THE 1932 EXPEDITION OF DAVID FAIRCHILD TO THE CARIBBEAN ON BOARD *UTOWANA*: BOTANIZING IN BEATA, SAONA, TRINIDAD, TOBAGO, AND TORTOLA ISLANDS

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ABSTRACT

Research conducted in the Archive and Library of Fairchild Tropical Botanic Garden, the U.S. National Archives, and the U.S. National Herbarium allowed us to reconstruct field work performed by David Fairchild (1869–1954) in the islands of Beata, Saona, Tobago, Tortola, and Trinidad in 1932. This was part of a larger expedition to the Caribbean Islands, Suriname and Guyana by the United States Department of Agriculture between December 1931 and April 1932. During the collection endeavor to these five islands, 261 photographs were taken, 82 herbarium collections (75 species) were made, and 185 germplasm accessions (148 species) were added to the USDA germplasm repositories. In total, plant material for 185 species (224 collections) was collected. A major highlight of the trip were the herbarium collections that led to the description of the Beata endemic genus *Armouria* (Malvaceae). However, more recent taxonomic studies place this genus within the tropical genus *Thespesia* (~13 species). Thirteen distinguished naturalists or high ranking government officers were met in Trinidad (12) and Tortola (1). Collections of cotton (6 accessions) and palms (25 accessions) were relevant to the expedition objectives; however no samples of Sea-Island Cotton were obtained, despite this being a major germplasm objective. Exploring the Botanic Garden of Trinidad was another main highlight of the trip. Documents, photos, and research results are made available online at: www.archive.org. The project is framed within an undergraduate research program on botanical history that is being performed in partnership with botanists from national and foreign institutions. Part of the collected material was introduced into the *Jardín Botánico de Cienfuegos*, Cuba shortly after the expedition ended.

RESUMEN

Estudios realizadas en el Archivo y Biblioteca del Jardín Botánico Tropical de Fairchild, en los Archivos Nacionales de los Estados Unidos y en el Herbario Nacional los Estados Unidos nos permitieron reconstruir los trabajos de prospección vegetal realizado por David Fairchild (1869–1954) en las islas de Beata, Saona, Tobago, Tortola, y Trinidad en 1932. Estos fueron parte de una expedición más amplia del Departamento de Agricultura de los Estados Unidos (USDA) que tuvo como objetivo el recolectar material vegetal en las Islas del Caribe, Surinam y Guyana entre diciembre de 1931 y abril de 1932. Durante la visita a estas cinco islas, se tomaron 261 fotografías, 82 especímenes de herbario (75 especies) fueron recolectados y 185 muestras de material vegetal (148 especies) se agregaron a las colecciones de germoplasma del USDA. En total se recolectó material vegetal para 185 especies (224 muestras). Un aspecto destacado del viaje fueron las colecciones de herbario resultado de la expedición, que dieron como resultado la descripción de *Armouria* (Malvaceae), un nuevo género endémico de Beata. Sin embargo, estudios taxonómicos posteriores ubicaron al mismo dentro del género tropical *Thespesia* (~13 especies). Los miembros de la expedición tuvieron amplias interacciones y contaron con la ayuda de 13 ilustres naturalistas o personas de alto cargo

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gubernamental en Trinidad (12) y Tórtola (1). Las colecciones de germoplasma de algodón (6 muestras) y palmas (25 muestras) fueron relevantes para los principales objetivos de la expedición, sin embargo no se obtuvieron muestras del tipo de algodón conocido "sea-island", cuyo germoplasma era uno de los objetivos principales de la expedición. La visita al Jardín Botánico de Trinidad fue uno de los aspectos más destacados del viaje. Los documentos, fotografías y resultados de la investigación están disponibles en internet en www.archive.org. El proyecto se enmarca dentro de un programa de investigación de pregrado en historia botánica que se está realizando en colaboración con botánicos de instituciones nacionales y extranjeras. Parte del material recolectado se encuentra en la actualidad cultivado en las colecciones vivas del Jardín Botánico de Cienfuegos, Cuba.

KEY WORDS: Tropical islands, plant genetic resources, botanical history, Neotropics, plant biodiversity, Orator F. Cook, Mangifera indica

INTRODUCTION

The Caribbean Islands were the target of the last two plant hunting expeditions of David Fairchild (1869– 1933) prior to his retirement as Director of the USDA Section of Foreign Seed and Plant Introduction¹ (Montes Espín et al. 2021). The first of these expeditions took place between December 1931 and April 1932 (thereafter "the 1932 Expedition") and involved the exploration of the Caribbean Islands, Guyana, and Suriname. The second one, which happened between February and April 1933, had a more limited geographical scope targeting only the Bahamas, Cayman Islands, Cuba, Jamaica, Panama, and Swan Island (Honduras). Previous botanical history research performed by members of our team focused on the 1932 Expedition, investigating the botanical outcomes of the visits made to Haiti (Francisco-Ortega et al. 2018b), the Bahamas (Chavarria et al. 2020), and the Lesser Antilles (Camas et al. 2020). As a continuation of these research initiatives, here we present a study concerning the portions of this voyage that explored the islands of Beata and Saona (Dominican Republic), Trinidad, Tobago, and Tortola (British Virgin Islands, Fig. 1). These studies have been centered in a program pertinent to undergraduate student research supported by Florida International University units.

These last two Caribbean expeditions of David Fairchild were carried out on board *Utowana* (Fig. 2A), a research yacht owned by Allison Armour (1863–1941), a wealthy businessman from Chicago and the main sponsor of Fairchild's plant hunting endeavors between 1925 and 1933 (Montes Espín et al. 2021). The 1932 Expedition included Fairchild's wife and daughter, along with A. Armour, and three plant biologists from either the USDA or the University of Florida (Table 1, Figs. 2–5). This was a well-documented expedition that included hundreds of photographs, a motion-picture film (which has not been found), and a two-volume report of 902 pages and 684 photos. The latter was prepared by Dorsett (1936), and also contained the travelogue that was produced during the trip. Furthermore, Fairchild (1934) published a popular article about the main results of the journey.

The three main aims of the 1932 Expedition (Fairchild 1934: 705; Dorsett 1936: 1) were to collect: (1) wild relatives of cultivated cotton, particularly of Sea-Island Cotton, (2) native palms, and (3) valuable plants that could potentially be introduced into and used in the United States. Sea-Island Cotton refers to the type of cotton that was widely cultivated along the many small islands that are scattered between northeastern Florida and South Carolina (Moore 1934). This was a high-quality cotton resulting through hybridizations between *Gossypium barbadense* L. and *G. hirsutum* L. (Stephens 1976). It was believed that this cotton land-race originated either in the island of Anguilla in the Lesser Antilles, the Bahamas, or Barbados (Moore 1934; Dorsett 1936).

Regarding the part of this expedition covered in our contribution, this portion of the voyage took place in 1932 and it can be divided into two parts (Fig. 1). The first part consisted of the trip from Miami to the Guianas with visits to Beata (January 17–19), Saona (January 2), Trinidad (February 11–18), and Tobago (February 19–21). The second part of the trip was the return voyage from Suriname to Florida and only included Tortola (March 18–19) and Beata (March 21–23); consequently, the island of Beata was explored twice during the 1932 Expedition.

¹Notice that this agency has had different names after it was founded in 1898 (Hodge & Erlanson 1956). It is currently known as the National Germplasm Resources Laboratory. Here we use the name that it had when it was originally established in the late 19th century. David Fairchild retired as USDA employee in June 1935 (Harris 2015: 248).



Fig. 1. Dates (year 1932) in which the islands of Beata, Saona, Tobago, Tortola, and Trinidad were visited during the 1932 USDA Caribbean Expedition.

MATERIALS AND METHODS

The research was primarily conducted in: (1) the Library and Archives of Fairchild Tropical Botanic Garden (LA-FTBG), Coral Gables, Miami, Florida; (2) the United States National Archives at College Park, Maryland; and (3) the United States National Herbarium (accepted herbarium acronym: US), United States National Museum of Natural History, Smithsonian Institution, Washington, District of Columbia. The final expedition report (including the travelogue) is housed in the U.S. National Archives, and an annotated facsimile of the portion of this document that covered the visits made to Beata, Saona, Trinidad, Tobago and Tortola is available as Online Supplementary Appendix 1. This appendix also includes additional pages of the report with details of material collected, introductory statements, and concluding remarks pertinent to the complete 1932 Expedition. Many of the photographs taken during this voyage were actually mounted on pages of this travelogue.

The rest of the documents and photographs that were studied are accessioned in the LA-FTBG, and they include David Fairchild's collection books. Facsimiles of pages of these collection books that were relevant to our research are available as Online Supplementary Appendix 2. The photos that are housed in the LA-FTBG are either mounted on scrapbooks/albums or are stored as negatives. Electronic copies of these photos were made and they can be found as Online Supplementary Appendices 3 and 4.

Our study also investigated to what extent the collected material reached the USDA germplasm inventories and the collections of the U.S. National Herbarium. All Caribbean Island specimens housed in this herbarium have been added to a database or scanned (Pedro Acevedo pers. comm.), and are available online. Regarding the germplasm collection records, they have also been incorporated to a database and can be accessed through one of the webpages of the United States National Germplasm System. This USDA internet portal posts the 230 germplasm inventories that were published by this federal agency between 1898 and 2008. Furthermore, our research also consulted the popular article that Fairchild (1934) wrote on the main highlights of the 1932 Expedition, and the article published by Mosely (2013) on the visit that was made to Beata Island during this voyage. Finally, MPO made visits to the Botanic Garden of Trinidad (Port of Spain) to



Fi6. 2. **A.** Utowana anchored offshore Beata Island (photo Dorsett #58272). **B.** Harold F. Loomis collecting fruits of *Pseudophoenix sargentii*, Saona Island (photo LA-FTBG 155). **C.** Palemon H. Dorsett carrying collected plant material of *P. sargentii*, Saona Island (photo LA-FTBG 2637). A (courtesy of the United States National Archives at College Park, Maryland); B and C (courtesy of LA-FTBG).



Fig. 3. A. Allison Armour (left) and David Fairchild (right) on board *Utowana* (photo LA-FTBG 8525). B. Allison Armour pointing to an individual of *Pseudophoenix sargentii*, Saona Island (photo LA-FTBG 2832). C. Nancy Fairchild holding a branch of *Thespesia beatensis*, Beata Island (photo Dorsett #57766). A and B (courtesy of LA-FTBG); C (courtesy of the United States National Archives at College Park, Maryland).



FiG. 4. Images of the Tropical South American tree *Lecythis zabucajo*. A. Individual growing in the Royal Botanic Gardens, Trinidad (photo Dorsett #58043). B. Individual depicted in A as it is currently growing in the same spot of this botanic garden (photo by MPO). C. David Fairchild holding a fruit of the species, image taken on board *Utowana*, fruit was presented by the director of the Royal Botanic Gardens, Trinidad, R.O. Williams (photo Dorsett #58079). D. Botanical label that currently identifies the tree depicted in B (photo by MPO). E. Close-up image of the fruit depicted in C (photo Dorsett #58051). A, C, and E (courtesy of the United States National Archives at College Park, Maryland).



FiG. 5. A. Nancy Fairchild holding a branch of *Norantea guianensis*, Aripo Savannas, Trinidad (photo LA-FTBG 7028). B. Individual of *N. guianensis* in habitat, Aripo Savannas, Trinidad (photo by MPO). C. Leonard R. Toy processing specimens of *Caularthron bicornutum* on board *Utowana*, plant material was collected in Man of War Bay, Tobago (photo Dorsett #58074). D. Individual of *C. bicornutum* growing in a private garden, Barbados (photo by Sean Carrington). A and C (courtesy of LA-FTBG).

Biographical note	Photo in this paper
Owner of Utowana and expedition sponsor	3A-B
Plant explorer, USDA	2C
Director of USDA Section of Foreign Seed and Plant Introduction, Washington, D.C.	3A, 4C
David Fairchild's wife	Unavailable
David Fairchild's daughter	3C, 5A
Plant biologist, USDA, Chapman Field, Miami-Dade	2B
Plant biologist, University of Florida, Homestead, Miami-Dade	5C
	Biographical note Owner of Utowana and expedition sponsor Plant explorer, USDA Director of USDA Section of Foreign Seed and Plant Introduction, Washington, D.C. David Fairchild's wife David Fairchild's daughter Plant biologist, USDA, Chapman Field, Miami-Dade Plant biologist, University of Florida, Homestead, Miami-Dade

TABLE 1. Participants of the 1932 USDA Caribbean Expedition who visited the islands of Beata, Saona, Tobago, Tortola, and Trinidad.

TABLE 2. Internet resources available to the project, including online supplementary appendices. All archive documents and photos are housed in Fairchild Tropical Botanic Garden with the exception of Dorsett's (1936) travelogue that is located in the U.S. National Archives.

Description	Website address	Notes
Online Supplementary Appendix 1	https://archive.org/details/appendix-1-jbrit-marlenon	Annotated facsimile of Dorsett's (1936)
Online Supplementary Appendix 2	https://archive.org/details/fairchild-sao-bea-tob-tor-tri-appendix-2	Facsimile of Fairchild's collection books
Online Supplementary Appendix 3	https://archive.org/details/fairchild-sao-bea-tob-tri-appendix-3	Photos of expedition stored as negatives
Online Supplementary Appendix 4	https://archive.org/details/fairchild-sao-bea-tob-tor-tri-appendix-4	Photos of expedition mounted on scrap books
Online Supplementary Appendix 5	https://archive.org/details/appendix-5-jbrit-marlenon	Table with details of photos of expedition
Online Supplementary Appendix 6	https://archive.org/details/appendix-6-jbrit-marlenon	Table with details of collected plant material
Herbarium specimen images at US	https://collections.nmnh.si.edu/search/botany/	Collected herbarium specimens
United States National Germplasm	https://npgsweb.ars-grin.gov/gringlobal/search?q=Pl+98769	Collected Germplasm System database
USDA Germplasm Inventories publications (1898– 2008)	https://www.ars.usda.gov/northeast-area/beltsville-md-barc/ beltsville-agricultural-research-center/national-germplasm- resources-laboratory/docs/plant-inventory-books	Pdf files with brief collection reports

determine to what extent individual plants recorded during the 1932 Expedition are still present in this botanic garden. Table 2 lists the online resources available for the project, including website addresses of the online supplementary appendices. As a working taxonomy we have primarily followed the flora catalogues published for the West Indies (Acevedo Rodríguez & Strong 2012, 2022) and Trinidad and Tobago (Baksh-Comeau et al. 2016).

RESULTS AND DISCUSSION

The Travelogue Narrative

A total of 133 pages of Dorsett's (1936) journal are devoted to the islands covered in our research. Accounts for the first visit to Beata are found in 28 pages of this document, whereas only twelve pages of this journal concern the second visit to this island. Details for Saona are described in nine pages. Reports for Trinidad and Tobago comprise 53 and 25 pages, respectively. Finally, only six pages focus on the visit made to Tortola. A total of 143 photographs taken during this part of the expedition were part of Dorsett's (1936) journal, and they include 44 pictures for Beata; 15 for Saona; 49 for Trinidad; 26 for Tobago; and nine for Tortola (Table 3).

This journal not only has details of the plants that were collected/recorded, but also provides descriptions of the sites that were visited and the people who were met during the trip. Brief discussions of these

Island	Number of pages in Dorsett's (1936) travelogue	Number of photos in Dorsett's (1936) travelogue	Total number of photos	Number of germplasm collections (number of species)	Number of herbarium collections (number of species)	Total number of plant collections
Beata	41	44	61	26 (20)	17 (17)	33 (23)
Saona	9	15	37	10 (9)	10 (9)	15 (13)
Tobago	25	26	62	33 (33)	22 (22)	39 (38)
Tortola	6	9	10	22 (16)	2 (2)	22 (16)
Trinidad	53	49	91	106 (95)	32 (30)	115 (102)

TABLE 3. Main outcomes of the 1932 USDA Caribbean Expedition pertinent to the islands of Beata, Saona, Tobago, Tortola, and Trinidad.

accounts are given below. We also include some historical details of the visited institutions, as they are among the oldest botanical/horticultural centers of the Caribbean region.

Beata and Saona Islands.—The two small islands of the Dominican Republic (Beata and Saona) were uninhabited; however, Dorsett (1936) reported evidence of Beata being temporarily occupied by locals who apparently travelled to this island to hunt for iguanas and to fish. Massive piles of queen conch (*Strombus gigas* L., Gastropoda) shells, remains of a campfire, and rudimentary huts thatched with grasses were found, providing evidence for human exploitation of the resources of this island. During their two visits to Beata, expedition members fished extensively and at least two iguanas were hunted, which were the source of subsequent meals. Regarding the natural history of Beata, they noticed "flocks of large birds flying" (likely pelicans), the presence of introduced goats, a rich flora that formed thick and impenetrable vegetation communities, and a rough terrain dominated by sharply ridged limestone rocks (Fairchild 1934; Dorsett 1936; Mosely 2013).

A rudimentary human settlement was also detected in Saona, which consisted of an abandoned shack found near the site where the only plants of cotton (as *Gossypium* sp.) were recorded. The presence of "giant hermit crabs" was noticed by Fairchild (1934) on this island. However, Dorsett (1936) did not make any reference to these crustaceans.

Trinidad.—Upon arriving to Trinidad samples previously collected in other Caribbean Islands were sent (Air Mail Express) to the USDA headquarters in Washington DC. In Port of Spain, visits were made to the local open market, the Agricultural Experimental Station, the university (likely the Imperial College of Tropical Agriculture), the Forestry Station, and the Botanic Garden (also known as the Royal Botanic Gardens, Port of Spain).

The Experimental Station was known initially as the Department of Agriculture's St. Clair Government Farm. Acquired by the colonial government in 1879 and later in 1898, it became the St. Clair Experiment Station after much of the land was sold off or diverted to community and residential development uses (Campbell 1988). With the collapse of the sugar industry in Trinidad and Tobago in the 1870–1980 period (Pemberton 2004), this agricultural station started to experiment with potential crop species secured by the Botanic Garden via local collections and overseas networks to try and revitalize agriculture in the West Indian colonies (Campbell 1988). The Station was part of a network of agriculture research units/institutions in Trinidad and Tobago, the wider Caribbean, the United Kingdom (such as the Royal Botanic Gardens in Kew), and throughout the British Empire. The Station was originally on the edge of the rapidly growing capital of Trinidad (Port of Spain) and was progressively taken over for other land uses and parks for the people.

The Imperial College of Tropical Agriculture was founded in 1922 as the West Indian Agricultural College. It had its roots in the Imperial Department of Agriculture for the West Indies through the Royal Commission of 1896 (Leake 1926). In 1960, the college became part of the University College of the West Indies as the Faculty of Agriculture of this academic institution (Pemberton et al. 2018). Currently, the University College of the West Indies is known as the University of the West Indies and this agricultural academic unit has the formal name of Faculty of Food and Agriculture.

As indicated in Dorsett's (1936) journal, the Royal Botanic Gardens, Port of Spain were founded in 1820 by David Lockhart on an old sugar plantation known as "Hollandais" which was purchased from the Peschier family in 1816, and it was where the governor of the island had his official residence. The Garden was closely associated with the Royal Botanic Gardens, Kew, and is one of the oldest botanic gardens of the New World (Harrington 2018; Pemberton et al. 2018). During the visit to the large open market of Port of Spain, a list of available fruits and vegetables was also made (Dorsett 1936: 437).

Sites outside Port of Spain were also explored, and there were trips to the "drier section of the island," most likely areas in the rain shadow of the Northern Range mountains between Port of Spain and Arima (Fig. 6). From the U.S. herbarium records and LA-FTBG photograph collections, we know that areas of the island with high floristic diversity such as Maracas Valley, Mausica Savannah, Arena Forest Reserve, Aripo Savannah, and Mora Forest (a tall closed canopy forest type, probably in the northeast of the island in Matura) were also reached. However, Dorsett's (1936) journal does not have any details about the activities developed in these localities.

Tobago.—During the short stay in Tobago, the small botanic garden was visited. By 1897, the Imperial Department of Agriculture had already established 13 Botanical Stations in the British colonies located in the Caribbean, and this botanic garden was one of them (Pemberton et al. 2018). The mission of these stations was to perform research relevant to the sugar cane industry and also to diversify the array of tropical crops/plantations in the region. Currently, this garden is known as the Scarborough Botanical Garden and is run by the Department of Natural Resources and Forestry, which is part of the Tobago House of Assembly.

Other parts of Tobago were visited, including a trip on board *Utowana* to Man of War Bay in the northeastern corner of the island, which was a place that was described by Dorsett (1936) as "by far the most romantic and wonderfully beautiful of any of the ports of call we have thus far seen."

Tortola.—During the stay in Tortola, Fairchild mostly remained on board the ship "working up some of the accumulated material" that was obtained during the voyage; meanwhile, other expedition members visited the Experiment Station, a site that in 1986 was transformed into the "Joseph Reynold O'Neal Botanic Gardens." This is the only active botanic garden of the island (Botanic Gardens Conservation International 2022; National Parks Trust of the Virgin Islands 2022). From the travelogue photos, we also know that a few hills located near the island capital Road Town (as Harrigan in Dorsett's travelogue) were also explored. However, the travelogue does not have any narrative about these countryside sites.

Naturalist and Government Officers.—Regarding the people they met in Trinidad (Table 4), Dorsett's (1936) travelogue referred to the island Governor [Sir Alfred Claud Hollis (1974–1961)], S.M. Gilbert (Assistant Director of the Experimental Station), Edward J. Wortley [(1884?–1942), Director of Agriculture], and Robert O. Williams [(1891–1967), Superintendent of the Botanic Garden, Fig. 7]. Interestingly, the photographic record (see below) depicts several other naturalists who were not mentioned in Dorsett's (1936) travelogue.

They met the Commissioner of the British Virgin Islands, F.C. Clarkson, when Tortola was visited. Clarkson was the most important administrative authority of this territory between 1926 and 1934 (Cahoon 2022).

The Photographic Record

The Fairchild Tropical Botanic Garden Archives have a total of 117 photographs that were not part of Dorsett's travelogue. In addition to this, Fairchild's (1934: 707, 720) popular article on the expedition includes two photos of Tobago that are neither mounted in this dairy nor accessioned in LA-FTBG. Overall, 261 photos were taken during the visits to these five islands (Online Supplementary Appendix 5). Four of these photos (Dorsett #57788, #58054, #58057; LA-FTBG 154) were already published by Fairchild (1934: 706, 710, 720, 725). Trinidad was the island where most photos were taken (91), followed by Tobago (62) and Beata (61). Thirty-seven photos were taken in Saona and ten were taken in Tortola.

Natural History Photographs.-The vast majority of the photos (192) focus either on plants (120) or on team



Fis. 6. Map of Trinidad indicating localities reported in the examined photographs, documents, herbarium specimens, and USDA germplasm holdings.

members performing field work (72). There are 33 images of natural landscapes or urban areas, including two pictures that Dorsett (#58049–58050) took in the Port of Spain market. Two of the photos show seedlings of *Thespesia beatensis* (LA-FTBG 7360) and *Coccothrinax ekmanii* (LA FTBG 8925) being cultivated in the Chapman Field USDA Station (Miami); they were collected when Beata was explored. There are six photos of animals (taken in Saona and Beata), and they depict pelicans (Dorsett #57762, #58265–58267), iguanas (Dorsett #58280), and hermit crabs (LA-FTBG 7333). There is also a small number of pictures (eight) showing *Utowana*, which were taken by Dorsett in Beata (#58272–58273), Tobago [#58059–58061, #58069, Fairchild (1934: 707)], and Tortola (#58262, #58264).

Naturalist Photos.—Twenty-two of the photographs accessioned in LA-FTBG show people met during the visit to Trinidad. However, eight of these individuals are not mentioned in Dorsett's (1936) travelogue. They assisted the collecting team during the botanical survey and were well-known distinguished naturalists/agriculturists working in the island in the early 1930s (Table 4). They included the Curator of the Royal Botanic Gardens, Port of Spain [Walter E. Broadway (1863–1935)] and S.C. Harlan (Fig. 8C). The latter was a plant breeder working at the Cotton Research Station of Trinidad. This station was established in 1926 as an initiative of the Empire Cotton Growing Corporation. However, in 1948 it closed due to a larger station focusing on this crop being established in Uganda (Lord 1948).

Name	Professional position/biographical reference	Travelogue page/photo number	Photo in this paper
Walter Elias Broadway (1863–1935)	Curator of Royal Botanic Gardens, Port of Spain/ Baksh-Comeau (1991)	-/7030	-
Reginald Laing Brooks (?–1977)	Deputy Conservator of Forests, Trinidad/ Anonymous (1977)	-/7043, 7047	Fig. 9A
Henry Caracciolo (1859–1934)	Founder and President of Trinidad Field Naturalists' Club / Rooks (1991), Cock & Robbins (2016)	-/7031-7033, 7035	Fig. 8B
Ernest Entwistle Cheesman (1898–1983)	Professor of Botany at the Imperial College of Tropical Agriculture / ProMusa (2020)	–/6688, 7018, 7019, 7045	Fig. 8A
Frank Cecil Clarkson	Commissioner of the British Virgin Islands/?	631/-	-
S.M. Gilbert	Assistant Director, Experiment Station, Trinidad/?	389/-	-
S.C. Harlan	Geneticist at the Cotton Research Station, Trinidad/?	-/7039	Fig. 8C
Sir Alfred Claud Hollis (1874–1961)	Governor of Trinidad/Mungean (2004), Pemberton et al. (2018)	422/-	-
Reginald Charles Marshall (1893–1955)	Army Captain and Trinidad Chief Forester/?	-/7027, 7044, 7047	Fig. 8D
John Golding Myers (1897–1942)	Biological Control Entomologist at Farnham House Laboratory and Imperial College of Tropical Agriculture, Trinidad / Cock & Bennett (2011)	-/7022	Fig. 9B
E.B. Smith	Unknown/?	-/7026	-
Robert Orchard Williams (1891–1967)	Director of Botanic Garden of Trinidad/Freeman & Williams (1927)	389/7024, 7026, 7038, 58042	Fig. 7A
Edward Jocelyn Wortley (1884?–1942)	Director of Agriculture, Trinidad/Anonymous (1942a, b)	389/-	-

TABLE 4. Botanists, horticulturists, foresters, and politicians who were met in Trinidad and Tortola during the 1932 USDA Caribbean Expedition.

Two scholars from the Imperial College of Tropical Agriculture were also photographed: Ernest E. Cheesman (1898–1983, Fig. 8A) and John G. Myers (1897–1942, Fig. 9B), the former being a Professor of Botany and one of the leading worldwide authorities in *Musa* (Musaceae) taxonomy (e.g., Cheesman 1947), while Myers was a biological control entomologist (e.g., Myers 1929) who also had an association with the Farnham House Laboratory, a research unit founded by the Imperial Bureau of Entomology in 1927 with a mandate for biological control of insect pests (Thompson 1930).

There are also photos of two foresters: Reginald L. Brooks (?–1977, Fig. 9A), the Deputy Conservator of Forests of Trinidad and Tobago and an expert of the ecology of Trinidad and Tobago forests (e.g., Brooks 1935); and Reginald C. Marshall (1893–1955, Fig. 8D), the Trinidad Chief Forester and specialist in vegetation and tree biodiversity of Trinidad and Tobago (e.g., Marshall 1934). The eighth person who was photographed was Henry Caracciolo (1859–1934, Fig. 8B), one of the most active natural history enthusiasts of the island. He was the President and founder of the Trinidad Field Naturalists' Club (Rooks 1991; Cock & Robbins 2016).

The Collected Plants

Taxonomic and Biogeographic Breadth.—A total of 224 plant collections (185 species) were made (Online Supplementary Appendix 6, Tables 3, 5–6). Among them were 185 germplasm accessions that reached the USDA (148 species) and 82 herbarium collections (75 species). For only 53 of these collections (48 species), both herbarium specimens and germplasm material were simultaneously collected. Fifteen of the accessions (15 species) were not processed in the USDA germplasm facilities, and it seems that they did not survive the trip. Trinidad was the island where most of the collections (115 accessions, 102 species) were made. This is followed by Tobago (39 accessions, 38 species), Beata (33 accessions, 23 species), Tortola (22 accessions, 16 species), and Saona (15 accessions, 13 species).

Fabaceae (48 collections, 46 species), Arecaceae (25 collections, 22 species), and Rubiaceae (12 collections, 10 species) were the families that yielded most of the sampled material. The high number of palm accessions that were collected matched one of the three main objectives of this trip, as this group of plants was one of the main botanical targets of the expedition. Regarding cotton, there were only six germplasm collections



Fis. 7. An individual of rubber tree (*Hevea brasiliensis*) that was cultivated from seeds sent from Kew Gardens in the 19th century. **A**. Robert Orchard Williams, Director of the Royal Botanic Gardens, Trinidad, standing close to this tree (photo Dorsett #58042), February 15, 1932. **B**. Individual depicted in A as it is currently growing in the same spot of this botanic garden, MPO standing as a size reference (photo by Doreen Jodhan).

(five from Beata, and one from Saona). Unfortunately, it is not clear what species of *Gossypium* were collected during the trip, as all accessions were identified as *Gossypium* sp., and no herbarium vouchers were collected for these accessions.

Beata, Saona, and Trinidad were the only islands where Caribbean endemics were sampled (Table 5). In total, eight species restricted to Hispaniola were collected, six in Beata and two in Saona. The Greater Antillean endemic *Roystonea borinquena* was collected in Trinidad; however we could not find details on the cultivated site where it was found. Additional material from multiple-island Caribbean endemics was sampled in Beata (three species) and Saona (three species). Hispaniola endemic species collected in Beata included *Casasia haitiensis* (*Fairchild 31*, Fig. 10D), *Psychilis truncata* (*Fairchild 2626*, Fig. 10C), and *Varronia salviifolia* (*Fairchild 32*, Fig. 10D).

Concerning non-endemic native species (Table 5), there were a total of 96 collections (73 species), most of them coming from Trinidad (39 collections, 33 species), with Tortola yielding the lowest number of accessions (nine collections, nine species). Most of the collections (113 accessions, 91 species, Table 5) belonged to introduced species or species with an uncertain geographic origin, 60 of them (53 species) came from botanic gardens, markets or agriculture stations. With ten accessions (ten cultivars), mangos were the cultivated



Fi6. 8. Distinguished individuals met when the island of Trinidad was explored. **A.** Ernest E. Cheesman, Professor of Botany at the Imperial College of Tropical Agriculture holding a fruit of *Pachira insignis*, Maracas Valley, Trinidad (photo LA-FTBG 6688). **B.** Henry Caracciolo, Founder and President of Trinidad Field Naturalists' Club, holding a tuberous underground stem of *Colocasia esculenta*, Port of Spain market, Trinidad (photo LA-FTBG 7032). **C.** S.C. Harlan, geneticist of the Cotton Research Station, Trinidad near a *Hibiscus "whyami*" plant in this station, St. Augustine, Trinidad. S.C. (photo LA-FTBG 7041). **D.** Reginald Charles Marshall, Chief Forester of Trinidad and Tobago, holding a leaf of *Mannicaria saccifera*, Arena Forest Reserve, Trinidad (photo LA-FTBG 7044). Photos courtesy of LA-FTBG.



FiG. 9. Distinguished individuals who were met when the island of Trinidad was explored. **A.** Reginald L. Brooks, Deputy Conservator of Forests of Trinidad and Tobago, in Arena Reserve, Trinidad (photo LA-FTBG 7043). **B.** John G. Myers, Biological Control Entomologist affiliated with Farnham House Laboratory and Imperial College of Tropical Agriculture, Trinidad (photo LA-FTBG 7022). Photos courtesy of LA-FTBG.

Biogeography	Beata	Saona	Tobago	Tortola	Trinidad	Total
Hispaniola endemic	6 (6)	2 (2)	0	0	0	8 (8)
Caribbean Island endemic	3 (3)	3 (2)	0	0	1 (1)	7 (7)
No endemic native	15 (10)	9 (8)	24 (22)	9 (9)	39 (33)	96 (73)
Introduced	1 (1)	0 (0)	10 (10)	12 (6)	69 (60)	92 (75)
Unknown	8 (3)	1 (1)	5 (5)	1 (1)	6 (6)	21 (16)

TABLE 5. Number of herbarium and germplasm collections that were obtained during the 1932 USDA Caribbean Expedition pertinent to the islands of Beata, Saona, Tobago, Tortola, and Trinidad. Data are arranged according to species biogeography. The number of species is indicated inside brackets.

species with the highest number of collections, and five of them are still used in the region (R. Campbell pers. comm.). They include "Cottage," currently present in the Lesser Antilles; "Graham," a relatively popular mango in Florida, the Caribbean, and the French Indian Ocean islands; "Kidney," a cultivar widely cultivated in Jamaica; and "Royal," which is still found in a few South Florida orchards.

Below we provide an account on the main botanical highlights encountered by expedition members when the five islands were visited. They are presented within historical frameworks pertinent to the USDA or particular plant genetic resource developments.

Beata Island.—The photographic record shows that there were no collections for three different species (*Clusia rosea, Guaiacum sanctum, Pilosocereus polygonus*) that were photographed when Beata was visited (photos Dorsett #57760, Dorsett #57773–57774, Dorsett #57779).

Beata provided what team members considered one of the most significant findings of the expedition. During its survey, plants of an "unknown" Malvaceae with large cream colored flowers were regarded to belong to a new taxon. Both herbarium and seeds were collected, and subsequently, Lewton (1933) described this as a new genus, *Armouria* (Figs. 10A–B), to recognize the contributions of Allison Armour to Tropical botany. The genus has a single species (*A. beata*) which is restricted to this island. According to Howard (1949), this Beata endemic was still cultivated in the Chapman Field station of USDA, Miami long after the expedition ended. Subsequent taxonomic research performed by Fryxell (1968) showed that this species was previously described by Urban (1924: 7–8) as *Ulbrichia beatensis* Urb., within a monotypic genus also endemic to this island. Eventually, Fryxell (1968) accommodated the taxon within *Thespesia* under the new combination *T. beatensis* (Urb.) Fryxell, a species restricted to this island.

Among the species collected in Beata, Fairchild and his colleagues were also particularly interested in the Hispaniola endemic palm *Coccothrinax ekmanii*. The collection of this palm and *Thespesia beatensis* fulfilled one of the three main botanical goals of the 1932 Expedition, as there was an interest in introducing new germplasm material that had potential for gardening or horticulture into the USDA holdings. *Coccothrinax ekmanii* and *Roystonea borinquena* were the only Caribbean endemic palms sampled when the five islands were visited.

During the 1932 Expedition, only one other collection clearly achieved the goal of discovering new species. This involved the collection of unidentified plants of the palm genus *Coccothrinax* on the island of Inagua (the Bahamas). They were later described as *C. inaguensis* Read (Read 1966), a species that is currently accepted and only occurs only in this archipelago (Freid et al 2014).

Saona Island.—Pseudophoenix sargentii (Figs. 2B–C) was the main botanical highlight of Saona. This is a palm species that reaches the Bahamas, Florida, the Greater Antilles, and Yucatan, and it was identified as the Saona endemic *P. saonae* O.F. Cook by the *Utowana* explorers. This species was originally published by the United States botanist Orator F. Cook (1867–1949) in 1923, and his description was based on herbarium specimens collected from this island by the New York Botanical Garden botanist Norman Taylor (1883–1967) in 1909 (Cook 1923). Cook, a recognized authority in the taxonomy and biology of cotton, rubber, and palms, was one of the most distinguished botanists of the USDA Section of Foreign Seed and Plant Introduction and a close



Fi6. 10. Plants recorded in Beata Island. **A.** Flowers and fruits of *Thespesia beatensis*, Beata Island (photo Dorsett #58269). **B.** *Thespesia beatensis*, Beata Island (photo by Alberto Veloz). **C.** *Psychilis truncata*, Río Partido, Dajabon, Dominican Republic (photo by FJ-R). **D.** *Casasia haitiensis*, Beata Island (photo by FJ-R). **E.** *Varronia salviifolia*, Pedernales, Dominican Republic (photo by FJ-R). All photos in habitat. A (courtesy of the United States National Archives at College Park, Maryland).

friend of David Fairchild. He became the Principal Botanist of this USDA agency in 1929 and worked for the USDA between 1898 and 1937 (Read 1983; Rudd 1983; Todd 2009). We performed searches in the USDA germplasm database (listed in Table 2), and no accession of *Pseudophoenix* from Saona was introduced into the USDA living collections prior to the 1932 Expedition. Because there is a clear connection between the taxonomic history of this palm species and the botanical contributions made by the USDA Section of Foreign Seed and Plant Introduction, it is not surprising that this particular palm was a major target when Saona was explored.

Trinidad.—During the visit to Trinidad, the botanic garden was a relevant landmark of the trip as 53 of the 117 accessions collected in Trinidad came from this garden, with these accessions belonging to 23 plant families (49 species). Interestingly, at least five of the plants that were documented during the visit to the botanic garden are still alive in this garden today (Figs. 4B, 4D, 7B, 11B, 11D), and they were depicted in photographs mounted in Dorsett's (1936) travelogue [Dorsett #58012 (*Bertholletia excelsa*, Fig. 11A), Dorsett #58022 (*Pimenta racemosa*), Dorsett #58038 (*Samanea saman*, Fig. 11C), Dorset #58042 (*Hevea brasiliensis*, Fig. 7A), Dorsett #58043 (*Lecythis zabucajo*, Figs. 4A, 4C, 4E)]. Additional comparison of the photos mounted in this travelogue with the current landscapes of this botanic garden shows that the layouts of paths and beds have not changed much in the last 90 years.

One of the trees cultivated in this garden, the Tropical South American *Lecythis zabucajo* (Fig. 4, common names Monkey Pot, Sapucaia), was extensively showcased in Dorsett's (1936) travelogue (#58043, #58051, #58078–58080) as it has distinct large globose/turbinate fruits with a well marked operculum and it bears edible seeds.

Among the botanical encounters in this garden, one particular individual of rubber tree (*Hevea brasiliensis*), which was photographed by Dorsett (1936: 431; Fig. 7A), is historically important as it appears that the depicted individual was part of the original progeny of the seeds that was brought from Brazil to the Royal Botanic Gardens, Kew in 1876 (Baldwin 1969; Imle 1978). From this stock, small trees were distributed to the colonies, particularly to Sri Lanka and Singapore. The young trees introduced to Asia provided the foundations for the spread of this crop in the Old World (Schultes 1993). The history of the cultivation of rubber tree and how it spread from South America to Indonesia is one of the best-known and most widely mentioned in the field of economic botany (Plucknett et al. 1987).

Plant material was also collected in natural areas of Trinidad, and native species such as *Erythrina pallida* (*Fairchild 2914*, Fig. 12D), *Heliconia psittacorum* (*Fairchild 2905*, Fig. 12A), *Manicaria saccifera* (*Fairchild 2917*, *Fairchild 2940*; Fig. 12F), *Mora excelsa* (*Fairchild 2916*, *Fairchild 3712*, Fig. 12G), and *Norantea guianensis* (*Fairchild 2884*, Figs. 5A–B) were targeted.

Tobago.—During the short visit to Tobago, the team was particularly interested in the orchid *Caularthron bicornutum* (Figs. 5C–D). Plants were collected from coastal cliffs in the Man of War Bay near the surf area and required local fishermen to be hired so they could help the team row among the rough waters and dangerous coastal rocks of this site. Other species were collected in coastal or montane parts of Tobago [e.g., *Diospyros inconstans* in Pigeon Hill (*Fairchild 3697*, Figs. 12B–C); *Lonchocarpus sericeus* (US01003684, Fig. 12E) in Charlotteville (also in Man of War Bay)].

Tortola.—Tortola provided the majority of accessions of mango as seven of them were sampled in this island. The remaining three came from the Botanic Garden of Trinidad. Germplasm of two additional species was also collected in Tortola [i.e., *Cestrum diurnum* and *Elaeodendron xylocarpum*, Fig. 13].

COLLECTING STRATEGIES AND CONCLUSIONS

A comparison can be made between the strategies followed by David Fairchild and his colleagues during this expedition and those that he followed in other plant hunting endeavors. Unlike other plant explorers who mostly collected plant material for herbaria, David Fairchild had a broader view during his botanical voyages.



Fig. 11. Trees recorded in the Royal Botanic Gardens, Trinidad. **A.** Bertholletia excelsa (photo Dorsett #58012). **B.** Individual depicted in A as it is currently growing in the same spot of this botanic garden (photo by MPO). **C.** Samanea saman (photo Dorsett #58038). **D.** Individual depicted in C as it is currently growing in the same spot of this botanic garden (photo by MPO). **A** and C (courtesy of the United States National Archives at College Park, Maryland).



Fi6. 12. Plants recorded in Trinidad and Tobago. A. Heliconia psittacorum, Arena Forest Reserve, Trinidad. B. and C. Diospyros inconstans, Pirates Bay, Tobago. D. Erythrina pallida, Saunders Trace, Victoria-Mayaro Forest Reserve, Trinidad. E. Lonchocarpus sericeus, Aripo Savannas, Trinidad. F. Manicaria saccifera, Arena Forest Reserve, Trinidad. G: Mora excelsa, Western Extension Matura Forest Reserve, Mora Forest, Trinidad. All photos in habitat, by MPO.



Fig. 13. Plants for which germplasm was collected in Tortola. **A.** *Cestrum diurnum*, spontaneous in University Campus of Universidad de Puerto Rico, Río Piedras, Puerto Rico. **B.** *Elaeodendron xylocarpum*, coastal forest in Vacia Talega, Loiza, Puerto Rico, in habitat. Both photos by ESV.

TABLE 6. Species for which plant material was collected during the 1932 USDA Caribbean Expedition pertinent to the islands of Beata, Saona, Tobago, Tortola, and Trinidad. Scientific name is provided followed by locality, biogeography, and USDA accession number/David Fairchild's collection number/US specimen barcode number.

- Adiantum concinnum Willd. (Pteridaceae)—Trinidad, Botanic Garden, Port Spain—Native—99500/2867/-
- Aiphanes minima (Gaertn.) Burret (Arecaceae)—Trinidad, Arena Forest Reserve—Native—99594/2888/-
- Aiphanes sp. (Arecaceae)—Trinidad—Unknown—97549/2829/-
- Amasonia campestris (Aubl.) Moldenke (Lamiaceae)—Trinidad, Aripo Savannah—Native—-/-/2786622
- Amherstia nobilis Wall. (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99504/2870/-
- Ananas comosus (L.) Merr. (Bromeliaceae)—Tortola, Experiment Station—Introduced—99507/3840/-
- Ananas comosus (L.) Merr. var. comosus (Bromeliaceae)— Trinidad, Mora Forest Reserve [likely from cultivated site or garden]—Introduced—97824/2928/-
- Antiaris toxicaria (J.F. Gmel.) Lesch. (Moraceae)—Trinidad, Botanic Garden, Port Spain—Introduced—-/-/1099637
- Apeiba schomburgkii Szyszyl. (Malvaceae)—Tobago, Charlotteville —Native—97834/2945/00530029
- Areca triandra Buch.-Ham. (Arecaceae)—Tobago, Botanic Station, Scarborough—Introduced—97807/2954/-
- Artocarpus sp. (Moraceae)—Tortola, Experiment Station— Introduced—99519/3865/-
- Astrocaryum sp. (Arecaceae)—Tobago—Unknown—97810/2957/-
- Attalea spectabilis Mart. (Arecaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97543/2840/-
- Bauhinia multinervia (Kunth) DC. (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Native—99521/3884/-
- Bentinckia nicobarica (Kurz) Becc. (Arecaceae)—Trinidad, Port Spain—Introduced—99524/2842/-
- Bignonia corymbosa (Vent.) L.G. Lohmann (Bignoniaceae)— Trinidad, Botanic Garden, Port Spain—Native—-/2868/-
- Bignonia corymbosa Vent. (Bignoniaceae)—Trinidad, Botanic Garden, Port Spain—Native—99586/2868/-
- Bougainvillea sp. (Nyctaginaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99526/2864/-
- Bougainvillea sp. (Nyctaginaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99527/-/-
- Byrsonima spicata (Cav.) Kunth (Malpighiaceae)—Trinidad, Arena Forest Reserve—Native—98546/2912/-
- Calathea sp. (Marantaceae)—Trinidad, Aripo Savanna— Unknown—99531/2882/-
- Calopogonium caeruleum (Benth.) C. Wright (Fabaceae)—Tobago, Man of War Bay—Native—–/–/01003731
- Camoensia scandens (Welw.) J.B. Gillett (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97953/2897/-
- Canavalia brasiliensis Benth. (Fabaceae)—Tobago, Botanic Station, Scarborough—Native—98814/2935/02344556
- Canavalia rosea (Sw.) DC. (Fabaceae)—Beata—Native— 97758/2612/00874978
- Capsicum frutescens L. (Solanaceae)—Trinidad, Port Spain—Introduced—97963/2880/-
- Carica papaya L. or Vasconcella cauliflora (Jacq.) A.DC (Caricaceae)— Tobago, Speyside—Introduced—98820/2939/-
- Casasia haitiensis Urb. & Ekman (Rubiaceae)—Beata—Hispaniola endemic—-/31/00826696
- Casearia dodecandra (Jacq.) T. Samar. & M.H. Alford (Salicaceae)— Beata—Caribbean Island endemic—-/-/00769753
- Cassia javanica ssp. agnes (de Wit) K. Larsen (Fabaceae)— Trinidad, Botanic Garden, Port Spain—Introduced— 97954/2850/00319400

- Caularthron bicornutum (Hook.) Raf. (Orchidaceae)—Tobago, Man of War Bay—Native—100279/2943/-
- Caularthron bicornutum (Hook.) Raf. (Orchidaceae)—Tobago, Botanic Station or near the sea-coast at Man of War Bay—Native—100280/2930/00460189
- Cayaponia americana (Lam.) Cogn. (Cucurbitaceae)—Tortola, Harringan—Native—98823/3855/-
- Cedrela odorata L. (Meliaceae)—Tobago, Botanic Station, Scarborough—Native—97976/2937/00962953
- Centrolobium paraense Tul. (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97977/2844/02150136
- Centrosema plumieri (Pers.) Benth. (Fabaceae)—Tobago, Richmond—Native—-/-/01003709
- Cestrum diurnum L. (Solanaceae)—Tortola, Harringan— Native—98984/3862/-
- Cissampelos pareira L. (Menispermaceae)—Tobago, Richmond— Native— -/-/03578198
- Citrus grandis (L.) Osbeck (Rutaceae)—Tobago, Botanic Station, Scarborough—Introduced—97827/2931/-
- Citrus maxima (Burm.) Merr. (Rutaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98449/2865/-
- Citrus medica L. (Rutaceae)—Trinidad, Market, Port Spain— Introduced—97826/2933/-
- Citrus sp. (Rutaceae)—Trinidad, Port Spain—Introduced— 97526/2830/-
- Citrus x aurantiifolia (Christm.) Swingle (Rutaceae)—Tobago, Charlotteville—Introduced—97825/2942/-
- Clerodendrum speciosissimum Drapiez (Lamiaceae)—Trinidad, Port Spain—Introduced—97840/2923/-
- Clusia palmicida Planch. & Triana (Clusiaceae)—Trinidad, Arena Forest Reserve—Native—98826/2892/-
- Clusia rosea Jacq. (Clusiaceae)—Beata—Native—-/-/00769637
- Coccocypselum guianense (Aubl.) K.Schum. (Rubiaceae)—Trinidad, St. Andrew District—Native—97841/2918/-
- Coccothrinax ekmanii Burret (Arecaceae)—Beata—Hispaniola endemic—96483, 98513/2614/-
- Coccothrinax sp. (Arecaceae)—Tortola, Experiment Station— Unknown—98489/3873/-
- Colvillea racemosa Bojer (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98549/2907/-
- Consolea moniliformis (L.) A.Berger (Cactaceae)—Beata— Caribbean Island endemic—96512/2604/-
- Cordia alliodora (Ruiz & Pav.) Oken (Boraginaceae)—Trinidad, Private Gardens, Hillside near Port of Spain—Native— 97842/2863/02890298
- Cordia nitida Vahl (Boraginaceae)—Tortola, Road Town— Native—98832/3868/-
- Costus scaber Ruiz & Pav. (Costaceae)—Trinidad, Arena Forest— Native—97843/2925/00340742, 00340743
- Costus scaber Ruiz & Pav. (Costaceae)—Tobago, Rainforest— Native—98986/2958/00340744
- Couroupita guianensis Aubl. (Lecythidaceae)—Trinidad, Port Spain—Introduced—98550/2904/-
- Crotalaria incana L. (Fabaceae)—Tobago, Along the Sea Wall, Scarborough—Native—97956/2932/01002532
- Crotalaria incana L. (Fabaceae)—Tortola, Harringan—Native— 98838/3853/-
- Crotalaria retusa L. (Fabaceae) Tortola, Road Town Introduced 98835/3860/00710817

TABLE 6. continued

- Crotalaria verrucosa L. (Fabaceae) Tobago, Near sea coast, along road just out of Scarborough — Introduced — 98058/2950/01003563
- Cubanola domingensis (Britton) Aiello (Rubiaceae)—Saona— Hispaniola endemic—97904/2624/-
- Cynometra trinitensis Oliv. (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Native—99559/2869/-
- Cyrtostachys renda Blume (Arecaceae)—Trinidad, Port Spain— Introduced—97546/2834/-
- Cyrtostachys renda Blume (Arecaceae)—Trinidad, Port Spain— Introduced—99560/2843/-
- Desmodium incanum (G. Mey.) DC. (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Native—98061/2861/01005040
- Desmodium incanum (G. Mey.) DC. (Fabaceae)—Tobago, Botanic Station, along road just out of Scarborough—Native— 97965/2936/01005039
- Desmodium incanum (J. Mey.) DC. (Fabaceae)—Trinidad, Port Spain—Native—-/-/1005041
- Desmoncus polyacanthos Mart. (Arecaceae)—Trinidad, Forest Reserve—Native—97812/2951/-
- Digitaria insularis (L.) Ekman (Poaceae)—Tortola, Experiment Station—Native—99007/3863/-
- Dioscorea esculenta (Lour.) Burkill (Dioscoreaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97820/2878/-
- Diospyros cayennensis A.DC. (Ebenaceae)—Trinidad, Forest Reserve—Native—97959/2879/-
- Diospyros inconstans Jacq. (Ebenaceae)—Tobago, Pigeon Hill—Native—97935/3697/-
- Diospyros malabarica (Desr.) Kostel. (Ebenaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98844/2848/-
- cf. Dolichos sp. (Fabaceae)—Tobago, Charlotteville—Introduced— 98987/3810/-
- Echites umbellatus Jacq. (Apocynaceae)—Saona—Native— -/-/00783040
- Elaeodendron xylocarpum (Vent.) DC. (Celastraceae)—Tortola, Sea coast—Native—99021/3864/-
- Entada polystachya (L.) DC. (Fabaceae)—Tobago—Native— 97960/2944/02211589
- Eriosema violaceum (Aubl.) G. Don (Fabaceae)—Trinidad, Mausica Savanna—Native—97844/2894/01003749
- Erythrina fusca Lour. (Fabaceae)—Tobago, Charlotteville— Introduced—-/-/01003726
- Erythrina pallida Britton & Rose (Fabaceae)—Trinidad, Port Spain—Native—98059/2914/-
- Erythrina poeppigiana (Walp.) O.F. Cook (Fabaceae)—Tobago, Mountain back of Charlotteville, Man of War Bay—Introduced— 98045/3700/01003710
- Eschweilera sp. (Lecythidaceae)—Trinidad, Botanic Garden, Port Spain—Unknown—98991/2857/03043820
- cf. Eugenia punicifolia (Kunth) DC. (Myrtaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98552/2854/03054961
- Euterpe oleracea Mart. (Arecaceae)—Tobago—Native— 97813/2955/-
- Euterpe oleracea Mart. (Arecaceae)—Trinidad, Arena Forest Reserve —Native—99566/2883/–
- Ficus benjamina L. subsp. comosa (Roxb.) Panigrahi & Murti (Moraceae)—Trinidad/Unknown—Introduced—-/2874/-
- Ficus citrifolia Mill. (Moraceae)—Tortola, Harringan—Native— 98850/3861/00704231
- Ficus citrifolia Mill. (Moraceae)—Tobago, Botanic Station, Scarborough—Native—98067/2927/02337780
- Galactia sp. (Fabaceae)—Beata—Unknown—97961/59/-
- Garcinia macrophylla Mart. (Clusiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98560/2860/–

- Geophila repens (L.) I.M. Johnst. (Rubiaceae)—Trinidad, Botanic Garden, Port Spain—Native—97846/2903/00856733
- Gossypium sp. (Malvaceae)—Beata—Unknown—98764/16/-
- Gossypium sp. (Malvaceae)—Beata—Unknown—98765/17/-
- Gossypium sp. (Malvaceae)—Beata—Unknown—98766/18/-
- Gossypium sp. (Malvaceae)-Beata-Unknown-98767/19/-
- Gossypium sp. (Malvaceae)-Beata-Unknown-98768/20/-
- Gossypium sp. (Malvaceae)-Beata-Unknown-98763/21/-
- Guilandina ciliata Wikstr. (Fabaceae)—Beata—Caribbean Island endemic—97884/2603/-
- Gustavia augusta L. (Lecythidaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98553/2853/03043132
- Heliconia psittacorum L.f. (Heliconiaceae)—Trinidad, Aripo Savanna—Native—98554/2905/-
- Heliconia sp. (Heliconiaceae)—Tobago—Unknown—99575/3902/-
- Hibiscus sp. (Malvaceae)—Trinidad, Cotton Research Station, St. Augustine—Unknown—99577/2893/-
- Indigofera suffruticosa Mill. (Fabaceae)—Beata—Native— 98859/3875/-
- Indigofera suffruticosa Mill. (Fabaceae)—Beata—Native— 98996/2616/00865438
- Ipomoea desrousseauxii Steud. (Convolvulaceae)—Beata— Hispaniola endemic—96508/2611/00792870
- Ixora sp. (Rubiaceae)—Tortola, Experiment Station—Introduced— 99582/3869/–
- Ixora sp. (Rubiaceae)—Trinidad, Port Spain—Introduced— 99581/2881/-
- Ixora sp. (Rubiaceae)—Trinidad, Port Spain—Introduced— 97848/2902/02508789
- Jacaranda obtusifolia Bonpl. (Bignoniaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98555/2901/03204790
- Jacquinia arborea Vahl (Primulaceae)—Saona—Native— 97316/2623/00780163
- Lablab purpureus (L.) Sweet (Fabaceae)—Trinidad, Port Spain— Introduced—97978/2921/-
- Lablab purpureus (L.) Sweet (Fabaceae)—Trinidad, Port Spain— Introduced—97978/2922/-
- Laelia undulata (Lindl.) L.O. Williams (Orchidaceae)—Trinidad— Native—-/-/00459845
- Lagerstroemia speciosa (L.) Pers. (Lythraceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97980/2855/01099053
- Lecythis pisonis Cambess. (Lecythidaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—-/-/03043473
- *Lecythis zabucajo* Aubl. (Lecythidaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—-/2841/-
- Lecythis zabucajo Aubl. (Lecythidaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99584/2889/-
- Lecythis zabucajo Aubl. (Lecythidaceae)—Trinidad—Introduced— 98047/2963/-
- Libidibia punctata (Willd.) Britton (Fabaceae)—Trinidad, Port Spain—Introduced—98070/2828/00383323
- Lonchocarpus sericeus (Poir.) DC. (Fabaceae)—Tobago, Charlotteville—Native—-/-/01003684
- Mandevilla hirsuta (Rich.) K. Schum. (Apocynaceae)—Trinidad, Aripo Valley—Native—-/-/01120534
- Mandevilla hirsuta (Rich.) K.Schum. (Apocynaceae)—Trinidad, Aripo Valley—Native—-/-/01120535
- Mangifera indica L. cv. Bullhead or Miss Niles (Anacardiaceae)— Tortola, Bough Bay—Introduced—98411/3818/-
- Mangifera indica L. cv. Cottage (Anacardiaceae)—Tortola— Introduced—98412/3819/-
- Mangifera indica L. cv. Graham (Anacardiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98445/2898/-

TABLE 6. continued

- Mangifera indica L. cv. Kidney (Anacardiaceae)—Tortola, Near Experiment Station—Introduced—98416/3833/-
- Mangifera indica L. cv. Pere Louis (Anacardiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98446/2899/-
- Mangifera indica L. cv. Quanto (Anacardiaceae)—Tortola— Introduced—98409/3816/-
- Mangifera indica L. cv. Rector or Boar Hog (Anacardiaceae)—Tortola, Sea Cow Bay—Introduced—98415/3832/-
- Mangifera indica L. cv. Roseau (Anacardiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98447/2900/–
- Mangifera indica L. cv. Royal (Anacardiaceae)—Tortola, Port of Tortola—Introduced—98413/3826/-
- Mangifera indica L. cv. Tortola (Anacardiaceae)—Tortola, Experiment Station—Introduced—98414/3831/-
- Manicaria saccifera Gaertn. (Arecaceae)—Trinidad, Mora Forest Reserve—Native—-/2917/-
- Manicaria saccifera Gaertn. (Arecaceae)—Trinidad, Sangre Grande—Native—98497,98556/2940/-
- Mauritia flexuosa L.f. (Arecaceae)—Tobago, Botanic Station, Scarborough—Native—98523/2929/-
- Maytenus reynosioides Urb. (Celastraceae)—Beata—Hispaniola endemic—97291/2613/00848715
- Melocactus curvispinus ssp. caesius (H.L. Wendl.) N.P. Taylor (Cactaceae)—Trinidad, Botanic Garden, Port Spain—Native— 97952/2949/-
- Monodora tenuifolia Benth. (Annonaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99595/2871/-
- Montrichardia arborescens (L.) Schott (Araceae) Tobago, Speyside Native — 99598/2948/00958747
- Mora excelsa Benth. (Fabaceae)—Trinidad, Eastern Trinidad— Native—99600/2916/-
- Mora excelsa Benth. (Fabaceae)—Trinidad, Mora Forest Reserve— Native—99000/3712/-
- Morisonia flexuosa L. (Anacardiaceae)—Beata—Native— -/34/00855455
- Morisonia flexuosa L. (Capparaceae)—Beata—Native— 96478/2607/00862334
- Morisonia flexuosa L. (Capparaceae)—Saona—Native— 97566/2618/00862343
- Mucuna sloanei Fawc. & Rendle (Fabaceae)—Tobago, Pigeon Hill—Native—98063/2938/01003733
- Mucuna sp. (Fabaceae)—Trinidad, Port Spain—Unknown— 98062/2895/-
- MussaendaerythrophyllaSchumach.&Thonn.(Rubiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99602/2875/-
- Norantea guianensis Aubl. (Marcgraviaceae)—Trinidad, Aripo Savanna—Native—99606/2884/-
- Ochrosia sp. (Apocynaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97981/2845/-
- Oenocarpus bataua Mart. var. oligocarpus (Griseb. & H. Wendl.) A.J. Hend. (Arecaceae)—Trinidad, Cumuto—Native—97553/2833/-
- Operculinahamiltonii(G.Don)D.F.Austin&Staples(Convolvulaceae)— Trinidad, Botanic Garden, Port Spain—Native—98557/2858/ 03148339
- Orchidaceae sp.—Trinidad, Huggins orchid collection—Unknown— 97968/–/–
- Pachira insignis (Sw.) Savigny (Malvaceae)—Trinidad, Maracas Valley—Native—-/2862/01226529
- Pachira insignis (Sw.) Savigny (Malvaceae)—Trinidad, Maracas Valley—Native—-/2988/-
- Pandanus dubius Spreng. (Pandanaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99611/2887/-

- Papilionanthe teres (Roxb.) Schltr. (Orchidaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99041/2876/-
- Papilionanthe teres (Roxb.) Schltr. (Orchidaceae)—Trinidad, Port Spain—Introduced—-/2836/00493277
- Papilionanthe teres (Roxb.) Schltr. (Orchidaceae)—Trinidad, Port Spain—Introduced—99040/2835/00493278
- Paspalum laxum Lam. (Poaceae)—Saona—Native—-/-/01019069 Paspalum plicatulum Michx. (Poaceae)—Tobago, Richmond—
- Native—98048/2941/01041970 Passiflora suberosa L. (Passifloraceae)—Saona—Native— 97776/2625/01193832
- Peltogyne floribunda (Kunth) Pittier (Fabaceae)—Trinidad, Arena Forest Reserve—Native—98558/2913/-
- Peltophorum pterocarpum (DC.) K. Heyne (Fabaceae)—Tobago, Botanic Station, Scarborough—Introduced—97835/2934/ 00401630
- Pentas lanceolata (Forssk.) Deflers (Rubiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99603/2909/-
- Pentas lanceolata (Forssk.) Deflers (Rubiaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99615/2873/-
- Periandra coccinea (Schrad.) Benth. (Fabaceae)—Tobago, Botanic Station, Scarborough—Introduced—97955/2926/01003696
- Phanera vahlii (Wight & Arn.) Benth. (Fabaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98803/2827/00317025, 00317026
- Phaseolus vulgaris L. (Fabaceae) Trinidad, Port Spain Introduced 98064,98065/59/-
- Picrodendron baccatum (L.) Krug & Urb. (Picrodendraceae)—Trinidad, Botanic Garden, Port Spain—Introduced—98559/2846/-
- Pityrogramma calomelanos (L.) Link (Pteridaceae)—Trinidad, Botanic Garden, Port Spain—Native—99535/2866/-
- Plumeria obtusa L. (Apocynaceae)—Beata—Native—96514/ 2608/00782879
- Plumeria obtusa L. (Apocynaceae) Beata Native 97782/2627/-
- Portlandia grandiflora L. (Rubiaceae)—Trinidad, Port Spain— Introduced—97577/2825/-
- Pothos sp. (Araceae)—Trinidad, Aripo Savanna—Introduced— 99626/2885/-
- Pseudophoenix sargentii Sarg. (Arecaceae)—Saona—Native— 96487/2619/-
- Pseudophoenix sargentii Sarg. (Arecaceae)—Saona—Native— 96487/2620/-
- Psychilis truncata (Cogn.) Sauleda (Orchidaceae)—Saona— Hispaniola endemic—–/2626/00428228
- Psychopsis papilio (Lindl.) H.G. Jones (Orchidaceae)—Trinidad, Port Spain—Native—99035/2911/-
- Ptychosperma sp. (Arecaceae)—Tobago, Botanic Station, Scarborough—Introduced—97806/2953/-
- Ptychosperma sp. (Arecaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—97545/2838/-
- Ravenia spectabilis (Lindl.) Engl. (Rutaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99630/2872/-
- Rhopaloblaste augusta (Kurz) H.E. Moore (Arecaceae)—Trinidad, Botanic Garden, Port Spain—Introduced—99629/2877/-
- Rhynchosia minima (L.) DC. (Fabaceae)—Tortola, Harringan— Native—98990/3858/-
- Rhynchosia minima (L.) DC. (Fabaceae)—Beata—Native— 97310/2615/00875015
- Rhynchosia reticulata (Sw.) DC. (Fabaceae)—Tortola, Road Town—Native—98989/3857/-
- Rivina humilis L. (Petiveriaceae)—Saona—Native—-/-/00848080
 - Roystonea borinquena O.F. Cook (Arecaceae)—Trinidad, Port Spain—Caribbean Island endemic—97550/2839/-

TABLE 6. continued

Roystonea oleracea (Jacq.) O.F. Cook (Arecaceae)—Trinidad, Port	Tephrosia cinerea (L.) Pers. (Fabaceae)—Tobago, Botanic Station,
Sabal causiarum (O.F. Cook) Becc. (Arecaceae)—Saona—Caribbean	<i>Teramus labialis</i> ssp. <i>arabicus</i> Verdc. (Fabaceae)—Tobago,
Island endemic—96489/2621/- Schnella microstachya Raddi (Fabaceae)—Tobago, Botanic Station, Scarborough—Introduced—98801/2960/-	cf. Terminalia arjuna (DC.) Wight & Arn. (Combretaceae)— Trinidad, Botanic Garden, Port Spain—Introduced—97984/
Scutellaria incarnata Vent. (Lamiaceae)—Irinidad, Botanic Garden,	2859/03047433 cf. Terminalia hellirica (Gaerth) Royh. (Combretaceae)—Trinidad
Securidaca diversifolia (L.) S.F. Blake (Polygalaceae)—Trinidad, Port	Botanic Garden, Port Spain—Introduced—97985/2852/
Spain—Native——/–/01093869	03043133, 03047432
Serjania polyphylla (L.) Radlk. (Sapindaceae)—Saona—Caribbean	Thespesia beatensis (Urb.) Fryxell (Malvaceae)—Beata—Beata
Island endemic—–/–/00707529	Island endemic—98417/2617/00101879,00101880,00849839
Serjania polyphylla (L.) Radlk. (Sapindaceae)—Saona—Caribbean	<i>Tillandsia</i> sp. (Bromeliaceae)—Tobago, Charlotteville—Unknown—
Island endemic—-/-/00707532	99038/3664/–
Sideroxylon obovatum Lam. (Sapotaceae)—Saona—Native—	cf. Tillandsia utriculata L. (Bromeliaceae)—Beata—Native—-/2610/-
97905/2622/00806652	Tribulus cistoides L. (Zygophyllaceae)—Beata—Introduced—
Solanum crinitum Lam. (Solanaceae)—Trinidad—Introduced—	–/2609/–
97852/2946/-	Trichocentrum cebolleta (Jacq.) M.W. Chase & N.H. Williams
Solanum lycopersicum L. (Solanaceae)—Trinidad, Cotton Research	(Orchidaceae)—Trinidad—Introduced—-/-/00025988
Station, St. Augustine—Introduced—97850/2896/-	Trichocentrum cebolleta (Jacq.) M.W. Chase & N.H. Williams
Sporobolus indicus (L.) R. Br. (Poaceae)—Beata—Native—	(Orchidaceae)—Trinidad, Port Spain—Introduced—99034/
-/33/01006599	2910/-
Stachytarpheta grandiflora P.H. Cardoso & Salimena (Verbenaceae)—	Unknown—Beata—Unknown—97903/-/-
Trinidad, Botanic Garden, Port Spain—Introduced—98561/	Unknown—Saona—Unknown—97906/2788/-
2906/–	Unknown—Tobago, Botanic Station, Scarborough—Unknown—
Stegnosperma cubense A. Rich. (Stegnospermataceae)—Beata—	97804/2956/-
Native—97580/2606/00848153	Unknown-Tohago Bainforest
Stegnosperma cubense A. Rich. (Stegnospermataceae)—Beata—	Varronia salviifolia (Poir.) Borhidi (Boraginaceae)—Beata—
Native—99010/3878/-	Hispaniola endemic—-/32/00796574
Stegnosperma cubense A. Rich. (Stegnospermataceae)—Beata—	Vigna marina (Burm.) Merr. (Fabaceae)—Tortola, Road Town
Native—97901/2605/00848152	—Introduced—98887/3885/-
Stegnosperma cubense A. Rich. (Stegnospermataceae)—Beata—	Warszewiczia coccinea (Vahl) Klotzsch (Rubiaceae)—Trinidad,
Native—-/-/00848154	Botanic Garden, Port Spain—Native—97986/2856/02363004
Syzygium cumini (L.) Skeels (Myrtaceae)—Trinidad, Botanic Garden,	Zingiber officinale Roscoe (Zingiberaceae)—Trinidad, Market—I
Port Spain—Introduced— -/2851/01100157, 01100158	ntroduced—98793/2891/-
Syzygium malaccense (L.) Merr. & L.M. Perry (Myrtaceae)—Trinidad, Market, Port Spain—Introduced—99534/2890/–	

He had a strong interest in economic botany as well as in historical events that influenced the development of botany as a discipline in the regions that he visited. Therefore, it is not surprising that during his visits to these five islands, Fairchild targeted not only native flora material but also local markets, botanic gardens, and agricultural research stations (Table 6). We found that the same collecting protocols were followed in the other territories explored during the 1932 Expedition as indicated below.

For instance, extensive plant collections were made in two historically important botanic gardens of the Caribbean: the botanic gardens of Dominica and of St. Vincent, during this particular expedition. David Fairchild was aware of their historical relevance in the region (Dorsett 1936: 261, 337); the latter was founded in 1766 and is the second oldest botanic garden of the Tropics, only surpassed by the botanic garden of Mauritius in the Indian Ocean, as it was established by France in 1735 (Plucknett et al. 1987: 44). The Botanic Garden of Dominica was established in 1891 as part of the network of colonial botanic gardens that the United Kingdom developed mostly to explore economic botany initiatives in the Tropics (Anonymous undated-a, undated-b).

Local markets were also visited, specifically, those in Nassau, the Bahamas; furthermore, material grown in agricultural stations was also added to the germplasm portfolio that was assembled during other parts of the 1932 Expedition. Interestingly, there was a high proportion of legume collections in these five islands, and

this trend was also found for the other islands targeted during the 1932 Expedition even though legumes were not mentioned as a major objective of germplasm exploration.

Regarding cotton, Dorsett (1936: 696) indicated that among the aims of the 1932 Expedition, this objective was not totally achieved. In total, twenty-one accessions of cotton were collected during the 1932 Expedition, and they were obtained in the Bahamas [Cat Island, Conception, and New Providence (Chavarria et al. 2020)], Beata, the Lesser Antilles [Cannouan, Dominica, Martinique, Saona, St. Kitts, St. Lucia, and St. Martin (Camas et al. 2020)], and Saona. All cotton collections were identified by the 1932 Expedition members as *Gossypium* sp., and they did not include a single sample of the actual Sea-Island Cotton, the type of cotton that was one of the three main expedition objectives.

Concerning the final utilization of the collected material, none of these accessions seem to still be present in the USDA germplasm repositories. The horticulture records of Fairchild Tropical Botanic Garden show that part of the plant material obtained during the Old World and New World *Utowana* expeditions reached this botanic garden (Francisco-Ortega et al. 2018a, 2019; Camas et al. 2020). However, the living collections of Fairchild Tropical Botanic Gardens do not seem to have any accessions that were collected in these five islands during the visits covered in this contribution.

Recent botanical history research conducted by Montes Espín et al. (2021) revealed that at least 15 of the accessions that reached the Cienfuegos Botanical Garden were from material collected in Trinidad or Tobago during the 1932 Expedition. This botanic garden was owned and run by Harvard University until 1960. During the 1930s, two additional botanic gardens in the region were under the administration of U.S. organizations (Lancetilla Botanical Garden in Honduras and Summit Gardens in Panama Canal Zone) and it is likely that they also received germplasm duplicates of the material that was collected during the 1932 Expedition.

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