
AUGUSTUS FENDLER'S VENEZUELAN PLANT COLLECTIONS¹

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ABSTRACT

Between 1854 and 1858, Augustus Fendler resided in Colonia Tovar, a German village in the Coastal Cordillera of Venezuela, where he assembled one of the finest collections of plant specimens for his time. Fendler's life in Colonia Tovar is described from his correspondence with Daniel C. Eaton, Asa Gray, George Engelmann, and Joseph Henry. Because of his devotion to plant collecting and his acute powers of observation, Fendler's 2,630 flowering plant specimens from Venezuela are extremely valuable; 223 (8.5% of his total collections) have been designated as types. Although most specimens were labeled as having been collected in Colonia Tovar, state of Aragua, Venezuela, Fendler's field notebooks cite many different localities in the states of Carabobo and Aragua, and in the Distrito Federal. A map and list of Fendler's collecting localities are provided. An annotated list including collection data extracted from his notebook is given for the angiosperm types that he collected.

In the mid nineteenth century South America was poorly known botanically compared with most other parts of the world. At this time, plants generally were collected by people who traveled through one or several countries, making plant specimens along their way (e.g., Ruiz & Pavón; Humboldt & Bonpland). Few collectors lived in an area long enough to sample a region thoroughly and collect the relatively rare species. Augustus Fendler was a notable exception. He resided four years in Colonia Tovar,³ a small German colony 35 miles west of Caracas, Venezuela (Rasmussen, 1943), and collected over 3,000 ferns and flowering plants. These collections are noteworthy, not only for their excellence, but also because a great number of new species were based on his material. To this day, new species are being described from Fendler's Venezuelan specimens (e.g., Croat & Lambert, 1986).

Although his Venezuelan collections are extremely important, Augustus Fendler is perhaps best known for his collections of New Mexican plants between 1846 and 1847. Gray (1849) published an annotated list of Fendler's New Mexican

plants, which Shaw (1982) discussed more recently. Fendler's other collecting trips to Panama, Venezuela, and Trinidad are not as well known as those he took in the United States. In Panama, Fendler (Fig. 1) collected near the Chagres River for four months in 1849 and 1850. He resided in Trinidad from 1877 until his death in 1883. His most valuable collections were made in Venezuela between January 1854, and September 1858.

This paper is an account of Fendler's life in Venezuela constructed from his letters to D. C. Eaton, G. Engelmann, and A. Gray in the Yale University Library, Missouri Botanical Garden, and Gray Herbarium archives, respectively. This correspondence provides insight not only into Fendler, but also into the difficulties of life as a plant collector in the 1800s. Fendler corresponded with Engelmann in German and with Eaton and Gray in English. These lucid and detailed letters are a chronicle of plant collecting in South America in the mid nineteenth century and are even more remarkable since German was Fendler's native language.

According to various biographical notes (Canby,

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³ Colonia Tovar is located in the state of Aragua and is not to be confused with Tovar in the state of Mérida, in the western part of Venezuela (Steyermark, 1981).



FIGURE 1. Photograph of Augustus Fendler probably taken in St. Louis, ca. 1860.

1885; Gray, 1885; Rohl, 1944), Fendler was born in Gumbinnen, eastern Prussia, in January 1813. At the age of 12 he was sent to a preparatory school where he mastered the fine penmanship that was as delightful to his correspondents as it is to his present-day historians (Fig. 2). Fascinated with traveling, Fendler sailed from Bremen to Baltimore in 1836 and within two years moved to St. Louis. During a visit to Europe in 1844, Fendler met Professor Ernst Meyer of the University at Königsberg in Prussia, who encouraged him to collect plants in the western United States and send them to him for sale. On his return to St. Louis, Fendler

brought his specimens for identification to George Engelmann, the botanist who advised Henry Shaw, founder of the Missouri Botanical Garden (Stieber & Lange, 1986). Fendler and Engelmann struck up a friendship that spanned nearly 40 years. Engelmann later introduced Fendler to Asa Gray, who described Fendler as "a close, accurate observer, a capital collector and specimen-maker" (J. L. Gray, 1893: 341).

After a year of plant collecting in New Mexico, a failed attempt to collect plants near the Great Salt Lake, and two sojourns in Arkansas and Louisiana, Fendler settled in Memphis, Tennessee in

297 - 117 West Memphis, Tenn. July 13th, 1853.

To
Professor Asa Gray M.D.
Harvard University.

Dear Sir

The interference of the Memphis Gas Company with my business, although it has somewhat unsettled my aims and threw me off the steady track which I thought I was on, has at the same time given me a little more leisure, and I have once more turned my attention to surrounding vegetation. If I should make Memphis my abiding-place, I should consider it my pleasing task to investigate thoroughly and study as much as possible all the species of plants that grow within 5 or 10 miles around Memphis. But I am at present very poorly supplied with botanical works. All the books I have on botany are: Your botanical Textbook, second edition and your Manual of Botany of the Northern United States 1848. If I was living in the Northern States, these two most excellent little volumes would be sufficient for me to recognize all the plants growing there.

FIGURE 2. Letter by Augustus Fendler to Asa Gray (Memphis, Tennessee, July 13, 1853). Missouri Botanical Garden archives.

1850, and prospered there for four years in the gas-lamp business (Stieber & Lange, 1986). In 1853, when the lamp-lighting business in Memphis faltered, he was eager for a change of pace and wanted to resume collecting plants. He wrote to Gray on 11 August 1853 about his collecting plans: "My principal object in going to Caracas is: to go into a business again, by which I can support myself. But I hope I shall have plenty of leisure

to make botanical collections besides. If I collect again I shall aim to make the sets as large and complete as possible. Do you think 15 sets, each containing from 1,000–1,500 species of plants collected about Caracas could meet with a ready sale?" On 15 August 1853, he wrote Engelmann that he wished to move to a town near Caracas because "In a city with a population of 70,000 I believe to be able to find more security than here,

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3
But in the region where I live now there are to be found many plants which are beyond the limits of your Manual. The Flora of North America which was kindly presented to me by Dr. Engelm. man was burned up in the great fire of 1865.

10
18
1.50
The following works

1. Flora of North America
2. Your Genera Illustrata
3. Your Botanical Textbook Third edition.
4. Hooker's London Journal of Botany and Kew Garden Miscellany, commencing with January 1849. up to the present time.

5. Michaux's work on North American Trees are the works which I should wish to possess. According to information, which I have from time to time received from Dr. Engelm., there ought to be about 15 sets of my Phragmites plants and about as many sets of Santa Fe plants in England yet unsold.

Allow me to ask you now my Dear Sir, whether by your aid and well known influence it would be possible to get the above named books on the following terms.

You may dispose of, or cause to be disposed of as many sets of my unsold plants, as it will require to pay, not only for the books and

FIGURE 2. Continued.

and secondly, because I believe I shall have a better climate there. Then also, the wish to live again in a mountain valley and to be in the vicinity of a rich mountain flora! without having the difficulties of long and difficult communication as I found in Santa Fe."

On the 24th of December 1853, Fendler sailed for Venezuela from New York harbor, accompanied by his chronically ill brother. They arrived

in La Guaira, Venezuela, on 21 January 1854. In his day, it took five hours to reach Caracas from the coast. Upon arriving, he commenced collecting plants in the vicinity. Prompted by the high cost of living in Caracas, he went up to Colonia Tovar after only six weeks. After reaching the settlement, he wrote to Gray on 16 December 1854: "The base of the valley is 5,600 ft. above the sea, and some of the surrounding mountains about 2,000

advances, but also for your time, trouble, and that of your agents. To effect a speedy sale of the plants you may have the price of them reduced as low as you think necessary in order to attain the object in view, viz: the acquisition of the books. Please inform me in a few lines whether this object can be accomplished in the way I have proposed, or not.

I remain

Yours very Respectfully

A. Fendler.

FIGURE 2. Continued.

feet higher The road from Caracas leads at first along a small river, which is very rapid and has to be crossed 42 times. The valley in which this river flows becomes at last very narrow and the road turns off to the left ascending a high mountain, from the tip of which it leads on in a westerly course along the very summit of the principal mountain range, through the deep shades of the primitive forest and down the valley of the Colony."

While at Colonia Tovar, Fendler also corresponded with Joseph Henry of the Smithsonian Institution, who published Fendler's letters and meteorological observations in the *Annual Report of the Board of Regents of the Smithsonian Institution*. Fendler was an ardent amateur meteorologist and in Venezuela traveled with a barometer, rain gauge, and thermometer. From his correspondence with Gray, Fendler provided a very rich description of Colonia Tovar (Fendler, 1857): "The valley in which Colonia Tovar is situated was, so late as December, 1841, a perfect wilderness, covered with primitive forest. Not even the existence of this valley was known fifteen years ago, neither to the government nor to its owner, although it is only thirty-five miles west of Caracas, the capital of Venezuela, and in a straight line cannot be more than twelve miles from the sea. And when an attempt was made to explore this region not even a guide could be found for the small exploring party of fifteen men, headed by Colonel Codazzi, a skillful

officer and compiler of the new map of Venezuela. When this party at last succeeded in crossing this region and reaching the sea-shore, they thought they had achieved a most extraordinary thing, (to cross a distance of twelve miles in six days;) and after they had returned to their homes none of them had a desire to do the feat over again. This was a party of natives. And when, at a later period, after the establishment of the colony, another skillful engineer found, with a party of colonists, his way to the opposite port of the sea-shore, the party did not venture to go back the same route, but rather chose the way by sea to Laguayra, from there to Caracas and back to the colony, a very circuitous route certainly. Such is the nature of this mountain region, with its precipices, waterfalls, deep ravines, and its dense, almost impenetrable primeval forests."

Shortly after arriving in Colonia Tovar, Fendler bought a small farm in 1854 for 47 dollars. He described his new home in his letter to Gray of 16 December 1854: "My cottage stands on a small hill which is projecting from the sloping side of a mountain overlooking the greater part of the Colony. On the slopes of this little hill we have made terraces planted with *Musa sapientum*, with apple trees, Palms (*Oenocarpus utilis*), and stately tree ferns 14 feet high. Near the brown polished stem of the Palm the clear arch of a fountain (9 feet high) glitters in the tropical sun sending unceasingly its sparkling little stream to the top of the young

Palm. This fountain I made in a few days without outlay of money. Two pieces of the trunk of *Ceroxylon andicola* served as pipes." Fendler clearly enjoyed Colonia Tovar: "A visitor who never before lived in a valley like this finds here many peculiarities of vegetation, surface and climate which make him feel that he is not far off the land of perpetual peace; for he has entered the happy region of the ferns, the 'tierra templada de los helechos.' There is no scorching summer's heat, no fearful winter's cold, neither tornados to devastate the country nor gales to blind the inhabitants with sand and dust or penetrate their clothes and flesh with piercing frost" [Fendler to Gray, 16 December 1854]. His years in the village were the most enjoyable time of his life, and later letters indicate that he very much would have liked to return there [Fendler to Engelmann, 20 July 1882, Trinidad].

During his first year at Colonia Tovar, Fendler devoted much of his time to plant collecting. He wrote to Professor Henry: "In collecting botanical specimens, I have penetrated, without companion, the wilderness around in different directions, also that on the other side of the principal mountain range towards the sea, and can testify to the difficulties and hardships which are met with in exploring such a country . . . In these woods, where the rays of the sun never touch the ground, there it is where moisture and a cool temperature reign forever. The trunk of every tree and its branches are covered with Ferns, Lycopodiaceae, Mosses, Hepaticae, Lichens, Orchids, Bromeliads, Araceae and besides Piperaceae with many exogenous plants too numerous to mention" (Fendler, 1857).

Fendler wrote in detail to Gray, who had offered to enlist subscribers for his sets of plants. "I have already 8 boxes full of dried plants. The most attention I have hitherto paid to ferns of which I have 255 species, most of them complete; other plants I have not yet enumerated. For the last four or five weeks I have been employed with arranging my collections but have not yet finished. The fine dry weather which is now approaching urges me again to renewed activity in the field. The woods here are very dense and impenetrable without a sabre. The neighboring country is much diversified" [Fendler to Gray, 16 December 1854].

"Of Palms I have collected 6 species, of which 5 grow in the colony. Tree ferns 9 or 10 species. Cruciferae and Umbelliferae are represented only by 2 or 3 species. I do not intend to send plants until I can send something complete, and until I can ascertain the safest way to forward them" [Fendler to Gray, 16 December 1854]. Less than

a year later, Fendler wrote: "Of flowering plants I have about 1,850 species, although my search after these may be called but a superficial one. I think from 800–1,000 more species might be collected and of ferns perhaps from 80–100 more" [Fendler to Gray, 25 November 1855]. In addition to ferns and angiosperms, Fendler collected fungi for M. A. Curtis, a mycologist in the Carolinas, lichens for Professor E. Tuckerman, a lichenologist at Amherst College, and mosses for William Starling Sullivant, a distinguished American bryologist in Ohio.

In 1857, after collecting in Colonia Tovar for over two years, Fendler found it increasingly difficult to find novel species. "In coming to a new country it is at first comparatively easy to make a living by collecting plants; for the collector can make use of all the different species that meet his eye, and can carry them home without the aid of other hired persons or beasts of burden. But after he has explored the neighborhood and is obliged to make extensive excursions of from 8–14 days or 3 weeks, the case is different, and he soon finds that his earnings do not come up to his expenses" [Fendler to Gray, 1 July 1857].

After collecting thoroughly around Colonia Tovar, Fendler took longer excursions crossing "the principal mountain chain in three different places. One from Maracai to Columbia [Puerto Colombia] to the very margin of the sea; the other from Valencia to San Estevan within 3 miles of Puerto Cabello; the third from Petaquira to within a few miles of the sea-shore. The two first regions are West, the third one East of Colonia Tovar. Besides these I have made a number of minor excursions into the neighboring valleys" [Fendler to Gray, 1 July 1857]. During these long excursions he reflected: "The more I attempt to explore these regions the more am I convinced, that a great deal remains yet to be done with regard to discovering and making known the plants of this country. These extensive ranges of mountains with their innumerable recesses and deep ravines, covered with the densest growth of primeval forest uninterrupted for more than 150 miles from East to West, have been in most places never been traversed by civilized men. When standing on some high mountain-peak and looking over a part of this territory, it needs no great power of imagination to be filled with a longing and an ardent desire to embark in enterprises even of the most perilous kinds, in order to penetrate the unknown abysses and to bring to light the hidden treasures of vegetation. And when in such moments I compare my strength and my fast waning pecuniary means, which forbid to hire

a companion to help me carry the burden, then I feel somewhat akin to depression of mind which prompts me to leave the spot and retrace my steps homewards."

Because Fendler viewed plant collecting as a business, he was very concerned with the marketability of his specimens, which were valued according to their origin, rarity, and completeness of identifications. Thus Fendler wished to have his plant collections be as rare as possible, as well as to have them determined. He was concerned that Karl Moritz, who had been living in Colonia Tovar for over ten years, would begin again to collect plants in his territory. "The present letter is chiefly written to make you acquainted with my intentions of sending the collections as soon as possible, that you may be enabled to correspond or to publish something to that account and secure me from 10–13 subscribers in time, because Mr. Moritz, who is still here has sometime ago commenced again to collect ferns, which he intends to send at an early date to Germany (I think to Berlin). I have seen Moritz's own set of his former collections when he used to travel about the greater part of Venezuela viz: the Orinoco, the mountains of Merida, Cumaná, Caripe and a great many other regions; but the number of all his species of ferns will hardly exceed 250 or 260, while I have already 314, of which at least 290 are collected at the Colony or from 4–8 miles around it. There are several regions not far-off, where I never yet have been and which promise a very rich harvest of new species. I think I could augment the number of species considerably and discover many more new ones if I am sure that they find a market on which I may rely. I am therefore anxious to secure subscribers for them; so that I need not fear competition and then I shall go at it with renewed vigour; and if my life and health be spared I think of bringing together a rather complete representation of the vegetation of this and other parts of Venezuela. When I came here, Moritz seemed rather surprised that I should go at collecting plants in a place which he thought of being thoroughly ransacked, and he said that it would be a hard matter to find any new species. He seems however to have altered his opinion in this respect, after I had been in the field for some time; for I showed him many a plant which was new to him" [Fendler to Gray, 25 November 1855]. Fendler's Venezuelan collections surpass Moritz's in quantity and quality (J. A. Steyermark, pers. comm.; A. R. Smith, pers. comm.).

Plant collecting, however, was not profitable enough for Fendler to support himself and his in-

valid brother. "Whenever I was engaged in scientific pursuits for any length of time I was soon obliged to go to work at some other more profitable business, although that business might not be in accordance with my inclinations. And now I find again that the little capital, which I had earned at Memphis during three years by distilling camphene, is rapidly vanishing, notwithstanding the most frugal mode of living. I am therefore under necessity to try my hand for a while at something else beside collecting plants, and have already commenced to make experiments in brewing beer and making brandy; and shall be obliged (with regret do I say it), to spend most of my time behind the still . . . By no means do I wish by the preceding lines to convey to you the idea, that I am discouraged or that I have given up collecting plants. As long as strength and life and a few spare dollars remain with me I shall continue to do all I can for my favorite pursuit; and even now, whenever time and circumstances allow me to do so, I shall do it with the same zeal as I have done heretofore" [Fendler to Gray, 1 July 1857].

FENDLER'S COLLECTIONS

In Venezuela Fendler collected under two number series, one for the ferns beginning at no. 1 and ending at no. 500, and one for flowering plants, numbers 1–2,630. Sets of Fendler's Venezuela plants were purchased by the following people and institutions (the number before the name indicates which set went to that recipient). (2) Hooker (K), (3) Grisebach (GOET), (4) A. Gray (GH), (5) Engelmann (MO), (6) Short (PH), (7) Charles Wyville Thomson (E), (8) Boissier (G), (9) De Candolle (G), (10) Oxford herbarium (OXF), (11) Harvey (TCD), (12) Delessert (G), (13) Martius (BR), (17) Eaton (YU), (18) Miss Elizabeth Morris (?PHA), (21) Eaton (YU). It is not known whether sets 14–16 were sold at a later date, or whether they remained at GH. Sets 2–13 included ferns and phanerogams; sets 17–23 consisted only of ferns. The first and most complete set was retained by Fendler at first. Later he sold this first set of angiosperms to Gray. "My full set of Venezuelan plants contained over twice as many species as set No. 4, and therefore I hope that by the addition of those plants your herbarium would gain something. I would rather see them incorporated with your herbarium than with that of anyone else. The naming of the price of the lot I leave to you as you can judge best of their value, and I know that I am in good hands when I am in yours" [Fendler to Gray, 28 October

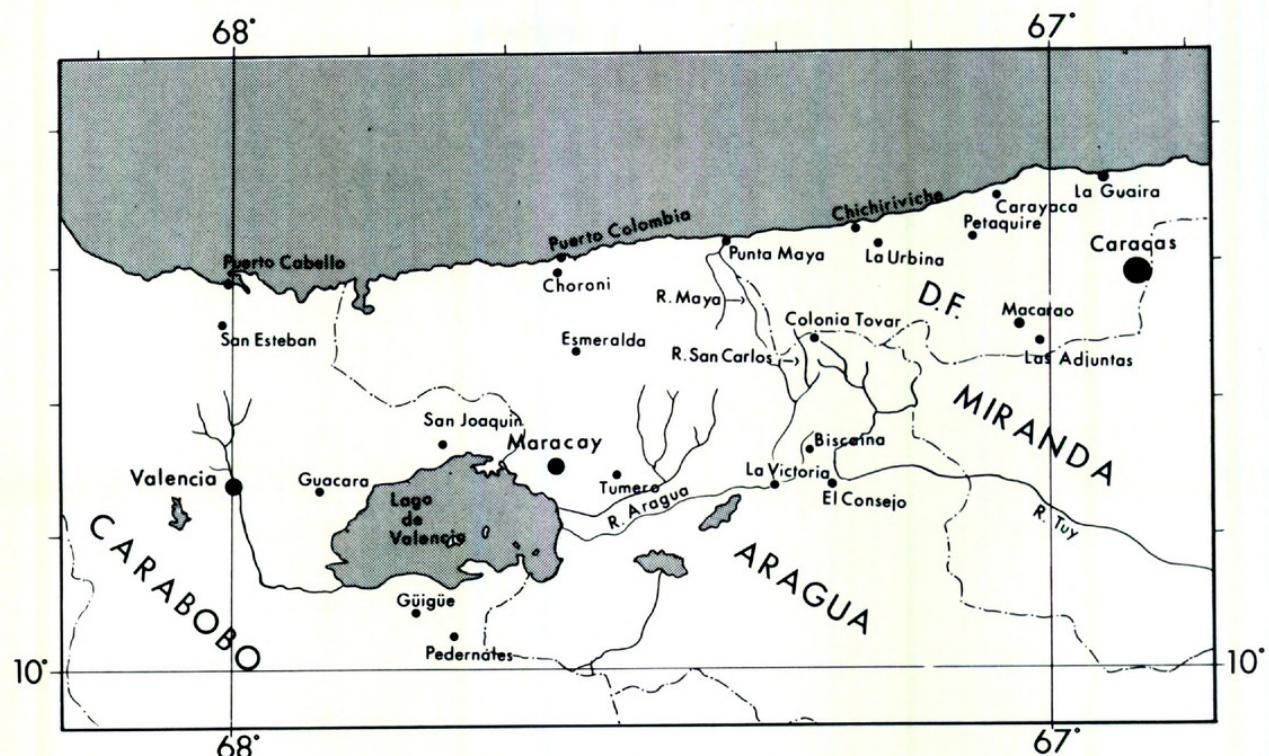


FIGURE 3. Map of the localities in northern Venezuela where A. Fendler collected in 1854–1858.

1863, St. Louis]. Ten cents per sheet was the usual asking price, although it was slightly higher for the orchids since they were often unicates.

At times Fendler felt he was not justly compensated for his specimens. For example, Lindley thought the price too high. "If Dr. Lindley was advised to pay but £2 per 100 for my Orchidae, then I will ask nothing more, and he shall be very welcome to them if he finds them to be worth that much. But if on the contrary he finds that the greater part of them, from being common things, are of no use to him, which I am inclined to infer from his letter, then I should be very sorry indeed that I ever offered them to him. To me that would be at least objects of remembrance of the amount of labor, bestowed upon, and perhaps of an over-animated enthusiasm in searching for them" [Fendler to Gray, 27 March 1859, St. Louis].

FENDLER'S FIELD NOTEBOOK

In 1859, Fendler sent Gray the field notes for his Venezuelan plants, retaining the information only on his personal set of specimens (set No. 1) [Fendler to Gray, 15 December 1859, St. Louis]. The field notes contain all dates and localities from which a particular species was collected, as well as elevation and notes about habit. Fendler numbered his plant collections according to the classification schemes presented in Gray's *Botany of the North*

ern United States and Lindley's *Vegetable Kingdom* rather than the order in which they were collected, as is usually done today.

To obtain more complete sets of specimens, which could then be sold at a higher price, Fendler often applied the same number to specimens he believed to be the same species but were from widely distant localities. Fendler also attributed to the same collection number specimens collected on as many as five different dates. This was a common practice among professional plant collectors, particularly those working with Gray (Ewan, 1969), and a source of problems for plant systematists. The *International Code of Botanical Nomenclature* (Burdet et al., 1983) states that an "isotype is any duplicate (part of a single gathering made by a collector at one time) of the holotype." Since Fendler did not indicate on his specimens what specific date a particular sheet was collected, technically no isotypes can be designated. Of the 225 names in this list, 66 were collected on more than one date. Few taxonomists have previously been aware of this problem with the Fendler Venezuelan collections.

LOCALITIES

Almost all of Fendler's Venezuelan specimens bear blue labels imprinted at the top with "Plantae Venezuelanae" and "Prope coloniam Tovar legit

TABLE 1. Localities used in Fendler's angiosperm list.

	State	Latitude	Longitude	Approximate Elevation in Meters
Agua Blanca = Quebrada Agua Blanca	Aragua	9°54'N	69°22'W	
Biscaina	Aragua	10°20'N	67°15'W	1,000
Campanero	Carabobo	10°26'N	68°01'W	150
Caracas	D.F.	10°30'N	66°55'W	914
Cariaca = Carayaca	D.F.	10°32'N	67°07'W	800
Chichiribichi = Chichiriviche	D.F.	10°33'N	67°14'W	0
Choroni	Aragua	10°29'N	67°37'W	0
Colombia = Puerto Colombia	Aragua	10°30'N	67°36'W	0
Colonia Tovar	Aragua	10°25'N	67°17'W	2,400
Consejo = El Consejo	Aragua	10°14'N	67°16'W	200
Cumbote = Cumboto	Aragua	10°24'N	66°26'W	70
Esmeralda	Aragua	10°25'N	67°36'W	200
Guacara	Carabobo	10°14'N	67°53'W	438
Güigüe	Carabobo	10°05'N	67°47'W	420
Hacienda Curisal (not located)				
La Guayra = La Guaira	D.F.	10°36'N	66°56'W	0
Lagunassa = Lagunazo	D.F.	10°25'N	67°10'W	2,000
Las Aguntas = Las Adjuntas	D.F.	10°26'N	67°01'W	900
La Victoria	Aragua	10°14'N	67°20'W	585
Macaraao	D.F.	10°26'N	67°02'W	1,400
Maracai = Maracay	Aragua	10°15'N	67°36'W	445
Maya, Punta	Aragua	10°32'N	67°24'W	1,400
Petaquire	D.F.	10°32'N	67°05'W	1,600
Piedernales = Pedernales	Carabobo	10°03'N	67°43'W	500
Puerto Cabello	Carabobo	10°28'N	68°01'W	0
San Carlos River	Aragua	10°19'N	67°19'W	
San Estévan = San Esteban	Carabobo	10°26'N	68°01'W	200
San Joaquin	Carabobo	10°16'N	67°47'W	450
Turmero	Aragua	10°14'N	67°29'W	466
Tuy River	Aragua, Miranda			
Urvina = La Urbina	D.F.	10°27'N	67°14'W	1,400
Valencia	Carabobo	10°11'N	72°12'W	478

A. Fendler 1845–5" at the bottom. The collection number is usually on the label, although it occasionally is on a slip of paper attached to the plant. Apparently Gray had these labels printed as he did for Wright's Cuban collections. Only the first set of Fendler's specimens, now at GH, has any collection data on them. Although the labels indicate that the sets were collected near Colonia Tovar in the state of Aragua, they were in fact also collected in the state of Carabobo and in the Distrito Federal. Figure 3 maps the Fendler localities in northern Venezuela, and Table 1 presents a list of these localities.

TYPE LIST

Of Fendler's 2,630 Venezuelan angiosperm collections, this study located records of 225 that

have been designated as types. Since only the first of the 20 sets has collection data, full localities from the notebook are given for these types. In the following annotated list of angiosperm types based on Fendler Venezuelan collections, the number in the parentheses refers to the number of dates listed in the notebook. The orchids, numbers 1,359–1,489 and 2,124–2,155, were not included in the notebook.

The species names listed in Appendix I were gleaned mostly from the *Flora de Venezuela* and the *Catálogo de La Flora Venezolana* (Pittier et al., 1945–1947), as well as with the help of several specialists (see Appendix I). The current accepted names are given when known to me. Herbaria data were gathered from the original descriptions, the TROPICOS data base at MO, the specialists listed in Appendix I, and the author's search through the

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MO herbarium. Unfortunately, there is no record of the number of duplicates made of each collection number (although the number may be on the labels of set No. 1 at GH, as with the ferns (Smith & Todzia, 1989), and therefore there is no way to ascertain which specific specimens are at any one herbarium. Since GH received Fendler's first set of angiosperms, excluding the orchids which went to Lindley, there are probably specimens for all numbers there. However, only herbaria where a specimen is confirmed to be deposited are included in the list. Overall, Fendler's Venezuelan specimens are widely distributed in the United States and Europe. The following 18 herbaria are known to have some Fendler Venezuelan collections (Lanjouw & Stafleu, 1957; pers. obs.): AMES, BR, BUF, C, CM, F, G, G-DC, GH, GOET, K, MO, NY, OXF, P, PH, S, and US.

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APPENDIX I

List of species with type specimens collected by A. Fendler in Venezuela (1854–1858). The collection dates listed by Fendler in his notebook are indicated in square brackets. If duplicates of a given collection number were made on a single date only, the exact date is given and is expressed as day/month/year; the year is between 1854 and 1858. All collection localities for a given collection number are furnished. Information enclosed in brackets comes directly from Fendler's notebook. The location of specimen(s), if known, is cited. In many cases, however, information from the literature did not record the place of deposition of the specimen seen, although in some cases it can be inferred. Specimens were searched for at MO and if not found in the herbarium were not cited. I thank the following people for help with specific plant groups: E. A. Christenson (Orchidaceae), T. B. Croat (Araceae), W. G. D'Arcy (Solanaceae), G. Davidsen (Cyperaceae, Poaceae), B. Hammel (Cyclanthaceae), J. Kuijt (Loranthaceae), C. Luer (Orchidaceae), J. Steyermark (Rubiaceae), H. van der Werff (Lauraceae), J. Wurdack (Melastomataceae, Polygalaceae), and J. Zarucchi (Apocynaceae, Fabaceae).

ANNONACEAE

- Rollinia fendleri** R. E. Fries, Acta Horti Berg. 12: 152, tab. 15. 1934.
[Biscaina, 3,000 ft., 5/6/55], Fendler 196 (holotype, K).

APIACEAE

- Hydrocotyle venezuelensis** Rose ex Mathias, Brittonia 2: 226. 1936.
[Colonia Tovar, 6,000 ft., 13/4/54], Fendler 524 (holotype, M; isotypes, G, K).

APOCYNACEAE

- Amblyanthera fendleri** Muell. Arg., Linnaea 30: 417. 1859–1860.

[A few mi. SE of Colonia Tovar, 5,000 ft., 12/4/54, 6/7/54, 4/9/54], Fendler 1032 (G-DC, photo at B, BR, F, K, MO).

= *Mandevilla fendleri* (Muell. Arg.) Woodson

- Dipladenia fendleri** Muell. Arg., Linnaea 30: 417. 1859–1860.

[A few mi. W of Colonia Tovar, 7,000 ft., 12/5/54], Fendler 1030 (holotype, G-DC, photo at F; isotypes, B, BR, F, K, MO).

ARACEAE

- Anthurium bredemeyeri** Schott var. **elongata** Engl., Fl. Bras. 3: 80. 1878.
[Colonia Tovar, 6,000–7,000 ft., 25/5/54, 15/9/54, 15/10/54], Fendler 1346 (lectotype, MO; islectotype, K).
= *Anthurium bredemeyeri* Schott

- Anthurium fendleri** Schott, Prodr. Syst. Aroid. 468. 1860.
 [Biscaina, 3,000 ft., 10/5/54], Fendler 1343 (holotype, K; isotype, GH).
- Anthurium nymphaeifolium** K. Koch & C. Bouché var. **ovatum** Engl., Monogr. Phan. 2: 177. 1879.
 [6–8 mi. SE of Colonia Tovar, 5,000–6,000 ft., 12/5/54, 28/7/54, 15/10/54], Fendler 1336 (syntype, K).
 = *Anthurium ornatum* Schott
- Philodendron deviatum** Schott, Bonplandia 7: 29. 1859.
 [Biscaina, 3,000 ft., 10/5/55], Fendler 1329 (holotype, K).
- Philodendron effusilobum** Croat, Aroideana 9: 99. 1986.
 [Near San Estevan, 1,000 ft., 9/3/57], Fendler 2573 (holotype, GH).
- Philodendron fraternum** Schott, Bonplandia 7: 29. 1859.
 [Colonia Tovar, 6,000–6,500 ft., 16/8/54, 19/6/55, 3/7/55], Fendler 1327 (holotype, K; isotypes, GH, US).
- ARALIACEAE**
- Dendropanax fendleri** Seemann, J. Bot. 2: 301. 1914.
 [A few mi. S of Colonia Tovar, 16/4/55], Fendler 529 (MO).
- ASCLEPIADACEAE**
- Philibertia fendleri** A. Gray, Proc. Amer. Acad. Arts 21: 395. 1886.
 [La Victoria, 20/11/56], Fendler 2119 (GH, MO).
 = *Sarcostemma bilobum* Hook. & Arn. subsp. *lindeniana* (Decne.) Holm
- ASTERACEAE**
- Clibadium parviceps** S. F. Blake, Contr. U.S. Natl. Herb. 22: 598. 1924.
 [Between Maracai and Choroni, 4,000 ft., 12/12/56; also between Petaquira and Cariaca, 4,000 ft., 12/2/58], Fendler 1967 (holotype, GH; isotype, US).
- Eupatorium neriifolium** B. L. Robinson, Contr. Gray Herb. 65: 49. 1922.
 [Colonia Tovar, 6,500 ft., 23/6/55], Fendler 634 (GH, photo at F).
- Eupatorium steetzii** B. L. Robinson, Proc. Amer. Acad. Arts 55: 36. 1919.
 [Colonia Tovar, 6,500 ft., 27/8/54], Fendler 647 (holotype, GH).
- Eupatorium tovarensense** B. L. Robinson, Proc. Amer. Acad. Arts 54: 259. 1918.
 [Between Petaquira and the sea, 4,000 ft., 22/4/58], Fendler 1947 (holotype, GH; isotype, MO).
 = *Ayapana tovarensis* (B. L. Robinson) R. King & H. Robinson
- Eupatorium xestolepis** B. L. Robinson var. **xestolepis**, Proc. Amer. Acad. Arts 54: 261. 1918.
 [Between Caracas and La Guayra; also a few mi. SE of Colonia Tovar, 7/5/55, 10/5/55, 16/8/55], Fendler 638 (holotype, GH).
- Hieracium tovarensense** Fries, Epicris. Hierac. 152. 1862.
 [Around Colonia Tovar, 6,000–7,500 ft., 26/7/54, 7/5/55, 28/6/55, 23/8/55, 17/7/56], Fendler 718 (G, photo at F).
 = *Hieracium avilae* H.B.K.

- Mikania gracilipes** B. L. Robinson, Contr. Gray Herb. 61: 15. 1920.
 [Between Valencia and Campanero, 5,000 ft., 27/2/57], Fendler 2348 (holotype, GH; isotypes, MO, G, photo at F).
- Mikania hexagona** B. L. Robinson, Proc. Amer. Acad. Arts 47: 196. 1911.
 [Tuy River below Colonia, 4,000 ft., 21/10/54], Fendler 626 (holotype, GH, photo at F).
- Mikania racemulosa** Klatt, Abh. Naturf. Ges. Halle 15: 325. 1882.
 [Colonia Tovar, 6,000–7,000 ft., 31/3/54, 28/6/55], Fendler 625 (GH, MO, photo at F) syntype with *Schomburgk 480* (G).
- Mikania vitrea** B. L. Robinson, Contr. Gray Herb. 61: 22. 1920.
 [Colonia Tovar, 6,500 ft., 24/5/57], Fendler 2349 (holotype, GH; isotype, G, photo at F).
 = *Mikania hookeriana* DC. var. *crassicaulis* Steyermark.
- Piptocarpha sprucei** Baker, Fl. Bras. 6(2): 129. 1873.
 [Between Maracai and Choroni, 2,500 ft., 28/1/57], Fendler 1957 (syntype).
- Senecio cucullatus** Klatt, Abh. Naturf. Ges. Halle 15: 331. 1882.
 [Colonia Tovar, 6,500 ft., 24/8/55], Fendler 702 (P, MO, photo at F).
- Trichogonia rhadinocarpa** B. L. Robinson, Proc. Amer. Acad. Arts 42: 36. 1906.
 [Biscaina, 3,200 ft., 5/6/55], Fendler 651 (GH).
- BEGONIACEAE**
- Begonia fagopyroides** Kunth & Bouché var. **fendleri** A. DC., Prodr. 15(1): 289. 1864.
 [A few mi. SE of Colonia Tovar, in ravines, 3,500 ft., 9/3/55, 7/5/55], Fendler 513 (G-DC, K).
- BROMELIACEAE**
- Aechmea cymoso-paniculata** Baker, J. Bot. 17: 165. 1879.
 [Between Petaquira and the sea, 3,000 ft., 9/2/57], Fendler 2453 (holotype, K; isotype, MO).
- Aechmea fendleri** André ex Mez, Bromel. Andreanae 13. 1889.
 [Between Petaquira and Colonia Tovar, 7,000 ft., 11/2/57], Fendler 2454 (holotype, K; isotype, GH).
- Bilbergia filicaulis** Griseb., Nachr. Königl. Ges. Wiss. Georg-Augusts-Univ. 1864: 13. 1865.
 [Between Valencia and Campanero, 500 ft., 7/3/57], Fendler 2452 (holotype, GOET, photo US).
 = *Aechmea filicaulis* (Griseb.) Mez
- Caraguata coriostachya** Griseb., Nachr. Königl. Ges. Wiss. Georg-Augusts-Univ. 1864: 21. 1865.
 [Between Maracai and Choroni, 4,000 ft., 13/12/56], Fendler 2167.
 = *Guzmania coriostachya* (Griseb.) Mez
- Nidularium albo-roseum** Griseb., Nachr. Königl. Ges. Wiss. Georg-Augusts-Univ. 1864: 12. 1865.
 [High mountains E of Colonia Tovar, 24/6/55], Fendler 1521 (holotype, GOET; isotype, GH).
 = *Greigia albo-rosea* (Griseb.) Mez
- Pitcairnia fendleri** Mez, Monogr. Phan. 9: 387. 1896.
 [Between Caracas and La Guayra, 1,500 ft., 16/8/55], Fendler 1550 (holotype, GOET, photo US).
- Tillandsia acorifolia** Griseb., Nachr. Königl. Ges. Wiss. Georg-Augusts-Univ. 1864: 19. 1865.
 [Seaside of mountains N of Colonia Tovar, 6,000 ft.,

- [22/1/56], *Fendler* 1771 (holotype, GOET).
= *Guzmania acorifolia* (Griseb.) Mez
- Tillandsia aurantiaca** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 16. 1865.
[Between Petaquira and Cariaca, 4,500 ft., 12/2/58], *Fendler* 2575 (holotype, GOET, photo US).
= *Tillandsia tetrantha* Ruiz Lopez & Pavón var. *aurantiaca* (Griseb.) Lyman B. Smith
- Tillandsia caribaea** Lyman B. Smith, Proc. Amer. Acad. Arts 70: 155. 1935.
[High mountains near Colonia Tovar, 6,000 ft., 14/2/55, 17/6/55], *Fendler* 1523 (holotype, GOET, photo US).
- Tillandsia compacta** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 18. 1865.
[A few mi. SE of Colonia Tovar, 6,000 ft., 25/5/54, 21/6/54], *Fendler* 1508 (holotype, GOET; isotype, K).
= *Tillandsia compacta* Griseb. var. *compacta*
- Tillandsia excelsa** Griseb. var. **latifolia** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 17. 1865.
[A few mi. SE of Colonia Tovar, 6,000 ft., 7/5/55], *Fendler* 1516 (GH, GOET).
= *Tillandsia fendleri* Griseb. var. *fendleri*
- Tillandsia fendleri** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 17. 1865.
[Between Caracas and Colonia Tovar, 6,000 ft., 7/5/55], *Fendler* 1515 (holotype, GOET, photo US).
= *Tillandsia fendleri* Griseb. var. *fendleri*
- Tillandsia grisebachiana** Baker, J. Bot. 26: 143. 1888.
[Colonia Tovar, 6,500 ft., 25/5/54, 21/6/54], *Fendler* 1509 (GH).
- Tillandsia incurva** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 15. 1865.
[6 mi. SE of Colonia Tovar, 6,000 ft., 28/8/54, 7/5/55], *Fendler* 1524 (holotype, GOET; isotype, GH).
= *Vriesea incurva* (Griseb.) Read
- Tillandsia laxa** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 18. 1865.
[Between Maracai and Choroni, 3,000 ft., 29/1/57], *Fendler* 2166 p.p. (holotype, GOET, photo US).
= *Vriesea laxa* (Griseb.) Mez
- Tillandsia lineatifolia** Mez, Monogr. Phan. 9: 686. 1896.
[Between Petaquira and the sea, 3,500 ft., 2/9/57], *Fendler* 2447 (GOET, photo GH).
= *Tillandsia anceps* G. Lodd.
- Tillandsia longibracteata** Baker, J. Bot. 26: 81. 1888.
[Between Petaquira and the sea, 5,000 ft., 9/2/57], *Fendler* 2449 (syntype).
= *Vriesea splendens* (Brongn.) Lemaire var. *formosa* Sur. ex Witte
- Tillandsia longifolia** Baker, Handb. Bromel. 185. 1889.
[A few mi. SE of Colonia Tovar, between rocks, 6,000–6,700 m, 7/5/55, 14/5/55], *Fendler* 1522.
- Tillandsia mucronata** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 20. 1865.
[Between Maracai and Choroni, 6,500 ft., 29/1/57], *Fendler* 2159 (holotype, GOET, photo US; isotype, K).
= *Guzmania mucronata* (Griseb.) Mez
- Tillandsia myriantha** Baker, J. Bot. 25: 242. 1887.
[7 mi. SE of Colonia Tovar, 5,000 ft., 14/5/55], *Fendler* 1530 (holotype, K; isotype, GOET).
- Tillandsia pleiosticha** Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 19. 1865.

[High mountains E of Colonia Tovar, 7,000 ft., 11/7/54, 19/3/55], *Fendler* 1514 (holotype, GOET, photo US; isotype, K).

= *Guzmania pleiosticha* (Griseb.) Mez

Tillandsia robusta Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 15. 1865.

[Maya, 4,000 ft., 23/6/55], *Fendler* 1525.

= *Vriesea robusta* (Griseb.) Lyman B. Smith

Tillandsia tovarensis Mez, Monogr. Phan. 9: 769. 1896.

[Between Petaquira and Colonia Tovar, 26/10/57], *Fendler* 2446 (holotype, GOET, photo US).

Tillandsia ventricosa Griseb., Nachr. Königl. Ges. Wis. Georg-Augusts-Univ. 1864: 19. 1865.

[High mountains E of Colonia Tovar, 7,000 ft., 7/5/55], *Fendler* 1517 (holotype, GOET; isotypes, GH, K).

= *Guzmania ventricosa* (Griseb.) Mez

BURSERACEAE

Protium laxiflorum Engl. var. **fendleri** Engl., Monogr. Phan. 4: 67. 1883.

[Large tree yielding a resin called "Taca mahac," flowers green. Colonia Tovar, 6,400 ft., 22/4/54, 19/9/55], *Fendler* 177 (holotype, G, photo F).

CAPPARACEAE

Cleome moritziana Klotzsch ex Eichler, Fl. Bras. 13(1): 250. 1841.

[A few mi. S of Colonia Tovar, 4,000 ft., 18/5/55], *Fendler* 27 (lectotype, F?).

CELASTRACEAE

Maytenus fendleri Briq., Annaire Conserv. Jard. Bot. Genève 20: 360. 1919.

[A few mi. SW of Colonia Tovar, 6,500 ft., 28/6/55], *Fendler* 215 (F, G).

CHLORANTHACEAE

Hedyosmum pseudoandromeda Solms-Laub., Prodr. 16(1): 481. 1869.

[Colonia Tovar, 6,500 ft., 26/7/56, 21/8/56, 4/9/56], *Fendler* 1127 (lectotype G, photos GH, MO, NY; isolectotypes, BR, G, GH, MO, NY, S, US).

COPMELINACEAE

Phaeosphaerion efoveolatum C. B. Clarke, Monogr. Phan. 3: 136. 1881.

[Between Caracas and Colonia Tovar, 6,000 ft., 23/8/55], *Fendler* 1555 (holotype, G).

CONVOLVULACEAE

Ipomoea alatipes Hook., Bot. Mag. pl. 5330. 1862.

[Between Biscaina and La Victoria, 2,000 ft., 8/9/56], *Fendler* 2084 (syntype, K).

= *Operculina alatipes* (Hook.) House

Ipomoea fendleriana Kuntze, Rev. Gen. Pl. 2: 444. 1891.

[La Victoria, 2,000 ft., 21/11/56], *Fendler* 2083.

= *Ipomoea calantha* Griseb.

Ipomoea fruticosa Kuntze, Revis. Gen. Pl. 2: 444. 1891.

[A few mi. W of Colonia Tovar, 7,000 ft., 17/4/55, 3/2/58], *Fendler* 941.

[Between Turmero and Agua Blanca, 1,800 ft., 30/1/57, 30/1/58], *Fendler* 2082.

CUCURBITACEAE

Echinocystis polycarpa Cogn., Mém. Couronnés Autres Mém. Acad. Roy. Sci. Belgique 28: 90. 1878.

[Caracas, 3,000 ft., 23/2/54], *Fendler* 503 (G, photo at F).

Edmondia spectabilis Cogn., Monogr. Phan. 3: 420. 1881.

[Colonia Tovar, 6,500 ft., 5/5/54, 6/3/55], *Fendler* 489 (G, photo at F).

Gurania wagneriana Cogn., Mém. Couronnés Autres Mém. Acad. Roy. Sci. Belgique 28: 25. 1877.

[A few mi. S of Colonia Tovar, 3,000–4,000 ft., no date], *Fendler* 490 (G, photo at F).

Sicyos macrocarpus Cogn., Monogr. Phan. 3: 893. 1881.

[Near Güigüe, 2,000 ft., 25/1/55], *Fendler* 502 (syntype, K).

= *Anomalosicyos macrocarpus* (Cogn.) H. Gentry

CYCLANTHACEAE

Asplundia fendleri Harling, Acta Horti Berg. 18: 221. 1958.

[In and near Colonia Tovar, 6,000–6,500 ft., 7/7/54, 23/8/56], *Fendler* 1348 (holotype, K; isotype, GH).

Evodianthus funifer (Poit.) Lindman subsp. **fendleri** Harling, Acta Horti Berg. 18: 274. 1958.

[Between Petaquire and the sea, 3,500 ft., 22/4/58], *Fendler* 2617 (holotype, K; isotypes, GH, GOET).

CYPERACEAE

Rhynchospora rufidis C. B. Clarke, Kew Bull. 8: 39. 1908.

[A few mi. W of Colonia Tovar, 7,000 ft., 28/8/54, 19/9/55, 19/7/56], *Fendler* 1591 (holotype, K).

DIOSCOREACEAE

Dioscorea fendleri R. Knuth, Pflanzenr. 4, Fam. 43: 65. 1924.

No information in notebook. *Fendler* 2171.

ELAEOCARPACEAE

Sloanea fendleriana Benth., J. Linn. Soc. Bot. 5, suppl. 2: 70. 1861.

[Seaside of mountains between Maracai and Choroni, 3,000–4,000 ft., 26/10/56, 12/12/56], *Fendler* 2489 (holotype, K).

EUPHORBIACEAE

Acalypha villosa Jacq. var. **intermedia** Muell. Arg., Linnaea 34: 8. 1865.

[La Victoria, 2,000 ft., 21/12/56], *Fendler* 1825 (syntype, G-DC; isotype, MO).

[Near La Victoria, 2,500 ft., 14/11/56], *Fendler* 2408 (syntype, G-DC).

= *Ricinocarpus villosus* (Jacq.) Kuntze var. *intermedius* (Muell. Arg.) Kuntze

Alechornea grandiflora Muell. Arg., Linnaea 34: 170. 1865.

[Colonia Tovar, 6,500 ft., 7/4/54, 13/4/54, *Fendler* 1272 (G-DC, MO, photo F)].

= *Ricinocarpus villosus* (Jacq.) Kuntze var. *intermedius* (Muell. Arg.) Kuntze

Euphorbia tovarensis Boiss., Prodr. 15(2): 59. 1862. [Maya, 3,000 ft., 12/12/54], *Fendler* 1191 (holotype, G; isotype, MO).

Excoecaria obtusiloba Muell. Arg., Linnaea 32: 125. 1865.

[Biscaina, 3,000 ft., 5/6/55], *Fendler* 1230 (G-DC, photo F).

Mabea rubrivenium Poeppig & Endl.

[Colonia Tovar, 6,500 ft., 7/5/54, 16/6/55], *Fendler* 1232.

Pedilanthus fendleri Boiss., Prodr. 15(2): 5. 1862. [Between Caracas and La Guayra, 1,000 ft., 16/8/55], *Fendler* 1202 (G-DC, photo F).

Plukenetia penninervia Muell. Arg., Linnaea 34: 158. 1865.

[Near Biscaina, 3,000 ft., 1/2/57], *Fendler* 2412 (holotype, G-DC, photo F).

Tragia fendleri Muell. Arg., Linnaea 34: 179. 1865–1866.

[Biscaina, 3,000 ft., 5/6/55], *Fendler* 1208 (holotype, G-DC, photo F).

FABACEAE

Calliandra laxa var. **parvifolia** Benth., Trans. Linn. Soc. London 30(3): 551. 1875.

[Between La Victoria and Biscaina, 2,500 ft., 1/2/57], *Fendler* 2255 (K).

Canavalia fendleri Piper, Contr. U.S. Natl. Herb. 20(14): 570. 1875.

[Biscaina, 7/9/55], *Fendler* 248 (holotype, K; isotype, MO).

Cassia viciifolia Benth., Trans. Linn. Soc. London 27: 544. 1871.

[Between Turmero and La Victoria, 2,000 ft., 14/3/57], *Fendler* 2230 (lectotype, K).

= *Senna viciifolia* (Benth.) Irwin & Barneby

Inga fendleriana Benth., Trans. Linn. Soc. London 30(3): 630. 1875.

[Valley of Macarao, 3,500 ft., 18/1/57], *Fendler* 2259 (K).

Machaerium moritzianum Benth., J. Proc. Linn. Soc., Bot. 4(suppl.): 58. 1860.

[Valley of Macarao, 4,000 ft., 4/7/56], *Fendler* 1750 (syntype, K).

[Near La Victoria, 2,200 ft., 21/11/56], *Fendler* 1866 (syntype, K).

Machaerium tovarensense Pittier, Contr. U.S. Natl. Herb. 20(3): 121. 1917.

[La Victoria, 2,000 ft., 14/11/56], *Fendler* 1865 (holotype, GH; isotype, MO).

Mimosa tovarensis Benth., Trans. Linn. Soc. London 30(3): 407. 1875.

[Caracas, 3,500 ft., 13/2/54], *Fendler* 344 (holotype, K; isotype, MO).

Moldenhawera mollis Benth., Fl. Bras. 15(2): 77. 1870.

[La Victoria, 2,000 ft., 21/11/56], *Fendler* 1864 (K).

GENTIANACEAE

Symbolanthus magnificus Gilg, Engl. Bot. 22: 343. 1896.

[10 mi. SE of Colonia Tovar, 5,000–6,000 ft., 8/4/54, 19/6/54, 4/9/54], *Fendler* 830 (B, MO, photo F).

= *Symbolanthus calygonus* (Ruiz Lopez & Pavón) Griseb.

GESNERIACEAE

Columnea fendleri Sprague, Kew Bull. 1912: 41. 1912.

[Between Petaquira and the sea, 5,000 ft., 9/2/57], Fendler 2031 (probably K).

= *Columnea scandens* L. var. *fendleri* (Sprague) Wiehler

Monopyle leucantha Moritz ex Benth., Icon. Pl. 12: 87. 1876.

[Colonia Tovar, 5,800–6,200 ft., 31/2/54, 27/3/54, 10/5/55, 17/6/54, 29/8/54], Fendler 794 (MO).

LAMIACEAE

Salvia tovariensis Briq., Annaire Conserv. Jard. Bot. Genève 2: 130. 1898.

[Between Caracas and Maya, 3,200 ft., 12/2/54, 12/5/54], Fendler 876 (G).

Stachys fendleri Briq., Annaire Conserv. Jard. Bot. Genève 2: 115. 1898.

[Near Colonia Tovar, 6,500 ft., 31/2/54, 19/12/54, 20/6/55, 21/9/55], Fendler 879 (G, MO, photo F).

LAURACEAE

Gymnobalanus fendleri Meissn., Prodr. 15(1): 142. 1864.

[Between Valencia and Campanero, 5,500 ft., 7/3/57], Fendler 2395 (holotype, G-DC).

= *Ocotea fendleri* (Meissn.) Rohwer

Gymnobalanus latifolia Meissn., Prodr. 15(1): 141. 1864.

[Between Colonia Tovar and Petaquira, 5,000 ft., 19/2/55], Fendler 1095 (G-DC, photo F).

Mespileodaphne vaginans Meissn., Prodr. 15(1): 104. 1864.

[Colonia Tovar, 6,000 ft., 21/6/54, 21/3/57], Fendler 1098 (types, G-DC, photo F, G, K, MO, NY, US).

= *Ocotea vaginans* (Meissn.) Mez

Nectandra leucantha Nees & Martius var. *attenuata* Meissn., Prodr. 15(1): 151. 1864.

[La Victoria, 2,000 ft., 14/10/56], Fendler 2393 (syntypes G, K, MO).

LECYTHIDACEAE

Eschweilera fendleriana Miers, Trans. Linn. Soc. 30: 250, t. 60, fig. 6. 1874. Fendler s.n. (K).

= *Lecythis fendleriana* (Miers) Kunth

LILIACEAE

Smilax scabriuscula H.B.K. var. *fendleri* A. DC., Monogr. Phan. 1: 143. 1878.

[Near Colonia Tovar, 6,000–7,000 ft., 19/6/54, 3/12/54, 16/9/55], Fendler 1546 (G, MO, photo at F).

LOGANIACEAE

Strychnos fendleri Sprague & Sandw., Kew Bull. 1927: 129. 1927.

[La Victoria, 2,500 ft., 21/11/56], Fendler 2314 (K).

LORANTHACEAE

Dendrophthora basiandra Kuijt, Wentia 6: 32. 1961. [Colonia Tovar, 6,800 ft., 10/8/54], Fendler 1104 (holotype, GH; isotypes, GH, K).

Dendrophthora eichleriana Urban, Ber. Deutsch. Bot. Ges. 14: 287. 1896. [Colonia Tovar, 6,800 ft., 14/2/55], Fendler 1101 (holotype, K; isotypes, GH, K, MO, PH).

Phoradendron bilineatum Urban, Bot. Jahrb. Syst. 23, Beibl. 57: 5. 1897. [La Victoria, 2,000 ft., 21/1/56], Fendler 1811.

Phoradendron cuneifolium Urban, Bot. Jahrb. Syst. 23, Beibl. 57: 5. 1897. [Biscaina, 3,200 ft., 5/6/55], Fendler 1115.

Phoradendron fendlerianum Eichler, Fl. Bras. 5(2): 129. 1868. [Colonia Tovar, 8/4/54, 10/5/54, 9/3/55], Fendler 1102 (MO).

Phoradendron longipetiolatum Urban, Bot. Jahrb. Syst. 23, Beibl. 57: 6. 1897. [Colonia Tovar, 6,500 ft., 10/7/56], Fendler 1762.

Phoradendron ovalifolium Urban, Bot. Jahrb. Syst. 23, Beibl. 57: 6. 1897. [Biscaina, 3,500 ft., 10/5/55], Fendler 1108.

Phoradendron rigidum Urban, Bot. Jahrb. Syst. 23, Beibl. 57: 7. 1897. [Colonia Tovar, 6,500 ft., 1/6/55], Fendler 1105.

Phoradendron tovarensense Urban, Bot. Jahrb. Syst. 23, Beibl. 57: 8. 1897. [A few mi. SE of Colonia Tovar, 6,000 ft., 26/7/56], Fendler 1761.

= *Phoradendron dipterum* Eichler

Phoradendron tubulosum Urban, Eng. Bot. Jahrb. 23, Beibl. 57: 5. 1897. [Biscaina, 3,200 ft., 7/9/55], Fendler 1106 (syntype).

Phoradendron venezuelense Trel., Genus Phoradendron, 111. 1916. [La Victoria, 2,000 ft., 21/11/56], Fendler 1810 (holotype, K; isotype, GH).

= *Phoradendron quadrangulare* (H.B.K.) Krug & Urban

Stachyphllum fendleri van Tiegh., Bull. Soc. France 42: 565. 1895.

[Colonia Tovar, 6,500 ft., 15/8/54, 24/10/55, 8/11/56], Fendler 1125 (holotype, P; isotypes, GH, MO).

= *Antidaphne viscoidea* Poeppig & Endl.

MELASTOMATACEAE

Arthrostemma alatum Triana, Trans. Linn. Soc. London 28: 35. 1871.

[Near La Victoria, 2,000 ft., 21/11/56], Fendler 1832 (G, MO, photo F).

Blakea grisebachii Cogn., Monogr. Phan. 7: 1071. 1891.

[Seaside of mountains, N of Agua Blanca, 4,000 ft., 30/1/58], Fendler 2547 (syntypes, GH, GOET).

Blakea longibracteata Cogn., Monogr. Phan. 7: 1074. 1891.

[Between Petaquira and the seashore, 5,500 ft., 22/4/58], Fendler 2593 (holotype, GOET).

Calophysa? flexuosa Triana, Trans. Linn. Soc. London 28: 141. 1871.

[Between Petaquira and the sea, 4,000 ft., 9/2/57], Fendler 2261.

= *Clidemia flexuosa* (Triana) Cogn.

- Clidemia ampla** Cogn., Monogr. Phan. 7: 1023. 1891.
 [Between Petaquire and the seashore, 5,500 ft., 22/4/58, Fendler 2594 (syntypes, F, G, GH, GOET, K, MO).]
- Clidemia ciliata** D. Don var. **grandifolia** Cogn., Monogr. Phan. 7: 1020. 1891.
 [Between Maracai and Choroni, 3,000 ft., 24/1/57], Fendler 436.
 = *Clidemia ciliata* D. Don var. *ciliata*
- Clidemia fendleri** Cogn., Monogr. Phan. 7: 1016. 1891.
 [Mountains near Caracas, a few mi. SE of Colonia Tovar, 17/2/54, 7/5/55, 19/6/55, 3/7/55], Fendler 438 (G, MO, photo F).
- Clidemia grandifolia** Cogn., Monogr. Phan. 7: 1018. 1891.
 [Between Maracai and Choroni, 4,000 ft., 28/1/57], Fendler 2263 (syntypes, G, MO).
- Henriettella tovarensis** Cogn., Monogr. Phan. 7: 1044. 1891.
 [Near Colonia Tovar, 5,600 ft., 6/4/54, 22/9/55, 3/10/55], Fendler 444 p.p. (G, photo F, MO).
- Henriettella tovarensis** Cogn. var. **angustifolia** Cogn., Monogr. Phan. 7: 1044. 1891.
 [Near Colonia Tovar, 5,600 ft., 6/4/54, 22/9/55, 3/10/55], Fendler 444 p.p. (syntype, G, photo F).
- Heterotrichum glandulosum** Cogn., Monogr. Phan. 7: 955. 1891.
 [A few mi. SE of Colonia Tovar, 5,100 ft., 4/9/54, 3/7/55], Fendler 432 (G, photo F).
 = *Micronia araguensis* Wurdack
- Heterotrichum lucidum** Triana, Trans. Linn. Soc. London 28: 134. 1871.
 [Colonia Tovar, 6,500 ft., 2/9/56], Fendler 1845 (MO).
- Leandra fendleri** Cogn., Monogr. Phan. 7: 653. 1891.
 [Near Colonia Tovar, 7,000 ft., 12/6/54, 3/12/54, 12/5/55, 27/8/55], Fendler 439 (G, MO, photo F).
 = *Leandra lindeniana* (Naud.) Cogn.
- Meriania subumbellata** Cogn., Monogr. Phan. 7: 430. 1891.
 [Between Maracai and Choroni, 4,000 ft., 12/12/56, 29/1/57], Fendler 1830.
- Miconia fendleriana** Cogn., Monogr. Phan. 7: 822. 1891.
 [Between Maracai and Choroni, 4,000 ft., 12/12/56], Fendler 1835 (syntype, GOET).
 [Between Maracai and Choroni, 6,000 ft., 12/12/56], Fendler 1836 (syntype, GOET).
- Miconia multinervulosa** Cogn., Monogr. Phan. 7: 926. 1891.
 [Near Colonia Tovar, 6,500 ft., 15/5/55, 23/8/56], Fendler 415 (syntypes, G, photo F).
 = *Miconia theaezans* (Bonpl.) Cogn.
- Miconia resimoides** Cogn., Monogr. Phan. 7: 926. 1891.
 [Near Colonia Tovar, 6,500 ft., 15/5/55, 23/8/56], Fendler 414 (G, MO, photo F).
- Miconia rubens** Naudin var. **latifolia** Cogn., Monogr. Phan. 7: 921. 1891.
 [Between Maracai and Choroni, 4,000 ft., 12/12/56], Fendler 1834.
- Miconia tovarensis** Cogn., Monogr. Phan. 7: 917. 1891.
 [Colonia Tovar, 6,500 ft., 29/4/54], Fendler 419 (G, photo F, MO).
 = *Miconia rubens* Naudin var. *rubens*

- Tibouchina moritziana** Cogn., Monogr. Phan. 7: 259. 1891. *Fendler 404* p.p. (MO).
 = *T. geitneriana* (Schltr.) Cogn.

MELIACEAE

- Trichilia montana** H.B.K. var. **fendleriana** C. DC., Monogr. Phan. 1: 654. 1878.
 [Colonia Tovar, 6,300 ft., 17/5/54, 21/6/55, 24/10/55], Fendler 139 (G, photo F).
 = *Trichilia pallida* Sw.

MONIMIACEAE

- Siparuna venezuelensis** Perkins, Bot. Jahrb. Syst. 28: 679. 1901.
 [Between Valencia and Campanero, 7/4/57], Fendler 2358.

MYRSINACEAE

- Ardisia robinsonii** Mez, Pflanzenr. 4, Fam. 236: 77. 1902.
 [Between Caracas and Colonia Tovar, 6,000 ft., 30/4/57], Fendler 2357 (GH, photo F).

- Conomorpha caracasana** Mez, Pflanzenr. 4, Fam. 236: 260. 1902.
 [Colonia Tovar, 6,500 ft.], Fendler 751 (MO, photo F).

- Conomorpha glabra** Mez, Pflanzenr. 4, Fam. 236: 254. 1902.
 [High mountains around Colonia Tovar, 7,000 ft., 19/3/55, 23/6/55], Fendler 752 (paratype, MO, photo F).

- Conomorpha laurifolia** Mez, Pflanzenr. 4, Fam. 236: 254. 1902.
 [Crest of mountains near Colonia Tovar, 7,000 ft., 9/11/54, 14/2/55], Fendler 756 (G, MO, photo F).

- Cybianthus fendleri** Mez, Pflanzenr. 4, Fam. 236: 218. 1902.
 [Between Petaquire and Colonia Tovar, 6,800 ft., 11/2/57], Fendler 2015 (G, GH, MO, photo F).

- Cybianthus klotzschii** Mez, Pflanzenr. 4, Fam. 236: 180. 1902.
 [Colonia Tovar, 7,000 ft., 31/8/54, 1/9/54], Fendler 757 (GH, 3 sheeets, MO).

- Parathesis moritziana** Mez, Pflanzenr. 4, Fam. 236: 180. 1902.
 [Colonia Tovar, 6,500 ft., 6/4/54], Fendler 754 (holotype, MO).

ORCHIDACEAE

- Cranichis fendleri** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 30. 1919.
 No information in notebook. Fendler 2135.

- Gomphichis psilosepala** Renz, Candollea 11: 245. 1948.
 No information in notebook. Fendler 1402 (isotype, MO).

- Liparis fendleri** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 32. 1919.
 No information in notebook. Fendler 1422 (MO).
 = *Liparis brachystalix* Reichb. f.

- Physurus brachyrrhynchus** Reichb. f., Xenia Orch. 2: 184. 1873.
 Fendler s.n.
 = *Aspidogne brachyrrhyncha* (Reichb. f.) Garay

Physurus hyphaematicus Reichb. f., Xenia Orch. 2: 184. 1873.

Fendler s.n.

= *Aspidogne hyphaematica* (Reichb. f.) Garay

Physurus xystophyllus Reichb. f., Xenia Orch. 2: 183. 1873.

Fendler s.n.

Pleurothallis apiculata Lindley, Fol. Orch. Pleuroth. 17. 1859.

No information in notebook. *Fendler* 2155 (K).

Pleurothallis clandestina Lindley, Fol. Orch. Pleuroth. 43. 1859.

No information in notebook. *Fendler* 2148 (K).

Pleurothallis exasperata Lindley, Fol. Orch. Pleuroth. 15. 1859.

No information in notebook. *Fendler* 1490 (K).

= *Myoxanthus exasperatus* (Lindley) Luer

Pleurothallis viridula Lindley, Fol. Orch. Pleuroth. 19. 1859.

No information in notebook. *Fendler* 1486 (K).

= *Restrepiaopsis viridula* (Lindley) Luer

Stelis alata Lindley, Fol. Orch. Stelis, 18. 1858.

No information in notebook. *Fendler* 2154 (K).

Stelis coriifolia Lindley, Fol. Orch. Stelis, 18. 1858.

No information in notebook. *Fendler* 2444 (K).

Stelis fendleri Lindley, Fol. Orch. Stelis, 18. 1858.

No information in notebook. *Fendler* 1470 (K, MO).

Stelis humulifolia Lindley, Fol. Orch. Stelis, 10. 1858.

No information in notebook. *Fendler* 1467 (K).

Stelis lutea Lindley, Fol. Orch. Stelis, 7. 1858.

No information in notebook. *Fendler* 1461 (K).

Stelis muscifera Lindley, Fol. Orch. Stelis, 2. 1858.

No information in notebook. *Fendler* 1460 (K).

Stelis mucososa Lindley, Fol. Orch. Stelis, 7. 1858.

No information in notebook. *Fendler* 1468 (K).

Stelis tenuilabris Lindley, Fol. Orch. Stelis, 18. 1858.

No information in notebook. *Fendler* 1469 (K).

No information in notebook. *Fendler* 1471 (K, MO).

PASSIFLORACEAE

Passiflora velata Mast., Fl. Bras. 13(1): 560. 1872.

[Between Turmero and La Victoria, 2,000 ft., 14/3/57], *Fendler* 2329 (lectotype, designated by Killip, 1938, K).

= *Passiflora serrulata* Jacq.

PIPERACEAE

Peperomia adscendens C. DC., J. Bot. 4: 140. 1866.

[Colonia Tovar, 6,500 ft., 1/4/54, 20/5/54, 3/6/55], *Fendler* 1153 (holotype, G-DC; isotypes, GH, K, MO, NY, PH; also the type of *Peperomia glabra* C. DC.).

Peperomia blanda H.B.K. var. **dissimilis** C. DC., Prodr. 16(1): 459. 1869.

[A few mi. W of Colonia Tovar, 7,000 ft., 28/6/55], *Fendler* 1170 (GH, MO, NY).

Peperomia carlosiana C. DC., J. Bot. 4: 140. 1866.

[Valley of San Carlos River, 3,500 ft., 25/10/54], *Fendler* 1148 (holotype, G, photo F).

= *Peperomia lanceolata-peltata* var. *carlosiana* (C. DC.) Trelease & Yuncker

Peperomia choroniana C. DC., J. Bot. 4: 141. 1866.

[Between Maracai and Choroni, 3,000 ft., 12/12/57], *Fendler* 2402 (holotype, G, photo F).

Peperomia decurrens C. DC., J. Bot. 4: 143. 1866.

[High mountains E of Colonia Tovar, 7,000 ft., 28/9/55], *Fendler* 1169 (G, photo F).

Peperomia diffusa C. DC., J. Bot. 4: 133. 1866.

[A few mi. S of Colonia Tovar; Biscaina, 3,000–4,000 ft., 18/5/55, 5/6/55], *Fendler* 1178 (holotype, G-DC; isotypes, GH, K, MO, NY, PH).

Peperomia ellipticifolia C. DC., Prodr. 16(1): 463. 1866.

[Colonia Tovar, 6,500 ft., 10/5/54, 14/5/55], *Fendler* 1171 (holotype, G-DC; isotype, GH).

= *Peperomia blanda* (Jacq.) H.B.K.

Peperomia ernstiana C. DC., Prodr. 16(1): 397. 1869.

[Near the River Tuy, 5,000–5,500 ft., 2/6/54, 29/7/54, 20/6/55, 3/7/55], *Fendler* 1163 (holotype, G-DC; isotypes, GH, MO, NY, PH).

= *Peperomia venezueliana* C. DC.

Peperomia fendleriana C. DC., Prodr. 16(1): 460. 1869.

[Colonia Tovar, 6,500–7,000 ft., 20/5/54, 16/6/54], *Fendler* 1174 (syntype, G-DC; isotypes, GH, MO, NY, PH).

Peperomia fragrans C. DC., J. Bot. 4: 140. 1866.

[Maya, banks of River Tuy, 3,000 ft., 20/6/55], *Fendler* 1156 (holotype, G-DC; isotypes, GH, K).

Peperomia glabra C. DC., J. Bot. 4: 143. 1866.

[Colonia Tovar, 6,500–7,000 ft., 25/5/54], *Fendler* 1153 (holotype, K; isotype, GH; also the type collection of *Peperomia adscendens* C. DC.).

= *Peperomia adscendens* C. DC.

Peperomia laevis C. DC., J. Bot. 4: 139. 1866.

[6 mi. SE of Colonia Tovar, 6,000 ft., 7/5/55], *Fendler* 1164 (G, photo F; isotype, GH).

= *Peperomia alata* Ruiz Lopez & Pavón

Peperomia lanceolata-peltata C. DC., J. Bot. 4: 136. 1866.

[Biscaina, 3,000 ft., 13/8/55], *Fendler* 1149 (syntype at G-DC) with *Hoffmann* 414 (at B); isosyntypes, GH, K, MO, PH).

Peperomia linearis C. DC., J. Bot. 4: 145. 1866.

[Colonia Tovar, 6,500–7,000 ft., 17/6/54, 3/11/56], *Fendler* 1176 (syntype with *Jameson* s.n., both G-DC; isosyntypes, GH, MO, NY, PH).

= *Peperomia swartziana* Miq.

Peperomia magnoliifolia A. Dietr. var. **emarginulata** C. DC., Prodr. 16(1): 427. 1869.

[Near Colonia Tovar, 6,500–7,000 ft., 25/5/54], *Fendler* 1152 (also cited as a type of *Peperomia decurrens*) (lectotype, G-DC (per Trel. & Yuncker, Piperac. No. S. Amer. 685. 1950), isolectotypes, GH, MO, NY, PH).

= *Peperomia obtusifolia* (L.) A. Dietr. var. *emarginata* (C. DC.) Trel. & Yuncker

Peperomia patula C. DC., J. Bot. 4: 133. 1866.

[Near Colonia Tovar, 6,500 ft., 16/5/54, 26/11/56], *Fendler* 1166 (holotype, G, photo F).

Peperomia pseudodependens C. DC., J. Bot. 4: 137. 1866.

[La Victoria, 2,000 ft., 20/11/56], *Fendler* 1817 (holotype, G, photo F; isotype, GH).

Peperomia pseudopeltoides C. DC., Prodr. 16(1): 434. 1869.

[Colonia Tovar, 6,500 ft., 6/6/54, 16/5/55], *Fendler* 1150b (G, photo F).

Peperomia purpurella C. DC., Prodr. 16(1): 414. 1869.

[River Tuy below Colonia Tovar, 5,000 ft., 29/8/54], *Fendler* 1161 (G, photo F).

= *Peperomia patula* C. DC.

Peperomia reflexa (L.) A. Dietr. var. *coriacea* C. DC., Prodr. 16(1): 452. 1869.

[Colonia Tovar, 6,500 ft., 3/4/54, 2/5/54, 5/8/54], *Fendler 1183* (holotype, G-DC, isotypes, GH, MO, NY, PH).

= *Peperomia reflexa* (L.) A. Dietr.

Peperomia san-carlosiana C. DC., J. Bot. 4: 138. 1866.

[San Carlos River valley, 3,500 ft., 7/9/54], *Fendler 1151* (holotype, G, photo F).

Peperomia succulenta C. DC., J. Bot. 4: 142. 1866.

[10 mi. S of Colonia Tovar, 3,500 ft., 10 mi. S of Colonia Tovar, 18/5/55], *Fendler 1157* (holotype, G, photo F; isotype, K).

Peperomia tenella A. Dietr. var. **glabra** C. DC., Prodr. 16(1): 397. 1869.

[Between Maracai and Choroni, 3,000 ft., 12/12/56], *Fendler 1818* (holotype, G-DC; isotypes, GH, K, MO, PH p.p.).

Peperomia tovariana C. DC., Prodr. 16(1): 404. 1869.

[Between Colonia Tovar and Petaquira, 19/4/55], *Fendler 1168* (syntype at G-DC with *Moritz 1941* (at BM); isosyntypes, GH, MO, NY, PH).

Peperomia trinervula C. DC., Prodr. 16(1): 420. 1869.

[High mountains E of Colonia Tovar, 7,000 ft., 28/9/55], *Fendler 1167* (lectotype, G-DC; isolectotype, GH).

Peperomia venezueliana C. DC., J. Bot. (Hooker) 4: 139. 1866.

[Between Colonia Tovar and Petaquira, 6,500 ft., 22/4/58], *Fendler 2618* (holotype, G, photo F).

Piper caracasanum Bredem. ex Link var. **firmius** C. DC., Prodr. 16(1): 306. 1869.

[Colonia Tovar, 6,000 ft., 28/4/54, 7/4/54], *Fendler 1143* (syntype at G-DC with *Bredemeyer 679* (at B-Willd.); 2 sheets at GH; isotype, GH).

= *Piper caracasanum* Bredem. ex Link

Piper cumbotianum C. DC., Prodr. 16(1): 268. 1869.

[Between Agua Blanca and Cumbote, 5,000 ft., 30/1/58], *Fendler 2571* (G, photo F).

Piper fendlerianum C. DC., J. Bot. 4: 213. 1866.

[10 mi. E of Colonia Tovar, 7,500 ft., 26/5/55, 17/6/55], *Fendler 1140* (G, photo F; isotypes, GH, K, MO, NY, PH).

Piper glanduligerum C. DC., J. Bot. 4: 215. 1866.

[Colonia Tovar, 6,500 ft., 6/4/54, 27/6/56], *Fendler 1137* (syntype, G, photo F; isosyntypes, GH, MO, NY, US).

Piper nobile C. DC., Prodr. 16(1): 289. 1869.

[Colonia Tovar, 6,500 ft., 16/6/55], *Fendler 1144* (holotype, G-DC; isotypes, GH, MO, NY, PH).

Piper ovale C. DC., J. Bot. 4: 166. 1866.

[A few mi. SE of Colonia Tovar, 4,000 ft., 27/2/57], *Fendler 2398* (syntype, G-DC; isosyntype, GH).

= *Piper crassinervium* H.B.K.

Piper tovarensse Trel. & Yuncker, Piperac. N. South Amer. 1: 27, fig. 17. 1950.

[10 mi. E of Colonia Tovar, 7,000 ft., 17/6/55], *Fendler 1145* (holotype, GH).

Piper tristemon C. DC., Prodr. 16(1): 328. 1869.

[10 mi. E of Colonia Tovar, 7,500 ft., 26/5/55, 17/6/55], *Fendler 1141* (holotype, G-DC, photo F; isotypes, GH, MO).

Piper venezuelense C. DC., J. Bot. 4: 216. 1866.

[Between Agua Blanca and Cumbote, 5,000 ft., 30/1/58], *Fendler 2572* (holotype, G-DC, photo F; isotypes, GH, MO, PH).

= *Piper glabrescens* (Miq.) C. DC. var. *venezuelense* (C. DC.) Trel. & Yuncker

Piper victorianum C. DC., J. Bot. 4: 218. 1866.

[La Victoria, 2,000 ft., 21/11/56], *Fendler 1139* (holotype, G-DC, photo F; isotypes, GH, K, MO, PH).

= *Piper amalgo* var. *medium* (Jacq.) Yuncker

POACEAE

Chusquea fendleri Munro, Trans. Linn. Soc. 26: 61. 1868.

[In and about Colonia Tovar, common, 6,000–7,900 ft., 17/4/55], *Fendler 1627* (holotype, K; isotype, MO).

PODOCARPACEAE

Podocarpus harmsianus Pilger, Pflanzenr. IV. 5(Heft 18): 69. 1903.

[Colonia Tovar, 6,500 ft., 6/4/54], *Fendler 1289*.
= *Prumnopitys harmsiana* (Pilger) Laubenf.

POLYGALACEAE

Polygala fendleri Chodat, Mém. Soc. Phys. Genève 31, pt. 2, no. 2: 167. 1893.

[A few mi. SW of Colonia Tovar, 5,000 ft., 13/9/55, 8/9/56], *Fendler 238* (G).

Polygala tovarensis Chodat, Mém. Soc. Phys. Genève 31, pt. 2, no. 2: 32. 1893.

[Caracas; also a few mi. W of Colonia Tovar, 500–6,500 ft., 31/1/54, 13/9/55, 19/7/56], *Fendler 240* (G).

Securidacea fendleri Chodat, Bull. Herb. Boissier 3: 545. 1895.
Fendler s.n.

RUBIACEAE

Cephaelis aneurophylla Standley, Publ. Field Columbian Mus., Bot. Ser. 8: 63. 1930.

[Between Maracai and Choroni, 5,000 ft., 12/12/56], *Fendler 1979* (holotype, GH; isotype, K).

= *Psychotria aneurophylla* (Standl.) Steyermark.

Cephaelis macrocarpa Standley, Publ. Field Columbian Mus., Bot. Ser. 8: 64. 1930.

[Between Maracai and Choroni, 5,000 ft., 12/12/56], *Fendler 1990* (holotype, GH; isotype, K).

= *Psychotria costanensis* Steyermark. subsp. *costanensis*

Elaeagia karstenii Standley, Field Columbian Mus., Bot. Ser. 8: 50. 1930.

[Colonia Tovar, 13/8/54], *Fendler 594* (holotype, GH; isotypes, F, MO).

Malanea fendleri Standley, Publ. Field Columbian Mus., Bot. Ser. 8: 61. 1930.

[Between Petaquira and Cariaca, 6,000 ft., 12/2/58], *Fendler 2555* (holotype, GH).

Malanea hirsuta Standley, Publ. Field Columbian Mus., Bot. Ser. 8: 65. 1930.

[A few mi. S of Colonia Tovar, 3,500 ft., 16/5/55], *Fendler 569* (holotype, GH; isotypes, K, M, MO, Y).

Manettia schumanniana Sprague, Bull. Herb. Boiss. 2(5): 834. 1905.

[A few mi. E of Colonia Tovar, 7,500 ft., 5/1/57], *Fendler 589*.

Palicourea fendleri Standley, Publ. Field Columbian Mus., Bot. Ser. 8: 65. 1930.

[Between Maracai and Choroni, 5,000 ft., 29/1/57], *Fendler 1983* (holotype, GH, photo F; isotype, K).

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[Between Petaquire and the sea, 4,000 ft., 9/2/57], Fendler 1993 (holotype, GH, photo F; isotype, K).

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Matayba longipes Radlkofer, Sitzungsber. Math-Phys. Cl. Königl. Bayer. Akad. Wiss. München 9: 626. 1879.
[Colonia Tovar, 6,500 ft., 28/6/56], Fendler 1748 (holotype, G, photo F; isotype, MO).

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[Seashore near Colombia, 100 ft., 26/1/57], Fendler 749 (holotype, P).
= *Pouteria crotonoides* (Purée) Baehni

SOLANACEAE

Cestrum laetum Francey, Candollea 6: 378. 1935.
[Colonia Tovar, 6,500 ft., 13/4/54, 7/5/54], Fendler 955 (holotype, NY).
Cestrum tovarensse Francey, Candollea 6: 388. 1935.
[Colonia Tovar, 6,000 ft., 31/8/55], Fendler 962 (holotype, NY; isotype, MO).
Saracha nitida Bitter, Repert. Spec. Nov. Regni Veg. 19: 265. 1924.
[10 mi. E of Colonia Tovar, 17/6/55, 21/9/55], Fendler 1007 (G, photo F).
Solanum tovarensse Bitter, Repert. Spec. Nov. Regni Veg. 18: 65. 1922.
[Colonia Tovar, 6,000 ft., 27/4/54, 16/8/55, 22/9/55], Fendler 980 (G, photo F).

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Styrax macrotrichus Perkins, Repert. Spec. Nov. Regni Veg. 2: 23. 1906.
[A few mi. SE of Colonia Tovar, 4,500 ft., 9/3/55], Fendler 746 (G, MO, photo F).

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Piriqueta tovarensis Urban, Jahrb. Königl. Bot. Gart. Berlin 2: 69. 1883.
[Savannahs S of Colonia Tovar, 4,000 ft., 13/9/55], Fendler 115.

URTICACEAE

Hemistylis macrostachya Wedd., Ann. Sci. Nat. (Paris) 4(1): 208. 1854.
[Between Caracas and La Guayra, 1,000 ft., 16/8/55], Fendler 1259 (G, photo F).
Hemistylis odontophylla Wedd., Prodr. 16(1): 235. 1869.
[La Victoria, 2,000 ft., 21/11/56], Fendler 1827 (G, photo F).
Phenax uliginosus Wedd., Ann. Sci. Nat. (Paris) 4(1): 192. 1854.
[Colonia Tovar, 31/4/54, 21/8/55], Fendler 1268 (G, MO, photo F).
Pilea dauciodora Wedd., Ann. Sci. Nat. (Paris) ser. 3. 18: 223. 1852.
[High mountains around Colonia Tovar, 7,000 ft., 10/5/54, 24/6/55], Fendler 1246 (G, MO, photo F).

Pilea mollis Wedd., Arch. Mus. Hist. Nat. 8: 251. 1855.

[River Tuy below Colonia Tovar, 4,000–5,500 ft., 2/7/54, 29/8/54, 22/4/58], Fendler 1241 (G, MO, photo F).

Pilea urticella Wedd., Prodr. 16(1): 157. 1869.
[Between Valencia and Campanero, 4,000 ft., 7/3/57], Fendler 2429 (G, MO, photo F).
Pouzolzia acalyphoides Wedd., Prodr. 16(1): 234. 1869.
[Biscaina, 3,000 ft., 10/5/55], Fendler 1264 (G, photo F).

VERBENACEAE

Aegiphila fendleri Moldenke, Repert. Spec. Nov. Regni Veg. 33: 121. 1933.
[Between Agua Blanca and Cumbote, 4,000 ft., 30/1/58], Fendler 2032 (holotype, GH; isotypes, G, K).
Aegiphila floribunda Moritz & Moldenke, Repert. Spec. Nov. Regni Veg. 33: 122. 1933.
[Colonia Tovar, 6,000 ft., 13/6/55, 16/6/55], Fendler 845 (MO, W, photo F).
Aegiphila lewisiana Moldenke, Repert. Spec. Nov. Regni Veg. 33: 131. 1933.
[Between Caracas and La Guayra, 2,000 ft., 16/8/55], Fendler 844.
Citharexylum venezuelense Moldenke, Repert. Spec. Nov. Regni Veg. 37: 237. 1934.
[Between Caracas and La Guayra, 1,000 ft., 16/8/55], Fendler 1298.

APPENDIX II

List of Fendler Venezuelan collections cited in Appendix I by number and their basionyms.

- 27 *Cleome moritziana* Klotsch ex Eichler (Capparaceae)
- 115 *Piriqueta tovarensis* Urban (Turneraceae)
- 139 *Trichilia montana* H.B.K. var. *fendleriana* C. DC. (Meliaceae)
- 177 *Protium laxiflorum* Engl. var. *fendleri* Engl. (Burseraceae)
- 196 *Rollinia fendleri* R. E. Fries (Annonaceae)
- 215 *Maytenus fendleri* Briq. (Celastraceae)
- 238 *Polygala fendleri* Chodat (Polygalaceae)
- 240 *Polygala tovarensis* Chodat (Polygalaceae)
- 248 *Canavalia fendleri* Piper (Fabaceae)
- 344 *Mimosa tovarensis* Benth. (Fabaceae)
- 404 *Tibouchina moritziana* Cogn. (Melastomataceae)
- 404 *Henriettella tovarensis* Cogn. var. *angustifolia* Cogn. (Melastomataceae)
- 414 *Miconia resimoides* Cogn. (Melastomataceae)
- 415 *Miconia multinervulosa* Cogn. (Melastomataceae)
- 419 *Miconia tovarensis* Cogn. (Melastomataceae)
- 432 *Heterotrichum glandulosum* Cogn. (Melastomataceae)
- 436 *Clidemia ciliata* D. Don var. *grandifolia* Cogn. (Melastomataceae)
- 438 *Clidemia fendleri* Cogn. (Melastomataceae)
- 439 *Leandra fendleri* Cogn. (Melastomataceae)
- 444 *Henriettella tovarensis* Cogn. (Melastomataceae)
- 444 *Henriettella tovarensis* Cogn. var. *angustifolia* Cogn. (Melastomataceae)
- 489 *Edmondia spectabilis* Cogn. (Cucurbitaceae)

- 490 *Gurania wagneriana* Cogn. (Cucurbitaceae)
 502 *Sicyos macrocarpus* Cogn. (Cucurbitaceae)
 503 *Echinocystis polycarpa* Cogn. (Cucurbitaceae)
 513 *Begonia fagopyroides* Kunth & Bouché var. *fendleriana* A. DC. (Begoniaceae)
 524 *Hydrocotyle venezuelensis* Rose ex Mathias (Asteraceae)
 529 *Dendropanax fendleri* Seemann (Araliaceae)
 569 *Malanea hirsuta* Standley (Rubiaceae)
 589 *Manettia schumanniana* Sprague (Rubiaceae)
 594 *Elaeagia karstenii* Standley (Rubiaceae)
 625 *Mikania racemulosa* Klatt (Asteraceae)
 626 *Mikania hexagona* B. L. Robinson (Asteraceae)
 634 *Eupatorium neriifolium* B. L. Robinson (Asteraceae)
 638 *Eupatorium xestolepis* B. L. Robinson var. *xestolepis* (Asteraceae)
 647 *Eupatorium steetzii* B. L. Robinson (Asteraceae)
 651 *Trichogonia rhadinocarpa* B. L. Robinson (Asteraceae)
 702 *Senecio cucullatus* Klatt (Asteraceae)
 718 *Hieracium tovarensense* Fries (Asteraceae)
 746 *Styrax macrotrichus* Perkins (Styracaceae)
 749 *Crepindodendron crotonoides* Pierre (Sapotaceae)
 751 *Conomorpha caracasana* Mez (Myrsinaceae)
 754 *Parathesis moritziana* Mez (Myrsinaceae)
 756 *Conomorpha laurifolia* Mez (Myrsinaceae)
 757 *Cybianthus klotzschii* Mez (Myrsinaceae)
 794 *Monopyle leucantha* Moritz ex Benth. (Gesneriaceae)
 830 *Symbolanthus magnificus* Gilg (Gentianaceae)
 844 *Aegiphila lewisiana* Moldenke (Verbenaceae)
 845 *Aegiphila floribunda* Moritz & Moldenke (Verbenaceae)
 876 *Salvia tovariensis* Briq. (Lamiaceae)
 879 *Stachys fendleri* Briq. (Lamiaceae)
 941 *Ipomoea fruticosa* Kuntze (Convolvulaceae)
 955 *Cestrum laetum* Francey (Solanaceae)
 962 *Cestrum tovarensense* Francey (Solanaceae)
 980 *Solanum tovarensense* Bitter (Solanaceae)
 1007 *Saracha nitida* Bitter (Solanaceae)
 1030 *Dipladenia fendleri* Muell. Arg. (Apocynaceae)
 1032 *Amblyanthera fendleri* Muell. Arg. (Apocynaceae)
 1095 *Gymnobalanus latifolia* Meissn. (Lauraceae)
 1098 *Mespilodaphne vaginans* Meissn. (Lauraceae)
 1101 *Dendrophthora eichleriana* Urban (Loranthaceae)
 1102 *Phoradendron fendelianum* Eichler (Loranthaceae)
 1104 *Dendrophthora basiandra* Kuijt (Loranthaceae)
 1105 *Phoradendron rigidum* Urban (Loranthaceae)
 1106 *Phoradendron tubulosum* Urban (Loranthaceae)
 1108 *Phoradendron ovalifolium* Urban (Loranthaceae)
 1115 *Phoradendron cuneifolium* Urban (Loranthaceae)
 1125 *Stachyphllum fendleri* van Tiegh. (Loranthaceae)
 1127 *Hedyosmum pseudoandromeda* Solms-Laub. (Chloranthaceae)
 1137 *Piper glanduligerum* C. DC. (Piperaceae)
 1139 *Piper victorianum* C. DC. (Piperaceae)
 1140 *Piper fendelianum* C. DC. (Piperaceae)
 1141 *Piper tristemon* C. DC. (Piperaceae)
 1143 *Piper caracasanum* Bredem. ex Link var. *firmius* C. DC. (Piperaceae)
 1144 *Piper nobile* C. DC. (Piperaceae)
 1145 *Piper tovarensense* Trel. (Piperaceae)
 1148 *Peperomia carlosiana* C. DC. (Piperaceae)
 1149 *Peperomia lanceolata-peltata* C. DC. (Piperaceae)
 1150b *Peperomia pseudopeltoidea* C. DC. (Piperaceae)
 1151 *Peperomia san-carlosiana* C. DC. (Piperaceae)
 1152 *Peperomia magnoliifolia* A. Dietr. var. *emarginulata* C. DC. (Piperaceae)
 1153 *Peperomia adscendens* C. DC. (Piperaceae)
 1153 *Peperomia glabra* C. DC. (Piperaceae)
 1156 *Peperomia fragrans* C. DC. (Piperaceae)
 1157 *Peperomia succulenta* C. DC. (Piperaceae)
 1161 *Peperomia purpurella* C. DC. (Piperaceae)
 1163 *Peperomia ernstiana* C. DC. (Piperaceae)
 1164 *Peperomia laevis* C. DC. (Piperaceae)
 1166 *Peperomia patula* C. DC. (Piperaceae)
 1167 *Peperomia trinervula* C. DC. (Piperaceae)
 1168 *Peperomia tovariana* C. DC. (Piperaceae)
 1169 *Peperomia decurrens* C. DC. (Piperaceae)
 1170 *Peperomia blanda* H.B.K. var. *dissimilis* C. DC. (Piperaceae)
 1171 *Peperomia ellipticifolia* C. DC. (Piperaceae)
 1174 *Peperomia fendleriana* C. DC. (Piperaceae)
 1176 *Peperomia linearis* C. DC. (Piperaceae)
 1178 *Peperomia diffusa* C. DC. (Piperaceae)
 1183 *Peperomia reflexa* A. Dietr. var. *coriacea* C. DC. (Piperaceae)
 1191 *Euphorbia tovarensis* Boiss. (Euphorbiaceae)
 1202 *Pedilanthus fendleri* Boiss. (Euphorbiaceae)
 1208 *Tragia fendleri* Muell. Arg. (Euphorbiaceae)
 1230 *Excoecaria obtusiloba* Muell. Arg. (Euphorbiaceae)
 1241 *Pilea mollis* Wedd. (Urticaceae)
 1246 *Pilea dauciodora* Wedd. (Urticaceae)
 1259 *Hemistylis macrostachya* Wedd. (Urticaceae)
 1264 *Pouzolzia acalyphoides* Wedd. (Urticaceae)
 1272 *Alchornea grandiflora* Muell. Arg. (Euphorbiaceae)
 1289 *Podocarpus harmsianum* Pilger (Podocarpaceae)
 1298 *Citharexylum venezuelense* Moldenke (Verbenaceae)
 1327 *Philodendron fraternum* Schott (Araceae)
 1329 *Philodendron deviatum* Schott (Araceae)
 1336 *Anthurium nymphaefolium* K. Koch & C. Bouché var. *ovatum* Engl. (Araceae)
 1343 *Anthurium fendleri* Schott (Araceae)
 1346 *Anthurium bredemeyeri* Schott var. *elongata* Engl. (Araceae)
 1348 *Asplundia fendleri* Harling (Cyclanthaceae)
 1422 *Liparis fendleri* Schltr. (Orchidaceae)
 1460 *Stelis muscifera* Lindley (Orchidaceae)
 1461 *Stelis lutea* Lindley (Orchidaceae)
 1467 *Stelis humulis* Lindley (Orchidaceae)
 1468 *Stelis muscosa* Lindley (Orchidaceae)
 1469 *Stelis tenuilabris* Lindley (Orchidaceae)
 1470 *Stelis fendleri* Lindley (Orchidaceae)
 1471 *Stelis tenuilabris* Lindley (Orchidaceae)
 1486 *Pleurothallis viridula* Lindley (Orchidaceae)
 1490 *Pleurothallis exasperata* Lindley (Orchidaceae)
 1508 *Tillandsia compacta* Griseb. (Bromeliaceae)
 1509 *Tillandsia grisebachiana* Baker (Bromeliaceae)
 1514 *Tillandsia pleiosticha* Griseb. (Bromeliaceae)
 1515 *Tillandsia fendleri* Griseb. (Bromeliaceae)
 1516 *Tillandsia excelsa* Griseb. var. *latifolia* Griseb. (Bromeliaceae)
 1517 *Tillandsia ventricosa* Griseb. (Bromeliaceae)

- 1521 *Nidularium albo-roseum* Griseb. (Bromeliaceae)
1523 *Tillandsia caribaea* Lyman B. Smith (Bromeliaceae)
1524 *Tillandsia incurva* Griseb. (Bromeliaceae)
1525 *Tillandsia robusta* Griseb. (Bromeliaceae)
1530 *Tillandsia myriantha* Baker (Bromeliaceae)
1546 *Smilax scabriuscula* Humb. & Bonpl. ex Willd. var. *fendleri* A. DC. (Liliaceae)
1550 *Pitcairnia fendleri* Mez (Bromeliaceae)
1552 *Tillandsia longifolia* Baker (Bromeliaceae)
1555 *Phaeosphaerion efoveolatum* C. B. Clarke (Comelinaceae)
1591 *Rhynchospora rufa* C. B. Clarke (Cyperaceae)
1627 *Chusquea fendleri* Munro (Poaceae)
1748 *Matayba longipes* Radlkofer (Sapindaceae)
1750 *Machaerium moritzianum* Benth. (Fabaceae)
1761 *Phoradendron tovarensis* Urban (Loranthaceae)
1762 *Phoradendron longipetiolatum* Urban (Loranthaceae)
1771 *Tillandsia acorifolia* Griseb. (Bromeliaceae)
1810 *Phoradendron venezuelense* Trel. (Loranthaceae)
1811 *Phoradendron bilineatum* Urban (Loranthaceae)
1817 *Peperomia pseudodependens* C. DC. (Piperaceae)
1818 *Peperomia tenella* A. Dietr. var. *glabra* C. DC. (Piperaceae)
1825 *Acalypha villosa* Jacq. var. *intermedia* Muell. Arg. (Euphorbiaceae)
1827 *Hemistylis odontophylla* Wedd. (Urticaceae)
1830 *Meriania subumbellata* Cogn. (Melastomataceae)
1832 *Arthrostemma alatum* Triana (Melastomataceae)
1834 *Miconia rubens* Naudin var. *latifolia* Cogn. (Melastomataceae)
1835 *Miconia fendleriana* Cogn. (Melastomataceae)
1836 *Miconia fendleriana* Cogn. (Melastomataceae)
1845 *Heterotrichum lucidum* Triana (Melastomataceae)
1865 *Machaerium tovarensis* Pittier (Fabaceae)
1866 *Machaerium mortizianum* Benth. (Fabaceae)
1947 *Eupatorium tovarensis* B. L. Robinson (Asteraceae)
1957 *Piptocarpha sprucei* Baker (Asteraceae)
1967 *Clibadium parviceps* S. F. Blake (Asteraceae)
1979 *Cephaelis aneurophylla* Standley (Rubiaceae)
1983 *Palicourea fendleri* Standley (Rubiaceae)
1990 *Cephaelis macrocarpa* Standley (Rubiaceae)
1993 *Rudgea apodantha* Standley (Rubiaceae)
2015 *Cybianthus fendleri* Mez (Myrsinaceae)
2031 *Columnnea fendleri* Sprague (Gesneriaceae)
2032 *Aegiphila fendleri* Moldenke (Verbenaceae)
2082 *Ipomoea fruticosa* Kuntze (Convolvulaceae)
2083 *Ipomoea fendleriana* Kuntze (Convolvulaceae)
2084 *Ipomoea alatipes* Hook. (Convolvulaceae)
2119 *Philibertia fendleri* A. Gray (Asclepiadaceae)
2135 *Cranichis fendleri* Schltr. (Orchidaceae)
2148 *Pleurothallis clandestina* Lindley (Orchidaceae)
2154 *Stelis alata* Lindley (Orchidaceae)
2155 *Pleurothallis apiculata* Lindley (Orchidaceae)
2159 *Tillandsia mucronata* Griseb. (Bromeliaceae)
2166 *Tillandsia laxa* Griseb. (Bromeliaceae)
2167 *Caraguata coriostachya* Griseb. (Bromeliaceae)
2171 *Dioscorea fendleri* R. Kunth (Dioscoreaceae)
2230 *Cassia viresfolia* Benth. (Fabaceae)
2255 *Calliandra laxa* Benth. var. *parvifolia* Benth. (Fabaceae)
2259 *Inga fendleriana* Benth. (Fabaceae)
2261 *Calophysa flexuosa* Triana (Melastomataceae)
2263 *Clidemia grandifolia* Cogn. (Melastomataceae)
2314 *Strychnos fendleri* Sprague & Sandw. (Loganiaceae)
2329 *Passiflora velata* Mast. (Passifloraceae)
2348 *Mikania gracilipes* B. L. Robinson (Asteraceae)
2349 *Mikania vitrea* B. L. Robinson (Asteraceae)
2357 *Ardisia robinsonii* Mez (Myrsinaceae)
2358 *Siparuna venezuelensis* Perkins (Monimiaceae)
2393 *Nectandra leucantha* Nees & Martius var. *attenuata* Meissn. (Lauraceae)
2395 *Gynobalanus fendleri* Meissn. (Lauraceae)
2398 *Piper ovale* C. DC. (Piperaceae)
2402 *Peperomia choroniana* C. DC. (Piperaceae)
2408 *Acalypha villosa* Jacq. var. *intermedia* Muell. Arg.
2412 *Plukenetia penninervia* Muell. Arg. (Euphorbiaceae)
2429 *Pilea urticella* Wedd. (Urticaceae)
2444 *Stelis coriifolia* Lindley (Orchidaceae)
2446 *Tillandsia tovarensis* Mez (Bromeliaceae)
2449 *Tillandsia longibracteata* Baker (Bromeliaceae)
2452 *Bilbergia filicaulis* Griseb. (Bromeliaceae)
2453 *Aechmea cymoso-paniculata* Baker (Bromeliaceae)
2454 *Aechmea fendleri* André ex Mez (Bromeliaceae)
2489 *Sloanea fendleriana* Benth. (Elaeocarpaceae)
2547 *Blakea grisebachii* Cogn. (Melastomataceae)
2555 *Malanea fendleri* Standley (Rubiaceae)
2571 *Piper cumbotianum* C. DC. (Piperaceae)
2572 *Piper venezuelense* C. DC. (Piperaceae)
2573 *Philodendron effusilobum* Croat (Araceae)
2575 *Tillandsia aurantiaca* Griseb. (Bromeliaceae)
2593 *Blakea longibracteata* Cogn. (Melastomataceae)
2594 *Clidemia ampla* Cogn. (Melastomataceae)
2617 *Evodianthus funifer* (Poit.) Lindman subsp. *fendlerianum* Harling (Cyclanthaceae)
2618 *Peperomia venezueliana* C. DC. (Piperaceae)



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