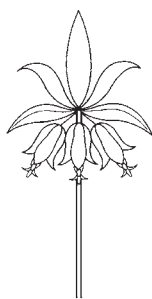


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Biographies of the agricultural explorers of the USDA's Bureau of Plant Industry, 1897–1955: Part 1, A–F

Angela L. Todd

Abstract

Included in this paper are biographies and photographs of the explorers listed in Tables 1 and 2 of W. H. Hodge and A. L. Todd's "Agricultural explorers of the USDA's Bureau of Plant Industry, 1897–1955." This is the first of a projected three parts intended to complement the histories of the United States Department of Agriculture (USDA) and Bureau of Plant Industry (BPI) and Hodge's lists of agricultural explorers given in that paper. Alternately, the biographies of the individuals who worked on specific projects or in specific regions add an exciting level of personal detail to those overarching historical narratives.

Introduction

The published Plant Inventories of the United States Department of Agriculture (USDA) were intended to serve as chronological records of all plants sent to the Bureau of Plant Industry (BPI); they were organized by plant introduction number (P.I. No.) in the order that they were received from a wide array of sources, from vicars to nurserymen to private citizens as well as USDA explorers. Using the printed Plant Inventories was a lesson for the author in the fragility of data, even in this age of digitization and increasing online access. These serials, like the offices within the BPI itself, changed titles several times. Shortly after their regularization by Orator Fuller Cook (1867–1949) around 1900,¹ they appeared as complete issues of the *Bulletin, Bureau of Plant Industry, United States Department*

of Agriculture, and these included *Inventory of Seeds and Plants Imported* from 1901 to 1913, including Plant Inventory numbers 9–30.² Next they appeared as *Inventory of Seeds and Plants Imported by the Office of Foreign Seed and Plant Introduction, United States Department of Agriculture*, 1912 to 1924, including Plant Inventory numbers 31–73. The publications appeared as *Inventory, United States Department of Agriculture* from 1925 to 1937 and included Plant Inventory numbers 74–132. For this article the publications collectively are referred to as Plant Inventories.

A check with the Online Computer Library Catalogue (OCLC) showed that few libraries have a full run of the Plant Inventories, nor did the Hunt Institute (and these came from an array of donors who, for one reason or another, clipped out some of the plant descriptions—suggesting both the importance of the publication and the fragility of printed data). The Plant Inventories are an amazing wealth of information.³ For example, the enigmatic H. H. Boyle was named in the introductions to the Plant Inventories held by the Hunt Institute, and fortunately his plant description was still intact. These Plant Inventories are indeed a great, detailed resource and helped track the explorers named in Hodge's lists. They also illuminate the tenuousness of early global plant introductions, happening as they did plant by single plant.

In *The National Program for Conservation of Crop Germ Plasm*, Sam Burgess (1971) included an appendix titled "Foreign Explorations of the

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USDA, 1946–1971,” which helped identify or corroborate some of the lesser-known people on Hodge’s lists. The table of “Principal Expeditions of the USDA,” appended to Knowles Ryerson’s “The History of Plant Exploration and Introduction in the United States Department of Agriculture” published in the *Proceedings of the International Symposium on Plant Introduction* (Ryerson 1967), also proved a valuable inventory for this article.

In addition, the biographies that follow are, due to time and space constraints, just sketches. Though lists of works consulted and some portraits do appear here, readers should contact the author for a complete listing of biographical citations for each botanist as well as a full array of portrait options available from the Archives of the Hunt Institute for Botanical Documentation. While biographical research has hopefully corrected any errors of inclusion and exclusion or brought attention to some items that need more research, the author acknowledges the possibility of error and asks that readers contact her with any such errors of inclusion, omission or attribution.

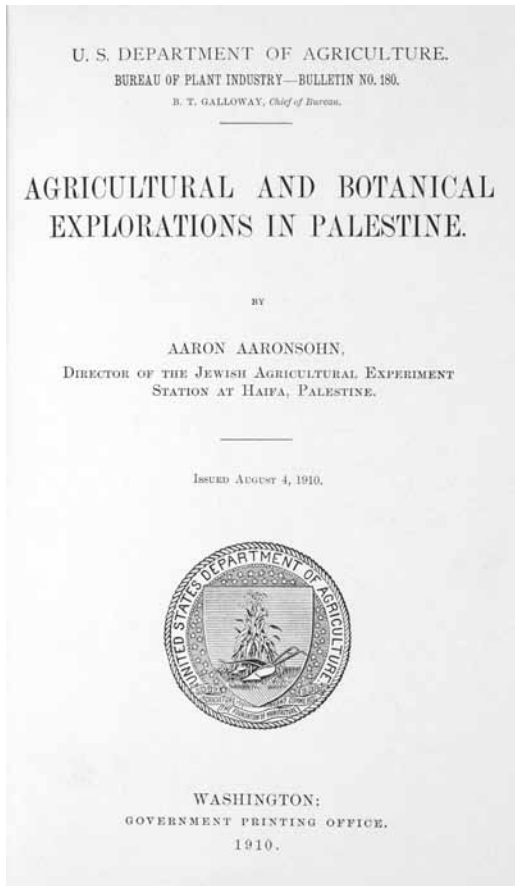
The explorers

Aaronsohn, Aaron (1876–1919, Fig. 1). Geneticist Aaron Aaronsohn was born in Bacau, Rumania, and emigrated to Palestine with his father in 1882. He grew up working in vineyards. Sent to France by the Baron Edmond de Rothschild, he studied at the National School of Agriculture in Grignon (1894–1896) and then superintended agricultural farms in Palestine and Anatolia (1896–1899). In 1906 in Palestine, Aaronsohn found emmer (*Triticum dicoccon*), a wild wheat believed to be the ancestor of cultivated wheats (Cook 1919; Dunbar 1920; Oppenheimer 1957). Invited to the USDA (1909–1910) to advise the Bureau of Plant Industry on introducing plants growing in Syria and Palestine to the arid western states,



Figure 1. *Above*, Aaron Aaronsohn, no date. Hunt Institute for Botanical Documentation Archives portrait no. 1; Figure 2. *Right*, Title page from Aaronsohn’s “Agricultural and botanical explorations in Palestine” published in 1910 as Bulletin no. 180.

he arrived in Washington knowing nobody and speaking no English (but able to converse in French and German). R. T. Swingle claimed that Aaronsohn “was always ready to attempt what more conservative men might term the impossible” (Swingle 1919, p. 159), and indeed within six months Aaronsohn’s English was sufficient to publicly address forestry and botany meetings. In 1910 he founded the American Agricultural Experiment Station near Haifa in Palestine, the first experiment station in that country. That same year his paper “Agricultural and botanical explorations in Palestine” was published as Bulletin no. 180 (Fig. 2). In it Aaronsohn wrote: “In the oriental countries can be found almost all of



the wild types which our prehistoric ancestors utilized in producing the cultivated crops of our time. Here, also, are to be found some of the best cultivated varieties, developed by the combined efforts of man and nature for thousands of years" (Aaronsohn 1910, p. 7). David Fairchild wrote of Aaronsohn that "His grasp of the dry land agricultural problems was to us surprising, and the botanical knowledge of our own plants, acquired through the quiet study of books in his little library in Haifa and from his visits to the herbaria of Europe made his advent among us in the summer of 1909 a real event" (Fairchild 1919, p. 156). In Bulletin no. 205 Fairchild reported hopefully:

To the fruit growers the question of better stock plants is of great importance and is being emphasized more strongly now than ever before. To such as are working on the problem, the introduction from Palestine, through Mr. Aaron Aaronsohn, of a large red-fruited variety of haw, *Crataegus azarolus*, will be interesting. It has been used successfully both in Tunis and Palestine and is considered by Mr. Aaronsohn to be an ideal stock for dwarf early pears in our arid irrigated regions of the Southwest, where the question of growing early pears is attracting attention (Fairchild 1909, p. 7).

Fairchild also noted that Aaronsohn's single publication for the USDA "formed the basis of the work which, had the war not interrupted the exchange in plants, would have resulted in the introduction into this country of hundreds of new species and varieties of plants, ... [but after the war] he did not find the time or money to carry on his work of exchanging plants" (Fairchild 1919, p. 157). The USDA sent Aaronsohn up the Nile River and on into Egypt. His Sultany palm and information about cultivating the date palm in the sand dunes of lower Egypt "contributed materially to the development of the date palm industry in America" (Fairchild 1919, p. 158). In 1912 Aaronsohn was commissioned to go to Sudan, from Palestine, to find and secure specimens of the Wahi date. Shortly after he contributed to the Peace Conference of Versailles in 1919, he was killed at age 43 in a plane crash while traveling from London to Paris.

Archer, William Andrew (1894–1973, Fig. 3). Taxonomist Andy Archer was born to American parents in Torreon, Mexico. He received his B.S. from New Mexico A&M in 1920 and his Ph.D. from the University of Michigan in 1925. He served in the New Mexico infantry in 1916–1917 and in an American Expeditionary Force Base Hospital in France during World War I (Anonymous 1973b, c). After the war he worked at the USDA as assistant plant pathologist (1926–1929). He spent a year as head of Botany and



Figure 3. William Andrew Archer, 1934.
Photographer: Robert Taylor. Hunt Institute for Botanical Documentation Archives portrait no. 1.

Plant Pathology at the Estación Experimental Agronómico in Medellín, Colombia (1929–1930), during which time he collected about 600 plants from the little-known Choco region and deposited those specimens at the Smithsonian (Anonymous 1931). Archer spent time exploring the Andes and was un- or under-employed during most of the depression. He then returned to the USDA, traveling in Latin America for the Division of Plant Exploration and Introduction (1934–1937). He traveled to Guyana (formerly British Guiana), Suriname, Venezuela and Colombia looking for fish poison and insecticide plants in 1934 and 1935.

His 2-part, 500-page manuscript describing those USDA-sponsored travels is at the Hunt Institute; for 6 July 1934 he wrote:

Mr. N[ankissoor] Persaud [Fig. 4], assistant in botany, will accompany me as helper and guide. Mr. Persaud has studied the flora to some extent and has charge of the fish poison plants growing in the Gardens. . . . The afternoon was spent going through the herbarium and the library. Later Persaud took me to the Gardens to see the few cultivated specimens of fish poisons (Archer 1934–1935, p. 16).

For 11 July 1934 he wrote:

In the afternoon went collecting with Persaud near the Compound. We passed through a beautiful avenue of *Hevea* rubber trees; the fruits were ripe and were bursting open with loud reports. Upon returning from the trip found several Indians that had brought in fish poison plants at the request of [Northwest Guyana Commissioner] Mr. Long (Archer 1934–1935, p. 18).

Archer's work on fish poison plants was published as "Fish poison plants of Guiana (A preliminary list)" in *Agricultural Journal of British Guiana* (1934, 5(3): 204–206). A brief summary of this research dated 1965 is in his collection at the Hunt Institute.

Archer explored Mexico and Central America for tobacco seed for the USDA (1935–1936), and his manuscript describing those travels also resides at Hunt Institute. The Works Progress Administration, sponsored by the Carson Indian Agency and in conjunction with the University of Nevada and the USDA, funded the 1937–1940 Nevada Medicinal Plants Project, which Archer directed. At the time of his death, this project was "considered to be the best treatment of medicinal plants used by native peoples" (Anonymous 1973a, p. 34). His papers documenting this and other later projects, including notes from extensive Native American interviews, are in the Hunt Institute Archives, and a description of the Archer Collection can be found on the



Figure 4. *Left*, Nankissoor Persaud beside *Hyophorbe amaricaulis*, Georgetown Botanic Gardens, Georgetown, British Guiana, South America, 1934–1935. Photographer: William Andrew Archer. Hunt Institute for Botanical Documentation Archives portrait no. 1.

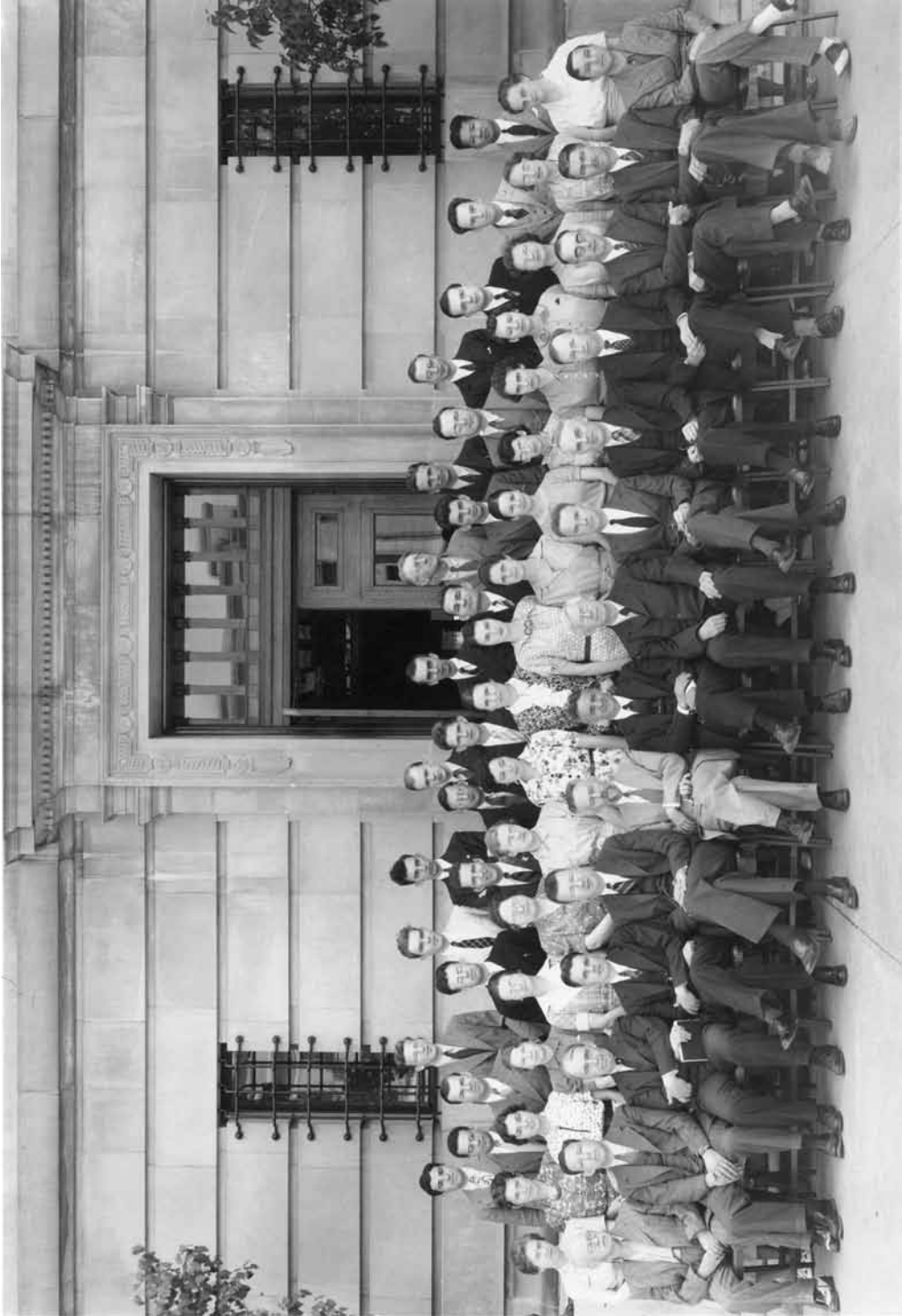
Figure 5. *Below*, John Thomas Baldwin Jr., no date. Photographer: Walter H. Hodge. Hunt Institute for Botanical Documentation Archives portrait no. 2.



Institute's Web site (<http://huntbot.andrew.cmu.edu/HIBD/Departments/Archives/Archives-AG/ArcherWilliam.shtml>). Archer served as custodian of the National Arboretum Herbarium (1938–1947) and as curator (1947–1964). After retiring, Archer volunteered at the Smithsonian Institution in the Archives, where he “organized into a usable form the outstanding Carleton Ball willow and archival collections” (Correll 1974, p. 755).

Baldwin, John Thomas, Jr. (1910–1974, Figs. 5, 6). Cytogeneticist John Baldwin was born in Chase City, Virginia. He earned his A.B. from the College of William and Mary in 1932 and his Ph.D. in biology from the University of Virginia in 1937. He taught at William and Mary (1937–1939) and was

an instructor in botany at the University of Michigan (1939–1942). He served as assistant cytologist for the USDA's rubber plants investigations in South America's Amazon Valley (1942–1944). Returning from his travels in South America, Baldwin served as assistant professor of biology and manager of the Blandy Experimental Farm at the University of Virginia (1944–1946). He returned to teach at William and Mary in 1946, garnering a reputation for populating the campus with *Cryptomeria* and other trees (Olson 1967, p. 12), and also served as chair of the Biology Department (1952–1962). Baldwin was a collaborator on the USDA's *Hevea* studies (1944–1946), and the Hunt Institute's Archer Collection (described in the Archer



entry above) has a folder of correspondence between Archer and Baldwin. Baldwin gave voice to the frustrations possible with plant introduction work when he wrote from the Blandy Experimental Farm to Archer at the Instituto Agronômico do Norte in Brazil on 1 September 1945: “Terribly disappointed with the treatment my *Hevea-Cunuria-Micrandra* collections have, according to report, received. Rands says no *Micrandra* or *Cunuria* survived transplanting. Would it not be possible for me to get from the Instituto a map of the plot in which my Rio Negro material was put?” (Baldwin 1945). Baldwin went to Africa in search of *Strophanthus* in 1949 and served as principal botanist on cortisone plant studies based in West Africa and Mexico (1949–1950). He earned his “fame for the major role he played in the historic quest for *Strophanthus*, a plant with compounds that synthesize into Cortisone, the pain-relieving drug”

(Anonymous 1974). Baldwin also served on the US State Department’s economic mission to Liberia (1947–1948).

Beetle, Alan Ackerman (1913–2003, Figs. 7, 8). Agronomist Alan A. “Doc” Beetle was born in Hanover, New Hampshire. He earned a bachelor’s degree from Dartmouth in 1936 and worked under Merritt Lyndon Fernald (1873–1950) at Harvard University (1936–1937). Beetle earned a master’s degree from the University of Wyoming in 1937 and his Ph.D. from the University of California at Berkeley in 1941. He was on the University of California Botanical Garden (Berkeley) Second Botanical Expedition to the Andes from August 1938 to April 1939 (with supplementary collections made into 1940) with Thomas Harper Goodspeed (1887–1966). According to the resulting publication, the USDA provided grants-in-aid for fieldwork on this trip (Goodspeed and Stork 1955).

Figure 6. *Left*, Department of Botany, Cornell University, Ithaca, New York, May 1937. Staff: (*seated in front row, left to right*) Stewart H. Burnham, Richard A. Laubengayer, Albert L. Andrews, Edward M. Palmquist, Daniel G. Clark, Loren C. Petry, Lewis Knudson, Karl M. Wiegand, Lester W. Sharp, Otis F. Curtis Sr., two unidentified men, Lowell F. Randolph, (G.?) De Toni; (*second row, left to right*) Ruth A. Petry, Mrs. Robert H. Tschudy, Rosamond Shurtleff, Carrolle E. Anderson, Mary Allen, unidentified woman, Helvia Justice, unidentified woman, Ethel C. Belk, Elizabeth Curtis, Fanny Randolph, four unidentified women, Elizabeth Williams, unidentified woman, Elizabeth Krebs; (*third row, left to right*) Leon Bernstein (*with glasses*), Elmer A. Palmartier, Charles Johns, Harlan P. Banks, unidentified man, Oren L. Justice, Clyde R. Harris, John Thomas Baldwin Jr. (*fifth from right*), George H. M. Lawrence, Robert H. Williams, unidentified man, Tom Boon-Long; (*fourth row, left to right*) Mr. Lester, Gabriel R. Mandels, Otis F. Curtis, John I. Shafer, Charles A. Taylor, unidentified man, Edward Swayze, Robert H. Tschudy, Bassett Maguire. Hunt Institute for Botanical Documentation Archives group portrait no. 0313.



Figure 7. *Right*, Alan Ackerman Beetle, 4 February 1952. Hunt Institute for Botanical Documentation Archives portrait no. 1.



Figure 8. Field Trip at Muir Woods, California, 1938. *Left to right:* Mrs. Morris G. Netting, Mrs. John L. Morrison, Mildred E. Mathias, Mrs. Lincoln Constance, Alan Ackerman Beetle, Carleton R. Worth, John L. Morrison, Morris G. Netting, Walter J. Eyerdam. Photographer: Lincoln Constance. Hunt Institute for Botanical Documentation Archives group portrait no. 0127.

Beetle served as agronomy instructor for the University of California and junior agronomist at the California Agricultural Experiment Station (1941–1945) and as assistant professor (1945–1946). Upon his return to the University of Wyoming, he was an assistant professor (1946–1948) and then associate professor (1948–1955) and full professor (1955–1979).

In 1952 Beetle went to the southern cone of South America—exploring the grasslands of Argentina, Uruguay and Brazil—on a USDA working mission, collecting barley, grass seeds and forage plants. Beetle deposited 94 seed samples with the USDA, among which were four peanuts purchased in Rio Grande do Sul in August 1952. Tomato spotted wilt virus (TSWV) was identified in American peanuts

in 1987, and, transmitted by thrips, it severely injures or kills the infected peanut plant. TSWV has been a serious problem in Georgia, Florida, Alabama and South Carolina. One of Beetle's peanut seeds, curated in the USDA's National Plant Germplasm System collection, has proven to be a key source of TSWV resistance in several varieties of peanuts, virtually saving the American peanut industry, but "it took decades and the attack of a devastating virus before the full 'value' of the Brazilian peanuts became apparent to the breeders in the US" (Edmonds Institute 2006, p. 3).

After returning to the United States, Beetle continued his grass work in Wyoming. He wrote at this time to May M. Blaine (1889–1973), the secretary to the head of the Division

of Plant Exploration and Introduction: “I miss my work for your Division very much but am constantly reminded of it as the seeds I am growing mature and become living plants in Wyoming. I am having very good success with the grasses and am slowly getting various shrubs and ornamentals started” (Beetle 1953). Back in Laramie, Beetle developed the University of Wyoming’s Department of Range Management and taught there until his 1979 retirement (Skinner 2003). Beetle’s contribution to the overall health of our national agriculture has taken decades to become apparent. His story is further testimony to the importance of these historic collections — of plants, germplasm and papers — and their long-term preservation.

Bessey, Ernst Athearn (1877–1957, Fig. 9). Botanist and mushroom authority Ernst A. Bessey was born in Ames, Iowa, the son of taxonomist Charles Edwin Bessey (Sharpe 2008). From the University of Nebraska he earned an A.B. in 1896 (Fig. 10), a B.S. in 1897, an A.M. in 1898, an M.A. in 1904 and an LL.D. in 1946. He earned his Ph.D. from the University of Halle, Germany, in 1904. Bessey served as assistant vegetable pathologist for the USDA (1899–1901) and assistant in charge of seed and plant introduction (1901–1902, while Fairchild was abroad). From 1902 to 1904 Bessey traveled on a USDA expedition to Russia, Turkestan, Germany and Algeria to collect alfalfas and hardy fruits. He served as a USDA vegetable pathologist (1904–1906) and as the pathologist in charge of the Miami, Florida, subtropical laboratory (1906–1908). Bessey was professor of botany and bacteriology for Louisiana State University, Baton Rouge (1908–1910), and professor of botany at Michigan Agricultural College (now Michigan State University, 1910–1945), during which time he served as acting dean of the applied sciences division (1927–1930), dean of the graduate school (1930–1944) and



Figure 9. Ernst Athearn Bessey, December 1950. Photographer: George F. Webber. Hunt Institute for Botanical Documentation Archives portrait no. 8.

distinguished professor (1945–1946). His subtle humor was revealed when he departed from his otherwise formal style in a 29 September 1919 letter to Truman G. Yuncker (1891–1964): “I was at Ann Arbor at a scientific conference, and at its close I visited the Botanical Department. Professor Bartlett asked concerning you in relation to the Botanical Society of America. We filled out a blank recommending you for membership and in due course of time you will receive a statement from the treasurer asking you to fork over \$5.00” (Bessey 1919). Bessey was emeritus professor at Michigan from 1946 until his death.

Bioletti, Frederic Theodore (1865–1939). Viticulturist Frederic T. Bioletti was born in Liverpool, England; he lived on



Figure 10. Seminar Botanicum, University of Nebraska, Lincoln, Nebraska, 1896. Seated in front row, left to right: Cornelius L. Shear, Frank W. Taylor, Ernst A. Bessey, Henry B. Ward, Charles E. Bessey, Lawrence Bruner; standing in second row, left to right: Roscoe Pound, Albert F. Woods, Clarence J. Elmore, Frederic E. Clements, De Alton Saunders. Hunt Institute for Botanical Documentation Archives group portrait no. 0031.

farms and in small towns (Bailey and Bailey 1930, p. 67) in England and Scotland until coming to the United States in 1878. From 1878 to 1888 he attended a private school and Heald’s Business College in San Francisco. He earned his bachelor’s degree from the University of California, Berkeley, in 1894 and a master of arts in 1898. From 1894 to 1901 he was instructor of viticulture at the University of California; from 1901 to 1904 he served as instructor in viticulture, enology and horticulture at Elsenburg College, Cape Colony, South Africa (now the Cape Institute

for Agricultural Training; Elsenburg). He was assistant professor of viticulture and enology at the University of California (1904–1906). In 1907 he farmed. From 1908 to 1910 he was a managing partner in a vineyard but returned to the university as associate professor in 1910. For ten months in 1930 he worked for the USDA as an agricultural explorer, collecting alfalfa, citrus, apricots and grapes in Spain, Portugal and French North Africa. During those ten months he traveled with H. L. Westover and Knowles Ryerson, going to England with Ryerson that year to search for grapes and deciduous fruits.

Otherwise, he served as professor of viticulture at Berkeley until his retirement with emeritus status in 1935 (Anonymous 1939). Bioletti's acquaintance and study with Edward Lee Greene inspired his avocational interest in taxonomy, to which he referred thus: "Botany in fact was not a study for us but a sport" but later recounts that "the joy of collecting a new and unrecorded species ... added an excitement and zest to our collecting that changed it from a mere recreation to a serious pursuit" (Bioletti 1929, p. 333). In addition to his interest in academic and scientific matters, Bioletti collected plants around San Francisco and worked to deliver information on grape and olive crop improvement directly to farmers through publications and farmers' institutes. Bioletti described *Collinsia franciscana* from San Francisco and was commemorated in *Mimulus bioletti* Eastwood, a plant of Nevada (Thomas 1961, p. 149). The Hunt Institute Archives holds no portraits of Bioletti and would welcome any individual or group photographs of him.

Blood, Heber Loran (1900–n.d.). Plant pathologist H. Loran Blood was born in Kaysville, Utah. He attended Utah College, earning his B.S. in 1926 and his M.S. in 1928, and served there as instructor in plant pathology (1925–1928). He was a fellow at the University of Wisconsin (1928–1930) and earned his Ph.D. there in 1930. He was assistant plant pathologist at the Wisconsin Agricultural Experiment Station (1926–1928) and worked as assistant professor and associate plant pathologist at Utah State College (1930–1931), where he was promoted to plant pathologist in 1931. He served as an agent of the USDA from 1928 to 1930 and from 1931 to at least 1938. From 1937 to 1938 he traveled in South America to collect tomatoes and related species. He collected a wild relative of the tomato in Peru that has supplied resistant factors for such diseases as Fusarium wilt and root-knot nematode. During the build-up to America's

entry into World War II, he wrote hopefully to May M. Blaine, secretary to Benjamin Yoe Morrison at the Division of Plant Exploration and Introduction, on 6 April 1938:

we passed through Lima April 4 on our way to Guayaquil, Ecuador. We are now sailing up the river and in another two and ½ hours will be docked at one of the hottest spots in South America. They say it is really quite terrific, so I presume we will still hurry to get out of the heat. ... Thanks so much for the news items. It has been so long since we have had an opportunity to find out what is happening in our native land that we hardly know whether anything is happening or not. Of course we know things are happening but to us it is nil. Thanks also for your well wishes. We hope our work will bring results. But that remains for the future to demonstrate (Blood 1938).

Unfortunately, the immediate future did not go well for Blood and his family. He wrote to Blaine on 26 June 1939:

Mr. Morrison, I am sure, has formed a very bad impression of me with you from my tardiness in taking care of the unfinished business relating to the South American expedition. I have no excuse except that I had planned on doing the work during my spare time, allowing the regular time of eight hours per day for the task of catching up with and carrying forward our research program, and I have had no spare time. The last year has been a night-mare to me. While I was in South America, Mrs. Blood had a very serious fall. ... Beginning just one year ago she has had one year of serious illness and trouble. She has been in bed much of the time with a number of organic disorders and two operations. She sat up yesterday for the first time following the last operation, performed in May. ... The result of the whole thing is that there has been no spare time to use in working up the material and completing the unfinished responsibilities resulting from the obligations of the expedition for which I am very sorry (Blood 1939).

According to the USDA's National Plant Germplasm System/Germplasm Resources Information Network database, Blood acquired or arranged cooperatively for the acquisition

of over 400 cultivated or wild tomato seeds accessioned into the system. He was listed in "Principal Expeditions of the USDA" (Ryerson 1967, p. 18), but little other information, including a death date and portraits, was found. Any additional information about, or portraits of, Heber Loran Blood would be welcome additions to the Hunt Institute Archives biographical collections.

Bolley, Henry Luke (1865–1956, Figs. 11, 12). Bacteriologist Henry Bolley was born in Manchester, Indiana. He attended Purdue University, earning his B.S. in 1888 and M.S. in 1889 under J. C. Arthur (1850–1942). Bolley served as instructor in biology at Purdue in 1889 and 1890; he was professor of botany and zoology at North Dakota College (1890–1946) and was dean of the division of botany (1908–1946); he also served as botanist at the North Dakota Agricultural Experiment Station (1890–1946) where he worked on combating flax wilt during the teens. Bolley was also state seed commissioner for North Dakota (1909–1929). He was granted honorary doctor of science degrees from Purdue in 1938 and from the North Dakota Agricultural College in 1939.

While working at the North Dakota Agricultural Experiment Station, Bolley proved, with nearly nine years of testing, that wilt-ridden plots of flax, called flax-sick soil, were infected not due to infertile lands but rather due to a fungus. As a result of this work, the USDA and North Dakota Agricultural College jointly funded Bolley's travel through Europe and Russia in the summer of 1903, though Bolley did not appear on the 1967 "Principal Expeditions of the USDA" (Ryerson 1967). In 1907 Bolley began advocating a "pure seed" law, and in 1909 his proposed legislation was passed as he had written it. His discovery of flax-sick and wheat-sick soils infuriated land speculators and railroad investors, who were profiting from new farmers. A group



Figure 11. Henry Luke Bolley, no date. From a negative loaned by Prof. H. C. Beeskov. Hunt Institute for Botanical Documentation Archives portrait no. 1.

of businessmen formed the Better Farming Association (BFA) to counter the findings of Bolley and the Agricultural College. In 1913 the BFA's director joined the Agricultural College in charge of the experiment station. Bolley was subsequently barred from his labs, his research financing was withheld, and he was charged with unscientific conduct in 1916. A lengthy investigation ended with his exoneration (Anonymous 2004).

In 1930 Bolley went to Argentina with his wife and daughter to study flax cropping. Mrs. Bolley died on the trip, and father and daughter returned to North Dakota. In 1931 Bolley went to Argentina again, and his observations of the trip were published in Bulletin no. 253 in 1932. Bolley continued to



Figure 12. Botanists Meeting, Minneapolis, Minnesota, 1910. George P. Burns, Louis H. Pammel, Erwin F. Smith, James B. Overton, Donald Reddick, Augustine D. Selby, George M. Reed, Carl O. Rose, George P. Burns, Louis H. Pammel, Erwin F. Smith, James B. Overton, Donald Reddick, Augustine D. Selby, Henry A. Gleason, John M. Coulter, Hermann Von Schrenk, Elizabeth H. Cowles, Melville T. Cook, Frank L. Stevens, George T. Moore, Charles E. Bessey, Frederick C. Newcombe, Cornelius L. Shear, Raymond J. Pool, Arthur H. R. Butler, Ots W. Caldwell, Lewis R. Jones, Arlow B. Stout, Alfred P. Dachnowski, Edgar W. Olive, Henry Luke Bolley (from row, fourth from right, facing right in light-colored top coat), ? Pond, John J. Davis, Haven Metcalf. Photographer: Skage, Minneapolis, Minnesota. Hunt Institute for Botanical Documentation Archives group portrait no. 0791.

teach and do research until he retired in 1945. His papers were discovered on a loading dock in the 1960s, waiting to be transported to a landfill. They are now housed at North Dakota State University (Anonymous 2004).

Boyle, Harry H. (fl.1902–1914). This listing has proven to be a most enticing mystery. According to Hodge’s lists, H. H. Boyle was in England, Ireland and Scotland in 1907. Boyle was not listed on “Principal Expeditions of the USDA” (Ryerson 1967). Hunt Institute Archives has collected no biographical mention of him in our nearly 50 years of garnering information. Biographical dictionaries, online botanical databases, even Web search engines offered no results.⁴ After much searching a reference to Harry Boyle surfaced in Fairchild’s work: “I could hear of no such thing as canned mangosteens, though a friend of mine, Harry Boyle, once sent me a case of canned mangosteens from the little island of Solo in the Philippines, which I thought perfectly delicious” (Fairchild 1930, p. 392). Surveying Fairchild’s other works produced the following account in *Garden Islands of the Great East* of his time canvassing the Philippines. Fairchild wrote:

There had been much talk about the Japanese infiltration into Davao, and those who should know had told us that there were more Japanese in the island of Mindanao than there were Americans in the whole of the Philippines. My first knowledge of the situation had come to me years ago through Harry Boyle, who had been sent out to Siam [now Thailand] to study the Siamese pomelos for the Department of Agriculture and then had gone on to Davao, where he settled down as the Abaca buyer for some Ohio rope manufacturers. Harry Boyle watched the buying up of the hemp plantations by Japanese, and as early as 1925 he became convinced that they were subsidized by the Japanese government (Fairchild 1943, pp. 82–83).

Thankfully, Fairchild here linked Harry H. Boyle with the USDA, placed him geographically and narrowed his flourish dates.

Fairchild wrote of his friend as early as 1917 when he reported in Plant Inventory no. 39: “Mr. Harry Boyle, who secured the Nakhon Chaisri seedless Siamese pummelo [*sic*] (No. 37724), making a special trip to Bangkok from the Philippines, reports that it is not always seedless in Siam” (Fairchild 1917, p. 10). The Plant Inventory report for plant number 37724 reveals that the plant and report were “Presented by Mr. Harry Boyle, assistant horticulturist, Bureau of Agriculture, Philippines Islands. Received December, 1913. The report that follows is taken from *Philippine Agricultural Review*, February, 1914” (Fairchild 1917, p. 27). Even with these three citations, it seemed unclear whether Harry Boyle was an explorer for the USDA in the same way as the others listed here. Then Amanda Harris, a generous researcher working on the history of plant quarantine, sent me two pages from “Explorers and Explorations,” an unpublished account by Fairchild. In it he wrote,

Harry Boyle, one of the boys who grew up in the greenhouses of the Department in Washington, graduating from them into service in the Philippines, was sent from his post in Manila to the town of Nakhon Chaisai, not far from Bangkok, in 1913, to get the Siamese seedless pomelo. I claim the slight distinction of being the one who first introduced it, but my “seedless” pomelo, when fruited in the greenhouse near other citrus trees, produced myriads of seeds. Strangely enough, the first fruit that Boyle opened in the orchard he visited was full of seeds, quite like the greenhouse-grown ones I had innocently taken as a present to the Siamese Minister in Washington. To Boyle’s enquiry as to how this came about, the owner explained that seedlessness was due to salt, deposited around the tree by the brackish water which backs up, in dry seasons, in the canals that run through the orchards of this reputedly seedless pomelo, or grapefruit (Fairchild n.d., pp. 20–21).

Although I did not find corroborating evidence of Boyle’s travels in England, Ireland and Scotland, documents revealed a story about

Fairchild's friend who was sent exploring on behalf of the Philippine governmental bureau at a time when the United States administrated the Philippines.

Amanda Harris sent a copy of Boyle's pomelo article in the *Journal of Heredity* and the thinly documented plantsman began to take on some personality. He wrote of the highly reputed seedless pomelo of Siam: "It was 12 years from the time I first became interested in this fruit to the time when I actually saw it, but it is now established in the Philippine Islands, has been introduced to the United States and will, I believe, spread throughout the warmer portions of the world, as the finest grapefruit cultivated" (Boyle 1914, p. 440). In telling the story of the pomelo, Boyle himself helped establish his flourish dates and fill in some of his career information:

As early as 1902, I was employed in the Office of Foreign Seed and Plant Introduction for the U. S. Department of Agriculture. ... In 1911 I was transferred to the Philippine Bureau of Agriculture, and shortly afterward learned from C. A. Steele, a Siamese acquaintance, that while the seedless pomelo was not common in Siam, it nevertheless did exist in certain parts of the country. A few months later he sent us a small shipment of budwood. In 1912 the Bureau received from a passing traveler a present of four fruits which, upon inspection, fully justified the almost legendary reputation of this pomelo. ... As a result of this evidence, the Bureau of Agriculture sent me to Siam to study the pomelo on the spot and obtain budwood, plants and fruits (Boyle 1914, p. 440).

An accompanying photo in the *Journal of Heredity* of the pomelo trees on the plantation of Prince Yugelar near Bangkok was dated 1913, corroborating Fairchild's data. Finding some seedless and some seedy pomelos, Boyle theorized that cross-pollination influenced seedlessness, based on "experience which I gained while working as Assistant in Arboriculture in charge of the propagation of citrus fruits under W. T. Swingle of the U. S.

Department of Agriculture at Washington" (Boyle 1914, p. 442). The Hunt Institute Archives would welcome any new information on, or portraits of, this enigmatic plantsman.

Carleton, Mark Alfred (1866–1925, Fig. 13). Agronomist and plant pathologist Mark Carleton was born near Jerusalem, Ohio, and raised in Kansas. He earned his B.S. at Kansas State Agricultural College (now Kansas State University), Manhattan, Kansas, in 1887 and his M.S. there in 1893. He served as instructor of natural history at Garfield University in Wichita (1888–1889). Without enough funds to continue, Garfield suspended classes, and Carleton moved to Wichita University as a professor (1890–1891). He served as assistant botanist at the Kansas Agricultural Experiment Station (1892–1893). He was working on studies of cereal diseases



Figure 13. Mark Alfred Carleton, no date. Hunt Institute for Botanical Documentation Archives portrait no. 1.

with Albert Spear Hitchcock (1865–1935) at Kansas State Agricultural College (Campbell et al. 1999, pp. 218–219) when he wrote to John Holzinger (1853–1929) in Washington, D.C., in June 1892 that he had sent specimens “In accordance with your request,” noting that “Dr. Vasey kindly allowed me to reserve specimens for myself in cases where the material was in sufficient abundance, so that I am able to send you these half dozen” (Carleton 1892). Carleton moved to Washington, D.C., and was a USDA pathologist (1894–1901) and cerealist in charge of the Office of Cereal Investigations at the Bureau of Plant Industry from 1901 to 1918 (Blaine 1964). Once there, Carleton quickly left his desk behind. Surveying wheat-growing practices in the American plains, with particular attention to the German-Russian Mennonites raising Turkey wheat in Kansas, led him to consider Russian wheat varieties as more suited to plains farming. He campaigned for exploration of Russian crops and learned to read Russian, and in 1898 Fairchild indeed sent him abroad. Carleton spent 1898–1899 scouring Russia, Austria and Hungary for wheats and cereals, bringing back rust-resistant Kubanka and Kharkov wheats. In a postcard dated 22 August 1898 from Carleton in Odessa, Ukraine, to Walter T. Swingle, Carleton wrote: “Am just now planning a trip northward and eastward to Siberia. It will be a long hard journey, I think” (Carleton 1898). In 1900 he went to Russia and Italy for general collecting. The USDA Web site reported that:

An increasing population, a new or sudden occurrence of a crop disease or the arrival of a new insect are a few reasons to continue the search for new plant material and new genotypes of familiar, widely used plants. As an example, in 1898, experts were predicting food shortages and famine because increases in the population would overtake our ability to grow sufficient wheat by 1931. Five years after this announcement, the U.S. production of wheat

went from 60,000 to 20 million bushels a year, due in part to the efforts of USDA explorer Mark Carleton. He brought back, from his plant exploration trip to Russia, new drought tolerant and better tasting varieties of wheat that opened the Great Plains and the Northwest for wheat growing (USDA, USNAH 2004).

Carleton (Fig. 14) was furloughed from his job as the cerealist in charge of the Office of Cereal Investigations in 1913–1914 when he took charge of the chestnut blight control campaign in Pennsylvania. He worked successfully on wheat importation but not so successfully on chestnut blight. In 1916 he published a textbook, *The Small Grains* (Rodenhiser 1967). Personal tragedies marked his later years as three of his four children took seriously ill and one died. Medical treatments for his children tapped his income; he borrowed widely to cover costs and lost his home; he died in 1925 while in Peru trying to solve a wealthy cotton planter’s infestation of pink boll weevils (Isern 1980).

Collins, Guy N. (1872–1938, Figs. 15, 16). Plant geneticist Guy Collins was born in Mertensia, New York. He left Syracuse University after one year to join Orator Fuller Cook’s agricultural surveys of Liberia on behalf of the New York Colonization Society, and from 1891 to 1896 he worked for what Fairchild called the “Liberian Colonization Society to see what the prospects were for the betterment of the Liberian youth” (1930, p. 486). Just after the United States acquired Puerto Rico, Collins and Cook “made two trips to Porto Rico, one in 1899, the other in 1901, which covered the different types of floral and agricultural areas of the island” (Cook and Collins 1903, p. 62). Collins also went to Costa Rica, Guatemala and Mexico on behalf of the USDA in 1902 in search of rubber, cacao and vanilla plants. He planted thick-skinned avocados of Guatemala in Puerto Rico, and those breeds have been used extensively in cultivating the table breeds



Figure 14. Office of Foreign Seed and Plant Introduction, USDA, 1914. Front row, left to right: David G. Fairchild, Palemon H. Dorsett, Beverly T. Galloway, Erwin F. Smith; back row, left to right: Walter T. Swingle, Merton B. Waite, Mark Alfred Carleton, Albert F. Woods. Hunt Institute for Botanical Documentation Archives group portrait no. 0164.

grown in Florida and California. Bulletin no. 77 on the avocado was written by Collins in 1905. He earned a reputation for collecting widely, and Fairchild quoted Collins' advice in the obituary written for the *Journal of Heredity*: "I venture again to call attention to the necessity of looking for desirable adaptations rather than desirable varieties and to urge that no variety be overlooked simply because it appears insignificant and worthless" (Fairchild 1938a, p. 405).

In addition to his social and botanical interests, Collins was a famed plant photographer in the early days of that technology. Fairchild wrote of Collins' "clever arrangement to eliminate the shadows in his pictures of plants. He mounted the camera and the object to be photographed on a swinging stand and whirled the whole stand while the exposure was being made" (1938a, p. 403). Collins was admired by botanical greats, yet in a memo dated 1898, he revealed a humbleness in light of appeals



Figure 15. Guy N. Collins, no date. Copied from prints in the collection of J. A. Stevenson, Crops Research Division, USDA, Beltsville, Maryland. Hunt Institute for Botanical Documentation Archives portrait no. 1.

to his photographic prowess when he wrote to Frederick V. Coville (1867–1937), then botanist at the USDA and curator of botany at the US National Museum, that “My ‘expert’ guess would agree with Mr. P[ictus?], but it might be due to old plates, or too alkaline developer. For old plates give full exposure and use more Potassium Bromide” (Collins 1898). Collins’ photographic expertise helped bring agricultural information to a wider audience. Coville wrote in the preface to Cook and Collins’ treatment of Puerto Rico “The use of illustrations reproduced from good photographs conveys in a simple and direct way information which no amount of technical description could replace” (Cook and Collins

1903, p. 53). J. T. Baldwin even reported that “Doctor Cook once told me to write papers around good photographs, and he frequently did just that—often with photographs supplied by Collins” (Baldwin 1969, p. 295).

Collins’ status as a pioneering authority on plant photography certainly did not keep him out of the field. He also accompanied Cook on trips to Central America and the West Indies. He worked for the USDA Bureau of Plant Industry as assistant botanist (1901–1910), as botanist (1910–1920) and as botanist in charge of biophysical investigations (1920–1938). Most of his career focused on Indian corn and the avocado. Indeed, he is credited with modifying the Spanish term “aguacate” to “avocado.” He also went on the Smithsonian Institution-sponsored Collins–Garner expedition to the Congo with Richard L. Garner in 1919.

Cook, Orator Fuller (1867–1949, Fig. 17). Taxonomist and botanist Orator Cook was born in Clyde, New York. He earned his Ph.B. from Syracuse University in 1890 and continued there as an instructor for a year while he worked and studied with pteridologist Lucien Marcus Underwood (1853–1907). Cook was also an agent of the New York Colonization Society (NYCS), which advocated and sponsored the resettling of African-Americans in Africa (1891–1898). Cook led an NYCS-sponsored agricultural trip to Liberia, West Africa, in 1891. He remained there as professor of natural sciences (1891–1897) and served as president of Liberia College (1896–1897). He worked for the BPI’s Section of Seed and Plant Introduction (1898–1901), traveling to Puerto Rico with G. N. Collins in 1899. Cook was botanist in charge of investigations in tropical agriculture (1901–1909) and initiated regular publication of the *Bulletin, Bureau of Plant Industry, United States Department of Agriculture* during his tenure. He went to Mexico, Guatemala and Puerto Rico with Collins again in 1901,



Figure 16. *Left*, American Genetic Association's Presentation of Frank N. Meyer Medal, USDA, Glenn Dale, Maryland, June 1936. *Left to right*: Orator F. Cook, Guy N. Collins (*second from left*), Carl S. Scofield, Palemon H. Dorsett (*holding the Meyer Medal*), David G. Fairchild, Thomas H. Kearney, Walter T. Swingle. Hunt Institute for Botanical Documentation Archives group portrait no. 0213.

Figure 17. *Below*, Orator Fuller Cook, 28 October 1947. Photographer: Walter H. Hodge. Hunt Institute for Botanical Documentation Archives portrait no. 1.

resulting in their *Economic Plants of Porto Rico* (1903). Cook also briefly worked at George Washington University in 1904. At the USDA he was bionomist in charge of acclimatization and adaptation investigations (1909–1929, Fig. 18) and chief botanist (1929–1934). In 1914 Cook traveled to Guatemala and British Honduras to collect weevil-resistant cottons. In 1922 Cook traveled to Central America with Harold Frederick Loomis (1896–1976) and R. D. Martin to investigate “the production of food sufficient to support large populations in regions that are now deserted and not considered suitable for agriculture” (Anonymous 1922, p. 1). Syracuse University granted him an honorary doctorate of science in 1930. In 1934 he transferred to the Division of Plant Exploration and Introduction until his retirement (Loomis 1950, p. 174). Fairchild wrote to Cook from the Fairchild Tropical Botanic Garden in December 1936: “I want

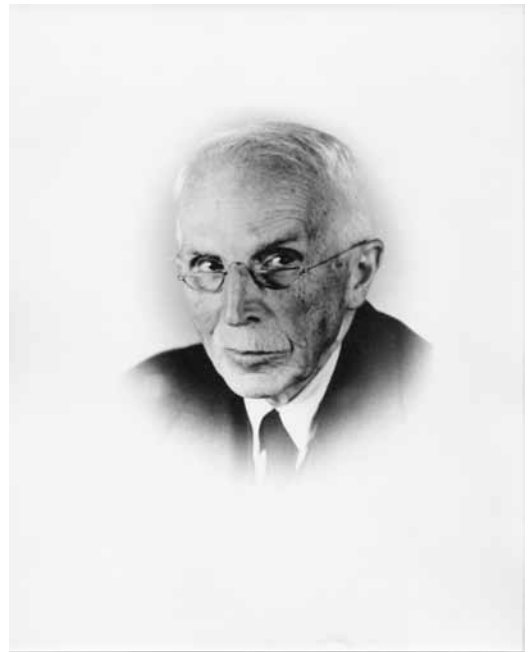




Figure 18. USDA Cotton Expedition in West Indies, South and Central America, 1926. On porch of native dwelling, Charles F. Baker (*holding rifle*), J. W. Hubbard, Orator Fuller Cook (*in hammock*), and 3 unidentified natives. Hunt Institute for Botanical Documentation Archives group portrait no. 0238.

to write that your letter was very favorably received and I think some satisfactory plan may be worked out whereby you can spend a part of your time among your loved palms! In any case don't tie yourself up on anything without letting us know here—that is, provided palms are what you would prefer to play with after you retire and provided you like this region down here where they grow" (Fairchild 1936, p. 1). Cook retired from the USDA in 1937 but continued to visit the office with as much regularity as during his employment (Loomis 1950, p. 174). Indeed, USDA secretary May

M. Blaine's biographical notes on Cook listed him as "Chief botanist 29–49" (Blaine 1964), sure testament to his continued presence. Some of Cook's papers are held at the University of Chicago Library; Hunt Institute Archives has his Notes on Cotton (1913–1929) and a collection that includes notes on citrus and maize, as well as letters to Cook from Fairchild.

Correll, Donovan Stewart (1908–1983, Fig. 19). Taxonomist Don Correll was born in Wilson, North Carolina. From Duke University he earned an A.B. degree in 1934,

an A.M. in 1936 and a Ph.D. in botany in 1939, having completed his dissertation work on Orchidaceae under a joint fellowship from Duke and Harvard University (Anonymous 1956, p. 71), where he worked with Oakes Ames (1874–1950). From 1939 to 1943 Correll was a research associate at the Botanical Museum of Harvard University, receiving a Milton Fund grant from Harvard in 1942 (Blaine 1964). In 1943 he also served as botanist on the Alaska Highway Botanical-Geological Survey. He was associate botanist for the USDA in Beltsville, Maryland (1943–1944). From 1944 to 1946 he served as a gunnery officer in the US Navy and then returned to Harvard with a Guggenheim Fellowship to continue his research (1946–1947). Upon completion of the fellowship, Correll returned to the USDA where from 1947 to 1956 he held several positions in the Specialty Crop Introductions Group of the Division of Plant Exploration and Introduction at the Bureau of Plant Industry, Soils, and Agricultural Engineering (BPISAE, Fig. 20).

Correll collected wild potatoes in the highlands of south-central Mexico for breeding, genetic research and systematic studies for the USDA (1947–1948). Correll wrote of this project that B. Y. Morrison tried unsuccessfully to assign a plant explorer from outside the Division of Plant Exploration and Introduction, “but turned to me as a last resort. Although, as he knew, our third child was only three weeks old, my wife and I accepted the challenge and I was on my way in a matter of days” (Correll 1962, p. vii). He wrote about the excursion itself:

Unlike most previous expeditions sent out by the Department of Agriculture, this one was directed primarily toward obtaining tubers, fruits, and botanical specimens of potatoes only, instead of economic plants in general. Consequently, although field work in Mexico did not begin until late in 1947, a rather large collection of potatoes was assembled in the

course of three months. Since some wild Mexican potatoes are known to be resistant to potato diseases, the collections made are to be used in breeding work with our domestic varieties to try to obtain more vigorous domestic strains with greater resistance to disease, drought, and frost. . . . After the known localities for potatoes were investigated [by car], work was undertaken in more or less unexplored territory. During this period time-consuming mule trips were taken to some of the almost inaccessible mountain ranges. In several cases potatoes were obtained from rather disjunct and isolated areas in Jalisco, Guerrero, Michoacán, and Oaxaca (Correll 1948, pp. 2, 8).

For this early exploration work and continued research, he received the Frank N. Meyer Memorial Medal in 1972 (Anonymous 1972).

In 1953 Correll explored Cuba, Puerto Rico and the Virgin Islands for breeding stock of sweet potatoes. In 1956 he became head of the Botany Department of the Texas Research Foundation in Renner, Texas. In 1958 he went to Chile, Colombia, Ecuador and Peru for the USDA in search of potatoes. One specimen from this journey “represents a connecting link between the potatoes and the tomatoes. Though described as a *Solanum* it could almost as readily have been described as a *Lycopersicon*” (Correll 1967, p. 90), and the specimen has facilitated research on the breeding and genetics of the tomato. In 1962 the Texas Research Institute published Correll’s monumental work *The Potato and Its Wild Relatives: Section Tuberarium of the Genus Solanum*. From 1972 to 1973 Correll was program director for systematic biology at the National Science Foundation, and at the conclusion of this appointment he was invited to join the staff of the Fairchild Tropical Garden in Miami, Florida. Ironically, Correll wrote to Paul Allen about the Fairchild Tropical Garden a generation earlier in 1953:

It is rather a coincidence to learn that you are interested in the possibility of a position elsewhere. Walter Hodge returned from Miami recently, and while there he talked with Mr.



Figure 19. Donovan Stewart Correll examining *Solanum* species (wild potatoes) under cultivation, Sturgeon Bay, Wisconsin, 1 September 1955. Photographer: Walter H. Hodge. Hunt Institute for Botanical Documentation Archives portrait no. 6a.



Figure 20. Division of Plant Exploration and Introduction, Plant Industry Station, USDA, Beltsville, Maryland, 29 November 1951. Staff: Carl O. Erlanson, Paul G. Russell, Benjamin Y. Morrison, Robert A. Young, Gabriel Edwin, William A. Archer, Frederick J. Hermann, Donovan Stewart Correll (*with dark hair on end of back row next to railing*), May M. Blaine, Harriet D. Potter, Mabel I. Yates, Emelia A. Leahy, Florence E. Shepard. Hunt Institute for Botanical Documentation Archives group portrait no. 005.

Loomis and others regarding a position open at the Fairchild Tropical Gardens. Both of us think that you might be interested in this position and Walter is writing you regarding the details. If you are interested in the position after hearing from Walter please let me know and I shall do all I can to help you land it (Correll 1953).

At just 45, Correll was one of the movers and shakers in American botany. While at the Fairchild Tropical Garden, Correll and his wife, Dr. Helen Butts Correll, researched, wrote and in 1983 published *Flora of the Bahama Archipelago, including the Turks and Caicos Islands*. Correll continued on at the Fairchild Tropical Garden until his death. The Native Plant

Society of Texas grants the Donovan Stewart Correll Memorial Award, for scientific writing in the field of the native Flora of Texas, in his memory. For more information, see also Bernice Schubert's obituary of Correll in *Economic Botany* (1984).

Crech, John Lewis (b. 1920, Figs. 21, 22). Horticulturist John Crech was born in Woonsocket, Rhode Island, and earned his University of Rhode Island bachelor's degree in horticulture in 1941. From 1941 to 1945 he served as an officer in the US Army; June 1943 to October 1944 of that time he spent as a prisoner of war in an officers' camp in Schuban,

Figure 21. *Right*, John Lewis Creech, Washington, D.C., April 1963. Photographer: Walter H. Hodge. Hunt Institute for Botanical Documentation Archives portrait no. 1a.



Figure 22. *Below*, Bureau of Plant Industry, USDA, Beltsville, Maryland, 30 November 1949. Staff (*left to right*): William E. Whitehouse, L. P. McCann, Max M. Hoover, Carl O. Erlanson, Edwin James, Howard L. Hyland, John Lewis Creech. Hunt Institute for Botanical Documentation Archives group portrait no. 0227.



Poland. The Germans turned a garden and greenhouse over to the prisoners, and Creech's training earned him the title of greenhouse manager. Thus he was allowed seeds and plants from the Red Cross, and with the ensuing crops he supplemented the prisoners' meager diet. Creech earned the Bronze Star for his plant work and the Silver Star for his valor in combat (Copeland and Armitage 2002). After World War II, Creech earned his master's degree in horticulture from the University of Massachusetts in 1947 and worked as an instructor there (1946–1947). From 1947 to 1950 he was an assistant horticulturist in the Division of Plant Exploration and Introduction at the BPISAE. In 1950 he was superintendent of the Plant Introduction Station in Glenn Dale, Missouri. There he continued the work of Frederick Charles Bradford (1887–1950) on “a dense-foliaged specimen of the Callery pear, grafted buds onto *Pyrus calleryana* seedlings, and established them in 1952 in a Washington suburb. ... Creech named this ornamental for F. C. Bradford, a former Glenn Dale superintendent” (Cunningham 1984, p. 262). Creech worked as a horticulturist for the Plant Introduction Station from 1950 to 1954 and earned his Ph.D. in botany from the University of Maryland in 1953. He was promoted to assistant chief of the New Crops Research Branch in 1959. Creech went to Japan and Ryukyu Island in 1955; he explored Okinawa, Japan, and Yakushima Island in search of ornamentals for the USDA in the fall and winter of 1956. This trip was the first in a series co-sponsored by Longwood Gardens, Kennett Square, Pennsylvania. In addition to collecting in the wild, “a number of small nurseries and plant breeding stations were visited” (Creech 1957, p. 1). Creech returned to Japan during azalea season from 14 April to 28 July 1961. Creech wrote in the published report on the 1961 trip, also co-sponsored by Longwood Gardens, that the missions' “objectives were

to investigate the geographical distribution of selected woody and herbaceous plants from Japan and to collect propagating material from important variations of species valuable as ornamentals in American horticulture” (Creech 1966, p. 1). Creech also collected ornamentals in Japan and Hong Kong in 1962 and in Nepal with Francis De Vos (1918–1990). In 1963 Creech went to Russia in search of fruits and ornamentals. Creech reported that when the USDA terminated the branch chiefs in 1972, “I was lucky and transferred directly to the National Arboretum when Dr. Henry Skinner retired and was appointed director in 1973” (Creech, pers. comm., 2007). In 1976 Creech arranged Japan's bonsai gift to America that served as the foundation of the National Bonsai and Penjing Museum. Creech retired from the USDA in 1980 as director of the National Herbarium (National Research Council 1991, p. 157). In 1989 he received the American Horticultural Society's Liberty Hyde Bailey Award for significant lifetime achievements in horticulture (AHS 2009), and in 2001 the National Bonsai Foundation published Creech's *The Bonsai Saga: How the Bicentennial Collection Came to America*.

Dorsett, Palemon Howard (1862–1943, Fig. 23). Horticulturist Howard Dorsett was born in Carlinville, Illinois. He earned a bachelor's degree from the University of Missouri in 1884 and joined the USDA in 1891 under Beverly Galloway (1863–1938) in the Section of Plant Pathology, where he worked on experiments with Bordeaux mixture (Cunningham 1984). From 1904 to 1907 Dorsett supervised the USDA experimental gardens in Chico, California. In 1907, on the heels of losing both his wife and eldest daughter, Dorsett opened a horticultural business in Alexandria, Virginia. Tragically, his youngest daughter died in 1909, and he returned to the BPI Office of Foreign Seed and Plant Introduction. In the fall of 1912, he was



Figure 23. Allison V. Armour Expedition, West Indies, Dominican Republic, Saona Island, ca.1930. Pelemon Howard Dorsett on beach holding a bunch of fruits of the Saona palm. Photographer: David G. Fairchild. Hunt Institute for Botanical Documentation Archives portrait no. 2.

sent to help get the new experimental farm in Mandan, North Dakota, up and running. In 1913 David Fairchild left Dorsett in charge back in Washington while he took an ill Mrs. Fairchild to Florida for the winter. Dorsett was tapped to head an expedition to Brazil to study variability of the navel orange. And indeed, in mid-January 1914, Dorsett, Archibald Dixon Shamel (b. 1878) and F. Wilson Popenoe (1892–1975) went to the interior of Brazil looking for citrus, and in 1917 they published Bulletin no. 445 about this expedition (USDA, NAL 2008, p. 2). In 1915 Dorsett helped Fairchild establish the Miami, Florida, Plant Introduction Garden; in 1920 Dorsett and Fairchild went to Panama for plants (Fairchild 1938b, 1947).

In 1924–1925 Dorsett traveled to Manchuria and northeastern China with his son James for general collecting. In 1925–1926 Dorsett and his son met up with Fairchild on the Allison Armour expedition in Ceylon (now Sri Lanka); they collected in Ceylon, Sumatra and Java (Fairchild 1928, pp. 97–98). Dorsett found a new species of shaddock, or wild grapefruit, in North Sumatra on the Armour expedition. He and his son also dodged local bloodshed: “This wonderful trip was made on foot by Mr. Dorsett and his son, and my son Graham without encountering any difficulty with the Atchenese even though the day before a massacre of Dutch troops had taken place on the West Coast some fifty miles only from the line of march” (Fairchild 1928, p. 101). (For more on the Armour expeditions, see Fairchild 1930.) In April 1926 the Dorsetts returned to Manchuria (Fairchild 1928, p. 109). Dorsett traveled to Japan, Korea and China from 1929 to 1932 with soybean expert William Joseph Morse (1884–1959) for soybeans, other legumes and ornamentals (USDA, NAL 2008). The Dorsett-Morse Expedition returned with about 9,000 specimens, half of which were soybeans, and is credited with helping soybeans become the second largest crop in the United States (Wood 2003, p. 19). In 1932 Dorsett went to Norway, Sweden and Denmark in search of hardy fruits and then retired from the USDA. Dorsett joined the Armour Expedition to the British West Indies and Guianas (1932–1933); he was awarded the Frank N. Meyer Memorial Medal in 1936 (Fig. 24) and died in a Washington, D.C., nursing home in 1943.

Enlow, Charles Ranger (1893–1977). Agronomist Charles Enlow was born in Kingman County, Kansas. He earned a B.S. in Agronomy from Kansas State University in 1920 and an M.S. in 1927. Between his degrees, he did fieldwork for the Great Western Sugar Company and taught high school agriculture. In 1924 he became assistant professor of agronomy at Kansas State University. In 1927 he joined the Florida



Figure 24. American Genetic Association's Presentation of Frank N. Meyer Medal, USDA, Glenn Dale, Maryland, June 1936. *Left to right:* David G. Fairchild, Mr. Hassell (zoologist), Guy N. Collins, Orator F. Cook, Thomas H. Kearney, Mrs. David G. Fairchild, Palemon Howard Dorsett (*holding the Meyer Medal*), Walter T. Swingle, Mabel I. Yates, Emilia A. Leahy, Carl S. Scofield. Photo courtesy of May M. Blaine. Hunt Institute for Botanical Documentation Archives group portrait no. 0212.

Agricultural Experiment Station and later that year was transferred to direct the Bureau of Plant Industry's lawn and grass research. Enlow was on record as an agronomist for the USDA's Office of Forage Crops in Washington, D.C., in 1930 and joined the USDA's Soil Conservation Service in 1933 as chief agronomist in charge of its Nursery Division.

In 1934 Enlow went to Russia and Turkey with Harvey Leroy Westover (1879–1943), on the six-month USDA Westover-Enlow expedition, to search out specimens of alfalfa, grasses and forage plants. Seeds from this expedition were used in the Civilian Conservation Corps' demonstration project,

headquartered at the Pullman Plant Materials Center in Pullman, Washington (USDA, NRCS 2007; Aubry et al. 2005). In 1944 Enlow was assigned to be the USDA's first agricultural attaché to South Africa. He retired from government service in 1950, started a seed business in Fowler, Indiana, and consulted on an international basis for land surveying, grazing and soil issues. He received the Frank N. Meyer Memorial Medal in 1970, and the accompanying citation read that

special tribute is paid to you for your successful introduction of grasses that have proven to be outstanding in the dryland areas of the United States, your successful efforts to assist countries

of Africa and the Near East in the development of plant introduction and conservation programs, and especially for your recent leadership of the USDA Plant and Seed Multiplication Team in Vietnam, wherein the eventual success of the improved rice varieties in Vietnam is largely credited to the initial introduction and testing program developed by you and your associates (Anonymous 1970, p. 260).

Enlow was 73 when he was appointed to lead the award-winning 1967 Vietnam project. The Hunt Institute Archives holds no portraits of Enlow but would welcome any.

Erlanson, Carl Oscar (1901–1975, Figs. 25, 26). Ecologist and phytogeographer Carl Erlanson was born in Aurora, Illinois. From the University of Michigan he earned his A.B. in 1924 and M.S. in 1925 and received an honorary D.Sc. in 1956. He was an instructor in botany at Michigan (1925–1927). He received an American-Scandinavian Foundation fellowship



Figure 25. Carl Oscar Erlanson, January 1930. Hunt Institute for Botanical Documentation Archives portrait no. 1.

for educational and cultural exchange and spent 1927–1928 in Greenland doing botanical research (Blaine 1964). Erlanson was an instructor of biology at Michigan (1928–1930). He served as associate ecologist at the BPI's Office of Foreign Plant Introduction (1930–1936) and in this capacity traveled broadly. He went on USDA expeditions to Mexico for potatoes and related tubers (1930–1931); to western South America, the Canal Zone and Cuba with Howard Grove MacMillan (b. 1890) for potatoes and other tubers (1931–1932); and to northern Norway, Sweden and Denmark for hardy fruits in 1932 (Ryerson 1967, p. 17). Erlanson worked as an ecologist (1936–1942), a senior ecologist (1942–1947) and then principle ecologist and associate chief (1947–1948) of the Division of Plant Exploration and Introduction. He was head of the Division (1948–1965), serving through its name change in 1953 to the Section of Plant Introduction and its move to the Agricultural Research Service (ARS) as the BPISAE was disbanded. He was also chief of the New Crops Research Branch of the ARS (1953–1965). In a rare glimpse of his personal side, a 1936 letter to Mildred Mathias reported: "Went up to the Island the next day and brought Killip back to civilization whereupon we celebrated his return by going to the "Volga Boatman" with the usual result" (Erlanson 1936). Erlanson received the Frank N. Meyer Memorial Medal in 1965 for his service: "In 1958 and again in 1964 he carried out surveys of agricultural research in the U.S.S.R. These trips resulted in the revival of exchange of plant materials between the United States and the U.S.S.R., and, as a result of his efforts, two plant explorations have occurred in the U.S.S.R., the first since 1930" (Phillips 1965, p. 203).

Fairchild, David Grandison (1869–1954, Figs. 27, 28). Legendary plant collector and mycologist David Fairchild was born at a home still standing on the campus of the Michigan State Agricultural College (now Michigan



Figure 26. First Anniversary Meeting Dinner, Society for Economic Botany, Purdue University, West Lafayette, Indiana, ca.21 May 1960. *Left to right*: Ernest Guenther, Carl Oscar Erlanson, David J. Rogers. Hunt Institute for Botanical Documentation Archives group portrait no. 0423

State University) in Lansing, Michigan (Beaman n.d., p. 1). His father was a professor of English at the new Agricultural College and lived on campus (Fairchild 1905). Fairchild described his idyllic start: “The campus was really only a clearing in the great Michigan Forest. A country road passed behind the row of professors’ houses where our playmates lived” (Fairchild 1938b, p. 3). He earned his B.S. from Kansas State College in 1888 and his M.S. there in 1893. He was awarded a Ph.D. from Oberlin College in 1916. Fairchild’s botanical employment began when his uncle brought Beverly T. Galloway, then at the Division of Plant Pathology and Physiology, home to lunch while Fairchild was visiting

and “before it ended [Galloway] invite[ed] me to join his staff in Washington” (Fairchild 1938b, p. 16). When Fairchild arrived in Washington in 1889, “all that existed of the Department of Agriculture was housed in an ugly old building... in a park just beyond one of the most disreputable quarters in the city” (Fairchild 1938b, p. 18). He worked on plant pathology, introducing a generation of scientists to “parasitic fungi” and popularizing Bordeaux mixture as a topical spray for leaf diseases (Fairchild 1938b, pp. 20–24). Fairchild was employed as second assistant pathologist at the Bureau of Plant Industry (1889–1892) and as assistant pathologist at the Division of Vegetable Pathology (1892–1893). Fairchild

resigned from the government to study in Europe and met wealthy businessman Barbour Lathrop on his subsequent Atlantic crossing in November 1893 (Fairchild 1938b, p. 30). Fairchild worked on *Valonia* while at the Naples Zoological Station in 1893, spent a semester at Breslau University as a student in botany and then went to Corsica for the USDA to help with the introduction of the Corsican Citron into American culture. He took a semester of botany and zoology in Berlin in 1894 and studied microscopic plant structures in Bonn in 1895. Fairchild studied at Buitenzorg Botanical Gardens for eight months in 1896, financed by Lathrop. Upon his return, he was made special agent in charge of the Section of

Seed and Plant Introduction (1897–1898), a position to which he would return.

“Lathrop came saw & conquered,” Fairchild announced in a December 1898 postcard to Walter T. Swingle. “Yesterday asked me to go for two years or more as Agricultural Explorer at large. He will foot all expense bills & will get secretary to pay my salary & original cost of such plants as I collect & freight of same” (Fairchild 1898). From 1898 to 1903 Fairchild was a worldwide agricultural explorer in the employ of Lathrop, sending the collected seeds and plants back to the USDA as gifts of Lathrop. During these years, Fairchild returned to Washington, D.C., briefly in 1900 and 1901. In 1903 he returned to a lengthy

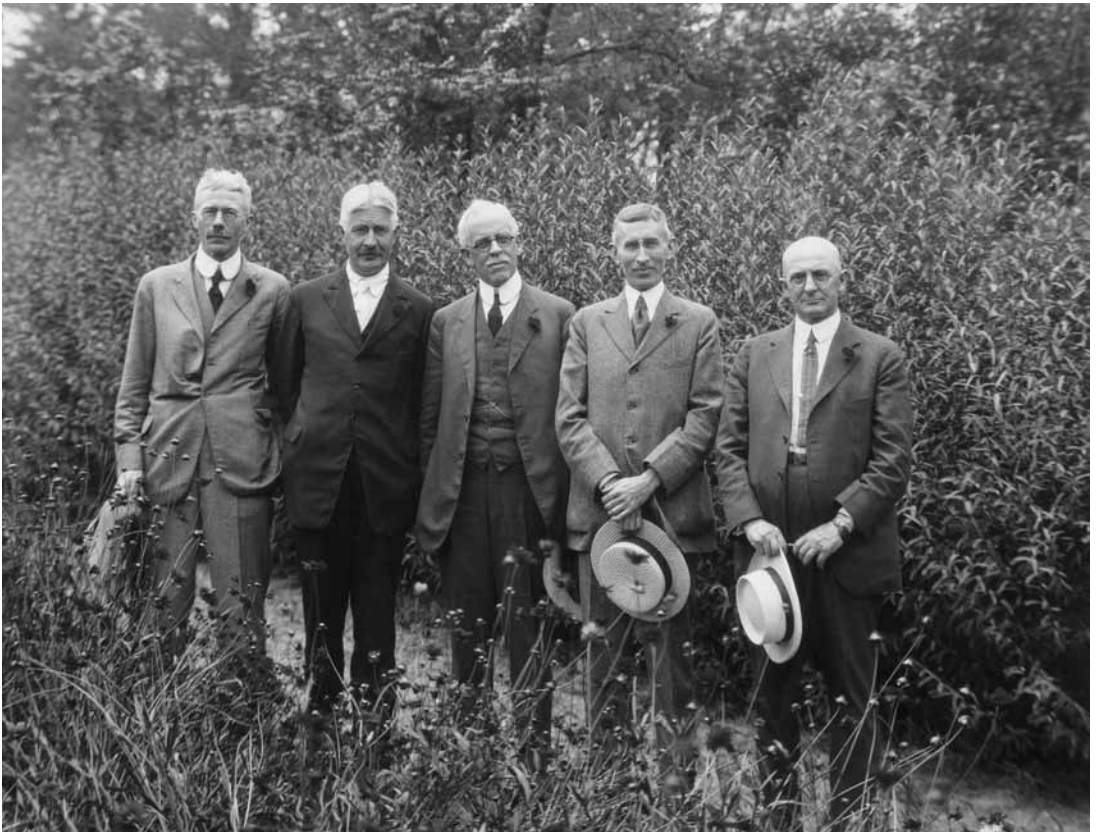


Figure 27. *Above*, David Grandison Fairchild at Treub’s “Mt. Laboratory,” Tjibodas, Java, 1896. Hunt Institute for Botanical Documentation Archives portrait no. 12; Figure 28. *Right*, Bureau of Plant Industry, USDA, June 1921. *Left to right*: Walter T. Swingle, Carl S. Scofield, David Grandison Fairchild, Thomas H. Kearney, Ellery C. Chilcott. Hunt Institute for Botanical Documentation Archives group portrait no. 0190.

and illustrious career at the USDA in the BPI's multiply named plant introduction program; he was head (1903–1928), senior agricultural explorer (1928–1933) and collaborator (1933–1935), when he retired. Fairchild wrote to his mentor and benefactor in 1906:

I made specific inquiries with regard to the Arabian alfalfa which we got at Bussorah on that trip up the Persian Gulf. Our experts inform me that this is already showing up as one of the biggest introductions which we have ever made. We are ordering two tons of seed for delivery next fall. The rapid growth of this variety of alfalfa, which is especially suited for irrigated lands, will affect the whole alfalfa business of the southwest, which amounts, as you know, to a great many million dollars a year (Fairchild 1906, p. 3).

Under Fairchild's leadership "more than 75,000 species of plants were introduced. He is responsible for the introduction of new varieties of wheat, rye and soybeans that increased the yields of these basic crops. He also introduced the kudzu vine and, in cooperation with Walter T. Swingle, introduced the commercial date to the Southwest" (Anonymous 1954). He was the lead scientist on the Allison V. Armour expeditions 1925–1927, 1930 and 1932. Robert H. Montgomery (1872–1953) founded and named the Fairchild Tropical Garden in honor of David Fairchild. The garden resides on a former grove of tropical fruit about ten miles south of Miami. Upon retirement, Fairchild moved his studies to the garden.



Fox, William Basil (1915–1952, Figs. 29, 30). Bill Fox was born in Talcott, West Virginia. He earned his B.S. from West Virginia University in 1939 and his M.S. in 1940. His Ph.D. in botany was granted from the University of Iowa in 1942. Fox was assistant botanist at West Virginia University (1939–1940) and then at the University of Iowa (1940–1942). He worked as a technical instructor of radar in the Air Force for the US War Department (1942–1945). In 1944 he married his botany student Helen Lee Hensleigh (Iowa Women’s Archives 2005). When the war ended, Fox served as assistant agronomist at the Washington (State) Agricultural Experiment Station (1945–1946). He was the first curator of the North Carolina State University herbarium (then North Carolina State College), Raleigh, and assistant professor of botany from 1946 until his death. Inheriting a herbarium collection maintained informally by several volunteer professors to assist in their teaching and research projects, Fox “enlarged it and increased its efficiency” (Anonymous 1952, p. 166) and is credited with “systematically arranging the collection and keeping accession records” (Krings 2004, p. 3). Fox went to Mexico and Baja California to search for medicinal plants for the USDA just before his death. His tragic death in a rifle accident happened in his home in 1952. Fox was president of the Southern Appalachian Botanical Society at the time of his death.

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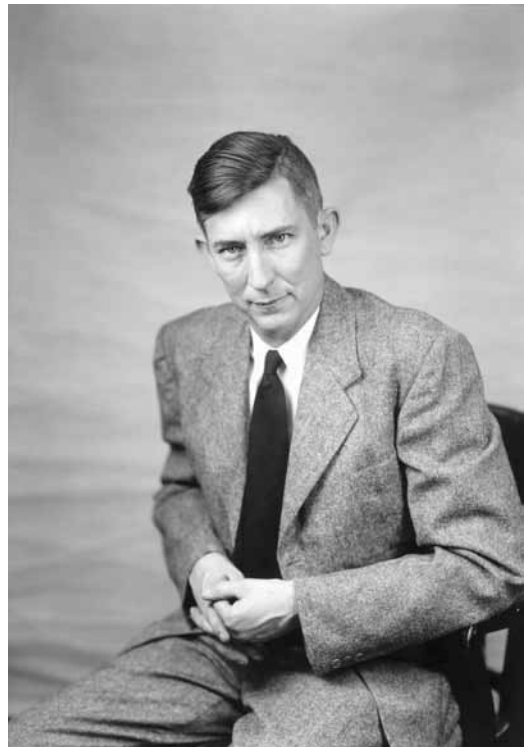
Notes

1. USDA explorer David Fairchild (1869–1954), first head of the Section of Seed and Plant



Figure 29. *Above*, William Basil Fox, 1948. Photographer: Hugh Iltis. Hunt Institute for Botanical Documentation Archives portrait no. 1.

Figure 30. *Below*, William Basil Fox, 10 March 1952. Photographer: Hugh Iltis. Hunt Institute for Botanical Documentation Archives portrait no. 2.



Introduction, wrote that “O. F. Cook returned from Liberia and took charge of the Section of S.P.I. as my successor. To him the Section owes one of the important developments of the organization, namely, the origination of the printed ‘Inventory of Plants Introduced’” (1938b, p. 117). After five years abroad, Fairchild returned to the Section and spent years championing the publication.

2. These publications were preceded by *Foreign Seeds and Plants Imported*, numbers 1–8 (1899–1901).
 3. This wealth of information is largely streamlined. Many records of the plants are available in the National Plant Germplasm System/Germplasm Resources Information Network (NPGS/GRIN) database (http://www.ars-grin.gov/npgs/acc/acc_queries.html) and can be searched by P.I. No. and explorer. Felicity Tyler, at the National Agricultural Library, USDA, informed me that “a comprehensive database of the USDA plant introductions and inventories does not exist. Much of the information remains within printed pages” (Tyler, pers. comm., 2008). However, the database captures information for “all records of germplasm that the USDA still possesses and some, but not all, records of germplasm that is now dead” (Whittemore, pers. comm., 2008). Susan Fugate, Head, Special Collections, National Agricultural Library, USDA, informed us that plans are in place to digitize the Plant Inventories themselves, as historical documents. This digitization project will allow some libraries to deaccession their duplicated Plant Inventory holdings, and the Hunt Institute is taking advantage of this to complete its holdings.
 4. Until, of course, Alan Whittemore directed the author to the USDA’s National Plant Germplasm System/Germplasm Resources Information Network database. A search of the NPGS/GRIN database for Boyle found several plants received from Luzon, Philippines, one cited from Malaysia, one from Thailand and one from Palawan, Philippines. H. Edwards and H. H. Boyle are listed as cooperators.
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