below the Ulcer completely disorganized, being converted into a greenish—grey colored mass, with the fibres, however, distinctly preserved.

This case offered little ground for hope from the commencement. The man was worn out by repeated attacks of the disease, and the last relapse proved more rapid than the previous one, on account of the slight resistance offered to its progress by the newly formed cicatrix.—It is probable that, had he consented to the removal of the limb when it was first proposed, his life would have been saved.

No. 3. ULCUS PHAGEDÆNICUM.

Cawdor Cawn Sepoy No. 85, F. Company 25th Regiment M. N. I, Ætat. 23—of delicate habit of body. December 18th 1827. Was admitted about a month ago with a sloughing ulcer on the instep of the left

left foot. This increased in size, but the sloughs had been removed and it seemed in a fair way of healing up, when about five days ago, shortly after the setting in of the rains, it again put on the sloughing character, and has now become very large being 7 inches in length and 5 broad, covering the whole of the instep. It is attended with little pain. The muscles and tendons are completely exposed in some places; in others they are covered with a greenish or yellowish slough—P. 115.. soft, small: T. coated at the root. Thirst much: skin warm; weakness. Admovr. Cataplasma effervescens *quater in die.* Bibat Vini rubri ounce 10. indies. Rj. Mist: Salinæ. *lb.* 1. Tart: Antimon grs. 2. M. sumt. cyath: 1. 2 da. qq horâ. R. Hydrarg: submur: grs. 5. Pulv. Antimon grs. 4. Opii grs. 2. omni nocte sumend.

10th. No improvement in the appearance of the sore. P. 110 soft. B. open. Stools nearly natural. Continr. omnia.

20th. Sore enlarging. All the tendons are in a diseased and sloughing state. Does not complain of much pain. Slough greenish—thick adhesive—P. 120 small, soft. Th: moderate. Habt. Vini rubri ounce 12. *in die.* Continr. alia.

21st. The slough is of a black colour in some places. Sore enlarging, extending now from the joint of the ankle to the toes, and across the whole of the foot. T. cleaner. P. 110 soft small. Thirst considerable. Great debility—*Bibat vini lb.* 1. *in die.* Continr. omnia alia.

22d. Sore extending. B. open. Face anxious. Does not complain of pain. P. 110 small.—Continr. omnia.

23rd. Sloughing proceeds. The tendons are gradually becoming disorganized, and mingling in one mass of a dark greenish yellow colour; other symptoms same. Want of sleep and debility continue.—Continr. omnia.

24th. The toes are of a greenish color and cold. A whitish band surrounds the ulcer. No pain when the slough is cut thro'. He refuses to submit to amputation. Restlessness continues. P. 130 small. Skin warmer than natural. Apply pure Nitric acid to the sore twice a day. R. opii grs. 2. *ter in die* sumend: Continr. alia.

25th. Sore looks very foul. Slough of various colours, black, green and yellow. The whole foot is in a state of disorganization. P. 130.

29th. The gangrene has proceeded since last report —Numerous maggots have been breeding in the toes—notwithstanding the use of Oil of Turpentine and Tincture of Camphor. P. 140. He now begs that his leg may be taken off. He is told that it offers no chance of life to him—still he earnestly begs that the operation may be performed. The muscles at the calf were so emaciated that fear was entertained of there not being sufficient substance to form a flap. The leg was taken off above the knee, this day at 2. P. M. by the common double circular incision—About 2. ounces of blood principally venous were lost, and five arteries were tied. He bore the operation with great firmness.

Vespere—He lies in the same state as before the operation. Very weak. P, 140—Habt. Opii grs. 2. *statim—Bibat vini rubri* ounce 1. omni horâ.

30th. Did not sleep during the night. Had about 10 evacuations of a dark watery unhealthy appearance. Hiccup. Great debility. P. 140 small. T. covered with a dark fur—Takes a little food occasionally.—Rept. Opii grs. 2, stat: Continr. *Vinum et Dieta nutriens.*

Vespere. The purging and hiccup relieved by the Opium. Lies in the same condition. Has illusory pain *in the Ulcer*—Rept. Opii grs. 2. Continr. *Vinum et Dieta nutriens.*

31st. Slept a little last night.—Took some soup and wine. He is very

very weak. Continr. *Vinum et cibus nutriens.*

1st. January 1828. The singultus recurred. He gradually sunk during the night. Delirium supervened, and he expired at 4½ clock this morning, 62 hours after the operation.

On opening the stump, the flaps were found cohering in many places, and presented a healthy appearance. An oozing of about half an ounce of blood had taken place thro' the dressings.

No. 4. PULMONARY CONSUMPTION.

Yenkiah Sepoy No. 61. H. Company 25th Regt. M. N. I. narrow chested—of weakly habit of body.

October 2d. 1827.—Came into hospital with symptoms of common Catarrh to which he is subject, and which is prevalent here at this period—Cough, attended with febrile symptoms: No pain in the chest, even on the fullest inspiration. P. 95; skin hot Bowels bound for some days past. T. clean:—Sumt. *statim* Tart: Antimon. grs. 2. Posteâ Infus: Sennæ Comp. ounces 4. R. Mistur: *pectoralis (e Syrupo Mellæ et Aceto Scillæ constantis) lb.* 1. Tart: Antimon. grs. 2. M. a wineglassful every two hours.

3rd. Febrile symptoms relieved. Cough continues troublesome—Let him have the tepid pediluvium twice a day. Warm clothing—Continr. Mist: *pectoralis* Antimoniata.

5th. Cough still severe. No febrile symptoms. No pain of chest. B. rather constipated:—Let him have an ounce of Castor oil—which is to be repeated whenever the bowels require it—Continr. alia.

11th. For the last six days, the cough has continued harassing—He has expectorated about 2 ounces daily of a muco-purulent matter. No pain in the chest, either in coughing, on pressure or on taking a full inspiration. Let the chest be rubbed with a dram of the Tartar Emetic Ointment twice or thrice a day—Contr. alia. Has been taking the following mixture at bedtime R. Tinct. Opii Camphor. 1 dram Mist. Camph. ounce 1. M.

15th. Coughing continues—What he expectorates has a very unpleasant smell. P. 90 rather full soft. Contr. Ungt: Tart. Antim.—R. Mist: pectoral ounces 2. Tinct. Digitalis gtt. 10. *ter in die sumend.* Omnittr. alia-Sulphat: Quininæ grs. 3. *quater in die.*

17th. For the last two nights has had rather a smart paroxysm of fever coming on in the evening and lasting for 5 or 6 hours. About 5 ounces of matter expectorated daily—No pain. Contr. Mist; *pectoralis cum Digitali*—Let a seton be put into his right arm. An ounce of Port wine in water to be given to him twice a day—Contr. alia—R Acetat: Morphiæ. grs. 4. Aquæ ounces 2. Alcoholis gtt. 15. Acid. Acetic. gtt. 1. M. 10. drops to be given at bedtime in an ounce of syrup.

19th. Cough and copious expectoration continue. From 7 to 8 ounces of matter spat up daily—Thorax covered with pimples from the Ointment Seton discharging freely—Stomach rejects solid food. P. 120 rather small, soft. Some thirst—Feet occasionally cold—Six ounces of wine daily with water. Contr. alia.

22d. From 8 to 10 ounces expectorated daily. Rests well at night—Cough occasionally troublesome. P. 96-soft small. To have 8 ounces of wine daily—Tinct. *Digitalis* gtt. 15. *ter in die cum* Mist: pector. Continr. omnia alia.

25th. Cough still continues. Expectoration less copious. From 4 to 6 ounces daily—Debility and emaciation increase; no pain in the chest—Countenance anxious. P. 110 small. Appetite good but the stomach rejects solid food—Nourishing diet and 6 ounces of Port daily.

27th.

27th. Had occasional flushing, with febrile feelings and much thirst during the night.- Slept little. Cough continues--Respiration somewhat difficult. P. 110 soft; skin cool; strength and flesh daily diminishing. Spat up 3 ounces of very morbid offensive, purulent matter during the night. *Bibat Vini rubri* ounces 8. *in dies* --Rept. T. *Digitalis* gtt 10. *ter in die*---Saline mixture for common drink---Cottinr. alia. Emplast: Ant: tartar. pectori admov:

31st. Cough better for the last three or four days. Expectoration much less copious--from 3 to six ounces daily. Matter occasionally streaked with blood. Sleeps moderately well at nights. P. 120 soft. Emaciation increases-- Continr. omnia:

November 2d. Vespere --Had six evacuations to day; watery--- and is now exhausted. At 4 o'clock he had a draught of Tinct: Opii gtt. 30. which stopped the purging---Breathing is now short and difficult. Voice very hollow---P. 130 weak. Three ounces of matter of a dirty green color expectorated during the day. R. Tinct: Camphor: Comp: gtt. 30. omni horâ sum.

3rd. Is hastening to dissolution. Four ounces of bloody pus discharged during the night—Cough harassing. P. 120 small. Breathing difficult. Debility great—Ommittr. Meda. omnia—A little wine and water occasionally. Vespere—Has been *moribund* all afternoon. Expired at 10 minutes before 6 P. M.

Sectio corporis—12 hours after death---The Body was much emaciated and reduced almost to a skeleton. The Sternum being dissected back in the usual manner, spots of inflammation were discernible over the *pleura*, especially that covering the left portion of the lungs. The *pleura costalis* and *pulmonalis* adhered closely all round. On attempting to separate them on the left side, the knife plunged into a large abscess which occupied the whole upper part of the left lung, and one of the parietes of which was formed by the ribs—It presented a peculiar honeycomb appearance, and contained some reddish and greenish purulent matter similar to that spat up some days before his death.—The right lung was studded with tubercles in a suppurating condition. The Heart was very small. No disease was observable in it, or in its valves. About 12 ounces of serous fluid were found effused in the right side of the thorax. Liver and other abdominal organs sound.

Remarks.—The peculiarity in this case consists in the total absence of pain in the chest during the whole course of the disease. The patient had regularly performed his duties, and was in apparent good health until the attack of Catarrh. No symptoms of such violent inflammation as could have produced Vomicæ occurred either before or after his admission into hospital. In many respects it seems to be a case of what Laennec terms *Acute phthisis.* (Forbes' Trans: p. 364) The fatal termination took place in 28 days from the commencement of expectoration. Tubercles similar to those discovered after death in the right lung had probably existed for some time, had gradually run into each other, and the disease was roused into full force by the irritation of the Catarrh. Such cases are interesting as they are of rare occurrence among the Natives of India.

TABLE I.

Of Ulcers which occurred among the Troops at Malacca from 1st May 1827 to 31st April 1828.

Detachments.	Remained 30th April, 1827.	Admitted. May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	Total admitted during the year.	Arrived from Penang.	Total treated in Hospital during the year.	Discharged cured.	Transferred	Died. Before amputation.	Died. After amputation.	Remaining.	State of the Remaining. Thigh amputated.	Large toe amputated.	Contracted limbs.	Total lost to the Service.	Convalescent.	Remarks.
25th Regt. M. N. I.	7	23	27	25	26	25	18	21	11	7	3	5	2	193	15	215	184	8	3	2	18	1	3	8	12	6	The 15 Cases from Penang, arrived in May 1827.
Madras Native Artillery	,,	,,	,,	,,	,,	,,	1	1	3	1	1	,,	,,	7	,,	7	7	,,	,,	,,	,,	,,	,,	,,	,,	,,	
Total admitted Monthly	,,	23	27	25	26	25	19	22	14	8	4	3	2	200	15	222	191	8	3	2	18	1	3	8	12	6	
Discharged during the Month	,,	15	9	23	29	37	13	11	13	11	11	7	2														
Transfered do.	,,	,,	,,	,,	,,	,,	,,	,,	,,	8	,,	,,	,,														
Died do.	,,	1	,,	,,	,,	,,	,,	,,	1	1	2	,,	,,														
Remained each Month	7	29	37	39	36	24	30	41	41	29	20	18	18														
Total treated do.	,,	45	56	62	65	61	43	52	55	49	35	25	30														
Numerical strength of the Military.		457	456	455	455	454	452	451	449	349	347	346	342														

State of the Weather during the year.

Months.	Weather during do.	Months.	Weather during do.
May.	Hot and dry. End rainy.	November.	Squally and rainy.
June.	Rainy with N. W. wind and Sumatrans.	December.	Much rain. Wind N. E.
July.	Fine, occasionally Showers.	January.	Do. do.
August.	Hot and dry. Wind S. E.	February.	Rainy. Wind variable.
September.	Do. do.	March.	Fine. Hot.
October.	Squally and rainy.	April.	Do. do.

TABLE II.

General Return of Sick treated in the Hospitals, Malacca, from 30th April 1827 to 1st May 1828,

Departments.	Remained 30th April 1827.	Admitted during the year.	Total.	Discharged cured.	Transferred.	Dead.	Remaining.	Remarks.
Europeans (non Commissioned)	0	1	1	0	0	1	0	
Natives of the Civil Department	12	163	175	154	0	8	13	
Sepoys of the 25th Regt. M. N. I. ..	33	738	771	683	14	20	54	
—— of the Madras Nat. Artillery ..	2	85	87	79	0	0	8	
Grand Total	47	987	1034	916	14	29	75	

Diseases Treated in Hospital.

Departments.	Amputation.	Anasarca.	Asthma.	Atrophy.	Beriberi.	Bubo.	Catarrh.	Cholera.	Colic.	Constipation.	Cynanche.	Diabetes.	Diarrhœa.	Dysentery.	Dyspepsia.	Dysphagy.	Fever intermittent.	—— remittent.	Fracture.	Gonorrhœa.	Hæmorrhoids.	Hydrocele.	Itch.	Ophthalmy.	Pleurisy.	Pulmonary Consumption.	Rheumatism.	Ringworm.	Scurvy.	Swelled Testicle.	Syphilis.	Tympanites.	Ulcer.	Wound and Accident.	Trifling cases.
Europeans (non Commissioned)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natives of the Civil Department	2	2	5	1	0	6	5	2	15	2	1	0	9	10	0	0	0	34	3	3	0	0	5	2	1	0	24	0	0	0	4	0	17	17	4
Sepoys of the 25th Regt. M. N. I. ..	0	21	0	0	1	7	14	2	25	0	1	1	72	12	2	1	11	65	0	4	1	1	159	5	0	1	46	3	6	6	7	1	215	19	63
—— of the Madras Nat. Artillery ..	0	0	0	0	0	2	1	0	1	5	0	0	6	0	0	0	2	14	0	1	1	0	25	1	0	0	6	0	1	0	4	0	7	5	5
Grand Total	2	23	5	1	1	15	20	4	41	7	2	1	87	22	2	1	13	114	3	8	1	1	189	8	1	1	76	3	7	6	15	1	239	41	72

Fatal Cases.

Departments.	Anasarca.	Asthma.	Atrophy.	Beriberi.	Cholera.	Cynanche.	Diarrhœa.	Dysentery.	Dyspepsia.	Dysphagy.	Fever intermittent.	—— remittent.	Fracture.	Pulmonary Consumption.	Rheumatism.	Scurvy.	Tympanites.	Ulcer.	Wound and Accident.	Total Fatal Cases.	Average Numerical strength during the 12 months.	Proportion per cent of sick to well.	Proportion per cent, of Deaths to the Total No. of sick.
Europeans (non Commissioned)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3	33$\frac{1}{3}$	—
Natives of the Civil Department	0	1	1	0	0	1	0	1	0	0	0	0	1	0	2	0	0	0	1	8	160	109	5:00
Sepoys of the 25th Regt. M. N. I. ..	1	0	0	1	2	0	2	0	1	1	1	3	0	1	0	1	1	5	0	20	370	208	2:59
—— of the Madras Nat. Artillery ..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	181$\frac{1}{4}$	0:00
Grand Total	1	1	1	1	2	1	2	1	1	1	1	4	1	1	2	1	1	5	1	29	581	177$\frac{36}{58}$	2:53

T. M. WARD, M. D.

Assist. Surgeon Residency

Malacca.

TABLE III.

General Return of Sick treated in the Hospitals, Malacca from 1st *June* 1828 *to* 31st *May* 1829.

Departments.	Remained 1st June 1828.	Admitted during the year.	Total.	Discharged cured.	Transferred.	Dead.	Remaining.	Amputation.	Anasarca.	Asthma.	Bubo.	Catarrh.	Cholera.	Colic.	Diabetes.	Diarrhœa.	Dysentery.	Dyspepsia.	Fever intermittent.	—— remittent.	Fracture.	Gonorrhœa.	Hœmorrhoids.	Hydrocele.	Itch.	Ophthalmy.	Pulmonary Consumption.	Rheumatism.	Scurvy.	Swelled testicle.	Syphilis.	Tympanites.	Ulcer.	Wound and Accident.	Trifling cases.	Anasarca.	Bubo.	Catarrh.	Colic.	Diarrhœa.	Dysentery.	Fever intermittent.	—— remittent.	Fracture.	Itch.	Tympanites.	Wound and Accident.	Total Fatal cases.	Average numerical Strength during the 12 months.	Proportion per cent of sick to well.	Proportion per cent of Deaths to the total No. of sick.	Remarks.
Europeans (non Commissioned)	,,	1	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	333	33	,,
Natives of the Civil Department	24	454	478	407	,,	12	59	2	34	18	28	19	9	21	,,	34	4	2	24	67	8	19	5	5	,,	17	1	17	,,	,,	18	3	78	41	15	3	,,	,,	,,	1	2	3	1	,,	1	,,	12	500	95	2.51	,,
Sepoys of the 25th Regt. M. N. I.	49	426	475	400	37	13	25	,,	23	,,	16	5	,,	1	1	64	6	,,	4	76	,,	5	,,	,,	50	4	,,	36	11	3	19	2	44	23	76	4	,,	1	1	2	,,	,,	4	,,	1	,,	,,	13	500	95.	2.73	,,
—— of the Mad. Nat. Artillery	8	67	75	65	1	2	5	,,	2	,,	1	1	,,	1	1	5	1	,,	2	20	,,	,,	,,	,,	9	,,	,,	9	1	,,	4	,,	1	11	6	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	60	125.	2.66	,,
Grand totals	81	948	1029	873	38	27	89	2	59	18	45	25	9	29	2	103	11	2	30	164	8	24	5	5	59	21	1	62	12	3	41	5	123	75	97	8	1	1	1	2	1	2	7	1	1	1	3	27	1063	96.8	2.63	,,

(Signed) J. L. GEDDES,

Assist. Surgeon 25*th Regt.*

M. N. I.

TABLE IV.

ABSTRACT OF THE RETURNS OF SICK AND WOUNDED, TREATED DURING EACH MONTH IN THE HOSPITALS, MALACCA, FROM THE 1ST MAY 1827, TO THE 30TH APRIL 1828.

DISEASES.	Remained 30th April 1827.	May.			June.			July.			August.			September.			October.			November.			December.			January.				February			March.			April.			Totals.				Remaining 30th April 1828.	Total of each disease treated during the year.	REMARKS.
		Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Transferred.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Admitted.	Discharged.	Dead.	Remaining.	Admitted.	Discharged.	Transferred.	Dead.			
Amputation	,,	1	,,	,,	1	1	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	2	,,	,,	,,	2	One for Compound Fracture—one for Ulcer.
Anasarca	,,	,,	,,	,,	1	,,	,,	2	1	,,	2	4	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	6	3	,,	5	3	,,	1	1	2	,,	1	2	,,	5	2	,,	,,	23	17	,,	1	5	23	
Asthma	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	2	3	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	3	4	,,	1	,,	5	
Atrophy	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	1	,,	,,	1	,,	1	
Beriberi	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	1	,,	1	
Bubo	1	,,	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	1	1	,,	,,	1	,,	,,	,,	,,	3	1	,,	,,	2	,,	,,	2	1	,,	4	2	,,	3	2	,,	1	14	11	,,	,,	4	15	
Catarrh	,,	2	,,	,,	1	2	,,	,,	,,	,,	2	2	,,	,,	,,	,,	5	2	,,	3	4	,,	1	2	,,	3	2	1	,,	3	5	,,	,,	,,	,,	,,	,,	,,	,,	20	19	1	,,	,,	20	
Cholera	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	,,	3	2	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	4	2	,,	2	,,	4	
Colic	1	5	4	,,	4	6	,,	3	3	,,	3	3	,,	2	2	,,	4	3	,,	6	7	,,	3	3	,,	,,	,,	,,	1	1	,,	5	2	,,	4	7	,,	1	40	41	,,	,,	,,	41	
Constipation	,,	2	2	,,	2	,,	,,	2	4	,,	,,	,,	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	7	7	,,	,,	,,	7	
Cynanche	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	2	1	,,	1	,,	2	
Diabetes	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	1	
Diarrhœa	2	19	15	,,	14	15	,,	8	10	,,	5	6	,,	10	10	,,	4	4	1	7	7	,,	5	3	1	1	1	,,	2	2	,,	4	1	,,	6	4	,,	2	85	78	,,	2	7	87	
Dysentery	1	2	2	,,	4	2	1	1	2	,,	2	2	,,	2	1	,,	3	3	,,	2	1	,,	,,	2	,,	2	2	,,	,,	1	2	,,	1	1	,,	1	,,	,,	1	21	20	,,	1	1	22	
Dyspepsia	1	,,	,,	,,	1	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	1	,,	1	,,	2	
Dysphagy	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	1	,,	1	
Fever intermittent	3	7	8	,,	1	3	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	3	10	12	,,	1	,,	13	
—— remittent	,,	,,	,,	,,	9	6	,,	11	10	,,	12	8	,,	4	9	1	12	13	,,	15	10	,,	11	11	1	10	11	,,	,,	14	6	,,	7	11	1	9	6	1	,,	114	100	,,	4	10	114	
Fracture	1	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	1	,,	,,	1	1	,,	1	2	2	,,	1	,,	3	
Gonorrhœa	,,	2	1	,,	,,	1	,,	,,	,,	,,	1	1	,,	3	2	,,	,,	1	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	1	1	,,	,,	8	8	,,	,,	,,	8	
Hœmorrhoids	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	1	1	,,	,,	,,	1	
Hydrocele	,,	1	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	,,	,,	,,	1	
Itch	13	39	33	,,	36	36	,,	15	25	,,	18	11	,,	7	15	,,	16	12	,,	8	16	,,	12	4	,,	7	9	2	,,	4	7	,,	7	7	,,	7	5	,,	13	176	180	2	,,	7	189	
Ophthalmy	1	1	2	,,	1	,,	,,	,,	1	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	1	,,	,,	,,	,,	3	2	,,	1	7	7	,,	,,	1	8	
Pleurisy	1	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	5	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	1	
Pulmonary Consumption	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	1	,,	1	
Rheumatism	4	6	6	,,	13	5	2	7	11	,,	1	3	,,	7	7	,,	5	5	,,	7	6	,,	6	6	,,	6	8	3	,,	3	1	,,	3	4	,,	8	4	,,	4	72	66	3	2	5	76	
Ringworm	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	2	1	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	3	,,	,,	,,	3	
Scurvy	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	5	,,	,,	,,	1	,,	,,	1	2	1	,,	1	,,	,,	7	3	,,	1	3	7	
Swelled Testicle	,,	2	1	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	2	3	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	6	5	,,	,,	1	6	
Syphilis	1	,,	,,	,,	1	,,	,,	,,	1	,,	1	,,	,,	,,	1	,,	1	,,	,,	1	,,	,,	2	2	,,	1	1	,,	,,	2	2	,,	,,	2	,,	5	,,	,,	1	14	9	,,	,,	6	15	
Tympanites	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	1	,,	1	
Ulcer	10	40	15	1	27	23	,,	25	24	,,	28	30	,,	26	38	,,	20	15	,,	22	11	,,	16	14	1	9	12	8	1	4	11	2	5	7	,,	7	5	,,	10	229	206	8	5	20	239	
Wounds and Accidents	,,	12	5	,,	3	9	,,	7	3	,,	6	8	,,	2	4	,,	,,	1	,,	2	1	,,	,,	1	,,	3	2	,,	,,	2	1	,,	2	3	,,	2	1	,,	,,	41	38	,,	1	2	41	
Trifling Cases	5	7	8	,,	9	7	,,	13	14	,,	5	5	,,	6	6	,,	2	4	,,	10	10	,,	5	7	,,	2	1	,,	,,	3	3	,,	2	3	,,	3	2	,,	5	67	70	,,	,,	2	72	
TOTALS	47	149	105	1	128	119	4	96	110	1	88	84	3	74	99	1	78	68	2	86	76	1	76	64	3	57	56	14	2	45	46	3	45	48	3	67	43	4	47	987	916	14	20	75	1.022	
Average numerical strength of Civil and Military each month		609.			608.			604.			603.			600.			599.			597.			596.			593.				502.			499.			585.			Average number of men during the year.						582.	
Proportion per cent of sick to well*.		24: $\frac{7}{15}$			21: $\frac{?}{60}$			15: $\frac{9}{10}$			12: $\frac{56}{60}$			12: $\frac{4}{3}$			13: $\frac{4}{60}$			14: $\frac{24}{59}$			12: $\frac{9}{42}$			9: $\frac{3}{5}$				8: $\frac{48}{50}$			8: $\frac{30}{49}$			11: $\frac{36}{58}$			Proportion per cent of admissions to the Average numerical strength.						177: $\frac{39}{58}$.	
Proportion per cent of Deaths to the whole number of Sick †		. 51.			1. 83			. 52.			1. 72.			. 64.			1. 50.			. 703.			2. 10.			1. 56.				2. 97.			3. 16.			3. 60.			Total proportion of Deaths per cent to the whole number treated.						2. 80.	

N. B. * In this line, the proportion is calculated from the *admissions* only during each month.

† In this however the number remaining the previous month are added to the admissions for each month.

CONTRIBUTIONS
TO THE MEDICAL TOPOGRAPHY
OF
PRINCE OF WALES ISLAND,
OR PULO PINANG,

By T. M. WARD, *M D.—Madras Establishment.*

THIS BEAUTIFUL ISLAND, one of the fairest spots in the possession of the English in the east, is situated near the coast of Quedah, on the Malayan Peninsula, between Lat. 5° 15' and 5° 29' N. and in Longit. 100°. 25.' E. Its greatest extent is from north to south, so that its length is about 16 statute miles; its greatest breadth is at the North end, where it is not less than 11 or 12 miles, but it decreases to the southward to about 8. Taking therefore the medium of its breadth to be about 10 miles, it contains in superficial measure 160 square miles. Almost the whole of the northern part is mountainous, and thro' the centre of the Island, runs a range of hills, which are high at the north end, but decrease in magnitude as they extend towards the south.*

On the whole of the East side, is a level country nearly three miles in breadth, denominated *par excellence* "The Valley." Here, are situated George Town, the capital of the Island,—the Fort, the public buildings, Barracks, Hospitals and the dwellings of the European inhabitants, and to this therefore, will be directed our more particular attention, in the following pages. On the West and South sides of the range of mountains, there is also a considerable quantity of level ground, of good quality for every species of cultivation, and it is computed that about one third of the Island is flat or of an easy inclination. Most of it is now in a state of cultivation; the east side more especially, owing to its swampy nature, is well adapted for the growth of rice, and paddy fields accordingly occupy the principal part of it. The south and western valleys, tho' partly cultivated for the same purpose, are chiefly laid out in pepper gardens and spice plantations. Every where close to the coast, runs an extensive belt of cocoa nut trees, and scattered over the Island, in various groups, appear groves of the graceful Arêca or Pinang, from which it taken its malay name.

The Hills and the low grounds where not cultivated, are thickly covered with wood. Vegetation is splendidly luxuriant, and for miles and miles, the eye dwells only on one dense mass of mountain forest. In the valley are seen fruit trees, indigenous and imported, the Neebong, the Areca, and the Cocoa-nut. The rest have been removed by the industry of man. Near the shore, in swampy spots, the mangrove is the only production which exists. On the mountains to their very summits, grows a vast variety of

* For some of these details, I am indebted to a M. S. in the Superintending Engineers office, with the perusal of which I was obligingly favour'd by Captain Lake.

trees

trees, probably of every species, that is to be found in the malayan peninsula—the trunks from their close and confined situation, rising high and straight, with few branches except near their tops, covered besides with parasitical plants, interlaced with creepers, thus rendering the forest almost impenetrable.

Besides George Town, already alluded to, there is only one large collection of houses, denominated James' Town, situated on the sea shore, midst a grove of cocoa nut trees and palms, about four miles to the Southward. Numerous small villages are scattered over the Island, more especially on the south side, where they are often beautifully and romantically situated on the coast, or among the pepper and spice gardens. The houses are almost all constructed of wood of coolycoy and atap, in the native manner as described when speaking of Malacca.—Having premised these few general introductory remarks on the appearance of the Island, I shall now proceed to a more particular description of the hills.

It has been already remarked, that a chain of HILLS, traverses the east side of the Island, in a north east, and south west direction, about 3 miles from the shore. Shortly after the possession of it by the English, it occurred to some speculative cultivators, that these, if cleared, would be favourable spots for the growth of nutmegs and cloves, especially the latter, which delight in high open and dry situations. Others without any object of gain, considered them delightful localities for country houses, where they might enjoy in quiet, the bracing breeze, and the beautiful prospects which the Island every where presents. Roads were cut thro' the forest, by incredible labour, with great ingenuity, and at considerable expence. The summits of all were gradually cleared; and now houses, and spice plantations occupy the place of the useless forest which once covered them. Nor was this achieved with impunity to the enterprising speculators. Many of them from exposure partly to the weather, and partly also to the miasmata from the decaying wood and newly cleared earth, were attacked with a severe and fatal form of fever, to be afterwards described. Experience has shown, that spots newly cleared do not become perfectly healthy, until at least three years have elapsed from the cutting of the wood. To this probation, the range of hills now under review has been submitted—and, he who adopts the precautions, which common sense points out, for avoiding the mid-day sun, and exposure to the night dews, may reside with as great safety, on them, as in the valley.

In describing the hills individually, we will commence with those to the northward. Their heights were all measured by one of Newman's Standard Mountain Barometers, in some cases compared with Trigonometrical surveys. The temperature and other particulars of climate are from personal observations, or from tables kindly furnished by the occupiers.*

1. "Mount Erskine," the property of J. J. Erskine, Esq. is a small hill, rising near the coast above Pulo Ticoose bay, about 350 feet in height—rocky, overgrown with jungle, and apparently unhealthy. It was formerly a signal station for communicating with the Fort, and the men employed in the department, I am informed, were subject to attacks of Quotidian intermittent fever, of a dangerous type. Four european superintendants were successively cut off by it, after lingering from 3 to 6 weeks; a fifth had repeated attacks of ague, and now survives with diseased spleen, the sequela of them. The thermometer is scarcely lower than what it is in the valley.—The hill has been now long unoccupied, and the Bungalow on it is in ruins.

2. "Mount Olivia" is a pleasant little hill to the southward of the foregoing, commanding several very beautiful prospects, well cleared, and

* I have already published some of the following remarks on the hills, in the Pinang Government Gazette, of the 17th January, and the 1st of August, 1829.

planted

planted with clove trees, all of which grow luxuriantly. Its height is 620 feet: the range of the thermometer is generally 3 degrees lower than it is in the valley; the healthiness of it is well established. From its comparatively slight elevation, and small difference of temperature, it will seldom be resorted to by invalids, tho' the commodiousness and elegance of the bungalow, and the delightful scenery around, will always make it a desirable residence.

3. The hill called " the Highlands of Scotland," belonging to Harry Scott, Esq. is 1,428 feet above the level of the sea, the range of the thermometer is generally 8 degrees lower than it is in the valley, and the situation and climate are delightful. The temperature seldom exceeds 78° even in the middle of the day; it is frequently lower and the mornings and evenings are refreshingly cool. The Bungalow is commodious, the garden produces many of the european vegetables in great perfection. On a rising ground above it some years ago, when ulcer raged among the Bengal troops, a temporary hospital was erected for the accommodation of the patients affected with phagedœna, and some benefit was derived from the change of air, but scarcely sufficient to warrant the adoption of the same measure in future, and in similar cases, necessarily attended both with trouble and expence.

4. Immediately behind the foregoing, near the centre of the Island, and towering over all the others, rises what is generally called the Great Hill, being a considerable extent of table land, on most of which the forest remains undisturbed—divided however into numerous summits, all of which are now either built upon, or cleared or cultivated.

" Bel Retiro" the seat of the Honorable the Governor, is 2460 feet above the level of the sea, and distant 8 miles from the landing place, at George's Town. The grounds around it are elegantly laid out, the gardens are stocked with many rich and rare exotics, and the flowers of our native country flourish there luxuriantly. The soil is a thin sandy clay, but vegetable mould is easily procured from the valley. Attempts partially successful have been made to cultivate the strawberry and potatoe, and I have no doubt that in time these will be grown abundantly.

Close to " Bel Retiro," is " Mount Hygeia" on which is built the Convalescent Bungalow, supported by the liberality of Government, with every convenience, for the accommodation of sick officers and their families, or of others in the service. Lately on " Woodland Brae" in the vicinity, has been erected a convenient house for a medical attendant with a dispensary and other requisites for affording aid to invalids who resort to it.

" Strawberry Hill" and " Belle Vue," both commodious and elegant houses, the property of different gentlemen on the Island are nearly at the same elevation, and in the immediate vicinity of the foregoing.

Distant about two miles in a western direction from Bel Retiro, is " the Western Hill," the highest in Penang, being 2574 feet above the level of the sea. The summit of it is cleared, but it is neither built on nor cultivated, and from the interposition of the Government Hill, the prospect from it to the eastward is greatly curtailed. From it to the different summits in the neighbourhood, a shady, nearly level but winding road leads thro' the forest, and gives this groupe the advantage of affording to the invalid room for exercise either on horseback or on foot. The road up the mountain to Bel Retiro, is about four miles in length, kept always in excellent repair, is of gentle acclivity in most places, and easily assended on the hardy ponies of the Island, in about an hour.

For the last two years a regular register of the thermometer and weather has been kept on the Government Hill, the observations being taken three times a day. Partly on this account, partly also from this groupe being the highest of the range, this will be a proper place for describing the " climate

of the hill." The Tables No. I. II. and III. for three complete years will give a tolerably correct idea of it; the first is constructed from data to be found in the 1st. Vol. of the Transactions of the Royal Asiatic Society of Great Britain and Ireland, the others from the Register above noticed.

From these detailed tables, it will be seen that the medium temperature of the year, is about 71° which is 5 degrees lower than the summer heat of Montpelier. The climate of the hill, judging from the isothermal tables of Humboldt, with the exception of its greater moisture, nearly resembles that of Funchal in Madeira, and possesses the advantage of a very limited range of the thermometer, both daily and yearly, the greatest range in the 24 hours being 11° and generally only 3° or 4°. It is not so much however its comparative coolness which makes the Great Hill a desirable residence. The lightness and purity of the atmosphere elevate the spirits and render the step free and buoyant, the splendid and varied scenery visible from its summit, the elegant tastefulness of the gardens, the inspiring breezes, and refreshing showers, render it literally a haven of health to the worn out invalid. We wish not to encroach on the province of the poet; but cold must that heart be, and dead to the beauties of nature, which cannot be excited by the prospect from the summit of this mountain. The Island itself with its numerous hills and dales; the town; the smooth roads in which vessels are riding in safety; the calm ocean around, studded with isles; the opposite coast of Quedah, with chains of mountains towering over chain, until they are lost in the distance, all inspire delight in the beholder. Nor are they undeserving of the attention of the medical topographer. Their influence is soothing to the mind of an invalid; and the convalescent from some dangerous malady, by looking on such scenes, must feel doubly grateful for the preservation of his existence. We will finish our remarks on the climate of the Great Hill, by quoting the only passage in medical authors, we have met with on the subject, and that in the well known and very valuable work of Dr. Johnson, on Tropical climates "From this mountain too, the "most romantic, extensive and picturesque views are presented to the delighted eye, contributing greatly to mental amusement, and corporeal renovation. "A temporary residence on that beautiful Island, during a painful illness "and tedious convalescence, has produced in my mind a strong local attachment towards it, and vivid recollection of its enchanting scenery.—*Op. Cit. Page* 184.

5. In the range of the thermometer, and in the extent of view, "Mount Elvira" 2370 feet above the level of the sea, nearly resembles the Great Hill, from which it is distant about two miles to the southward. Towards the north, it is well cleared and planted with cloves and nutmeg trees, but to the south and east, the forest rises within about 100 feet from the house. On this account, and from the circumstance of some cases of fever having lately occurred among the occupiers of it, its healthiness is still suspected—but whether there be sufficient grounds for such suspicion will be a matter of examination hereafter. The road to it is exceedingly easy of ascent, and in many places very romantic; the summit is obout 10 miles from George's Town, and the bungalow is neat and comfortable.

6. At the southern extremity of the chain, there is a groupe similar to that composing the Great Hill, denominated "the Pentlands" and forming an extensive tract of table land fully cleared, and planted with cloves nutmegs and mangosteens, the regular rows of which on the sides of the hills and dales, have a very imposing effect. Landsdowne 1800 feet above the sea, Sans souci 1580, both the property of the honorable Mr. Ibbetson, and Belmont, at an elevation of 1650 feet belonging to G. Browne Esq. are the principal summits in this part of the Island. They command beautiful views of the southern, western, and great tree vallies, which are well cultivated

and

and studded with malay huts. The range of the thermometer is from 8 to 10 degrees lower than it is in George's Town, and its daily variations are even less considerable than they are on the Great Hill This groupe is also less subject to fogs; and Belmont more especially, tho' not equal in height to the others, excels them all in equability of temperature, from the wind being totally unobstructed in every direction.

7. Forming with the preceding an acute angle, which includes the great tree valley, runs a small chain of hills parallel with the sea coast. The northernmost summit of it, 870 feet in height, the property of Captain Low, is now undergoing the processes of clearing and planting. The thermometer is about 5 degrees lower than that of George's Town. The chinese workmen employed on it have been subject to attacks of remittent and intermittent fevers, which have proved fatal to many of them.

Such are a few remarks on the cultivated hills of Penang: to the north and west of the Island however, there are numerous summits still uncleared, which offer a fine field for the european speculator with capital and industry. Such situations, as we have already noticed, are well adapted to the cultivation of spices; and while the cultivator would be enriched by the produce, the Island would gain considerably in healthiness.

For the greatest part of the year, the hills are subject to fogs, which are often dense, and at all times disagreeable. The air is consequently much colder to the feelings than the thermometer indicates; and warm clothing is generally requisite. In the month of June and July also, violent squalls from the westward prevail accompanied with deluges of rain. In other respects, with the exception of diminished temperature, and the rarity and purity of the atmosphere, there is little difference in the weather of the mountains and that of the valley, and for further particulars we refer to the description of the latter to be afterwards given.

The first effect of the air of the mountains, on comparatively healthy constitutions, is drowsiness, produced in some measure by the stillness around, partly also by the bland purity and lightness of the atmosphere. The appetite increases considerably; the spirits after a day or two become more lively, the perspiration diminishes, while a proportional increase takes place in the secretion from the kidneys and the alvine dejections if previously deranged become healthy and natural. The pale sickly aspect of the intertropical resident, is soon replaced by the bloom of English health. Convalescents from fever, Dysentery and Hepatic complaints soon perceive the beneficial effects of the change in the improvement of their appetite and strength. Instances have occurred repeatedly of patients, who were too weak to crawl from their beds in the valley, being able to walk about, and enjoy the delightful scenery, a few days after their removal to the mountain. The heat is never oppressive, even in the middle of the day; every breeze has a bracing effect; the mornings and evenings are often so cold as to require exercise to keep up the temperature of the body; and at night blankets are indispensable. When proper precautions too are taken, with regard to warm clothing, and the vicissitudes of the weather are guarded against which is easily done, from the circumstance of the Bungalows being all furnished with glass windows, the air of the hill has been found highly successful as a remedial measure in most of the common tropical diseases, when other means have failed.

To invalids from the other presidencies in India, with any of the above mentioned complaints, with chronic diseases of the stomach and bowels, or with general debility resulting from any cause, this might be suggested as an eligible place of resort, and in many instances might supersede the necessity of a voyage to the Cape, to New South Wales, or to China. To phthisical people, perhaps, and to patients with pulmonary affections

generally

generally and Rheumatism, except in the dry months of December, January and February, it would not prove advantageous, on account of the great moisture of the climate, and occasional fogs. At most seasons of the year, and more especially in those seasons when Madras and Calcutta are both unpleasant places of residence for persons labouring under sickness, the communication with Penang is frequent. The voyage down or across the bay, and two months residence on the great Hill, would restore the worn out constitution, which would probably be completely renovated by a trip down the straits to Malacca and Singapore The distance from the landing place to the foot of the mountain is inconsiderable, and the ascent as before mentioned is easy. The convalescent Bungalow may be procured by persons in the service of the honorable Company when the application is accompanied by a certificate from any of the medical officers of the establishment; and those not in the service will generally be able to obtain one of the houses belonging to private individuals, at a moderate rent. Supplies are readily obtained from George's Town by coolies, and the expences of living are not much greater than they are in the valley

It is suggested that the houses on *Bel Retiro*, and *Woodland Brae*, together with the present *Convalescent Bungalow*, might be converted into a Sanatarium for sick officers and their families both of this station and from other parts of India. The expense of repair would be little; a moderate monthly rent might be charged to cover it; and a few convicts might be usefully employed in keeping the grounds and roads in order. Six families or twelve single persons might be easily accommodated in the different Bungalows; and those with sick certificates might have the preference. A room in one of the houses might be used as a dispensary with a small supply of the most necessary medicines and utensils, and as medical aid could always be obtained on an hour and a half or two hours notice, the permanent residence of a medical officer would be unnecessary.

It has been justly remarked by Dr. Annesley*, that the *daily range*, of all the variations of the thermometer, is the one which more especially affects health; and it is to the limited extent of this, that the climate of the hills of Pinang owes its excellence. The annual range is, compared with even the healthiest stations in the east, with the Neilgherries, with Bangalore with Canton and the Cape, inconsiderable. From the following tables it will be found that the average annual range is 10°¼.—the average greatest daily range for 3 years 9° and of the least daily range about 1¼°—now the annual range of the Neilgherries is estimated at about 36° the highest being 72° the lowest 36°†. At Bangalore in 1800, it was calculated at 24°‡ At the Cape the daily variations of the thermometer are from 25° to 30°‡‡ At Canton, during the cold months of December January and February, the period at which invalids resort there for the recovery of their health "the vicissitudes of the weather are more quick than in any other part of the world."§

In the course of the following pages several instances will be adduced of the beneficial effects of the hill climate The following is a striking one and may here be appropriately introduced.

* Sketches of the most prevalent diseases of India page 324.

† Appendix 1st. Vol. Dr. Annesley's Researches P. XXI.

‡ Annesley's Researches vol. 1. P. 152.

‡‡ Johnson on Tropical Climates P. 184.

§ Clarke's diseases of hot countries p. 96. At Canton, "when the winds are northerly, the weather is cold, and the thermometer at 46°—upon a change of the wind to the south, it is next day up to 60° or 70°. People who reside here, are always at a loss, with regard to their clothing; one day finding a silk coat sufficient and the next, upon a sudden change of the wind, finding it necessary to wear a flannel waistcoat."—*Id. loc. cit.*

CASE, I.

An Officer of rank, 32 years in India, had been for the last 14 years of his life subject to repeated attacks of disease, originating in a morbid affection of the colon, a little above the caput cœcum, at one time producing distressing dysenteric symptoms, at another obstinate alvine obstruction. He had been subjected to various courses of medicine, and various methods of treatment, each only with temporary benefit. Five months after his arrival on this Island, he had a recurrence of the dysentery, which was relieved by a course of blue pill, Ipecachuan and Opium, with occasional doses of oil. He afterwards ascended the Great Hill, remained there two months, and returned comparatively well. Six months after, the disease again recurred and then was evidently accompanied with deranged liver. These were palliated by a course of mercurials, castor oil and emollient enemata, with occasional doses of hyosciamus.—On the evening of the 31st of January 1830, he had a recurrence of the violent spasmodic pain in the region of the colon, he passed a wretched night, had repeated chills and flushes; felt great depression of spirits and total failure of strength. He had recourse to the measures above stated, with only slight benefit. On the 7th February, the following symptoms were noted. He was much emaciated; his cheeks sunk, his face and eyes sallow, and patches of yellow appeared about the lips and here and there upon the face. His eyes were dull; his forehead was warm, and the skin generally warmer than natural; his voice was faint and low, and conversation was difficult; pulse 120, irritable compressible; tongue coated with an orange fur. His dejections were bilious, copious, offensive and mucous. Pain in the region of the colon, relieved by rubbing and hot bottles. A distressing dry cough came on four days ago; fullness and pain were present in the right hypochondriac region, and during the cough, he felt as if something was tearing the epigastrium. He had repeated flushings of the face, and occasional chills; a sense also of fluctuation as if water trickled down his back, and a cold clammy perspiration about the loins. His strength was exhausted; appetite gone, and there was increased thirst.—In consultation it was determined that the case was one of great emergency, that the symptoms threatened the occurrence of abscess of the liver superadded to the disease of the colon; and that the object of remedial measures was to support the system, until it could be acted upon by mercurials. Change of air, and that immediately, suggested itself, as the most likely means of effecting this; and as there was a difference at that time of 14° between the valley where he was living and the Great Hill, he was recommended to remove to the latter without the least delay. He accordingly ascended the mountain in a Ton-jon (a sort of chair borne on mens' shoulders) and reached the summit about 6½ A. M. refreshed at every step by the bracing breeze, and not in the least fatigued by the removal. The hill air acted upon him like a charm. On the very first day, all the symptoms were relieved, his spirits gradually improved, and by means of a gentle course of mercurial medicines, until the mouth became slightly affected, but not to salivation, with a seton in the side, and mild nutrient diet, his general health was greatly restored; his strength had much increased, and the state of his stomach and bowels was also improved, tho' he was still subject to occasional attacks of spasm and obstruction of the colon. On the 1st of June, he was almost as completely re-established in health as he could have been by a trip to England, tho' of course the improvement cannot be expected to be permanent; and return to a hot climate will most likely be followed by a relapse.

I am inclined to attribute the successful issue of this case, entirely to the beneficial operation of the mountain air, as had he continued in the Valley, where the heat was then oppressively great, the thermometer being at 88° in the middle of the day, I have no doubt that he would have sunk from exhaustion.

TABLE

TABLE I.

ABSTRACT OF THE WEATHER ON THE GREAT HILL PINANG FROM 1ST JULY 1815, TO 30 JUNE 1816, FROM TABLES IN THE TRANS. R. A. S. GREAT BRITAIN.

	Month.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at in the evening	Medium temperature of the whole month.	Maximum of the month.	Minimum do. do.	Range during the month.	Greatest daily range.	Least do. do.	Number of days on which Thunder and Lightning are noted.	Number of days on which rain fell.	Prevailing winds during the month, with the number of days on which they blew in each direction. E.	W.	S.	N.	N. E.	N. W.	S. W.	Variable.	Remarks.
1815.	July,	68°	72½°	71°	70⅓°	77°	65½°	11½°	7½°	1°	1	12	,,	17	14	,,	,,	,,	,,	,,	Generally clear—rain hard—mostly in the evenings and during the night.
	August,	67½	72	70	70	75	65.	10	8	2	,,	14	,,	13	16	2	,,	,,	,,	,,	Clear with occasional refreshing showers.
	September,	67	71⅓	70	69⅔	77½	64½	13	8	2	,,	15	,,	12	11	2	,,	,,	,,	,,	Each day clear and cloudy – towards the end of the month hard squalls with much rain.
	October,	67	71¼	69¼	69⅓	75	65	10	7½	1½	,,	14	,,	,,	,,	19	,,	9	,,	3	Cloudy afternoons; refreshing showers in the middle of the day.
	November,	67	70¾	70⅔	69	72½	65	7½	7	1	1	23	,,	,,	,,	2	,,	27	,,	1	Mornings generally clear. Afternoons cloudy and rainy.
	December,	63⅔	69	67	67	72	61	11	9	3	1	17	3	5	,,	10	,,	12	,,	1	Little rain, fine fresh breeze throughout, cool and pleasant.
1816.	January,	63¼	71	69	68	76	60	16	11	2	1	2	,,	,,	,,	,,	10	20	,,	1	Dry and clear throughout.
	February,	66	74⅔	72	71	78	63	15	11	4	,,	2	,,	,,	,,	16	,,	8	,,	5	Do do. Only one day's rain from the 1st January to 27th February, a period of 56 days.
	March,	68	74½	70⅔	71	79	65	14	9	0	6	14	,,	7	,,	,,	,,	8	9	7	Throughout cloudy, squally and rain. Monsoon weather.
	April,	69¼	74	71½	71⅔	76	68	8	8	3	4	11	,,	19	,,	,,	,,	,,	11	,,	Mostly clear and sultry with very heavy showers occasionally.
	May,	69	74	71	71⅓	77	67⅔	9½	8	2	,,	17	,,	18	4	,,	,,	,,	9	,,	Generally clear with occasional squalls and very hard rain.
	June,	68	74	70¼	71	78	64	14	8	1	,,	16	,,	19	6	,,	,,	,,	5	,,	First part clear; afterwards squally with very hard rain.
	Media, Maxima and Totals for the whole year	67°	72½°	70¼°	70°	79°	60°	19°	11°	,,	14	159	3	115	51	51	10	84	34	18	Medium temperature of the whole year 70°.

TABLE II.

Abstract of the Weather on the Great Hill, Pinang, for the year 1823.

Months.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at 7 P. M.	Medium temperature of the whole month.	Maximum of the month.	Minimum do do.	Range during the month.	Greatest daily range.	Least do. do.	Number of days on which Thunder and Lightning are noted.	Number of days on which rain fell	Prevailing winds during the month, with the number of days on which they blew in each direction. E.	W.	S.	N.	N. E.	N. W.	S. E.	S. W.	Variable	Calm	Remarks.
January.	68 2/3	73 5/6	70 1/3	71	76 1/2	66	10 1/2	8	3	4	8	5	4	,,	5	7	6	3	1	,,	,,	Clear and cool, with occasionally squalls and showers
February,	69	74	71 5/6	71 1/2	78	67	11	9	2	4	8	4	4	,,	3	5	3	7	,,	3	,,	Rainy and cloudy.
March,	69 1/3	74 1/2	71 1/3	71	78	68	10	8	1	3	18	4	4	,,	1	1	7	8	2	2	2	Throughout squally and rainy
April,	70 1/2	75 1/3	72	72	78	68	10	8	2	3	12	2	6	1	,,	,,	9	8	2	2	,,	First part clear—latterly squally and rainy.
May,	71	75	72 1/2	73	79	68	10	7	1	5	16	2	12	7	,,	,,	2	3	3	,,	2	Cloudy, rainy and cool throughout.
June,	71	75	73	73	77	69	10	6	2 1/2	6	13	1	3	13	,,	,,	2	6	3	2	,,	Cloudy, sultry and rainy.
July,	70	75	72	72 1/2	77	67	10	9	1	2	10	,,	14	11	,,	,,	2	4	,,	,,	,,	Cloudy and rainy.
August,	69 1/3	74 1/2	71	74 1/2	76	68	9	8	2	8	23	2	12	5	,,	,,	1	4	4	3	,,	Cloudy, squally and rainy throughout.
September,	68 1/3	73	70	71 5/6	76	66	10	8	1	3	20	,,	15	1	,,	,,	7	5	2	,,	,,	Rainy with fine breeze throughout.
October,	68 2/3	75 1/2	71	71	76	66	10	8	1	1	,,	,,	20	2	1	,,	2	2	4	,,	,,	Do. do.
November,	67 5/6	72 1/2	69 2/3	69	75	65	10	7	2	12	20	3	6	,,	1	5	5	5	3	2	,,	Very rainy with squalls and lightning and thunder.
December,	67 2/3	73	70	70	75	65	10	9	3	9	14	2	1	3	6	5	14	1	,,	1	1	Dull, cloudy and rainy.
Medias, Maxima and Totals for the whole year.	69	74	71 5/6	71 1/2	77	67	10	9	1	60	162	25	101	43	17	23	56	56	24	15	5	Medium temperature of the year 71 1/2°

TABLE III.

Abstract of the Weather on the Great Hill, Pinang, for the year 1829.

Months.	Medium temperature of the month at 6 A. M.	3 P. M.	9 P. M.	Medium temperature of the whole month.	Maximum of the month.	Minimum do. do.	Range during the month.	Greatest daily range.	Least do. do.	Number of days on which Thunder and Lightning are noted.	Number of days on which rain fell.	Prevailing winds during each month, with the number of days on which they blew in each direction. E.	W.	S.	N.	N. E.	N. W.	S. E.	S. W.	Variable	Calm.	Remarks.
	°	°	°	°	°	°	°	°	°													
January,	67	72½	68¼	69¼	75½	64	11½	9	2	5	12	13	7	,,	1	5	5	,,	,,	,,	,,	In the early part hot and oppressive; latterly cool.
February,	68	73	69¼	70	75	65½	9½	8	1	6	13	8	7	,,	4	4	2	1	1	1	,,	Throughout dry and pleasant.
March,	69¾	75	70½	71⅔	77	68	9	9	1	17	15	5	4	4	,,	7	4	4	,,	3	,,	Forenoons and nights sultry and oppressive. T. L. much rain.
April,	70	74⅔	71	71⅔	77	67	10	7	2	10	20	,,	14	3	,,	,,	5	4	1	3	,,	Variable. F. noons oppressive. Heavy rain at night.
May,	70	74	70⅔	71⅓	78	67½	10⅓	8	2	4	22	,,	20	3	,,	,,	2	4	2	,,	,,	Squally and rainy throughout.
June,	70	74⅔	71½	71⅔	77	68	9	7	1	2	12	,,	10	8	,,	,,	2	3	4	3	,,	Dry—Nights cool.
July,	68⅔	72½	69⅓	70⅙	76½	66	10½	7	1½	1	15	,,	17	2	,,	,,	5	5	1	1	,,	Cool and pleasant. Much rain at night.
August,	68⅔	73	70	70¼	76	66½	9½	7	1½	6	21	,,	12	3	,,	,,	6	3	6	1	,,	Do. do. Much rain.
September,	69	73	69⅔	70⅓	75½	67	8½	6½	1	6	16	,,	15	3	,,	,,	4	4	3	1	,,	Cool, cloudy and pleasant.
October,	68	73	69	70	75	63½	11½	7	0	4	25	1	18	,,	,,	,,	8	1	,,	3	,,	Monsoon weather; much rain; cool.
November,	67	71	68	69	73½	62	11½	8	1	3	19	6	2	2	5	,,	6	5	,,	3	,,	Delightfully cool. Heavy rain at night.
December,	67	71⅓	68½	69	73	64	9	8	2	4	13	2	2	3	6	3	9	,,	4	2	,,	Throughout dry and cool. Morning breeze bracing and refreshing.
Media, Maxima and Totals for the whole year	68⅓°	73°	69¾°	70¼°	78°	62°	16°	9°	,,	68	203	35	128	31	17	19	58	34	22	21	,,	Medium temperature of the year 70¼°

"THE VALLEY," has been already alluded to, as that level part of the Island, on its eastern side, which extends from the hills to the sea, of a triangular shape; the range of mountains above described forming the base, and the apex called *Tanjong* jutting into the harbour, and having the town and fort built upon it. In 1786, when the Island came into the possession of the Company, thro' the agency of Captain Light, nearly the whole of it was overgrown with forest, and was inhabited by only a few malay fishermen, or occasionally formed the rendezvous of the pirates who infested the Straits. Great encouragement was held out to settlers by the British Authorities; and they soon flocked from the Malay and Siamese countries. The Chinese and Klings too, here denominated Chulias, were attracted to it, by the prospect of gain presented by the formation of a new settlement. The woods were successively cut down by their united industry, impelled by british capital and perseverance; the number of colonists gradually increased, and in twenty years after its first establishment, we find it a populous and flourishing place of commerce. It is not necessary to trace the gradual progress of cultivation, the rise of the fort and town, and the erection of private houses, which now extend for upwards of three miles in every direction from the point or *Tanjong*. Sufficient is it for medical purposes, to bear in mind the rapid conversion of the Island, from an unproductive, wild and thickly wooded resort of pirates, to a cultivated and populous station, and the clearing of the forest and the necessary exposure of surface consequent thereto, which in inter-tropical countries, have been always fertile sources of disease.

CENSUSES of the POPULATION have been regularly taken for several years past, but from the fluctuating number of Europeans, of the Chinese and Chulias, and the circumstance of the births and deaths among the different tribes not being included, they are necessarily imperfect, and unsatisfactory as medical documents of the rate of increase or mortality.

The following table taken from the *Government Gazette*, contains an abstract of the population of the Island on the 30th September, 1829.

" DISTRICTS.	Malays and Bugis	Achinese	Battas	Chinese	Bengalees	Chuliahs	Burmese and Siamese	Arabs	Armenians	Parsees	Native Christians	Coffrees.	Total.	REMARKS.
George Town	3 820	83	400	4,007	366	4 097	37	120	18	16	737	90	13,791	Europeans, their descendants Itinerants, Military and Convicts are not included in this statement.
Teluk ayer raja	3 583	155	187	1 677	833	1 381	700	10	2	,,	668	42	9 198	
Jelutong	2 368	22	108	1,399	185	739	71	34	,,	,,	22	15	4,963	
Gingora	989	8	90	452	1	175	11	6	,,	,,	7	32	1.771	
Sungei kluang	2 090	156	123	795	5	59	8	,,	,,	,,	,,	7	3,243	
Western district	644	22	186	871	,,	8	,,	,,	,,	,,	,,	,,	1,731	
Pulo jeraja	117	,,	7	,,	,,	4	,,	,,	,,	,,	,,	,,	128	
Pulo rimau	8	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	10	
Totals.	13.619	446	1.101	9,101	1,390	6.465	827	170	20	16	1434	186	34 775	

An increase in the number of permanent residents amounting to 2 934 has taken place in this Island, since the publication of the last Census in October 1828. Province Wellesley is not included in the present Census."

Besides these, the Europeans and their descendants the Indo-Britons may be reckoned to amount to about 500; the Convicts to be 1300; the European troops 40; and the native troops and followers nearly 1100; making a grand total of 37,715, as the population of the Island. The manners, habits and customs of the various native tribes, and the state of medicine among

among them, have been already briefly discussed in speaking of Malacca The remarks there made equally apply to this Island, and any further ob servations on them, would only be a repetition of what has there been said The British Merchants and the servants of the Company occupy very com fortable and convenient houses, either in the vicinity of the town or on th sea-shore along the north side of the valley, where an almost perpetual sea breeze makes them cool and salubrious Other dwellings are more in th interior, in the neighbourhood of the sepoy lines, to be afterwards more parti cularly noticed. Most of them are in distinct enclosures or compounds like the garden houses at Madras, or the houses of the good citizens o London, near the metropolis. The habits of the European community diffe not from those of their compatriots in the other presidencies in India. Th Chinese, here as at Malacca, are the principal artisans, manufacturers an cultivators of the place. The following is a spirited and just description o this enterprising people, from the pen of the lamented Mr. Finlayson, wh visited the Island in 1821. " We had not proceeded far, before a mo " interesting and more gratifying scene was expanded to our observatio " Industry, active, useful, manly and independent, seemed here to hav " found a congenial soil and fostering care. The indolent air of the Asiat " was thrown aside; every arm laboured to produce some useful objec " and every countenance teeming with animation, seemed, as it were directe " to a set task. With the air they had lost even the slender frame of the asiati " and the limbs, and muscularity and symmetry were those of another, an " more energetic race. These were Chinese, a people highly valuable as se " tlers, by reason of their industrious and very regular habits, who had estal " lished on this spot the mechanical arts, on a scale which might even vie wi " that of European artists, but which we should look for in vain in any oth " part of India."—" All the principal shops, all important and useful emplo " ments, and almost all the commerce of the Island, was in their hand " Under the patronage of the British Government, they soon acquire riches " they meet with entire protection of property and person, and are cherishe " by the Government, which in return, derives benefit from their industr " and from the commercial and profitable speculations, in which they usu " ally engage."*

The whole of the Valley is of alluvial formation, probably i great measure formed by the detritus of the mountains washed down an collected thro' the lapse of ages. At first sight, the Geologist is impres ed with the idea, that it must have once been covered with water an that the sea formerly washed the base of the mountains. This is confirmed b the phenomena observable on the opposite shore of Quedah, where Captai Low, the distinguished Siamese scholar, has traced the successive de posits of alluvial matter, for several miles inland, and the gradual re tirement of the ocean, indicated by ridges running parallel with the preser line of coast. In fact the process is now going on about 8 miles fro the Fort, where new soil is daily encroaching upon the sea, and in som places already converted into rice grounds.

The soil of the Valley is various—near tanjong, it is sandy, wit a surface of about 4 inches of vegetable mould from decayed leaves an branches of trees. In advancing about a mile into the interior, the groun begins to rise, and the superficial stratum is also a light vegetable mould about a foot in thickness resting on the sand. Near the foot of the moun tains, the height of the ground increases, the soil becomes rich in many places and beds of white clay resembling fuller's earth are found here and there. I those parts of the Island, near the sea coast, which are generally overflowed

* Finlayson's mission to Siam and Hué, 8vo. P. 13. 14.

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and thickly covered with mangrove, the soil for a foot in thickness is a rich black mould, mixed with a small quantity of sand. Throughout the Island it is light; and in most parts is composed of clay with an intermixture of a large portion of sabulous particles. On this account even after the heaviest showers, except in some places, where the clay predominates, the water seldom remains on the ground above a few minutes.

Neither in GEOLOGY nor ZOOLOGY, does the island offer a rich field for the student of natural history---The mountains are as has been already mentioned entirely composed of fine grey granite, and all the smaller eminences are of the same material. Near the surface, where it is in part disintegrated by the action of the weather, it is of a reddish hue, resembling sand and gravel kept together by a yellowish clay; the former produced by the Quartz, the latter by the Feldspar of the original rock --From its proximity to the Malayan peninsula, it might be presumed to contain valuable metallic deposits; but such if they exist, have not yet been discovered.* Some of the small hills near the coast are partly formed of the Laterite, already described when speaking of Malacca; and Saddle island at the south western angle of Pinang is apparently entirely composed of the same ingredient.

THE INDIGENOUS ANIMALS of the Island, are few in number. The malayan Elk, or cervus equinus is found in the deep forests, and on some of the hills. The moschus pygmeus or moose deer is also abundant. The spotted deer or cervus axis was sent from Bengal several years ago, to stock the Government park at Suffolk, and their numbers have so much increased that they are now to be found in every part of the valley. The galeopithecus variegatus, sometimes called Lemur volans; monkeys; a species of wild cat; two or three kinds of squirrel; a species of otter; and some varieties of bat, are the principal of the mammiferous tribe, to be met with here. The Buffalo is brought from the opposite main land. Sheep and oxen are imported from Bengal, and thrive, both on the Quedah shore and in the Island itself better than they do at Malacca. Beef and veal of excellent quality are therefore to be had at all times in the bazars, and mutton may be obtained occasionally. All these articles of diet are however so high priced, as to preclude their being in common use among the sepoys and lower order of inhabitants generally. The Chinese are here also distinguished for the excellence of their Pork.

The birds, the Amphibious animals, and Reptiles have been already enumerated when speaking of Malacca. A large species of Boa, or more properly speaking, the *Python* of Cuvier, sometimes 18 or 20 feet in length is common on some of the hills. Other snakes are numerous and of various kinds. A great variety of fish is to be had in the bazars.

The insect tribe seem to be the most numerous inhabitants of the woods. Various species of gryllus, cicada (among them the famed trumpeter) phasma, and mantis, keep up a constant clangor from morn to night, the effect of which, especially in ascending the mountain in the evening, is often deafening to the auditor.

" *Sole sub ardente rumpunt arbusta cicadis.*"—BUCOLICA.

On the EPIZOOTIC DISEASES of the Island, a few remarks will suffice. On the diseases of large horses I have been favoured with the following communication from DR. GRANT, who has paid particular attention to these subjects. " It has been supposed that the climate of this Island is ob-
" noxious to large horses; they are consequently in little demand, and ponies
" imported from Sumatra and Java, are employed in their stead, and sell at a
" high price. The reason why ponies thrive better than horses is clear: they
" are indigenous productions of climates and soils very similar to those of
" this place, and the food which they used in their native country is here
" continued. Horses are however imported from the arid climes of Arabia

* The Author has since been informed that a tin mine was many years ago worked in one of the hills.

" and

" and of India, where they have been accustomed to feed on the nutritive " forts of grass, dates, peas, Bengal grain, oats and kooltee. Here the " stables are damp, their feet are neglected, the grass coarse and green, and " paddy, or rice in the husk, the grain substituted for the other more nu- " tritive articles. To these causes, their diseases may in general be traced. " They are very subject to dry colic, moulting grease, mange, scurvy, thrush, " farcy and glanders. The best cure for the latter is a bullet; the others, " may be relieved by subduing inflammatory action, by bleeding, purgatives " and enemata; and then pursuing a course of proper food and medicine. If " attention be paid to the diet and stabling of large horses, I have no doubt " that they would enjoy as good health here, as in India." Dogs are subject to mange and tapeworm; the distemper is unknown here; nor has any instance of canine madness ever occurred. Oxen and buffaloes, especially the latter, are affected with an epidemic, which destroys great numbers of them, and which prevails to a great extent after long droughts. Such was the case in the present year, both here and on the opposite coast of Wellesley Province. When opened, I am informed that the liver is found extensively diseased, being full of hydatids. Both cats and dogs are frequently born with twisted tails; and in this case the animals are generally weak in the loins. The cause of this phenomenon is unknown. After a long continued dry season, in the months of March and April, poultry die in numbers, but I have not had an opportunity of investigating the nature of the epidemic.

THE BOTANY of the island is rich and varied. The great luxuriance of vegetation, and the vast variety of trees have been already alluded to. The whole surface of the Island, even in the dry months, is in a constant state of verdure. The trees are never stripped of their foliage; jungle rapidly springs up in neglected spots, and throughout the year some one or other of the numerous plants is always in flower. It would far exceed our limits to enter into a description of these. On the mountain grow the Pooh, the Bintangor of the natives; the Ranghas; the red poon; the dammer laut, and wood oil tree; all which are used in the domestic economy of the Malays—On the more elevated parts of the Island, grow the Cypress tree, a species of fir resembling the Larch, and some superb species of arborescent ferns. On the sides of the mountains also, a great variety of very beautiful ferns, mosses, and algæ are to be gathered. Among the creepers, is to be found the plant which yields the Cautchouc or elastic gum, winding round the trunks of trees in a spiral form. In the valley, almost all the Malacca fruits with the exception of the Duku, grow in great abundance, and the Mangosteen, the lanseh, the doorian, the rambootan, the jack, the tampoonee and the rambai may be obtained in great perfection. Most part of the valley is in a state of cultivation; the moister portions of it are appropriated to the growth of rice; the drier to that of vegetables both European and Native, raised by the industry of the Chinese. The sugar cane, and pepper vine are are extensively cultivated by them also, more especially on the South side of the Island. The quantity of the latter annually produced is estimated at about 15,000 piculs,* or 2,025,000 pounds Av. Wt. Cloves and Nutmegs thrive well —the former cover the tops of most of the cleared summits; the latter are seen in every part of the valley. The largest plantation of these, occupying a space of several square miles, the property of the hospitable and intelligent G. W. Brown Esquire is at Glugor, nearthe foot of the hills, about 3 miles to the southward of George town. The grounds are extremely beautiful, presenting every variety of surface; and the situation of the house is one of the most salubrious, and most pleasing in the valley. Coffee grows well both below and

* Vide table E. in the Appendix to Anderson's Mission to the East Coast of Sumatra, P. 422.

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on the hills, and yields abundantly; but the price it brings in the bazar hardly covers the expence of cultivation and picking. As an article of commerce, its growth has therefore been abandoned. Extensive fields of pine apples, of very fine flavour are found at the foot of the mountains.

ROADS traverse the valley in every direction, especially on the north side. They are kept in excellent repair, almost all shaded with the Sonna tree, which grows very luxuriantly, and many being raised several feet, where they pass thro' swampy portions of the Island. Each road has generally a deep ditch and a high bamboo hedge on each side. After long droughts, the ditches sometimes give out disagreeable effluvia; at spring tides however, they are mostly filled from the sea; they are frequently cleared; and can hardly therefore be reckoned injurious to the health of the inhabitants: Not so the bamboo hedges—These, not only along the roads but round most of the compounds are allowed to reach a height of from 10 to 15 feet, obstructing the free circulation of air and thus favouring the production of morbiferous effluvia. This subject is well deserving the attention of the police of the Island; and it is suggested that all proprietors should be compelled to cut their hedges, whenever they exceed six feet in height; the cuttings of course being burnt as early as possible afterwards. Government might give considerable aid in this, by supplying convicts; the only objection likely to be urged by private individuals, that of the expence of the measure, would thus be done away with; and the benefits resulting from its general adoption, would soon repay any temporary inconveniences attending it.

WATER, generally speaking of good quality, is to be had in almost every part of the island, by digging a few feet below the surface. In some places it is slightly brackish; in others it is tainted by passing over the decayed roots or leaves or branches of trees; and sometimes mixed with the clayey particles of the soil, over which it runs. There is no large river in the island; the several rills from the mountains collect into two or three rivulets, which traverse the valley in different directions. Their beds are sandy, the water pure as crystal and of excellent quality, unimpregnated with any deleterious ingredient. An aqueduct extending for several miles, conducts water from one of the hills to the harbour, where ship's boats are readily and expeditiously supplied. This however has got into disrepair, and being uncovered is frequently made the receptacle of every kind of filth, so that the water, by the time it reaches the town, is not always of the purest description. A new and more commodious one therefore, in which the water is conveyed by iron pipes under ground, is now in progress and nearly completed. By this, not only the shipping, but the town and various public establishments will be supplied with this indispensable article of life in a state of great purity. I am not aware of the existence of any mineral water in the island.

No MARSHES of any extent exist in the interior of the valley. In many places, as has been already remarked, the ground remains swampy for some time after long continued rain. Along the sea shore, and especially to the southward of George town, and in Polo tecoose bay, there are extensive swamps, overgrown with mangrove—but the deleterious influence which these *á priori* might be supposed to exert, is materially diminished by their being regularly overflowed at each tide. The other swampy spots, moreover, are generally cultivated as rice grounds; and this circumstance must also render them less injurious to the health of the inhabitants. On the whole therefore, as far as the soil is concerned, there is little which can tend to produce disease.

We now come to the CLIMATE of the valley. Our remarks on it are taken from the following tables for five and a half years, drawn from various sources. No. IV. is constructed from a Register published in the 1st volume

of

of the transactions of the Royal Asiatic Society of Great Britain and Ireland; No. V. is taken entire from the same work. No. VI. and VII. are constructed from Registers furnished by Mr. Palmer, late Sub. Assistant Surgeon; and No. VIII. and IX from a Register kept in the Hospital of the 35th Regiment. The prevailing winds could not be particularized in the same manner, as those on the hill—since in all the Registers which I have examined, they are mentioned only in a general way.

TABLE IV.

ABSTRACT OF THE WEATHER IN THE VALLEY PINANG, FROM 1st JULY 1815, TO 30TH JUNE 1816.

	Months.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at In the Evening.	Medium temperature of the whole month.	Maximum of the month	Minimum do. do.	Range.	Greatest daily range.	Least daily range.	Number of days on which lightning occurred.	Number of days on which rain fell.	Prevailing Winds.	Remarks.
1815.	July,	78½°	82½°	80⅓°	80⅓°	85½°	76½°	9°	6°	2½°	1	12	W. & S.	The general remarks on the Weather for this year are the same as those already given when treating of the hill in Table No. I.
	August,	78	81⅓	79⅓	80	85	76½	8½	5	2	,,	14	S. & W.	
	September,	77⅓	80⅔	78⅓	79	84½	75½	9	6	1	,,	15	W. & S.	
	October,	77	80⅔	79	79	83	75½	7½	5½	⅔	,,	14	N.	
	November,	76	79⅔	77⅙	77⅓	81	75½	6½	4½	2	,,	23	N. W.	
	December,	75	78⅔	76⅓	77	81	72½	8½	6	½	1	17	N. W. & N.	
1816.	January,	75	80⅙	78	77⅓	82½	73	9½	6½	2	1	2	N. E. & N. W.	
	February,	77	82½	80	80	85	74	11	10	2	1	2	N. & N. W.	
	March,	78½	83	81	80⅔	87	75½	11½	7	1	6	14	N. W.	
	April,	79⅔	84	82	82	85½	77½	8	7	½	4	11	S. W. & W.	
	May,	79	82⅔	81	81	85	77½	7½	5½	1	,,	17	W. & S. W.	
	June,	78½	82⅓	79⅓	80	86	75½	10½	6½	1	,,	18	W.	
	Media, Maxima and Totals for the whole year	77½°	83°	79⅓°	80°	87°	77½°	9½°	10°	⅛°	14	160	Average annual temperature 80°.	

TABLE V.

"ABSTRACT OF THE METEOROLOGICAL REGISTER KEPT IN THE LIBRARY IN GEORGE TOWN, PRINCE OF WALES' ISLAND 1820—1821."

"Months."	Average range of the Thermometer at 7 A. M.	Average range of the Thermometer at 12 noon	Average range of the Thermometer at 4 P. M.	Greatest height of the Thermometer during the month at 7 A. M.	Greatest height of the Thermometer during the month at 12 noon	Greatest height of the Thermometer during the month at 4 A. M.	Prevailing Winds	No. of days rain in the month.	Remarks.
1820.									
July,	78½°	81½°	82½°	80°	84°	85°	W.	3	From this table we find the annual temperature to be 80⅔° the maximum of the year 89° the minimum 76° and the yearly range therefore 13°.
August,	80¾	81¼	83¼	81½	85	87½	N. W.	10	
September,	78¼	81½	83	82	86	86½	,,	13	
October,	77½	81¼	82¼	80	85	86½	,,	13	
November,	77¾	81	82¼	80	84	85	,,	5	
December,	77¼	80½	81¼	77	82½	85	,,	3	
1821.									
January,	77½	79½	82¼	77½	82	85½	,,	3	
February,	78	82¼	85	79½	84½	87	,,	2	
March,	78¼	83	85¼	79½	86	87	N. W. & S. E.	5	
April,	76	78	79½	80	86	86¼	S. E. & N. W.	11	
May,	79¼	84	85½	82	87	89	S. E S. & N. W.	6	
June.	77½	84	85	83	88	88	N. W. & S. E.	9	
Media.	78	81¼	83					83	

TABLE VI.

Abstract of the Weather, Prince of Wales' Island, from 1st January to 31st December 1826.

Months.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at 9 P. M.	Medium temperature of the whole month.	Maximum do. do.	Minimum do. do.	Range during the month.	Daily range. Greatest.	Daily range. Least.	Number of days on which Thunder and Lightning occurred.	Number of days on which rain fell.	Prevailing Winds.	Remarks.
	°	°	°	°	°	°	°	°	°				
January,	75 1/3	83 3/4	78 3/4	79	85 1/2	72 1/2	13	12 1/2	1	6	12	Nr.	Cloudy, cool and pleasant, with frequently passing showers.
February,	76 1/3	84 1/2	79 1/4	80	87 1/2	72 1/2	15	12 1/2	5	4	13	Nr. & Er.	Cool and pleasant, with occasional squalls, and gentle showers.
March,	76 1/2	84 3/4	79 1/3	80	87 1/4	74	13 1/4	10 1/2	3 1/2	7	16	N. E. N. & S. W.	First part clear—afterwards cloudy with much rain. Southerly monsoon perceived on the 19th of the month.
April,	76 1/2	84	80	80	87 1/2	74	13 1/2	11 1/2	3	3	19	S.	Cloudy. Much rain, with repeated squalls.
May,	76	83 3/4	79	79 1/2	86	74	12	10 1/2	1/2	11	25	S. & W.	Much rain. Cloudy and pleasant weather.
June,	77 1/6	84 1/2	79 1/2	80 1/2	88	74	14	10 1/2	3	2	13	S.	Little rain, passing showers.
July,	76	83 3/4	78 1/4	79 1/3	86 1/2	73	13 1/2	11 1/2	3 1/2	,,	13	Sr.	Repeated squalls in the early part of the month.
August,	75 2/3	82 3/4	78 1/2	79	86 1/2	72 1/2	14	10 1/2	3 1/2	3	22	N. W.	Much rain. Weather cloudy throughout.
September,	76 1/4	82 3/4	78 3/4	79	85 1/2	75	10 1/2	10 1/2	2 1/2	1	20	N. & N. W.	Frequent squalls and much rain.—Influence of the monsoon perceptible.
October,	76	82 1/2	78 1/4	79	86	73	13	11	3	1	18	Nr.	Little rain; cloudy and pleasant throughout.
November,	75 1/2	82	77 3/4	78 3/4	84 1/2	73 1/2	11	10 1/2	2 1/2	4	28	Sr. N. & N. E.	Much rain and frequent squalls. Cool throughout.
December,	67 1/2	82 3/4	78	78 3/4	86	73 1/2	12 1/2	11	3	,,	10	Nr. & N. W.	Delightfully cool. Gentle showers generally in the middle of the day.
Media, Maxima and Totals for the whole year.	° 76	° 83 1/2	° 79	° 79 1/2	° 88	° 72 1/2	° 15 1/2	° 12 1/2	° 1/2	42	209		Medium temperature of the year 79 1/2°.

TABLE VII.

Abstract of the Weather, Prince of Wales' Island, from 1st January to 31st December 1827.

Months.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at 9 P. M.	Medium temperature of the whole month.	Maximum of the month.	Minimum do. do.	Range during the month.	Daily range. Greatest.	Daily range. Least.	Number of days on which Thunder and Lightning are noted.	Number of days on which rain fell.	Prevailing Winds.	Remarks.
January,	74 5/6	83	78	78 2/3	86	70 1/2	15 1/2	12	1 1/2	1	9	N. latt. S.	Generally fair, pleasant and cool.
February,	75 1/6	88	80	81	88	72 1/2	15 1/2	13	7	,,	7	Ny.	Sultry and oppressive. R. freshing showers occasionally.
March,	77 1/4	86 2/3	81 1/4	81 2/3	90	75 1/2	14 1/2	12 1/2	5	7	13	S. & N. E.	The influence of the Sy. Monsoon experienced about the 21st. Weather generally hot and oppressive—latterly cool and rainy.
April,	78	86 1/3	82	82	89	75	14	11 1/2	6	12	19	Sy.	Hot with heavy showers occasionally. Much T. & L. Wind Sy. steady breeze.
May,	82	87	84	84 1/3	89	80	9	7	2	5	11	Wy. & Sy.	Calm and sultry throughout.
June,	80	85 1/3	82 2/3	82 2/3	89	77	12	7	2	12	21	S. E. & Wy.	Much rain in the early part, with squalls from the W. Wind generally southerly.
July,	80	85 1/3	83	82 2/3	88 1/2	76	12 1/2	9	2	15	18	S. E. & Wy. Ny.	At first pleasant with gentle showers. Afterwards rainy and squally.
August,	79 2/3	84	82	82	87	78	9	7	1	17	16	Wy. & Sy. E.	Generally cool. Rain heavy. Dull and foggy.
September,	79 1/3	84	81	82	87 1/2	77	10 1/2	7 1/2	1	,,	19	Wy. & Sy.	Very rainy and squally throughout. Cool.
October,	80 1/3	83	82 1/4	82	85	79	6	4	,,	,,	23	At first Wy. afterds. N. W. & N. E.	Monsoon's influence perceived about the 21st; squalls and heavy rain then.
November,	80 1/2	83	82	81 2/3	84	79	5	4	1	10	25	N. E. & N. W.	Rainy and cool throughout—with much thunder and lightning.
December,	83 2/3	87 1/3	83	82 1/3	85	78	7	4	1	3	10	N. E.	Throughout clear, cool and pleasant.
Media, Maxima and Totals for the whole year	79	85	82	82	90	70 1/2	19 1/2	13	,,	82	181		Medium temperature of the year 82°.

TABLE VIII.

Abstract of the Weather, Pinang, for the Year 1829.

Months.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at 9 P. M.	Medium temperature of the whole month.	Maximum of the month	Minimum do. do	Range during the month.	Daily range. Greatest	Daily range. Least.	Number of days on which Th. and Lg. occurred.	Number of days on which rain fell.	Prevailing Winds.	Remarks.
January,	77	86	81½	81⅓	88	77	11	11	6	5	6	N. W.	The general remarks on the Weather are nearly the same as those given when treating of the Hill climate in Table III.
February,	76½	84	80½	80⅔	85	74	11	11	5	6	15	W. & S.	
March,	77	84¼	81¼	81	89	76	13	11	5	17	15	E. & S.	
April,	77	85¼	82¼	81⅓	87	76	11	11	7	10	16	W.	
May,	78¼	84⅓	81⅓	81⅓	86	76	10	7	3	4	2	N. W. & W.	
June,	78⅓	84	82	81⅓	86	74	12	11	2	2	10	S. & N. W.	
July,	76	83½	81½	80⅔	86	72	14	12	4	1	15	N. W.	
August,	76½	84½	81¼	81	87	75	12	10	6	6	19	W.	
September,	77	83	80¼	80⅓	85	75	10	9	5	6	17	W.	
October,	76	82⅓	79⅓	79⅓	85	74	11	8	1	4	19	N. W.	
November,	74½	82	80	78⅓	84	74	10	10	6	3	17	N. W. & E.	
December,	74½	82½	80	79	85	74	11	11	5	4	9	N. W.	
Media, Maxima and Totals for the whole year	76½	84	81	80½	89	72	17	12	1	68	180	Average annual temperature 80½°.	

TABLE IX.

Abstract of the Weather, Pinang, from 1st January to 30th June 1830.

Months.	Medium temperature of the month at 6 A. M.	Medium temperature of the month at 3 P. M.	Medium temperature of the month at 9 P. M.	Medium temperature of the month.	Maximum do. do.	Minimum do. do.	Range during the month.	Daily range Greatest.	Daily range Least.	Number of days on which Th. and Lg. occurred.	Number of days on which rain fell.	Prevailing Winds.	Remarks.
January,	74°	84°	81°	79⅔°	86°	73°	13°	12°	8°	7	5	N. W.	Throughout dry & sultry. Two inches and a half of rain fell.
February,	75	86	82	81	89	74	15	13	9	7	1	S. E. & N. W.	Throughout clear, dry and sultry. Heat very oppressive from long drought. ⅛ an inch of rain.
March,	75½	85	81½	80⅔	88	74	14	12	3	14	16	N. W. & E.	Rainy & sultry, 16 inches of rain fell.
April,	76½	84	81	80⅓	86	75	11	11	2	12	9	E. & S. E.	Alternate shower and sunshine—occasionally heavy rain, sultry and muggy, 5 inches of rain.
May,	77	84	81	80⅔	86	76	10	9	5	8	18	E. & N. W.	Much rain—30 ins. Close and sultry. Frequent squalls from Westward.
June,	77	85½	82½	81⅓	88	75	13	11	5	5	14	Variable at first Sr. & Wr. afterwards N. W.	6 inches of rain. Weather uncertain. Rain heavy, squalls from West.
Media Maxima and Totals for the ½ year.	76°	85°	81½°	80⅔°	89°	73°	16°	13°	2°	53	63		

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As the foregoing tables are presumed to be as comprehensive as possible, a very few general remarks on the climate of Penang will suffice.—The mean temperature of the year it would appear from them, is 79°¼ of Fahrenheit—the mean temperature of the morning about sun rise is 75°¼ that of mid-day or of the afternoons when the sun is most powerful is 83°¼ and that of evening after sun set is 80°. The highest point the thermometer reached in the period included in the tables was 90° in the month of March, 1827; the lowest point 70°½. The average monthly range however is only 11°. the greatest daily range 13°, but on many days, the thermometer remained at the same point throughout the 24 hours, more especially in the months of October and November. The average daily range for the whole period was 6°. The nights throughout the year are delightfully cool and pleasant.

The great characteristic of the climate of Penang is its moisture. I have met with no document, by which I am enabled to state the quantity of rain which falls annually. In the first six months of the present year 60 inches fell; and it probably approximates nearly to that of Malacca. The average number of rainy days for four years was 182; the greatest number in one year being 209, the least 160. It is to this constant moisture, that the valley owes its verdure, and extreme luxuriance of vegetation; and probably also its exemption from those virulent epidemic fevers, which might be expected to arise from the immense mass of vegetable matter in a constant state of decay, and from the swampy nature of the soil. By this constant fall of rain, the heat of the sun is moderated; the marshy spots, where they do exist are kept always covered, or at least never completely uncovered, the condition of them allowed to be the least favourable to the developement of miasmata. It cannot be concealed however, that this excessive moisture is also one of the principal causes of the diseases most prevalent among the troops, who are constantly exposed to its influence; such as Fevers, Rheumatism, Bowel complaints and Ulcers. That maismata occur on the island, can hardly be doubted by any one who glances over its topography, and who considers that the above diseases, in most instances owe their origin to some contamination of the atmosphere. One bad effect of moisture also, is the sudden alterations of temperature during the 24 hours: in a hot and sultry day, perhaps, when the spirits are depressed, and perspiration distils from every pore, a sudden fall of rain takes place, accompanied with violent gusts of wind, the immediate effects of which are a disagreeable sensation of chilliness, and a check to the cutaneous transpiration, the *fons et origo* of many diseases.—Occasionally also, especially in the afternoons, in the intervals between showers of rain, there is a stewing ovenish heat, like the effect of a vapour bath, producing great languor and oppression, even when the thermometer does not indicate any increase of temperature. I was inclined to ascribe this at one time, to some peculiar state of the electricity of the atmosphere, as electrical phenomena are very frequent in the straits, until I met with the following remarks, by the distinguished meteorologist Mr. Daniell, which I think explain the effect better, and refer them to a cause less hidden than electricity. "There are days," says he, "when even the robust feel oppression "and languor, which are commonly and justly to be attributed to the wea- "ther ——" The oppression of sultry days, may be accounted for, from the "obstruction of the insensible perspiration of the body, which is prevented "exhaling into the atmosphere already surcharged with moisture, while "unimpeded transpiration from the pores, adds new energy to all the vital "functions."*

Another peculiarity of the climate of the valley is its uncertainty; a fair morning can seldom be expected to be followed by a fine day—and the

* Daniell on a new Hygrometer. Quarterly Journal of Science Literature and the Arts.—Vol. VIII. p. 318 319.

changes from hot to cold, and from fair to rainy are sudden and frequent. Throughout the greater part of the year too, dense, brownish clouds attended with a very sultry and oppressive state of the atmosphere prevail, sometimes completely canopying the island; and the languor produced by them is only relieved by their bursting into rain.—To this excessive moisture and heat combined, may also be ascribed the ready production of maggots in sores affecting man and the lower animals. Ulcers, if neglected, soon become filled with these loathsome objects, at all times of the year; and numerous instances of the kind are to be met with among paupers who do not seek timely medical aid.

From what has been said above, the climate of Pinang can scarcely with propriety be divided into seasons. Almost every year differs from the preceding in the characteristic features of the weather in each month; but from an examination of the foregoing tables, and enquiries from the oldest residents, the following may be reckoned to present a view of the principal meteorological phenomena.—January and February are reckoned the dry season, as less rain falls in them, than during any other part of the year. In 1816, there was only one rainy day from the 2d of January to the 27th February, making an almost uninterrupted interval of 56 days' fair weather. We have lately understood from a respectable authority, that scarcely a drop of rain fell from the beginning of December 1821 to the end of March 1822, the longest drought on record in this island. In the present year also, (1830) only 2½ inches of rain fell in January, and half an inch in February, the number of rainy days in the former being 5, in the latter only 1. When these long droughts occur, the season is generally expected to be unhealthy—epizootic diseases, as has been already noticed, become endemic; and in this year, the remark was verified by the very general prevalence of dysenteric affections among the inhabitants. The heat during February was excessive, and the country was "changing its usual livery of green, for the parched and barren appearance of the Carnatic."* The influence of both monsoons is felt at Pinang. In the early part of March, the weather is generally clear; towards the end however, monsoon weather prevails. In the two succeeding months, especially in May, frequent showers occur, but the falls of rain are seldom heavy; tho' in the present year, as an instance of the variability of the seasons, May was a very rainy month, the quantity indicated by the Ombrometer being 30 inches. June is rainy; squalls from the Westward are frequent, and sometimes violent, tearing up trees by the roots, and unroofing houses in exposed situations, thus resembling the dreadful hurricanes of the West Indies, tho' their duration is seldom long.—All kinds of fruit are now in season, and to be obtained in abundance in the bazars—In July, August and September, the sky is generally overcast; much rain falls, alternated with sunshine; squalls are also frequent in the two first, accompanied with electrical phenomena. In these months more particularly, are experienced the languor and oppression from the vapour-bath state of the atmosphere before mentioned. The early part of October is generally clear and pleasant; towards the end of the month, however, the influence of the N. E. monsoon is perceived; squalls from the N. occur; dense masses of clouds collect; and rain falls in great quantity for days uninterruptedly, attended with much thunder and lightning. November and December are pleasant, cool, and delightful months; the morning breeze is refreshingly bracing; the heat is moderated by frequent showers and occasional heavy falls of rain; and the air is purer and drier than in any other part of the year. Catarrh and Rheumatism are the prevalent diseases at this season.

Heavy dews prevail throughout the year, in clear nights: fogs too are frequent in the mornings, especially during the more rainy months. From

* Pinang Government Gazette, for February 20th 1830.

repeated

As the foregoing tables are presumed to be as comprehensive as possible, a very few general remarks on the climate of Penang will suffice.—The mean temperature of the year it would appear from them, is 79°¾ of Fahrenheit—the mean temperature of the morning about sun rise is 75°¾ that of mid-day or of the afternoons when the sun is most powerful is 83°¼ and that of evening after sun set is 80°. The highest point the thermometer reached in the period included in the tables was 90° in the month of March 1827; the lowest point 70°½. The average monthly range however is only 11°. the greatest daily range 13°, but on many days, the thermometer remained at the same point throughout the 24 hours, more especially in the months of October and November. The average daily range for the whole peroid was 6°. The nights throughout the year are delightfully cool and pleasant.

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repeated observations of Daniell's Hygrometer, in both moist and dry states of the atmosphere, the average difference between the external and internal thermometers, at the point of condensation, has been found to be about 10°. The Barometer has been observed to range always about 30 inches, with a daily variation of about .08, the maximum being at 9. o'clock A. M. the minimum about 3 P. M.

The winds in the valley are exceedingly variable. From the situation of the island, near the great malayan peninsula to the east, with an open sea to the west, the westerly wind is necessarily the sea breeze; it blows pretty constantly throughout the year, and influences all the others. From an inspection of the Tables of the weather on the great hill, previously given it will be found that the average number of days on which Westerly winds prevailed, during each year was 207—of easterly winds 68—of the south wind 42—and of the north only 28 —It must be remembered however, that the valley is situated to the eastward of a lofty range of hills, which obstruct the direct influence of the prevailing wind; this therefore sweeps round the extremities of the range, becoming in the northern part of the Island, a north west wind, in the southerly a south west wind, while immediately under the hills there is perhaps a perfect calm. From this reason, during some days the wind may be observed to shift to every point of the compass; that in the valley and on the hill having contrary directions, and ships coming into harbour from the southward and northern passages may each be seen to have a favourable breeze. From the interposition of the curtain of hills also, arise in some measure that stagnant state of the atmosphere and that stewing oppressive heat, which have been already described as of frequent occurrence. During the N. E. moonsoon there is generally a strong breeze from the northward, often keen and producing Catarrhs, Rheumatisms and slight fevers in those exposed to its influence. The southerly and south easterly breezes, blowing over a great extent of land on the opposite peninsula, resemble the long shore winds of Madras. It is in fact the land wind of Pinang; occurs occasionally throughout the year, but more particularly in May, June and July, setting in about 11 o'clock in the forenoon and continuing until about 4 P. M. It is hot and dry, producing a constricted state of the skin, headache, with heat and pain in the eyes, languor, and lassitude. Some constitutions are peculiarly susceptible of its influence; and the feverish feelings above described are often to them, the first indications of its existence—It luckily seldom blows oftener than once in four or five days—What is called the hill breeze sets in towards evening; the cultivated valley being heated during the day, and retaining its heat longer than the forest on the mountains, the cooler air from the latter rushes down after sun set to establish the equilibrium. Its effect is limited to that part of the valley in the neighbourhood of the hills; and is delightfully refreshing, tho' prejudicial perhaps to those exposed to it at night, from its probable combination with the miasmata of the great mass of vegetation over which it blows.

Electrical phenomena, as in other stations in the straits are very common in Pinang, more especially at the commencement of each moonsoon, and during the rainier months. That they must influence the health of the inhabitants can hardly be doubted: but to what extent, and in what manner they do so, will remain unknown, till the nature of electricity be better understood. Towards evening, in the months of July, August and September, there is sometimes an awful stillness and coolness in the atmosphere, followed by tremendous peals of thunder and vivid flashes of lightning, during which the mind and body feel equally debilitated until the storm from the eastward brings with it those refreshing showers which fall during those months.

Travellers have often been struck with the similarity which Pinang bears in formation and scenery to some of the West India Islands; and from the foregoing hasty sketch of the climate, a slight resemblance between them, may be traced also in this respect.† In temperature,* in the variableness of the winds and heat, in the moisture,‡ and in the revolution of the seasons,§ they somewhat approximate; and it will be found hereafter that in the prevailing diseases, the resemblance is also kept up. Various points of difference however have been noticed in the course of these pages; the comparative absence of marshes, the constant falls of rain, the prevalence of the westerly sea-breeze, its situation near the equator close to a lofty mainland, exempt Pinang; from those dreadful scourges of the West, hurricanes and epidemic fever.

On comparison of the climate of Pinang with that of Malacca, the latter must be allowed to have the preference. The want of constantly alternating sea and land breezes, the variableness of the winds, the daily and often rapid alternations from hot to cold, and from dry to moist, during ten months in the year, the general moisture, and the frequent closeness and sultriness of the atmosphere all tend to make it a climate trying to European constitutions. Some degree of impurity of the atmosphere seems constantly to exist, and the heat has been already noticed to be often greater to the feelings, than is indicated by the Thermometer. The climate of Pinang however is not without some counterbalancing advantages, which give it a superiority at least over the Carnatic, and the province of Bengal. The nights and mornings are always delightfully cool, and the bracing breeze which prevails at those hours, enables the frame to endure the greater heat of the day. In the smallness of the range of the thermometer too, throughout the year, it surpasses any station on the continent of India; and the command of the delightful climate of the Hill, in an hour and a half's ride, will make it still a desirable place of resort for invalids from the other presidencies. With proper precautions too, there is no danger from *Pinang* or any other fever—the bugbear which has lately frightened many votaries of Hygeia from the Island; it must be sought after to be obtained; and if the snipe shooter, or boater prefer amusement to the preservation of his health and life, let him enjoy his sport, but let not the accidents resulting from his folly be ascribed to the "baneful effects of the climate" as they usually have been.

We now proceed to a brief sketch of the HOSPITALS and PUBLIC BUILDINGS occupied by the soldiery and convicts.

GEORGE TOWN, the capital of the Island is situated on the extreme eastern point of the valley, and extends about a mile along the shore, the banks of which are a thick rich clay. It consists of one principal street running parallel with the coast, rather broad and airy; the houses being of very unequal magnitude, but for the most part small and crowded; the lower apartments being occupied as shops, the upper as sleep-

* "The annual mean temperature (of Barbadoes) is about 79½ of Farenheit, and its extreme variations very slight; the thermometer seldom falling below 73," or rising above 85°"—Annesley's Researches Vol. I. p. 188.

† "The windings of the innumerable hills (in the West India islands) produce a change of temperature, as they recede into hollows, or project into prominences, giving a quick and unpleasant alternation of almost unsupportable heat, and consequent profuse perspiration, and comparative cold with dry and corrugated skin."—Chisholm's Manual of the Climate and diseases of Tropical countries p. 1.——2.

‡ "At Martinico, 100 inches (of rain) on an average fall." Id. p. 4.

§ "The dry season is the portion of the year between the beginning of December and the end of April.—The rainy season includes the two last months of summer, all autumn and generally the first month in winter.—Many successive days occur of dry weather chiefly in August and September, and are distinguished by an almost insupportable sultryness and closeness." Idem p. 4.

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ing places. From this branch off various other streets, with the houses partly built of stone or brick, partly of wood or atap, narrow and much crowded, so that epidemic diseases would probably spread rapidly among the occupiers.—The architecture is very irregular—the houses of the more opulent chinese bear away the palm in neatness and comfort. The town on the whole is clean and airy; and all filth is removed regularly by a working gang of convicts.—In the outskirts, the huts occupied by malays and others, often built over creeks, and the salt water swamps near the shore, are constructed of wood and atap, raised generally 5 or 6 feet from the ground. Among the causes of disease might be enumerated the great number of licensed spirit shops, where are sold indian arrack, and chinese samsoo, containing often the most deleterious ingredients. Around the town, there is a broad bound ditch, connected with the sea at both extremities; often only half filled, with muddy and dirty banks, the receptacle of every kind of filth, and in dry weather especially exhaling effluvia of no very agreeable odour. A great part too of the western and southern sides of the town is built on the margin of one of those extensive salt water swamps covered with mangrove, which have been already observed to skirt most of the island; and the deleterious effects of which are only moderated by their being regularly overflowed at each tide. These circumstances of locality would *á priori* be considered to render the town nearly uninhabitable; yet we do not find disease prevailing in its precincts to a greater extent, than in any other parts of the island.—The prevailing diseases however will, as might be expected, be found to owe their origin principally to miasmatic influence. On the northern side of the town, within the bound ditch, between Bamboo-Square and the sea, there is a marsh of some extent on each side of the great road, where the water constantly remains stagnant. That part of it near the sea, in front of the present Native Artillery barracks, has been lately removed, by a tank having been dug in the neighbourhood. No attempt however has been made to drain the other portion of it; tho' it well deserves the attention of the Police. I am not aware that the permanent residents in its vicinity are subject to attacks of disease; but new comers occupying the houses near it are subject to intermittents, of a severe tertian type. In 1827, several clerks, and others in the Government Offices lately arrived from Madras, were affected with the disease, which left them only on removal to a more healthy situation. The bazars are on a large scale, and well furnished with all the necessary articles of every day consumption.

Fort Cornwallis is of small size situated on the point of Tanjong to the north of the town. The ditch is broad and muddy, but communicates with the sea, which bounds the fort on two sides, and thus is kept constantly filled.—Within the walls are the Ordnance Stores, the quarters of the non-commissioned Staff, and the barracks of the European Artillery. The latter are built on the ramparts, in an airy situation facing the sea, clean, cool, and well ventilated. The Artillery parade and practice ground is a small swampy spot, on the glacis to the westward of the Fort, along the sea shore.

The General Hospital, for the accommodation of the sick of both European and Native Artillery, of seamen, and paupers, was formerly situated on an open but rather swampy plain about two miles and a half from the Fort, near the sepoy lines. It was sufficiently large and commodious, but in 1828, became so dilapidated, that it was considered no longer safe to occupy it. The sick were therefore removed to a large building close to the glacis of the Fort, fronting the sea; and still more lately, owing to the comparatively small number of European troops in garrison, have been accommodated in a smaller house, calculated to hold about 20 beds, at a little distance from the foregoing, and furnished with every requisite convenience.

Pinang is well known to be the BOTANY BAY of India, whither convicts for life or for a limited period of years are sent from the different presidencies.—Their number for the last 9 years has averaged about 1400. They are divided into different classes according to their length of residence on the island, or to their good behaviour. The first class convicts are allowed to provide for themselves; those of the second are either hired out, or given as servants to the European inhabitants, or employed in different public offices, with a monthly allowance of 4 rupees in lieu of clothes and rations; the other classes are employed in gangs on the roads, in cutting wood, or carrying on Government works.—From these occupations, they are necessarily much exposed to the vicissitudes of the weather; many of them moreover, especially those who are not under the immediate control of guards and peons, are occasionally dissipated and irregular in their habits, and we accordingly find that among the convicts in general, the admissions with disease are numerous, averaging for 8 years 60 per cent annually, while the deaths have been about 9 per cent on the total number of admissions. It is to be remembered however that a great proportion remain sick in quarters and are not included in the hospital returns. The mortality among this class of people is therefore considerable.—Their habitations are situated in different parts of the island, according to the nature of the service in which they are engaged; but the greater portion occupy the "Convict Lines,"— a spacious square enclosure, along three sides of which is built a continuous shed, about 12 feet broad, and at an average height of 10 feet. It is well ventilated, and sheltered from the weather, affording accommodation to about 300 individuals who sleep on a platform of wood, raised between 3 and 4 feet from the ground, along the whole extent of the building.

The CONVICT HOSPITAL, was formerly a part of the "Lines" above described, separated from the rest, and sufficiently large to contain about 50 patients. It has been lately removed however to the neighbourhood of the sepoy lines; and now consists of a number of huts, the out-houses of the former General Hospital, properly enclosed, and capable of accommodating about the same number of sick.

His MAJESTY'S JAIL, for Criminals and Debtors is in the vicinity of the foregoing; large, commodious, and well ventilated. Disease in it is of rare occurrence.

The CHINESE POOR HOUSE, is a building situated behind the jail, calculated to contain about 100 poor chinese afflicted with incurable or chronic complaints, or labourers of that nation thrown out of employment by temporary illness.—They are fed and clothed, partly by an allowance from Government, partly by voluntary contributions of individuals, and partly by the proceeds of the Pork Farm*—and medical aid is afforded them by one of the Surgeons of the establishment.

The LUNATIC ASYLUM, is situated near the Regimental Hospital. It is a long and lofty mud building, divided by partitions—open above so as to admit of free ventilation—into several compartments, in each of which are raised platforms for the accommodation of the patients, and in one are stocks &c. for the restraint of those who are refractory. It is airy comfortable and secure. The women are lodged in a building separate from that in which the men are confined.—On the 1st January 1829, the number of inmates was 25, (23 men and 2 women) 11 of whom were chinese, 1 portuguese, and the rest natives of India, convicts, malays &c. Four were affected with Mania, 8 with Monomania and 13 with Dementia. From that period up to the 30th June 1830, there were admitted 9 cases of Mania, 5 of Monomania and 16 of Dementia making a total of 30, of whom 15 were Chinese, and 2 Portuguese.

* The monopoly of the Pork market is sold annually for about 7000 Spanish Dollars.

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Out of the 55 treated during the year and a half, 14 were discharged cured, 3 was transferred, 1 was given up to his friends, and 1 deserted; 10 died, 2 of these from supervening desentery; and 25 men, (of whom 13 were chinese,) and 3 women, remained. Most of these are in a state of harmless fatuity, being principally paupers sent by the police to prevent their proving a nuisance to the community; none of them are violent.—The great proportion of chinese may be attributed to the vicious habits of drinking, smoking opium and gambling, and in some measure also to the spirit of enterprise and speculation which prevail among that tribe—I am informed by Mr. Boswell the medical officer in charge, that the system of treatment pursued is one of mildness; and that, in the more violent cases, he has succeeded sometimes in effecting a cure by the administration of strong cathartic remedies, by bleeding general and topical, by an antiphlogistic regimen and kind conciliatory measures.

The Sepoy Lines are about two and a half miles to the westward of the town, near the foot of the mountains, built on a dry spot elevated about 30 feet above the level of the sea.—The huts are in separate streets, with intersecting ditches by which the water is carried off—each is distinct from the others, by which ventilation is ensured, 24 feet long and 12 wide, being occupied by four men. When the Madras troops first arrived here in 1827, the men were much crowded; the huts were in bad repair, and afforded little protection from the weather, as the rain and wind beat in thro' numerous fissures in the roofs and sides; and many of them from inexperience slept on the cold and humid ground—causes no doubt contributing in combination with change of climate and diet, to the prevalence of ulcer and disease in general among them. On representation, the houses were readily repaired by Government; and in 1829, a completely new range was erected, affording dry and comfortable quarters for nearly 1000 men.—As at Malacca, the sepoys here soon saw the danger of sleeping on the ground, as their custom is in India; and every one supplied himself with a cot, or erected platforms for sleeping on, of common bamboo.—To the north of the lines there is a marshy spot, tho' not of great extent; and the whole parade ground is somewhat swampy, more especially after rain, so that on occasions of exercise, wet feet become another cause of sickness—Duty has been also severe; and the consequent exposure to the weather has been an active means of increasing the sick list.—Each sepoy is allowed 2 *lbs.* of rice, and 2 *oz* of ghee per day from the Company's Stores, and a compensation of 12 annas per month is given to him in lieu of spices &c. On this, he principally subsists; but on the subject of the food of the native soldier, we have descanted at length in the paper on the diseases of Mulacca.

The Hospital for Native troops is situated in the rear of the lines. It is a large airy commodious building consisting of an upper floor, with a hall 59 feet long by 21 wide, on each side of which are two rooms 29½ feet by 17. Below are the dispensary and bathing rooms. It is furnished with every requisite convenience, and is calculated to contain 100 men without crowding. The situation is one of the coolest and healthiest in the Island.

The local corps, consisting of men principally from the Bengal Presidency, was formerly stationed about 3 miles to the southward of the town on a spot slightly elevated above a portion of marshy ground. During their residence there, the proportion of sick was always considerable, principally from Fever, Rheumatism and Ulcers. In 1825, the corps was removed to Province Wellesley on the Quedah shore, and in 1827, was disbanded.

Having in the preceding pages traced the influence of climate, situation, soil and habits, in the production of disease, we now proceed to a detailed account of the diseases which have actually prevailed in the Island

Island since its first possession by the English, and more especially for the last ten years. The want of records of the mortality of the inhabitants; whereby the healthiness of the station might be correctly ascertained, has been already remarked. No medical returns exist anteriorly to 1821.

The following remarks therefore, are deduced from private information,* from the Tables to be given hereafter constructed from the monthly Returns in the Superintending Surgeon's Office—and from personal observation during a period of three years and a half. It may be here remarked, that the rate of sickness shewn by the Tables is scarcely a fair criterion of the salubrity or insalubrity of the Island; as the troops and convicts, are exposed to causes of sickness, from which the generality of the inhabitants are exempt.

The principal Epidemic Diseases, have been the small pox and cholera.—The former recurs nearly every year, with more or less virulence, and to greater or less extent, according to various circumstances, with which we are unacquainted. In some years, every case has been observed to be of the worst confluent description, while in others, the disease has been comparatively mild. For the last three years, the population has been denied the blessings of vaccination; as, tho' the station has been regularly supplied with lymph from Madras and Calcutta, the vaccine disease has not been produced in any one instance in which it has been tried. It is difficult to explain this failure; it has occurred in the hands of every practitioner, not only here but at Malacca and Singapore, so that the mode of inserting the virus can hardly be called in question. Lymph has been conveyed from Madras in the space of 8 days, during which its efficacy could scarcely have become impaired. Nor has the climate always been unfavourable; as vaccination has been for years together kept up at all these stations. There has been no want of zeal in the medical officers of the establishment, and no means are now left untried to introduce and continue this invaluable protection against so formidable a malady.—As at Malacca, many instances of small pox after vaccination, have occurred; but for the same reasons as noticed in our former paper, these failures ought to have no weight in weakening our confidence in its powers.†

* I beg to offer my best acknowledgments to the Hon'ble Mr. Ibbetson, one of the oldest residents, and to Mr. Palmer the oldest resident practitioner in the Island, for their kind communications respecting the health of the inhabitants.

† The following interesting account of the Malayan mode of treating small pox, is extracted from a memoir on Province Wellesley, published in the Pinang Government Gazette by Captain Low, who, from his official situation has opportunities of being intimately acquainted with the manners and habits of the natives. "The patient is shut up in the house on the appearance of the first symptoms (from a belief that the least annoyance increases the violence of the disease until the pustules appear.) The native practitioner administers doses of the *gall* of the boa constrictor lampadoo oolar (sawa) infused or mixed in cocoa nut water—or made up in the shape of pills with plantain fruit. Should a visitor come to a house which contains a person with small pox, the natives will not invite him to enter, owing to a superstitious idea that the disease or rather the spirit which presides over it will be offended, and the danger be increased. He may however enter of his own accord.—Parents whose child falls sick of the disease must not wear the bajoo or jacket. Many other things are forbidden to be brought into the house during the period the distemper prevails. Three days after the attack, they apply the cold bath twice or thrice a day, and keep the patient as cool as possible, giving him cold water to drink, but with which has been mixed a portion of the following *recipe*. *The bone of a goose ground to paste; the ukur burh a black solid kind of coral sparingly obtained in this coast but more abundantly on the martaban coast, and often brought by the Hadjees from Mecca being apparently the same as that sort described by Mr. Burkhardt—the ukur kayoo putih, or pinnawa putih, the leaf of a tree slightly bitter—the sea cocoa nut ukur mooratajum, the root of a fruit bearing tree of an astringent quality.* The above ingredients are all mixed and *fried* before being used.—To urge the pustules forward a mixture of cocoa-nut milk and dawn birneh a leaf of an air plant, found on areca and other trees which are in a decaying state, is sprinkled over the patients body.—When the pustules decline, a paste is used compounded of rice flour, turmeric, the leaf of Jamboo ayer, and the leaf of the *burumbang* a high tree. This leaf is slightly acid and astringent. To allay the irritation, a leafy branch of the tree *mamoo* is brushed over the body. In bad cases, the juice of the root of the *sorrosentoon*, a very bitter plant, is mixed with

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The CHOLERA, having ravaged for nearly two years the continent of India, made its way over the mountains of Arracan, thro' the Burmese and Siamese territories to the Malayan Peninsula. In its course eastward it reached this island in October, 1819. On the 28th of that month, among the Records of Government, we find a minute by the President in Council, notifying the presence of the dreaded scourge; and recommending the immediate adoption of measures for the relief of the sufferers. Hospitals were erected in various parts of the town; the medical officers were unremitting in their attentious; the public authorities and private individuals, especially D. Brown, Esq. of Glugor, willingly lent their aid in the distribution of medicines and comforts to the sick; notwithstanding, the disease spread rapidly, and the mortality was considerable. There are no documents now in existence, shewing the actual number of deaths; but the following extract of a letter from Mr. Palmer, will give some idea of its ravages—"The epidemic first made its appearance on the island in October 1819, raged with great violence in November, and gradually declined in December; since when we have had a few occasional sporadic instances of the disease chiefly among the natives. During its prevalence in 1819, the poorer class of Chuliahs and Malays appeared to be the greatest sufferers; a few Europeans were also attacked, among whom Mr. P. Carnegy was, I believe the only victim. Mr. W. and Mr. P. were among the afflicted, and they both recovered. On the appearance of Cholera on the island, I cannot now point out any one part of the town, as more affected by it, than another; its influence was general, and I was employed night and day in distributing remedies to all quarters of the town. The mortality was very great during November and December, and to the best of my recollection from 40 to 50 Chuliahs and Malays have died within the town, for several successive days." The treatment found most efficacious was the prompt administration of large doses of Calomel and Laudanum, with powerful diffusible stimuli.

The PREVALENT DISEASES among the native inhabitants of the town and country, are Fever, both of the remittent and intermittent forms; Diarrhœa, Dysentery and Rheumatism. Intermittent Fever, of the Quotidian type, may perhaps be reckoned the disease of most frequent occurrence. —It is not often fatal; the native practice in it, is cold affusion in the hot stage; purgatives, and some vegetable decoction to determine to the surface. Dropsy and visceral obstructions sometimes are sequelæ of it, especially among the lower classes. Ulcers often of a phagedænic nature are common among the Malay and Chinese new-comers, not properly assimilated to the climate; and numerous proofs of the ravages of the disease are to be met with, in the large scars on the legs, and lameness so frequently seen among the inhabitants in the bazars. Leprosy of the same nature as described when speaking of Malacca, is also of common occurrence, more especially among the lower classes of Chinese, originating probably in bad food and uncleanly habits. During 9 years from 1821 to 1829 inclusive, the number of admissions with this disease into the poor Asylum has been 48, of whom 21 died. No one has ever recovered; and no medicine has proved at all useful in arresting the progress of the complaint. Arsenic, Mercury and Madár have each been tried with equal inefficacy. The general opinion here seems to be that it is not contagious, tho' some supicion of this was entertained from the circumstance of one of the hospital attendants, who was in the practice of dressing the sores, having been attacked with the disease. Only one instance of it has occurred among the Madras troops here, during the last 8 years and a half. The "cochin leg," the Bucnemia indica of Good or Ele-

blerang bang, volcanic sulphur and water, and snake's gall, and applied externally to induce the pustules to appear. It is no wonder that so imperfect, and in most instances so ridiculous a system fails to effect a cure."—*Pinang Government Gazette, July 3d* 1830.

phantiasis

phantiasis of the Arabians is sometimes seen among the native inhabitants, but it is not a common affection.—Catarrhal and pulmonic affections are frequent about the period of the monsoons. Beriberi is rarely met with. Cutaneous affections are common; and many melancholy instances are to be seen of the loathsome effects of secondary syphilis.—Children are very generally affected with worms principally the Lumbricoides; and these are also common among adults.—Many instances of Trismus nascentium, or the locked jaw of infants, have been noticed occurring a few days after birth and proving invariably fatal.—Hepatitis is of very rare occurrence among the natives—Surgical cases in hospital are always numerous; as frequent accidents occur from bites of alligators; and from kris, lance or gun shot wounds. Tetanus frequently supervenes on these, and as in other parts of the world, is generally fatal. Diarrhœa however, and Marasmus from diseased viscera, may be reckoned the most frequent causes of death among the native inhabitants generally.

With regard to the MORTALITY among the European residents in this island, we have again to lament the want of satisfactory documents. From a table kindly furnished to me by Mr. Ibbetson, it appears that out of 34 Civil Servants appointed to Pinang, including Governors, between the years 1805 and 1825, 20 have died, 2 have resigned, 1 has been transferred, 1 dismissed, 2 are at home, and 8 remain, 7 of whom have been appointed since 1811, so that only 1 remains who has reached a period of service of 20 years. Out of the 20 deaths, 9 were from fever, 3 from Dysentery, 2 from Hepatitis, 1 from Decline, and two were drowned. This mortality is great among men who are not obliged to expose themselves to the vicissitudes of the weather; and would seem to argue against the salubrity of the climate, were we not aware that health is often sacrificed, to the temporary gratification of idle or vicious tastes, and that dissipation and exposure are but too common causes of disease among the young and thoughtless who resort to India. The Table No XII. of Burials in the Protestant Burying Ground, during the last 10 years, with the causes of death, as far as could be ascertained, collected from various sources, and the correctness of which may be depended on, will afford some data whereon to calculate the mortality among Europeans here. The 3 upper lines, in this table, more particularly interest us; the fourth contains the deaths which have occurred here among visitors either in search of health or engaged in commerce—the fifth shews the casualties among naval officers and seamen, either of His Majesty's, or the Company's Services, or of private ships, admitted into the General Hospital; the sixth contains a list of persons sent on shore for burial, the diseases of whom could not be ascertained.—The average number of European residents here, has been about 300, out of whom in 10 years 140 died; making the average annual mortality, 1 in 28½ nearly, or 3½ per cent.—This nearly approximates to the rate of mortality of Naples, which is one 1 in 28,* and is somewhat below that of India, which from a communication in the Madras Courier, quoted by Dr. Marshall, appears to be about 4 per cent.—† The rate of mortality however will be observed to differ very considerably in different years; thus in 1823 there was only one death in the whole European population, while in 1825 there were 18—This probably has some connection with the irregularity of seasons, formerly noticed.—The average number of European Soldiery, during the same period was 54, of whom 30 died, making the annual average mortality among them 1 in 18 or 5½ per cent. This, tho' considerable, when compared with the mortality among the troops in Britain (which from the best accounts, is only 1 in 75 or about 1¼ per cent), is nearly equal to that of the troops in India generally, as may be seen in the Tables, published in the splendid works of Dr. Annesley on the diseases of India.

* Hawkins's Elements of Medical Statistics, p. 33.

† Marshall's Medical Topography of Ceylon, p. 134.

In the table above alluded to, FEVER is observed to bear the large proportion of one third of the whole number of ascertained causes of death among the adult residents. This island, as has been already repeatedly remarked has been long noted for the very fatal form in which the disease presents itself. So insidious was its approach, so rapid its progress, and so numerous its victims,—scarcely one attacked with it recovering,—that it was dreaded both by medical men and others as a new and undescribed affection, totally irremediable, and distinguished from all other fevers by its uniformly fatal issue—

"*Macies, et nova febrium*
Terris incubuit cohors."

Within the last few years however, several recoveries have been effected, which have in some measure removed this dread; and it has been found to resemble in most respects, the malignant remittents frequently met with in other parts of India. The causes of fever, in this part of the world may be arranged in two classes; the first depending on the soil, and including Malaria, in the widest acceptation of the term; the second depending on the person, comprehending exposure to the sun, or to the weather, and irregularity of every kind. That the first exist in Pinang, can scarcely be doubted by any one who glances over its topography; the masses of vegetation in a state of constant decay, must necessarily contaminate the atmosphere, especially in sheltered situations, where free ventilation does not dissipate the noxious effluvia. It is one of the many curious facts relating to miasma too, that the very means taken for its destruction, are sometimes the cause of its acting more virulently on the human body.‡ "This is more especially the "case within the tropics in low swampy places near the sea coast. *Fever was* "*more frequent and severe after clearing Pinang in* 1801 *and* 1802.——so "that it may be considered as a general approximation to the truth, that "low and marshy situations become still more unhealthy, when the trees "and woods upon or around them are cut down, unless they are subjected "to a careful drainage and cultivation; *and even for the first two or three* "*years of such culture, they are at particular seasons productive of disease.*"§ The cutting down of woods, clearing the country, and more especially the hills has been occasionally a cause of fever here, of a virulent nature. Some years ago, a party of about 20 lascars, under the command of Captain Poynton, engaged in cutting a water course, thro' the dense forest, and marshy soil, on the S. W. side of Pinang near Pigeon Island, was completely cut off to a man by Remittent fever; and the superintendant himself, when nearly moribund, was saved by proceeding to sea. Other instances of the same kind, but not of such severity, have occurred among men similarly employed; but the same happens in every part of India, and the disease induced seems not to have differed in any respect from the well known and dreaded Hill Fever of the East.—A few cases of it also have been observed in delicate females of the higher ranks who have been residing on the hills, in whom the occurrence could scarcely be ascribed to any other cause than the inhalation of miasma. We may here remark, that the Convicts employed during the last 5 years in cutting wood for Government, on various parts of the island, and in clearing the summits of some hills to the southward of Bel Retiro, have not been subject to fever, and that scarcely a death from this has happened among them.

To the second class of causes, those depending on the individual, are most of the cases of fever which have occurred at Pinang among the European inhabitants, to be ascribed. In almost every instance the affection could be traced to some obvious exciting cause, the force of which might

‡ Annesley's Researches into the diseases of India, vol. I. p. 97.
§ Idem loco cit.

perhaps have been increased by some peculiarity in the climate—which rendered the system more susceptible of disease. The following table, constructed with great care and correctness from the best information, is adduced in proof of the above assertion; it shews that incautious exposure, and some peculiarity of habits in the person, have been more efficacious in producing fever, than the direct influence of the climate; and that scarcely one has been attacked with it, who has taken those precautions for preserving health, which experience has pointed out to be necessary in tropicpl countries.

From this table, it appears that the greatest number of cases have occurred in the months of April, May, June, July and August, and that in all where the disease proved speedy fatal, the average period of deaths was between the 6th and 7 day. The remedial measure, principally relied on, in this fever, previous to 1827 was the administration of Mercury in various forms to salivation. In that year, Drs. Conwell and Grant introduced the practice of copious depletion in the commencement, which in several instances was attended with the most happy result. The former gentlemen has announced his intention of publishing his remarks on the subject;* ——the latter has forwarded a very interesting paper on the disease to this Government; to which I refer for a particular account of its history, progress, symptoms and treatment. It will be sufficient here to state the following facts regarding it, deduced from their observations, and my own limited experience.—

1. The disease when arising from miasma, in some cases has not appeared until several days after exposure to the morbific cause—the poison, whatever it be, seemingly lying dormant in the system till some excitant calls it into action.—2. It is insidious in its commencement, but to be suspected, if after exposure either to miasma or the sun, there be intense headache, and frequent flushes of heat attended with chills. 3. That it is rapid in its progress; and that if the treatment be not commenced before the 3d day of the disease, the prognosis may generally be pronounced "termination in death." 4th. That early and copious depletion is the remedial measure of greatest efficacy; and 5th. That no cure has been effected without salivation by mercury. With regard to prophylactic measures, it will appear from the foregoing remarks, that the most common causes of fever in the island are those over which every person has control; avoidance of them therefore will ensure immunity from the disease; and should, at any time, exposure to the miasmata of suspected spots be inevitable, the means recommended by Dr. Annesley to prevent their action on the system, of which the following is a summary, should be adopted. Keep the bowels open; live on nourishing but not heating diet; take regular exercise; light a fire; use mosquito curtains; take sometimes a dose of Sulphate of Quinine, powdered ginger or Cayenne pepper at bed time; smoke a cigar or hookah, and preserve confidence and equanimity.†

* Researches on Indian Pulmonary Diseases. *Introduction*, p. LXIII.
† Annesley's Researches vol. I. p. 100. 101.

TABLE

TABLE X.

List of the Residents at Pinang who have died of Fever, more particularly from January 1820 *to December* 1829, *with the alledged exciting cause of the disease in each case.*

Name.	Rank or Occupation.	Age.	Date of Decease or Burial.	No. of days ill or under treatment.	Alledged exciting cause of the Disease.
—— Bruce, Esquire	Bengal Civilian & Govt.	,,	December, 1810.	4 days.	Fatigue and exposure in walking down the hill, drinking cold water, when heated.
Q. D. Thompson, Esq.	Pinang Civilian	,,	10th June, 1809.	3 days.	Exposure in clearing one of the hills.
Arthur Tegart, Esq.	Ditto Ditto.	29	18th July, 1818	,,	Hard drinking.
William Sartorius, Esq.	Ditto Ditto.	28	31st Augt. 1820.	3 days.	Went on duty to the East coast of Sumatra, caught fever, and died the day of his return to Pinang.
Mr. Wm. Revely,	Shop Keeper	27	15th April, 1821.	3 days.	Exposure and drinking bad Beer.
Mr. M. W. Wallace,	Parish Clerk	52	8th Jany. 1822.	9 days.	Cold caught from exposure to the weather.
J. Scott, Esq.	Master Attendant	,,	30th April, 1822.	14 days.	Ditto. ditto. ditto. and mental suffering.
R. Stewart, Esq.	Deputy Sheriff	40	25th Oct. 1822.	2 or 3 days.	Exposure in the execution of his duty.
J. Carnegy, Esq.	Merchant	56	5th April, 1824.	7 days.	Relapse from exposure while engaged in superintending the digging of a well on one of the hills.
Hon'ble J. Macalister	Pinang Civilian	34	9th Oct. 1824.	2 days.	Free living.
Sir F. Bayly, Kt.	Recorder	35	21st Oct. 1824.	5 days.	Exposure from going up the hill in the middle of the day.
J. W. Tonsey, Esq.	Pinang Civillian	25	22d Feby. 1825.	7 days.	}
Wm. M. Williams Esq.	Ditto Ditto	28	25th Feby. 1825.	5 days.	} A shooting excursion to Province Wellesley and much exposure to the sun.
D. Brown, Esq.	Merchant	49	25th Sept. 1825.	3 months.	Exposure on the Pentland range. Died ultimately of exhaustion.
J. R. Cuppage, Esq.	Pinang Civilian	22	13th Oct. 1825.	14 days.	Died of abscess in the liver, supervening on fever from fatigue and exposure.
Wm. Henderson, Esq.	Surgeon	,,	14th Dec, 1825.	3 weeks.	Low spirits—Depressing passions.
Mr. G De Young,	Musician	,,	18th Dec 1825.	2 days.	Hard drinking.
Mr. W. Fletcher,	Surveyor	,,	3d April, 1826.	7 days.	—— Ditto.
Mr. M. Baptist,	Clerk	43	7th June, 1826.	7 days.	—— Ditto.
Hon'ble W. A. Clubley	Resident Councillor	37	13th July, 1826.	7 days.	Exposure to the sun and wet feet, while working in his garden.
Revd. R. S. Hutchings	Military Chaplain	,,	19th April, 1827.	9 days.	Ditto ditto while superintending his plantations on Mount Elvira.
F. E. Salmond, Esq.	Pinang Civilian	,,	27th May, 1827.	7 days.	Ditto ditto while boating in the harbour and fatigue.
Wm. Brooke, Esq.	Capt. Madras Artillery	30	6th Augt. 1827.	5 days.	A fall from his Buggy, and exposure to the sun.
Mr. D. Caldwell,	Butcher &c.	,,	9th March, 1828.	10 days.	Depressing passion—Fever of the low nervous kind.
Wm. Hare, Esq.	Bengal Civilian	21	2nd June, 1828.	7 days.	}
Mrs. H. Puttullo,	Lady of J. Pattullo Esq. Pinang Civilian.	25	7th June, 1828.	8 days.	} Brother and Sister.—The family had been residing on one of the Southern hills, and had been in the valley some days before symptoms of Fever shewed themselves—The gentleman had exposed himself in shooting &c.—In the lady's case the only assignable cause is Miasm.

During the last two years, three cases of Fever have occurred among the officers of the 35th Regiment, under my medical charge. In all of them, the disease evidently bore some resemblance to the Pinang Remittent, in the tendency to congestion, either in the brain or liver, exhibited in their progress; they luckily terminated successfully, tho' the convalescence in all was tedious. They shew the dangerous nature of the malady; the utility of active measures in the commencement; and the necessity of constant watching during its whole progress. All acute diseases in India require the greatest attention of the medical officer; but none more so than fever, in which, an hour or two may bring on changes in the system, determination to, or congestion in different organs, which when once formed baffle every mode of treatment, but which might generally be arrested if noticed in their commencement. In these cases, the patients were regularly seen 5 or 6 times during the 24 hours, occasionally oftener; notes were taken at each visit, but the detail would occupy too much space, and it is hoped that the following abstracts will suffice, as they include every interesting or necessary particular of the symptoms and treatment in each.

CASE, I.

J. C. W——, Ensign 35th Regiment N. I. Ætat: 23; two years in India; tall; of strong muscular make; habit of body plethoric. Is much in the practice of exposing himself to the sun.— 3rd September, 1828. For 3 or 4 days past, he has felt a heavy dull pain in his side; he went to parade as usual this morning; but about 8 o'clock, he had some degree of headache and shivering. About 11, notwithstanding these symptoms, he went out in a palankeen, got into his boat and sailed about the harbour, unsheltered from the sun, for more than an hour. During the whole morning, his skin was burning hot and he had a most violent headache. About 2 P. M. this became insupportable, and he crawled as well as he was able to the Fort, where I saw him at 5 P. M.—The symptoms then were as follows—He complained of excruciating headache; his face was flushed, and his eyes suffused; there was pain in the right iliac region, and tenderness in the right hypochondrium on pressure; a general feeling of uneasiness over the body, and pain in the limbs. His skin was hot and dry, except on the forehead, where there was some moisture. Pulse 120 full, with a slight degree of hardness in it—not bounding, rather sharp; thirst violent; tongue coated with a brownish fur, with red edges, moist; sulci in the centre. Bowels bound and appetite bad for the last four days. Breathing quick, and inspiration accompanied with a painful sensation about the scrobiculus.—Senses perfect; restlessness, unwillingness to converse; debility extreme.—*Diagnosis.* Inflammatory fever from exposure to the sun; with determination of blood to the head; and threatened congestion in the lungs and liver—*Indications.* To reduce as quickly as possible the mass of circulating fluid, and thereby to balance the distribution of blood to the important organs alluded to in the Diagnosis. 2. To clear the primæ viæ. 3. To watch carefully threatened congestion in any particular organ, especially the brain and liver; 4. To restore the natural action of the liver by deobstruents.—30 oz. of blood were immediately drawn after which he felt faint; the pulse fell to 100; and all the disagreeable feelings were relieved—When he had somewhat recovered from the faintness, he was removed to his quarters, about three miles from the Fort, in a palankeen.—During the removal all the febrile symptoms recurred. At half past 8 P. M. he was again bled to the extent of 24 oz:—after which the pulse fell to 88; all disagreeable symptoms were again relieved except the pain in the right hypochondrium, still slightly increased on pressure, and he felt inclined to sleep. At 10 o'clock he took 10 grains of Calomel, and six of James' powder; was ordered the saline mixture, with a grain and a half of

Tartrate

Tartrate of Antimony to each pound; two ounces every third hour—Diet low. He slept great part of the night; at 6 o'clock on the 4th September, he expressed himself free from pain; his pulse was 115 in the minute, and rather full. The neck face and head were hotter than the rest of the body, and there was some flushing of the face. He twice attempted to take some castor oil, and oil of turpentine; but rejected it both times Let him take immediately the following powder. Pulv: Jalap: Comp: 75 grains. Calomel 5.—let the solution be continued. At 7 o'clock, the powder was vomited. He took an ounce of Sulphate of Magnesia which he retained —Twenty four leeches were applied to the temples, and a blister was put between the shoulders. At 6 P. M. an exacerbation of fever—Breathing difficult, pulse 144 small; soft; Tongue brownish, dry; much thirst —22 oz. of blood were drawn, which relieved the breathing. &c. he became easy tho' weak—stomach irritable all day—He took some chicken broth which revived him. Bowels freely opened during the day—Evacuations copious—As he seemed to suffer from the depletory measures only, no medicine was prescribed—he was to be kept quiet—At 4½ A. M. on the 5th September,—He had no sleep all night—He complained of a fixed pain in the scrobiculus cordis, increased on pressure. Skin cool, pulse 122 soft compressible—Twenty leeches were ordered to the scrobiculus; and he was to take a pill of calomel grains 4 and Pulv: Antimon: grains 3, every 3rd hour—The leeches relieved the pain at the scrobiculus. His stomach seemed too irritable to bear any preparation of antimony —this was directed to be discontinued therefore; and the following pill to be substituted. ℞. calomel grana: 4. Opii grana: ½ m. ft. pilula 4. ta qq. h. s. At 6 P. M.—a slight exacerbation of fever; pulse 130; some pain on pressure in the scrobiculus—Apply a blister over this. At 9 o'clock, let him take a bolus of Calomel grains 15 Antimonial powder grains 5 Opium grains 2—6th September, he had five hours undisturbed sleep during the night—Is free from pain. Irritability of stomach gone—skin slightly warm. Took oil in the morning which produced three or four brownish feculent evacuations—He continued to take the pills of calomel and antimony, as first ordered; in the evening had a slight copperish taste in the mouth.—He took the Bolus. Took 10 oz. of chicken broth during the day—7th September, still free from pain of all kind; mercurial fetor increased. Pulse 108, soft; skin slightly warm. A slight exacerbation in the evenings. He took the pills regularly during the day—and his diet has been chicken broth, moss jelly, tea and conjee, all which he has retained.—8th September, did not rest all night. At 3 A. M. he had some difficulty of breathing and general restlessness. Pulse 120 small. He took a draught of Tinct: Opii gtt. 60 Æther: Sulph: dr. 1. Spts: Lavand: Comp. dr. 1. which relieved him. In the course of the day, symptoms of determination to the head shewed themselves—The head was shaved, and ordered to be kept cool by vinegar and water.—12 leeches were put to the temples; and a blister between the shoulders—and he took five grains of James powder every three hours—Calomel omitted—A dose of Castor oil every morning. He complained of numbness of the hands, which disappeared after the leeches and blister were applied. The T. is smooth brownish and moist. P. ranges from 108 to 120 soft, equable. Takes chicken broth, jellies. &c. 9th September. Last night, was much troubled with tenesmus. Repeated the anodyne draught which relieved him. Took 8 grains of calomel and 5 of James Powder this morning—The oil as usual, and he continued the James powder every three hours with 2 grains of calomel. At 7 P. M. he was affected with general shivering and coldness, commencing about the abdomen, which obliged him to wrap himself up in a blanket. This was followed by headache, a feeling of distention in the head, throbbing of the temples, and painful sensation of heat in the eyes—Cheeks slightly flushed and hot. P. 120 full, with a slight degree of hardness. Some degree of deafness, and

intolerantia

intolerantia lucis et soni. T. dry and covered with a dirty cream color'd fur. Skin dry, but not hot 20 leeches were applied to the temples; and a blister was put between the shoulders. The calomel and antimony were ordered to be continued. The disagreeable feelings ceased, on application of the leeches and blister, and at midnight he was easy—Took a bolus of 20 grains of Calomel, and 2 of Opium.—On the 10th his only complaint was weakness—T. continues furred and pasty, and dejections are still unnatural—Recommended to continue the Calomel and Antimony every three hours, and to have a bolus of from 15 to 20 grains of Calomel every night at bed time, till free salivation be produced—A dose of oil every morning—cold applications to the head—sponging the body with vinegar and water whenever the temperature rises above the natural standard—To have an anodyne draught at night when required—To continue mild nutrient diet, as conjee jellies and chicken broth &c. and to have imperial or effervescing draughts for common drink. From this time he began to recover gradually, tho' slowly. He took the medicines prescribed above regularly—His pulse continued above 100 till the 17th when it fell to 94—and he had generally a slight exacerbation of fever every evening. On the 20th, salivation was established, and the mercury was omitted. After this he had some irritability of stomach, and his strength did not recruit rapidly—He was therefore recommended change of air, and on the 28th September, was removed to the Convalescent Bungalow on the Great Hill. Tho' debilitated, he bore the removal well—The irritability of stomach continued for a few days—but gradually the delightful climate began to exert a beneficial effect upon him; and in three weeks after going up, he was able to walk about, with the assistance of a stick. He took no medicine, except the oil in the morning and anodyne draught in the evening occasionally.—He descended about the end of November, and joined his corps in perfect health, with the exception of total loss of power in the little finger of his left hand—which continued for nearly a year afterwards.

Remarks.—The organ most particularly threatened in this case was the brain, and to prevent congestion in it was the principal object in the treatment. The patient lost during the first 24 hours of his illness 76 ounces of blood from the arm, and 24 by leeches, making altogether 6 *lbs.* 4 ounces—The effect of this copious depletion, was that the fever never recurred after the first day with any violence. The liver also evidently suffered, and bloodletting was therefore followed up by the free exhibition of Mercury to salivation. Large doses were given at night, to obviate the necessity of disturbing his rest by administering smaller ones; and it was supposed that the sedative effect of the Calomel and Opium might have a salutary influence. The anodyne draught, when not contraindicated by any symptom, was given for the same purpose, and with a beneficial result. The ol. ricini every morning was considered an indispensable part of the treatment.

CASE. II.

C. G. T. C——, Lieutenant 35th Regiment M. N. I. Ætat: 28; ten years in India; of middling stature—spare habit of body and dark complexion—subject to hepatic affections, and in the practice of exposing himself to the sun and weather, while snipe-shooting &c.—reported sick October 13th 1828. About the beginning of the month, he walked up the great hill, and descended the same day which fatigued him greatly— and he has been complaining ever since. Notwithstanding, he continued his snipe-shooting excursions in the burning sun wading to his knees in mud and water. For some months past, he has been troubled with severe shooting pains in his right side, and derangement of the digestive organs—On Saturday evening, the 11th Instant, he was seized with shivering, accompanied with pains down his back, in his head, loins and extremities. He continued hot and restless all night. On

Saturday

Saturday, of his own accord, he took 5 grains of Calomel and a dose of Salts, which moved his bowels freely. He repeated the calomel at night, and took another dose of salts this morning (13th October)--- At 11 A. M. he sent for me---He has scarcely had a moment's rest, since the shivering fit above alluded to, as having occurred on the 11th---Ever since, he has had repeated chills and flushes; his countenance is now anxious; his whole skin, more especially that of the hands, and the conjunctivæ of the eyes, are tinged of a yellow color. He complains of excruciating pain in his loins and lower limbs, which prevents his moving in bed. He has also severe pain in the iliac regions and in the right hypochondrium, only slightly increased upon pressure. There is much flatus in the bowels---great nausea, especially when in the erect posture, when he describes it as a deadly sickness, more distressing than the most violent pain. He also vomits frequently bilious looking fluid, which vomiting relieves for a time the dreadful nausea. His forehead is slightly warm, but there is not the least headache; the thorax is also hotter than natural; his pulse is 104 small hard and sharp; tongue deeply coated with a whitish fur, and very red at the apex and edges---Bowels have been freely opened by the medicines he has taken; stools are dark colored and offensive. Urine reported copious, and of a light color. Thirst is not excessive, but greater than it is when in health. No appetite. *Diagnosis*---Bilious remittent fever, with great engorgement of the liver, and slight inflammation of the ileum.--- He was immediately bled to the extent of 40 ounces; the bleeding produced faintness and relieved all the symptoms; the pulse fell to 86 and became much softer; the sickness continued and he vomited once or twice. R. Hydrarg: Submur: grana 4. Pulv: Amtim: grana 2 M. ft. pulv: 3 tia qqa: hora sum:---Low diet---Saline mixture or imperial for common drink. After the bleeding he felt easy, and had a short disturbed sleep. Two hours afterwards however, the skin became hot, he was very restless and wished continually to change his bed. The symptoms of fever recurred but not so violently---P. 98 soft---No headache. Pain in the right hyprohondriac and iliac regions---At 8 P. M. he was ordered 30 leeches to be placed over the pained parts; to take Calomel scr. 1. and 1½ grain of opium; and an ounce of Ol: ricini in the morning, and to continue the imperial and saline mixture. 14th October, he took the bolus last night; vomited; but was supposed to have retained it. Only 20 leeches applied; 30 ounces of blood calculated to have been drawn by them. He slept great part of the night; sleep however broken and unrefreshing. Took oil at 7 A. M.---since has suffered from nausea and griping pains; restlessness continues; debility; yellow tinge somewhat less; pain of back gone; skin warm but moist; P. 100, small, soft, compressible; T. less coated; thirst occasionally urgent.---*Indications*. To excite the proper action of the liver, and subdue the febrile symptoms by the quick introduction of mercury; and to relieve urgent symptoms. Continue the powders---rub in a drachm and a half of mercurial ointment three times a day ---Effervescing draughts to subdue vomiting. Low diet---During the day, he had an exacerbation of fever---his head and hands being burning hot while his feet were cold, with great restlessness. These symptoms went off about 4 P. M. and left him comparatively easy.--- In the evening his pulse was 98 soft, small; his skin covered with perspiration, and he had slight soreness in the mouth. He was ordered to continue the remedial measures already prescribed, and to repeat the Bolus of Calomel and Opium at bed time and oil in the morning. 15th October. Took all the medicines ordered. Dozed during the night. About 5 A. M. had a slight return of the fever--- During the day, there were occasional flushes and chills---skin less yellow. P. 104-soft and fuller. Nausea, and pain of abdomen continued; occasional restlessness; great debility. B. freely opened; evacuations dark and green.---To continue all the medicines, and to repeat the Bolus in the evening---16th October. He slept great part of

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the night; about 6, had a slight exacerbation of fever; in the middle of the day, a copious perspiration came on, which obliged him to change his dress 3 or 4 times; he was troubled with nausea also and occasionally vomiting; the antimony was omitted in the powders, but with this exception his medicines were regularly administered. The breath in the course of the day became fetid from mercury —His pulse was 100—soft, small; his evacuations yellowish; he complained greatly of weakness, and was in low spirits.—The nausea continuing, he was ordered a blister, to be put over the epigastrium which was done at 9 P. M. and the bolus was repeated. He took arrow-root occasionally. On the 17th, the nausea continued, and he vomited bilious matters mixed with mucus; he complained of great weakness—No fever. P. 88 soft, small, weak—He was ordered to continue the remedies, as ptyalism had not commenced, and to take two ounces of the cold infusion of Bark every two hours—In the afternoon, he shewed symptoms of *mercurial erethismus*; great restlessness; constant desire to change from bed to bed, violent sickness and burning pain at the stomach; great debility; countenance anxious and contracted; skin cold, and clammy; pulse 94 small, feeble with a tendency to intermission In consultation with Dr. Conwell (the value of whose advice, no less kindly than promptly given, I have to acknowledge in this and many other instances) it was resolved to intermit the mercury immediately, to check the irritability of the stomach by blisters, and to support the system.—A blister was put on the side at 9 P. M.—During the night, the restlessness, and nausea continued, with much oppression at the præcordia. These symptoms continued on the morning of the 18th—He was ordered to have an ounce of mulled Port wine, every hour; and to take a wine glass full of the following mixture every alternate half hour. Rj. Mist: Camphoræ 1 pound. Spt: Ammoniæ. Aromat: one ounce M. At 2 P. M. of this day, the following were his symptoms—"The anxiety of countenance has increased; his eyes are sunk and somewhat glassy; pupils contracted; speaks with difficulty; tone of voice hollow, like that of a cholera patient; great restlessnes; hands and arms covered with a cold clammy sweat; tongue moist, clean; pulse intermits every 3rd or 4th beat, is exceedingly languid, and not to be felt at the ankle joints; no headache; senses perfect.—B. opened; stools dark, green and offensive; since morning, he has taken 6 ounces of Port wine; the camphor mixture makes him retch immediately." Let him have a bumper of mulled port, mulligatanny, chicken broth and animal jellies frequently. Apply a blister to the nape of the neck and another over the right side —In the evening, he was somewhat better—he had no retching, nor restlessness—his spirits were better—In consultation with Dr. C recommended to persevere diligently in the use of stimuli of the diffusible kind, Champagne, Burgundy, Hock, Beer or Port, as the patient's fancy may direct; to support the circulation by shampooing, and the temperature by warm bottles to the feet &c.—During the night, these measures were put in force, under my superintendance—. Four men shampoo'd him constantly for several hours, and between 6 P. M. of the 18th—and 6 A. M. of the 19th, he took one bottle of Port, ½ of a bottle of Champagne, and half a bottle of Burgundy, besides soup, jellies and mulligatanny. On the 19th—he was considerably better—Two grains of opium were given to him during the night, which produced sleep. The quantity of stimulants he took, did not in the least affect his intellect. During the day, the shampooing was continued, and he had one bottle of Hodson's beer and one of Burgundy. In the evening, the heat of his body became natural, and the pulse regular. At 10 P. M. he took the following draught, Tinct: Opii gtt, 60, mist: camphor: ounces 2. Spts. Ammoniæ Aromat: gtt. 30 M.—and during the night took ½ of a bottle of Burgundy. On the 20th, he continued the stimulants, jellies, soups, mulligatanny &c. and towards evening ptyalism was fairly established. The pulse was 98 moderately full, and all the bad symptoms

symptoms disappeared.---After this, every thing went on smoothly and well, wine and nourishing diet being the only remedies, until the 27th---when he complained of pain in his right side, increased when he attempted to lie on the left, and on full inspiration; occasional coldness in the extremities, and flushes of heat over the surface; sleep broken, tho' sound for several hours at a time; cold clammy perspirations, but no shivering - These symptoms were attributed to debility rather than to any serious disorganization of the liver.---A blister was applied over the right hypochondrium, and he was ordered 10 grains of blue pill at night and oil in the morning. He continued to improve very slowly, and ascended the great hill for change of air on the 8th of November. After his removal, he suffered much from diarrhœa, flatulence, pain of side, constant retching and vomiting, which were treated with anodyne draughts and castor oil. On the 17th he was much better; his appetite had improved; his strength was increasing; his bowels were more regular--but on consideration of the shock which his constitution had received, it was thought adviseable for him to proceed to Europe for three years---A certificate was accordingly granted to him; he proceeded to England by the first opportunity; and on arrival there, had nearly recovered his pristine health and strength.

Remarks.—This is an interesting case on many accounts, but more particularly as it shews the poisonous effects which mercury sometimes produces. It can hardly be doubted that the symptoms noted on the evening of the 18th October, were those of *erethismus mercurialis*, an occurrence always of a dangerous nature; but one which in this case was speedily relieved by leaving off the employment of mercury, and administering large doses of diffusible stimuli. The lateness of the period at which the treatment commenced, and the peculiar characters of the patient's constitution, prevented any copious depletory measures being carried into effect; mercury was the only other remedy, in which confidence could be placed; and it was exhibited with the result already noticed.

CASE, III.

F. S. Lieutenant, 35th Regiment M. N. I. Ætatis 28; eight years in India; tall; of moderate stoutness; florid complexion; and of the sanguineo --melancholic temperament; reported sick 1st July 1829. Yesterday, he walked up the great hill, after parade; drank some cold water when he was much heated, and descended the same evening. This morning he went to town, about 3 miles from his own house, drove about all day, and on his return, was seized with headache, pain in his limbs, loins and back, and languor succeeded by burning heat over the body. I saw him first at $6\frac{1}{2}$ P. M. three hours after the appearance of these symptoms. The skin was then hot and dry, except on the forehead, where there was slight moisture The headache was severe, especially over and across the eyes, with a sense of throbbing in the head; there was great pain in the loins, back and limbs; he yawned frequently and felt very weak. His thirst was considerable: his tongue moist, and furred brown; pulse 96 rather hard and labouring; his bowels had not been moved for two days; appetite none. He took a dose of Seidlitz salts this morning.—*Diagnosis.* Inflammatory remittent fever; resulting from fatigue and exposure to the sun, with determination to the head and liver. *Indications.* To subdue inflammatory action by the abstraction of blood from the system. 2. to keep up free action in the skin and lower the circulation by antimonials and purgatives, and 3. to prevent congestion in the brain and liver.—He was immediately bled to deliquium which took place when 22 ounces had been drawn; he vomited; and was covered with a copious perspiration; his bowels were also moved. Shortly afterwards, he felt cold and shivered; was covered with blankets, and took some warm

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tea—In the course of the evening all the bad symptoms were relieved. He was ordered 8 grains of calomel and 5 of antimonial powder, to be taken at nine; a dose of senna and salts in the morning; to take an ounce of the following mixture every three hours—Mist: Camphor: lbiss: Tartrat: Antim: gr. 6. m; and to have 20 leeches applied to the temples, if the pain of head, or heat of skin should increase.—At 12 o'clock, the headache and feverish feelings returned; the leeches were immediately applied and drew well; he afterwards slept for two or three hours.—On the morning of the 2d, his only complaints were weakness and pain in the loins—He took the black dose and the camphor mixture regularly. In the forenoon he had occasional shiverings; but his skin tho' warm all day, was soft, and covered with perspiration towards evening. Pulse 112 small. T. covered with a yellow fur, red at the tip and edges—slight thirst. Dejections liquid, very bilious—mucous. —Calomel a scruple, and Opium 2 grains to be given at bed time—Continue the Camphor mixture—Soda water occasionally for common drink; and the back and loins to be rubbed with liniment. On the 3d, after about five hours sleep, he awoke very weak and giddy; nausea; skin warm and soft; no pain in any part of the abdomen; pain still of loins; P. 120 full and soft. He took four ounces of compound inf: of senna in the morning. The antimoniated camphor mixture was omitted—the following pills, were ordered.—℞. Calomel. gr. 3, Pulv: Antim: gr. 4, Opii gr. ½ m. 3 tia, qqa h. sum:—and with each a wineglass full of the following mixture ℞. mist: salinæ: mist: camphor: aa. ounces 8. m. Diet low—Conjee Tea and Soda water for drink.—He was easy all day, with the exception of occasional vomiting and pain of epigastrium. In the evening the bolus of Calomel and opium was repeated—On the 4th he was better all day, his pulse was 92—tongue covered with a bright yellow fur. He had a warm bath in the morning for cleanliness. He took seidlitz salts, as both the oil and the infusion of senna were rejected; in the evening there was a slight exacerbation—Dejections numerous and liquid.—To repeat the bolus of calomel and opium at bed time—He has taken the pills regularly—On the 5th he was very weak, tho' free from fever. During the night he had very disturbed sleep; fearful dreams, starting; many watery evacuations. He took the following mixture in the morning; ℞. infusi sennæ ounces 3½. Tinct: Gentian: C—Tinct: Rhei aa. ounces 2. m. He took no medicine during the day. Had 5 or 6 dejections, like chopped spinage. Towards evening there was slight mercurial fetor; and his tongue presented a peculiar appearance, being quite parched and brown in the centre, like meat exposed to the sun, but moist and yellow at the sides. P. 98 small, no symptom of fever—He was ordered the following pills, Extract colocynth: gr. 10 calomel gr. 12. Extract. Hyosciam: gr. 8. Divide in pilul. No. 4 q. sumt. 2 h. s. et 2 cras name quam primo.—On the 6th the symptoms continued as yesterday; there was strong mercurial fetor in his breath, and soreness of the gums. T. in the same state—pulse 95 soft—skin soft—I considered that he might be benefited considerably by change of air immediately; and recommended his removal to the great hill, as his family had made arrangements previous to his attack, for residing there—He ascended in the evening and came under the charge of my friend Mr. Grant, the medical officer on the hill—by whom principally the subsequent notes of his case were taken. During the ascent, regular jaundice had come on, and on the 7th his whole skin was of a yellow color; his stomach very irritable; and there was a dull pain on pressure and fullness in the region of the liver. He was ordered a large blister over the right hypochondrium, 10 grains of Calomel and 3 of Antimonial powder, at night; a dose of purging mixture next morning, and two drachms of strong mercurial ointment to be rubbed in morning and evening. On the 8th he was nearly in the same way; stomach irritable—T. same; recommended to continue the medicines, with some light bitter occasionally,

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and mild nutrient diet.—He continued to be troubled with irritability of stomach, and flatulence until the 11th, when ptyalism was fairly established, and then he became much better, tho' dreadfully weak, and with little or no appetite. Medicines were then discontinued with the exception of the common Colocynth and Calomel pill to keep the bowels regular. On the 20th July, his stomach was irritable, his appetite bad: and the constitution did not seem to be rallying in the least—He had been taking wine, soups, jellies and other mild nutrient substances. He was recommended to take 5 grains of Quinine in two ounces of Inf: Quassiæ every day at mid day—to contiue wine and nourishment; to have the nitro-muriatic acid pediluvium night and morning, and to drink nitric acid potion occasionally—These medicines were continued until the 23d, when the salivation ceased; he was then again ordered the mercurial pills as before—and to take wine, soup, and jelly as often as he could.—On the morning of the 24th July, "he awoke with a severe pain in the left breast, which shot from the region of the heart into the top of the left shoulder; his countenance had a very dejected anxious expression; a full inspiration increased the pain; on pressure over the left hypochondrium he shrunk from the hand; the pulse was 90 small and weak. T. covered with a brown fur and quite dry. Ptyalism not re-established." A large blister was put over the seat of pain, and an emollient enema was administered, and repeated, until some hard feculent dejections were produced. The pain left him about 5 P. M. when he was much exhausted. He took a glass of Champagne and some sago which revived him. He passed a better night but had a recurrence of the same pain next day, which left him about 11 A. M. after the discharge of about "2 or 3 ounces of matter and blood, with tenesmus" brought away by an emollient enema which had been given him. After this he continued to improve; tho' very weak. Wine, sago, nourishing diet, and emollient enemata were exhibited regularly. About the end of the month he was able to walk about a little—During August he remained on the hill; he had three attacks of pain in the left hypochondriac region, similar to, but much less severe than that described on the 24th of last month. They were relieved by enemata and large doses of Opiates and oil of peppermint.—His only other complaints were occasional pains in the limbs, and want of power in his fingers, which he sometimes could not bend. On the 1st of September he descended the hill; he had picked up flesh again, and his secretions and excretions had returned to their healthy condition; he resumed his military duties on the 28th of the same month, perfectly recovered, with the exception of occasional numbness in the fingers.

Remarks.—The patient, in this case, was so much weakened by the loss of only 50 ounces of blood, by general and topical bleeding, in the first 12 hours, that it would have been dangerous to have drawn more; as it was, the disease assumed an adynamic appearance immediately afterwards. The Jaundice, originating in hepatic congestion seems to have been brought on in some measure by the fatigue of removal to the hill, and of course interfered greatly with the advantages expected to result from the change of air. Speedy affection of the system with mercury, to restore the action of the liver, became then the object of treatment. The attack of pain on the 24th of July was ascribed by Mr. Grant, to the existence of a tubercle in the intestines, near the commencement of the sigmoid flexure of the Colon, producing distention from flatus, and accumulated fæces, which continued until it burst and discharged the "blood and matter" mentioned in the notes. The numbness of the fingers is a curious circumstance in the sequelæ of the disease, having occured also in the case of Ensign W. and having in both instances continued for a considerable time after all the other symptoms had disappeared. Two causes may be assigned for it, either affection of the liver, which sometimes produces numbness of the hands; or some specific action of Mercury.

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The latter appears to me to be the least objectionable explanation of the phenomenon, tho' the *modus operandi* perhaps cannot be explained.

Among the native troops, of whom during the 9 years from 1821 to 1829 inclusive, the average annual number has been 1237, Fever has been the prevailing disease. The number of admissions with it, during the above years, was 3493, of whom 84 died making the per-centage of deaths 2. 4. or only 1 in 41½ nearly. Previous to 1827, in none of the returns is any distinction made between intermittents, remittents, and common bilious ephemeral fevers; all the cases are included under the generic term. From what I have been able to learn however, and from the observations I have made here on the fevers among the troops, I find that intermittents are the most frequent; that they are generally mild, and easily yield to remedies; and that my remarks on febrile diseases, as they occur at Malacca apply in every respect to those occuring at Pinang.—It will not be necessary therefore to say aught regarding either their treatment or symptoms—The occupations and habits of the convicts lead this class of people to be much exposed to the ordinary exciting causes of fever. The admissions with it have been numerous among them and the proportion of deaths considerable—In the six years from 1821 to 1826 inclusive, 2244 cases of it were admitted, 129 of which proved fatal, making the mortality 5. 7 per cent on 1 in 17½ nearly. Within the last three years a considerable reduction has taken place in the number of cases of fever, included in the returns of the convict hospital; in 1828 there were only 57 admissions and 3 deaths; in 1829, only 37, none of whom died. This apparent reduction may be ascribed in some degree to greater accuracy in making out the returns; and to the convicts themselves being more scattered in different parts of the island, too far removed to be sent to hospital when labouring under only trifling attacks of disease. Of intermittent fevers, cases occasionally occur among the European soldiery, of the tertian type, but they rarely are seen in the European inhabitants of the island. During three years I have met with only one instance, in an officer,—Lieutenant J. U. 35th Regt.—who since his residence at Seringapatam in 1823, had been repeatedly subject to attacks of it. In May 1830 after walking up one of the hills, and much fatigue, he had a perfect paroxysm of it which lasted several hours; and it afterwards assumed a complicated form resembling double tertian, coming on with feeling of chilliness over the body, sometimes amounting to shivering, and with acute pain of the lower extremities from the middle of the thighs to the toes, followed by the hot fit, terminating in sweating, and leaving him much exhausted. His liver and intestines were at the same time deranged. After clearing the primæ viæ, quinine was had recourse to, but in the usual small doses seemed to have little efficacy; 8 grains were then adminstered, every two hours, during the intermission. He took altogether six doses in the course of the day, the last producing giddiness and vomiting; next day, the paroxysms were milder, the same quantity was repeated; he took 96 grains in the course of 36 hours, with the effect of completely arresting the fever; he was ordered to take 6 grains then twice a day, afterwards only once; to take mercurial alteratives, to bring the liver and bowels into order; and to remove to the great hill for change of air, to complete the recovery.

Next to fever, the most common complaint among the European community is Dysentery. The number of Europeans admitted into the General Hospital with it for 14 years, from 1816 to 1829 inclusive, was 233 out of whom 22 died, making the mortality from it 9. 4 per cent. or 1 in 10⅔ nearly. Many of these however were sent from on board ship, in the last stage of the disease—During the years 1827, 28 and 29, 48 cases of it occurred among the men of the Madras European Artillery, of which 2 proved

fatal,

fatal, a proportion of only 4¼ per cent or 1 in 24—Diarrhœa is less common among Europeans, tho' it too sometimes is a cause of death.—Both diseases occasionally prevail in an epidemic form; an example of this occurred at the commencement of the present year, when scarcely an European, adult or child, escaped an attack more or less severe, of either one or the other disease. It was ascribed as formerly noticed, to the long continued drought of January and February, and to the action of miasma, generated thereby. The greatest number of cases occurred among those residing near the foot of the hills, in the neighbourhood of the Sepoy lines; they were less numerous among the inhabitants of the town. Some preparation of mercury combined with opium administered till the mouth became slightly affected, or till the excretions became healthy, was the remedial measure of most efficacy; and to this, conjoined with strict attention to the ingesta, the intestinal disease generally yielded in a few days—In some of the instances, aphthæ appeared in the mouth, singly or in crops, recurring frequently, and harassing the patient, by their pain, and the difficulty of swallowing produced by them—Several well marked cases also of the Cachexia aphthosa, of Thomas, or the Chronic thrush of the West Indies were noticed among the inhabitants, and the society of the island has to lament the loss of one of its most distinguished members, cut off by this lingering complaint. I am not aware of its ever having been noticed in any of our Eastern possessions, tho' it is common in the West India colonies, and its occurrence here is an additional proof of the resemblance which we have attempted to trace between the climate of them, and that of Pinang. Delicate females and spare livers were principally affected with it; in the worst cases it was complicated with disease of the liver and the intestines; the aphthæ apparently extending throughout the whole mucous coat of the latter—It commenced generally with feeling of languor, and listlessness; burning heat in the stomach and frequent acid eructations; loss of appetite, and puffiness of the abdomen after eating; the dejections were changed in appearance, being either dysenteric mixed with mucus, or green, liquid and numerous. Three or four aphthous spots appeared either on the lips, or margin of the tongue, generally extending to the throat; painful, and interrupting deglutition—stimulant food, vinous, or spirituous liquors, were from the irritation excited by them, obliged to be abstained from; and if taken, produced a disagreeable burning sensation throughout the œsophagus—the fauces were red, the tongue preternaturally smooth, of a bright red, sometimes purplish color, perfectly clean, and swollen at the edges, shewing occasionally the impression of the teeth. The pulse was seldom affected at the commencement of the disease; there was no fever, tho' the skin was commonly dry.—The above symptoms continued for four, five or six days; the white crusts of the aphthæ dropped off, and the sores below healed; the patient felt himself better, the dejections were more natural; the spirits were better, and the strength improved. In a few days more however, the burning sensation, the acid eructations, and derangement of the excretions shewed themselves and a fresh crop of aphthæ appeared in the mouth, running the same course as before. At this period of the disease, if the system was brought under the influence of Mercury, usually exhibited in combination with Opium, a cure was speedily effected in the milder cases; but if, from any peculiarity of constitution, or from the organic derangements producing the affection being beyond the influence of medicine, this desirable object could not be attained, the aphthæ alternately appeared and disappeared, sometimes for weeks at a time; but the derangement of the bowels went on; the evacuations were occasionally healthy, but generally mucous, and shewing deficiency of bile; emaciation and debility daily increased, till the patient became literally a skeleton; the eyes were sunk and glassy; the skin was tinged of a greenish yellow hue; the mind was irritable, and desponding;

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the appetite capricious, generally defective; thirst urged, and febrile symptoms appeared: the legs became œdematous; and in the only fatal case, after four month's suffering, diarrhœa suddenly supervened, and death followed in two or three days.* Mercury even to salivation, a course of nitro-muriatic acid baths; antacids; tonics, nourishing diet and wine, in two of the worst cases, were tried without effect, or only with temporary advantage, and our experience fully confirms the opinion given in the following sentence of Dr. Thomas's description of the disease. "It often admits of "palliation from the resources of medicine, but it is seldom cured, even at "an early stage of the disease. When engendered beneath the influence of "a tropical sun, or it has been neglected, is of long standing, or has made "its attack in an advanced period of life, it will terminate fatally."†

With regard to the pathology of the disease, I am inclined to agree with Chisholm, that it is a "modification of dysenteric inflamation" extending over the whole mucous coat of the intestinal canal, produced by some peculiarity of constitution. His mode of treatment has been found to succeed perfectly in the mild cases here—he considers "gentle ptyalism to be absolutely necessary to remove the inflammation"‡ and certainly whenever this was effected, a cure speedily followed. But in debilitated constitutions, and where there is serious disease of the liver, I should consider the best remedy to be *immediate* removal to a cool and dry climate; and if the circumstances of the patient admit of it, a return to the temperate climes of Europe. —Antacids and tonics are useful adjuvants in the treatment; and the local applications most beneficial are solutions of Borax, tincture of Myrrh, and nitrate of silver.—The following case will exhibit the nature and progress of the disease, in its most virulent form.

CASE.

W. B. K—— Esq. Ætat: 29; ten years in India; of middling stature; stout make; fair complexion; habits regular and temperate. In the month of September 1829, he first observed aphthæ in his mouth; they were only troublesome from the local irritation, which prevented his taking wine or stimulant food; they appeared and disappeared repeatedly, sometimes more or less numerous; but his general health was little affected, and he did not seek medical aid—In January 1830 however, he first complained of listlessness; he lost his usual energy; he began to emaciate; his face became pale and wan; his dejections were frequent; consisting principally of mucus-like jelly, occasionally colour'd with small portions of blood. He had occasional tormina, and tenesmus, and the aphthæ continued to harass him; no sooner was one crop healed, but a fresh one made its appearance. He

* How closely the above sketch of the symptoms drawn from the observation of the disease as it occurred here, agrees with the description given of them by Dr Thomas, will appear from the following quotation, which for the sake of non-professional readers, we may be excused inserting here. "It shews itself" says he "at first by an uneasy sensation or burning heat in the stomach, which comes on by slow degrees, and increases gradually in violence. After some time, small pimples, of about the size of a pins head, appear on the tip and edges of the tongue, and these at length spread over the whole inside of the mouth, and occasion such a rawness and tenderness of the parts, that the patient cannot take any food of a solid nature; neither can he receive any vinous or spirituous liquor into his mouth, without great pungency and pain being excited: little febrile heat attends, although there is some thirst, but the skin is always remarkably dry, and without the least moisture on it; the countenance is of a pale olive color; the pulse is smaller and more languid than in health, and general coldness is felt over the whole body, but more particularly in the extremities." "These symptoms will continue probably for some weeks, the general health being sometimes better and sometimes worse, and then the patient will be attacked with acid eructations and a vomiting of acrid phlegm, as likewise with a severe purging, which greatly exhausts his strength, and produces considerable emaciation of the whole body. The stools indicate a defective biliary secretion—but there is no pain or enlargement of the liver, nor jaundice, though the complexion is somewhat of the olive color. After a little time, the symptoms cease, and he again enjoys better health; but sooner or later the acrid matter shews itself once more in the mouth, with greater virulence than before, and makes frequent translations to the stomach and intestines, and so from these to the mouth again, until at last the patient is reduced to a perfect skeleton. Death in its approach still lingers, and seems as it were unwilling to overtake its languid victim, until worn down with fatigue and his quietude, he sinks into a state of exhausted apathy, and life at length is extinguished." Thomas' practice of physic—p. 541—Other medical writers on west Indian diseases casually notice this disease, especially Chisholm who in his manual p. 61. mentions it as "very troublesome and sometimes dangerous." The above description is the fullest and best, I have met with.

† Thomas's Pract. of Physic p. 541.

‡ Chisholm's Manual of the clim: and Dis: of Trop countries p. 62.

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had been in the habit of taking strong purgative medicines of his own accord; and these might have tended to increase the dysenteric inflammation. From January to the middle of February 1830 he took various medicines principally preparations of opium, without any alleviation of the symptoms. At this time he was much emaciated; very weak and had a peculiar pale yellowness of the skin. On the 13th he removed to " the Highlands of Scotland" one of the Pinang hills for change of air, and he was ordered the following course of medicine. Emollient anodyne enemas at bed time; a wash of alum and myrrh to the aphthæ; a liniment composed of ungt: Hydrarg: ounce 2— Antim: tart: drach: 2. Pulv: Opii drach: 3. Liniment: Saponis ounce 1. m. a tea spoonful to be rubbed over the colon, morning and evening; and a pill composed of Pil: Hydrarg: Pulv: Ipecach: Extract: Hyosciam aa. gr. 3. and Opii gr. 1 to be taken every night. On the 16th February the following were his symptoms; he was weak, thin and pale; if he attempted to move, or take liquid of any kind, he had an immediate call; he had no pain on pressure over the abdomen, tho' there was a fullness about the colon. The P. was 78 soft, full, of moderate strength: tongue red, shining, perfectly clean and smooth as glass; skin cool. The evacuations had not been kept. He was ordered to continue all the remedies above prescribed—to use food of the mildest nature, principally farinaceous, and to take two glasses of Port wine daily.—next day, he had three evacuations, attended with griping and straining, partly feculent, of a light yellowish green color, mixed with a large quantity of jelly-like mucus, of a reddish tinge—very offensive, and of a peculiar sickening fœtor—From the nature of the evacuations, it was considered that the liver was seriously deranged, and that the system must be affected by mercury as soon as possible. In addition to the foregoing remedies, he was to take three blue pills in the day.—For ten days he took these medicines regularly and found himself gradually improving. The mucus entirely disappeared; he had generally only one evacuation daily, of a buffish color but still offensive; he was obliged however to take the greatest care of himself, as if he took exercise or drank any quantity of fluid, he had an immediate call, and passed some of the gelatinous like mucus—His mouth was free from aphthæ—The liniment had brought out an extensive crop of pustules over the region of the colon; and had been omitted since the 21st.—He continued the medicines—On the 3d of March, the aphthæ reappeared in the mouth, which was tender; the dysenteric symptoms recurred; pain across the abdomen, evacuations with a large quantity of mucus; no straining; pulse from 80 to 88 soft, skin cool —He was ordered to have again recourse to the liniment, and continue all the other medicines. On the 5th of March from over indulgence of appetite, and use of solid food his stomach became irritable, stools were whitish and very offensive. P. from 80 to 96—skin somewhat warm—He was ordered a scruple of Calomel and 2 grains of Opium at bed time—and a dose of oil next morning. Care in diet recommended. Omit wine. The aphthæ disappeared after the use of the gargle. He took the bolus, felt very weak next day, but it produced copious yellow evacuations—He adhered diligently to low diet, taking only arrow-root and other farinaceous substances. On the 9th he was much better and had one copious, bright golden yellow evacuation; the rubbing in again produced a crop of pustules.—He took one blue pill every night, and 36 drops of diluted nitric acid three times a day. In the evening the aphthæ reappeared in the mouth. On the 13th he descended into the valley—and returned to his usual occupations; but he was gradually emaciating; his eyes had become sunk, and glassy, his complexion of a slight greenish tinge, and he was weak—He was recommended to try change of air—he proceeded towards the end of the month down the straits of Malacca. At Singapore, from having caught cold, his complaint returned, his mouth was literally filled with

aphthæ

aphthæ—for which he employed a wash of nitrate of silver solution.—He returned in the beginning of May, in a small ship where he was exposed to numerous privations; and arrived here in a much worse state than when he had left. The emaciation and debility had increased; his eyes were more sunk and glasey, and his skin of a deeper tinge; constant crops of aphthæ, each time more numerous, continued to distress him; his evacuations were changeable, but generally frequent, and mixed with large quantities of mucus. —For some time after his arrival, he continued to use the medicines prescribed for him at Singapore, a pill of Sulphate of iron and Opium, and the nitrate of silver wash—He afterwards took antacids, tonics of various kinds, and preparations of mercury and opium, and was put under a course of nitro-muriatic acid bath; the disease however went on, he had copious colliquative sweats at night; constant starting in his sleep and disagreeable dreams; which symptoms had appeared during the whole course of his complaint, but latterly became much aggravated; the feet and legs became œdematous; he was occasionally better for a day or two; but it was agreed on in consultation that a speedy removal to a cold climate was the only remedy that held out any chance of success—In the end of July, therefore, he proceeded to England, where it is to be hoped that he will arrive in perfect health.

Remarks.—The above is a short sketch of one of the worst cases of Chronic aphthæ which occurred at Pinang.—It was evidently complicated with disease of the liver; in which the symptoms noticed latterly, would lead to the suspicion of abscess having formed. The system could not be brought under the influence of mercury by mild means, and the irritation produced by it, seemed to render it unsafe to pursue the exhibition in large doses. The most important period of the complaint too was allowed to pass over without any active treatment.

Aphtha as in other parts of the world, is of frequent occurrence among children in this island—and readily yields to the usual remedies—but this disease is occasionally observed to be congenital here, a circumstance, we believe of rare occurrence, and one which we have not seen noticed in our limited course of reading, or in any of the common elementary books on the diseases of infants—Three cases have occurred in our own practice, in the course of two years and a half; in one the aphthæ extended throughout the whole canal; the infant was weak and puny; the circulation was never properly established, as the skin remained of a blue color; and death took place by convulsions, the fourth or fifth day after birth—In the other cases, the disease appeared to be confined to the fauces; and yielded to cleanliness and the application of borax.

Among the native troops here, during the 9 years included in the tables, the greatest number of deaths have taken place from diarrhœa and dysentery—the number of admissions with the former being greater than the latter, tho' the proportion of mortality was nearly equal in both. The number of admissions with diarrhœa was 1088, of whom 70 died, making the per cent of deaths $6\frac{1}{2}$ or the proportion 1 in $15\frac{1}{2}$—of dysentery they were 298, of whom 22 died, being 1 in $13\frac{1}{2}$ or $7\frac{1}{4}\frac{1}{7}$ per cent.—The treatment adopted was that mentioned when treating of the disease of Malacca.—Among the convicts, the mortality from these diseases has been still greater—In 8 years the number of admissions with Dysentery was 356, of whom 103 died, being 29 per cent or 1 in $3\frac{1}{2}$ nearly—of admissions with diarrhœa 619 among whom the number of fatal cases was 165 being 1 in $3\frac{4}{7}$ or $26\frac{2}{3}$ per cent: nearly.—The cause of this mortality in this class of people has been already alluded to; many of them are very old worn out men, who are ill able to resist disease. Among natives generally, diarrhæa and dysentery to be treated successfully, must be treated early; as in a few days, their strength in so much exhausted as to be with difficulty rallied. Opium is in general the remedy we must most depend on in these cases. Of

Of Hepatitis, during 14 years, 140 cases affecting Europeans were admitted into the General Hospital, of whom 9 died, making a proportion of 1 in 15½ nearly, or 6 4/14 per cent. Only 2 cases of it occurred among natives during 9 years.

With regard to the treatment of the prevalent diseases of Europeans, I refer to Mr. Grant's paper on that subject. The following table will exhibit the admissions and deaths from Cholera, Diarrhœa, Dysentery, Fever and Hepatitis during a period of 14 years. Under the head Cholera we find so few cases, that we have not been induced to notice the disease, as particularly occurring among Europeans—Attached to the table will be found a comparative statement of the mortality from these tropical diseases, in the West Indies and in Pinang for 3 years—which may be interesting to those who consider the climates to be similar.

TABLE XI.

Abstract of the Principal Diseases among Europeans treated in the General Hospital Pinang from 1816 to 1829 inclusive.

Years.	Cholera.		Diarrhœa.		Dysentery.		Fever.		Hepatitis.		Per centage of Deaths among Admissions.				
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Cholera.	Diarrhœa.	Dysentery.	Fever.	Hepatitis.
1816	2	,,	,,	,,	12	,,	4	,,	5	2	,,	,,	,,	,,	40.
1817	,,	,,	2	,,	8	,,	15	,,	2	1	,,	,,	,,	,,	50.
1818	,,	,,	,,	,,	3	,,	3	,,	1	1	,,	,,	,,	,,	100.
1819	,,	,,	,,	,,	29	2	15	,,	5	,,	,,	,,	6. 9	,,	,,
1820	,,	,,	,,	,,	20	2	19	,,	8	,,	,,	,,	10.	,,	,,
1821	1	,,	3	,,	32	1	21	1	3	,,	,,	,,	3. 1	4. 47	,,
1822	,,	,,	13	,,	13	1	27	,,	6	2	,,	,,	7. 7	,,	33. 3.
1823	,,	,,	11	2	12	2	20	4	5	,,	,,	18. 1	16. 6	20.	,,
1824	1	,,	3	,,	12	3	31	7	9	1	,,	,,	25.	22. 6	11. 1.
1825	,,	,,	7	,,	13	,,	53	2	,,	,,	,,	,,	,,	3. 78	,,
1826	1	1	3	,,	11	3	15	,,	4	,,	100	,,	27. 2	,,	,,
1827	,,	,,	31	1	47	5	29	,,	48	2	,,	3. 22	10. 6	,,	4. 1.
1828	,,	,,	9	1	15	3	40	3	33	,,	,,	11. 1	20.	7. 5	,,
1829	1	,,	1	,,	6	,,	6	,,	11	,,	,,	,,	,,	,,	,,
Totals....	6	1	83	4	233	22	298	17	140	9	66. 6	4. 8	9. 1	5. 7	6. 4.
Comparative statement of the mortality from the above diseases during 1823, 1824 and 1825.															
											Pinang		9. 5	13 5	12. 4	7.
											West Indies*.....		. 78	3. 36	7. 9	5. 8.

* Including St. Lucia Barbadoes and Jamaica, and calculated from the Tables published in the 1st Vol. of Annesley's Researches.

Only

Only two cases of Scurvy appear in the Returns for 9 years. The Madras sepoys, shortly after their arrival, partly from the want of fresh and wholesome animal food, and partly from some peculiar action of the climate, acquired a scorbutic taint which rendered them more subject to disease, prolonged their continuance in hospital, and interfered with the efficacy of the remedies employed for their cure. It was denoted by derangement of the digestive organs, emaciation and debility disproportioned to the severity of the original disease, for which the patient had reported sick, by listlessness and inactivity, purple spots over the body, sponginess of the gums and foul odour of the breath, irregularity in the alvine excretions and pains in the calves of the legs. A few cases also of Scorbutic Dysentery, presenting all the symptoms so well described by Bamfield, occurred in 1828. In these, the object of treatment was to correct the diseased condition of the system by nourishing animal diet, acids, and opium, with port wine occasionally.

The constitutions of natives seem peculiarly disposed to attacks of Rheumatism, and the vicissitudes of the climate of the valley offer numerous causes of the frequency of the disease in this island. Among the native troops 819 cases occurred in 9 years of whom 10 died; among the convicts during 8 years there were 707 admissions with it, of which 20 proved fatal; in the Chinese poor house, during the same period there were 143 cases, and 3 deaths. It is seldom observed to be of the acute kind; more generally it is chronic, exceedingly obstinate, and resisting sometimes every mode of treatment, terminating in permanent contractions of the limbs. All the usual remedies have been tried in some of the cases, which have occurred during the last 3 years among the Madras sepoys, without effect; in others, where the disease was of an intermittent nature, some advantage has been derived from a course of Bark or Quinine, and Arsenic. In the long continued cases, the best plan perhaps would be to transfer them to Madras for change of air.

Among native troops, on foreign service, unaccompanied by their families; among convicts, few of whom are permitted to bring their wives with them; and in a population like that of Pinang where the proportion of females is so small to that of males, Syphilis might be expected to be of common occurrence—In the Returns, for four years we find 64 cases of it among Europeans, all of whom were cured; among the native soldiery in 9 years 451 were admitted with it of whom 6 died—and among the convicts, during the 8 years there were 307 cases of which 6 were fatal. In our own practice during the last 3 years, it has seldom appeared to be of a severe nature, and is generally readily cured by a mild mercurial course, quiet, and the antiphlogistic regimen—One or two cases of secondary symptoms occurred, which yielded to Sarsaparilla. During the prevalence of sloughing ulcer, here as at Malacca, sores on the penis readily assumed a phagedænic character, and required the treatment to be modified accordingly.

Next to fever Ulcer shows the greater proportion to the whole number of cases borne on the Returns as occurring among Natives. It is found principally in new comers, not yet assimilated to the climate; and among the troops from Bengal or Madras has prevailed in an epidemic form for the first year after arrival. This is a curious and in some degree inexplicable peculiarity in the history of the disease. The 65th Regiment Bengal Native Infantry arrived here in the middle of August 1825—Between that time and the 31st of December, 241 cases of ulcer were treated in hospital, of whom 9 died. During the next year there were 147 cases and 32 deaths. After harassing the corps for a year it disappeared

entirely,

entirely, and Fever and Diarrhœa became the prevailing diseases* The Head Quarters of the 25th Regiment Madras N. I. landed here in December 1826—the numerical strength then being 809 of all ranks. During the month of January and early part of February, the corps was encamped, and enjoyed comparative healthiness, the admissions being very slight cases of constipation, and itch. In February, after they had moved into their lines, ulcer appeared among them—and 24 cases of it were admitted in that month, and for each subsequent month, the average number of admissions was 22, many of them of the worst phagedænic form—The total number of cases during the year was 263 of whom 10 died. During 1828, 145 were admitted and 6 deaths took place; but the sloughing form disappeared in the early part of the year, and fevers of which hitherto there had been but few instances became prevalent. The Head Quarters of the 35th Regiment M. N. I. 710 strong, arrived here in the end of March 1827—During April the admissions with Ulcer were 15, in May 39, in June 34, in July 15 and August 15—after which the number declined—The total number of cases during the year was 152, of whom 20 died, and 13 had their legs amputated. In the returns, distinction has not been made between the sloughing and simple cases, but the mortality shews that the number of the former must have been considerable—In 1828, the admissions were 91, and deaths 2—In 1827 the number of remittent and intermittent fevers was only 30; while in 1828, after the cessation of the ulcers, they amounted to 273. Ulcers did not prevail among Europeans, nor did they affect the Native officers of the different corps. The above facts confirm what we have said of ulcer when speaking of Malacca; 1st. that the cause whatever it be does not operate for a month or six weeks after exposure to its influence; 2nd. That the disease disappears generally after 10 or 12 months' seasoning to the climate; and 3rd. that Fever and Diarrhœa then become the prevailing complaints—For further information on this subject, and some ingenious reasoning thereon, I refer to a valuable paper on Ulcer forwarded to this Government by my friend Mr. Grant. In it also will be found an account of the symptoms, progress and treatment of the disease as it occurred among the Madras troops in 1827 and 28.

The circumstance of Ulcers prevailing in a corps at one time, and Fever at another in similar circumstances, has been noticed in the West Indies by Jackson; and both he* and Chisholm†, are inclined to consider Ulcer as a peculiar modification of Fever excited by miasma. In Pinang, it will be observed from the foregoing statement, that during the existence of ulcer in the epidemic form the admissions with fever were few---when the ulcers disappeared however fever cases were numerous. This occurrence leads me to coincide in a great measure with the opinion of the authors above mentioned. Fever is at all times the prevailing disease among native soldiers. On their arrival in this island however it is replaced by Ulcer—Deficient nourishment from want of animal food, and the moisture of the climate, lower the tone of the system, and produce want of energy in the extremities. The Miasma or Malaria, which under other circumstances in the dry climate of the Carnatic, would produce fever, now creates Ulcer —After a time however the constitutions of the men become reconciled to the change of climate; and in the same manner, as inhabitants of marshy countries are often free from Agues, while strangers are immediately affected, so the body of the sepoy becomes habituated to the action of miasm, or if exposed

* For an interesting account of the disease as it appeared in the 65th Regt. see a paper by Mr. Leslie in the 3rd. Vol. of the Cal. Med. Society Transactions.

* Jackson on Febrile Diseases. Vol. 2. pp. 189. 190.

† Chisholm on Tropical Climates. p. 168.

to

to it, has an attack of mild remittent or intermittent fever. Unless we take this view of the matter, it is difficult to explain the cessation of ulcer after a certain period has elapsed; as if owing entirely to deficient nourishment, they would continue to prevail as long as this cause continued—but they did not, for the ulcers ceased, tho' no change took place in the food of the sepoys. The fact is certain, however it may be explained, and perhaps we must be contented to ascribe it to some unknown peculiarity of the climate.

To continue our numerical observations—among the native troops, during nine years from 1821 to 1829 inclusive, the number of cases of ulcer was 1567, of which 98 were fatal, making the proportion of deaths 6¼ per cent; among the convicts, the admissions with it, during 8 years, were 1004, and deaths 44, or 4½ per cent nearly; in the Chinese poor house out of 922 admitted in 9 years, 80 died, being a proportion of 8¾ per cent.—In the Pinang local corps, they always bore a large share of the diseases treated, while stationed on the island; but decreased greatly, when the men were removed to Province Wellesley. In the convicts they do not often assume the phagedænic form. In the Chinese poor house, the cases are generally of the worst description.

Pulmonary affections are frequently noticed in the returns. A few cases of Phthisis have occurred—Asthma and Catarrh are common—originating in the dampness and uncertainty of the climate—Cutaneous diseases are not of great frequency. Itch which is so common among the Madras sepoys in India disappeared after the troops had been on the island for some time—owing perhaps to their better accommodation, and absence from their families.—Dropsy occasionally occurs as a sequela of fever, diarrhœa and chronic diseases; but is seldom idiopathic. No cases of Beriberi appear on the records for 9 years.—Diseases of the testicles have been more common in the 35th Regiment than in India; in the form of Hydrocele, Scirrhus and Hernia humoralis. Of the treatment of these complaints I have said little,—my object has been to give a sketch of the medical history of the island, so far as information could be obtained. The same remedial measures successful in other parts of the world, proved useful here; and for any peculiarity in the mode of treating the diseases of Europeans, I again refer to the papers of Mr. Grant, whose experience while in charge of the General Hospital here, has been considerable.

For the last two years, the sick list of the 35th Regiment M. N. I. has been high, averaging generally about 76 out of a force of little more than 900 men. A number of causes contributed to keep up the rate of sickness. From its being the only corps in the island, the whole duties devolved upon it; the guards were numerous, many of them distant. Duty was therefore constant and severe—the men were exposed to privations and to the vicissitudes of the weather—they were necessitated to report sick for the most trifling complaints—complaints, which a few days rest in quarters would have relieved, had the exigencies of the service permitted such, and for which in India, the sepoy seldom comes into hospital, for instance, boils, cuts, small sores, slight rheumatic pains, and ephemeral fevers—Such trifling cases formed a considerable part of the sick returns of the corps; and it will be found on inspection that the rate of mortality, even including the deaths from epidemic ulcer, was lower than the average rate among native troops in India. Out of 1753 cases treated during 1827, 28 and 29, 32 deaths took place in Pinang, 18 after transfer to Madras, making the total number of casualties 50 or 2. 8 per cent on the total number treated. Now it appears, from the tables published by Dr. Annesley in his "Sketches of the diseases of India," that in 6 years the average mortality calculated on the No. of admissions, of the whole Madras Native Army was 3 4 per cent:—taking the healthy and unhealthy stations indiscriminately—The mortality in all the Hospitals in the island

island has been about 7½ per cent; a trifle greater than it is in the hospitals of London.—For further details, the reader is referred to the following Tables—No. XIII. has been constructed for the purpose of exhibiting the influence of the weather in increasing the number of admissions. The six years from 1821 to 1826 have been selected, as during that period the troops, convicts, and other classes remained nearly stationary—It will be found that the greatest number of cases occurred in the months of May and October—about the period of the change of the monsoons.

As an Appendix to the account of Pinang, we offer a few remarks on its dependency on the Quedah coast, Province Wellesley. This is a tract of territory, ceded by the king of Quedah to the English in 1800 extending along the shore opposite to the island about 30 miles, and running about 3 miles inland. Previous to 1822 it was covered with jungle, and the population was exceedingly scanty. Since that period, from the encouragement given to settlers, it has been gradually cleared, and is now a flourishing station with a population of 25,000 souls. Rice, Pepper, and Sugar, are its principal products, and the cultivation of them is daily extending—The strait dividing it from the island, and forming the Pinang harbour, is at its narrowest part only 2½ miles broad—but notwithstanding this short distance, there is some difference in the climate. The air is purer, and cooler; the sea and land breezes are regular; and there is never that oppressive close feeling in the atmosphere which is frequently experienced at Pinang.—The reason is obvious; it is open to all the winds of heaven, and there is a constant circulation of air—From an interesting account of the Climate and Topography, published by Captain Low in the Government Gazette of June 1830—it appears that the medium temperature of the year is about 2 degrees lower than on the island, the maximum being 87, the minimum 69½. From the description he has given of the Climate, it seems to approximate nearly to that of Malacca. The dry season includes December, January, February and March.—Rain is less frequent than on the island. In most other respects however it differs little from Pinang.—The soil is described by Finlayson as being a stiff blue clay; in other parts a black soft and spongy mould resembling peat moss. It has been already remarked, that according to Captain Low, the whole province has been gradually reclaimed from the sea, and the process is actually now going on, on some parts of the coast—Many parts of the province are swampy; it is traversed by several broad and deep rivers, the banks of which are marshy, and apparently unhealthy—But, according to the testimony of Captain Low, the salubrity is great, as the registered deaths in 1829-30 amounted to only a fraction more than one half per cent. The vegetable productions are the same as those observed at Malacca—the animals are more numerous than in the island, including the Rhinoceros, Elephant, Tiger and Wild-hog—The prevailing diseases are the same as on the island itself—fevers chiefly intermittent, diarrhœa, dysentery, and pulmonary affections. Small pox is said to be very destructive.—In January 1830, a detachment of 90 sepoys were ordered to the Province, under the command of a European officer for the protection of the Police.—The head Quarters were at Pinagar, a healthy village about six miles to the N. of Fort Cornwallis—but several parties were stationed at different out-posts—one especially on the muddy marshy bank of the Quallà mooda river which separates the English territory from the Siamese on the N. and another at the foot of a low recently cleared hill, called Battu-kawan at the southern extremity of the Province.—The former soon after its arrival was attacked with intermittent fever of a severe form—and nearly every individual of the latter had a more or less severe attack of fever, first of the intermittent, afterwards of the remittent type. It was accompanied with the usual symptoms of great debility, hot and dry skin, severe headache, dry yellowish furred tongue, and quick small pulse. The

men

men suffered much from want of medical aid, and the necessary delay produced by their being obliged to be brought to the Regimental Hospital on the island for treatment, a distance of 8 or 10 miles During the months of January February and March ten cases of intermittents were admitted, all of whom recovered; and 42 cases of remittent, of whom one who had been brought over in an advanced stage of the disease died. Since that time 3 more fatal cases have occurred from this fever. All those who were bled rapidly recovered--it afterwards readily yielded to antimony, the antimonial solution, calomel, and leeches to the head, and to Quinine after the violence of the Fever was subdued. When the liver was affected, calomel given to salivation generally proved efficacious. I am inclined to ascribe the fever to the action of miasma, combined with imprudence on the part of the men. On the whole, Province Wellesley will be found a healthy station, and cases of chronic disease might be benefited in some measure by removal there for change of air, when opportunities for returning to Madras cannot be obtained. The sepoys stationed there in former years enjoyed uninterrupted good health.

In concluding these dry details, I have to solicit the reader's indulgence for many defects both in style and arrangement. Of elegance, the subject scarely admitted; and it has not been aimed at. The intention was to collect the scattered materials of the medical history of an interesting portion of our Eastern possessions; and to touch briefly on every subject, now considered requisite in a medico-topographical memoir. The multiplicity of these precluded any detailed account of each, without greatly exceeding the limits I had assigned myself. It is to be hoped however that nothing really useful, or necessary has been omitted; and it may with safety be asserted, that as far as the facts go, their accuracy may be relied on. It is a first attempt, and like most first attempts probably an imperfect one: but if it attract the attention of men of more talent or experience, if it elicit further information on the subject from them, or if the hints should prove useful even in the remotest degree to any of my fellow creatures, I shall feel amply rewarded for the labor I have bestowed upon it. " *Non enim spe quæstus, aut* " *gloria commoti venimus ad scribendum, quemadmodum cæteri; sed ut in-* " *dustria nostra tuæ morem geramus voluntati.*" *Cic.*

TABLE XII.

ABSTRACT OF THE BURIALS IN THE PROTESTANT BURYING GROUND, PINANG, FOR TEN YEARS; WITH THE CAUSES OF DEATH AS FAR AS COULD BE ASCERTAINED.

Number buried in the following years.

Classes of Persons.	1820.	1821.	1822.	1823.	1824.	1825.	1826.	1827.	1828.	1829.	Total buried during 10 years.	Average number of Protestant inhabitants for 10 years.
Permanent Residents. Inhabitants. Adults	6	3	5	1	12	13	8	9	5	3	65	300
Permanent Residents. Inhabitants. Children	3	3	2	,,	4	5	7	5	9	1	39	
Permanent Residents. Soldiery	,,	2	1	5	3	7	3	5	3	,,	30	54
Casual visitors	3	2	2	2	6	7	6	5	4	,,	38	,,
Naval officers & Seamen sent to the General Hospital	3	2	2	6	5	2	5	9	5	,,	40	,,
Seamen who died on board	8	2	3	4	2	5	2	2	4	1	33	,,
Totals	23	16	16	18	32	39	31	35	30	5	245	,,

Ascertained causes of Death.

Classes of Persons.	Abscess.	Aphthæ chronic.	Apoplexy.	Asthma.	Bladder diseased.	Cholera.	Chorea.	Concussion of the Brain.	Consumption.	Convulsions.	Croup.	Debility.	Decline.	Delirium tremens.	Diabetes.	Diarrhœa.	Dropsy.	Drowned.	Dysentery.	Dyspnœa.	Enteritis.	Epilepsy.
Inhabitants. Adults	,,	1	2	1	,,	,,	1	,,	4	,,	,,	1	,,	1	,,	5	,,	,,	7	1	1	,,
Inhabitants. Children	,,	,,	,,	,,	,,	,,	,,	,,	,,	4	5	,,	1	,,	,,	7	,,	,,	2	,,	,,	,,
Soldiery	,,	,,	,,	1	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	7	,,	1	1
Casual visitors	,,	,,	,,	,,	,,	,,	,,	,,	5	,,	,,	,,	,,	,,	,,	2	1	1	,,	,,	1	,,
Naval officers & Seamen sent to the General Hospital	1	,,	,,	1	1	,,	,,	1	1	,,	,,	,,	,,	,,	1	2	1	,,	14	,,	,,	,,
Seamen who died on board	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Totals	1	1	2	3	1	2	1	1	10	4	5	1	1	1	1	16	4	1	30	1	3	1

Classes of Persons.	Fever.	Fractured skull.	Hæmoptysis.	Hæmorrhage.	Heart malformed.	Hepatitis.	Hydrocele.	Hydrocephalus.	Locked jaw.	Mania.	Old Age.	Palsy.	Rheumatism.	Small pox.	Spleen.	Suicide.	Syphilis.	Teething.	Ulcer.	Worms.	Wounds and accidents.	Total ascertained diseases.
Inhabitants. Adults	22	1	,,	1	,,	4	,,	1	,,	1	1	,,	1	1	1	1	1	,,	1	,,	,,	62
Inhabitants. Children	1	,,	,,	,,	1	2	,,	1	5	,,	,,	,,	,,	,,	,,	,,	,,	3	,,	2	,,	34
Soldiery	11	,,	,,	,,	,,	2	1	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	30
Casual visitors	4	,,	,,	,,	,,	3	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	18
Naval officers & Seamen sent to the General Hospital	6	1	1	,,	,,	4	,,	,,	,,	,,	,,	1	2	,,	,,	,,	1	,,	,,	,,	1	40
Seamen who died on board	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Totals	45	2	1	1	1	15	1	2	6	2	2	1	3	1	1	1	2	3	1	2	1	184

TABLE XIII

ABSTRACT OF THE DISEASES TREATED AND OF THE CASUALTIES IN ALL THE HOSPITALS, EUROPEAN AND NATIVE, PINANG FROM 1ST JAN. 1821 TO 31ST DEC. 1823.

DISEASES.	Remained 1st December 1820.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total Admitted during six years.	Total treated during six years.	Total No. of deaths during six years.	Proportion of deaths to admissions.	Remaining 31st December 1826.
		Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.				One in	
Abscess	2	15	„	8	„	8	„	10	1	6	1	„	„	5	„	6	3	6	„	6	„	2	„	5	„	77	79	5	15½	„
Apoplexy	„	„	„	2	2	„	„	1	1	1	1	1	„	„	1	1	1	„	„	„	„	„	„	„	„	6	6	6	1	„
Asthma	2	10	„	4	„	8	2	5	1	5	1	3	„	4	1	2	1	4	„	4	„	5	1	6	1	60	62	8	7½	„
Chicken-pox	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	1	„	2	„	„	„	„	„	„	„	3	3	„	„	„
Cholera	„	2	„	3	2	20	4	10	2	25	6	12	„	4	2	4	3	26	14	18	13	7	2	8	4	139	139	52	2½	„
Chronic disease of the abdominal viscera*	„	6	„	1	„	11	4	11	6	5	3	3	2	5	1	2	1	9	3	11	3	5	5	8	6	77	77	34	2¼	5
Colic	„	„	„	„	„	„	„	„	„	3	„	7	„	3	„	2	„	3	„	„	„	„	„	„	„	18	18	„	„	„
Debility	11	5	9	4	2	7	2	8	1	2	2	2	„	1	1	„	„	4	1	4	2	2	2	10	„	49	60	13	3⅗	„
Diarrhœa	8	117	16	121	5	91	11	166	15	258	11	171	21	159	21	179	30	185	33	146	33	147	31	155	26	1903	1911	257	7⅖	4
Dropsy	4	11	3	6	3	13	4	12	„	7	3	10	1	4	4	4	„	6	3	4	1	3	1	5	3	85	89	31	2¾	„
Dysentery	3	62	12	82	8	56	12	40	5	71	6	51	11	58	17	53	11	43	12	51	10	41	8	45	18	667	670	133	5	3
Fever	71	615	21	465	19	438	11	1[illegible]	[illegible]	[illegible]	21	510	21	516	22	543	25	513	13	558	23	474	21	541	17	6074	6145	286	25½	30
Fracture	1	1	„	3	„	5	1	3	„	2	„	2	„	2	„	2	„	„	„	2	1	1	„	5	1	24	25	4	6	1
Hepatitis	2	5	„	3	„	2	„	2	1	1	„	6	„	4	1	2	„	2	„	2	1	5	1	3	1	37	39	7	5½	1
Hydrocele	„	3	„	1	„	1	„	1	„	1	„	2	„	6	„	1	„	2	„	1	„	„	„	3	„	22	22	„	„	„
Inflammation: Abdominal	„	„	„	„	„	„	„	„	„	„	„	„	„	2	1	„	„	„	„	„	„	„	„	„	„	2	2	1	2	„
Inflammation: Cephalic	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	1	1	„	„	„	„	„	„	„	„	1	1	1	1	„
Inflammation: Thoracic	11	11	4	17	2	24	5	15	3	14	4	13	1	17	2	10	2	8	1	13	1	16	1	14	7	172	172	33	5⅕	„
Insanity	4	2	„	1	1	1	„	1	1	1	„	1	„	2	„	2	„	1	„	„	„	2	„	1	„	15	19	2	7½	„
Itch	12	20	„	10	„	6	„	9	„	8	„	2	„	1	„	3	„	2	„	3	„	2	„	2	„	63	75	„	„	„
Leprosy	9	2	1	5	3	3	2	4	„	6	2	2	„	4	3	2	2	3	1	2	„	1	2	3	„	37	46	16	2¼	8
Ophthalmia	1	10	„	17	„	10	„	7	„	7	„	5	„	8	1	14	„	3	„	10	„	9	„	14	„	120	121	1	120	1
Palsy	4	„	1	2	„	„	1	„	„	„	„	1	„	„	„	1	„	1	„	„	„	„	„	1	„	6	10	2	3	„
Rheumatism	39	87	6	97	3	109	1	138	1	126	7	98	1	90	1	80	4	110	2	122	4	109	2	145	3	1311	1350	35	37½	18
Scrofula	„	4	„	„	„	3	„	2	„	„	„	„	„	„	„	1	„	„	„	2	„	1	„	1	„	14	14	„	„	„
Small-pox	„	1	„	4	1	„	„	1	„	1	1	„	„	„	„	4	„	9	9	3	„	4	1	1	„	28	28	12	2⅓	„
Syphilis	15	58	„	50	„	59	2	52	1	42	2	58	1	40	„	64	2	42	4	54	2	48	„	48	2	615	630	16	39⅜	11
Tetanus	„	„	„	1	1	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	„	1	1	1	1	„
Trifling & *Anomalous*† cases	6	150	11	97	12	103	9	117	13	173	14	189	17	142	18	141	11	167	16	195	18	138	22	150	18	1761	1787	179	9¾	18
Ulcer	47	189	27	162	23	200	20	181	11	237	12	303	17	261	15	227	17	261	10	347	12	256	13	255	19	2879	2926	196	14⅔	69
Wounds and Accidents	10	60	1	63	2	58	2	53	„	72	2	52	3	76	4	78	2	67	2	76	4	71	3	76	2	802	812	27	29⅔	8
Totals	251	1446	102	1229	91	1238	96	1272	83	1526	101	1513	105	1441	119	1430	116	1479	124	1638	127	1349	116	1505	128	17068	17319	1308	13¼	177

* These occurred among the paupers admitted into the Chinese poor Asylum; they are included in the Returns under the general term Obstructions, and I have since learnt, were cases of visceral derangement, mostly consequent to fevers, occurring in old men, and forming species of the Genus Parabysma of Dr. Good.

† Previous to 1827, a number of the cases in the Returns were arranged under the head *Anomalous*. It is now not possible to determine the peculiar diseases so denominated; but they were principally cutaneous affections.

Table

TABLE XIV.

Abstract of the Diseases admitted into the different Hospitals Pinang during the year. 1826.

Hospitals.	Remained 31st December 1825.	Admitted in 1826.	Total.	Discharged.	Dead.	Remaining.	Diseases admitted into Hospital.																Fatal cases.											Numerical strength.	Proportion per cent: of sick to well.	Proportion per cent: of deaths to the total number of sick.
							Apoplexy.	Cholera.	Diarrhœa.	Dropsy.	Dysentery.	Fever.	Fracture.	Hepatitis.	Leprosy.	Ophthalmiy.	Pulmonic affections.	Rheumatism.	Venereal.	Visceral Obstructions.	Ulcer.	Wounds and accidents.	Other diseases.	Apoplexy.	Cholera.	Diarrhœa.	Dropsy.	Dysentery.	Fever.	Leprosy.	Pulmonic affections.	Rheumatism.	Ventral.	Visceral Obstructions.	Ulcer.	Wounds and accidents.	Other diseases.			
General Hospital { Europeans	9	110	119	100	9	10	,,	1	3	,,	11	15	,,	4	,,	,,	,,	6	10	5	4	12	39	,,	1	,,	,,	3	,,	,,	,,	1	,,	,,	,,	1	3	,,	,,	7. 5
General Hospital { Natives	17	204	221	173	28	20	,,	1	5	1	21	60	1	,,	,,	5	,,	12	10	,,	26	30	42	,,	,,	1	,,	7	,,	,,	,,	,,	,,	,,	6	5	9	,,	,,	12. 6
*65th Regiment B. N. I.	146	972	1118	1025	75	20	,,	15	254	,,	,,	342	,,	,,	,,	9	7	42	43	,,	147	53	60	,,	2	25	,,	,,	8	,,	,,	,,	,,	,,	32	,,	6	948	102. 5	6. 5
†25th Do. Do.	8	38	46	44	2	,,	,,	,,	,,	,,	3	26	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	8	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	522	7. 3	4. 3
Golundauze and Gun-lascars	3	07	110	102	1	7	,,	,,	19	2	,,	28	,,	,,	,,	,,	,,	3	5	,,	23	2	25	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	122	88.	.9
‡Local Corps	4	266	270	248	10	12	1	11	9	2	9	111	1	,,	,,	,,	5	14	14	,,	12	15	62	1	1	,,	2	1	1	,,	1	,,	,,	,,	,,	,,	3	294	90. 4	3. 8
Chinese poor house	53	238	291	192	38	61	,,	,,	,,	,,	,,	21	,,	,,	5	,,	,,	36	,,	55	142	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	31	6	,,	,,	,,	,,	13. 4
Convict Hospital	84	1021	1105	1001	79	25	,,	11	85	11	53	394	,,	,,	,,	13	2	47	42	,,	89	47	127	,,	3	28	3	19	14	,,	,,	,,	1	,,	7	,,	4	1538	66. 3	7. 1
Jails	19	267	286	271	2	13	,,	1	46	,,	1	144	,,	,,	,,	,,	,,	4	,,	2	64	1	4	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	.7
Totals	343	3213	3566	3156	242	168	1	41	421	16	88	1120	2	4	5	27	14	165	124	62	507	26	367	1	8	54	5	31	23	2	1	1	3	32	51	6	26	,,	,,	5. 831

* This corps arrived here in the middle of August 1825.—† This had for many years been stationed in the Straits.—It left this Island for Bengal on the 29th June 1826.

‡ The Local corps was stationed this year at Province Wellesley—and was disbanded in 1827.

TABLE XV.

Abstract of the Diseases admitted into the different Hospitals Pinang during the year 1827.

Hospitals.	Remained 31st December 1826.	Admitted in 1827.	Total treated.	Discharged.	Transferred.	Dead.	Remaining.
General Hospital, Natives, Of the Madras* Artillery	,,	267	267	233	12	5	17
General Hospital, Natives, Others....	9	63	72	63	,,	8	1
General Hospital, Europeans, Of the Madras* Artillery	,,	420	420	377	,,	5	38
General Hospital, Europeans, Others....	18	177	195	164	,,	25	6
25th Reg. M. N. I.†..	25	762	787	702	28	19	38
35th Reg. Do. Do.‡..	40	723	763	681	10	32	40
Chinese poor house	61	202	263	175	,,	30	58
Totals....	153	2614	2767	2395	50	124	198

Diseases admitted into Hospital.

Hospitals.	Asthma.	Catarrh.	Diarrhœa.	Dropsy.	Dysentery.	Dyspepsia.	Epilepsy.	Fever. Intermittent.	Fever. Remittent.	Fever. Ephemer; bilious.	Fracture.	Hæmoptysis.	Headache.	Hepatitis.	Inflammation. Abdominal.	Inflammation. Cephalic.	Inflammation. External.	Inflammation. Thoracic.
General Hospital, Natives, Of the Madras* Artillery	,,	,,	30	,,	35	,,	2	4	8	14	,,	,,	21	32	1	,,	9	7
General Hospital, Natives, Others	,,	,,	1	1	12	,,	,,	,,	,,	3	,,	1	,,	13	,,	,,	,,	,,
General Hospital, Europeans, Of the Madras* Artillery	,,	,,	53	2	12	,,	,,	18	8	73	,,	,,	1	,,	1	,,	21	1
General Hospital, Europeans, Others	1	2	1	3	9	,,	,,	,,	,,	24	4	1	2	2	,,	,,	2	,,
25th Reg. M. N. I.†	2	8	7	,,	,,	1	,,	23	,,	11	,,	,,	1	,,	,,	,,	17	,,
35th Reg. Do. Do.‡	2	3	26	,,	8	,,	,,	6	24	87	,,	,,	,,	,,	,,	2	32	5
Chinese poor house	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Totals	5	13	118	6	76	1	2	51	40	212	4	2	25	47	2	2	81	13

Hospitals.	Insanity.	Itch.	Leprosy.	Ophthalmy.	Palsy.	Pulmon; Consump;	Punished.	Rheumatism.	Scrofula.	Tetanus.	Ulcer.	Venereal.	Visceral obstructions.	Wounds and accidents.	Other diseases.
General Hospital, Natives, Of the Madras* Artillery	,,	5	,,	1	1	,,	6	9	,,	1	30	12	,,	17	22
General Hospital, Natives, Others	,,	2	,,	,,	,,	1	4	2	1	,,	3	3	,,	3	13
General Hospital, Europeans, Of the Madras* Artillery	,,	83	,,	1	,,	,,	,,	16	1	,,	75	19	,,	16	19
General Hospital, Europeans, Others	1	5	,,	3	,,	,,	7	23	,,	,,	23	11	,,	21	32
25th Reg. M. N. I.†	,,	103	,,	5	,,	3	10	42	3	1	263	24	,,	25	212
35th Reg. Do. Do.‡	2	219	,,	5	,,	,,	2	72	2	,,	148	19	,,	26	33
Chinese poor house	,,	,,	6	,,	,,	,,	,,	27	,,	,,	127	,,	42	,,	,,
Totals	3	417	6	15	1	4	29	191	7	2	669	88	42	108	331

Fatal cases.

Hospitals.	Diarrhœa.	Dropsy.	Dysentery.	Epilepsy.	Fever remittent.	Fracture.	Hæmoptysis.	Hepatitis.	Inflam; cephalic.	Leprosy.	Rheumatism.	Scrofula.	Tetanus.	Ulcer.	Venereal.	Visceral obstructions.	Wounds and accidents.	Other diseases.
General Hospital, Natives, Of the Madras* Artillery	1	,,	1	1	,,	,,	,,	1	,,	,,	,,	,,	1	,,	,,	,,	,,	,,
General Hospital, Natives, Others	,,	1	4	,,	,,	,,	1	1	,,	,,	1	,,	,,	,,	,,	,,	,,	,,
General Hospital, Europeans, Of the Madras* Artillery	,,	,,	1	,,	1	,,	,,	,,	,,	,,	,,	1	,,	2	,,	,,	,,	,,
General Hospital, Europeans, Others	,,	2	4	,,	2	1	,,	1	,,	,,	,,	,,	,,	6	,,	,,	6	3
25th Reg. M. N. I.†	2	,,	,,	,,	1	,,	,,	,,	,,	,,	1	,,	1	10	1	,,	,,	3
35th Reg. Do. Do.‡	,,	,,	1	,,	5	,,	,,	,,	1	,,	1	,,	,,	**20	1	,,	,,	3
Chinese poor house	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	28	,,	,,
Totals	3	3	11	1	9	1	1	3	1	2	3	1	2	38	2	38	6	9

Hospitals.	Numerical strength.	Proportion per cent; of sick to well.	Proportion per cent; of deaths to total No. of sick.
General Hospital, Natives, Of the Madras* Artillery	100	267	1. 87.
General Hospital, Natives, Others	,,	,,	12. 7.
General Hospital, Europeans, Of the Madras* Artillery	174	241	1. 19.
General Hospital, Europeans, Others	,,	,,	14. 1.
25th Reg. M. N. I.†	701	108	2. 5.
35th Reg. Do. Do.‡	714	101	4. 19.
Chinese poor house	,,	,,	14. 8.
Totals	,,	,,	4. 5.

* Arrived at Pinang in the beginning of 1827. † Head Quarters of this corps landed in Deccember 1826. ‡ Head Quarters landed at Pinang in April 1827. ** Thirteen legs were amputated—five deaths took place after the operation.

☞ From the change of men and measures which took place early this year, the whole of the medical Returns became confused; and from the imperfect state of the documents of the Convict Hospital, we have been obliged to omit the diseases of that establishment.

TABLE XVI.

Abstract of the Diseases admitted into the different Hospitals, Pinang during the year 1828.

Hospitals.	Remained 31st December 1827.	Admitted in 1828.	Total.	Discharged.	Transferred.	Dead.	Remaining.	Diseases admitted into Hospital. Asthma.	Catarrh.	Cholera.	Diarrhœa.	Dropsy.	Dysentery.	Dyspepsia.	Epilepsy.	Fever. Intermittent.	Fever. Remittent.	Fever. Continued.	Fracture.	Hæmoptysis.	Hepatitis.	Inflammation. Abdominal.	Inflammation. Cephalic.	Inflammation. External.	Inflammation. Thoracic.	Insanity.	Leprosy.	Opthalmy.	Punished.	Rheumatism.	Scrofula.	Scurvy.	Ulcer.	Venereal.	Visceral obstructions.	Wounds and Accidents.	Other diseases.
General Hospital. Europeans. Of the Madras Artillery	17	203	220	205	6	4	5	,,	,,	,,	6	2	11	,,	3	34	1	3	,,	1	31	3	8	10	7	,,	,,	,,	1	9	,,	,,	10	15	,,	29	19
General Hospital. Europeans. Others	1	33	34	26	,,	6	2	,,	,,	1	3	,,	4	,,	,,	2	,,	,,	,,	,,	2	,,	2	1	1	,,	,,	,,	,,	1	,,	,,	2	8	,,	2	3
General Hospital. Natives. Of the Madras Artillery	38	351	289	369	,,	8	12	,,	1	,,	39	3	10	,,	,,	87	17	1	,,	,,	,,	,,	1	16	7	2	,,	1	3	41	,,	1	39	28	,,	22	46
General Hospital. Natives. Others	6	40	46	37	,,	7	2	1	,,	,,	1	,,	3	,,	,,	6	,,	,,	,,	,,	2	,,	,,	,,	1	,,	,,	,,	,,	3	1	,,	3	3	,,	13	3
* 25th Reg. M. N. I.	32	241	273	236	34	3	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	145	,,	,,	,,	,,
35th Reg. Do. Do.	41	960	1001	842	63	18	78	4	8	,,	95	2	18	,,	,,	126	147	,,	,,	,,	1	1	,,	81	,,	1	,,	11	21	139	1	,,	91	32	,,	75	124
Convict Hospital	21	443	464	414	,,	37	13	,,	,,	,,	22	8	34	24	2	55	1	1	,,	4	,,	1	,,	3	16	,,	,,	4	,,	33	1	,,	72	22	,,	64	88
Chinese poor house	58	155	213	120	,,	13	80	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	6	1	,,	14	,,	,,	129	,,	12	,,	1
Totals	214	2426	2640	2249	103	96	192	5	9	1	166	15	80	24	5	310	166	5	,,	5	36	5	11	111	34	3	6	6	25	120	3	1	491	108	12	205	284

Hospitals.	Fatal cases. Asthma.	Diarrhœa.	Dropsy.	Dysentery.	Dyspepsia.	Fever. Intermittent.	Fever. Remittent.	Hepatitis.	Hæmoptysis.	Inflammation. Abdominal.	Inflammation. External.	Inflammation. Thoracic.	Leprosy.	Rheumatism.	Ulcer.	Venereal.	Visceral obstructions.	Wounds and Accidents.	Other diseases.	Numerical strength.	Proportion per cent: of sick to well.	Proportion per cent: of deaths to No. of sick.
General Hospital. Europeans. Of the Madras Artillery	,,	,,	,,	1	,,	1	1	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	75	264.	1. 97.
General Hospital. Europeans. Others	,,	1	,,	2	,,	1	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	1	,,	,,	,,	18. 18.
General Hospital. Natives. Of the Madras Artillery	,,	2	1	,,	,,	1	,,	,,	,,	,,	1	,,	,,	3	,,	,,	,,	,,	,,	360	108.	2. 28.
General Hospital. Natives. Others	1	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	1	1	,,	,,	1	,,	,,	17. 5.
* 25th Reg. M. N. I.	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	6	,,	,,	,,	,,	378	61. 11	1. 09.
35th Reg. Do. Do.	1	4	1	2	,,	2	,,	1	,,	1	1	,,	,,	1	2	1	,,	,,	1	987	97. 2	1. 87.
Convict Hospital	,,	5	3	11	2	3	,,	,,	1	,,	,,	7	,,	,,	1	,,	,,	1	3	1151	35. 33	8. 35.
Chinese poor house	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	,,	4	,,	7	,,	,,	,,	,,	8. 38.
Totals	2	12	5	18	2	8	1	1	1	2	2	10	1	4	14	2	7	2	5	,,	,,	3. 65

* The 25th Regiment left Pinang about the middle of the year. The Head Quarters had proceeded to Singapore in February to relieve a detachment of the 35th which returned to this Island.

TABLE XVII.

Abstract of the Diseases admitted into the different Hospitals, Pinang during the year 1829.

Hospitals.	Remained 31st December 1828.	Admitted in 1829.	Total.	Discharged.	Transferred.	Dead.	Remaining.	Asthma.	Atrophy.	Catarrh.	Cholera.	Consumption.	Debility.	Diarrhœa.	Dropsy.	Dysentery.	Dyspepsia.
General Hospital, Europeans, Of the Madras* Artillery	5	74	79	68	3	"	8	"	"	"	"	"	"	1	"	2	4
General Hospital, Europeans, Others	2	39	41	38	"	"	3	"	"	"	1	"	"	"	"	4	"
General Hospital, Natives, Of the Madras† Artillery	12	135	147	141	1	4	1	"	"	"	"	"	3	10	"	4	5
General Hospital, Natives, Others	2	102	104	69	"	19	16	"	1	"	"	2	"	3	"	3	"
35th Regt. M. N. I. ‡	78	772	850	740	17	5	88	1	6	28	"	"	"	39	6	19	"
Convicts	13	339	352	297	"	30	25	1	8	"	"	"	"	6	6	21	"
Chinese poor house	80	99	179	99	"	20	69	"	1	"	"	2	"	1	3	2	"
Totals	192	1560	1752	1443	21	78	210	2	16	28	1	4	3	60	15	55	9

Diseases admitted into Hospital (continued)

Hospitals.	Fever. Intermittent.	Fever. Remittent.	Fever. Continued.	Fracture.	Hepatitis.	Inflammation. Abdominal.	Inflammation. Cephalic.	Inflammation. External.	Inflammation. Thoracic.	Insanity.	Leprosy.	Ophthalmy.	Palsy.	Punished.	Rheumatism.	Scurvy.	Tetanus.	Ulcer.	Venereal.	Visceral Obstruction.	Wounds and Accidents.	Other diseases.
General Hospital, Europeans, Of the Madras* Artillery	2	"	"	"	11	4	5	5	5	"	"	1	"	"	4	"	"	3	10	"	14	3
General Hospital, Europeans, Others	4	"	"	"	"	1	2	2	4	1	"	"	"	"	"	1	"	3	6	"	2	8
General Hospital, Natives, Of the Madras† Artillery	49	"	"	"	"	1	"	9	1	"	"	2	"	1	15	"	"	6	10	"	12	7
General Hospital, Natives, Others	5	"	"	2	"	1	4	2	1	"	"	2	2	"	8	"	1	10	10	"	31	14
35th Regt. M. N. I. ‡	157	56	"	1	"	"	1	101	"	1	"	2	"	10	102	"	"	53	27	"	66	97
Convicts	29	2	6	"	"	9	"	24	14	"	1	4	1	4	17	"	1	53	18	"	55	62
Chinese poor house	6	"	"	"	"	"	"	2	1	"	3	"	3	"	5	"	"	47	2	1	1	19
Totals	252	58	6	3	11	16	12	145	23	2	4	11	6	15	151	1	2	175	83	1	181	210

Fatal cases.

Hospitals.	Atrophy.	Consumption.	Diarrhœa.	Dropsy.	Dysentery.	Dyspepsia.	Fever. Intermittent.	Fever. Remittent.	Inflammation. Abdominal.	Inflammation. Cephalic.	Inflammation. External.	Inflammation. Thoracic.	Leprosy.	Palsy.	Rheumatism.	Tetanus.	Ulcer.	Visceral Obstruction.	Wounds and Accidents.	Other diseases.	Numerical strength.	Proportion per cent of sick to well.	Proportion per cent of deaths to total No. of sick.
General Hospital, Europeans, Of the Madras* Artillery	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	41	180⅓	"
General Hospital, Europeans, Others	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
General Hospital, Natives, Of the Madras† Artillery	"	"	1	"	1	1	"	"	"	"	"	"	"	"	1	"	"	"	"	"	101	135 3/5	3.
General Hospital, Natives, Others	1	2	1	"	2	"	1	"	1	1	"	1	"	2	2	"	1	"	2	2	"	"	18.6.
35th Regt. M. N. I. ‡	"	"	1	1	1	"	"	1	"	"	"	"	"	"	1	"	"	"	"	"	970	79 8/9	0.64.
Convicts	8	"	1	4	7	"	"	"	1	"	1	2	1	"	"	1	"	"	1	3	1264	26 10/12	8.8.
Chinese poor house	1	2	"	2	1	"	"	"	"	"	1	1	2	1	"	"	2	1	"	6	"	"	20.2.
Totals	10	4	4	7	12	1	1	1	2	1	2	4	3	3	4	1	3	1	3	11	"	"	4.4.

* In May 1829, 20 Europeans, including the most sickly and worn out men, returned to Madras—leaving the strength of the Detachment only 35. Since that time, there has been scarcely an admission into Hospital.

† In April, the strength of the Native Detachment of Artillery was 174; in May, 99 proceeded to Madras, leaving it only 75.

‡ A small proportion of deaths is observed in the Returns of the 35th Regiment, but it is accounted for by many of the sick having been transferred to Madras at different periods, often in the last stage of illness, for change of air. Of 61 men so transferred during 1827, 28 and 29, the number reported "dead" to Head Quarters up to July 1830 was 21, of whom 11 died in 1828, 7 in 1829, and 3 in 1830. Their diseases were Fever 6, Rheumatism 5, Diarrhœa 4, Ulcer 4, Dysentery 1, and Atrophy 1.—This result is favorable to the system of transferring, as it is probable that the whole number would have sunk into the grave, or the survivors if any would have been useless to the service, had they remained on this Island.

T. M. WARD, M. D.
Assist. Surgeon 35th Regt. M. N. I.

OBSERVATIONS

ON THE REMITTENT NERVOUS

Congestive Fever, and the other diseases most prevalent among Europeans at Pinang.

BY J. P. GRANT, ESQ.—*MADRAS ESTABLISHMENT.*

IT appears to me evident that this fever differs not in origin, symptoms, type, course and termination, from the one I have already endeavoured to describe as the Congestive Fever of the Burmese Country, and after the Medical reader has perused the following statement of facts and cases, he will I trust accord with me in this opinion.

Proximate cause. The proximate cause of this disease I believe is a poisonous miasm produced by the powerful rays of the sun acting upon vegetable matter in a state of decomposition, particularly in hills where the Jungle has been cut down and left unburnt. It has also appeared from many fatal occurrences that no newly cleared hills are safe places of abode at certain seasons for the 1st three or four years.*

There is no regular monsoon on this Island, neither is there any stated period in which it does not appear, but the months in which during the last 3 years it has been most prevalent, were May, June, July, and August: during these months there are frequent and heavy falls of rain, but more fair than rainy days, when the heat of the sun is so great that it produces copious noxious exhalations from the soil which is so luxuriantly clothed with Jungle; the atmosphere then breathed is very moist, hot and stagnant at times, in consequence of the west wind which is the prevailing one at that season being so much intercepted by the Hills of the Island. The air thus impregnated, then, is but too often productive of this disease. In the greatest number of cases I have seen of it, it evidently arose from the persons having exposed themselves to Jungle miasm; in the other cases it was called into action by dissipation, exposure to the sun, shooting or boating and over exertion. From what I have seen of it in this place, Burmah and the Continent of India, I think it may and does lurk in the blood often for days and even weeks, only producing indisposition, and then it gradually comes to its full height by being immediately called into notice by exposure to the sun, excess or fatigue, but eventually when the poison has been inhaled, it will make its appearance with destructive virulence.†

* For a disquisition on the nature and vicissitudes of the climate of this Island, I refer the reader to a paper drawn up by my friend Dr. Ward on that subject for Government.

† In my remarks on the Remittent fever of the Burmese Country, I have briefly stated my views regarding the nature of the disease. The theory is a modification of the Boerhaavian, but with some peculiarities, which I believe circumstances justify me in adopting. To recapitulate then, I consider that the air is loaded with miasm at certain seasons of the year, when vegetation is in a state of decomposition. Whether that miasm consists in an excess of Carbonic acid, or nitrogen Gas, it is for future experience and chemists who are qualified to conduct such an intricate investigation to determine. The former of these appears to me to be the most probable cause of the disease. My reasons for maintaining this opinion are; 1st. That it is produced by an inhalation of an impure atmosphere into the lungs thereby causing a diseased condition of the blood: this theory is supported on these grounds. That this fever is prevalent in the continent of India, in the kingdoms of Ava, Siam, in the malay Peninsula and its neighbouring Islands at particular seasons after the rainy monsoon has ceased, in deep Jungles or where the Jungle has been cut down and not burnt (the

Symptoms

Symptoms The incipient symptoms are variable, before the fever displays itself. They generally are as follows. Great prostration of strength, pains in the loins and limbs, loss of appetite, increased thirst, a foul tongue furred white or yellow, nausea, bowels torpid, urine high colored and scanty scalding the urethra in passing, short chills followed by flushes of heat, eyes heavy and the balls painful on pressure, general heaviness of the head without severe headach. These symptoms may continue some time before they burst forth in the formed type of remittent Congestive fever: When they do its symptoms are as follows: On the first day, there is a general burning heat all over the body, but greater in the head than elsewhere; this then is the accession of the hot stage of this fever which is acccompanied with an excruciating headach: this continues from ½ an hour to 3 hours according to the violence of the attack; it is then succeeded by a copious cold clammy sweat, the skin feeling to the touch like that of a *Chunam* Frog; this relaxed state of the skin is alternated by warmth and perspiration, this is the remission during which period the pain in the head is relieved in some degree. The pain is most violent in the occiput, sinciput, and eyeballs. The tongue is dry and foul, furred either white or yellow, there is no desire for food but great thirst, great irritability of stomach, liquid being rejected almost immediately it is taken, but the thirst still continues. The Pulse runs from 90 to 140, is small, hard, labouring and obstructed. The urine is like decoction of bark, and often scalds the urethra in passing, at times having a red gritty deposit. Breathing oppressed and hurried particularly during the hot fit. Countenance flushed, and the expression anxious. Pupils of the eyes contracted; temper captious and the thoughts are rapidly expressed. The bowels are torpid, dejections clay coloured. The Abdomen is tympanitic and there is fulness and pain on pressure in the right hyprocondriac region. The general restlessness of body and turbulence of mind which are always present are increased during the hot fit, which recurs generally a little before noon and midnight. The symptoms continue each day for three days becoming more aggravated, the remissions being of shorter duration, the breathing more oppressed, the cold clammy sweats more profuse and of longer duration, the tongue browner, the irritability of stomach continuing, the pulse smaller, the temper more irritable, and the words spoken more rapidly. The dejections, if mercurials and other purgatives have been exhibited without producing a happy effect, are and continue

latter, has often been the fatal cause of fever in this Island,} under each of these circumstances there is an excessive decomposition of vegetable matter and a consequent exhalation of noxious miasm. *2ndly*. That the blood drawn from the patient is thicker and blacker, even when drawn at the earliest stage, than it is in any other disease; it coagulates very rapidly; never shows a buffy coat, has a very large proportion of crassamentum which parts very slowly from the serous part; there is also an extraordinary appearance on its surface such as is seen on water when pitch is thrown on it; this looks opalescent; the blood at first flows very tardily, it is often necessary to administer stimulants to accomplish this object at first, every successive cup that is extracted assumes a more healthy appearance, at the commencement of the disease for the two first days. These appearances mark a great want of Oxygenation in the blood. *3rdly*. This fever bears a striking resemblance in many of its features to the yellow Fever of the West Indies, which Dr. Ferguson remarked attacked those chiefly who slept in the lower rooms of barracks. If such is the case, carbonic acid Gas from its weight is most probably the miasmatic poison; and *4thly*. That the inhalation of pure air by going to Sea has frequently had the effect of checking the fever, is well known. After the poison has been taken into the system it often does not shew itself in the form of fever for some time; not until the blood has become so thickened as to produce cranial congestion; thus then it can neither supply sufficient energy to the brain, spinal cord and nerves, nor pass through the smaller capillary vessels; the result of this obstruction is effusion, which, as it encreases, so is there a loss of nervous energy, and the secreting glands which from the commencement of the disease are torpid, become in consequence completely inactive. The original features of the disease I think support this hypothesis. The most evident symtoms are the severe headache and the pupils of the eyes contracted. This, as well as the congestion in other parts is almost instantly relieved by large depletion, the pulse becomes fuller softer and stronger, the debility is removed more and more by each bleeding till the congestion is removed. Hence it would appear that the nerves are affected by the diseased condition of the blood and not primarily by the action of miasm either through the medium of the skin or stomach. If such were the case, how comes it that the disease so often lies dormant for days in the system before it makes its appearance? how does depletion have such an immediate and happy effect? and how does the action of mercury protect the brain and its nerves from this disease? It is a fact well known in India that those who are under its influence pass through deep Jungles at the unhealthy season after the rains without injury; while men in perfect health under similar circumstances are attacked with and rarely saved, in consequence of not having either immediate or effective medical attendance.

Whatever is the true theory of this which hitherto has baffled the energetic researches of the most able medical minds, experience has now taught us that the most fatal results ensue, when this disease has once entered the system, if, in the 1st place large depletion, in the second mercurial action, which Oxygenizes the blood and excites all the glands and absorbents into action, in the 3d. Counterirritants to relieve Congestion and 4th tonics, stimulants and nutrition to support the efforts of nature, each in due succession, are not carried into full effect.

green

green and slimy. The notice is then attracted to pain complained of somewhere in the course of the colon; the character of the urine continues as already described. If the disease is not impeded as I shall hereafter endeavour to state, effusion of serous fluid takes place in the brain and spinal canal, sometimes on the 3rd but more frequently on the 4th day. That this change has taken place is indicated by the watery eye, the pupil of which becomes dilated, the stertorous breathing, the black and arid tongue, increased restlessness, the patient becomes delirious for a short time, he looks like an intoxicated person, says he is quite well and free from pain, cares not at times for the pain of blisters or any thing else, laughs and talks of past pleasures, jumps out of bed, and says he must go and follow his usual avocations. These are fatal signs; the patient is now almost always covered with a cold clammy sweat, but the head still continues hot. This state of delirium continues for about a day; the pupils of the eyes are more dilated; the mouth becomes dry; the lips chopped and black; the teeth covered with black sordes; the tongue dark brown or black, dry and husky; the extremities become quite cold; the lungs labour excessively; the voluntary as well as the involuntary muscles lose their power; a general relaxed state of the skin accompanied with hiccup—involuntary dejections of a green watery appearance—subsultus tendinum—low fluttering pulse which becomes imperceptible at the wrist sometime before death, close the scene, on the 5th rarely, on the 6th and 7th commonly, and life is seldom protracted to the 8th day.

A comatose state is a frequent occurrence, but the patients in some instances seem to have their intellects capable of action till within a few minutes of dissolution. In one case I observed a great craving for food a precursor of dissolution. The skin often assumes a mottled and marbled appearance before death. Where there are leech bites the areolas round them are wide and of a deep blue colour: In the case annexed of W. H. Esquire which is detailed at more length than any of the others, a history of the fatal symptoms is delineated.

In my notes on this fever in the Burmese Country written 3 years ago, I have given a general sketch of this disease and the appearances on dissection. Since my arrival here I have only had 3 post mortem examinations of Europeans who have died of it. But each of these confirmed the ideas I had already formed with regard to the cause and cure of the disease.

Appearances on Dissection } The appearances in the membranes of the Brain were 1st great plethora in their sanguineous vessels of very dark blood, having large portions of air separating that fluid in many places and 2ndly having about 1 ounce of serous fluid effused on and between the membranes. On the sections through the substance of the Brain, the bleeding points of dark blood were very conspicuous; the ventricles full of serous fluid, the choroid plexus turgid with dark blood, the spinal cord having the serous fluid copiously diffused between it and its theca; the lungs heavier than usual from the quantity of blood contained in them; the heart also containing black clots of the same fluid; the Liver pouring forth this same diseased fluid in its sections (in one case that of Captain B's which is annexed, this organ had been previously disorganized from hard living, it was large and spongy but did not bleed like those in the other cases.) The Gall bladder full of dark thick yellow or tar like bile, which was too thick to flow through the duct. The spleen of a purple color, large and showing encreased venous congestion, and having lost its natural continuity. The kidneys tumified. The alimentary canal on being slit open was covered with green viscid mucus throughout. The large intestines having venous congestion, and in one case ulceration of the mucous coat. The mesentery had always unusual dark sanguineous congestion. The internal

ternal coats of the Arteries had a red blush, which increased on exposure to the air.* In all cases there is some difference in the appearances after death, for many of those who have been cut off by this fever have had great visceral derangement for years previously, and such when they have been known to exist, cannot be placed to the account of this malady.

Treatment I have already alluded to the absolute necessity there is for immediate and large depletion till the cranial Congestion is removed. The good effects of active depletion will appear in Captain D's.—B's. Esquire and W. R's. cases annexed hereto. In the first instance I would always prefer general depletion, but when the patient has lost much blood, and there is still congestion in the Liver or great Intestines, both which circumstances are of frequent occurrence, the local abstraction of blood is preferable. In the European patient an equally active mode of treatment is called for with that already recommended, as the disease runs its course so rapidly, and the cranial congestion is so great that effusion often takes place on, and in the ventricles of the Brain and along the spinal canal by the third day, and then there is but little chance of a recovery. A well watched course of external and internal stimulants, with nutritious diet, occasional mercurials and laxatives will be most likely to effect this object. This subject is illustrated in the case of Lieut. C. at Rangoon. This fever in the Natives is far less violent and the native doctors cure it frequently without resorting to depletion; their chief dependence is placed on cold affusion and purgatives. During the hot stage cold water is poured over the whole body, which lowers the heat of the body very much, reduces the pulse and brings on the sweating stage; they keep the head constantly wet with cold water dropping on it. This has the effect of preventing congestion in the head and with the use of drastic purgatives and mercury, the determination thereto is removed and a healthy balance of the circulation established. In the 35th Regt. M. N. I. here, I had many cases of this disease all of which terminated happily. It was seldom requisite to resort to general depletion. If the headach was very severe a few leeches removed the pain. The routine of practise was as follows. On admission an emetic was administered which cleared the stomach and opened the skin, this was followed by Calomel gr. VI: P. Antim: gr. III. ft. Pil: I. H. S. sum: and by P. Jalap: Comp: gr. XXV. Cras mane. The skin was kept open by a solution of 1½ grain of Tartarized Antimony to a quart of water, a wine glass full to be taken every hour; mercurial action was then kept up till the gums became affected or the fever gave way, both which events took place nearly at once. Blisters were sometimes required to remove local oppression, and finally tonics were used to restore the tone of the stomach and warm alteratives to promote healthy secretions from the Liver and kidneys.

It is a point of great moment for all military forces (especially where there is a scarcity of good diet for the sick,) who are exposed to these malignant fevers, that Medical officers should be as sparing of the blood of their patients as possible, since dropsical effusions for want of proper nutrition are a frequent occurrence resulting from debility and want of action in the vascular system.

In the European Patient depletion to a large extent is positively called for to save life; it therefore is a necessary evil. But in the native from his habits of body assimilating him more to these climes, the blood, which in him is always thinner than it is in the European, and which appears to be

* Dr. Conwell who saw some cases of this fever here, supposed that this was peculiar to this disease, and he denominated it Pinang Fever. I think the increased vascular appearance was produced by the increased action required by the heart and arteries to propel their diseased contents and the increased blush acquired after exposure to the air, was the consequence of Oxygen absorbed from it.

not

not so easily disorganized by noxious inhalations, can flow through all the extreme vessels without producing dangerous congestion, and that to such an extent only as can be removed without depletion; by means of antimonials, mercurials and counterirritants.

Mercury. In a brief way touching upon the wonderful influence that Mercury (in whatever form administered so as to affect the system) exerts in putting an immediate check to this, as well as all other acute intertropical maladies, I was induced by perusing the works of that enlightened and elegant writer Dr. James Johnson, who, it must be allowed; is the progenitor of the present active and extended system pursued in the treatment of tropical diseases, to be one of the happy followers of his doctrine. And it is to be hoped that all who follow his precepts will have equal gratification and success therefrom. In the first place then this medicine whenever it produces a healthy action in the glands, more particularly in the Liver, subdues this fever; but extended practise must point out, that in acute diseases this rarely happens till ptyalism is established, when the petroleum or tarlike dejections indicate that the gall bladder has gorged forth its long inspissated and diseased tenant. There is little further use for its influence excepting to keep up a gentle action in the glands. The case of Lieut. C. is the only one in which I have seen life saved in this fever without its being through the medium of Mercury carried to the length of ptyalism, and I look upon it to be a matter of the most essential importance to the welfare of our fellow sojourners in India that this fact should be particularly enquired into. Facts are stubborn things and I uphold my opinions on them alone. Some medical men suppose its influence is not required. I will conclude my remarks upon it with the words of that celebrated practitioner Dr. Chisholm on the administration of it in the malignant Pestilential Fever P. 221. "Are "we then from vain and unfounded apprehensions of this kind, from reason- "ing drawn from false premises or from the suggestions of uninformed or "prejudiced minds, to yield up the result of our own frequently reiterated "experience to relinquish the best aid we can bring to the relief and sup- "port of our fellow creatures suffering under so direful a malady? forbid it "humanity! forbid it truth! forbid it heaven!"

Cold affusion. Cold affusion is also an excellent auxiliary in the treatment of this fever, but should only be used in the hot stage. It then retards congestion by creating consequent diaphoresis, and acting as a tonic on the nervous system and stomach; and at all times when the head or other parts feel unnaturally hot they may be sponged with vinegar diluted with an equal quantity of water, with much comfort and advantage to the patient.

Purgatives. The requisite and immediate use of purgatives and enemas has already been alluded to. When the canal has once been well emptied, occasional doses of Castor Oil with Tincture of opium will best answer an aperient object.

Drinks. Frequent draughts of Camphor mixture and effervescing drinks are to be recommended in all stages of the disease. Should there be a deficiency of action in the kidneys the Spirit: Æther: nitrosi will be found to be a good addition to them. I have seen the Nitrate of Potass and Carbon: Ammoniæ Saline mixture as recommended by Hillary in the West Indian fevers used; but I cannot say I have ever seen any advantage derived from it. Stimulants may be sparingly given immediately congestion has been removed and encreased according to circumstances. Port wine I have found to be the best.

Diet. Nutritious diet will be requisite to uphold the patient even before ptyalism appears, and most unquestionably afterwards. It ought to be given in small quantities at a time, but frequently.

Tonics. Tonics although they have not the powers of counteracting the poison in the blood or preventing febrile symptoms, yet, when these have been removed by other means they have the effect of giving tone to the Stomach and energy to the nervous system.

Change of Air. Change of climate particularly a sea voyage will permanently re-establish good health. The inhalation of a pure atmosphere, and the undulating motion of the ship produce each their beneficial effects.

General Remarks. I cannot say I have ever seen any real case of this fever pass into Intermittent or Continued fever. They have either terminated fatally always before the 9th day or made a rapid march into Convalescence. It will be but repetition here to again go through the treatment, as it has been detailed in my observations on this fever in the Burmese Country. But I must briefly with every deference to the opinions of many of my professional brethren who have treated that disease, state, what appear to be the immediate measures called for. 1st to remove the cranial congestion by depletion and counterirritants. 2ndly to clear the alimentary canal by Purgatives and enemas. 3rdly to improve the condition of the blood which requires oxigenation, and excite the glands into action, both which objects are attained by mercury when it affects the system; and 4thly to support the patient by tonics, wine and frequent nutrition.

In most respects this type of fever appears to resemble the congestive Typhus, as described by Dr. Armstrong in his work on Typhus Fever from P. 224 to 254. No system of treatment that has ever come under my notice bears so nearly on the one I have found most successful as that laid down by him. The following extracts from that part of his writings shew that he has founded his opinions upon a solid foundation and that they are the emanations of an extended experience and a capacious mind. On Depletion, P. 227. "In the severest cases of the Congestive Typhus there is "from the beginning great APPARENT debility which speculative men have "considered as *real*, and which they attributed to the direct influence of the "contagion as a sedative, without ever reflecting, that it chiefly depends on "the changes which take place, in the circulation, and that is no more to "be accounted positive exhaustion, than the loss of muscular power, which "precedes and accompanies the threatenings of genuine apoplexy, to which "disease in fact, this form of typhus has often a most forcible resemblance. "In general it comes on very suddenly: and what magical change it may "be asked, has been wrought in the system, in the period of a few hours, "and, that the subject, who the moment before his sickening might have "been largely bled without the least prejudice, should now, that he is actually indisposed be all at once pronounced incapable of bearing the "smallest abstraction of blood? To permit ourselves to be influenced by "preconceived theories and puerile fears on such emergencies is in effect "to conjure up ideal phantoms which paralize our energies, when they are "most urgently required." Again in the same part; "It is the very error of "the schools to avoid early depletion on account of supposed exhaustion; "and it is truly surprising on what slender grounds men of sagacity and "even of great experience have rejected venesection in congestive fever." On the same subject in P. 237 he says. "Venesection in particular can only "be beneficially used at the very commencement of the most severe cases "of this kind." This is very true; when effusion has taken place in consequence of Cranial Congestion it only hastens dissolution. The febrile symptoms indicate throughout the pressure on the brain and consequent loss of nervous action. My learned friend and preceptor Dr. Thomson in his lectures on Inflammation P. 117 says. "The headach, pain of the back, anxiety "and restlessness, which occur in symptomatic fever are most probably "affections of the nervous system; they seem to be almost essential symp-

toms

"toms as they are present in a greater or less degree during the commence-
"ment and progress of almost all fevers." In no fever except in the malig-
nant pestilential as described by that venerable author Dr. Chisholm on Tro-
pical climates P. 175 are these symptoms more urgent than in this, but how
soon do they all give way to immediate depletion and the action of mercury.
The state of the blood is very deserving of notice and I trust at some future
period we shall be better able to say how such extraordinary changes take
place in this fluid, from the action of poisonous inhalations, as in this fever,
typhus, the yellow remittent of the west Indies, the plague, rubeola, scarla-
tina, small pox and the epidemic cholera of India; sanguineous congestion
taking place in each of these variously, and in each, nature making an effort
Final General Remarks } to throw off disease by a different process. In the symptoms of the
2d species of the plague, as described by Sir Brooke Faulkner, in the
Edinburgh medical and Physical Journal, and in the Congestive Typhus of
Armstrong a striking similarity will appear to those in this fever. That na-
ture attempts to cast off disease in the congestive Remittent by the suppur-
ation of glands I have endeavored to point out in Lieut. C's case at Rangoon:
Two other cases came under my notice of this fever in India, where suppur-
ation took place, in one of the Submaxillary glands as a finale in one pa-
tient; and in various parts of the body, in the other, in large boils: the
first of these died from the Abscess having not been opened, and the sys-
tem supported with nutrition, tonics and stimulants. A directly opposite
plan being adopted in the other case, he recovered. There is no apparent
inflammatory action in most of the worst cases of this disease; the blood
never shews (that I am aware of) a buffy coat. It is not therefore to reduce
Inflammation that I should recommend the detraction of so much blood, but
to prevent the congestion in the brain of this diseased fluid, thereby putting
it out of the power of the exhalants to secrete the serous fluid in the brain
and spinal canal. The energies of the system can then be supported by
stimulants and nutritives, till mercury has equalized the circulation and im-
proved its condition. That there is here always a tendency to putrescence
and gangrene without symptoms of active Inflammatory action I believe, as
may be remarked from the appearance of the spleen and great intestines on
dissection, where the former is found to have lost its natural continuity
from exceeding venous congestion of dark thickened blood, and the latter
to have constant venous congestion with incipient ulceration or passing into
gangrene, and in some cases there is a similar appearance in the Liver and
Stomach, where the patients have been affected with the dark colored vomit
in the last day of Life.

REMITTENT NERVOUS CONGESTIVE FEVER.

1st Case. The following is a short abstract of the first case of this
Fever I treated in this Island, where I understood it had always proved fatal.
In May 1827 I was called to see Mr. J. R. an Indo Briton of a spare habit
of body and sanguine temperament; previous health good; he could only at-
tribute the attack of fever to exposure to the sun. He had been ill for a day
before I saw him. I found him labouring under the usual symptoms of re-
mittent Fever, viz. violent headach, eyes suffused, breathing hurried, pulse
120, hard, skin hot and dry during the paroxysm of fever, which was followed
by cold clammy sweats, tongue white and arid, thirst great, bowels torpid,
urinary secretion scanty: no appetite, some irritability of stomach, accom-
panied with great anxiety and restlessness. On the first day I bled him
largely till the cranial congestion was completely removed, cleared his bow-
els with calomel and castor oil then ordered him the following Pills R. Ca-
lomel gr. XXX. Pulv: Antim: gr. IX. Pulv. opii gr. 1½, Divid: m: in

Pil.

Pil. III. one to be taken every 4th hour 'till the fever ceased or ptyalism came on; the bowels were kept open by castor oil. This treatment was continued for 5 days; still the fever continued, he became delirious, his tongue black, dry and husky, and the dejections which were green and slimy, became more frequent and bloody, the tenesmus was very distressing and to all appearance dissolution was near at hand; a large blister was applied to his head, emollient enemas were used to check the Dysenteric symptoms, his system was supported with strong soup, the mercurial course was persevered in, the fever, delirium and black tongue still continued. On the 6th day the Dysentery was relieved, when on the 7th day, when, he had taken upwards of 350 grains of calomel combined as above mentioned, ptyalism came on and all bad symptoms vanished, he required frequent nourishment and wine to renovate his system after so dreadful an attack; he became convalescent on the 13th day, and by the 21st June he was restored to health.*

2nd Case. F. C. S. Esquire P. C. S. aged 19; one year in India; of a plethoric habit of body, and sanguine temperament; previous health good. On the 24th May 1827 I was called to see him and found he had been ill for 3 days with fever: the exacerbations came on twice during the 24 hours. The headach which had been so violent since the commencement of the attack was nearly gone, but there was much heaviness about the head, the pupils dilated, the eyes watery, the skin covered over with a cold clammy sweat, pulse small, weak and averaging 96, bowels torpid, dejections clay coloured, tongue dry and brown; much thirst; irritability of stomach, and pain in the sigmoid flexure of the colon. General depletion could not now be used, cranial effusion having taken place. Leeches were applied over the seat of pain in the colon; mercurials, purgatives, enemas, blisters to the head and between the shoulders, mustard sinapisms to the legs, internal stimulants of different kinds were all used in vain to rouse the nervous energy of the sinking system, to produce an equilibrium of the circulation or establish a healthy action in the glands. No symtomps of ptyalism ever appeared. The dejections from the bowels as is generally the case were green and slimy, he became comatose on the 6th day from the commencement of the fever and expired on the 7th. In the post mortem examination, the cranial effusion seemed to have been the cause of Death. The membranes of the brain were found much injected with dark blood; on removing the dura mater about oz. $\frac{1}{2}$ of serous fluid escaped. There was some of the same fluid between the arachnoid coat and Pia mater. The blood vessels of the membranes contained large globules of air separating the blood in many places. The bleeding points of black blood were very distinct on many sections through the substance of the brain. The ventricles contained about oz. 1 of clear serous fluid. The spinal cord was blanched and had an effusion of the same fluid between it and its Theca. The lungs were healthy but gorged with dark blood. Liver the same in both respects. The vena portæ much distended with very black blood. The gall bladder full of dark bile. Stomach and small intestines lined with a thick viscid, slimy mucus. Great intestines the same, and incipient morbid disease in the sigmoid flexure of the Colon. This is most frequently the case in this fever. There were no other appearances worthy of remark in this dissection: the body was examined as soon as possible after death.

REMARKS.

This was one of the most healthy robust young men in India and

* Since the above observations were made 9 years ago, this young man has enjoyed excellent health.

had

had enjoyed perfect health until this attack of fever put an end to his career. Had depletion been used to a sufficient extent at an early stage of the disease, so as to have prevented the occurrence of effusion, and his system brought under mercurial action, I have no doubt but the issue of his case would have been favorable.

3rd Case. 1st August 1827. Captain B: aged 30. 14 years in India; very tall and slender; of a sanguine temperament; has been a hard liver for many years; had a severe attack of Hepatitis several years ago, which rendered it necessary for him to go to the Cape of Good Hope: has been for the last 4 months in a delicate state of health, which was induced by exposure to the sun and free living: has lately had two falls from his buggy. To remove the headach produced by the last I found it necessary to take away about 30 ounces of blood from the arm which relieved him. He has been complaining for the last 3 or 4 days, but he thought the headach would go away and did not take medical advice: he has now called me in, and I find him as follows. He complains of violent headach which is most severe in the occiput; he has had short fits of fever followed by clammy and cold sweats; his eyes are watery and painful on pressure; countenance pale and haggard; stomach irritable; tongue very foul and furred yellow, bowels irregular, evacuations deficient of bile; pulse irregular, obstructed, small and hard, running from 96 to 110; general weakness very great; extremities cold and clammy. Admov: Hirud. XL. Capiti statim. R. Calomel. gr. VI. Pulv: antim: gr. III. ft. Pil. I. H. S. Sum: et ol: Ricini oz. I. cras mane sum.

5 P. M. The leeches have been removed and the headach has left him for the present; he is still covered with a cold clammy sweat; his pulse is low and sinking: friction with hot flannel is used to the extremities: he is to take a wine glassful of hot sherry and water, when inclined to drink. From the extreme debility present it seems that effusion has already taken place. The following is an abstract of the remainder of the case. He would take no medicine for 24 hours after I saw him; depletion could not be carried further; mercury was administered without taking any effect on his system; blisters were applied to the head, sinapisms to the legs when they became cold. The fever returned twice during the 24 hours for 4 days, when he became completely exhausted, was delirious occasionally for a day and expired.

On dissection, the usual appearances of the blood vessels of the brain much distended with dark blood were present, also effusion of clear serous fluid between the membranes, in the ventricles and along the spinal canal, in all about 2 ounces of fluid. The thoracic cavity presented nothing worthy of remark. In the Abdominal, the liver was large, spongy, deficient of blood and had two scars, the marks I suppose of old abscesses which had there formed and been removed by absorption. The mucous membrane of the alimentary canal was throughout in a diseased condition. Nothing in the other organs was worthy of remark. The internal coat of the arteries had a slight blush as is usual in these cases.

REMARKS.

The constitution of this officer was completely undermined previous to the attack of this fever, and by not sending sooner for medical aid, and then objecting to take the medicines prescribed, he removed the little chance there remained of a favorable issue in his case.

4th Case. October 6th 1827. Captain D. aged 26; eight years in India, of a spare habit and melancholic temperament; previous health good; attributes his present illness to exposure to night air and fatigue in walking up to the top of the great Hill on the night of the 5th Instant.

Says

Says he has had an excruciating headach all day; had a hot fit of fever which continued one hour followed by a cold sweat, hurried respiration and much restlessness, great thirst, irritability of stomach, also pain and fullness in the præcordia, accompanied with great mental anxiety. ½ past 8 P. M. I have just seen him for the 1st time and find him suffering much from his headach; the pain is more particularly severe in the eyeballs on pressure; his head is very hot; his body is warm, but the extremities are cold and clammy. Tongue furred white and is dry. Pulse 96, small hard and irregular; urine scanty; bowels open. V. S pleno rivo ad deliquium. Headach completely removed by the bleeding; the heat of the head is also reduced. 9 P. M. Headach and heat of head have again returned: Rept: V. S. ad deliquium. Headach is again removed. Pulse 90 small and soft. ½ past 9 P. M. Headach and heat of head have again returned, but the extremities have continued cold and clammy. Pulse 96 small and harder, breathing still oppressed. Pediluvium et V. S statim ut antea ad deliquium. ¼ to 10 P. M. Headach quite gone; head cool and covered with a gentle diaphoresis: heat of all the body natural, pain in the eyeballs removed. Has had a glass of hot brandy and water, stomach not so irritable. Pulse 90, small and soft; breathing easy; restlessness and anxiety gone. Has lost in all oz. 46 of blood. The whole but more particularly that first drawn is very thick and black: it looks like black currant Jelly. R. Calomel gr. X. ft. Pil. I. H. S. S. Cras mane ol. Ricini oz. 1½. cum aqua menthæ oz. 2. sum:

7th 8 A. M. Past a good night, no return of headach or accession of fever. Pulse 80, small soft: heat of body general and natural. Tongue moist and furred white. Has had 4 copious dark brown dejections; urine more copious. To drink Congee, barley water, black tea and 4 oz. of Camphor Julep 3 times during the day. R. Calomel gr. XXX. P. Antim: gr. XII. P. opii gr. IV. m: bene et divid mass: in Pil. VI. unam quartâ qqâ horâ sumat. 1 P. M. The hot stage of fever has returned with some headach, restlessness and rapid breathing. The whole body is hot and he has much thirst. Admov: Hirud: XX. ad temp: et emplast: lyttæ mag: super sternum. 8 P. M. The exacerbation was of short duration: he is now easy; has no headach or other unfavorable symptoms. Cont: med: om:

8th. Passed a good night; no fever; skin open and natural; heat general; has a brassy taste in his mouth and the breath has some mercurial fetor. Pulse 86 small and soft. Tongue white and moist; bowels freely opened; dejections dark yellow, urine copious and straw colored. Cont: med: om: 8 P. M. Ptyalism has come on; all bad symptoms have disappeared. Omitt: Pil. et Cont: mist: Camph. R. mist: purgans oz. III. Cras mane sumed:

9th. Feels weak, had a good night and is quite free from disease.

REMARKS.

This officer had no return of fever after this period. His disease was checked before any mischief took place in any of the internal organs; nor did he require much mercury to bring on a healthy action in the glands.

5th Case. 28th December, 1828. A. B. Esquire, P. C. S. Aged 22. three years in India; of a spare habit of body; previous general health pretty good; mode of living regular, was attacked with Penang Remittent or Nervous Congestive Fever on the 26th Instant, which was brought on by exposure to the sun with wet feet, while snipe shooting; has had no medical assistance till now 9 P. M. 28th December, with the exception of such as an Apothecary afforded him, who administered some drastic purgatives, which produced a great deal of Tenesmus from which he has had no relief. I visited him at the request of Dr. Conwell at 9 P. M. and found

him

him complaining much of a severe headach which he has had for two days, but now it is much increased; eyes suffused, affording pain on pressure, can't bear the light; breathing oppressed and hurried; has great anxiety and restlessness; much thirst, no appetite, tongue dry and furred white; bowels 5 times opened by the purgatives taken, evacuations scanty, and of a black colour; urine scanty, high coloured, scalding and affording a red gritty deposit. Pulse 126 small hard stringy and not compressible. S. clear hot and dry. The patient says that he had a hot fit of fever yesterday, for two hours, which went off in a cold clammy sweat; he thinks the hot fit is now coming on, as his headach is more severe then, than at any other time. The liver is much gorged, and the whole of the intestinal tube tympanitic.

Diagnosis. Penang remittent or nervous congestive fever.

Prognosis. A fatal termination by congestion in the head and engorgement of the lungs, if the disease is not subdued by the 4th day; also ulceration of the colon and rectum.

Ratio medendi.—Copious blood-letting immediately; large blisters to the head and between the shoulders; cold affusion of vinegar and water to the body; large doses of Castor oil as a purgative with mercurials to affect the system as rapidly as possible. Venesectio pleno rivo ad deliquium Sang: oz. XXX. 10 P. M. Immediately on his recovery from the swoon, says he feels much easier; headach much relieved. Pulse 120 soft; skin moist; breathing not so oppressed. Venesectio ad oz. XX. repetatur statim. ½ past 10 P. M. He fainted on losing oz. 18 of blood; on his recovering from it, says his head is quite relieved; skin now quite open and cool. Pulse 100 soft and undulating; says he has much thirst; to drink toast and water or thin conjee. Emplast: Lyttæ: 6 Digit 7 Dorso. appl: statim: Rj. Calomel gr X. Pulv. Antimon gr. V. M. ft. pil: stat: sumend: cras mane Ol: Ricini oz. 2.

29th 2 A M. Is quiet and sleeps. 6 A. M. Has passed a good night; has no pain in his head; breathing easy. Pulse 100 weak but stringy; mouth very dry; tongue furred white; skin hot but moist; urine scanty and amber coloured, passed since last night only oz. 3. of it. 8 A. M. Oil has operated 3 times; evacuations dark, clayey, and very fetid; is inclined to sleep. P. 110 rising in systole, skin becoming dry and hotter. 11 A. M. Blister dressed, has acted powerfully. 11½ A. M. Has some return of headach, and the hot fit of fever is fast approaching. Pulse 120 small hard and thready; he tumbles about in bed. Tongue very dry and white. Venesectio statim ad oz. XXV. 1 P. M. Syncope not produced, but the hot fit was checked in its progress; skin cool and moist, thirst urgent; to drink barley water. 2 P. M. Complains of much pain in the sigmoid flexure of the colon; has had 3 evacuations of a clay colour, the last of them slimy and accompanied with much tenesmus. Hirud: XXXV. applic: statim part: dolent: Rj. Calomel gr. XXX. Pulv: antim: gr. XV. P. opii gr. IV. M. ft. m. et divid: in Pil: VIII. unam 4. ta qq. hora sumat: 4 P. M. Pain in the sigmoid flexure relieved. Pulse 125 weak and soft; he has some nausea. Enema emolliens stat: administrand: 6 P. M. Has no pain any where, breathing easy. Pulse 120 weak and soft; skin warm and moist; thirst urgent. Enema brought away a very fetid clay coloured evacuation; urine amber coloured and scanty; no deposit from it. 10 P. M. No change. Enema emolliens stat: administ: ½ past 10. Injection has brought away some fæculent matter. He is to take some weak chicken soup.

30th. 3 A. M. Seems to sleep easy; skin open. 6 A. M. Passed a good night; quite easy in every way; no heat of skin; thirst diminished; has some nausea; Pulse 115 weak soft and undulating. Tongue cleaning at the edges. Haust: effervescens: stat: sumend: 7 A. M Continues easy and much refreshed by the draught taken. Contin. Medicament:

11 A. M. Face is flushed; skin becoming hot and dry; mouth parched; eyes sligbly suffused. P. 128 bard and jerking. Breathing hurried; great anxiety and restlessness; some thirst; urine amber coloured without deposit and scanty. Omittr: Pil: Rj. Calomel scr. 1 4ta qq. horâ sumend. Let the body be sponged constantly with cold vinegar and water. 1 P. M. Hot fit has gone off, having lasted ¾ of an hour; skin moist. Pulse 120 softening and full. 4 P. M. Is quite easy; skin cool; T. moist and red at the tip; breathing easy. P. soft and full, 120; has had 3 liquid brown dejections; urine more copious, of a lighter colour, and on standing some time shows flocculi in the centre. To take chicken soup. Habeat statim Enema purgans Ol: Ricini. Cont Calomel. ut antea. 8 P M. Report. by Dr. Conwell; "has had two dejections of a brown fluid; urine more copious, not preserved, character unkown. Pulse large, soft, vessel empties; 130; skin hot rather dry; no pain; quite easy, has slept much, now sleeps. T. margins red, central superior surface furred, moist, less thirst; abdomen meteorised, especially on the left side and epigastric region, generally tense. Countenance good; drowsy; there is no pain or uneasiness in any part; to take red currant jelly dissolved in water or Chicken broth. Room to be kept temperate, not hot." (Signed) W. E. E. C. Contr. Medca. Omnia ut antea. 10 P. M. Continues quiet and easy; is inclined to sleep; has occasional nausea, has had 2 thin brown evacuations. Pulse 115, weak and soft. To drink weak brandy and water. Contr. Medca. Omnia ut antea.

31st. 3 M. Has slept till now; skin rather hot and dry; has had 1 small brown dejection. Pulse 120 harder than it has been for the last 14 hours; mouth dry; some thirst, anxiety and restlessness coming on. Rj. Ol: Ricini oz. 1½. Aqua menth: pip: oz. 2. M. ft. Haust: stat: sumend. 7 A. M. Oil has operated well 3 times, bringing away 3 pints of green vitiated bile and latterly some clotted yellow bile which produced great scalding and uneasiness in the rectum; he is now much relieved. 10 A. M. Has had 3 dejections, amounting to 4 pints of the same character as in last report. He is to drink freely of warm conjee. 11 A. M. The Castor oil is now only coming away and has brought with it about 2 pints more of green and yellow bile with mucus like frogs spawn, producing much scalding in the rectum; the fulness in the course of the colon is much diminished; the anxiety and restlessness gone. Pulse soft undulating and weak, 118. T. moist and cleaning toward the edges. Enema emolliens stat: administrand: Pulv. Jacobi stat: sumend. 1 P. M. Continues easy; skin cool and moist. Pulse 108; in character as in last report. Tongue assuming a brown fur in the centre; apex and edges cleaning. He is inclined to sleep, has taken some chicken soup. Contr. Medicament: ut antea. ½ past 1 A. M. Has a slight return of fever. Pulse 120 small sharp, skin hot and dry. Apply the cold vinegar and water immediately. 2 P. M. The vinegar bath seems to have checked the progress of the fever, he is now cool and easy, has had 3 brown and watery evacuations, urine become clearer and more copious, showing flocculi throughout. Enema emolliens. 4 P. M. Continues quite easy, has had 3 dark green dejections from the Enema; they did not scald him so much as formerly; the fullness in the course of the colon is almost gone. Pulse 108, soft and weak, skin cool but not clammy; thirst gone. Tongue clearing at the edges; countenance a little flushed; eyes becoming lively and clear. Cont: Calomel ut antea. 8 P. M. Has symptoms of a return of fever; used the vinegar bath; says he feels an unusual lightness about his head and a shooting pain in the forehead, mouth dry. Tongue furred brown. Pulse 120 small and sharp; urine amber coloured and scanty; no cloudy appearance; tumbles about in bed; great nausea, stomach rejecting every thing. Rj. Calomel scr. 1 stat: sumend

mend. repetatur quarta qqa. hora. The rest of this is an abstract from the detailed case. He had his head shaved and a large blister applied; the scruple doses of calomel were continued every 4 hours till ptyalism was produced, which event occurred when he had taken 300 grains of Calomel; his tongue which had become dry and dark brown, began immediately to clear; the fever disappeared; and on the 7th day, his dejections assumed a healthy yellow colour, the appetite returned and convalescence was established; the system was supported with strong soups jellies, wine &c. This gentleman was soon restored to health.*

6th Case. May 1829. Wm. H. Esquire, B. C. S. aged 20, one year in India, of a sanguine temperament, and full plethoric habit of body, previous health good; was attacked on the morning of the 27th Inst. with Nervous Cranial Congestive, or what is commonly called Hill fever, from exposure to the Sun and Jungle miasm when shooting on one of the Southern Hills where his family had been residing for some days. The medical officer who was called in to see him on the 28th by his account, treated him as follows. The principal features of the disease were headach, restlessness, anxiety, rapid and oppressed breathing and a hard bounding pulse, 120. He was bled to 18 oz. which relieved the headach and the other engorged organs. He had 1 scr. of Pulv: Jalap: compos: and 10 grs. of Calomel; this medicine did not produce much effect. Some hours afterwards, his medical attendant administered 6 grains more of Calomel with 25 drops of Tincture of Opium. On the 29th he bled him again to the extent of 16 oz. when the pulse which had got up to 120, full and hard, was reduced to 109. He then gave him Calomel grs. 10. Dovers powder gr. 10. Tinct: of opium gtt 30. He has had all along great irritability of stomach, excessive headach, except after the bleedings; the hot fit comes on at noon and midnight and is followed by cold clammy sweats; these continue over the body for some time particularly on the extremities, and are succeeded by a hot and moist skin, which alternately becomes cold, till the hot fit recurs; the head is at all times hotter than any other part of the body; the pains in the eye balls have been incessant excepting for a short time after each bleeding.

I was called in to see him for the first time on Saturday the 30th at 11 A. M. and found him covered over with a profuse clammy sweat; face much flushed; eyes suffused; pupil contracted; breathing much oppressed, with occasional deep inspirations. Pulse 120 hard and unyielding on pressure: Tongue furred with a thick brown crust: Bowels have been much constipated since the commencement of his illness. Has now had 3 enemas which have not brought away any fæculent matter; the dejections in appearance were dark green and muculent. His urinary secretions are scanty, high colored and have a brick red deposit. He has much thirst and speaks quick. He has some giddiness in his head, but has not been delirious. The effusion in the cranium is taking place, there is evidently great engorgement of the lungs; the liver is quite torpid, and the abdomen is very tympanitic.

Diagnosis. Cranial Nervous Congestive or Hill fever.

Prognosis. A fatal termination by the 7th or 8th day from the commencement of the attack, if the cerebral congestion and that of the other organs, as a natural consequence, be not relieved and finally removed.

Ratio medendi. Venesectio ad oz. 30. statim pleno rivo, Emplast: Lyttæ 6 per 7 Digit. inter scapulas applicand: enema Ol: Ricini oz. 2 aquæ tepid oz. 4 stat: immitt: R. Ol: Ricini oz. 2. fiat Haust: st: sum: When the extremities become cold, mustard sinapisms to be applied to the soles of the feet and continued up to the knees. 12 noon. Hot fit has come on

* Since the above stated period, 2½ years have elapsed and this gentleman has continued to enjoy excellent health.

½ past 12 P. M. I bled him as long as the blood, which was black and thick, would flow, and in all got 26 oz. of blood without syncope, which was prevented with a little weak brandy and water. ½ to one. He breathes easier than he did, face not so flushed; when the bleeding stopped, he had an inclination to go to stool, when he had a very copious green fætid dejection. 1 P. M. The clammy sweat has left him, but he is still restless and has much thirst Abdomen still tympanitic, but does not afford pain any where on pressure; he has some nausea; tongue as before described. Pulse 118, small and thready.

30th. 6 P. M. Has been very restless; skin again covered with a cold clammy sweat. Pulse and tongue as by last report; bowels 3 times opened, dejections slimy and dark green. Habeat Pulv: Calomel scr. 1. bis in diem sumend. 9 P. M. Skin now warm and moist; stomach very irritable. 10 P. M. Continues as by last report, has had two dejections of the same character as before; urine still scanty and of a brick red color; has much thirst; he is to drink toast and water or weak tea. 11 P. M. Hot fit recurred; it continued 1 hour, it is succeeded by the cold sweat.

31st. 2 A. M. Has had one dejection as before, otherwise as by last report. 6 A. M. Has had a bad night, great restlessness, tumbling about in bed; breathing rapid and oppressed, heaves deep sighs frequently. His tongue is furred of a deep brown color and is very arid. Skin now hot, but is covered with a clammy sweat. His bowels have been frequently opened, dejections of the same character as already mentioned, latterly a tendency in color to yellow. Eyes not so suffused as yesterday, but his face is flushed, he has now less anxiety and restlessness than he had last night; says he has an occasional giddiness in his head. Pulse 118 small, thready and hard, urine amber colored, urine is more copious, has floating flocculi in it and is of an amber color: he says he has no pain any where. His head to be shaved and a large blister applied to cover the whole head. To take a little weak chicken broth if possible at 10 A. M. The Calomel to be repeated at 11 A. M. Habeat enema emolliens statim. 1 P. M. Has been very restless all day, rolls about much and has excessive engorgement of the lungs. Skin hot and cold by turns, tongue covered with a thick brown fur; has much thirst. Pulse irregular, starting, incompressible and running 140. Bowels frequently opened, evacuations green and muculent, latterly they had a yellow tinge, urine scanty and high colored. Emplast: Lyttæ ad epigas: region. 4 P. M. Habeat statim Calomel scr. 1. continues as by last report; no appearance of ptyalism; his teeth are sore but his mouth is dry. Large sinapisms to be applied to the legs immediately from the knees to the soles, to take some chicken broth and some sago if possible. The cold sweats still continue over his extremities, the pupils of the eyes are becoming dilated, the consequence of cranial effusion. The lungs are much oppressed and I suspect dissolution will take place in about 30 hours hence. As the system cannot be affected with Mercury I see no chance of a happy issue. 5 P. M. The large blister applied to the head has taken effect, but has given him much pain, he complains also much of the blister over the epigastric region; still his mouth is quite dry. Tongue, pulse and skin have the same unpropitious characters, as are noted by the last report. 11 P. M. Has been quiet for some time and the blisters seem to have relieved the cranial congestion and pulmonary engorgement for a time; no appearance of ptyalism.

1*st. May.* 1. A. M. No change since last report. The extremities are now warm and the cold sweat has left him for some time; he complains much of the pain of the blisters and sinapisms. Friction is to be used to the body, where not covered with blisters and sinapisms, when the coldness is felt approaching. Tongue dry and furred brown. Pulse 135, irregular and thready; skin of extremities and body of an equal temperature and warm.

6 A. M. I have been up all night with him, he has had a better night than I could have expected, the system seems rallying, he speaks more firmly and is quite collected, the blisters give him much annoyance. Tongue is covered with a deep brownish yellow fur and is quite dry. Pulse 136 small, thready but regular; skin cool but not moist; mouth sore but no ptyalism; appearance of countenance much improved; eyes not so suffused; to take some chicken soup or tea. 9 A. M. He continues easy and says he feels his own weakness, has passed a slimy green evacuation, with the appearance of white threads in it. Pulse 130 fuller and softer than it has been for the last 30 hours. Tongue is red at the tip and edges, but still dry and covered with a dark brown crust. No appearance of saliva from the glands in the mouth, he has just passed 4 ounces of amber colored urine, which on standing some time shows clouds or flocculi in its centre; there is no deposit from it. At 10 A. M. Calomel gr. 20. sum. 1 P. M. Has had 3 dejections of the same character as already mentioned; skin hot and moist. 6 P. M. No pain any where but from the blisters, breathing rather oppressed and hurried. He is much refreshed, during the hot fits of fever, by the use of vinegar and water half and half of each, sponged over the surface of the body; has taken an effervescing draught which he found very agreeable. 10 P. M. Habeat statim Calomel scr. 1. et Contra medicamenta omnia ut antea. 11 P. M. The hot fit has come on as usual about this time of night.

2nd. 1 A M. The only change since yesterday is that the pupils of the eyes are rather more dilated and he has a vacant stare. Complains of no internal pain; thirst continues and is relieved by effervescing draughts every hour, mouth is much parched and he speaks very quick, and is very irritable, does not like to have people near him: has had two large dejections of the same character as before mentioned. 4 P. M. Skin still continues hot and moist. 5 A. M. Has taken 1½ ounce of medicated Castor Oil; continues as by last report. 7 A. M. Mouth dry and the mercury taken seems to have no effect on the system. Tongue furred, dark brown and dry. Pulse 140, small, hard, thready and irregular. Bowels have been twice opened, dejections as before, dark green and slimy, face much flushed and he stares vacantly. Pupils of the eyes are more dilated, his mind wanders occasionally, he is very restless and has passed about 2 pints of urine like decoction of bark. 10 A. M. Habeat statim calomel ut antea. 11 A. M. There is a rapid change for the worse, the extremities are becoming cold. Another large blister to be applied to the head and sinapisms to the feet as before. He tumbles much about in his bed. His breathing is much more hurried and oppressed than it has yet been. He has much thirst and has taken frequent effervescing draughts; the pupils are becoming more dilated. Stomach continues very irritable and the only nourishment he can take is a little strong soup. Has pain, but from the blisters; and he does not complain of them unless asked about them. He wanders occasionally, delirium is fast approaching. ½ past 11 A. M. Cerebral congestion increases much, the pupils of the eyes are much dilated, the pulmonary engorgement is excessive. Pulse 140, intermitting and very weak, body cold and clammy. The sinapisms now applied to the legs give him much pain; he tumbles much about and moans. His lips and teeth are becoming covered with a black crust. Stimulants all used to rouse the arterial system, but to no effect. Dissolution is fast approaching. ½ past 12. He has become comatose. Has had some thin green involuntary dejections. Pulse intermitting and almost imperceptible; stimulants and friction are continued. The body has assumed quite a variegated marble appearance. 2 P. M. Continues in the same state, breathing very rapid and oppressed. 4 P. M. The Pulmonary engorgement is excessive. 20 minutes past 4 P. M. after a short struggle he expired easily. Owing to peculiar circumstances, an examination of the body could not be obtained.

REMARKS.

REMARKS.

The case of this fine young man cut off with this dire form of fever in the prime of youth exactly terminated as I prognosticated the first minute I saw him on Friday morning; the cerebral effusion had then taken place, and it may be seen by the practise I pursued that my only hopes of saving the life of the patient rested on counterirritants and mercurials. He was too far gone for me to use depletion to any extent; as it would only have brought on dissolution more rapidly. Had depletion at any time within the first or second day been used to the extent of from 70 to 100 oz. there is little doubt but the life of the patient would have been saved; as in extensive practise in this dreadful form of fever I have never but once seen a person recover, where depletion was not used in the first instance to a large extent, and where the disease runs on for 3 or 4 days it becomes completely out of the reach of medical skill. The cranial effusion takes place, the lungs become much engorged, the abdominial viscera completly torpid; and death puts a close to the melancholy scene about the 7th or 8th day from the commencement of the attack. Even after the congestion is removed and prevented by large depletions and counterirritants, it is generally necessary to bring on a healthy secretion of all the glands in the body by mercurials.

In this melancholy case, it was found impossible to produce a healthy action of any of the glands, the whole system having lost its nervous energy.

DYSENTERY ACUTE AND CHRONIC.

Dysenteries both acute and chronic are of very frequent occurrence among the European Inhabitants of this Island. The acute and very violent forms of this disease, met with here, arise from disease of the Liver. In the fatal cases of it which I have examined, I have generally found that organ suppurated in one or more places, occasionally having a number of tubercles. In these, I never could get the systems of the patients under the influence of Mercury, and they sunk in eight or ten days from the date of their admission. These very bad cases were chiefly men from H. M. Ships who often allowed the disease to run on for some time before they reported sick. In the European Detachment of Artillery during 1828, two violent cases of this disease occurred, where I found it was impossible to check the sloughing in the colon and rectum by any means, nor could their systems be affected by mercury: these patients died in 8 and 9 days from the date of their admission into Hospital. On dissection I found the mortification in the colon very extensive and in each of them large abscesses in the Liver. The most active treatment was followed in these as well as in all other cases of this disease, viz. in the first place large general and local depletion; the latter by the application of 10 leeches at intervals to the extent of from 20 to 30 to the rectum, and in some cases the same number over the seat of pain; clearing the primæ viæ with Castor Oil and emollient injections, and bringing the system of the patient as rapidly as possible under the influence of mercury. The most effectual mode of doing this I have found to be by frequent doses of Calomel, antimony and opium, to the extent of scr. $1\frac{1}{2}$. of Calomel, gr. 10. of antimony and 3 of opium during the 24 hours, until ptyalism is produced, using the Castor Oil every second day as a laxative sometimes with the addition of 30 or 40 drops of Tincture of Opium to it when required; also the continued use of thick congee injections to which are added these emollient ingredients, Tinct: of opium, Olive Oil, each containing one drachm of

Ipecacuanha

Ipecacuanha powder which appears to have a specific effect in healing the diseased intestine. This, with fomentations and blisters, comprise the general and most successful modes of treatment in this disease. It appears to me to arise from a want of bile, as in the worst cases it does not give way until all the glands of the body (more particularly the liver) are set in full action through the influence of Mercury; then the dejections point out what prognosis is to be formed and what course is to be followed. In the fatal cases I always found the gall-bladder and its ducts choked up with thick vitiated bile, in appearance resembling a mixture of Petroleum and snuff. It may be remarked that immediately the mouth becomes affected, the dejections have often this or a tarry appearance, succeeded by light yellow evacuations; and a speedy return to convalescence is the result. Where the disease is very urgent I give scr. i. doses of Calomel every 4 hours until Ptyalism is produced, or the disease is subdued. I have found much relief to the patient where the tenesmus is very distressing from introducing a plug of opium of 5 grains into the rectum. Where affecting the system with mercury is such a desirable object in this as well as all other violent Tropical diseases, the mode of doing this by an able German Practitioner in Java more particularly in the violent forms of remittent fever there, has lately come to my knowledge viz putting the patient into a hot bath as hot as he can bear it and rubbing in large quantities of mercurial Ointment over the abdomen; in almost every case it has an immediate and the desired effect, and the practise appears to me worthy of trial.

In chronic Dysentery which also arises from a diseased condition of the liver and from want of a sufficient quantity of bile and that secreted being of a vitiated quality, I have found the blue pill and Ipecac: have a most happy effect in soothing the intestinal canal and improving the action of the liver. The Extract of Hyociamus is occasionally a good addition to this pill, and the continued use of small dozes of Castor Oil is essentially necessary. These as internal remedies, with topical bleeding and vesications over the part chiefly affected, comprise the general form of treatment of this disease. Enemas of an emollient kind are also used where there is any degree of tormina and tenesmus.

ACUTE HEPATITIS.

Hepatic diseases of the most acute kind occur here frequently among the Europeans, particularly in March, April and May, which are the hottest months of the year on this Island. The great number of cases of Hepatic disease we have here in proportion to the number of European inhabitants, may be attributed to two predisposing causes. The first is the great and direct power of the sun, the rays of which are doubly reflected from the Hills to the valley, also from a want of a free circulation of air, more particularly of the westerly winds, which are intercepted by the mountains, added to this a constantly hot, damp, and muggy atmosphere. This condition of the air appears to me to arise from the frequent showers of rain which fall on the Island itself and the main land, which like the rest of the Malayan peninsula is completely and thickly covered with jungle affording the sun full scope for continued evaporation as the earth never becomes quite dried up as it is at some seasons in India. Of all the winds that blow here, those from the south are the most unhealthy, they are more highly impregnated with noxious vapours, from the district of country over which they blow for many hundred miles, being covered with low mangrove jungle, they are very productive of intermittent fevers, and Catarrhs. The second cause of Hepatic disease is the immoderate use of ardent spirits in which both European soldiers and sailors indulge, whenever an opportunity offers; which when continued in, brings on either violent disease of the Liver, in which here, there is a great tendency to suppuration, accompanied often with very distressing dysenteries,

or should these diseases not be produced by dissipation, continued fevers with great determination of blood to the head and loss of reason are a common result from some deleterious qualities in the spirit called *sham shou* manufactured by the chinese. This spirit brings on inflammation of the membranes of the brain, which gives way in 10 or 12 days to depletion, vesications to the head, a strict antiphlogistic regimen, and small doses of camphor and opium to quiet the nervous system. In acute hepatic disease, the only treatment that can be successful is in the first instance large general and local depletion, having the canal cleared out as speedily as possible by the use of mercurials, combined with antimonials and small quantities of opium, to get the system affected the length of Ptyalism, as speedily as practicable, or till the evacuations assume a healthy aspect, with large vesications over the seat of the disease, which are to be persisted in, should the pain not be removed by the depletion used, and the first vesication. When from the symptoms it is evident that suppuration has taken place in the Liver I have found the following method of treatment successful (especially in the last 7 cases of this kind that I have had) viz. as internal remedies small doses of calomel, sometimes combined with Hydriodate of Potass to excite the action of the absorbent system and the kidneys; laxatives ofCastor oil and purgative mixture alternately; the patients diet to be light and nutritive; and a course of large setons over the seat of the disease, until all bad symptoms disappear. A change of air and a sea voyage will assist nature much and generally ensure a perfect recovery from this disease.

Intermittent Fevers are of frequent occurrence particularly among the natives, but when not accompanied with extensive disease of some important organ are seldom fatal when treated with a sufficient quantity of mercury, to correct biliary derangement, and Quinine to establish the nervous energy. Of course when there is much determination of blood to any particular part bleeding general or topical must be resorted to, but it is a practise seldom required.

Diarrhœas are not frequent among the European population and seldom prove fatal; they readily yield to calomel and opium, Pulv: Ipecac: Compt and Castor Oil. Diarrhœ accompanied with aphtha, has been very prevalent this year among the higher classes here, and resembled exactly the aphtha chronica of the west India Islands as described by Drs. Thomas, Chisholm &c. For a more particular account of it I refer the readers to Dr. Ward's remarks on the diseases of this Island.

Epidemic Cholera has not existed here for the last 3 years. Some cases have appeared resembling cholera in all the symptoms, but causes could be assigned for the attack, such as eating or drinking articles disagreeable to the stomach or intestines, dissipation, or sleeping on the cold earth in the open air. The following is an extract from my notes on this disease as it appeared at Prome in the Burmese Country in the end of 1825, since which period I have followed the same mode of treatment with much satisfaction. When our army had marched in advance from Prome in the end of November 1825, the Epidemic Cholera burst forth with great virulence among our European and Native troops, but fortunately it only continued for a few days. The country was quite parched from want of rain; the wind was from the N. East cold and raw, at night bringing the thermometer some degrees under 60°; from the lull of the wind the great heat of the sun expanded the mercury during the day above 90°. In this state of the atmosphere then, it made its appearance, and was of a very peculiar and fatal kind among the natives. The 22d Reg M. N. I. of which I had medical charge was encamped on the Picket hills near Prome; these are small green hills free from jungle elevated about 300 feet above the town and had always been considered healthy

healthy. In the course of a few days from one of our outposts I received 15 cases and from 3 other guards 15 cases more of the worst form of Cholera I had ever seen. These men were taken ill during the night generally or in the morning after having been exposed to the cold night wind when on sentry; some of the patients attributed the attack to having eaten cold rice cooked the day before, out of this number 14 cases terminated in death, some of them died almost immediately after they were brought into hospital. The hospital of the regiment is about a mile from these outposts; the patients were carried by their comrades in a *cumbly* immediately they were attacked, yet in some of them in the short period of an hour there was a general collapse of the frame, which could neither be excited by internal or external stimulants. When admitted they said they had vomited and been purged once or twice; the dejections were of the usual conjee like appearance; they complained of no pain and only of great prostration of strength; had no spasms; body collapsed, particularly the face; skin particularly of the extremities quite cold. Pulse at thewrist scarcely perceptible; tongue white and dry; had much thirst, called for cold water; said they wished to go to sleep, and many of them did go to sleep in that way, and passed easily and quietly into the long sleep of death. The remedies that were used were the most powerful external and internal stimulants with Calomel to the extent of 30 grains with Ipecac: and opium given in divided doses of 5 grains at each time every third hour till the disease terminated happily, or in death, which was generally the case within the first 24 hours. If the disease was checked, the prima via was cleared out with Castor oil, and the strength of the patient supported with whatever nutritious food was procurable. When reaction was produced by medicine the change in the evacuations from the conjee to the bilious feculent appearance, was a sure sign of returning health. 3 of the afflicted who recovered passed white Lumbrici each nearly a foot in length and upwards of an inch in circumference, one was thrown off from the stomach the other two from the rectum; however these had nothing to do with the disease, for they were common among our troops in consequence of their bad diet; I never in other instances saw them above half the size of those here mentioned. Among the recruits of the Detachment of H. M. 47th. 87th. 89th. 41st. and Royals I had 13 cases of spasmodic cholera of which all terminated favorably. The treatment I adopted may be considered too active, but this desperate disease requires a desperate remedy. If seen immediately after the disease came on and the patient complained of pain in any important part I bled them to the extent of 2 or 3 lbs. and administered Calomel drs. 1. Tinct. of opium fld. drs. 2. washed down with brandy oz. 4. Almost immediately after this dose, the spasms and pain ceased when with the use of strong rubefacients, the extremities became warm, and sleep came on which continued for many hours; when the patient awoke he had a dose of castor oil, which brought away large and feculent evacuations, and debility was the only complaint the following day. This dire disease continued to rage among our troops and the natives till the end of December, the wind still continuing from the N. E. when we had 2 days of heavy rain the wind at the same time changing to S. W. This put a stop to the Cholera, but it introduced the small Pox, which was even more destructive to the natives than the other disease. Our troops suffered but little from it in consequence of our vaccine protection. My reason for having used such large doses of Calomel and Tinct. of opium in Cholera was, that when it raged at Madras in 1824, I saw many cases which were treated with small and frequent doses of these medicines terminate fatally, and I believe that scr. 1. doses given every hour for 3 hours will not act so beneficially in allaying the irritability of stomach as when dr 1. is given at once in the way I have mentioned; it puts a stop to intestinal irritability and consequently muscular spasm; it excites the depressed nervous system, establishes an equal circulation of the blood, and makes the

the dormant Liver perform its functions. Many conjectures have gone abroad concerning the cause of this scourge of the Eastern World, but all that has been said is vague and unsatisfactory, and I fear will remain so till time is no more. The only idea I have formed on this subject is that it depends upon a peculiar state of the Electric fluid acting on the nervous system.

Syphilis is here very common in consequence of the very great excess of the male sex in the population. The cure of it differs not from that which is successfully followed in other parts of the world; when ulceration takes place, from the dampness of the atmosphere it is sometimes tedious and requires a stimulating mode of treatment. So much valuable information has lately emanated from the pen of Mr. Annesley in his voluminous work on the diseases of India, and as I think generally his recommendations with regard to the treatment of tropical maladies, are no less applicable to those of this Island, than to such in other parts, I deem it therefore superfluous to make more extensive observations on the diseases here. I have a number of cases and dissections of patients who have suffered from the most violent forms of Hepatitis and Dysentery, and have some prospect at a future time of giving them to the professional public.

In the following table I have given a statement of the admissions, both of Europeans and natives into the General Hospital here for the last 5 years. It will be observed that the proportion of deaths is very great to the number admitted; but the reason is, that the patients sent into this Establishment, from H. M. Ships, and from the Police, are generally in the most hopeless stage of disease. In the years 1825, 26 and 27 previous to the time I took medical charge here, there appear to have been 20 anomalous cases. I am sorry to say I have it not in my power to account for so many of these cases, nor have I been able to discover any records of them, or other cases of disease prior to that period.

Return of Europeans and Natives admitted into the General Hospital shewing Admissions and Deaths for 5 years.

	Europeans.				Natives.				1825.				1826.				1827.				1828.				1829.				General Total admitted &c. in 5 years.	
	Of the Madras Artillery for 3 years.*		Admitted into the General Hospital.		Of the Madras Artillery for 3 years.*		Admitted into the General Hospital.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.			
	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.
Abscess	1	,,	1	1	,,	,,	5	1	,,	,,	1	,,	1	,,	1	,,	1	,,	2	,,	,,	,,	,,	,,	,,	,,	1	,,	7	2
Amaurosis	,,	,,	,,	,,	1	,,	3	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	3	,,	,,	,,	1	,,	,,	,,	,,	,,	4	,,
Ambustio	1	,,	1	,,	3	,,	6	3	,,	,,	,,	,,	,,	,,	6	2	1	,,	7	1	,,	,,	2	,,	,,	,,	,,	,,	16	3
Anasarca	,,	,,	2	,,	3	,,	4	4	,,	,,	2	,,	,,	,,	1	,,	1	,,	5	4	,,	,,	1	,,	,,	,,	,,	,,	11	4
Aneurism	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Anomalous Cases	,,	,,	18	,,	,,	,,	3	,,	,,	,,	1	,,	5	,,	2	,,	4	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	21	,,
Asthma	1	,,	4	3	3	1	4	1	3	2	2	,,	,,	,,	1	1	,,	,,	2	1	2	1	2	,,	,,	,,	,,	,,	12	5
Atrophy	,,	,,	,,	,,	,,	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	1	1
Cataract	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	,,	3	,,
Catarrh	5	,,	4	,,	1	,,	1	,,	1	,,	,,	,,	1	,,	,,	,,	6	,,	,,	,,	,,	,,	4	,,	1	,,	,,	,,	18	,,
Cholera	2	,,	5	1	,,	,,	3	2	2	1	1	,,	2	,,	,,	,,	2	,,	,,	,,	1	,,	1	,,	1	,,	,,	,,	10	2
Colica	2	,,	2	,,	2	,,	1	,,	,,	,,	,,	,,	1	,,	,,	,,	2	,,	1	,,	1	,,	1	,,	,,	,,	1	,,	7	,,
Contusion	1	,,	1	,,	4	,,	5	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	5	,,	1	,,	3	,,	,,	,,	1	,,	11	,,
Debility	2	,,	4	,,	3	,,	13	5	1	,,	1	1	3	,,	5	2	2	,,	7	2	,,	,,	,,	,,	,,	,,	3	,,	22	5
Diarrhœa ⊙	37	4	12	1	76	5	18	8	9	1	7	3	2	,,	4	3	22	1	51	2	10	,,	14	3	6	,,	8	2	143	15
Dislocations	1	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	2	,,
Dysentery	49	2	44	11	22	2	30	15	12	1	3	1	12	2	9	6	43	4	21	5	20	5	12	3	6	,,	7	2	145	30
Dyspepsia	6	,,	,,	,,	5	1	3	,,	,,	,,	1	,,	,,	,,	2	,,	,,	,,	,,	,,	1	,,	,,	,,	6	1	4	1	14	1
Dyspnœa	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Dysury	3	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	1	,,	1	,,	,,	,,	,,	,,	,,	,,	4	,,
Emphysema	,,	,,	,,	,,	,,	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,
Epilepsy	5	1	,,	,,	,,	,,	1	1	,,	,,	1	1	,,	,,	,,	,,	2	1	,,	,,	3	,,	,,	,,	,,	,,	,,	,,	6	2
Febris Ephemera biliosa	6	,,	,,	,,	44	,,	,,	,,	,,	,,	,,	,,	,,	,,	6	,,	44	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	50	,,
,, Intermittent Quotidian	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
,, Continued	18	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	12	,,	2	,,	,,	,,	6	,,	,,	,,	,,	,,	,,	,,	20	,,
,, Intermittent	40	1	86	7	158	1	139	9	63	8	37	4	14	1	63	1	12	,,	22	3	29	,,	124	2	11	,,	50	,,	423	18
,, Remittent ‡	7	1	,,	,,	19	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	4	,,	5	1	15	,,	,,	,,	,,	,,	26	1
Fractures	,,	,,	2	,,	,,	,,	12	3	1	,,	6	2	,,	,,	,,	,,	1	,,	3	1	,,	,,	,,	,,	,,	,,	2	,,	14	3
Gastritis	1	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
Hœmoptysis	,,	,,	1	1	,,	,,	1	,,	,,	,,	,,	,,	1	1	,,	,,	1	1	,,	,,	1	,,	,,	,,	,,	,,	1	,,	2	1
Hœmorrhois	2	,,	1	,,	1	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	1	,,	,,	,,	4	,,
Heart burn	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,
Hepatitis	76	1	18	4	1	,,	4	2	1	,,	3	,,	1	,,	44	1	3	2	35	1	,,	,,	11	,,	,,	,,	2	,,	98	4
Hernia	2	,,	,,	,,	2	,,	5	1	,,	,,	,,	,,	,,	,,	1	,,	2	,,	1	,,	1	,,	1	,,	1	,,	3	1	9	1
,, humoral	4	,,	7	,,	4	,,	3	,,	3	,,	1	,,	2	,,	2	,,	1	,,	3	,,	2	,,	1	,,	2	,,	2	,,	18	,,
Hydrocele	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
Inflammation External	23	,,	6	,,	50	,,	4	,,	,,	,,	,,	,,	,,	,,	,,	,,	9	,,	24	,,	14	,,	22	,,	6	,,	8	,,	83	,,
Infl. of Viscera Abdominal	7	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	,,	,,	,,	4	,,	,,	,,	7	1
Infl. of Viscera Cephalic	23	,,	5	,,	1	,,	4	,,	,,	,,	,,	,,	,,	,,	,,	,,	10	,,	1	,,	8	,,	1	,,	10	,,	1	,,	33	,,
Infl. of Viscera Thoracic	15	,,	7	1	12	3	3	3	,,	,,	,,	,,	,,	,,	,,	,,	6	,,	2	,,	10	1	6	2	6	,,	7	4	37	7
Insanity	,,	,,	4	,,	2	,,	1	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	1	,,	,,	,,	7	,,
Ischuria	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Leprosy	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Miliary fever	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Mumps	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,
Nephritis	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,
Obstipatio	5	,,	12	,,	11	,,	3	,,	,,	,,	,,	,,	7	,,	,,	,,	2	,,	4	,,	6	,,	9	,,	2	,,	4	,,	31	,,
Odontalgia	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	,,	,,	2	,,
Ophthalmia	2	,,	,,	,,	2	,,	8	,,	,,	,,	,,	,,	3	,,	1	,,	3	,,	,,	,,	1	,,	1	,,	1	,,	4	,,	12	,,
Otitis	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	2	,,
Paracusis	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	1	,,
Paralysis	1	,,	,,	,,	,,	,,	4	,,	,,	,,	2	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	5	,,
Phthisis-Pulmonalis	,,	,,	1	,,	,,	,,	1	1	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	2	1
Pneumonia	1	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	,,
Psora	5	,,	3	,,	25	,,	15	,,	,,	,,	,,	,,	2	,,	8	,,	2	,,	10	,,	3	,,	21	,,	1	,,	,,	,,	48	,,
Punished	7	,,	2	,,	4	,,	7	,,	,,	,,	,,	,,	,,	,,	,,	,,	7	,,	8	,,	2	,,	3	,,	,,	,,	1	,,	20	,,
Rheumatism	22	1	14	1	59	5	54	3	3	,,	10	1	4	,,	11	,,	13	,,	26	1	12	1	52	3	4	,,	14	3	149	9
Ringworm	1	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	3	,,	,,	,,	,,	,,	,,	,,	3	,,
Scrofula	,,	,,	,,	,,	1	,,	3	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	4	,,
Scurvy	,,	,,	2	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,	,,	,,	3	,,
Sorethroat	4	,,	2	,,	,,	,,	1	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	4	1	1	,,	,,	,,	,,	,,	7	,,
Spasms	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
Stricture (Urethra)	,,	,,	,,	,,	,,	,,	2	2	,,	,,	,,	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	1	1	,,	,,	,,	,,	2	2
Syphilis	37	,,	41	,,	51	,,	48	2	6	,,	8	,,	8	,,	10	,,	19	,,	27	,,	28	,,	36	2	17	,,	18	,,	177	2
Tape Worm	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	1	,,
Tetanus	1	1	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	1	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	2	1
Tussis	2	,,	1	,,	,,	,,	5	,,	,,	,,	,,	,,	1	,,	5	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	8	,,
Tympanites	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
Ulcers	43	,,	17	1	95	2	72	17	6	,,	12	,,	9	,,	16	8	23	1	77	8	17	,,	44	2	5	,,	18	1	227	20
,, in the Cornea	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Verruca	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,
Varicella	,,	,,	1	,,	,,	,,	1	,,	1	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
Variola	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	1	,,
Worms	,,	,,	1	,,	1	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	1	,,	,,	,,	,,	,,	,,	,,	,,	,,	2	,,
Wounds and Accidents	44	,,	33	2	47	,,	124	21	9	1	27	2	16	1	32	8	13	,,	20	5	22	,,	51	4	17	,,	41	2	248	23
Totals	524	9	375	31	719	20	646	104	131	14	128	16	99	3	190	32	289	10	393	35	260	13	441	21	124	1	209	19	2264	164
Average numerical strength	84 2/3		,,		48 7/12		,,		30		53		111		75		68		,,											
Proportion per cent of the Admissions annually to the Numerical strength	207 1/7		,,		499 1/2		,,		,,		,,		,,		,,		,,		,,											
Proportion per cent of Deaths to the Number admitted	1. 71		8. 26		2. 77 1/11		16 1/10		,,		,,		,,		,,		,,		,,										7 1/2	

* The Sick of the European and Native Bengal Artillery are included respectively in the columns of Europeans and Natives admitted into the General Hospital a separate Register not having been kept previous to 1827.

‡ In case it may appear strange how few admissions have occurred from this disease I have to remark that Soldiers are here not exposed to Jungle Miasm. This disease has only been destructive among the highest class. The individuals composing it in too many instances inhaled the poison on hills newly cleared and prepared their systems for the reception of disease by indulgence in excesses of all kinds.

⊙ It will be remarked that there is a large proportion of deaths among those people admitted into the General Hospital. They generally are either patients sent in from His Majesty's ships or from the Police in the last stage of disease when Medicine can be of no avail.

J. P. GRANT.

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Practical observations on the Ulcers which prevailed among the Native Troops at Rangoon, Prome, Tavoy and Prince of Wales Island, in the Years 1825-26-27-28-29.

By J. P. GRANT Assistant Surgeon,—Madras Establishment.

AS Ulcer is the disease which is by far the most destructive to our Native Troops who come from the Continent of India, to this or any other place in the Malayan, Siamese or Burmese Countries, during the first year of their residence in the above places; and as it is of rare occurrence in any of our Continental possessions as a destroyer of life or limb, Medical Officers who have for the first time come in contact with it, behold its ravages with horror, and the most scientific even are puzzled as to the treatment best adapted for it. In some instances, so rapid is its progress that the patient sinks in 10 or 12 days, and sometimes even in a shorter period, the limb below the knee becoming one slough and the muscular parts appearing like slimy rope yarn, and eventually a black mass of Gangrene. It has been my lot for the last 5 years to have been placed in medical charges at Rangoon, Prome, the Tenasserim Coast and Penang, during which time I have treated an immense number of cases of sloughing Ulcer in 5 Native Regiments, and the General Hospitals at Tavoy and Penang. In the hope that the following statement of facts with the opinions founded thereon may be of use to some of my Medical brethren who may be placed in similar situations, and that their adoption of the practice which I have found almost invariably successful, may prevent much mental anxiety and enable them to save the lives and limbs of many of their patients, I with deference lay them before the professional public.

1. RANGOON AND PROME. Of all diseases to which the Natives of India are liable in this climate, Ulcer is the most common and destructive, till they have passed one rainy monsoon in it. Their bodies by that time become naturalized both to the climate and the food; the former here being much damper than it is any part of the continent of India, and the latter being less stimulating and nutritious, than what they were previously accustomed to. These circumstances, which are the proximate causes of this disease, by producing a deficiency of fibrine in the blood and a general loss of tone and action in the extreme vessels, no longer act in a similar way, after an ordeal of one year's residence, and the result is that the men are seldom attacked with the disease afterwards. But should this state of blood continue, extraordinary as it may appear, and originating from the same cause—Diarrhœa, common dropsy and Beriberi become their most fatal assailants.

When the body is thus predisposed, Ulceration is produced by the slightest separation or contusion of the cuticle and this is the first and most frequent exciting cause of ulcer. The second in frequency, and the

the one in which the sloughing process takes place most rapidly, arises from a disordered state of the digestive organs, accompanied with a bloated and adipose state of the body, in which condition many of our native troops arrive here from India. The third is Psora or Malabar Itch; and the fourth is Syphilis, both in its primary and secondary stages. These were the four causes which I noted produced ulcer most frequently in Rangoon—They each produced different varieties of the disease, and each variety under the morbid condition of the blood already mentioned sooner or later, if not checked with care according to the cause of its origin, became a sloughing ulcer, rendering the patient useless as a soldier for a very long time, or lame for life, by destruction of muscle, tendon or bone, or the case required amputation of the limb, or the disease too frequently deprived the miserable sufferer of existence. In the first kind of ulcer, where there was a leech bite or laceration of the skin and any of the parts underneath, a careful examination was made so that no extraneous matter might be left in the wound; it was washed with warm water and when dried a few drops of Tincture of Myrrh and turpentine were poured on it over which some dressed lint was strapped on with some long pieces of adhesive plaister, and a rolling bandage 4 inches wide applied from the great toe to the knee. More care was required if the wound were in that range where it happens most frequently, and where it is most tedious in the process of healing, as about the foot and ancle. If there were no predisposition in the constitution to sloughing, the following day some healthy, organizable lymph was thrown out, and with the use of escharotics as circumstances required, and the above mentioned dressing, the wound rapidly closed and became permanently healed. Did the sore assume a sloughing aspect, the treatment I found most efficacious was the one mentioned hereafter in the second kind of ulcer. These were the external remedies. Did the state of the tongue and pulse indicate febrile action or derangement of the chylopoietic viscera, mild mercurials and the solution of Epsom salts and Tartarized antimony, till the tongue became clean, followed up by light nutritious diet, Port Wine, Beer or Decoction of Bark and Arrack, were the requisite internal remedies.

In the second kind of Ulcer which was by far the most rapid in its progress and fatal in result, the most immediate attention was paid to the constitutional derangement, which was the cause of the disease. This I supposed to consist in a scorbutic state of the blood, produced by bad food composed of salt-fish, which is often in a state of putrescence, and rice with little of any other substance to counteract its bad effects, or stimulants to give energy to the extreme vessels. As a natural consequence of this aliment the stomach and the canal became disordered, the former being weak in its digestive powers and the latter, generally loaded with mucus; the liver and kidneys also became inactive in their secretions. The disorder hence may be traced through its various stages, ultimately producing the tension of limb, vesicular blotch, and rapidly sloughing sore proceeding therefrom. The patient came into Hospital complaining of tension, stiffness, and pain, about the ancle, or over the metatarsal bones; on examination, vesicles from the size of a pea to that of a shilling were visible, filled with sanious fluid; both limbs were sometimes in this state; the body having generally a bloated appearance; face very puffy; the tunica sclerotica of the eyes yellow; tongue swollen, white and moist; gums white and spongy, sometimes bleeding on the least pressure; appetite very bad; thirst natural; skin cool; pulse weak and soft; evacuations from the bowels scanty, slimy, and clay coloured. The vesicles in the course of a day or two burst, and if near each other ran into one sloughing

ing sore discharging viscid gramous matter, which continued (were a constitutional change not effected by the medical treatment adopted) till the whole limb became a gangrenous mass; when if it were not removed by amputation, the sufferer soon sank either from colliquative Diarrhœa or from exhaustion by the disease.

To check the progress of ulceration in the first instance, I found the following internal treatment the most successful Where the tongue indicated a foul and loaded state of the mucous membrane of the stomach and intestines, an emetic composed of Pulv: Ipecach: grs. 20, Antimon. Tartarisat grs. 1. followed up by these aperient medicines. Rj. Calomel grs. 36. Extract Colocynth. C. Pil: Aloes cum Myrrh aa grs. 36. P. Antim: Tartarisat: grs 4. M. bene et fiat Mass: in Pil: 24 divid: of these one to be taken every night at bed time with a dose of the tonic aperient mixture or Castor Oil next morning, and this system was continued till the tongue became clean and the patient's appetite returned. When this desirable object was attained, the slough generally dropped off and healthy granulations sprung up from the bottom of the ulcer. It was necessary at this stage of the disease to support the strength of the patient with nourishing diet, to consist of animal food as much as possible, with beer, port wine or Decoction of Bark and Arrack, if wine were not procurable. This form of diet improved the state of the blood, gave energy to the lymphatic vessels, and the lymph thrown out formed granulations of a firm consistence; and with the assistance of the following external application brought them on a level with the surrounding part when the sore healed, and remained permanently so.

If the constitutional disorder were not removed and a healthy state of the blood established, I have seen these ulcers break out frequently when they were on the point of healing, 2 or 3 times successively, and sometimes the patient either lost limb or life eventually, from the granulations formed from an unhealthy lymph, wanting a proper consistence and continuity. Such granulations are recognisable by their large white and spongy appearance.

In the sloughing stage of ulcer, the Nitric and Muriatic acid wash, diluted with 10 parts of water dropped gently on the sore, appeared best to give excitement to the surrounding parts and enable them to cast off the foul slough. When this happened, a wash with thirty parts of water was found sufficiently strong to keep the parts clean. I also found the decoction of the root of the Margosa tree an excellent strengthening application, and in some cases I used arrack or lime juice with evident benefit; however these last applications should only be employed after the slough has fallen off. The dressing in the first stage most effectual was a charcoal poultice softened with oil or butter and some powdered bark and chalk sprinkled on the surface of it. Were the discharge copious and sanious or ichorous, which was not frequently the case, the lint dressing was used instead of the charcoal poultice, and the bandage already recommended was indispensably necessary on all occasions. I always recommended Officers, who could procure flannel bandages, to use them in preference, from their elasticity, but we could never afford them in general hospital practice. When the slough separated, I used the following dressing with more success than any other in such cases. It was given to me by the Rhahan or High Priest at Rangoon.

Take of the tender leaves of the Magosa tree (the *Melia Azedirachta*) dried and pounded. - - - - - oz. 2.
Fresh Butter. - - - - oz. 4.
Rosin. - - - - - - oz 2.
Wax. - - - - - - oz. 2.
Red precipitate (Hydrag. Nit: oxyd:) oz. 1. mix

mix them well together and put the mass in a chatty over a brisk fire for 40 minutes or till it assumes a greyish colour. It is to be spread thinly on cloth, cut of the size of the sore, which should previously be washed with the weak Nitric or Muriatic acid wash, or the one recommended by the high priest, made from the root of the Margosa tree; or a weak solution of the sulphate of copper was often recommended as a change. Did the chasm of the ulcer become deep and the edges serrated and turning upwards, they were eaten down with lunar caustic, till they became on a level with the neighbouring parts; were the sore clean, some fine tow was applied over the cavity of the ulcer, so that the bandage made an equal pressure on all parts—but were it at all foul, the charcoal poultice was put over the dressing for the same purpose, as it was found to act as an Antiseptic. When the granulations rose on a level with the skin, some dressed lint and adhesive straps brought on a firm skin, which covering a healthy and compact muscular fibre did not give way, and the patients afterwards enjoy'd better health than other men who were not seasoned to these climates by so disagreeable an ordeal.

Ulcers arising from the third exciting cause---Psora or Malabar itch--were seldom of conseqnence, being small and superficial, if the constitutional disorder were removed, which was easily accomplished by the following treatment. The patient rubbed in a portion of the following ointment morning and evening.

Take of Sulphur.	-	oz. 2.
Corrosive Sublimate.	-	oz. 2.
Powdered charcoal.	-	oz. 4.
Common Oil.	-	oz. 4.

to be well mixed——this was washed off every morning with hot water and soap, and the patient took a few alterative pills such as already prescribed in the 2nd kind of ulcer, did the state of the tongue or evacuations render it advisable. If the ulcers assumed a phagedenic appearance, it was necessary to adopt the active measures already mentioned, in the second species of ulcers. Milk diet and animal food were recommended throughout every stage of the disease. It arose from three causes, viz. Living on fish particularly if salted, want of cleanliness and from contact with others who had the disease. That arising from the first was most tedious, as the constitution was more generally disordered, but they all usually gave way in a few days to the above treatment.

Syphilis was the 4th exciting cause of ulcer both in its primary and secondary stages. With Europeans in this climate it was more productive of this disease than either of the other causes. In the primary stage, the penis was generally first attacked and next the groins, and so rapid at times was the sloughing stage that I have seen the whole penis drop off in a few days, and if mercury did not check the progress of the disease, it passed on to the bladder producing death as a consequence. With the view of affecting the system and counteracting the violence of the disease, I have given the following Pill 2 or 3 times a day with the desired effect.

Rj. Pil. Hydrarg.	-	grs. 2.
Calomel.	-	grs. 2
P. Opii.	-	grs. $\frac{1}{2}$ M. ft. pil.

with an occasional dose of laxative medicines. This with light but nutritious food, brought on a healthy action in the parts. The external applications that appeared to be most useful were the black wash or a strong solution of sulphate of copper; the charcoal poultice, or the Rhahan's ointment or sometimes Calomel sprinkled over the sore, and a little

little simple dressing; in case of great pain or irritation, poultices of the Decoction of Poppies, and Henbane, proved beneficial; in all instances, the Decoction of Sarsaparilla was given with benefit as it had the effect both of removing the venereal poison, and preventing the evil action of mercury on the system, the baneful effects of which when taken to excess for the cure of any disease particularly the venereal, we are daily eye witnesses to. The native practitioners of medicine use two preparations of mercury for the cure of Venereal, the red oxide internally and the grey in fumigation; and I have seen many unfortunate victims of the effects of each of these medicines; their joints stiff, painful and swollen; the bones of the extremities full of nodes, and those of the skull exfoliated.

Ulcers arising from secondary Syphilis were situated generally on the Tibia about its centre, and were very tedious, after the sloughing process had ceased, from the exfoliation of the Tibia which frequently took place; nature required some time to renew the parts. The internal remedies which I found most effectual were alteratives, compound decoction of Sarsaparilla, and nourishing food; beer wine or decotion of bark and arrack; the external, such as have already been recommended, according to the position, nature, and appearance of the sore

It is to be regretted that there is a blind partiality among some medical men for the use of mercury the *grand specific* against every variety of syphilis; and that it is often improperly administered in those forms of disease resembling venereal, and where a proper distinction is not drawn between simple excoriations and venereal chancres, or between sympathetic and venereal buboes. When the patient happens to be of a strumous habit, it may be of the most serious consequence. The following case occurred to me lately, the result of the mistaken use of mercury. Captain S. of one of His Majestys Regiments, had been a long time resident in India and had enjoyed very good health till within the last two years, when his general health became very bad, in consequence of venereal disease. He said he had taken immense quantities of mercury for it from time to time with no effect, and that he was becoming weaker daily, although he still continued to take 5 grains of Blue pill morning and evening, and he had been following that course about 3 months. On examination, I found he had several small sores on the penis and other parts of the body; those most conspicuous were two of the size of a rupee on the frontal and two of the same size on the occipital bone; the external plates of the bones exfoliated; the sores discharging thin yellowish fœtid pus; and some purple patches on different parts of the body; his tibia covered with nodes, and his body emaciated and sallow; his appetite and digestive organs generally impaired. It appeared evident in this case, that mercury in any shape was not to be continued; I then put him under a course of medicine and diet; the former consisting of the Tjnctura Ferri Muriatis daily at noon and *lbs.* 2 of the compound Decoction of Sarsaparilla during the day and 3 ounces of the tonic aperient medicine in the morning as the case required; the latter of the most generous food his stomach could digest, consisting chiefly of animal diet and beer. A moderate portion of exercise was also enjoined. The sores which were only dressed with dry lint soon assumed a healthy appearance; his body became clear, and after continuing this course for 10 weeks he got perfectly well and the nodes on the shins with the continued use of stimulating liniments disappeared. Thus were the evil effects of mercury counteracted; this officer has since enjoyed continued good health and has had no symptom of the dread disease.

Throughout all the Burmese country the rainy monsoon from the Ist of May to the end of September is the season when the Phagedenic

ulcer

ulcer is so prevalent among the native Troops in the 1st year of their residence in this climate. I have already stated my opinion as to the causes of it generally, but the moisture of the climate which prevents the usual quantity of evaporation from the body has the effect of producing a fullness of the extreme vessels and from the general want of nervous energy the absorbents become ineffective which assists the cause of the second kind of ulcer already described. To counteract this state of atmosphere as much as possible, the Hospital should be placed in the driest situation procurable, and fire places erected in various parts of it; and the greatest possible attention paid to cleanliness and fumigation with Sulphuric acid and Salt, to prevent Hospital gangrene, which is likely to occur in crowded Hospitals and to become contagious. During the months of July and August 1825, I had upwards of 150 cases of Phagedænic ulcer in the 22d Regiment N. I. Hospital. Although all precautions were used, Gangrene showed itself in the beginning of August. In the first two cases the patients had small ulcers on their great toes, which became gangrenous and were amputated. One of them recovered; the other, who was an old man much emaciated, did well for some days and the wound continued to look clean, when a large vesicle formed above the ancle, burst, and became rapidly gangrenous, colliquative diarrhœa putting an end to the patient's life. Three other patients who were contiguous to the last case were attacked with gangrene and carried off in the same way by Diarrhœa. I had all the patients immediately removed from that part of the Hospital and I fortunately saw no more of it. Where imputation was performed, mortification generally showed itself on the third day in the stump and soon proved fatal. Tonics and stimulants were used in such cases without benefit, and when diarrhœa once commenced, nothing in medicine seemed to check its progress.

When men have passed over the 1st rainy monsoon, ulceration does not seem to attack wounded parts; neither does it occur spontaneously, but Intermittent and Remittent fevers make their appearance which scarcely ever attack them during the continued rains, if they are not extremely exposed. This I have endeavoured to account for in my remarks on Remittent fever. The following fact is a strong proof of the effect the state of the atmosphere has in producing or preventing Phagedenic ulcer. My corps the 22d Regiment M. N. I. marched on the night of the 15th November 1825 to attack the stockade at Wantigaum, 20 miles from Prome. It consisted of 450 rank and file and 12 European Officers. We came up to the stockade at 6 O'clock in the morning and after having had 6 Officers wounded and 80 men killed and wounded in a few minutes, the object in view was found impracticable. We returned bringing the 6 Officers and 40 of the wounded men with us a march of 12 miles. Many of these men had operations performed on them, but none of their wounds assumed a phagedenic appearance, and they all recovered except two of them. One an old man died from eating opium in excess and the other from Remittent fever. Most of the men however had attacks of Intermittent or Remittent fever, but had it been the wet monsoon, instead of the dry, the case would have been reversed and most likely all the wounds would have become phagedenic, and the fevers would not have occurred.

2. Tavoy. I arrived at Tavoy in the end of May 1826 and took medical charge of 1200 native troops and a company of European Artillery. The native Hospital contained 175 cases of ulcer, the European Hospital none. Aware of what fatal consequences might be expected during the rainy monsoon to this Regiment, being its first year in this country, I applied to the Commanding Officer for his assistance, in procuring me animal

animal food, spirits and wine for the use of the sick. This he did to the extent that lay in his power, having ordered the commissariat to supply me with Arrack and the few sheep that could be procured. This was of material service, and I supplied the Hospital with Beer, Wine, Bread, Milk, poultry and two buffaloes a week which had the effect of counteracting the scorbutic state of the blood and arresting the progress of Phagedenic ulcer. I gave up this charge 9 months from the period I assumed it, and left only 24 cases in the Hospital and not one of Phagedæna among them. During this period the native troops consisting of the 32d Regiment M. N. I. and a detachment of Native Artillery lost only 1½ per cent, including deaths from various diseases, while the 1st Regiment M. N. I. at Mergui placed in similar circumstances as to length of residence in the Burmese country, climate, stations, duty, and exposure, from want of proper nutrition which there could not be procured, lost upwards of 20 per Cent of its men from scurvy terminating in ulcer and diarrhœa. Had the diet of the Native sick troops been more attended to during the Burmese war, the Honorable Company would not have lost a third of the native troops they did, and would ultimately have saved, by such a precaution, that money which is now expended in pensions on the families of the dead, and the maimed from this destructive disease.

With regard to the different Castes of Native Soldiers, Hindoos from abstaining from religious scruples from eating animal food, and often from penuriousness when such animal food as the tenets of their religion permit can be procured, are most subject to this disease. Musselmen only avoid pork; and most of them drink spirits more or less when they can. They as a consequence enjoy better health than the Hindoos; Parias who eat and drink every thing they can get hold of withstand diseases of all kinds better than either of the other Castes. Few native Officers in proportion were attacked with ulcer; they had better food which prevented the scorbutic diathesis.

III. Penang. This disease attacks the fresh troops at Penang in the same way as it does in the Burmese country, but for the following reasons the cases are not so numerous in the former as the latter place. In the 1st. instance there is no regular rainy monsoon at Penang; but in those months June, July and August in which most rain falls, Phagedenic ulcer is most prevalent; and in the next they are not so much exposed to accidents producing the 1st kind of ulcer already described, as the troops were in the Burmese country, marching over bad roads and often employed in cutting down and clearing away jungle.

The species of ulcer which is most prevalent at Penang is that of the second arising from a scorbutic diathesis produced as previously mentioned, and called into an active state of disease by the wet weather. I took charge of the 35th Regiment M. N. I. in the end of April 1827, the greatest part of them had only arrived a few days previously from Madras and were in very good health apparently; but of a gross habit of body and when examined few of them were found to have their digestive organs in a healthy condition. During the months of May and June the ulcers did not assume so serious an aspect but in July and August some of the patients were carried off in a few days; nor could any internal remedies or external applications arrest the progress of the disease. In 13 of these cases I found it requisite to perform amputation of the diseased limb; and in one case out of 2 where the operation was performed under the knee it was found necessary to repeat the operation above the knee to save the patient, as the stump became itself an ulcer.

It appears to me evident that where the ulcer (supposing it to be situated about the ancle) continues to spread upwards and that the

muscles

muscles of the leg become affected with the disease, amputation should not be performed under the knee as the disease will attack the stump in 5 cases in 6 and then can only be prevented by external and internal stimulants. This diseased state of the muscles is produced by part of the matter which is formed on the ulcer following the course of the tendons and muscles which is most frequently the case along the tendo Achillis and the Gastrocnemii and Solei. When the disease has followed the course of the muscles the skin appears tense and swollen, and there is an effusion of serous fluid in the cellular membrane. On cutting through the muscular fibre it will be found flabby and blanched, and the blood issuing from the wound not to contain above a half of the healthy portion of red globules. Of course a healthy stump cannot be expected under such circumstances. There are other arguments against performing amputation under the knee; the want of muscle over the Tibia to form a good stump and the greater languidness of the circulation. I have always used an application of strong brine to the surface of the stump after the vessels were taken up, and it seems to induce healthy action in the parts. Out of the 13 amputation cases, 3 died; from their being so very much reduced before the operation was performed, the stumps commenced sloughing almost immediately. Two more died, after their stumps had healed, one of Phthisis the other of diarrhœa; all the rest recovered and were transmitted to Madras. I subjoin returns for the last 3 years of the two Regiments to the eastward at Penang, Malacca and Singapore, of the admissions and deaths from this disease. My remarks are very brief on this affection as it appeared at Penang. I have stated my views of it in the Burmese Country and ever since I left that place I have pursued the same course of treatment I trust with success.

Ere bringing this subject which is of so much interest to our native army to a close, I beg to state my opinion about removing Corps from the continent of India to either of the stations in the Straits of Malacca or on the Tenasserim Coast; corps which have been stationed on the Malabar Coast, which nearly resembles that of the Tenasserim should be preferred, as their bodies will be found already seasoned in a great degree; and if they are well fed, few of them will suffer from ulcer simple or phagedenic. Commanding Officers should pay the utmost attention to the mode in which the Sepoys diet themselves; as they too often sell part of their rations particularly Ghee from avaricious motives, and also to the manner in which they are housed. Many of them from partiality to former habits will sleep on the ground in preference to a rattan Cot, and this in cold damp climates is a source of many diseases.

Medical Officers should frequent regimental undress parades for the inspection of the men, so that those who have Malabar Itch, or are of a Scorbutic diathesis, may be taken under immediate treatment before they break out into Ulcer. The following appearance which I have not previously taken notice of is a frequent symptom of this scorbutic state of the system; the skin looks as if it was powdered over, an appearance produced by small white scales of dry cuticle, and accompanied with a constant dryness of the skin; also a frequent distressing complaint, is a burning sensation in the extremities, more particularly in the feet which affects the patient generally at night and which has never been satisfactorily accounted for. It appears to me to arise from obstruction in the extreme vessels producing great nervous irritation which is removed only by restoring the energies of the system generally by nutritious food, Wine, Beer, and both Mineral and Vegetable tonics; as the Liquor Arsenicalis and Quinine or Bark with Port Wine.

OBSERVATIONS ON THE BURMAN JUNGLE REMITTENT NERVOUS CONGESTIVE FEVER.

OF all diseases to which the European traveller in India and its neighbouring countries is exposed, this, next to the Epidemic Cholera, is the most destructive and the one which most speedily deprives the patient of life, if not checked by active medical treatment.

This very serious and insidious form of fever is prevalent at the breaking up of the wet monsoon in these territories in the months of October, November and December. In its type it differs not from what in India is generally called Pucka or Jungle or Hill fever. It varies in different parts of the Eastern world in virulence; its fatility depending upon the following circumstances, whether the country is thickly covered with Jungle, whether vegetation is rapid or not, whether the monsoon is heavy such as it is all over the Kingdoms of Ava, Siam and part of the Malay Peninsula, and finally upon the length of time the subject has been inhaling the noxious vapours producing it. In such situations as above mentioned, if the disease be allowed to run its course or even treated as fevers of a less virulent nature are, the patient generally dies from the 5th to the 7th or 8th day from the time he first complains of it. The following melancholy circumstance came under my observation in the end of October and the months of November and December 1825. A party of troops both European and Native was sent out about the middle of October under Colonel Parlby to scour the country about 20 miles from Prome; they continued marching about through this jungley and swampy country for 5 or 6 days when they returned to Prome; the Officers and men were apparently fatigued but did not complain of being unwell till they had been in quarters for some days when it insidiously made its destructive appearance and under what was considered sufficiently active treatment, the Medical officers were astonished to find that they could not check its progress and the patients sank by the 5th. 6th. or 7th. day. A detachment consisting of 39 rank and file and one Commissioned Officer of H. M. Royals was of all the most unfortunate. These poor fellows were attacked with this fever, one after another, having had the best medical attendance and comforts that were procurable in that situation, but to no avail. Lt. Mac Gregor, the officer who commanded the Detachment, told me in the beginning of January that he himself was the only man of that party in existence. His Majesty's 41st Regiment were nearly equally unfortunate, but the very zealous medical officer of the corps, Mr. Perrot, took his men of that party, who were not immediately attacked under medical treatment,* thereby removing the diseased condition of the blood and preventing the congestion which ultimately would have terminated fatally. Among the natives of this party the type of fever was the same, but from their peculiar mode of living and different habits of body, few in comparison of them died under the common mode of treatment. From having had an immense number of cases of both European and Native patients labouring under this disease under my charge, I have formed the following opinion: that the proximate cause of this disease is a superabundance of carbonic acid gas existing in the air produced by a powerful sun acting upon wet vegetable matter in a state of decomposition. My principal reasons for this opinion are, in the 1st place, during 2 years residence in the Burmese country, I do not recollect having seen any cases of nervous congestive fever during the rainy season for 4 months in the year. In that country during the wet monsoon, from the cloudy state of the atmosphere

* This consisted of mercurial and other purgatives.

and

and almost constant rain, the sun is much obscured, nor have the rays sufficient power to act on the surface of the earth almost covered with water; but immediately the rains cease as I have stated previously, this fever shows itself and continues generally for about 3 months: the earth by that time is quite dried up, the decayed vegetable matter has become a kindred mould and a fresh healthy vegetation overspreads the ground. My next argument in favor of this opinion is that this disease also ceases about this time, but there continues enough of miasm throughout the dry season to cause Intermittent fever if the body is much exposed to night air. The blood taken from the patient in this fever is of a particularly black colour and immediately it is drawn from the arm shows a variegated scum on its surface; when coagulated, it assumes the appearance of black currant Jelly; thus evidently showing that the quantity of oxygen gas, which is requisite for a healthy state of the blood is here wanting and an over plus of carbonic acid gas substituted; the blood is consequently thicker and darker than it is in the healthy state. Hence arise many of the principal features of this disease, the excessive labouring of the heart, aorta and its branches; the engorgement of the lungs and the membranes and substance of the brain, which is immediately followed by a want of action in the Liver and excessive fullness and engorgement of that important organ; the great intestines immediately sympathise with it; they are attacked with inflammation, ulceration and gangrene, should the patient not sink before this could take place, from effusion in the brain more particularly in its ventricles and its cauda. The symptoms of this disease are as follow; the patient says he has been unwell for a day or two; restless at night; no appetite, bowels rather costive; heaviness in the head; constant thirst; urine brick red, scalding and scanty, having a deposit of a red gritty sediment; some difficulty of breathing. The patient says that he wishes to have medical aid to relieve his head ache which has become dreadful; if this be not relieved by the treatment, I shall hereafter mention, the head-ach (accompanied with the hot fit which lasts about one hour and is followed by a cold clammy sweat with coldness of the extremities) increases for two days, when the patient complains of pain in the right hypochondriac region, with great fullness and increased pain on pressure; he also says he has pain some where in the course of the great intestines, generally in the Caput Cœcum or Sigmoid flexure of the colon; he complains of difficult and hurried breathing, great thirst; pulse running from 100 to 130 hard and stringy; tongue furred brown generally, and dry, eyes suffused and watery, painful on pressure. When these symptoms have continued unrelieved for 4 days, the pupils of the eyes become much dilated, delirium comes on for an hour or two now and then; the pulse now becomes weak, intermitting, occasionally undulating, running 140. This continues for a day when coma and all other fatal symptoms supervene; when about the 7th or 8th day the sufferer dies. The excessive pulmonary engorgement seems generally to close the scene. The Sectio Cadaveris of subjects who have died of this fever shows generally the following appearances. Body not in the least emaciated; skin generally clear but often becomes marbled immediately before or after death; countenance showing no appearance that the patient has died in pain; eyes clear excepting where the biliary secretions have previously been disordered. In some such cases I have seen the subject have a completely jaundiced appearance. Dissection of the cranium shows the vessels of the Pia and Dura Mater much injected with black blood and on removing these membranes, a quantity (generally 1½ ounce) of serous fluid escapes; I could see no change in the appearance of the cineritious or cortical substance further than that on a section being made through the centrum ovale, the bleeding

ing points were very conspicuous, shewing an effusion of the darkish blood, already noticed; the ventricles always filled with serous fluid which is also found to exist between the spinal marrow and its theca; the marrow, blanched and rather pulpy. Thoracic dissection shows the Lungs much engorged with blood and their specific gravity greater than natural; they afford little crepitus and are of a dark purple color. On laying open the Heart, its cavities contain clots of dark blood. Abdominal cavity shows, on slitting open the whole length of the tube a total want of healthy biliary secretion; the internal surface of the stomach and small intestines presents a viscid tenacious slimy secretion on its surface with a small portion of cystic bile. The great intestines externally appear to have livid spots through their course, showing the disease affecting the internal membranes. The mesentery is much inflamed and gorged with blood, more particularly its glands. The great intestine internally from the Caput Cœcum till it terminates in the rectum presents a complete state of disease; the mucous coat is for the most part covered with the slimy secretion alluded to above. On removing this, it is found ulcerated in various places, especially in the sigmoid flexure of the Colon and course of the Rectum; the ulcers are deep and ragged having eaten through the internal coats and the external often gives way on the pressure of the finger against it. The Liver is overcharged with dark blood, bleeds in its section and the vena portæ is distended with it. The colour of it is of a purplish brown; the Gall bladder is distended with thick black and tar-like or dark yellow bile; the biliary ducts are often lined with a greenish viscid secretion with which they must have been clogged for some days. The spleen is of a purple slate colour, easily broken with the finger; of the Pancreas I can say nothing; the Kidneys are tumefied and darker than natural; the Bladder has an occasional secretion of white mucus on its internal coat, probably produced by the acridity of the urine secreted during the disease. The medical treatment I have found most successful in the 1st, 2d. or 3d. day of the fever (however the sooner the better) to relieve the excessive congestion in the brain and lungs is large bleeding till the pain of the head and difficulty of breathing are relieved. The best time to carry this object into effect is on the accession of the hot stage. The next object to be attained is by large counter-irritants to the head, nape of the neck and chest, to withdraw the determination from these parts as speedily as possible; also by clearing the Prima via by large doses of the Oleum Ricini, and Turpentine and injections of the same with topical applications of leeches over the course of the colon or rectum—to remove the congestion of blood in these parts. These emergent symptoms being subdued, the system will be prepared for the reception of our *chief anchor of hope Mercury*. If the disease has existed for a number of hours, the Liver becomes quite torpid and of course the canal becomes constipated: when such is the case after congestion in the organs of intellect, respiration and digestion has been relieved, (which is generally done by abstracting from 60 to 120 ounces of blood in the most speedy way,) should the evacuations present a clayey or green slimy appearace, it is absolutely necessary to rouse the action of the Liver with external counter-irritants and external and internal mercurials. If calomel be exhibited in small and frequent doses, I would recommend the following pills; Rj. Calomel grs. 24. Pulv: Antimon. grs. 12. P. Opii grs. 2. M. ft. divid: Mas: in Pilul: 4. One to be taken every 4th. hour till Ptyalism be produced or the evacuations assume a healthy appearance. This treatment will have the desired effect about the third day; but where the disease is violent in its course and has existed 2 days before the patient has had medical aid, I should recommend a scruple of calomel to be administered every

4th.

4th. hour till the mouth becomes affected, which if accomplished, is sure salvation; and I must here confess in all the cases I have seen I have never observed a single patient recover without its aid and influence on the system, and I believe it to be the only remedy we have in this most malignant fever; but it must be preceded as already noticed by copious depletion and by having the *prima via* well emptied by purgatives. I have found as a first dose 10 grains of Calomel and 30 of Jalap followed up with the Oleum Ricini oz. 2. carry off an immense quantity of fœtid matter. In addition to the above remedies, I have seen decided advantage from the use of vinegar diluted with an equal quantity of water sponged over the head and chest during the accessions of the hot fit which attacks the patient generally at 12 at noon and 12 at night; patients always express themselves gratified and refreshed by this application. Injections are also indispensably necessary, as they keep the Colon clear, which in every case of this fever is more or less diseased. Immediately the system is affected with mercury the equilibrium of the circulation is established, the dejections lose their green slimy, clayey or tarry appearance, and become of a golden colour; the urine instead of being dark and scanty having a gritty deposit, becomes of a straw colour and on standing in a glass urinal for an hour there are muculent clouds floating in its centre; the tongue which is dry and covered with a dark yellow or black fur begins to clean at the edges; the skin which (during the progress of the fever till this happy change) has been of various temperatures in different parts of the body, now gives out an equal moderate heat throughout and it is moist; the countenance loses its anxiety the whole system its restlessness; the eye its watery and glazed appearance, and convalescence has commenced and will continue till health is re-established if the following course of diet and medical treatment be pursued after the severe course of discipline the patient must have undergone. Arrow root or Sago with a small quantity of Sherry in either may be given 3 times a day, a small tea cup full each time, also a strong cup of beef tea or a Calf head Jelly if the stomach will receive either without being oppressed; in this way gradually increasing the diet and stimulants as the state of the patient may require. As a drink, weak black tea is much to be recommended. When the patient's stomach could bear it I have always administered good Hodgsons Beer with the most happy results given in such quantity as did not excite the arterial action above a few pulsations in the minute. The course of medicines which proved most salutary in this convalescent state was keeping up a gentle action in the Liver with the Compound Ipecac: and Blue pill 3 grains of each at bed time with a small dose of Castor Oil or bitter aperient mixture the following morning and 3 ounces of decoction of Bark and a little Port wine daily at noon till the system and Stomach had completely recovered their tone; and change of air, particularly a sea voyage, will expedite a return to health. Indeed the latter often restores salubrity when medicine has proved of little service. At Prome in a number of cases of convalescent Europeans, I had medical charge of men of His Majestys 1st—41st—47th—87th and 89th Regts. who had recovered from this violent form of fever and other diseases requiring very active measures. I saw the evil effects of want of proper nutrition which was not there to be procured for them; some were suffering from general dropsy, others from Diarrhœa and almost every man from Dyspepsia. When a patient was relieved from dropsy it was effected by purgatives and diuretics; and when astringent medicines were used to relieve the Diarrhœa, the lower extremities showed œdema almost immediately. This state of debility in the extreme vessels was of course the result of the great depletion used

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for their preservation. Thus between these two diseases I found it a very difficult task to keep up the natural balance in their systems, but this was finally accomplished in the dropsical cases by the use of decoction of bark and ginger, arrack and whatever nutritious food could be got for them. In œdema of the limbs, external stimulating liniments and flannel bandages, and the use of the Squills and Digitalis had a happy effect in increasing the urinary secretions. The Diarrhœa was removed by the frequent application of blisters to the abdomen, and the internal use of Ipecac: and Opium in doses of 5 grains of the former to $1\frac{1}{2}$ a grain of the latter taken morning and evening with 1 ounce of the Oleum Ricini and 30 drops of Laudanum as a laxative to remove any hard fœcal matter which not unfrequently is the irritating cause of the disease. These men rapidly recovered on being removed from Prome to Rangoon.

The following circumstance occurred to myself while labouring under bilious Remittent Fever, at Prome in the beginning of February 1826. My medical attendant had put me through the usual course of treatment and given me a large quantity of mercury without checking the fever or producing Ptyalism. I was reduced to a very debilitated state, and as the *dernier resource*, he sent me off to Rangoon in a boat. The fever left me and Ptyalism came on the second day of being on the river; and although I could scarcely walk for a month, I had no recurrence of fever afterwards. This happy result I attributed to the change of air assisted perhaps by the motion of the boat on the water.

As a proof of what wonderful efforts the vis medicatrix naturæ will make to throw off disease, I have recorded a case in which I assisted my friend Dr. A. Campbell of the M. E. General Hospital at Rangoon. The following is an abstract of it. Lt. C.——*M.* E. R. arrived from Pegu in the end of March 1826 labouring under Remittent fever; he had been 4 days ill before he arrived, without medical assistance. It was too late at this stage of the disease to use depletory measures; he was delirious with a dilated pupil, effusion having already taken place; he had accessions of fever twice in the 24 hours followed by cold clammy sweats. His tongue was dry and yellow; pulse averaging 120 small and hard. He took mercurials for 4 days internally which cleared the intestinal tube, but did not produce any ptyalism; the fever subsided about the 9th day; and to all his medical attendants dissolution seemed fast approaching; he became speechless, incapable of motion and insensible to all external objects. Counter irritants were applied to the head from the commencement of his treatment and I believe were beneficial. On the 11th day a large abscess formed under the angle of the sub-maxillary bone, and on its forming was opened by Dr. Campbell, and some thick purulent matter escaped; he instantly breathed more easily; we gave him at this time from 16 to 24 ounces of Port wine during the 24 hours, in sago or Arrow root and some strong soup; his bowels were kept open by enemas and small doses of Castor oil. Notwithstanding this stimulant regimen, the parts of his back which were chiefly pressed upon, and the part where the abscess was opened began to slough away. The nutritive stimulant system was carried to its full extent and with the necessary dressings, the sores healed up, and on the 20th day he appeared to know those about him. Henceforward absorption of the effused fluid in the brain and spinal marrow went on increasing daily. In a few days more he was able to speak and could move his right side. He was sent soon afterwards to Madras and England, the nervous system still continuing paralysed to a great degree.*

Such a happy termination is but very rare indeed where nature

* This Officer has since returned to his duty to India in very good health – 1830.

has

has continued so long unrelieved as it was in this case; and nothing but the constant watching of the pulse and the continued administration of nourishment and wine, could have kept up the system or given vigour to the nerves. Could depletion have been used at the commencement of the attack the cranial congestion and consequent effusion would have been prevented, and Mercury would have established a healthy condition of the blood, and secretion from the glands. In concluding my remarks on this disease, I have briefly to state that my opinion founded on experience is that, when the medical man treats this violent type of fever with active depletive measures on the 1st or even 2nd day of it, followed up with mercurials in which-ever way he can effect salivation either by friction, fumigation, by the mouth or by injection, his patient will be saved. Tonics are of no use until the disease is fairly subdued; then indeed with stimulant and generous diet, they give strength to the general system and prevent the occurrence of Diarrhœa or Dropsy.

FINIS.

A TABLE

OR

RETURN OF ULCERS WHICH OCCURRED AMONG THE TROOPS OF THE MADRAS ESTABLISHMENT, AT PRINCE OF WALES ISLAND AND ITS DEPENDENCIES, SHEWING THE NUMBER OF ADMISSIONS, CURES, AMPUTATIONS AND DEATHS FOR THE YEARS 1827, 28 AND 29.

	1827.				1828.				1829.				Total treated.	1827	1828	1829
	Admitted.	Cured.	Amputated.	Died.	Admitted.	Cured.	Amputated.	Died.	Admitted.	Cured.	Amputated.	Died.		Effective strength.	Effective strength.	Effective strength.
Detachment 4th Battalion Native Artillery	100	86	1	3‡	65	58	„	„	9	9	„	„	174	367	326	159
25th Regiment M. N. I.	381	371	„	10	145	139	„	6	18	18	„	„	544	1225	1075	900
35th Regiment M. N. I.	182	162	13*	20	91	90	1	1	53	53	„	„	326†	1135	1088	917
Grand Total	663	619	14	33	301	287	1	7	80	80	„	„	1044	2727	2489	1976

* These were all amputations of the limbs from Ulcer.—2 Men died from Exhaustion a few days after amputation; also two other Men of this number after the stumps had healed, one Man of Diarrhœa and the other of Phthisis Pulmonalis. The remainder were transferred to Madras.

† From this Corps being now stationed at Malacca and Singapore, I have not been able to get a correct return of the amputations, but they had almost the same number as is shewn in the 35th Regiment and a greater proportion of Men died after the operation.

‡ Out of these 3 deaths, two Men would not submit to amputation being performed when thought advisable by the Medical Officer in charge and the other did not give his consent till he was very much reduced. Amputation was performed and he died the same night from Debility.

J. P. GRANT,

Assistant Surgeon in charge of the Garrison and General Hospital.