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CONTRIBUTIONS FROM THE HERBARIUM OF
COLUMBIA COLLEGE.—No. 6.

An Enumeration of the Plants Col-
lected by Dr. H. H. Rusby in
South America, 1885-'86.
I.

GENERAL FEATURES OF THE REGION TRAVERSED.
ENUMERTION OF THE THALLOPHYTA.

(Reprinted from the BULLETIN OF THE TORREY BOTANICAL CLUB, Vol. XV., No. 7.)



(Reprinted from BULLETIN OF THE TORREY BOTANICAL CLUB, July, 1888.)

An Enumeration of the Plants Collected by Dr. H. H. Rusby in South America, 1885-1886.—I.

GENERAL FEATURES OF THE REGION TRAVERSED.

The collections recorded in this series of papers were made during a two years journey along the Pacific coast and across the continent of South America, the special object being the investigation of Medical Botany.

The route of travel covered regions the most diverse as regards all the conditions of plant life. North of Guayaquil the coast is verdant, the luxuriant tropical vegetation reaching the very water's edge. But a short distance south of that city begins an entirely different region. The eastern cordillera of the Andes divides South America into two portions, having almost nothing in common. While only a few miles in width, this cordillera marks differences in soil, climate, and general appearance, as great as any to be observed upon the globe.

Upon the Pacific side there is a very general dearth of moisture, rain being in many places almost unknown, while upon the eastern slope rain is so constant that months may pass when the sun is seen for scarcely an entire hour, and the humidity is so great that clouds of rising vapor sometimes obscure the view of even the nearest objects. The laden clouds that sweep in from the tropical Atlantic lose little of their moisture in crossing the Amazonian basin; any loss is but temporary, the equilibrium being at once restored by the soaking up of a fresh supply from the enormous water surface that the region presents. But immediately on reaching the mountains, great volumes of water are precipitated. The lightened clouds endeavor to escape upward, reach the colder strata, and suffer fresh precipitations. This process is continued over a belt of two hundred and fifty miles of steadily increasing elevation, until the winds which cross the cordillera

carry only the merest traces of moisture. Throughout most of this heavily watered region, the vegetation is of the densest character. Allowing for the breaks caused by the streams, it might be said that an arboreal animal, ascending a tree upon the Andean foothills, could pass to the Atlantic without once descending to the ground.

The species and genera of this eastern Andean region have in general a very wide range. With the latitude, varies the altitude at which they grow. As we pass to the cooler southern region, a species or its representative creeps down upon the mountain sides. Thus, the *Desfontainea spinosa*, Remy., which I collected abundantly in northern Bolivia, gradually descends, until in the neighborhood of the cape, Lieutenant Safford finds it near the sea level, constituting a characteristic feature of the landscape. Sometimes also, a species has its limits as to altitude very narrowly and sharply defined, but will be represented at successively lower elevations by other species exceedingly closely related. Of this, the *Cinchonas* furnish us a striking example. Each altitude has its own species—if species they can be called—and they usually overlap to but a trifling extent. I have (in two cases) looked along a mountain side where miles of *Cinchona Calisaya* had been planted, and seen the upward limit defined to within fifty feet by a line of dead or dying trees.

In general, we are disappointed by the scarcity of flowers as compared with the abundance of plants. To this rule, trees and many herbs are exceptions. But in the case of shrubs and vines, of which latter there is everywhere a multitude, it is strikingly true. It is probably to be accounted for by the steepness of the land and a climate highly favorable for the reestablishment of detached fragments, torn away and carried to a new position. Unable to obtain the light and air necessary for a high floral development, they have learned to depend upon a less complicated method.

Turning to the western side, we find, as stated, a region in which almost every condition is reversed. With more or less scanty rains, strictly limited to a few months or even weeks, we get a treeless and almost shrubless region, with a temperature subject to very sudden and great variations. The amount of

moisture increases with the altitude. Upon our school-maps great deserts are located on the table lands of this region. The real deserts, however, are not there, but along the coast. Upon the highlands there is sufficient moisture to redeem the country from barrenness, and it is a fairly good stock country. As upon the eastern side, so upon the western, the highland vegetation creeps down the mountains as we go southward, until at Valparaiso it reaches the ocean. North of Valparaiso there is thus left a true desert along the coast, which widens as we go northward, until at the boundary of Chili and Peru, we find miles of pure, absolutely barren sand. To the patient and industrious botanist this coast desert will furnish a far more interesting field than the luxuriant regions to the eastward. There is no regular water supply, the showers being infrequent and spasmodic, with years sometimes elapsing between them. But when they do occur in sufficient quantity we find a rich and beautiful flora, springing up, maturing and perishing in an incredibly short period of time. What special provisions are required, and what lessons in physiology are to be learned, while watching the processes of birth and extinction which are here going on! Long after the flora of the Amazonian basin shall have been satisfactorily classified, this desert region will be contributing its annual quota of undescribed species.

With this very meagre general outline before us, we shall notice briefly the special localities where the collections were made.

A part of a day each were spent at Guayaquil, Zorritos, Payta and Coquimbo, and two or three days at Lima, but only fragments were collected. Zorritos stands at the northern extremity of the desert, and is watered with moderate frequency. The *Prosopis*, *Cereus*, *Amarantaceæ* and *Chenopodiaceæ*, reminded me strongly of the gravelly hills of the Mohave desert. Payta is one of the driest spots in the world, and Coquimbo is but little better. Lima, like Tacna, stands near the foot of the mountain. At the latter place a week was spent in the early part of February. No rain had occurred, and the fifty species collected were all from irrigated grounds. Tacna has one small stream, conducted through the town by a paved channel, and it

does duty in great part as a sewer, besides furnishing the only water supply. From Tacna, the route lay seven days by mule, to La Paz. At nine thousand feet, 17° south latitude,* the vegetation is sufficient to afford pasturage for the llama. At twelve thousand feet we are upon the table-land, which is, in part at least, volcanic, and at first thickly covered with loose rounded stones. Farther on it becomes sandy and rocky by turns. We cross many superimposed small ranges, and skirt the bases of much greater ones. The landscape is much like that of our own south-western plateau, except that there is less grass. What frequently appears like a grassy plain, proves to be covered with plants like dwarf *Hypochaeris* or *Perezia*, only an inch or two in height, and presenting a green cushion of needles in the form of spines terminating the erect linear leaves. Numerous species of *Adesmia*, rarely rising above a foot from the ground, and often very closely prostrate, cover much of the country.

Near the eastern verge of this table-land, in a basin two thousand feet deep, with nearly vertical walls of clay or gravel, is situated La Paz, at an elevation of about eleven thousand feet. Here I spent some two weeks during the months of February, March and April, collecting one hundred and fifty or more species. This was during the latter half of the rainy season, when the walls of the basin, and the gravelly and rocky hills along the La Paz River to the south, were richly clothed with plants in flower. The remainder of the time during this period was passed across the range in Yungas. Returning early in April to the coast, I proceeded to Valparaiso, where three months were spent. Here the season is earlier, and winter was just setting in when I arrived. A winter there is about the same as in northern Florida, the orange surviving, but not thriving. Some twenty-five or thirty stray specimens were found in flower before I returned to La Paz. It being then early in June, I found a dry and wintry season prevailing, with a most dreary prospect for a collector. For a long time business detained me in the city, save for a few short excursions across the mountains, and one long stay in the province of Yungas, made, unfortunately, at an unfavorable season for collecting. Just as the rains were beginning the next Janu-

*Distances, latitudes and altitudes are given approximately.

ary, I was obliged to leave La Paz on my journey to the Atlantic. Thus, out of almost a year spent in this interesting region, fortune had favored me with only about two weeks favorable collecting. But extensive collections had been made meantime upon the eastern slope at Unduavi and Yungas. Unduavi is one of several little hamlets upon a mountain stream in the first valley to the eastward of La Paz. But I have characterized by this name the entire collecting station constituted by this valley and its enclosing mountains. At 12,000 feet begins the semi-alpine flora generally associated with *Aspidium aculeatum* and the smaller species of *Acrostichum*. At 10,000 feet the shining, coriaceous leaves of the tropics begin to be seen, and at 8,000 feet the vegetation is truly tropical, including bamboos, fuchsias and begonias. The whole surface is characteristically rocky, the soil being very scanty indeed, but rich. At Unduavi, between 8,000 and 10,000 feet, I collected 150 species in flower in October, in three days.

Crossing the northern wall of this valley, we find upon the summit, at about 11,000 or 12,000 feet, a cold, boggy and cloudy region, where sphagnum and long drooping lichens abound. Upon the other side we are in Yungas, referring not to the political boundary, but to my collecting station of that name. Descending to 7,000 feet, we enter the great Andean forests which become heavier and heavier, though scarcely denser, as we descend. The trunks and greater branches are scarcely to be seen for the epiphytes upon them, chief of which are orchids, bromeliads, ferns, mosses and aroids. At 5,500 feet we strike the coca and cinchona belt, and at 4,000 feet we find the heat becoming oppressive and the air sultry. From 3,500 to 5,500 feet is probably the region of greatest rain-fall. The Yungas collections were chiefly made at elevations of 3,000, 4,000 and 6,000 feet.

Leaving La Paz on the 10th of January, 1886, we were at once overtaken by the unprecedented rains of that season. At Sorata, on the base of Mount Iliampu, we were detained by floods from the latter part of January till about the first of March. But little could be dried, and that little with the greatest difficulty, many of the collections being repeated once and some of them twice. In transit to the coast moreover, the continuous

rains succeeded in penetrating some of the bales. A fine and little known alpine flora exists on Mt. Iliampu. The altitude and conditions of this locality are a parallel of those of Unduavi. One day's journey to the northward we reach Ingenio del Oro, a gold washing establishment. This locality is also very similar to Unduavi, but has the richest flora (March) of any locality that I have ever visited. It is above timber line. Three days of miserable exposure were passed here, and all our collections spoiled. Two days more brought us to Mapiri, a section almost precisely like Yungas, where, at 2,500 to 5,000 feet, I remained during March and April, improving the fairly good weather in making enormous collections, which arrived home, after great vicissitudes, in very fair condition. Mapiri is the great centre of *Cinchona* culture in South America, and large collections of these plants were made, among them being many new hybrids. The run of eighty-four miles to Guanai, 2,000 feet elevation, was made on rafts by the force of the current in a little less than eight hours. Arriving at Guanai three weeks earlier, we should have encountered one of the most interesting floras in South America. However, as we lost nearly everything collected at this place, it mattered but little. The forests at that point consist almost wholly of *Mimoseæ*, in prodigious variety. These had all gone to fruit and made rather ill looking specimens. At this point the succulent plants, such as *Begonia*, *Oxalis* and Bromeliaceæ began to appear much less prominent. I had early abandoned the collection of such plants, foreseeing that they would crowd out all other work, owing to the unlimited time necessary to dry them.

Upon new and larger rafts we floated in eight days to Reyes, the mountains becoming smaller, and the banks lower and lower as we proceeded, until, just at the port of Reyes we cut through the outermost range of the Andean foothills. Here, at an altitude of 1,500 feet, the forests are broken by patches of pampa, which are projected into them from the South, and the varying conditions of lake and river, forest, plain and bog, produce a flora of surpassing interest. Nearly two months were passed in Reyes, and although sickness materially interfered, a handsome representation of between 400 and 500 species was secured. The whole of this collection, with the most of what we had brought

from Guanai, 9,000 specimens in all, was found one morning sunken with our boat under fifteen feet of water. From this point on down the Beni, the country rapidly assumes the character of the Brazilian forest, with a dense tangle in the sombre shade below and a wealth of floral life high above upon the tree tops. The month of July was passed in journeying down this river and making occasional short stops to collect. At the junction of this river with the Madre de Dios, the centre of the rubber production of that district, two months were spent, and the finest part of my collection was prepared. Just below this junction begins the series of falls produced by the river's cutting its way through a series of low hills. During the two months that were required to make the tedious transit of these falls, I had ample time to complete my collection with a handsome addition. Many of the Andean species with which we had already become familiar, here re-appeared.

The entire collection includes somewhere about three thousand numbers, of which an average of ten specimens were collected.

THALLOPHYTA.

(I.)—DIATOMS.

The following species were found by Prof. C. H. Kain in a gathering from Sorata, Bolivia:—*Amphiptera Lindheimerii*, Grun.; *A. pellucida*, Kütz.; *Amphora ovalis*, Kütz.; *Cocconema lanceolata*, Ehr.; *Cocconeis Pediculus*, Ehr.; *Cymbella stomatophora*, Grun.; *Epithemia gibba*, Kütz.; and var. *ventricosa*, Grun.; *E. Argus*, Kütz.; *Encyonema ventricosa*, Kütz.; *Gonphonema constricta*, Ehr.; *Melosira varians*, Ag.; *Navicula elliptica*, Kütz.; *N. tenella*, Breb.; *Pleurosigma Spencerii*, W. Sm; *Suriella cardinalis*, Kitton, rare; *Synedra capitata*, Ehr.; *S. Ulna*, Ehr.; and var. *amphirhynchus*, Ehr.; *S. Crotonensis*, Grun.; var. *constricta*, Kain, n. var., a provisional name for what may be a new species.

It is sometimes the case in this gathering that *Amphiptera pellucida* and *A. Lindheimerii* are both slightly sigmoid, so that they in some degree appear like *Pleurosigma*.

(II.)—ALGÆ.

Determined by Prof. W. G. Farlow.

Coralina Chilensis, Dec., Tacna, Chili, and Pisco, (281, 282).

- Prionitis pectinata*, J. Ag., Tacna (283).
Gymnogongrus furcellatus, J. Ag., Tacna (284).
Ulva nematoidea, Bory., Tacna (286).

(III.)—FUNGI.

Determined by Prof. Farlow.

- Lentinus villosus*, Kl., near Yungas, Bolivia (248).
Exidia Auricula-Fudæ, Fr., Mapiri, Bolivia (252).
Polyporus sanguineus, Fr., Yungas (254).
P. biformis, Kl., Yungas (255).
Xylaria multiplex, Kunze (?), Yungas (257b).

(IV.)—LICHENS.

Determined by Dr. J. W. Eckfeldt.*

- Ramalina calcaris*, Fr., var. *fraxinea*, Fr.
Usnea barbata, (L.) Fr., var. *florida*, Fr., near Yungas (277).
Evernia sulcata, (Sw.), Nyl., Sorata, (269), and Unduavi, (272).
Alectoria Canariensis, Nyl., Unduavi, Bolivia (268).
Theloschistes chrysoththalmus, (L.), Norm., Sorata (270), var. *flavicans*, (Fr.), Wallr., Sorata (267).
Parmelia Camtschadalis, (Ach.), Esch., La Paz, Bolivia (273).
P. caperata, Ach., Yungas (262).
P. perforata, (Jacq.), Ach., var. *hypotropa*, Nyl., La Paz (274).
Physcia hypoleuca, (Muhl.), Tuckerm., Sorata (266).
Sticta damæcornis, Tuck., Yungas and Mapiri (258).
S. crocata (L.), Ach., Yungas (278).
Leptogium foveolatum, Nyl., Syn. i., 124, Yungas (263).
Stereocaulon furcatum, Nyl., Yungas (260).
S. tomentosum (Fr.), Th. Fr., Yungas and Sorata (271).
Cladonia cariosa (Ach.), Spreng., Yungas (259).
C. floerkiana, Fr., Yungas (275).
C. ceratophylla, (Sw.), Eschw., Yungas (276).
Cænogonium Linkii, Ehrenb., Yungas (280).
Bæomyces fungoides, Ach., Unduavi (251).
Cora Pavonia, Nyl., Yungas (249).

*Dr. Eckfeldt regrets that more attention was not given to the collection of Lichens in a region so interesting. It may be stated that the collection of the lower cryptogams was purely incidental, my excessive labors entirely preventing any special work in that direction.

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An Enumeration of the Plants Collected by H. H. Rusby, in
Bolivia, 1885-1886.—II.

BY ELIZABETH G. BRITTON.

MUSCI.

There has been a long delay in publishing this portion of the enumeration of Dr. Rusby's collection, because at the time that the first comparisons were made at Kew in the summer of 1888, I felt that further study, and, in many cases, better material would be necessary in order to accurately determine many of the species. Furthermore, all of Mandon's specimens, which were collected in the same localities which Dr. Rusby visited, such as La Paz and Sorata, were still lying in Schimper's herbarium undescribed and bearing only manuscript names.

In all instances when Dr. Rusby's specimens agreed with Mandon's the latter have been cited by number and locality, but as we did not possess at that time a set of Mandon's mosses, and my time at Kew was limited, it was impossible for me to write descriptions of all of the new species preserved in Schimper's herbarium collected by him. Hoping, however, that some one better fitted to do this than myself would have the opportunity of studying these Bolivian mosses, and also in recognition of the special privileges accorded to me at Kew while studying there, the first and most complete set of Dr. Rusby's duplicates was deposited there. The second set was sent, after having been carefully studied and named as far as possible by one unacquainted with

Tropical American genera, to Dr. Carl Müller, at Halle. He treated them in the same way that Schimper did Mandon's, giving most of them manuscript names, making few or no critical comparisons, and furnishing no descriptions. As far as we know, they are still lying in his herbarium unpublished.*

When we went to Europe, in 1891, I again took with me all the doubtful species and those supposed to be new, for the sake of making further comparisons at Kew with Schimper's specimens. In several cases, as shown in the text, I found that Dr. Müller was mistaken, and that my original determinations were correct; in several others I found manuscript names of Schimper's given to Mandon's specimens which had priority over those of Müller's given to Dr. Rusby's specimens. In several other cases the types were not at Kew, and the specimens had to be referred to William Mitten and Emile Bescherelle for further study. We visited Mr. Mitten and I showed him and gave him several species, the types of which were in his herbarium. He very kindly made the comparisons for me, and in several cases shared his specimens with me.

We also took a set of the duplicates for M. Bescherelle, and I spent a day with him at the Jardin des Plantes in Paris looking up some of Moutagne's types. In a letter received from him at Kew he says:

"As for the mosses collected in Bolivia by Mandon, I think I remember that they were distributed by me in 1869, after the death of Mandon, which occurred on the 30th of December, 1866. Schimper named them, but did not describe or diagnose them. All of Mandon's mosses, Bolivian and Madeira, were sent to me by M. Cosson to be made up into sets, which were sold for the benefit of the widow. I kept one set and the residue, and proposed publishing at least the list of new species with the numbers and localities, in order to save Schimper's priority in the new discoveries. Unfortunately, other occupations have prevented my accomplishing this project. It will give me pleasure to share with you my duplicates."

We have to thank M. Bescherelle for a very good set of Mandon's mosses and we were also fortunate enough to secure Dr. Spruce's own private set of his *Musci Amazonici et Andini*, so

* Since this manuscript was sent to the printer we have learned that Dr. Müller is proposing to publish a *Brylogia Boliviana* in the *Nuovo Giornale Botanico Italiano*.

that we are now better able to study and compare Dr. Rusby's specimens.

In 1893 we received a much larger collection of mosses than Dr. Rusby's, made by Mr. Pierre Jay in northern Bolivia, also from the vicinity of La Paz and Sorata. I again wrote to M. Bescherele, offering to send him a complete set if he would name them. He replied that he was so occupied with his studies of the mosses of Japan that he found it impossible to undertake it and that it was a thankless task acting as secretary for some one else. I might, perhaps, have been strongly tempted to take the same stand had there not been twelve pages skipped in the reprints of Dr. Rusby's enumeration and held in reserve for this list of mosses. Just as we are going to press I have received a postal card from M. Emile Levier, inquiring for the Bang collection of Bolivian mosses and telling me that Dr. Carl Müller is printing in Florence a *Bryologia Boliviana*. As my manuscript is completed and the priority of Schimper's names from Mandon's collections is maintained throughout, we think it best to publish our enumeration independently.

This summer I have also commenced wrapping and sorting Mr. Jay's collections and have found several of Dr. Rusby's new species in fruit, which had previously only been collected sterile, so that the work promises to be of great interest, but will take a good deal of time to accomplish with the limited collection at my disposal and the pressure of other duties. However, it seems best to publish the list of Dr. Rusby's collection as it stands, first with such determinations and descriptions as I now know to be correct, and to modify and amend this list subsequently as I find time to study and compare the fine collections made by Mr. Jay.

The sequence of genera followed is nearly that given by Mitten in his *Musci Austro-Americani* (Journ. Linn. Soc. 12: 12-25. 1869). Thirty-nine genera and ninety-six species are enumerated in this collection of which forty-two are new or previously undescribed. Six mosses, as many hepatics, four lichens and a few algae and fungi were also collected in Bolivia by A. M. Bang and enumerated by Dr. Rusby (Mem. Torr. Bot. Club, 4: 273). These were named by Mr. Wright at Kew, but the *Sphagnums* have since been examined and corrected by Dr. Warnstorf from specimens preserved in the Boissier Herbarium at Geneva.

ACROCARPI.

Ceratodon Nova-Granatensis Hpe. Mapiri, 5000 ft. (3107)=
Lindig, Nova Granada, Boq. Tequedamas, 1863.

Leptodontium gracilescens C. Müller. Yungas, 6000 ft. (3108);
Sorata, 8000 ft. (3108a) *fide* C. Müller. E. Bescherelle says:
"Affine *L. luteo* foliis tamen patulis haud appressis or minus
longe cuspidatis differt."

At Kew in Herb. Hooker there are four specimens of Jameson's from the Andes of Quito, labelled *Didymodon luteum*, evidently the types of Hook. Lond. Journ. 5: 48. No. 174 is annotated by Wilson: "var. foliis magis recurvis patenti-recurvo serrulato." A part of 143 has the leaves much recurved as in 193b, both of which are sterile. On the same sheet is a specimen of G. Mandon's *Plantae Andium Boliviensium Exsicc.*, no 1616, from vicinuis Sorata labelled *Didymodon luteus* Taylor, which quite agrees with Rusby's specimens in its bright yellow recurved leaves, longer pedicels two or three in the same perichetium, and capsules twice longer than Jameson's specimen's.

LEPTODONTIUM GRACILE C. Müller, n. sp. Mapiri, 5000 ft (3111);
Unduavi, 8000 ft. (3109).

Plants bright yellowish green, stems slender, leaves squarrose and curled when dry; cells densely papillose and obscure above, clearer and oblong below, margins entire and recurved to above the middle, sharply and doubly serrate above. Plants all sterile.

Allied to *Didymodon cirrifolius* Hpe. by its papillose leaves but with the aspect of *L. gracilescens* Müll. "Affine *L. luteo* foliis longioribus quam *L. gracilescens* acutioribus margine non repetito denticulatis." E. Bescherelle, teste.

LEPTODONTIUM GRIMMIOIDES C. Müller, n. sp. Sorata, 13000 ft.
(3192).

Plants dark and discolored below, tips of the branches bright yellowish green, stems 3-4 cm. long, leaves squarrose, spreading and curled when dry, remaining undulate when moist, margins entire and recurved below with a few protruding teeth above, vein generally excurrent into a cuspidate apex, cells clear but papillose at base, densely and finely papillose above. Plants sterile.

Leptodontium Mandoni Sch., *fide* C. Müller. Unduavi, 10000 ft. (3110). (Sterile.)

There is no specimen in Schimper's Herbarium at Kew bearing this name, so no comparison was possible. These specimens of Dr. Rusby's have the leaves strongly costate to the apex, the costa is papillose on the back, the margins are entire below, serrate and recurved above, papillose and undulate, the upper cells are small and round, but not opaque, the basal cells longer and brown.

HOLOMITRIUM BOLIVIANUM C. Müller, n. sp. Near Yungas, 4000 ft. (3190).

Plants in light yellowish tangled mats, mixed with hepatics; stems 3-4 cm. long, flexuous and matted, with light-colored tomentum; leaves 3-5 mm. long, linear lanceolate, twisted and curled when dry, costate to apex, serrate and papillose above as well as undulate, entire with revolute margins below; cells round and small, lower ones hyaline. Plants sterile.

This species was compared with *H. flexuosum* Mitt. at Kew, but it differs from No. 21 Spruce from Andes Quitenses in the leaves, nor does it agree with any other species from this region at Kew. It should be compared with *H. longifolium* Hpe.

Dicranella angustifolia Mitt. Near Yungas, 4000 ft. (3112).

DICRANELLA NANOCARPA C. Müller, n. sp. Near Yungas, 4000 ft. (3139 pp).

Stems 3-5 mm. high, simple or branching, leaves erect or slightly secund when dry, uppermost often 2 mm. long, linear-subulate, margin entire, vein excurrent with a few indistinct teeth at apex; perichetial leaves broader and clasping at base. Dioecious. Pedicels 5-8 mm. long, twisted above, bright orange; capsule erect, ovoid, less than .5 mm. long, with a longer straight beak on the lid than the theca, which becomes broad and hemispherical when empty; mouth with a dark border, peristome red, teeth fugacious; cells of the walls oblong or hexagonal in regular rows.

Only six plants found mixed with a specimen of *Philonotis*, No. 3139; the alliance was not determined.

DICRANUM SPECTABILE Sch. mss. Unduavi, 12000 ft. (3113.)

Plants stout and large, much discolored at base, glossy and yellow at the tips of the branches; stems 10-15 cm. long, decumbent, branching by short innovations, tomentose in the axils of the leaves, often slender and interruptedly foliate; leaves longest at the tips of the branches, often 15 mm. in length and 1 mm. broad at base, to a concave apex with involute margins, entire below, serrate, becoming spinose along the excurrent vein; basal

cells larger and brown, a few hyaline ones near the vein, others conspicuously porose, becoming long, spindle-shaped above and oblique along the margin. Monoecious antheridia in small buds on the tomentum in the axils of the leaves. Pedicels 15–20 mm. long, much twisted to the left; capsule 3–4 mm. long, erect, smooth, ovoid, largest at base, abruptly contracted or with a short neck; lid with a slender oblique beak 2 mm. long; mouth small, teeth short, slender and bifid.

Compared with and equal to Mandon *Plantae Andium Bolivien- sium*, No. 1609. Hab. vicinius Sorata, also Songo, 1857.

Nearest to *D. speciosum* Hk. & Wilson. Compared with No. 325 of W. Jameson's Pl. Aequatoriales from which it differs in its more slender habit, shorter leaves and pedicels half as long. Dr. C. Müller, also recognized this as a new species.

Dicranum species? Yungas, 6000 ft. (3115).

These specimens are sterile, and have baffled Dr. Müller, and Mr. Mitten as well. They have been compared with all the specimens at Kew likely to be the same. Mr. Mitten sent me a portion of his specimen of *Dicranum Mittenii* CM., but they do not agree. Dr. Müller named them *Campylopus concolor* Hook., but they were compared at Kew with specimens in Hooker's herbarium collected by Lindig in Bogota, and they differ in being much stouter plants of a glossy yellow color, with longer and broader leaves, which are serrate *only* at the apex and have a much broader blade.

Pilopogon gracilis Hook. Near Yungas, 6000 ft. (3159 in part).

Compared with Hooker's specimens at Kew collected by Weddell in the Province of Yungas, Bolivia, May, 1847, with which they agree in every way. The leaves are hyaline at the basal angles and these cells extend up along the margins; the short transverse walls of the cells are thickened; the vein is broad, the margins incurved, and there are a few teeth at the apex. The perichetial leaves end in a very long tip, often extending half the length of the pedicel.

Dr. Müller gave this a manuscript name under *Catagonio*.

CAMPYLOPUS TRIVIALIS C. M. n. sp. Mapiri, 2500 ft. (3196).

Plants loosely matted, dirty green; stems flexuous, not rigid, 3–5 cm. long, usually simple, occasionally with crowded branches

at the apex of the stems; stem leaves short, 3–5 mm. long, slightly falcate at the tips of the branches, tubular with incurved, entire margins; vein more than one-third of the width of the base of leaf excurrent with a few teeth at apex; basal cells thin, hyaline to the vein, not colored.

Plants sterile and much less rigid than is usual in this genus; their alliance was not indicated nor determined.

Campylopus sp. undetermined. Yungas, 6000 ft. (3116).

Plants fragmentary and broken. Stems 2–3 cm. high, proliferous with fasciculate branches at apex, branches often 15 mm. long with the leaves crowded at the summit; leaves curled and twisted when dry, 3–5 mm. long, blade narrow, forming a serrate border of one row of cells almost to the apex; vein papillose on the back; cells enlarged at base, brown at angles; leaves of the branches shorter, often entire, and radiculose at base, perichetial leaves very long pointed, costate, entire, or scarcely serrulate; cells much enlarged at base, brown, upper oblong; antheridia in heads matted with brown radicles; pedicels several in the same head, 8–10 mm. long, curved, becoming erect where dry; capsules 1.5 mm. long, ovoid, not ribbed when dry; peristome red, lid not seen.

These specimens are closely allied to *C. annotinus* Mitt., and *C. brachyphyllus* Mitt., and *C. multicapsularis* Sch., from all of which they differ in the leaves and the smooth walls of the capsules when dry.

GRIMMIA NANO-GLOBOSA C. M. n. sp. Mapiri, 5000 ft. (3195).

Plants pulvinate in gray cushions, stems 5–8 mm. high; leaves crowded with a long, rough, white hair-point, blade carinate, cells small, almost quadrate, sinuous, basal ones elongated. Dioecious(?). Perichetial leaves with a long sheathing base, the white tip reaching the lid of the capsule. Pedicel erect, straight, 3–4 mm. long; calyptra lobate-mitrate, capsules 1–1.5 mm. long, lid with a straight beak, .5 mm. long; annulus narrow, of several single rows of cells falling in fragments with the lid; peristome red; teeth short, papillose; spores smooth, .008–.010 mm.

A smaller species than either *G. ovata* Web. & M., or *G. longirostris* Hook.

Compared at Kew with Matthews' Peruvian specimens labelled *G. ovata* and illustrated by W. Wilson. The Bolivian specimens are smaller.

Grimmia (*Racomitrium*) *crispipila* (Taylor) Mitt. Sorata, 10000 ft. (3117).

Agrees with specimens at Kew collected by Pearce at Undu-

avi and Yungas, duplicates of which are in our collection, sent by Mr. C. H. Wright with the permission of the Director.

GRIMMIA (RACOMITRUM) DIMORPHUM C. Müller, n. sp. Unduavi, 10000 ft., Oct., 1885 (3118).

Plants in dark dirty mats, stems blackened beneath, decumbent, giving off lower branches 3-4 cm. long, branchlets short, fasciculate; leaves subsecund, incurved and twisted when dry, spreading when moist, carinate, plicate with one strongly involute margin, generally blunt apex, but occasionally with a white mucronate tip or the apical ones with white crisped tips, vein prominently keeled, ending below the blunt apex or continuous into the white prolongation; cells all uniformly sinuous, elongated with faint transverse walls; perichetium short, 3 mm. long, broadly convolute, sheathing; bracts broad, apex acute, cells scarcely sinuous. Pedicels short, less than 1 cm., long, arcuate, twisted; capsule erect, or bent, 3 mm. long, smooth except just below the small dark bordered mouth; lid 1 mm. long, conic beaked, teeth long, slender, papillose, yellow.

Compared with *R. crispipilum* Taylor in Herb. Hooker, nos. 135, *a, b*; Spruce Musci Am. et And.

Leaves less cirrous pointed than 135 *b*; stems shorter than 135; leaves exactly alike; capsules on shorter pedicels, less cylindrical, shorter and broader, with a broader mouth. General aspect quite different.

Leucobryum longifolium Hpe. Mapiri, 2500 ft. May, 1886 (3119).

Sporophyte immature. Agrees with no. 71 c. of Spruce's Musci Amazon. et And. and with no. 7169 of A. Glaziou from Rio Janeiro, both at Kew.

LEUCOBRYUM STRICTUM C. Müller, n. sp. Unduavi, 10000 ft., Oct., 1885 (3119a).

Plants short, loosely tufted, mats dull gray when dry, stems short, decumbent at base, less than 2 cm. high, brown when moist, with light tips; leaves erect and slightly spreading, iridescent when dry, about 1 cm. long by 2 mm. broad, concave from a broad white base, tubular and dark above the middle, margin narrowly hyaline, apex with a few brown cuspidate teeth.

Plants sterile, smaller and darker than *L. vidans* (Brid.). "Ab *L. longifolium* Hpe., cellulis chlorophyllis tantum latioribus differt." E. Bescherelle.

* TORTULACEAE.

The treatment of this group by Mitten in his "Musci Austro-Americani" is far from satisfactory. It has seemed best, however, to follow him in this as in the other families. Duplicates of these were not sent to Dr. C. Müller, as they had not been carefully studied nor compared at that time. Later M. Bescherelle had a set of them, and made one or two comparisons for me with Montagne's types at the Jardin des Plantes. It will require more study and comparison with a more modern treatment of the family, before the specimens listed can be thoroughly understood.

Tortula (Trichostomum) contortifolium Mitt.? Unduavi, 8,000 ft. October, 1885 (3126).

There were no specimens of this species at Kew; hence these specimens were named only from the description on page 147 of Mitten's Musci Austro-Americani. They were shown to Mitten and sent to M. Bescherelle, but should be compared with Spruce, "No. 213, Andes Quitenses, Chimborazo (10000 ped.)"

TORTULA (*Trichostomum*) SEMIVAGINATUM Sch. mss. in Herb., no. 1618. Mandon, Plantae Andium Bolivienisium. De Capanuta a Songo, 18 Obr., 1857, in Herb. Schimper. Vicinius Sorata, April, 1858, in Herb. Hooker. Near Yungas, 4000 ft., 1885, in Herb. Rusby, no. 3128.

Plants 2-3 cm. high, dark below, red-brown above; stems simple or branching by subapical innovations 1-2 cm. high; leaves curled and twisted when dry, spreading when moist from an erect, glossy clasping base, the lanceolate blade 2 mm. long, suddenly bent and contracted from the hyaline base, 1 mm. long, upper cells small, dense and with thickened irregular walls and small, blunt papillae, decurrent at the margins a short distance on each side of the clasping base, vein large, yellow, ending in the acute apex. Dioecious? Perichetial leaves smaller, with a longer, more sheathing base. Pedicels 5-15 mm. long, twisted in two directions; capsules 2-3 mm. long, straight, cylindrical, smaller at the mouth; lid with a long curved beak, annulus large, falling with the lid; peristome fragile, pale, papillose, teeth long and slender, thickened and united at the basal joints, not twisted.

Closely related to *T. decolorans* Hpe., from which it differs in its larger size, longer, more spreading and clasping leaves and paler not twisted peristome.

Tortula (Barbula) campylocarpa Taylor. Unduavi, 8000 ft. October, 1885 (3127).

Compared with *Spruce Musci* Am. et And. nos. 185 and 201, agrees with specimens at Kew and has been verified by Bescherelle. Also compared with *T. rectifolia* Taylor, nos. 193-196, *Spruce*, from which it differs in its larger size and longer, more acuminate leaves.

BARBULA AUSTRO-REVOLUTA Besch. mss. Near La Paz, 10000 ft. April, 1885 (3129).

Plants in dense light yellowish-green or slightly glaucous, and dirty tufts; stems 1-2 cm. high with numerous, slender, subapical branches; leaves erect-spreading when moist, spirally twisted around the stem when dry, small, 1 mm. or less long, with strongly revolute margins and a broad, thick, yellow vein, ending in and forming the blunt apex; lower cells oblong, clear; upper smaller, denser and papillose; dioecious (?), perichetial leaves with a longer, more hyaline, clasping base. Pedicels light yellow, 5-7 mm. long; capsule 2 mm.; lid conic-beaked, cells spirally formed; peristome immature.

Closely related to no. 1622 of Mandon's Bolivian Mosses, collected in April, 1856, near Sorata, and labelled *B. glaucescens* in Herb. Schimper, but differing in the shorter, more blunt leaves, the more revolute margins, and in the yellow pedicel. Bescherelle says of it, "*B. revoluta* affinis sed foliis magis obtusa acuminatis glaucescentibus cucullatis; pedicello flavo, peristomio longe distat."

TORTULA (*Syntrichia*) sp.? Near Yungas, 4000 ft., 1885 (3124). Unduavi, 8000 feet. October, 1885 (3125 and 3127 pp).

Plants in dirty, yellowish-brown tufts; stems 1-1.5 cm. high, branching; much abraded and discolored below; leaves erect-appressed when dry, tufted on the stems, upper, green with white hair-points, the vein papillose on back, and excurrent into a rough awn, apex rounded, margins involute; upper cells densely papillose, lower, clear and hyaline. Dioecious? Seta 10-12 mm. long, red below, twisted; capsule narrowly cylindrical, 1 mm. long, straight or slightly arcuate when old, with a long-exserted columella; mouth small, annulus narrow, falling in fragments when old; peristome short or broken, twisted from a short basal membrane; teeth pale, papillose.

These plants were compared with several of Mandon's *Plantae Andes Bolivienis*, but their alliance was not determined by me while at Kew, nor by M. Bescherelle, to whom they were subsequently submitted.

Tortula (Syntrichia) Andicola Mont. Unduavi, 8000 ft. October, 1885 (3120). Sterile plants only collected.

Large sterile specimens answering the description given in the Ann. Sci. Nat. (Series 2, 953) and compared at the Jardin des Plantes with the type collected by D'Orbigny near La Paz, in the Bolivian Andes.

Tortula (Syntrichia) aculeata Wils.? Mapiri, 5000 ft. April, 1886 (3123); Sorata, 10000 ft.

Compared at Kew with Spruce, no. 144 and Jameson's specimens from Pichincha, both cited by Mitten under the description of this species. Ours agree with Jameson's better than Spruce's no. 144, and it would seem as if the two were distinct or the species very variable. Bescherele also seems to think there is room for separation here, as he says: "*T. aculeata* Wils. affinis sed primo viso differt. Foliis integerrimis, magis papillois, duplo longioribus, pilo valde longiore diversa, ut videtur—forsan species nova?"

TORTULA (SYNTRICHIA) BIPEDICELLATA n. sp. Bescherele, M. S. Mapiri, 5000 ft. May, 1886 (3123a).

Plants in small yellowish-brown tufts; stems 1-2 cm. high; leaves not crowded, curled and twisted when dry, 3-4 mm. long, without a hyaline point, the vein stout and brown, but ending in a short mucronate point at the apex of the leaves; margins plane or rarely slightly revolute below; upper cells densely papillose, lower large, clear and oblong. Dioecious perichetial leaves not differentiated. Pedicels mostly two together, about 1 cm. long, straw-colored; capsules 3-5 mm. with a long beaked lid, straight or slightly curved; mouth small, red; peristome not developed.

Closely related to *T. glacialis* Kze. Compared at Kew with Weddell's no. 20, collected in Bolivia, province of Larecaja, June, 1847, with which it agrees in the leaf characters but differs in having the pedicels more uniformly in pairs. There is a mixture also in this species at Kew, for the specimens collected by Liebmann on Mt. Orizaba and Poeppig in Chili are very different in aspect. Bescherele says of them: "Affinis *T. glacialis* Kze., foliis tamen duplo-longioribus, ad summum planis haud undulatis; capsula geminore, peristomio non afformato."

Tortula fragilis Taylor? Sorata, 10000 ft. (3121).

Compared with specimens at Kew collected by Lindig, New

Granada, 2075, and Jameson's, from the Andes of Quito, 1847. Our plants are larger than Lindig's, the capsules longer and the pedicels single. The leaf is broadly undulate, ending in a short cusp, the marginal cells short, quadrate and papillose, the basal cells oblong and hyaline. The basal membrane of the peristome is very short, the teeth twisted once, white and granulose. Bescherelle says of this: "Folia ad basin margine recurvis, cellulis inferioribus similibus differe mihi videtur. *T. fragilis* (N. Grenada, Lindig, 2075) folia basi plana, ab cellulis marginales inferiore minores ut marginata habet: an *T. fragilis* forma peculiaris?"

Tortula Pichinchensis Taylor (*Barbula affinis* Hpe.). Ingenio del Oro, 10000 ft. (3122).

Compared at Kew with Spruce's nos. 185, 194, 197, 200-202 *Andium Quitensium*. Also verified by M. Bescherelle.

Orthotrichum pariatum Mitt. Sorata, 10000 ft., Feb., 1886 (3130).

Compared with no. 130 Spruce, And. Quit., with which it agrees.

MACROMITRIUM RUSBYANUM E. G. Britton, n. sp. Unduavi 12000 ft. October, 1885 (3188).

Plants large and showy in yellowish-brown tufts; stems 9-10 cm. long, repeatedly branching; leaves brown, broken and abraded on the lower parts of the stems, light yellow, longer and spirally twisted at the tips of the branches, 5-9 mm. long, lanceolate-linear, from a broader yellow or brown base, margins finely serrate above, vein ending in the channelled apex; lower cells elongated, porose; upper, shorter with thick protruding walls. Dioecious? Seta twisted or arcuate, 5 mm. long, stout; capsule almost globose, 2 mm. long, walls smooth and thick, brown and shining; lid conic-beaked; peristome double, outer, a thick fleshy membrane; inner, short, fragile, with bright yellow smooth teeth; calyptra, not seen; spores large, .0810-.0864 mm.

This is one of the handsomest species collected by Dr. Rusby and was dedicated to him by Dr. Müller, but referred to a new genus allied to *Leptodontium*; but after careful comparison at Kew with specimens of *Macromitrium trichophyllum* Mitt., and *M. scoparium* Mitt., I have concluded that its alliance is with these species. The absence of the calyptra is unfortunate, but in all other respects the likeness is very close, and the alliance is concurred in by William Mitten, to whom specimens were sent.

SCHLOTTHEIMIA RUSBYANA C. Müller, n. sp. Near Yungas, 4600 ft. 1883 (3191).

Plants densely matted together in dark red-brown cushions among the roots of orchids. Stems trailing, branches erect, about 1 cm. long; leaves densely crowded at the apex of the branches, erect-appressed and plicate when dry, 1-1.5 mm. long, oblong, obtuse, the vein ending in a short cuspidate apex; upper cells in regular transverse rows, the blade slightly undulate; lower elongated with thickened papillose ends. Plants sterile; alliance not determined.

Zygodon recurvifolius Sch. Sorata, Bolivia, 8000 ft. Feb., 1886 (3194.)

Compared with type in Herb. Schimper at Kew, no. 1629, G. Mandon Plantae Andium Boliviensium Exsicc. from Vicinius Sorata; also compared with no. 1627 *Z. ferrugineus* Sch., of the same Exsiccatae, Dr. Müller having determined Dr. Rusby's specimen as the last named species. It is unmistakably the former having much larger leaves which quickly become recurved when moistened. The plants also are not at all rusty. M. Bescherelle has subsequently supplied me with duplicates of Mandon's nos. 1629 and 2627 and I have recently been able to verify my previous determination.

ENTOSTHODON PAPILLOSUM E. G. Britton, n. sp. Sorata 10000 ft. Feb. 1886 (3131).

Plants scattered on hard, bare patches of earth; plants including the sporophyte 5-8 mm. high; leaves few, rosulate, long subulate, acuminate, the vein excurrent into or ending below the long slender tip, margins entire; cells very lax. Dioecious. Seta 5-8 mm. long, stout, densely papillose, erect or slightly arcuate when dry, sinuous when moist; capsule globose-pyriform, about 2 mm. long, including the stomatose neck; lid flat; peristome none; calyptra not lobed at base.

Allied to *E. Lindigii* Hpe. according to the description and key given by Mitten (Musci, Austro-Americani, p. 243), but differing in the densely papillose pedicel. This and the following species were found growing together in the same patches.

Entosthodon Lindigii Hpe.? (ex. descriptio.) Sorata 10000 ft. Feb. 1886 (3131).

Compared with specimens of *E. Mandoni* Sch. mss., no. 1645, Mandon, Bolivia, the leaves of which are less acuminate and have not a subulate tip; in both, the leaves are not bordered and

the mouth is small and surrounded by 3-4 rows of darker, denser cells. In *E. apiculatus* Sch., no. 1646 of Mandon, the lid of the capsule is beaked, not flattened as in our specimens, and the leaves are not subulate pointed.

Funaria hygrometrica (L.) Sibth. Near Yungas, 4000 ft., 1885 (3132a).

Growing mixed with *Bryum argenteum* var. *lanatum*.

Funaria calvescens Schwaegr. Near Yungas, 4000-6000 ft., 1885 (3133a); Unduavi, 8000 ft., Oct., 1885 (3133b).

FUNARIA INCURVIFOLIA C. Müller, n. sp. Near La Paz, 10000 ft., Oct., 1885 (3132).

Plants 1-2 cm., pale straw-yellow; stems often several together, 2-5 mm. high; leaves rosulate, 2-2.5 mm. long, incurved, carinate-cucullate; vein yellow, ending in the acuminate, incurved apex; margins with a narrow border of 1 row of elongated cells, entire or faintly subserulate; cells of the basal angles large, swollen. Dioecious; seta 5-10 mm. long, pale yellow and twisted; capsule small, 1.5-2 mm., oblique-pyriform; annulus large, compound, falling with the blunt lid; teeth with projecting cross-bars; inner peristome present, of short slender segments.

Belonging to the section of *F. hygrometrica* with which it was compared; differs in being smaller with incurved, more hyaline leaves, the cells with thinner walls.

Both *F. hygrometricoides* Sch. (Mandon, no. 1648) and *F. Mandoni* Sch. (Mandon, no. 1647) have shorter, blunt leaves, with cells more lax and thicker walled, and the vein ending below the apex with the marginal cells more swollen.

PHILONOTIS ASPERRIMA C.M., n. sp. Sorata, 10000 ft. (3140).

Plants small; stems matted with brown tomentum, branches short, less than 5 mm. long, numerous; leaves of two kinds, those of the main stems with a long subulate tip, a dark excurrent vein and serrate, revolute margins, with clear, rectangular cells; branch leaves smaller, the upper part of the leaf very spinose, the vein ending in the shorter, acuminate apex, margins plane or slightly recurved, sharply serrate; lower cells quadrate, smoother and clearer than in the upper ones. Dioecious. Perichetial leaves, broad, hyaline, and clasping at base, with a long subulate apex. Pedicels short, 1 cm.; capsules globose, 1.5-2 mm., oblique, strongly ribbed; lid mamillate, appressed; peristome double, endostome shorter than the teeth, mouth bordered by 4-6 rows of darker denser cells.

Growing mixed with *Bryum argenteum* var. *lanatum* and a

sterile species of *Dicranum* in dense tufts, copiously fruiting. Compared with nos. 11, 13, 14, 17, 18, 20 and 21 of the species listed by Mitten in his *Musci Austro-Americani*. Most closely related to *P. gracilentia* Hpe., but differing in its smaller size and shorter pedicel.

PHILONOTIS PAGIONIFOLIA C. M., n. sp. Yungas, 4000–6000 ft. 1885 (3139).

Plants forming dense, matted tufts, with little fruit; stems short, branches fasciculate, about 5 mm. long, slender and curved at apex; leaves erect-spreading or secund, narrowly lanceolate, acuminate from a clasping, slightly decurrent base; margins thickened or revolute with several rows of teeth from base to apex; vein thick, excurrent into a toothed subulate apex; cells clear and square at base, all papillose on the upper surface. Dioecious; perigonium broad and clear at base, long-cuspidate at apex; perichetium concave, hyaline at base, ecostate, also with a long serrate tip; both sets of bracts much longer than the stem leaves. Pedicels 20–25 mm. long, bright glossy, orange-colored; capsules 3 mm. long, oblique, strongly ribbed when dry; lid mamillate; peristome double.

Resembling *P. gracilentia* Hpe. (Lindig, New Granada) but the leaves are more blunt. Compared with Mandon's no. 1676 from Sorata, Bolivia, named by Schimper *Philonotis Boliviana*, it differs in its slender and delicate branches, which are less fasciculate. Specimens at Kew are much confused in this troublesome group of species, but ours do not seem to agree with any of theirs. The nearest are those collected by Matthews at Casapi, Peru, in Herb. Hooker, named by Wilson and labelled "No. 2313, *Bartramia uncinata*" (*B. scabrida* Schwaegr. Supp. pl. 57), but they differ in the leaves being non-cuspidate and in the large ecostate perichetium.

BARTRAMIA (PLICATELLA) SCORPIOIDES C. Müller. n. sp. Near Yungas, 4000 ft., 1885 (3138).

Plants large, 5–6 cm. high, decumbent and matted with brown tomentum at base, yellowish-green, glossy; stems arcuate, branching by innovations 1–2 cm. long, or fasciculate; leaves secund, uncinuate, acuminate, plicate; vein narrow, ending in the carinate serrulate apex, forming a sharp point; cells all papillose, the end walls thickened; dioecious; the antheridia surrounded by broad orange-colored bracts, with serrate papillose tips; perichetial leaves broad, clasping and hyaline, smooth and entire, vein narrow, excurrent into a slender point; pedicels 10–15 mm. long, red, curved at tip; capsules all eaten off or decayed.

Resembling *B. andina* Mitt. in its secund leaves, but when compared with Spruce no. 429 from Pichincha they are quite distinct, our species belonging to the section with *B. arcuata* and *B. scoparia*, but agreeing with neither. The absence of fruit prevents the determination of its closest alliance.

Bartramia tomentosa (Sw.) Mitt. Near Yungas, 4000 ft., 1885 (3136b.) Unduavi, 10000 ft. Oct. 1885 (3136a). Sorata 13000 ft. February, 1886 (3136).

Bartramia (Breutelina) Brittoniae R. & C. Bull. Soc. Bot. Belg. 31: 161. 1892. Sorata 13000 ft. February, 1886 (3137).

Large plants of a glossy golden green color; stems 6-7 cm. high densely matted with brown tomentum below; capsules few and immature.

Mixed with and resembling *B. tomentosa*, but differing in its squarrose, not secund leaves, which are longer and more sharply acuminate, and serrate.

Bartramia (Cryptopodium) Jamesoni Tayl. Near Yungas, 4000 ft. 1885 (3134).

BARTRAMIA THRAUSTA Schpr. mss. in Mandon's *Plantae And. Boliv.*, no. 1673. Vicinius Sorata, 3200-4000 m. Mapiri, 5000 ft. May, 1886 (3135) H. H. R.

Plants decumbent and matted together with brown tomentum at base; stems 3-4 cm. high; leaves very brittle, with a conspicuous, white, clasping imbricate base, those of the young branches with a slender twisted apex 3-5 mm. long; older ones all broken off, the white base smooth, the upper part opaque and papillose on the short walls of the cells; margins bordered by 1 row of long yellow cells with small appressed teeth; vein narrow, toothed on back. Dioecious. Perichetial leaves with a short base and long serrate awn. Pedicel curved, 5 mm. long, red; capsule curved, 2 mm. long, with a small orange-colored lid; mouth small; walls ribbed; peristome short, double.

Allied to *B. potosica* Mont., but differing in the longer, less crowded, more spreading leaves with a more conspicuous white clasping base. Named by Dr. Müller for Dr. Rusby but Schimper's name has priority.

BARTRAMIA (VAGINELLA) AURICOLA C. M. n. sp. Ingenio del Oro, 10000 ft., February, 1886 (3135b). Sorata, 10000 ft., February, 1886 (3135a).

Plants light green or brown when old, with numerous, erect,

simple stems, 1–2 cm. long, matted together with brown tomentum at base; leaves 2–6 mm. long, crowded, their white bases imbricated, the green upper part of the blade spreading, much broken, except on the youngest branches; margins finely and sharply serrate, bordered by one or two rows of smooth, elongated, clear cells, those of the blade densely papillose and opaque, vein narrow, keeled and spinose on back. Dioecious, perichetial leaf with a short basal blade only covering the foot and a long rough awn; pedicels short, 3–5 mm. long, pseudo-lateral, straight or curved; capsules large, 3 mm., erect or oblique, strongly ribbed when dry and brown; lid mamillate, appressed; peristome double, teeth, orange-red, trabeculate on the inner face; spores large, .027–.032 mm., rough, brown.

Differing from *B. thrausta* in its smaller size, more strict, erect habit, stouter more rigid leaves. Agrees with Lechler's no. 2680, from Chili, labelled *B. potosica* at Kew, but differs from the type of that species at Paris in the much more conspicuous white base of the leaves.

BRYUM RUSBYANUM C. Müller. n. sp. Yungas. 6000 ft. 1885 (3148a).

Plants slender, stems erect with short, strict branches, bearing small, erect, lanceolate, serrate leaves, vein disappearing below the apex; stem leaves larger, acuminate with a prominent red vein, also disappearing below the apex. Dioecious; pedicel, 3 cm. long, tawny, capsule pendent, 3–4 mm. long, with a neck half its length; lid mamillate; annulus double, inflated, dehiscent in fragments; mouth with an orange-colored border; cell-walls of exothecium much thickened, peristome double, teeth white, granulose, erose and irregular, endostome also granular with a basal membrane, segments hardly distinguishable from the teeth, neither carinate nor parted, basal rudiments of cilia two; spores large, yellow.

Seemingly a *Dicranobryum* most nearly allied to *D. fusiferum*, Mitt. with the type of which it was compared at South Kensington. Nat. Hist. Museum.

Bryum (*Webera*) *albicans* (Wahlb). Near Valparaiso, Chili, June, 1885 (3145). Antheridial plants only. Sorata, Bolivia, 10000 ft. February, 1896 (3193). Sterile.

Compared with Austin's, No. 189, Musci Appalachiani, these specimens agree perfectly in all the leaf characters, but are a little taller, 3–4 cm. in height.

Bryum candicans Taylor. Sorata, 13000 ft. February, 1886, (3144).

Bryum argenteum L. Near Yungas, 4000 ft. 1885 (3142).
Mapiri, 5000 ft. May, 1886 (3142a).

B. argenteum var. *lanatum* Br. & Sch. Mapiri, 5000 ft. May, 1886 (3143).

BRYUM HUMILLIMUM C.M., n. sp. Ingenio del Oro, 10000 ft. March, 1886 (3147).

Plants small, bright glossy, yellowish-green; with julaceous branches less than 1 cm. high; stems red; leaves small, 1 mm. or less, imbricate, concave, those of the young branches obtuse and closely imbricated, the vein dividing and ending below the apex; lower cells lax and enlarged, upper rhomboidal spindle-shaped, forming small inconspicuous teeth. Dioecious. Pedicels short, 5-7 mm. long, darker below; capsules 2 mm. long, pendant; neck nearly half the length, contracted below the sporesac; lid mamillate, orange-colored, rim red; annulus large, falling with the lid; peristome double, outer of light yellow teeth, papillose outside, trabeculate inside; endostome a shorter membrane with carinate segments, open along the keel, with rudiments of two cilia between.

Closely allied to *Bryum julaceum* Sm., but differing from European specimens at Kew in the shorter more rigid branches, with more closely imbricated leaves and shorter pedicels. Specimens collected by Mandon near Guyaboya, 28th May, 1866, named *B. julaceum*, at Kew, differ in much longer, more slender branches and pedicels 10-12 mm. long.

Bryum soboliferum Taylor. Sorata, 10000 ft. February, 1886. Ingenio del Oro, 10000 ft. (3148).

Compared at Kew with specimens collected by Jameson from Quito, nos. 151-200, and Pichincha, no. 328. Sent to Dr. Müller and with this name, and he replied "forsan species nova."

BRYUM COLORATUM, C. Müller, n. sp. Near La Paz. October, 1885 (3141).

Plants cespitose, in loose light-green cushions; stems with several 4-5 short fasciculate innovations about 1 cm. high; leaves in rosettes at the ends of the branches, 2-6 mm. long, oblong-lanceolate carinate, serrate above the middle, margins bordered by 2-3 rows of elongated cells; vein round, ending in a short mucronate apex; cells all regularly rhomboidal. Dioecious. Perichetial shorter with a longer mucronate tip. Pedicels straight or bent, about 2 cm. high, glossy yellow; capsules nodding, 4-5 mm. long, bright yellowish-brown; neck short, plicate; lid conic-apiculate; annulus compound, falling with the lid; peristome

double perfect, teeth brown, inner membrane deep, carinate segments open along the keel with 3-4 slender, papillose, appendiculate cilia; spores brown .013-.016 mm.

Resembling *B. cernuum* Hedw. in the bright yellow color of its capsules, but a larger and coarser plant, seemingly one of the smaller *Rhodobryums*, with the leaves twisted when dry, allied to *B. andicola*.

Mielichhoferia campylocarpa H. & T. Near Yungas, 4000 ft. 1885 (3150).

Compared with no. 1694 of Mandon's Bolivian mosses, with which it agrees.

Mielichhoferia brevicaulis Hornsch. Near Yungas, 4000 ft. 1885 (3149).

Mielichhoferia n. sp.? Ingenio del Oro, 10000 ft. March, 1886 (3146).

These specimens were compared at Kew with all the species described by Mitten (Jour. Linn. Soc. 12, 320) having leaves at all similar and found to be most nearly related to *M. dipodontia*, but as the fruit is too immature to determine any peristome characters, it cannot be safely referred to any of them. A portion sent to C. Müller was named by him *Mielichhoferia modesta* n. sp.

Rhizogonium spiniforme (L.) Bruch. Yungas, 6000 ft.; Mapiri, 5000 ft. (3151).

POLYTRICHADELPHUS GROSSIDENS C. Müller, n. sp. Yungas 4000-6000 ft. 1885 (3159).

Plants dark red, glossy; stems erect, unbranched 5-6 cm. high, leaves erect, 5 mm. long, closely imbricate with a brown clasping base; margin coarsely serrate; vein pellucid, excurrent into a smooth blunt cusp; perichaetium longer tipped, enclosing long dark protruding paraphyses; Dioecious, the male plants proliferous at apex. Pedicels stout, erect, 2-3 cm. long, bright fulvous, capsules horizontal 4-5 mm. long; lid conic, beak hooked, 2 mm. long.

Compared with *P. rubiginosus* Mitt. no. 211, J. Weir, Andes Bogotenses, pedicels shorter, leaves more sharply dentate; with *P. aristatus* Hpe., no. 2002, Lindig, New Granada, Bogota (1859), and another not numbered, collected in 1863, in the fewer but larger multicellular teeth and short cuspidate apex as well as in the longer pedicels and larger capsules of Dr. Rusby's plants.

Polytrichadelphus umbrosus Mitt. Unduavi, 10000 ft. October, 1885 (3160).

POLYTRICHADELPHUS INTEGRIFOLIUS C.M., n. sp. Unduavi, 10000 ft. October, 1885 (3159a).

Stems 5–8 cm. high, leafless below and tomentose, proliferous at apex; leaves erect, slightly spreading, vein broad, excurrent into a smooth, dark awn; margins entire, incurved; lamellae seven, rows of cells high, uppermost cells rounded in section. Dioecious. Perigonial bracts scarious, with short triangular points.

Male plants only collected, and from the robust stems and broad, scarious, perigonial bracts it strongly resembles *Polytrichum*. Compared with various species of *Polytrichadelphus* at Kew, none of which it resembles.

Pogonatum oligodus Kze. Near Yungas, 4000 ft. 1883 (3157).

Pogonatum tortile Sw. Near Yungas, 4000 ft. 1885 (3158).

Agrees with specimens so named collected by Matthews in Peru.

Polytrichium juniperinum Hedw. Sorata, 13000 ft. February, 1886 (3156).

Polytrichum cuspidigerum Sch. Teste C. Müller. Unduavi, 18000 ft. October, 1885 (3156c).

Plants 5–8 cm. high; stems naked below, densely leafy above; leaves erect-appressed, almost imbricate when dry, 5 mm. long, margins serrate with a few large, coarse, teeth; lamellae filling almost all of the blade, margins only slightly incurved. Perichetial leaves longer, erect, innermost with a scarious base and long, slender tips; pedicel 15–25 mm. long; capsules 3 mm. long with a small hypophysis; teeth lax, short, pale and regular.

No specimens bearing this name can be found in Schimper's Herbarium at Kew.

Polytrichum aristiflorum Mitt. Unduavi, 8000 ft. October 1885 (3155a).

This species has also been collected at Yungas by Pearce. There are a great many diverse localities cited for this species by Mitten, and there is as much diversity in the specimens at Kew. We referred all of Dr. Rusby's specimens from Yungas, nos. 3155b and c and no. 3155a from Sorata and 3155c from Mapiri to this species, but Dr. Müller gave it a manuscript name, which is antedated by *P. patulum* Harvey (Müll. Syn. Musc. 1: 210) from Nepal. It seems probable that there is room for the separation of several species, but as ours agree with Jameson's from the Andes

of Quito and Weddell's from Peru, we have thought it best to enumerate them under this species.

POLYTRICHUM ANGUSTICAULE C.M., n. sp. Near Yungas, 4000 ft., 1885 (3155).

Plants large, 8–10 cm. high; stems simple, 2–4 cm. high; leaves 6–8 mm. long, the clasping base oblong, brown or slightly scarios on the margins, tapering into a slightly longer apex, with incurved entire margins; vein rough on back, with two or three rows of sharp teeth, excurrent into a smooth or only slightly roughened awn; lamellae covering almost all of the blade, of 6–7 rows of cells, the last row elongated, conical and smooth. Dioecious; male plants proliferous; perichetial leaves with a long smooth point; seta 6–8 cm. long, stout, glossy, curved at apex; capsules large, 5 mm. long, cubic, with a short wrinkled apophysis; lid dark red, beak long; teeth white, 64.

Closely allied to *P. aristiflorum* Mitt., and compared with specimens sent us by Wm. Mitten, collected in Venezuela by Funk and Schlim, no. 472. Differs in the longer, scarcely roughened awn of the leaves, which are more closely appressed when dry, and in the larger capsules.

PLEUROCARPI.

All the specimens of the pleurocarpous mosses as well as the acrocarpous ones were carefully studied and separated before duplicates were sent to Dr. Müller, yet in two cases in the genus *Hookeria*, there was evidently a mixture of species growing together, which in one instance seems to have misled Dr. Müller.

HOOKERIA BAKERI E. G. Britton, n. sp. Near Yungas, 4000 ft. 1885 (3163).

Plants yellowish-green, large and coarse; stems 2–3 cm. long; branches 1 cm., leaves curled and crisped when dry, more or less undulate with long subulate tips 2 mm. long, veins prominent when dry, ending just inside the margin, which is entire below, serrulate along the tapering apex and bordered by 3 rows of narrow, elongated cells; those of the blade very large and clear, not papillose. Pedicel 20–25 mm. long, bright, glossy brown; capsules ovoid, 2 mm., brown, walls thick; lid conic-rostrate; teeth long, slender, brown and incurved in pairs, and papillose; endostome yellow, erect, carinate segments closed.

Compared with *H. marginata* to which it is related, but differs in the lighter green leaves, broader and less acuminate, the cells more lax and hyaline.

Dedicated to Mr. J. G. Baker, of the Royal Herbarium at Kew, in grateful acknowledgement of the many kind favors received from him while at work, under his charge, on Dr. Rusby's Ferns and Mosses, and also as a small recognition of the task he accomplished in mounting and putting in order the Herbarium of W. P. Schimper, presented to Kew by the Baroness Burdett-Coutts.

This species was first named *H. castanea*, from the description only, and when submitted to Dr. Müller he discovered three new species in it; but as we can find but one specimen in our packet, and have no means of determining which of his names apply to our species, we have discarded all his manuscript names.

HOOKERIA PURPUREOPHYLLA C.M., n. sp. Near Yungas, 6000 ft. 1885 (3164).

Plants small, light reddish brown, .7–1.5 cm. high; stems branched, distichous, or flattened; leaves small, 1 mm. long, closely imbricate, appressed with flexuous, filiform spreading points; veins ending below the rounded part of apex, toothed at the back of the leaf above; margins serrate to below the middle, more coarsely so above; cells papillose, upper wine-color, lower colorless and longer; pedicel purple, 15 mm. long, arched at apex; capsule 2 mm. long; neck tapering; lid conic-rostrate. Peristome not yet matured, torn off with lid.

Compared with *H. (Callicostella) rufescens* Mitt. (Spruce, no. 629) from which it differs in the longer acuminate leaves; they also are more slender and not so crisped as those of *H. purpurea* and are too acute for *H. incurva*. Our plants are mixed with a small, golden yellow *Hypnum* in fruit, and a brown Hepatic, but we cannot find the two species of *Hookeria*, indicated by Dr. Müller in his letter by two other manuscript names.

Hookeria crispa C.M. Near Yungas, 4000–6000 ft. 1885 (nos. 3161 and 3161a).

Hookeria falcata Hook. Near Yungas, 4000–6000 ft. 1885 (3162).

BRAUNIA CANESCENS Sch. in G. Mandon, *Plantae Andium Bolivien-sium*, Exsicc., no. 1641. Vicinius Sorata, 1858, Mandon. Sorata, 10000 ft., February, 1886, H. H. R. (no. 3153).

Plants crowded in brown masses, stems copiously branching, less than 2 cm. high, discolored beneath, green at tips of branches; leaves closely imbricated, lower ones with short white tips, those at the ends of the branches frequently prolonged into flex-

uous white hairs, ovate and quite concave in the middle with a plane border of small square cells in straight rows, and the margins double or recurved, bluntly papillose, frequently brown in the upper half with elongated cells in the centre of the base, and others sinuous; apex serrulate or erose when long and hyaline; perichetium short, 3 mm., enclosing very long paraphyses, bracts strongly plicate, cells long and clear, apex not hyaline; pedicels 1 cm. long, capsules about 3 mm. with small orange-colored mouth and apiculate lid.

Mandon's specimens at Kew in Herb. Schimper are somewhat larger and lighter colored than Dr. Rusby's, but agree in all essential characters, especially no. 1641 of the Exsiccatae in Herb. Hooker. Sent to Dr. Müller as *H. cirrhifolia* (Wils.) Mitt. (J. L. Soc. xii., 406, ex descriptio) and named by him *Braunia argyrocarpa* n. sp., also to Bescherelle, who says, "ut videtur foliis tamen apice diaphanis quod nos indicat Mitten."

BRAUNIA SUBPLICATA E. G. Britton, n. sp. Ingenio del Oro, 10000 ft., May, 1886 (3154); Mapiri, 5000 ft. (3154a).

Plants dark brownish green, in large dense mats, stems decumbent, pinnately branched, often giving off radiculose stolons, branches erect, 4-5 cm. long; leaves subsecund when moist, imbricate and erect when dry, with three blunt ridges, not hyaline pointed, ovate-concave, over 1 mm. long, less than 1 mm. broad, with entire revolute margins and a conspicuously rolled border to the concave center, apex acute and concave, erose dentate, but not hyaline, conspicuously papillose at the tips of the branches, basal cells elongated brown, others regular and sinuous; perichetium narrowly lanceolate, erect, sulcate, 3 mm. long, with oblong yellow cells at base and middle and blunt erose tips; pedicels 1 cm. long, erect or cernuous twisted, fulvous as well as the base of the capsule, which is 2 mm. long with a straight beak over 1 mm. long, mouth with a thick red rim, calyptra brown, 3 mm. long, tufted and ragged at base with a straight beak 1 mm. long.

Differs from *H. plicata* Mitt. (Bridges, Bolivia in Herb. Hooker) in the dull brown color of the plants and in the leaves not being hyaline tipped; from *H. secunda* (Hook. Musci Exot. t. 46, Humboldt's type in Herb. Hooker) in the larger, less secund leaves with more strongly revolute margins; resembling only an unnamed scrap in Herb. Hooker, collected by Mathews in Peru at Casapi, and a part of *Braunia subsecunda* Sch. M. S., no. 5, in Herb. Schimper without locality or name of collector. (See Jaeger, p. 86) pencilled Mexico? by J. G. Baker. Sent to E. Bescherelle as *B. plicata* Mitt. he says = "? var. *foliis majoribus!*"

Hedwigidium imberbe Sm. Unduavi, 1000 ft. (3152) Sterile. Mapiri, 5000 ft. with 3154a fertile.

Compared with *G. Mandon Plantae Andeum Bolivienisium Exsicc.*, no., 1638 vicinius Sorata, labelled *Harrisonia rhabdocarpa* Hpe. with which it agrees. As also with Lindig's New Granada, no. 2000. Both of these are considered to be *H. imberbe* Sm. (Mitt. J. L. Soc. 12: 405). The plants mixed with 3154a are coarser and brighter green, agreeing better with Spruce Musci Am. et. And., nos. 1293-1295, of *H. imberbe*. There is considerable variation in the size and color of this species; also in the degree of ramification of the stems and the appression of the leaves, but otherwise the leaves are indistinguishable when placed side by side under the same cover-glass under the microscope. Weddell's no. 9 Peru, are small, little over 1 cm. high and almost simple like 3152 H. H. R., while Spruce no. 1295 and Rusby's 3154a are nearly 6 cm. high and quite pinnately branched.

CRYPTHAEA (EUCRYPTHAEA) BOLIVIANA Sch. mss. Mandon (no, 1688), vicinius Sorata, 3200 metr., 1857. H. H. Rusby. Sorata, 10000 ft. 1886 (3165).

Plants large, slender; stems bipinnate, 10-15 cm. long, branches pendant, 5-6 cm. long, branchlets few and distant, 1-1.5 cm. long; leaves spreading when dry, those of the branches 2 mm. long, those of the branchlets only about 1 mm. long, both lanceolate-acuminate, vein ending below the long subulate, serrate apex, margins entire below, slightly recurved in the middle; basal angles auricled, decurrent. Capsules two or three together at intervals along the branches, perichetial leaves with a broad, clasping base covering the capsule, vein scarcely extending below the long nearly smooth awn, exceeding the base in length. Capsules 2 mm. long; peristome double, the outer of long, spreading, broad teeth, the inner of shorter, narrower segments, composed of a double row of papillose cells, attached to a basal membrane.

Allied to *C. pilifera* Mitt., and possibly referable to that species, but recognized also by Müller as a new species, Schimper's name having priority.

Cryphaca ramosa Wilson. Unduavi, 12000 ft., October, 1885 (3166).

Prionodon luteo-virens (Taylor) Mitt. Unduavi, 10000 ft., October, 1885 (3167). Also collected at Yungas and Unduavi by Pearce.

Phyllogonium viscosum Beauv. Near Yungas, 6000 ft., 1885 (3168). Also collected by M. Bang near Yungas, 1890 (565).

METEORIUM (PAPILLARIA) CLADONIELLA C. M. n. sp. Near Yungas, 4000 ft., 1885 (3189).

Plants light yellowish-green, glossy; stems creeping horizontally, 10–12 cm. long; branches simple, 1–3 cm. long; leaves crowded, concave, plicate, appressed, with short spreading points; vein broad at base, or rarely lacking; apex suddenly subulate; margins minutely serrate; cells all papillose.

Plants sterile. Alliance not determined.

METEORIUM LONCHOTRICHUM C. M. n. sp. Near Yungas, 4000 ft. 1885 (3172).

Plants bright yellowish-green, glossy; stems long, creeping; branches irregularly pinnate, 2–3 cm. long; leaves 1–1.5 mm. long, undulate, crisped when dry, lanceolate-acuminate, serrate, vein ending below the apex, cells of the basal angles enlarged.

Plants sterile. Allied to *M. patulum* Sw.

Meteorium filiferum (C.M.) Mitt. Near Yungas, 4000 ft. 1885 (3173).

Plants dark green or black with lighter yellowish branches. Youngest shoots very slender, filiform, and totally different in aspect from the older stems; stem leaves, entire, concave, the vein ending below the short recurved cuspidate point; basal angles conspicuously inflated at the inner angle, with a small round group of yellow cells; leaves of the young branchlets much smaller, distant, narrowly lanceolate-acuminate, vein ending below the long filiform point; basal angles decurrent with the same conspicuous round auricle, at the inner point of insertion.

Named from description, and compared with No. 131 collected by Weir, Andes Bogotensis from which it differs in aspect, and the presence of the long filiform branches described in the original.

METEORIUM (PILOTRICHELLA) PERINFLATA C.M. n. sp. Near Yungas, 6000 ft. 1885 (3171).

Plants light yellowish-green, glossy; primary stems 10–15 cm. long, creeping; branches simple, 1–2 cm. long, or with a few short branchlets; leaves concave, the margins so completely incurved as to almost meet, quite entire; vein narrow, ending below the short, sharp-pointed apex; cells of the outer basal angles square, enlarged, slightly auricled and decurrent. Fruiting branches 5 mm. long, perichetial leaves far exceeding the capsules, imbric-

cate, each with a long, squarrose, acuminate apex, with a short vein or veinless. Capsule brown, thick-walled, ovoid, about 2 mm. long, on a short seta; peristome double, teeth long, slender, yellow, endostome as long, carinate segments rarely open along the keel; spores green, .021-.024 mm.

Allied to *M. crinitum* Sull., but differing in the entire leaves and the long peristome, the inner not adhering to the outer. Specimens not compared.

METEORIUM (PILOTRICHELLA) REFLECTO-MUCRONATA C. M. n. sp.
Sorata, 10000 ft., February, 1886 (3170).

Plants light green, glossy; stems creeping and rooting; branches about 1 cm.; leaves imbricate, concave, with reflexed points; vein very short and indistinct; margins incurved, entire, forming a cucullate cuspidate apex; cells of basal angles enlarged, but indistinct, slightly decumbent.

Plants sterile. Alliance not determined.

Neckera Jamesoni Taylor. Sorata, 8000 ft., February, 1886 (3169); Unduavi, 8000 ft., October, 1885 (3169a).

Beautiful plants with pendant branches, often 18-20 cm. long.

Thamniium longirostre (Hook)? Near Yungas, 4000 ft., 1885 (3174a); Sorata, 10000 ft., February, 1886.

POROTRICHUM (THAMNIUM) BOLIVIANUM C. M. n. sp. Near Yungas, 4000 ft., 1885 (3174).

Plants light yellowish-green, with a creeping rhizome; stems 4-5 cm. long, naked below, about 2 cm., bipinnate; branches flattened, frond-like, red; leaves compressed, elliptical-oblong, unequal at base, about 1 mm. long; vein dividing and disappearing below the broad sharply serrate apex; margins entire below; cells of the basal angles only slightly differentiated; monoecious; antheridial buds on different branches from the archegonia; perichetial leaves longer, outer squarrose, subulate, often veinless, inner erect-clasping, with a narrow vein; seta red, flexuous, 10-15 mm. long; capsule 2 mm., ovoid-cylindric, neck short; lid 2 mm. long, with a long beak; annulus large, simple; peristome double, teeth long, slender, endostome of slender papillose carinate segments, open along the keel; cilia none.

Allied to *Porotrichum longirostrum* (Hook.) Mitt. and possibly referable to this variable species, according to Mitten. Compared at Kew with specimens collected by Spruce (And. Quit. nos. 1361-1363) from which ours differ in being much coarser, with less slender, not flagellate branches and shorter stouter pedicels,

agreeing better with Weddell's no. 53 from the Andes of Peru, but our plants are smaller with shorter leaves, turning yellower with age, and more coarsely and doubly serrate at the apex.

Entodon Jamesoni (Tayl.) Mitt. Unduavi, 8000 ft. October, 1885 (3175).

FABRONIA SINGULIDENS C.M., n. sp. Ingenio del Oro., 10000 ft. March, 1886 (3176); Mapiri, 10000 ft. (3182 pp).

Plants in dense pale, yellowish-green mats; stems with numerous short branches 3–5 mm. long; leaves crowded, spreading minute, ovate-acuminate with a long subulate point, margins spinose-dentate or rarely entire at the apex of the branches, vein ending above the middle; basal cells square at the angles. Perichetial leaves broad and serrate at apex, with a suddenly subulate point; vein short. Pedicel erect, 5 mm. long; capsule small, little over 1 mm. long, ovoid; neck distinct, tapering into the pedicel; lid conic-rostrate, small, yellow; mouth small, bordered by 4–5 rows of transversely elongated, darker, denser cells; peristome short, teeth brown when old, pale when young, united in fours or divided when old, smooth, slender at apex.

Closely related to *F. polycarpa* Hook. from which it differs in its abruptly subulate perichetial leaves and its ovate capsule.

HYPNUM (CUPRESSINA) *ENTODONTICARPUM C.M., n. sp. Unduavi, 12000 ft. October, 1885 (3186).

Plants in dense, yellowish-green, glossy cushions; stems pinnately branched, arcuate, 1–2 cm. long, branches 5–8 mm. long; leaves crowded, uncinately hooked, entire, veinless; cells of basal angles inflated, yellow. Monoecious. Perichetial leaves longer, outer uncinately, inner erect, subulate, all veinless. Pedicels red below, twisted above, 15–20 mm. long; capsules erect, cylindrical or arched; neck tapering; walls thin; mouth bordered by denser, brown cells; peristome double; teeth brown, short and thick, bordered by the adherent segments of the inner peristome.

Compared with *Drepanium hamatum* Mitt., no. 1046, Spruce Musci Am. et And.), specimens of which are preserved at Kew but are not listed by Mitten. Closely related to this species, but differs in its more clearly veined leaves and longer pedicels.

Leskea aciculata Taylor. Near Yungas, 6000 ft. 1885 (3177).

Compared with Jameson's specimens from Quito with which it agrees.

LESKEA (SCHWETSCHKEA) BOLIVIANA C.M., n. sp. Mapiri, 10000 ft., 1886 (3102). Sorata, 10000 ft., February, 1886 (3185).

Plants in dense yellowish-green mats; stems 1–3 cm. long,

creeping, with short, irregular branches 5–8 mm. long; leaves imbricate with spreading points, ovate-acuminate, less than 1 mm. long; margins entire; vein ending below the apex; cells rhomboidal above, transversely elongated below, not papillose; monocious; perichetial leaves longer, erect, base long, clasping, vein ending below the acuminate apex; cells elongated; pedicels red, 10–15 mm. long; capsule cylindrical, 2 mm.; lid conic; annulus falling in fragments, narrow, single; mouth bordered by darker, denser cells, walls thin; peristome double, teeth long, slender, papillose at apex; endostome with a short basal membrane and slender, carinate, papillose segments, thickened at the joints, or appendiculate; cilia none.

Allied to *L. gracillima* Tayl., which has also been collected in Bolivia by Bridges, but differs in the vein ending below the apex and the leaves being quite smooth. Identical with no. 3185 cited above, which was also sent to Dr. Müller and named by him *Pseudoleskea amblystegiella* n. sp., but this name is too near *P. amblystegioides* C.M. from Costa Rica, Polanowsky.

PSEUDOLESKEA ANDINA Sch., mss. Prov. Larecaja, vicinius Sorata, 3200 metr. November, 1857 (1694), legit, G. Mandon "super arbores." Sorata, 13000 ft. February, 1886 (3181). H.H.R. and Unduavi, 12000 ft. October, 1885 (3180)

Plants in dense brown cushions; stems 7–9 cm. long, irregularly pinnate; branches .5–1.5 mm. long, slender; paraphyllia small, clustered, branching; leaves small, less than 1 mm., crowded, minute; base concave appressed, apex subulate, serrulate; vein thick, channelled, excurrent; cells rhomboidal, papillose, those of the basal angles erect, rectangular and denser on each side of the basal folds. Perichetial leaves longer and more acuminate, and not papillose, outer recurved, inner sheathing, all pale and plicate with the vein ending below the apex. Pedicels straw-colored, 2 cm. long; capsules arched, 3 mm. long, slightly contracted below the mouth when dry; lid mammillate; mouth bordered by a deep flaring rim; peristome inserted below the rim, double; teeth yellow, trabeculate; endostome yellow, segments as long as the teeth, carinate, rarely divided or open along the keel, attached to a short, basal membrane, appendaged at the joints; cilia none; spores rough, .016–.021 mm. green.

No. 3181 was named for Dr. Rusby, by C. Müller, but Schimper's name has priority.

Thuidium Peruvianum Mitt. Near Yungas, 6000 ft. (3178), Unduavi, 8000–10,000 ft. October, 1885 (3179).

Compared with Jameson's specimens from Pichincha and Pearce's from the Andes, duplicates of which have been sent to us from Kew. The specimens collected by Miguel Bang (No. 482) at Yungas, and listed by Dr. Rusby (Mem. Torr. Club, 2: No. 3, p. 274) as *Thuxidium delicatulum*, were so named by Mr. C. H. Wright at Kew. Duplicates of all our specimens, including these, were submitted to Dr. George N. Best for critical comparison. He says: "They apparently belong to one and the same species. The stem leaves differ from those of *T. delicatulum* in not being closely appressed when dry; they are more concave, broader at base and more abruptly acuminate, somewhat undulate and rugose above, and the leaf-cells are more rectangular and less rhomboidal. Notwithstanding these differences, which indicate a variety rather than a distinct species, the general type remains well marked. I should refer your specimens to *T. delicatulum*." But as these specimens are much larger and coarser than any of *T. delicatulum* which we have ever seen, and they seem worthy of a distinctive name, we have maintained them as above listed.

SPHAGNACEAE.

Sphagnum Peruvianum Mitt. Near Yungas, 6000 ft., 1885 (3100).

Sphagnum acutifolium Ehrh. Near Yungas, 6000 ft., 1885 (3102), near La Paz, 10,000 ft. October, 1885 (3103).

Sphagnum Meridense C.M. Unduavi, 10,000 ft. October, 1885 (3104).

Sphagnum recurvum Hoffm. Unduavi, 8000 ft. October, 1885 (3106).

Sphagnum recurvum var. *mucronatum* Russ. Near La Paz, 12,000 ft. (3105).

HEPATICAE.

The Hepaticae of the collection were enumerated by Dr. Richard Spruce in Memoirs of the Torrey Botanical Club, 1: 113-140. 1890.

An Enumeration of the Plants Collected by Dr. H. H. Rusby in South America. 1885-1886.—III.

PTERIDOPHYTA.

Determined by Elizabeth G. Britton.*

(I.)—EQUISETÆ.

Equisetum Bogotense, H.B.K., Sorata (2509).

(II.)—LYCOPODIACEÆ.

Lycopodium Saururus, Lam., Yungas (455).

L. linifolium, L., Yungas (449).

L. alopecuroides, L., Mapiri (457).

L. aqualupianum, Spring, Yungas (458).

L. cernuum, L., Yungas (447).

L. clavatum, L., Unduavi (448).

L. scariosum, Forst., var. *Fussiae* (Desv.), Baker, Yungas (451).

(III.)—SELAGINELLEÆ.

Selaginella macrophylla, Spring, Sorata (456).

S. longicuspis, Baker (?). Possibly *S. substipitata*, Spring, but leaves of the upper plane less than one-half as long as those of the lower. Mapiri (461a). Beyond the recorded range of either.

S. Breynii, Spring, Mapiri (461). Approaching in the auricled bases of the leaves, *S. campylois*, A. Br.

S. polycephala, Baker, Mapiri and Yungas (462). Young plants like Holton's No. 82, Flora Neo-Granadina Quindiensis.

S. Poeppigiana, Spring, Yungas (452); Unduavi (454).

*In the determination of these plants I have been favored with exceptional advantages, for, in addition to the resources of the Columbia College Herbarium and Library, I have had access to Professor's Eaton's, at New Haven, and those at Kew. To Professor Eaton and Mr. Baker, for their kindly assistance, I hereby tender my hearty thanks.



- S. mnioides*, A. Br., Mapiri (460).
S. Moritziana, Spring, var. *major*, Yungas (462a). One of the numerous varieties, agreeing with No. 1565 of Lindig from Bogota.
S. radiata, Baker, Yungas, La Paz and Sorata (453).
S. hæmatodes, Spring, Mapiri (450).

(IV.)—FILICES.

- Gleichenia pubescens*, H. B. K., Unduavi (438).
Cyathea Schanschin, Mart., near Yungas (121).
Hemitelia grandifolia, Spr., Mapiri (149).
Alsophila pubescens, Baker, Unduavi and Yungas (424).
A. infesta, Kunze, Yungas (122). "This species exudes much gelatinous matter, which is very styptic."—[H. H. R.]
A. pruinata, (Sw.), Kaulf., Yungas (123).
Woodsia Peruviana, Hook., Sorata (337); Ingenio del Oro (338).
 Regarded as a variety of *W. obtusa*, Torr., in the Synopsis Filicum.
Dicksonia cicutaria, Sw., Yungas (127).
Hymenophyllum polyanthos, Sw., Yungas (136), typical; Mapiri (186), is *H. protrusum*, Hook.; Mapiri (187), is *H. brevistipes*, Liebm., forma *minima*, Kunze—both forms of *H. polyanthos*.
H. ciliatum, Sw., Yungas (135); Mapiri, (183).
H. microcarpum, Desv., Yungas (137).
H. sericeum, Sw., Yungas (140).
Trichomanes sinuosum, Rich., Yungas (138); not typical, is *T. incisum*, Kaulf.
T. brachypus, Kunze, Mapiri (185). Not typical; fronds shorter and more deltoid.
T. radicans, Sw., Yungas (139); (*T. Kunzeanum*, Hook.)
T. crispum, L., Mapiri (184).
Davallia inæqualis, Kunze, Yungas (126).
D. Saccoloma, Spr., Mapiri (156).
Cystopteris fragilis (L.), Bernh., Sorata (319). Specimens eighteen inches high.
Lindsaya trapeziformis, Dry., Mapiri (161).
Adiantum tetraphyllum, Willd., Guanai (164).
A. Chilense, Kaulf., Unduavi (444). Named by Prof. Eaton.

- Regarded as a form of *A. Æthiopicum*, L., in the Synopsis Filicum.
- A. decorum*, Moore, Gard. Chron., 1869, 582. Near La Paz (166). "Common on walls along roadsides."—H. H. R.
- A. cuneatum*, Langsd. and Fisch., Yungas (165).
- Lonchitis pubescens*, Willd., Yungas (145).
- Hypolepis repens*, Presl., near Yungas (410).
- Cheilanthes Matthewsii*, Kunze, near La Paz (320).
- C. pilosa*, Goldm., Ingenio del Oro (330); Mapiri (331).
- C. myriophylla*, Desv., near La Paz (321); Sorata (322).
- Pellæa geraniæfolia*, Fée, Guanai (113).
- P. ternifolia*, Fée, near La Paz (323).
- P. marginata* (H.B.K.), Baker, Sorata, (328).
- Pteris deflexa*, Link, Yungas (116); Sorata (163.)
- P. pedata*, L., Yungas, (112).
- P. aculeata*, Sw., Mapiri (162.)
- P. podophylla*, Sw., Unduavi (115).
- Lomaria attenuata*, Willd., near Yungas (314).
- L. Plumieri*, Desv., Yungas (318).
- L. alpina*, Spr., near La Paz (317); Sorata, (316).
- L. procera*, Spr., near Valparaiso (310) (*L. Chilensis*, Kaulf); near Yungas (311, 312).
- L. Boryana*, Willd., Mapiri (313).
- Blechnum asplenoides*, Sw., Yungas (315). Sterile.
- B. unilaterale*, Willd., Yungas (302, 307).
- B. longifolium*, H.B.K., Guanai (304).
- B. occidentale*, L., La Paz (305); near Yungas (396, 309).
- B. hastatum*, Kaulf., near Valparaiso (303); named by Prof. Philippi.
- Asplenium fragile*, Presl., Sorata (404); Unduavi (405); Ingenio del Oro (406).
- A. Trichomanes*, L. Unduavi (407).
- A. monanthemum*, L. Sorata (400); typically fruited fronds mixed with forms of *A. Menziesii*, Hook.
- A. oligophyllum*, Kaulf., Yungas (383).
- A. lunulatum*, Sw., Yungas (398); Unduavi (399).
- var. *harpeodes*, Mett. Mapiri (402).
- var. *pteropus*, (Kaulf.), Baker, Sorata (401, 403).

- A. auriculatum*, Sw., Yungas (397).
- A. rhizophorum*, L., Yungas (396), fronds pinnate, Mapiri and Yungas (389), tripinnate (*A. flabellulatum*, Kunze).
- A. serra*, Langs. & Fisch., Yungas (384).
- A. auritum*, Sw., (*A. rigidum*, Sw.), Unduavi (390); Yungas (391).
- A. falcatum*, Lam., Yungas (388). Approaches a form at Kew, labelled by Mr. Baker "an *A. insiticum*, Brack." More lacinate than any other American specimens seen.
- A. fragrans*, Sw., (*A. fœniculaceum*, H.B.K.), Unduavi (392).
- A. repens*, Hook., Yungas (409).
- A. delicatulum*, Presl., near Yungas (393).
- A. Filix-fœmina* (L.), Bernh., Unduavi (395).
- A. grandifolium*, Sw., Mapiri (385). Approaching *A. crenulatum*, Baker.
- A. crenulatum*, Baker, Yungas (387).
- A. Klotschii*, Mett., Yungas (394).
- A. radicans*, Sw., Yungas (386).
- Didymochlæna lunulata*, Desv., Yungas (117).
- Aspidium macrophyllum*, Sw., Mapiri (413).
- A. aculeatum*, Sw. The type is not represented in the collection. The form described as *Polypodium platyphyllum*, Hook., in Synopsis Filicum agrees with specimens from Sorata (414); Ingenio del Oro (417); near Yungas (418, 446.) That known as *P. rigidum*, Hook. & Grev. with Sorata (416); Yungas (419), and Unduavi (420). *Phegopteris cochleata*, Mett., is represented from Sorata and Yungas (415).
- A. rivulorum*, Link, near Valparaiso, Chili (421); named by Prof. Phillippi.
- A. patens*, Sw., Yungas (423); approaching *Nephrodium macroum*, Baker, in the basal pinnules.
- A. conspersoides*, Fée, in Fourn. Fil. Mex., p. 95 (?); Mapiri (426). An unusual form marked by coriaceous texture and the lowest pair pinnules much prolonged and appressed to the rachis.
- A. conterminum*, Willd., Sorata (422); Guanai (430, 436); near Yungas (429, 432); specimens approaching *A. Noveboracense*, Sw., from Yungas (435); Unduavi (431); Mapiri (434),

(*Nephrodium conterminum*, Desv., var. *A. pilosulum*, Klotsch.)

Specimens resembling *A. Thelypteris*, Sw., from La Paz (433).

None of the specimens are indusiate.

A. falciculatum, Raddi, Mapiri (437).

A. VILLOSUM (Presl.). *Nephrodium villosum*, Presl., Yungas (425).

A. prætervisum, Kuhn, Linnæa, xxxvi., (411); Mapiri (437a).

Nephrolepis exaltata, Schott., Yungas (411).

Phegopteris decussata, (L.), Mett., near Yungas (427); Sorata (428).

Polypodium serrulatum, Mett., Unduavi (368); Yungas (369).

P. moniliforme, Lag., Mapiri and Unduavi (381).

P. cultratum, Willd., near La Paz (370); Yungas (371).

P. pendulum, Sw., var. *subsessile*, Baker, near La Paz and Yungas (379); Mapiri (380).

P. suspensum, L., Yungas (376). The form *P. mollisissimum*, Fée, near La Paz (373); Yungas (374); Mapiri (375).

P. macrocarpum, Presl., La Paz (365).

P. rigescens, Bory, Mapiri (382).

P. apiculatum, Kunze, Yungas (372).

P. Plumula, H.B.K., Mapiri (366); near Yungas (367).

P. pectinatum, L., Mapiri (356); Unduavi (358).

P. plebeium, Schlecht., Sorata (352); Yungas (353); Unduavi (355). Also a large form from Unduavi (364), agreeing with *P. pleopeltidis*, Fée, Fil. Bras., t. 26, f. 1; approaching some large specimens at Kew, collected by P. L. Sodiro, "Flora Andium Quitensium," Nos. 39, 40 and 48, considered by Mr. Baker to be forms of *P. plebeium*.

P. piloseloides, L., Unduavi (361).

var. *ciliatum*, (Willd.), Baker, Mapiri (361a).

P. glaucophyllum, Kunze, Yungas (362); Mapiri (363).

P. plesiosorum, Kunze, Unduavi (377).

P. loriceum, L., Yungas (357, 378); Ingenio del Oro (359); Unduavi (360).

P. Chacapoyense, Hook, Yungas (354).

P. fraxinifolium, Jacq., Yungas (346).

P. thysanolepis, A. Br., Sorata (344).

P. aureum, L., var. *areolatum*, Eaton, Yungas (343).

P. angustifolium, Sw., Yungas (350); Unduavi (351).

P. percussum, Cav., Yungas (347); Unduavi (348); Mapiri (348).

- P. crassifolium*, L., Sorata (345).
Jamesonia imbricata, Hook. & Grev., Sorata and Unduavi (141).
Notholæna ferruginea, Kaulf., Sorata (335); near La Paz (333);
 Guanai (336); Yungas (332).
N. hypoleuca, Kunze, Yungas (334).
N. tenera, Gill., Sorata (326); near La Paz (327).
N. nivea, Desv., near La Paz (324); near Yungas (325).
Gymnogramme grandis, Baker, Yungas (147).
G. angustifrons, Baker, Unduavi (329); a sterile, narrower and
 more elongated form from Yungas (408).
G. flexuosa, Desv., Yungas (128); young fronds sterile from La
 Paz (445); a variety from Ingenio del Oro (160), agrees with
 No. 239, Pearce, Andes of Ecuador in Herb. Kew; another
 from near Yungas (129), approaches in coarseness and slight
 hirsuteness a specimen at Kew collected by R. Pearce in
 Quenca, (also numbered 239), and labelled var. *hirsuta*.
G. trifoliata, Desv., Guanai (146).
G. tartarea, Desv., Unduavi (132); a variety (*G. ornithopteris*,
 Klotz), Yungas (133).
G. calomelanos, Kaulf., Yungas (134); Mapiri (148); unusually
 large and coarse, from Cinchona plantations at Yungas (131);
 a variety (*G. chrysophylla*, Kaulf.), Yungas (130).
Meniscium serratum, Cav., Guanai (412).
Vittaria stipitata, Kunze, Yungas (339, 340).
V. lineata, Sw., (*V. filifolia*, Fée); Mapiri (341).
Acrostichum conforme, Sw., Mapiri (300).
A. flaccidum, Fée, Yungas (298).
A. castaneum, Baker, Journ. Bot., 1877, p. 166, near Yungas (295).
A. Lingua, Raddi, Mapiri (441).
A. latifolium, Sw., Yungas (296).
A. melanopus, Kunze, Yungas (292).
A. viscosum, Sw., Yungas (301).
 var. *minor*, Moore, (*Elaphoglossum tenuiculum*, Moore, Herb.),
 near Yungas (299).
A. Matthewsii, Fée, Unduavi and Yungas (297).
A. lepidotum, Willd., Mapiri (440).

ACROSTICTUM EATONIANUM, sp. nov. Sect. *Elaphoglossum*,
A lepidotum, Willd., proximo. Rhizoma scandentis, densissime

squamosis; frondibus anguste-linearis, coriaceis, apice et basi longe acuminatis, margine glabris, revolutis, subtus densissime squamosis; squamis ovatis-lanceolatis, reticulatis, ciliatis; stipes teretes, squamosi, prope basim articulati.

Climbing on trees; rhizome slender, less than 1 cm. in diameter, covered with dark-brown, glossy, stiff, lanceolate scales; stipes clustered, terete, arising from lateral buds, 2 to 3 cm. long, and also covered with short, dark scales, when old of a bright reddish straw-color, showing a well marked joint less than 1 cm. from the rhizome; fronds coriaceous, 30-40 cm. long, 2 to 5 mm. wide, broadest above the middle and tapering to each end, of a light green color when young, becoming tawny and mottled with black on the upper surface when old, densely covered beneath with ovate-lanceolate, ciliate and reticulate scales, naked above except along the midvein; scales of the lower surface of the midvein mottled with black; margins nearly naked and strongly revolute, even when boiled; veins pinnate, about 1 mm. apart, sometimes bifurcate near the midvein. Yungas (342), sterile specimens only; collected also by R. Pearce, June, 1865, at Quichara, Herb. Kew, marked "epiphytal ferns." Another specimen, collected by Pearce at the same time and place, has fronds nearly twice as long and broad, and the scales are round and more deeply lacinate—perhaps a different species. A remarkable species of the section *Elaphoglossum* not approaching any member of the group that we have seen; its nearest alliance is with *A. lepidotum*, Willd., and probably with var. *vittatum*, Sodiro, Recens. Crypt. Vasc. Quitenses, p. 81. Named in honor of Professor Daniel Cady Eaton, of Yale University, who first declared it to be a new species.

A. cuspidatum, Willd., Unduavi (293); Yungas (294).

A. caudatum, Hook., Mapiri (442).

A. osmundaceum, Hook., Yungas (443).

Aneimia Breuteliana, Presl., Yungas (120).

A. tomentosa, Sw., Yungas (118, 119).

A. Phyllitidis, Sw., Mapiri (155).

Lygodium venustum, Sw., Guanai (144); the form, *L. palmatilobum*, Mart. Flor. Bras., t. 14, No. 6, Guanai (142) and another, *L. hirsutum*, Willd., Yungas (143).

(Reprinted from BULLETIN OF THE TORREY BOTANICAL CLUB, Vol. XVI., No. 1.)

An Enumeration of the Plants Collected by Dr. H. H. Rusby in South America. 1885-1886.—IV.

ANTHOPHYTA.

By N. L. Britton.

GYMNOSPERMÆ.

GNETACEÆ.

Ephedra Americana, Humb. & Bonpl. in Willd., Sp. Pl., iv., 860.
Near La Paz, 10,000 ft. (503).

CONIFERÆ.

Podocarpus montana (Willd.), Lodd., Cat. Plants, Ed. 1836, 37.
(*Taxus montana*, Willd., Sp. Pl., iv., 857 (1805); *P. taxifolia*,
H. B. K., Nov. Gen., et Sp. ii., t. 97 (1817).) Yungas, 6,000 ft.
(1960).

Podocarpus salicifolia, Kl. & Karst. in Endl., Conif., 209. Mapiri,
10,000 ft. (2463).

Cupressus sempervirens, L., Sp. Pl., 1422. Near Valparaiso, Chili,
cultivated (619).

ANGIOSPERMÆ.

RANUNCULACEÆ.

Thalictrum podocarpum, H. B. K., Nov. Gen. et Sp., v., 38.
Sorata, 10,000 ft. (501); Unduavi, 8,000 ft. (502).

Anemone decapetala, L., Mant. Pl., 79. Sorata, 13,000 ft., a very
slender form. (*A. triternata*, Vahl, Symb. iii., 74.) (1753).

Ranunculus psychrophilus, Wedd., Chlor. And., ii., 300. Un-
duavi, 8,000 ft. (1354); Sorata, 13,000 ft., a small alpine form.
(1779).

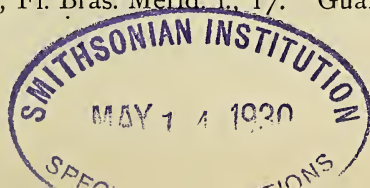
Ranunculus pilosus, H. B. K., Nov. Gen. et Sp., v., 45. Sorata
10,000 ft. (510).

Ranunculus brevipes, Triana & Planch., Ann. Sci., Nat., (V.),
xvii., 14. (*R. setoso-pilosus*, Steud, in Lechler No. 2709,
Herb. Kew.) Near La Paz, 10,000 ft. (1981).

Ranunculus sibbaldoides, H. B. K., Nov. Gen. et Sp., v., 48.
Near La Paz, 10,000 ft. (1965).

DILLENACEÆ.

Davilla elliptica, St. Hil., Fl. Bras. Merid. i., 17. Guanai, 2,000
ft. (865).



- Davilla rugosa*, Poir., Encyc. Meth. Suppl., ii., 457. Guanai, 2,000 ft. (863.) A smooth form with large acute leaves, the specimens in fruit only, from the junction of the Beni and Madre de Dios Rivers is provisionally referred to this species. (864).
- Doliocarpus Rolandri*, Gmel., Syst., 805. Falls of Maderia, Brazil. (2495).

ANONACEÆ.

- Guatteria pogonopus*, Mart., Flor. Bras., xiii., (1), 34. Yungas, 6,000 ft. (1252).
- Guatteria eriopoda*, DC., Syst. i., 505. Mapiri, 2,500 ft. (1240).
- Duguetia Quitarensis*, Benth., Lond. Jour. Bot., ii., 361. Junction of the Rivers Beni and Madre de Dios. (1361).
- Duguetia ? glabra*, spec. nov. Folia oblonga, abrupte acuminata, basi obtusa, glabra. Camaræ in capitulum densissimum congestæ. Flores non vidi. Junction of the Rivers Beni and Madre de Dios. (1378).

This species, if correctly referred to the present genus, differs from all the others I have been able to examine in having the separate fruits connate to very near their beaks, forming a very dense head.

It also diverges from most of the species, in being entirely destitute of lepidote trichomes. The leaves are about 8 inches long by 2 inches wide, and are markedly acuminate.

“This fruit is very fleshy within and edible.” H. H. R.

- Trigyneia Boliviensis*, spec. nov. Folia anguste oblonga, apica acuminata, basi acuta, utrinque glabra, brevissime petiolata. Baccæ oblongæ, 6-10 lin. longæ, 4-5 lin. latæ, stipite 6-9 lin. longæ.

Junction of the Rivers Beni and Madre de Dios. (1253).

Foliage resembling that of *T. Matthewsii*, Benth., Journ. Linn. Soc., v., 69, but fruit very different.

- Anona hypoglauca*, Mart., Flor. Bras. xiii., (1), 13, ex descriptio. Junction of Rivers Beni and Madre de Dios. (1241).
- Xylopia grandiflora*, St. Hil., Flor. Bras. Merid., i., 40. Mapiri, 5,000 ft. (1225).

BOCAGEA AROMATICA (Tr. & Planch.) *Oxandra aromatica*, Tr. & Pl., Prodr. Flor. Nova Gran. in Ann. Sci. Nat. (IV.), xvii., 36.

Guanai, 2,000 ft. (2651).

No. 1422 collected at Guanai is of this order, perhaps a *Gutteria*, but the material is insufficient for exact determination.

MENISPERMACEÆ.

Chondodendron tamoides (DC.), Miers, Ann. Nat. Hist., (II), vii., 44. Falls of Maderia, Brazil. (2096.)

Abuta concolor, Poepp. & Endl., Nov. Gen. et Sp., ii., 64. Falls of Maderia, Brazil. (1980); also a form with leaves acuminate and longer. Guanai. (1979). Common name "Cofferaria."

Cissampelos Pariera, L., Sp. Pl., 1473. Reis, 1,500 ft. (1441). Unduavi, 8,000 ft. (1444).

Var. *Caapeba* (L.), Eichl., in Mart. Flor. Bras., xiii., (1), 190. Falls of Maderia, Brazil. (1442).

Cissampelos sympodialis, Eichl., l. c., 192, var. GRANDIFOLIA n. var. Folia limba 9 cm. longa, 8 cm. lata; petiolis 6 cm. Junction of the Rivers Beni and Madre de Dios. (1443).

BERBERIDEÆ.

Berberis Quindiuensis, H. B. K., Nov. Gen. et Sp., v., 432. Unduavi, 10,000 ft. 508. Matching a specimen in Herb. Kew. named by Bentham, collected by Bridges in Bolivia.

Berberis rigidifolia, H. B. K., l. c., 431. Near La Paz, 10,000 ft. (1211).

PAPAVERACEÆ.

Bocconia frutescens, L., Sp. Pl., 634. Near Yungas, 6,000 ft. (1162).

Bocconia integrifolia, H. B. K., Nov. Gen. et Sp., i., 119. Yungas, 6,000 ft. (1161).

Eschscholtzia Californica, Cham., in Nees Hort. Berol., 73. Near Valparaiso, Chili. (498), Apparently introduced.

Fumaria officinalis, L., Sp. Pl., 984. Near Valparaiso, Chili, (488). I cannot distinguish the *F. media*, Lois., to which Phillipi refers the Chilian plants. Introduced from Europe.

CRUCIFERÆ.

Cardamine axillaris, Wedd., Ann. Sci. Nat., (V). i., 290. Sorata,

8,000 ft., (2416); Unduavi, 10,000 ft., a small alpine form. (1366).

Cardamine ovata, Benth., Pl. Hattw., 158. Unduavi, 8,000 ft. (1198).

Var. CORYMBOSA, n. var. Siliquis in corymbi conferti. Unduavi, 10,000 ft. (1206). Matching Spruce, No. 5378 from Ecuador in Herb. Kew.

CARDAMINE SPECIOSA, spec. nov. Caule erecto, 20-30 cm. alte; folia 3 vel 4, pinnata, cum petiolo 7-9 cm. longo; foliola 5-7, oblonga vel ovata, 1-2 cm. longa, 5-10 mm. lata, integerrima vel pauci-dentata; racemis terminalibus 5-7 cm. longis, multifloris; floris 1 cm. longis, atropurpureis; siliquiis erectis, 4-5 cm. longis, linearibus, cum stylis longi-acuminatis; petiolis gracilibus, 12-15 mm. longis. Tota planta glabra.

A most beautiful species, somewhat resembling *C. pratensis*, L., but with very large deep purple flowers. Unduavi, 10,000 ft., in wet places among mosses. (1199).

Sisymbrium gracile, Wedd., l. c., 288. Sorata, 10,000 ft. (1209).

Sisymbrium hispidulum (DC), Tr. & Planch., l. c., A form or variety with leaves merely dentate, not pinnatifid. Sorata, 10,000 ft. (1208). Mandon, 907.

Sisymbrium leptocarpum, Hook. & Arn., Bot. Misc., iii., 139. Near La Paz, 10,000 ft. (1207).

Sisymbrium myriophyllum, H. B. K., in DC., Syst., ii, 477. Near La Paz, 10,000 ft. (1205).

SISYMBRIUM(?) RUSBYI, spec. nov. Elatum; caulibus simplicibus, vel prope ad apicem ramosum, fistulosum, glabrum; folia numerosa, distantia, simplicia, ovata; gracilia petiolata, 5-6 cm. longa, 2-3 cm. lata, utrinque glabra, membranacea, denticulata; racemis 20-30 cm longis; floribus 6 mm. longis, alboburpureis; siliquiis linearibus, 2-4 cm. longis. Sorata, 10,000 ft. (1432): Mandon, 906.

Alyssum maritimum, (L.), Lam., Encyc. Meth., i., 98. Near La Paz, 10,000 ft. (1956). Introduced from Europe.

Capsella Bursa-pastoris (L.), Moench, Meth., 271. Near La Paz, 10,000 ft. (1200). Also introduced.

Lepidium bipinnatifidum, Desv., Journ. Bot. iii., 165. Near La Paz, 10,000 ft. (1202); Yungas, 6,000 ft. (1201).

Lepidium Chichicara, Desv., l. c. Near La Paz, 10,000 ft. (1203).

Senebiera didyma (L.), Pers., Syn., ii., 185. Near La Paz, 10,000 ft. (1204).

CREMALOBUS BOLIVIANUS, spec. nov. Erectus, pubescens, 50-80 cm. altus; foliis oppositis ovatis vel ovato-lanceolatis, 5-8 cm. longis, 2 cm. latis, petiolis 5 mm., subter densissime albo-pubescens; racemis laxis, ramosis; siliculis 8 mm. latis, 4 mm. longis, valvis orbicularibus, crenatis. Pedicellis 6-8 mm. longis. Unduavi, 8,000 ft. (1816). The same as Mandon, 905 bis. in Herb. Kew.

Cremalobus, sp. probably related to the last, but entirely smooth; specimens only in flower. Perhaps a distinct species. Near Yungas, 4,000 ft. (1820).

CAPPARIDÆ.

Cleome gigantea, L., Mant. Pl., 430. A large form with nine leaflets and elongated calyx lobes, extremely glandular-hairy all over, perhaps a distinct species or variety. Yungas, 6,000 ft. (736). Also a very smooth and slender form from Guanai or vicinity. (735).

Cleome glandulosa, R. & P., in DC., Prodr., i., 238. Unduavi, 8,000 ft. (734). The same as Mandon, 937.

Cleome latifolia, Vahl, in DC., Prodr., i., 239. Junction of Beni and Madre de Dios. (737).

Cleome Guianensis, Aubl., Guian., iv., t. 273. Falls of Madeira, Brazil. (1160).

MORISONIA OBLONGIFOLIA, spec. nova. Arbuscula. Folia oblonga, coriacea, 12-20 cm. longa, 7-9 cm. lata, basi obtusa, apici acuta utrinque glabra et reticulata; petiola 6-10 cm. longa; racemi axillares, 3-7 flori; flores 2 cm. lati, pedicelli 1 cm.; baccæ oblongæ, costatæ, papillosæ. Junction of the Rivers Beni and Madre de Dios. (2643 and 2708).

Capparis nitida, R. & P., in DC., Prodr., i., 252. Same locality. (1290, 1291, 1292).

Capparis macrophylla, H. B. K., Nov. Gen. et Sp., v., 91. Falls of Madeira, Brazil. (1293); Junction of Beni and Madre de Dios. (1288, 1289).

Capparis crotonoides, H. B. K., l. c., 95. Unduavi, 8,000 ft. (2637).

VIOLARIÆ.

Viola scandens, Willd., in H. B. K., Nov. Gen. & Sp., v., 371.

Unduavi, 8,000 ft. (1175); Yungas, 6,000 ft. (844); Guanai, 2,000 ft. (845); native name "Chilqua."

Viola veronicæfolia, Planch. & Lind., in Ann. Sci. Nat., IV, xvii., 121. Mapiri, 5,000 ft. (842).

VIOLA BOLIVIANA, spec. nova. Cæspitosa; stolonifera; caule depressa, simplicia, 2-3 cm. alta; folia orbiculares, 2-3 cm. lata, in petiola abrupte contracta, margine crenato-serrata, utrinque glabra; petioli anguste-marginati, 1-2 cm. longi; stipulis fimbriatis, 1-2 cm. longis, 6-8 mm. latis; flores axillares; pedunculi gracili, 2-3 cm. longi, ad medium bibracteolatum; sepalis linearibus, 6 mm. longibus; flores 15 mm. lat., purpureis. Mapiri, 5,000 ft. (843).

Viola Humboldtii, Tr. & Planch., Ann. Sci. Nat., l. c., var. *RENIFOLIA*, var. nov. Caules repentes; stipulis ciliatibus, 5 mm. longibus; folia reniformia, mucronato-denticulata. Mapiri, 5,000 ft. (2218).

The same as Mandon, Sorata, No. 943; "in graminosis."

VIOLA BRIDGESII, spec. nova. Caules repentes, graciles; folia reniformia, 15 mm. lata, crenata, glabra; petioli 1 cm. longi; flores axillares; pedunculi gracillimi, 6-7 cm. longi, infra medium bibracteolati; flores 15 mm. longes, calcare brevi, sepalis linearibus, obtusibus. Sorata, 13,000 ft. (841).

This resembles *V. Lechleri*, Griseb., but differs from that species in being entirely smooth and having shorter and obtuse sepals. It is also allied to the last variety enumerated, but its flowers are more than twice as large, and its leaf form very different. Collected first by Bridges, also in Bolivia.

VIOLA THYMIFOLIA, spec. nova. Humilis; caules repentes, 2-6 cm. longes; folia parva, ovata, 3-5 mm. longa, crenulata, glabrata; petioli 2 mm. longi; flores axillares, purpureis, 1 cm. longes, calcare brevissimo, sepalis lanceolatis, obtusibus. Unduavi, 10,000 ft. (1074). A very neat little Alpine species.

Ionidium commune, St. Hil., Pl. Remarques, 295. Mapiri, 2,500 ft. (1365).

Ionidium Sprucei, Eichl., in Mart. Flor. Bras., xiii., (1), 373. Guanai, 2,000 ft. (1364). Falls of Madeira, Brazil (2055.)

Ionidium album, St. Hil., l. c., 303. Falls of Madeira, (846).

ALSOIDEIA OVALIFOLIA, spec. nova. Ramuli pubescenti. Folia glabra, opposita, 6-10 cm. longa, ovalia, dentata, acuta vel acuminata, basi obtusa; petioli 5 mm. longi; flores anguste

racemosi, (pedunculi 2 mm. longi.), parvi; capsula 10-12 mm. longa, puberula. Junction of the Rivers Beni and Madre de Dios. (1916). Near *A. deflexa*, Benth.

Leonia glycyarpa, Ruiz & Pav., Fl. Peruv., ii., 69. t. 222 (*L. racemosa*, Mart., fide Eichl., l. c., 391) Junction of the Beni and Madre de Dios. (2647).

Sauvagesia erecta, L., Sp. Pl., Ed. II., 294. Mapiri, 5,000 ft. (1076).

BIXINÆ.

Bixa orellana, L. Sp. Pl. 730. Near Yungas, cultivated. (1310).

Oncoba maynensis (Poepp. & Endl.), Eichl., l. c., 441. (*Mayna paludosa*, Benth.) Junction of Beni and Madre de Dios (1332); Falls of Madeira (1423).

POLYGALEÆ.

Determined by Prof. A. W. BENNETT.

Polygala paniculata, L., Amœn. Acad., v., 402. Near La Paz, 10,000 ft. (1914.)

Polygala violacea, Vahl, Symb. Bot., ii., 79. Near La Paz, 10,000 ft. (1934): Yungas, 6,000 ft. (1915.)

POLYGALA ANDINA, A. W. Bennett, spec. nova. Frutex parvus? Caule ascendente, pubescente; foliis tenuibus, subglabris, lanceolatis, apiculatis, breviter petiolatis; racemis terminalibus; floribus pedicellatis, pedicellis hirsutis; sepalis exterioribus inæqualibus, ovatis, pubescentibus, ciliatis, superiore majore, concavo; alis magnis, ovatis, glabris, eciliatis, 8mm. longis, 6 mm. latis; corolla alas æquante, vagina basi valde gibbosa; petalis per $\frac{2}{3}$ coalitis; petalis superioribus rotundatis. Semina fructusque ignoti. Near La Paz, 10,000 ft. (2869). Near *P. Laureola*.

POLYGALA FORMOSA, A. W. Bennett, spec. nova. Frutex caule glabro vel puberulo; foliis elliptico-lanceolatis, tenuibus, acuminatis (supernis); 8-10 cm. longis, 4 cm. latis, breviter petiolatis; racemis terminalibus, vel axillaribus, laxis, floribus insignibus pedicellatis, pedicellis puberulis; sepalis exterioribus inæqualibus, glabris, eciliatis, superiore concavo; alis grandibus, glabris, eciliatis, inæqualiter ovalibus, 12 mm. longis, 8 mm. latis; corolla ecristata; petalis alas multo superantibus, per $\frac{3}{4}$ coalitis, glabris; fructo elliptico; seminibus triangularibus, hirsutis, caruncula carnosâ præditis, ad dorsum seminis dimidio libera descendente. Mapiri, 5,000 ft. (1908). Related to *P. spectabilis*, of Southern Brazil.

Securidaca volubilis, L., Sp. Pl., 992. Yungas, 6,000 ft. (2544), Guanai, 2,000 ft. (2365).

Monnina parviflora, H. B. K., Nov. Gen. & Sp., v. 419. Yungas, 4,000 ft. (1913 and 1909); Mapiri, 2,500 ft.; specimens referred to this species with some hesitation (1907.)

Monnina cestrifolia, H. B. R., l.c., 413; Mapiri, 5,000 ft. (1912). Collected also by R. Pearce in the same region (728 in Herb. Kew).

MONNINA BOLIVIENSIS, A. W. Bennett, spec. nova. Frutex grandis? Ramis validis crassis pubescentibus; foliis crassis ellipticis vel ovatis (supernis), 10 cm. longis, 6-7 cm. latis, nervo medio subtus valde prominente, breviter petiolatis, petiolo ad basim articulato; petiolo nervoque medio pubescentibus; paniculis terminalibus ramosissimus, confertis, ramulis ad basim articulatis; bracteis linearibus hirsutis subpersistentibus; floribus sessilibus cœruleis in alabastro fere rotundis, 4 mm. latis et longis; sepalis 3 exterioribus subæqualibus, ovatis, ciliatis, margine cœruleis; alis subrotundis, glabris, eciliatis; carina et petalis lateralibus glabris, eciliatis; fructu sessili, triangulari, 3 mm. longo, 2 mm. lato; glabro et vix rugoso; monospermo, seminibus maturis non visis. Near Yungas, 4,000 ft. (1970). Related to *M. æstuans*, (L.), DC., and *M. Xalapensis*, Kunth.

Monnina rupestris, H. B. K., l. c., 415. Sorata, 10,000 ft. (1910); Unduavi, 8,000 ft. (1911).

Monnina resedoides, St. Hil., Flor. Bras. Mer., ii., 61. Near La Paz, 10,000 ft. (1932 and 1933). Specimens also from near Yungas, 4,000 ft. perhaps this species, perhaps *M. Chandruyensis*, Spruce, ms.

Monnina, (?) Beni River (1538). A mere scrap with the flowers not developed; not seen by Professor Bennett.

VOCHYSIACEÆ.

Vochysia divergens, Pohl, Pl. Bras., ii., 19, t. III. Mapiri, 2,500 ft. (610). Specimens referred to this species with some hesitation.

Trigonia pubescens, Camb. in St. Hil., Fl. Bras., ii., 114. Guanai, 2,000 ft. (2450, fl., 2596, fr.)

Trigonia parviflora, Benth., Kew Journ., iii., 163. Guanai, 2,000 ft. (2449, fl.); Mapiri, 5,000 ft. (1220, fr.)



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An Enumeration of the Plants Collected by Dr. H. H. Rusby in
South America, 1885-1886.—V.

(Continued from p. 20.)

CARYOPHYLLEÆ.

- Silene Gallica*, L. Sp. Pl. 595. Near La Paz, 10,000 ft. (2476).
LYCHNIS ANDICOLA (Gill.) (*Silene andicola*, Gill. Bot. Misc.
iii. 147). Sorata, Bolivia, 10,000 ft. (1179).
Cerastium arvense, L. l. c. 628. Sorata, 10,000 ft. (1193 and
1194). Forms not quite identical with any boreal ones.
Var. *arvensiforme* (Wedd.) Rohrb. Linnæa, xxxvii. 305.
Unduavi, 8,000 ft. (1191).
Cerastium Soratense, Rohrb. l. c. 291 (?) Unduavi, 8,000 ft.
(1192). Specimens with very large sepals, perhaps an
undescribed species.
Stellaria media (L.) Smith, Engl. Bot. t. 537. Sorata, 8,000 ft.
(1190).
Stellaria nemorum, L. l. c. 603. Yungas, 6,000 ft. (1186);
Ingenio del Oro, 10,000 ft. (1184); also a form with sessile,
thin, not acuminate leaves, perhaps a distinct species, from
Yungas. (1185).
Arenaria lanuginosa (Michx.) Rohrb. in Mart. Flor. Bras. Cary-
phyll. 274. (*A. alsinoides*, Willd.) Sorata, 10,000 ft. (1188);
Unduavi, 8,000 ft. (1187); also a form with short leaves and
very pubescent stems from Unduavi, 10,000 ft. (1189), and
another one from the same place, smoother and forming
dense tufts. (1195).
Drymaria cordata (L.) Willd. in Rœm & Schult. Syst. Veg.
v. 406. Yungas, 6,000 ft. (1182).
Drymaria pauciflora, Bartl. in Presl, Rel. Hænck. ii. 8. Near
La Paz, 10,000 ft. (1183).

TISSA VILLOSA (Pers.) *Spergula villosa*, Pers. Syn. i. 522; *Spergularia villosa* (Pers.) Cambess. in St. Hillaire, Flor. Bras. Merid. ii. 129). Near La Paz, 10,000 ft. (1180); Yungas, 6,000 ft. (1181).

PORTULACEÆ.

Portulaca pilosa, L. Sp. Pl. 639. Near La Paz, 10,000 ft. (1445).

Talinum patens (L.) Willd. Sp. Pl. ii. 864. Yungas, 4,000 ft. (1931).

Calandrinia caulescens, H. B. K. Nov. Gen. vi. 78. Yungas, 6,000 ft. (2601).

HYPERICINEÆ.

Hypericum brevistylum, Chois. Prodr. Hyper. 51. Sorata, 13,000 ft. (1389).

Hypericum thesiifolium, H. B. K. l. c. 192. Unduavi, 8,000 ft. (1196).

Hypericum struthiolæfolium, Juss. Ann. Mus. iii. 160. Sorata, 13,000 ft. (1350). A depressed alpine form.

Vismia Guianensis (Aubl.) Pers. Ench. ii. 86. Mapiri, 2,500 ft. (1810 and 722).

Vismia Cayennensis (L.) Pers l. c. Guanai, 2,000 ft. (860).

Vismia glabra, Ruiz & Pav. Syst. Flor. Per. i. 183. Yungas, 6,000 ft. (720).

Vismia tomentosa, Ruiz & Pav. l. c. Unduavi, 8,000 ft. (719). Apparently this species, but no authentic specimens seen.

GUTTIFERÆ.

Clusia insignis, Mart. Nov. Gen. & Sp. iii. 164. Mapiri, 5,000 ft. (1242). The same as Lechler's No. 2,204 from Peru, and from insufficient material is doubtfully referred to this species.

Clusia Criuwa, Cambess. in St. Hil. Flor. Bras. Merid. i. 245. Mapiri, 5,000 ft. (1246). Apparently this species, but flowers sessile.

Clusia latipes, Planch. & Triana, Ann. Sci. Nat (IV.) xiii. 365. Mapiri, 5,000 ft. (1809).

Havetia laurifolia, H. B. K. Nov. Gen. & Sp. i. 204 (?) Unduavi, 8,000 ft. (1771).

- Tovomita umbellata*, Benth. in Mart. Flor. Bras. Guttif. 448. Mapiri, 5,000 ft. (1849).
- Tovomita* (?) Same locality, (2621).
- Chrysochlamys myrcioides*, Planch. & Tri. Ann. Sci. Nat. (IV.) xiv. 106. Yungas, 6,000 ft. (2665).
- Rengifia acuminata*, Planch. & Triana, l. c. xiv. 243. Beni River. (2481). Doubtfully referred to this species.
- Symphonia globulifera*, L. f. Suppl. 302. Mapiri, 5,000 ft. (1853).
- Rheedia Spruceana*, Engl. in Mart. Flor. Bras. Guttif. 463. Beni River. (2093).
- Quiina*; a species collected in fruit, perhaps undescribed. Junction of the Beni and Madre de Dios (2675).
- No. 2613 collected at the Falls of Madeira, Brazil, is apparently of this order, but the specimens are too imperfect for determination.

TERNSTRÆMIACEÆ.

- Caryocar glabrum*, Pers. Ench. ii. 84. Junction of the Beni and Madre de Dios. A form or variety with leaves more serrate than usual (861.)
- Marcgravia rectiflora*, Triana & Planch., Ann. Sci. Nat. (IV.) xvii. 364. Yungas, 6,000 ft. (2092 and 2612;) also a scrap from Reis, 1,500 ft. (2707.)
- Marcgravia*. Yungas, 6,000 ft. (1362.) I brought this from Kew with the name *M. peduncularis*, Pœpp., but am now unable to find this name either among the species recognized by Wittmack in the Brazil Flora nor in his synonymy. It is therefore left for subsequent investigation.
- Ternstræmia Brasiliensis*, Cambess. in St. Hil. Flor. Bras. Merid. i. 298. Mapiri, 5,000 ft. (486.)
- Ternstræmia confertiflora*, Triana & Planch. in Herb. Kew. Mapiri, 5,000 ft. (617.)
- FREZIERA INÆQUILATERA, spec. nova. Caulis rectus, villosopubescentibus; foliis rigidis, elliptico-lanceolatis, 12-20 cm. longis, 4-6 cm. latis, subtus densissime fulvo-pubescentibus supra minutissime molliter vel ad maturitatem glabris, margine undique serrulata, apice longe acuminata, basi obtusa, valde inæquilatera; nervi subter prominentes; petioli rigidi, 1 cm.

- longi; pedicellis, bracteis, calycibus cum petalisque, fulvo-pubescentibus; flores fasciculatæ, pedunculi 8 mm. longi. Related to *F. reticulata*, H. B. K. Mapiri, 2,500 ft. (2467).
- Saurauja serrata*, DC. Prodr. i. 526. Mapiri 5,000 ft. (481.) Possibly specifically distinct from the Mexican plant, but I can see from these specimens no very obvious differences.
- Saurauja parviflora*, Triana & Planch. l. c. xviii. 268. ex. descriptio. Yungas 6,000 ft. (483.)
- SAURAUJA RUSBYI, spec. nova. Caulis debilis, angulatus, hispidus; folia obovata, 15-20 cm. longa, 6-8 cm. lata, utrinque hispida, undique aristo-serrata, apices acuti vel acuminati, basi cuneati; paniculis axillaribus, longe et graciliter peduncularibus, multifloris; floribus 10-15 mm. latis, petalis rotundatis, glabris, calycibus et pedicellis breviter hirsutis; antheræ oblongæ, loculis apice poro dehiscentibus. Yungas, 6,000 ft. (482.)
- Saurauja*, near *S. serrata*, perhaps a distinct species. Unduavi, 8,000 ft. (506.)
- Laplacea semiserrata*, Cambess. in St. Hil. l. c. i. 300. Yungas, 4,000 ft. (485.)
- Laplacea Organensis*, Planch. in Herb Kew. (Gardner, No. 5680.) Yungas, 6,000 ft. (627.)
- Laplacea symplocoides*, Planch. & Lind. in Ann. Sci. Nat. l. c. 269. Mapiri, 5,000 ft. (484.)

MALVACEÆ.

- Malvastrum Peruvianum* (L.), Gray, in Bot. U. S. Expl. Exped. 146. Yungas, 6,000 ft. (1463); Near La Paz, 10,000 ft. (1921).
- Malvastrum lobulatum*, Wedd. Chlor. And. ii. and in Bull. Soc. Bot. France, xii. 82. Near La Paz, 12,000 ft. (1373).
- MALVASTRUM RUSBYI, spec. nova. Frutescens; caulis lignescens, 25-30 cm. altus, ramosus; rami juvenales densissime stellato-pubescentes; folia ovato-reniformia, triloba, crenata, stellato-pubescentia lobo terminali longissimo; nervi subter prominentes; petioli graciles 2-4 cm. longes; pedunculis axillaribus, 1-8 cm. longis, multifloris; flores in capitulis congestæ, purpurascens, 2-3 cm. lat.; involucllo speciose stellato-tomentoso.
- Near La Paz, 10,000 ft. (1780 and 1781.) Related to *M. capitatum*, (Cav.).

An Enumeration of the Plants Collected by Dr. H. H. Rusby in
South America, 1885-1886.—VI.

(Continued from p. 64.)

Malvastrum tricuspdatum (L.), Gray, Plantæ Wright. i. 16. Reis,
1,500 ft. (1418). Also from Unduavi.

MALVASTRUM MULTICAULE (Schlecht.) *Malva multicaulis*,
Schlecht. in Lechler, Pl. Peru, No. 1784, Herb. Kew. Near
La Paz, 10,000 ft. (1782).

Sida rhombifolia, L. Sp. Pl. 961. Sorata, 8,000 ft. (1452).

Sida glomerata, Cav. Diss. i. 18. Falls of Madeira (1453).

Sida cordifolia, L. l. c. 961. Mapiri, 2,500 ft. (1456); Guanai,
2,000 ft. (1457).

Sida urens, L. l. c. 963. Reis, 1,500 ft. (1454); Guanai, 2,000 ft.
(1454a).

SIDA BENENSIS, spec. nova. ♂. Cordifoliæ. Foliis ovato-cordatis,
7-nervis, 9 cm. latis et longis, crenato-dentatis, acuminatis,
utrinque scabris; petiolis 5-6 cm. longis; floribus paniculatis;
paniculis foliosis, terminalibus axillaribusque; pedunculis
bracteosis, gracilibus, ad maturitatem 15 mm. longis, pubes-
centibus; flores parvæ; calicibus pubescentibus, persistentibus;
carpellis 5, biaristatis. Junction of the Rivers Beni and
Madre de Dios (1455). Resembling in foliage *S. dumosa*, Sw.

Wissadula spicata (HBK.), Presl. Rel. Hænk. ii. 117. Guanai,
2,000 ft. (1862 and 1957).

Wissadula periplocifolia (L.), Griseb. Cat. Plant. Cubens 25.
Yungas (1861); Guanai, 2,000 ft. (1860).

Wissadula andina, spec. nova. Frutex erectus, densissime stel-
lato-pubescentibus; foliis petiolatis, cordatis, ovatis, acumina-
tis, subter pallidis, speciose stellato pubescentibus, supra velu-
tinus; folia 2-4 cm. longa, crenulata; floribus pedicellatis, in
paniculis angustis terminalis disposita, albidus, 2 cm. latis;
lobis calicibus triangularibus, acuminatis; carpellis 3 vel 4,
acutis. Near La Paz, 10,000 ft. (1850).

Mandon's No. 822 may perhaps be referred to the same spe-
cies. In Bull. Soc. Bot. France, xii. 82, this is, however, alluded
to as *Abutilon nudiflorum*, and *Sida virgata*, Cav. is given as a
synonym; I am quite satisfied, however, that neither Mandon's
nor Rusby's specimens can belong in that species, whatever else
it may be.



Abutilon, a large-flowered species the same as Mandon's No. 821, which is alluded to in Bull. Soc. Bot. France, l. c. as *Sida cistiflora*, Cav., but can hardly be that plant. It is left for subsequent investigation. Sorata, 8,000 ft. (660).

Urena lobata, L. Sp. Pl. 974, Reis, 1,500 ft. (1460).

Pavonia Typhalea (L.), Cav. Diss. ii. 134. Mapiri, 5,000 ft. (1487).

Pavonia paniculata, Cav. l. c. iii. 135. Guanai, 2,000 ft. (1789).

Pavonia communis, St. Hil., Flor. Bras. Merid. i. 224. Yungas, 6,000 ft. (1461).

Pavonia diuretica, St. Hil. Plant. Us. t. 53. Falls of Madeira, Brazil. (1459).

PAVONIA MALACOPHYLLA (*Lopimia malacophylla*, Nees & Mart, Nova Acta xi. 97; *Pavonia velutina*, St. Hil.). Guanai, 2,000 ft. (1462).

Gossypium maritimum, Todaro, var. *polycarpum*, Todaro, Rel. Cult. Cot. t. viii. Tacna (659).

Bombax? A species collected only in fruit and not matched at Kew. Yungas, 6,000 ft. (1928).

Chorisia speciosa, St. Hil. Plant. Us. t. 63. Guanai, 2,000 ft. (661).

Ochroma Lagopus, Sw. Flor. Ind. Occ. ii. 1144. Junction of the rivers Beni and Madre de Dios. (1927).

No. 1501 from Mapiri is of this order, perhaps a *Pavonia*, but is not satisfactorily determined.

STERCULIACEÆ.

Helicteres pentandra, L. Mant. 294. Guanai, 2,000 ft. (614).

The same as Matthews, No. 1547 from Peru, Herb. Kew.

Helicteres brevispira, St. Hil. Flor. Bras. Merid. i. 213. Yungas, 6,000 ft. (615).

HELICTERES RUSBYI, spec. nova. § Orthocarpæa. Stamina 10? Flores horizontales, magnæ; inflorascentia sub 6-florus; calycibus stellato-tomentosus, 2 cm. longus; foliis ovato-cordatis, utrinque stellato-tomentosis, crenatibus; petiolis crassis, 2-3 cm. longis; ramis teretibus, stellato-tomentosis; carpidia 5-6 cm. longæ, minutissime rufo-tomentosi. Guanai, 2,000 ft. (616). Resembling Balansa's No. 1602 from Paraguay in Herb. Kew.

Melochia hirsuta, Cav. Diss. vi. 320. Guanai, 2,000 ft. (1846).

Melochia venosa, Sw. Prodr. Flor. Ind. Occ. 97. Yungas, 4,000 ft. (1847). No. 1848 is probably the same species.

Waltheria Americana, L. Sp. Pl. 673. Guanai, 2,000 ft. (1405 and 1458).

Theobroma Cacao, L. l. c. 782. Guanai, 2,000 ft. (655).

Theobroma sylvestre, Mart., Bern. Uebers. Theobr. 14? Junction of the rivers Beni and Madre de Dios. (654).

Guazuma ulmifolia, Lam. Encycl. iii. 52. Guanai, 2,000 ft. (1859).

Guazuma tomentosa, HBK. Nov. Gen. & Pl. v. 320. Yungas, 4,000 ft. (1287).

BUETTNERIA PESCAPRÆIFOLIA, spec. nova. Glabra; rami et petioli aculeis destituti; caules ramosi; folia orbicularia vel late ovata, 8-12 cm. lata; apice obtusa vel acuta, cordata, margine integra; petioli gracili, folia æquantia; folia subter pallido-glaucous, nervi prominenti, supra atroviridi, nervi immersa; capsula semiglobosa, 2 cm. diametro, densissime muricata. Flores non vidi. Guanai, 2,000 ft. (2644). Related to *B. discolor*, Benth.

BUETTNERIA BENENSIS, spec. nova. Scandens; folia herbacea, nervis utrinque prominentibus, distincte reticulata; rami et petioli pubescentes, aculeis destituti; foliis valde cordatis, ovatis, sagittatis vel ovato-lanceolatis, subter minutissime pubescentibus, supra glabris, utriusque dentato-serratis, longe acuminatis, 8-13 cm. longis, 5-7 cm. latis, petiolatis; petioli 3-4 cm. longi; inflorescentia parviflora, breviter pedunculata; flores parvi; calyce hirsuto, sepalis lanceolatis, 5 mm. longis; capsula et semina non visa. Junction of the rivers Beni and Madre de Dios. (1964). Resembles in leaf-form specimens in Herb. Kew marked *B. cordifolia*, Sagot from French Guiana, but the plant is smooth except for a few scattered, stellate hairs.

BUETTNERIA BOLIVIANA, spec. nova. Scandens; glabrescens; folia herbacea, utrinque reticulata; rami et petioli aculeis destituti; foliis cordatis, utrinque glabris, ovatis vel acuminatis, serrulatis, 6-8 cm. longis, 4-5 cm. latis, gracile petiolatis; inflorescentia parviflora?; capsula 1-5 cm. longis, 2 cm. diametro, echinata, echinis 2-3 mm. longis, semina 5 mm. longa, 2 mm. lata, glabra, nigra. Junction of the rivers Beni and Madre de Dios. (1249).

BUETTNERIA CORIACEA, spec. nova. Folia coriacea, oblonga, vel oblongo-lanceolata, 12-14 cm. longa, 4-5 cm. lata, utinque glabra, margine integra, nervi supra immersi, subter prominenti; petioli crassi, 1 cm. longi; ramis teretibus, glabris, sparse aculeatis, aculeis 2 mm. longis; inflorescetiâ multifloris, pedicellis et bracteis pubescentibus; calyce extus tomentosus; sepalis ovatis, acutis, 2 mm. longis. Capsula seminâque desiderantur. Junction of the rivers Beni and Madre de Dios. (2503).

Buettneria Carthaginensis, Jacq. Amer. 41. Guanai, 2,000 ft. (1250). The same as Spruce No. 3900 in Herb. Kew which is marked *B. lanceolata*, DC., to which species our specimens may perhaps best be referred.

TILIACEÆ.

Triumfetta rhomboidea, Jacq. Stirp. Amer. 147. Guanai, 2,000 ft. (714).

Triumfetta abutiloides, St. Hil. Flor. Bras. Merid. i. 223. ? Mapiri 2,500 ft. (1213).

Triumfetta althaeoides, Lam. Reis, 1,500 ft. (716) and (717 ?).

Triumfetta semitriloba, L. Mant. i. 73. Guanai, 2,000 ft. (715); Yungas, 6,000 ft. (718); Mapiri, 5,000 ft. (1236a) and 2,500 ft. (1450).

Heliocarpus Americanus, L. Sp. Pl. 448. Guanai, 2,000 ft. (1492); Beni River (1493).

Corchorus hirtus, L. l. c. Ed. 2, 747. Guanai, 2,000 ft. (1751).

Luhea uniflora, St. Hil. Fl. Bras. Merid. i. 226. Falls of Madeira, Brazil. (701).

Luhea speciosa, Willd. Neue Schrift. Gesell. Nat. Freunde, iii. 400. Yungas, 4,000 ft. (1028).

Luhea paniculata, Mart. and Zucc. Nov. Gen. i. 100. Yungas, 4,000 ft. (658).

Luhea nobilis, Planch. & Triana in Herb. Kew. Guanai, 2,000 ft. (1029).

MOLLIA BOLIVIANA, spec. nova. Folia ovata vel oblonga, subter pallida, integra, acuminata, 8-10 cm. longa, 3-4 cm. lata, utrinque lepidota; ramis teretibus, striatis, lepidotis; petiolis 1 cm. longis; capsula oblonga, exalata, densissime lepidota, 2-5 cm. longa, 1-5 cm. lata, papyracea; semina subrhomboidea, 5 mm. longa, 3 mm. lata. Mapiri, 2,500 ft. (2610). Collected only in fruit.

- Muntingia Calabura*, L. Sp. Pl. 509. Beni River. (1489).
Apiaba Tibourba, Aubl. Pl. Guian. i. 538. Guanai, 2,000 ft. (612); Beni River (613), the latter specimen fragmentary and the determination uncertain. Falls of Madeira, with purple flowers, (611).
Apiaba aspera, Aubl. l. c. 545. Mapiri, 2,500 ft. (723.)
Prockia Crucis, L. Sp. Pl. 745. Yungas, 6,000 ft. (499).
Prockia completa, Hook. Ic. Plant. i. t. 94. Guanai, 2,000 ft. (1491). Appears distinct enough from the common species.
Hasseltia laxiflora (Benth.), Eichl. in Mart. Flor. Bras. xiii. (I), 498. Falls of Madeira, Brazil. (2451).
Vallea stipularis, Mutis. in L. f. Suppl. 266. Unduavi, 8,000 ft. (465).
Sloanea obtusa (Splitg.), Schum. in Mart. Flor. Bras. Tiliaceæ, 181? Junction of the Rivers Beni and Madre de Dios. (1294 and 2648). I think there is little doubt of the determination, but am not altogether satisfied with it.
Tricuspidaria dependens, R. & P. Prodr. Fl. Per. t. 36. Near Valparaiso, Chili. (1025).

LINEÆ.

- Erythroxylon Coca*, Lam. Encycl. ii. 393. Junction of the Rivers Beni and Madre de Dios, Peruvian form, forest grown (2076); Yungas, 6,000 ft. Bolivian form (2077 and 2078); the best, cultivated (2079); wild, history unknown (2081); Mapiri, 5,000 ft. (2080).
Erythroxylon anguifugum, Mart. Abhand. Akad. Wiss. Munchen, 1840, 361. Junction of the Beni and Madre de Dios. (2075).
Erythroxylon macrophyllum, Cav. Diss. viii. 404. Mapiri, 5,000 ft. (2466.)

MALPIGHIACEÆ.*

- Byrsonima crassifolia* (L.), HBK. Nov. Gen. v. 149. Yungas, 4,000 ft. (504); Guanai, 2,000 ft. (505).
Byrsonima lævigata, DC. Prodr. i. 580? Mapiri, 2,500 ft. (1034). Near Spruce's No. 1648, Herb Kew.
Byrsonima variabilis, Juss. in St. Hil. Flor. Bras. Merid. iii. 78?

*Satisfactory determination of many of these specimens cannot be had without reference to the Jussieuan types at Paris.

- Rusby's plant has yellow flowers, differing in this respect from the description. Beni River. (507).
- Byrsonima*, a species collected in fruit. Yungas, 4,000 ft. (2170).
- Bunchosia Lindeniana*, A. Juss. Monog. Malpig. 81. Guanai, 2,000 ft. (2168).
- Heteropteris trichanthera*, A. Juss. l. c. 180. Guanai, 2,000 ft. (514).
- Heteropteris macrostachya*, A. Juss. l. c. Mapiri, 2,500 ft. (2417).
- Heteropteris*, near *H. grandiflora*, A. Juss. l. c. 207. Guanai, 2,000 ft. (2170a).
- Heteropteris anoptera*, A. Juss. l. c. 205. Yungas, 6,000 ft. (730).
Nos. 724, 733, 2172 and 2418 are probably of this genus but have not been determined.
- Bannisterea argentea* (HBK.), Spreng. in A. Juss. l. c. 139. Mapiri, 5,000 ft. (511).
- Bannisteria Gardneriana*, A. Juss. l. c. 167? Yungas, 6,000 ft. (1033); 4,000 ft. (852).
- Bannisteria oxyclada*, A. Juss. l. c. 142. Junction of the Beni and Madre de Dios. (2167).
- Bannisteria Spruceana*, Griseb. in Mart. Flor. Bras. Malpig. 45. Yungas, 6,000 ft. (515).
- Tetrapterys papyracea*, Triana & Planch. Ann. Sci. Nat. (IV.) xviii. 334. Guanai, 2,000 ft. (513 and 731).
- Hiræa Jussieana*, Miq. Guanai, 2,000 ft.; (528); Yungas, 6,000 ft. (732).
- Hiræa Riedleyana*, A. Juss. l. c. 315. Guanai, 2,000 ft. (516).
- Hiræa*, related to the last. Guanai, 2,000 ft. (512).
- Nos. 2169 and 2171 are probably of this genus, but not determined.

ZYGOPHYLLÆ.

- Tribulus maximus*, L. Sp. Pl. 553. Yungas, 6,000 ft. (739).

GERANIACEÆ.

- Geranium dissectum*, L. l. c. 956. Near Valparaiso, Chili. (762).
- Geranium Carolinianum*, L. l. c. Near La Paz, 10,000 ft. (760); Sorata, same altitude (761).
- Geranium diffusum*, HBK. Nov. Gen. v. 231. Sorata, 10,000 and 13,000 ft. (763 and 764).
- Tropæolum Smithii*, DC. Prodr. i. 684. Near La Paz, 10,000 ft. (759).

Hypseocharis pimpinellifolia, Remy Ann. Sci. Nat. (III.) viii. 238. Sorata, 8,000 ft. (2553).

Oxalis corniculata, L. l. c. 624. Near La Paz, 10,000 ft. (750 and 1020); near Valparaiso (*O. repens*). (2555).

Oxalis microcarpa, Benth. Pl. Hartw. 115. Mapiri, 2,500 ft. (747).

Oxalis Barrelieri, Jacq. Oxal. 4. Guanai, 2,000 ft. (944).

Oxalis pubescens, HBK. Nov. Gen. v. 239. Near LaPaz, 10,000 ft. (751). The same as Mandon's No. 851. Also a nearly glabrous form or variety from Yungas, 6,000 ft. (748).

OXALIS BOLIVIANA, spec. nova. Caulescens, erecta, pubescens, 30-40 cm. alta, ramosa; foliis ternatis; petiolis gracilibus, 3-5 cm. longis; foliolis sessilibus, late triangularibus, truncatis vel bilobatis, 1-1.5 cm. longis, 2-3 cm. latis; pedunculis terminalibus, elongatis, sub 10-florus; flores gracile pedicellati, 15 mm. longi; sepalis linearibus, 7 mm. longis; petalis luteis et purpureis. Yungas, 6,000 ft. (756). Evidently of the same group as the last.

Oxalis scandens, HBK. l. c. 241. Unduavi, 8,000 ft. (749); Sorata, 8,000 ft. (752).

Oxalis medicaginea, HBK. l. c. Unduavi, 8,000 ft. (755). A form or variety with small leaves the same as Mandon's No. 849.

OXALIS ANDINA, spec. nova. Caulibus filiformibus, repentibus, parce pubescentibus; foliis trifoliolatis; foliolis obcordato-bilobis, 5-8 mm. longis, 6-9 mm. latis minute reticulatis; petiolis gracilibus, 3-4 cm. longis, stipulis latis, prominentibus; pedunculis petiolis valde superantibus, pubescentibus, medio 2-bracteolatis; sepalis obtusibus, 6 mm. longis; corolla purpurea, 2 cm. longa. Unduavi, 8,000 ft. (1212). Related to the last.

Oxalis, of the same section as the last but material too scanty for determination; probably undescribed. Yungas. (753).

Oxalis lobata, Sims, Bot. Mag. t. 2386. Near Valparaiso, Chili. (757).

Oxalis violacea, L. Sp. Pl. 621. Sorata, 8,000 ft. (746); also from Yungas (745 and 758), the exact localities uncertain; I cannot separate these specimens from the N. A. plant.

Oxalis dendroides, HBK. Nov. Gen. v. 250. Mapiri, 2,500 ft. (856); also from 10,000 ft. (1752).

RUTACEÆ.

Erythrochiton Brasiliensis, Nees et Mart. Nov. Act. Cur. xi. 166.

Guanai, 2,000 ft. (2615).

Galipea; a species resembling in leaf form *G. pentagona* but with very different fruit. Guanai, 2,000 ft. (2072).

Esenbeckia alata (Karst. & Tri.), Tri. & Planch., Ann. Sci. Nat. (V). xiv. 306. Falls of Madeira, Brazil. (2617 and 2663).

Zanthoxylum; a species with extremely dense stellate pubescence, evidently related to *Z. stelligerum*, Turcz., but probably distinct; collected only in fruit. Guanai, 2,000 ft. (2592).

SIMARUBEÆ.

Dictyoloma Peruvianum, Planch. in Hook. Lond. Journ. Bot. v. 583. Guanai, 2,000 ft. (738).

BRUNELLIA OLIVERII, spec. nova. Arbor, 20-40 pedalis; ramulis striatis, glaucis; foliis oppositis, imparripinnatis, 25-35 cm. longis, rigidis 5-6 jugis; foliolis ovato-lanceolatis, crenato-serratis, utrinque glabris, supra viridis, nitidis, subter pallidis, sessilibus vel breviter petiolatis; petiolis crassis, 6 cm. longis; paniculis axillaribus, tomentosis 6-8 cm. longis; flores 2 mm. lat.; calyx 4-partitus; pedicellis 2-3 mm. longis; stamina 8; fructus pubescens, 4 mm. longus; semina nigra. Unduavi, 8,000 ft. (1372). Collected also by R. Pearce about Tuapi, near Moro, 4-5,000 ft., Jan. 1866, Herb. Kew. Named in honor of Professor Daniel Oliver, who kindly determined for me this puzzling genus.

Picramnia Sellowii, Planch. in Hook. Lond. Journ. Bot. v. 578. Reis, 1,500 ft. (2690). Collected only in fruit.

Picramnia Spruceana, Engl. in Mart. Fl. Bras. xii. (2), 238. Junction of the rivers Beni and Madre de Dios. (740).

OCHNACEÆ.

Ouratea acuminata (DC.), Engl. in Mart. Fl. Bras. xii. (2), 318. (*Gomphia acuminata*, DC.) Falls of the Madeira, Brazil. (2673 and 2689).

Ouratea inundata (Spruce), Engl. var. *erythrocalyx* (Spruce), Engl.? Falls of the Madeira, Brazil. (2645).

Ouratea, a species with elongated leaves and racemes, not matched at Kew, and probably undescribed. Junction of the Beni and Madre de Dios. (2710).

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South America, 1885-1886.—VII.

(Continued from p. 160.)

BURSERACEÆ.

Protium unifoliolatum (Spruce), Engl. in Mart. Fl. Bras. xii. (2),
262. Falls of the Madeira, Brazil. (2578).

Protium pubescens (Benth.), Engl. l. c. 265. Reis, 1,500 ft.
(2523). Junction of the Beni and Madre de Dios. (2593).

Protium Guianense (Aubl.), March. Adansonia, viii. 52. Guanai,
2,000 ft. (2568).

PROTIUM BOLIVIANUM, spec. nova. Arbor. Folia 15-18 cm.
longa; ramulis petiolisque breviter ferrugineo-pilosis; foliolis
subcoriaceis, supra glabris nitidisque, subtus reticulatis brevi-
ter ferrugineo-tomentosis, 2 vel 3-jugis, ovato-oblongis, 7-9
cm. longis, 4 cm. latis, breviter petiolatis; paniculis axillari-
bus, 7 cm. longis, tomentosis; pedicellis 1 mm. longis; calycis
lobi 5, obtusi; petala 2 mm. longa, 1 mm. lata, glabra; stam-
ina 1 mm. longa; ovarium glabrum. Unduavi, 8,000 ft.
(2638). Related to *P. Spruceanum*, but with different foliage
and calyx.

MELIACEÆ.

Guarea trichilioides, L. Mant. 228. (*Sycocarpus Rusbyi*, Britton,
Bull. Torr. Club, xiv: 143). Guanai, 2,000 ft. (463); also
from junction of the Beni and Madre de Dios. (1296).

Guarea, a species collected only in fruit and not satisfactorily de-
termined. Junction of the Beni and Madre de Dios. (2590).

Moschoxylum propinquum, Miq. Guanai, 2,000 ft. (2352).

CELASTRINEÆ.

Maytenus uliginosus, HBK. l. c. vii. 65. Near Tacna, Chili.
(2698).

Maytenus Chilensis, DC. Prodr. i. 9. Near Valparaiso, Chili.
(2695).

RHAMNEÆ.

Rhamnus polymorpha, Reissek. Yungas, 6,000 ft. (2634); Mapi-
ri, 2,500 ft. (2661).

Gouania tomentosa, Jacq. Amer. 263. Mapiri, 2,500 ft. (1381);
Guanai, 2,000 ft. (1758).

Gouania sepiaria, Mart. Mapiri, 2,500 ft. (1486).



AMPELIDÆ.

Vitis sicioides (L.), Baker, in Mart. Fl. Bras. xiv. pt. II. 202. Mapiri, 5,000 ft. (548); the *forma monstrosa* along the Beni River (1959).

Var. *ovata* (Lam.), Baker, l. c. 203. Beni River (2087).

Vitis trifoliata (L.), Baker, l. c. 212. Mapiri, 5,000 ft. (546); 2,500 ft. (549). I am accepting the species as taken by Mr. Baker.

SAPINDACEÆ.

Urvillea lævis, Radlk. in Herb. Kew. Guanai, 2,000 ft. (543).

Serjania confertiflora, Radkl. Consp. Serj. 4. Guanai, 2,000 ft. (1754).

Serjania Caracasana, Willd. Sp. Pl. iii. 465. Guanai, 2,000 ft. (540); Beni River (541).

Serjania erecta, Radkl. Consp. Serj. 8. Guanai, 2,000 ft. (525).

Serjania glabrata, HBK. Nov. Gen. v. 110. Falls of the Madeira, Brazil (539).

Serjania clematidifolia, Camb.? Mapiri, 2,500 ft. (517). Agreeing in foliage, but with much smaller flowers.

Serjania, related to *S. lethalis*, St. Hil. but with the fruit pubescent. Guanai, 2,000 ft. (524).

Serjania rubicaulis, Benth. Junction of the Rivers Beni and Madre de Dios (521); Beni River (523). The same as Spruce No. 4139.

Serjania rufa, Radkl. Consp. Serj. 16. Reis, 1,500 ft. (538); Guanai, 2,000 ft. (542).

Serjania, Sorata, 10,000 ft. (518).

Nos. 537, 545, 625 and 2699 are also probably of this genus, but they are not certainly determined.

Cardiospermum Helicacabum, L. Sp. Pl. 925. Reis, 1,500 ft. (526).

Paullinia riparia, HBK. Nov. Gen. v. 115. Guanai, 2,000 ft. (626). The same as Spruce No. 578, Herb. Kew.

Paullinia pinnata, L. l. c. 366. Falls of the Madeira, Brazil, (519 and 520); Reis, Bolivia (522).

Paullinia acutangula, Pers. Ench. i. 443. Guanai, 2,000 ft. (530 and 531).

Paullinia weinmanniæfolia, Mart. Herb. Fl. Bras. No. 69. Reis, 1,500 ft. (527).

Paullinia, a species probably undescribed. Guanai, 2,000 ft. (529).

Paullinia, a species collected only in fruit and without leaves. Junction of the Beni and Madre de Dios (2687).

Schmidelia lævis, St. Hil. Reis, 1,500 ft. (2086).

Schmidelia lævigata, Camb.? Falls of the Madeira, Brazil (544).

Schmidelia, related to *S. mollis*, HBK. Falls of the Madeira (552).

Schmidelia, same locality (1821).

Capunia scrobiculata, Rich. Junction of the Beni and Madre de Dios (1367).

Matayba scrobiculata (HBK.), Radkl. in Herb. Kew. Reis, 1,500 ft. (1385).

THINOUIA CORIACEA, sp. nova. Frutex scandens; rami teretes; folia bi- vel trifoliolata vel foliola in cirrus simplice transforma; foliola ovata, coriacea, 10-12 cm. longa, 7-8 cm. lata, integra, apice et basis obtusa, utrinque glaberrima; petiolis crassis, 1 cm. longis; samaræ tripteræ, columella persistente, subulata; samaræ 4 cm. longæ, speciose reticulatæ, alis erectis, integris. Guanai, 2,000 ft. (550), Nearly related to *T. myriantha*, Triana and Planch. Ann. Sci. Nat. (IV. ; xviii. 368, but apparently a distinct species.

Talisia esculenta (Camb.), Rac. in Herb. Kew. (*Sapindus esculentus*, Camb.) Beni River (1390).

Talisia cerasina, Radkl. in Herb. Kew. Falls of Madeira, Brazil. (2527).

Dodonæa viscosa, L. Mant. 238. Near La Paz, 10,000 ft. (500); Yungas, 4,000 ft. (2350).

ANACARDIACEÆ.

Anarcadium occidentale, L. Sp. Pl. 548. Junction of the Rivers Beni and Madre de Dios (1963).

Schinus molle, L. l. c. 1467. Near Valparaiso, Chili (1214).

Duvaua dependens (Ort.), DC. Prodr. ii. 74. Near La Paz, 10,000 ft. (1446).

Spondias lutea, L. l. c. 613. Falls of the Madeira, Brazil, (2594).

CONNARACEÆ.

Rourea glabra, HBK. Nov. Gen. vii. 41, var. TRIFOLIOLATA, n. var. Folia trifoliolata; foliola obovata, 10-15 cm. longa, 5-7 cm. lata; petiolis 6 cm. longis. Junction of the Rivers Beni and Madre de Dios. (1360 and 1370).

Rourea cuspidata, Benth. in Spruce, Exsic. No. 1901, Herb. Kew. Baker in Mart. Fl. Bras. xiv. (11) 181. Mapiri, 2,500 ft. (1336).

ROUREA (?) BAKERANA, spec. nova. Folia 15-20 cm. longa, 5-7 foliolata, ad maturitatum utrinque glabra; foliolis oblongis vel ellipticis, acutis, triplo longioribus quam latis, basi cuneatis vel obtusis; petiolis venisque minute griseo-sericeis, calycis et pedicellis valde griseo-sericeis; calyx persistens, minutus, post anthesin *non auctus*; capsula sessilis, solitaria, dense sericea, 15 mm. longa, pedicellis 2 mm. longis. Flores non vidi. Junction of the Rivers Beni and Madre de Dios (618). Differing from the described species of *Rourea* in the calyx remaining small in fruit. Named for Mr. J. G. Baker, the monographer of this order for the Brazil Flora.

Connarus fulvus, Planch. Linnæa, xxiii. 434. Mapiri, 2,500 ft. (1334). Collected in fruit; the pubescence which marks the species in its juvenile state entirely gone from these specimens.

Connarus, a species resembling *C. Beyrichii*, Planch., but with very different venation; probably undescribed. Junction of the Rivers Beni and Madre de Dios. (1335).

LEGUMINOSÆ.

Crotalaria Pohliana, Benth. Tayl. Ann. Nat. Hist. iii. 428 and in Mart. Flor. Bras. xv. (1), 20. Mapiri, 5,000 ft. (937).

Crotalaria incana, L. Sp. Pl. 1.05. Falls of Madeira, Brazil, (942); Yungas, 6,000 ft., a branching form with few-flowered racemes, (939); Guanai, 2,000 ft., a thin-leaved form, collected in fruit (943).

Var. *grandiflora*, Benth. mss. in Herb. Kew. Sorata, 10,000 ft. (940). The same as Matthew's Peru No. 916.

Crotalaria avagyroides, HBK. Nov. Gen. vi. 404. Yungas, 4,000 ft. (941).

Crotalaria brachystachya, Benth. Linnæa, xxii. 512. Falls of the Madeira, Brazil. (938).



An Enumeration of the Plants Collected by Dr. H. H. Rusby in
South America, 1885-1886.—VIII

(Continued from p. 192.)

- Lupinus humifusus*, Benth. Pl. Hartw. 169. Sorata, 13,000 ft. (955); the same as Mandon No. 687.
- Lupinus Bogotensis*, Benth. l. c. 168. Near La Paz, 10,000 ft. (954); the same as Holton's No. 946 from New Grenada.
- Spartium junceum*, L. Sp. Pl. 995. Near La Paz, 10,000 ft. (1016); abundantly escaped from cultivation.
- Medicago denticulata*, Willd. Sp. Pl. iii. 1414. Near La Paz, 10,000 ft. (1018); a weed.
- Medicago lupulina*, L. l. c. 1097. Near La Paz, 10,000 ft. (1019 and 1968); abundantly introduced.
- Melilotus Indica* (L.), All. Flor. Ped. i. 308. Near La Paz, 10,000 ft. (1017).
- Trifolium amabile*, HBK. l. c. vi. 503. Near La Paz, 10,000 ft. (1012, 1013, 1014 and 1015).
- Psoralea Mutisii*, HBK. l. c. 487. Near La Paz, 10,000 ft. (957); a form with calyx lobes nearly triangular.
- Psoralea*, perhaps a broad-leaved form of the last, but indeterminate. Sorata, 8,000 ft. (958).
- Psoralea glandulosa*, L. Sp. Pl. 1075. Valparaiso (956).
- Indigofera lespedezoides*, HBK. l. c. 457. Reis, 1,500 ft. (1439).
- DALEA BOLIVIANA, spec. nova. Suffruticosa, prostrata, ramosissima, foliolis 13-17, cuneato-oblongis, truncatis vel emarginatis, punctatis, glabris, 3-5 mm. longis; ramulis et rachis pubescentibus; spicis oblongis, 2-3 cm. longis; bracteis obovatis, longe acuminatis, pubescentibus; calycis villosis, dentibus tubo multo brevioribus; corolla 8-10 mm. longa. purpurea. Near La Paz, 10,000 ft. (959).
- Related to *D. humifusa*, Benth. Pl. Hartw. 170; collected

also by R. Pearce at La Paz, 12,000 ft. April, 1864, and by Mandon (No. 702).

Barbiera polyphylla, DC. Mem. Leg. 242. Guanai, 2,000 ft. (2356).

Tephrosia leptostachya, DC. Prodr. ii. 251. Unduavi, 8,000 ft. (1343).

Tephrosia toxicaria, Pers. Syn. ii. 329. Mapiri, 5,000 ft. (985).
Bolivian name "sacha."

Cracca ochroleuca (Pers.), Benth, in Oerst. Leg. Cent. Amer. 9. Yungas, 6,000 ft. (2355).

COURSETIA BOLIVIANA, spec. nova. Frutex scandens; foliolis 15-19, oblongis, 3-4 cm. longis, 1-5 cm. latis, obtusis, mucronatis, utrinque minutissime pubescentibus, breviter petiolatis; racemis axillaribus, elongatis, 10-20 floris, 9-18 cm. longis; floribus pedicellatis, 8 mm. latis; petalis exteriore pubescentibus, calycibus 5-dentatis, bibracteolatis; bracteolis linearibus. Folia 15-20 cm. longa. Sorata, 8,000 ft. (1043 and 1344).

Astragalus uniflorus, DC. Mem. Astrag. t. 50. Sorata, 13,000 ft. (1925). The same as Mandon's No. 713.

ASTRAGALUS CAPITELLUS, spec. nova. Herbaceus vel basi lignescens, 20-25 cm. altus; foliolis 16-19, oblongo-linearibus, 1 cm. longis, 2-3 mm. latis, supra glabratis, subter albo-pubescentibus; folia 5-9 cm. longa, foliola distantia; stipulis triangularibus, scariosis; pedunculis axillaribus, ad maturitatem 1 cm. longis, parce pilosis; capitellis paucifloris, flores minores; calycibus 2 mm. longis, laciniis subulatis; leguminibus 12 mm. longis, oblongis, apiculatis, puberulis, sulcatis, 10-spermis. Capitellis sub 6-floris. Near La Paz, 10,000 ft. (1005). Apparently the same as Mandon's No. 714, Herb. Kew.

Chætocalyx Brasiliensis (Vogel), Benth, in Mart. Fl. Bras. xv. Pars 1. 75. Guanai, 2,000 ft. (2398).

Amicia Lobbiana. Benth. in Herb. Kew. Sorata, 10,000 ft. (1333). The same as Mandon No. 765.

Æschynomene sensitiva, Sw. Fl. Ind. Occ. iii. 1276. Falls of the Madeira, Brazil. (1037).

Æschynomene Hystrix, Poir. Dict. Suppl. iv. 77. Same locality. (1038).

Æschynomene falcata, DC. Prodr. ii. 322. Guanai, 2,000 ft. (1035).

Æschynomene Brasiliana, DC. l. c. Sorata, 10,000 ft. (1036).

Adesmia microphylla, Hook. & Arn. Bot. Beech. 19. Near Valparaiso, Chili, (2512 and 1040), the latter number distributed as from near La Paz, which is almost certainly due to a confusion of labels.

Adesmia Miraflorensis, Remy. Ann. Sci. Nat. (III.), vi. 357. ex descriptio. Near La Paz, 10,000 ft. (1039 and 1041).

Stylosanthes Guianensis (Aubl.), Sw. Act. Holm. 1789, 296. Near La Paz, 10,000 ft. (1008); Guanai, 2,000 ft. (2324).

Zornia diphylla (L.), Pers. Syn. ii. 318. Guanai, 2,000 ft. (1156). var. *latifolia* (DC.), Benth. in Mart. Fl. Bras. xv. Pars. 1. 81. Unduavi, 8,000 ft. (1971). Specimens with exceedingly large bracts; referred to this variety with much hesitation.

Desmodium cajanifolium (HBK.), DC. Prodr. ii. 331. Guanai, 2,000 ft. (966); Mapiri, 5,000 ft. (967 and 968); Reis, 1,500 ft. (969). Also a form or variety with very large flowers, Yungas, 6,000 ft. (965).

Desmodium axillare (Sw.), DC. l. c. 333. Falls of Madeira, Brazil, (960); Mapiri, 5,000 ft. (963).

Desmodium albiflorum, Salzm. in Benth. l. c. 99. Yungas, 6,000 ft. (975).

Desmodium molliculum (HBK.), DC. l. c. 331. Sorata, 10,000 ft. (973).

DESMODIUM MANDONI, spec. nova. Caulibus ascendentibus, frutescentibus, pilosis; foliolis ovatis vel oblongis, obtusis, apiculatis, breviter petiolatis, supra glabris, subter pilosis, 4-5 cm. longis; racemis terminalibus elongatis (15 cm. longis); flores purpurei, magni, (12 mm. lati), gracile pedicellati; bracteis acuminatis, glabris; calycis lobi acuminati; leguminibus 4-articulatis, articulis oblongis, breviter pilosis.

Sorata, 10,000 ft. (970), Yungas, 6,000 ft. (964 as to the flowering specimens; the fruit distributed with this number belongs to some other species, perhaps *D. tortuosum*). The same as Mandon's Nos. 733 and 738.

Desmodium, a species resembling the last and apparently the same as Mandon's 732 and 735, but only in flower (976).

Desmodium adscendens (Sw.), DC. l. c. 332. Mapiri, 5,000 ft. (977).

DESMODIUM YUNGASENSE, spec. nova. Caulibus repentibus

vel ascendentibus; ramulis pilosis; foliolis ovatis vel lanceolatis, tenuis, obtusis, mucronulatis, breviter petiolatis, supra glabratibus, subter albo-pilosis; racemis terminalibus axillaribusque, elongatis; flores caerulei?, parvi, (7 mm. lati); gracile pedicellati; bracteis et calycibus valde pilosis; leguminibus 5-articulatis, articulis oblongis, dense et breviter tomentos. Yungas, 4,000 ft. (974).

Evidently related to *D. Mandonii*, but with smaller flowers, thinner and smaller leaves and pilose bracts and calyx.

Desmodium. A species apparently related to *D. axillare*. Falls of the Madeira, Brazil (961); junction of the Beni and Madre de Dios (962).

Desmodium sclerophyllum, Benth. in Mart. Fl. Bras. xv. Pars. 1., 102. Reis, 1,500 ft. (2349).

Desmodium barbatum (L.), Benth. l. c. 96. Reis, 1,500 ft. (971).

Vicia sativa, L. var. *angustifolia* (Roth), Ser. Near La Paz, 10,000 ft. (1006). Introduced.

Vicia graminea, Sm. in Rees Cyclop. fide Benth. l. c. Sorata, 10,000 ft. (1007). The same as Mandon, No. 724.

Lathyrus pubescens, Hook. & Arn. Bot. Beech. 21. Sorata, 10,000 ft. (1011).

Faba vulgaris, L. Cultivated in Yungas, 4,000 ft. (1010).

Centrosema Plumieri (Juss.), Benth. l. c. 127. Guanai, 2,000 ft. (2354).

Centrosema pubescens, Benth. l. c. 131. Reis, 1,500 ft. (1345).

Centrosema Virginianum (L.), Benth. l. c. 132. Yungas, 6,000 ft. (1340). The same as Mandon's 744.

Centrosema hastatum, Benth. l. c. Guanai, 2,000 ft. (1049).

Clitoria Poitæi, DC. Prodr. ii. 234. Guanai, 2,000 ft. (2399).

Cologania ovalifolia, HBK. Nov. gen. vi. 412. Sorata, 10,000 ft. (1338).

Teramnus uncinatus, (L.), Sw. Fl. Ind. Occ. iii. 1238. Reis, 1,500 ft. (1346).

CALOPOGONIUM CÆRULEUM (Benth). (*Stenolobium cæruleum*, Benth. Ann. Mus. Vind. ii. 125). Guanai, 2,000 ft. (2629).

Galactia tenuiflora (Willd.), Wight. & Arn. Prodr. i. 206. Guanai, 2,000 ft. (2370).

GALACTIA SPECIOSA (DC). (*Collæa speciosa*, DC., Mem. Leg. 245). Yungas, 6,000 ft. (1341); Unduavi, 8,000 ft. (1342).

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GALACTIA MONTANA, spec. nova. Procumbens vel adscendens; ramulis elongatis, molliter pubescentibus; foliolis 3, oblongis, obtusis, emarginatis, subter pilosis, supra glabratissimis vel minute tuberculatis; racemis axillaribus, folio brevioribus, paucifloris; flores 13 mm. lat.; calycis laciniis tubo æquantibus; leguminibus sericeis, 2-3 cm. longis. Sorata, 8,000 ft. (972). The same as Mandon's No. 742.

Cratylia floribunda, Benth. Ann. Mus. Vind. ii. 132. Beni River. (1330).

Canavalia ensiformis (L.), DC. Prodr. ii., 404. Mapiri, 5,000 ft. (1328 and 2858); Guanai, 2,000 ft. (2369).

Dioclea lasiocarpa, Mart. in Benth. l. c. 133. Guanai, 2,000 ft. (1327); Mapiri, 5,000 ft. (2357).

Dioclea, a species resembling the last but with flowers twice as large and leaves nearly smooth. Yungas. (1325).

Dioclea reflexa, Hook. f. Niger Flora, 306. Unduavi, 8,000 ft. (2397).

Phaseolus ovatus, Benth. l. c. 139. Junction of the Rivers Beni and Madre de Dios. (1337).

Phaseolus campestris, Mart. in Benth. l. c. 141. Guanai, 2,000 ft. (2367). Referred to this species with some doubt.

Phaseolus erythroloma, Mart. in Benth. l. c. Unduavi, 8,000 ft. (2368).

Phaseolus peduncularis, HBK. Nov. Gen. vi. 447. Junction of the Rivers Beni and Madre de Dios. (1339).

PACHYRHIZUS BULBOSUS (L.) (*Dolichos bulbosus*, L. Spec. Pl. 1021; *P. angulatus*, Rich). Beni River. (1326). An entire leaved form referred to this species with some hesitation.

Cajanus Indicus, Spreng. Syst. Veg. iii. 248. Mapiri, 5,000 ft. (2360).

DALBERGIA FRUTESCENS (Vell.) (*Pterocarpus frutescens*, Vell. Fl. Flum. vii. t. 96; *D. variabilis*, Vogel). Guanai, 2,000 ft. (2532).

Machærium angustifolium, Vogel, Linnæa, xi. 193. Guanai, 2,000 ft. (1324); Yungas, 4,000 ft. (2366).

Machærium sordidum, Benth. in Mart. Fl. Bras. xv. Part I. 241?



Guanai, 2,000 ft. (2361). Compared with Claussen, 139 in Herb. Kew, and apparently the same.

Machærium acuminatum, HBK. l. c. 391. Guanai, 2,000 ft. (1321 and 1322).

Machærium, species undetermined. Falls of the Madeira. (1323).

Pterocarpus Rohrii, Vahl. Symb. ii. 79. Falls of the Madeira. (2401).

Pterocarpus violaceus, Vogel. Linnæa, xi. 416. Junction of the Beni and Madre de Dios. (2359).

Lonchocarpus macrocarpus, Benth. Journ. Linn. Soc. iv. Suppl. 91. Guanai, 2,000 ft. (1329).

Lonchocarpus, species undetermined. Junction of the Beni and Madre de Dios. (2362).

Derris Negrensis, Benth. in Mart. Fl. Bras. l. c. 289. Reis, 1,500 ft. (2374). A form or variety with paniced inflorescence.

Andira inermis (Sw.), HBK. Nov. Gen. vi. 385. Falls of the Madeira, Brazil. (2353).

Sophora macrocarpa, Smith in Rees Cycl. 6. Unduavi, 8,000 ft. (2364).

TOUNATEA ARBORESCENS (Aubl.) (*Possira arborescens*, Aubl. Pl. Gui. ii. 934 (1775); *Rittera triphylla*, Sw. Prodr. 82, (1788); *Swartzia triphylla*, Willd.) Junction of the Rivers Beni and Madre de Dios (1320).

TOUNATEA FUGAX (Spruce). (*Swartzia fugax*, Spruce, in Mart. Fl. Bras. xv. Pars II. 30). Guanai, 2,000 ft. (1319).

Cæsalpinia pectinata, Cav. in DC. Cat. Hort. Monspel. 84. Tacna, Chili (2358).

Cassia bacillaris, L. f. Suppl. 231. Reis, 1,500 ft. (2400).

Cassia affinis, Benth. in Mart. Fl. Bras. xv. (II.), 98. Yungas; 6,000 ft. (837). Specimens referred to this species with some hesitation.

Cassia bicapsularis, L. Spec. Pl. 538. Mapiri, 2,500 ft. (988).

Cassia occidentalis, L. l. c. 539. Reis, 1,500 ft. (983).

Cassia trachypus, Mart. Fl. Bras. xv. (II.) 122. Mapiri, 2,500 ft. (986).

Cassia atomaria, L. l. c. 540. Near La Paz, 10,000 ft. (1042).

Cassia leiophylla, Vog. var. (?) *pubescens*, Benth. in Herb. Kew. Guanai, 2,000 ft. (987).

- Cassia emarginata*, Clos in C. Gay, Fl. Chil. ii. 235. Near Valparaiso, Chili (979).
- Cassia tomentosa*, L. f. l. c. Near La Paz, 10,000 ft. (981). Yungas, 6,000 ft. (989).
- Cassia latipetiolata*, Domb. in Vogel Syn. Cass. 70. Tacna, Chili (982); Near La Paz, 10,000 ft. (980).
- Cassia pilifera*, Vogel, l. c. 23. Mapiri, 5,000 ft. (984).
- Cassia Chamæcrista*, L. l. c. 542. Guanai, 2,000 ft. (2854).
- Cassia flavicomis*, HBK. Nov. Gen. vi. 366. (1021).
- Bauhinia longifolia* (Bong.), Steud. Nom. and in Benth. in Mart. l. c. 192. Falls of the Madeira, Brazil, (951).
- Bauhinia inermis* (Cav.), Pers. Ench. i. 455. Reis, 1,500 ft. (950).
- BAUHINIA RUSBYI, spec. nova. Sectio Pauletia. Foliis majusculis, ad $\frac{3}{4}$ bilobis; lobis lanceolatis, coriaceis, obtusis, divergentibus, 5-7 nervis, subtus dense pubescentibus, venis prominentibus, supra glabris, nitidis; ramuli tereti, pubescenti, aculeati; petala anguste linearia, 1 cm. longi; racemi elongati; petioli 2 cm. longi; calycis tubus 1 cm. longus; legumen 10-12 cm. longum, 1 cm. latum, minutissime pubescens, stipite 1 cm. longe. Guanai, 2,000 ft. (946). Apparently nearest to *B. longifolia*.
- Bauhinia splendens*, HBK. Nov. Gen. vi. 319. Falls of the Madeira, Brazil (948).
- Bauhinia Langsdorfiana*, Bong. Mem. Acad. St. Petersburg. vi. (IV.). Guanai, 2,000 ft. (947 and 952). Presumably this species, but collected in fruit only.
- Bauhinia*, species undetermined. Junction of the Beni and Madre de Dios (949).
- Bauhinia*, species undetermined, not matched at Kew and probably undescribed. Reis, 1,500 ft. (945). Not sufficiently studied; possibly to be referred to another genus.
- Copaifera Langsdorfii*, Desv. Mem. Mus. Paris, vii. 377. Falls of Maderia, Brazil. (1009).
- Piptadenia communis*, Benth. Hook. Journ. Bot. iv. 337. Guanai, 2,000 ft. (1306; 1307; 1308).
- Piptadenia*, a species somewhat related to the last, collected only in fruit. Guanai, 2,000 ft. (1317).
- Piptadenia colubrina* (Vell.), Benth. l. c. 341. Yungas, 6,000 ft. (1305, in flower) Guanai, 2,000 ft. (1331, in fruit).

- Mimosa albida*, Kunth, Mim. t. I. Guanai, 2,000 ft. (1297); Yungas, 4,000 ft. (1303). A thornless form.
- Mimosa floribunda*, Wild. Sp. Pl. iv. 1031. Falls of the Maderia, Brazil (1298). Apparently this species.
- Mimosa asperata*, L. l. c. 1507. Falls of Madeira, Brazil (1302) Guanai, 2,000 ft. (1301).
- Mimosa rufescens*, Benth. in Mart. l.c. 362. Mapiri, 2,500 ft. (1304).
- Mimosa Boliviana*, Benth. Trans. Linn. Soc. xxx. 396. Yungas, 6,000 ft. (1300); Guanai, 2,000 ft. (1311).
- Mimosa Soratensis*, Benth. l. c. 427. Sorata, 10,000 ft. (1299).
- Acacia Cavenia* (Mol.), H. & A. Bot. Beech. 21. Valparaiso, Chili (953).
- Acacia Farnesiana* (L.), Willd. Sp. Pl. iv. 1083. Sorata 8,000 ft. (2371).
- ACACIA LUTEA (Mill). (*Mimosa lutea*, Mill. Dict. No. 18; *A. macracantha*, Humb. & Bonpl. in Willd, l. c. 1080). Junction of the Beni and Madre de Dios (2373).
- Acacia*, ? sp. Yungas, 6,000 ft. (2372).
- CALLIANDRA BOLIVIANA, spec. nova. Sect. Macrophyllæ. Foliola 3-juga, terminalia oblique-ovata, obtuse acuminata, mucronulata, 8-12 cm. longa, 4-nervia, inferiora ovato-rhomboida, 4-6 cm. longa; petiola 2-4 cm. longa; pedunculi 3 cm.; calyx 3 mm., corolla 8 mm. longa, striata; legumen glabrum, 12 cm. long., 8 mm. lat. Guanai, 2,000 ft. (1314); Mapiri 2,500 ft. (1315).
- Nearly related to *C. Guildingii*, Benth. of the West Indies.
- Calliandra* ? Mapiri, 5,000 ft. (1316). Collected only in fruit. Very similar to if not identical with Glaziou's No. 8451 in Herb. Kew, from vicinity of Rio Janeiro. Also collected only in fruit.
- Pithecolobium latifolium*, (L.), Benth. in Hook. Lond. Journ. Bot. iii. 214. Junction of the Beni and Madre de Dios (1313).
- Pithecolobium trapezifolium*, (Vahl), Benth. l. c. 204. Guanai, 2,000 ft. (1318).
- Pithecolobium Saman* (Jacq.), Benth. l. c. 216. Yungas, 6,000 ft. (2363).
- Pithecolobium divaricatum*, Benth. l. c. 213. Junction of the Beni and Madre de Dios (2507).
- Pithecolobium* ? Guanai, 2,000 ft. Specimens too fragmentary for determination (2567).

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Inga strigillosa, Spruce in Mart. Fl. Bras. Reis, 1,500 ft.
(1002).

Inga nobilis, Willd. Enum. 1047. Mapiri, 2,500 ft. (1003).

Inga edulis, Mart. Herb. fl. Bras. 113. Unduavi, 8,000 ft.
(991); Junction of the Beni and Madre de Dios (995).

Inga marginata, Willd. Sp. Pl. iv. 1015. Guanai, 2,000 ft.
(994; 998; 999).

Inga punctata, Willd. l. c. 1016. Beni River, (1000).

Inga Matthewsiana, Benth. in Hook. Lond. Journ. Bot. iv. 594.
Guanai, 2,000 ft. (996).

Inga tomentosa, Benth. Trans. Linn. Soc. xxx. 609. Mapiri,
5,000 ft. (997).

Inga stipularis, DC. Mem. Leg. 440. Mapiri, 5,000 ft. (1004).

INGA BOLIVIANA, spec. nova. Flores tomentelli, in receptaculo
distincte pedicellati, umbellam globosam formantes; pedicelli
calyce longiores; petiolus nudus; foliola 3-4 juga, elliptico-ob-
longa, apice acuminata, utrinque glabra, venulosa, sessiles,
9-20 cm. longa; umbellæ longiuscule pedunculatæ, pedunculi
tomentelli; pedicelli 5-8 mm., calyc. 4-6 mm., corolla 10 mm.
longa; legumen ignotum. Junction of the Rivers Beni and
Madre de Dios (990). This is nearest to *I. quaternata*, Poepp.
& Endl. but has much larger leaflets and less woolly flowers.

Inga, probably undescribed; collected only in fruit. Junction of
the Beni and Madre de Dios (993 and 2375). Some flowers
of *I. edulis*, Mart. were accidentally distributed with No. 993.

Inga, related to *I. nobilis*, but with thin membranaceous leaves
and simple inflorescence. Mapiri, 2,500 ft. (1001). This is
most likely an undescribed species.

ROSACEÆ.

Licania Benthami, Hook. f. in Mart. Fl. Bras. xiv. (2) 12. Junc-
tion of the Madre de Dios and Beni (2420). The same as
Spruce No. 3278.

LICANIA PALLIDA, spec. nova. Folia oblonga, utrinque pallida
et glabra, 10-12 cm. longa, 5 cm. lata; petiola crassa, 1 cm.
longa; paniculæ terminales et axillares; ramulis, bracteolis,
pedunculis calicibusque albo-pubescentibus; flores spicati;



spicæ 3-4 cm. longæ, 8mm. latæ; pedunculi 2 mm. longi; bracteolæ longiores; stamina sub 5, exserta, petala longiores; fructus ignotus. Junction of the Beni and Madre de Dios (2442). Apparently nearest to *L. polita*.

Hirtella Americana, Aubl. Guian. i. 247. Guanai, 2,000 ft. (702); Mapiri, 5,000 ft. (704). Junction of the Beni and Madre de Dios (1371). A widely diffused and variable species.

Hirtella bullata, Benth. in Hook. Journ. Bot. ii. 216. Reis, 1,500 ft. (703). The same as Spruce No. 3084, Herb. Kew.

HIRTELLA BURCHELLII, spec. nova. Flores in paniculas angustas dispositi; paniculæ rufo-villosæ, angustæ, axillares terminalibusque, 12-20 cm. longæ; ramulis rufo-villosis; foliis ovato-oblongis, acuminatis, basi rotundatis, utrinque nitidis, supra lævis, subtus ad nervos parce villosis; pedunculis 2mm. longis calicibusque dense villosis. Beni River (1222). The same as Burchell's Nos. 6331, 6416 and 6571, Herb. Kew. Nearest to the preceding species.

Hirtella triandra, Sw. Prodr. 57. Reis, 1,500 ft. (1448).

Hirtella bracteata, Mart. & Zucc. Abhand. Akad. Munch. x. 384? Guanai, 2,000 ft. (2492). Specimens insufficient for certain determination.

Couepia glaucescens, Spruce in Mart. Flor. Bras. xiv. (2) 49. Falls of Madeira, Brazil (2678).

Prunus salicifolia, HBK. Nov. Gen. iv. 241. Near La Paz, 10,000 ft. (480).

Quillaja Saponaria, Mol. Chil. 354. Sorata, 8,000 ft. (728).

Rubus megallococcus, Focke, Abhand. Nat. Gesell. Bremen, iv. 157. Unduavi, 8,000 ft. (470 and 472). The same as Mandon's 662.

Rubus Boliviensis, Focke, l. c. 158. Same locality (468). Distributed as *R. Sellowii*, C. & S.? The same as Mandon's 656.

Rubus Bogotensis, HBK. l. c. vi. 220. Unduavi, 8,000 ft. (474). Possibly this may be an extreme form of *R. floribundus*.

Rubus roseus, Poir. Dict. vi. 237. Unduavi, 8,000 ft. (473 and 469). The same as Mandon's Nos. 659 in part and 661.

Rubus glaucus, Benth. Pl. Hartw. 173. Yungas, 6,000 ft. (471).

RUBUS RUSBYI, spec. nova. Ascendens; tomentosus; folia integra, petiolata, serrata, utrinque tomentosa; stipulis latis,

ovatis; ramulis, petiolisque minute recurvo-aculeatis; floris solitariis, 2 cm. latis; sepalis ovatis, acutis, 8 cm. longis, dense tomentosus. Planta 50 cm. alta; folia 4 cm. longa, 2 cm. lata. Next to *R. Loxensis*, Benth. Unduavi, 10,000 ft. (2508).

Fragaria Chilensis, Ehrh. Beitr. vii. 26. Near La Paz, 10,000 ft. (479).

Alchemilla aphanoides, Mutis. in Linn. f. Suppl. 122. Unduavi, 8,000 ft. (851).

Alchemilla hirsuta, HBK. l. c. 226. Sorata, 13,000 ft. (477).

Alchemilla tripartita, R. & P. Fl. Per. i. 68. Unduavi, 10,000 ft. (476); 8,000 ft. (849 and 850, the latter a large, strong form).

Alchemilla pectinata, HBK. l. c. 226. Unduavi, 10,000 ft. (475).

Alchemilla pinnata, R. & P. l. c. 69. Near La Paz, 10,000 ft. (2551).

Alchemilla, probably a reduced form of *A. hirsuta*. Sorata, 13,000 ft. (1855). The same in Herb. Kew, coll. by Jameson in Columbia.

Acæna ovalifolia, R. & P. l. c. 67. Unduavi, 8,000 ft. (467).

Acæna cylindrostachya, R. & P. l. c. 68. Near La Paz, 10,000 ft. (466).

Poterium Sanguisorba, L. Sp. Pl. 1411. Near La Paz, 10,000 ft. (1926). Introduced from Europe.

OSTEOMELES PERNETTYOIDES (Wedd.) (*Hesperomeles pernettyoides*, Wedd. Chlor. And. ii. 231). Sorata, 8,000 ft. (1787). Unduavi, 10,000 ft. (2030).

SAXIFRAGÆ.

Escallonia rubra, Pers. Ench. i. 235. Valparaiso, Chili (1024).

Escallonia revoluta, (R. & P). Pers. l. c. Same locality (487 and 1772).

PHYLLONOMA INTEGERRIMA (Turcz.) (*Dulongia integerrima*, Turcz. Bull. Soc. Moscou, 1858, 454). Mapiri, 5,000 ft. (2521). A form with serrate leaves. I am obliged to Mr. N. E. Brown for putting me on the track of this plant.

Weinmannia hirtella, HBK. l. c. 56. Mapiri, 10,000 ft. (2040).

Weinmannia elliptica, HBK. l. c. 50. Yungas, 6,000 ft. (535); Unduavi, 8,000 ft. (536). Some of these specimens were distributed as *W. subsessilifolia*, R. & P.?

Ribes albiflorum, R. & P. Fl. Per. iii. 12. Unduavi, 8,000 ft. (478).

HALORACEÆ.

Gunnera scabra, R. & P. l. c. t. 44. Unduavi, 8,000 ft. (624).

COMBRETACEÆ.

Combretum Jacquini, Griseb. Fl. Brit. West Indies, 275. Junction of the Beni and Madre de Dios (721).

Combretum Læflingii, Eichl. in Mart. Fl. Bras. xiv. (2) 110. Guanai, 2,000 ft. (622), and (2635?) the latter in fruit only.

Combretum Aubletii, DC. Prodr. iii. 19. Beni River (1773).

Combretum, sp. undetermined. Guanai, 2,000 ft. (623).

MYRTACEÆ.

Eucalyptus capitellatus, Sm. Bot. Nov. Holl. 42. Near Valparaiso (600). Cultivated.

Calyptranthes, a species near *C. Spruceana*, Berg. Guanai, 2,000 ft. (1226). Not at Kew, and perhaps undescribed. Collected only in fruit.

Psidium pomiferum, L. Sp. Pl. 672. Beni River (2083).

Psidium polycarpon, Lamb. Trans. Linn. Soc. xi. 231. Yungas, 4,000 ft. (2460).

Psidium, sp. Falls of Madeira, Brazil, (2084).

Psidium aromaticum, Aubl. Guian. i. 485. Falls of Madeira (2085). Compared with Schomburgh's No. 355, Herb. Kew, and appears not distinct.

Myrtus microphylla, Humb. & Bonpl. Pl. Æquin. t. 4. Sorata, 10,000 ft. (2042).

Myrcia lanceolata, Camb. in St. Hil. Fl. Bras. Merid. ii. 236. Yungas, 6,000 ft. (605 and 1447).

Myrcia Selloana, Berg in Mart. Flor. Bras. xiv. (1) 197. Falls of the Madeira (585); Junction of the Beni and Madre de Dios, (592) and 586).

Myrcia velutina, Berg, l. c. 182. Falls of the Madeira (590).

Myrcia Paivæ, Berg, l. c. 179. Yungas, 4,000 ft. (598). The same as Spruce No. 486.

Myrcia anacardiæfolia, Berg, Gardn. Lond. Journ. Bot. ii. 354. Falls of the Madeira (2683).

Myrcia Berberis, DC. Prodr. iii. 254? Falls of the Madeira (587).



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- Myrcia guajavæfolia*, Berg, l. c. 160. Falls of Madeira (596).
Myrcia phæoclada, Berg, l. c. 167. Yungas, 6,000 ft. (599).
Myrcia prunifolia, DC. l. c. 253. Junction of the Beni and
Madre de Dios (2693); Falls of Madeira (595), the latter
specimens referred here with considerable doubt.
Myrcia sp. near *M. bimarginata*, Berg. Falls of the Madeira (603).
Eugenia Michellii, Lam. Encycl. iii. 203. Unduavi, 8,000 ft.
(2082).
Eugenia flavescens, DC. Prodr. iii. 272. Falls of the Madeira
(606).
Eugenia Macahaensis, Berg l. c. 589? Falls of the Madeira
(588 and 593); Junction of the River Beni and Madre de
Dios (597). Compared with Riedel's No. 353, Herb. Kew.,
and closely related if not identical.
Eugenia Schlechtendahliana, Berg, l. c. 321. Junction of the
Rivers Beni and Madre de Dios (594).
Eugenia Gardneriana, Berg, l. c. 316. Falls of the Madeira
(604). Flowers smaller than in the type.
Eugenia Feijoi, Berg, l. c. 283. Falls of the Madeira (2664).
Eugenia ovalis, Berg, Linnæa, xxvii. 156? Falls of the Ma-
deira (602). Apparently the same as Spruce's No. 5523.
Specimens in leaf only.
Eugenia Chequen (Mol.), H. & A. Near Valparaiso, Chili (583).
Eugenia spectabilis, Phil. Linnæa, xxviii. 639. Same locality (584).
Eugenia, sp. Same locality. (601).

Nos. 591 from Falls of the Madeira and 589 from Junction of
the Beni and Madre de Dios are probably *Eugenias*, but the spe-
cimens are indeterminable.

Lecythis pachysepala, Spruce in Mart. Fl. Bras. l. c. 494. Junction of the Rivers Beni and Madre de Dios (2528).

Gustavia angusta, L. Amoen. Acad. viii. 266. Falls of the Madeira (656).

Gustavia Brasiliana, DC. Prodr. l. c. 290. Junction of the Beni and Madre de Dios (657).

As the species of the order Myrtaceæ have been so exceedingly multiplied by Berg, and many of his descriptions are not represented in the Kew Herbarium, I was unable to distinguish any new species among the numerous specimens collected by Dr. Rusby.

MELASTOMACEÆ.

Acisanthera alsinæfolia (DC.), Tri. Trans. Linn. Soc. xxviii. Falls of the Madeira, Brazil (2534).

Pterolepis trichotoma (Rottb.), Cogn. in Mart. Fl. Bras. xiv. (3) 261. Guanai, 2,000 ft. (2325).

Tibouchina granulosa (Desr.), Cogn. Mapiri, 5,000 ft. (2247). var. *ANGUSTIFOLIA*, var. nov. Folia anguste oblonga, 8 cm. longa 2 cm. lata, acuta; petiolis 1 cm. longis. Yungas, 6,000 ft. (2245).

Tibouchina barbigerà (Naud.), Baill. Adans. xii. 75. Guanai, 2,000 ft. (2326).

Tibouchina longifolia (Vahl), Baill. l. c. 74. Yungas, 6,000 ft. (2336; 2243); Guanai, 2,000 ft. (2244); Yungas, 4,000 ft. (2549), the latter determination from imperfect specimens and uncertain.

TIBOUCHINA PANICULARIS (Naud). (*Chætogastra panicularis*, Naud. Ann. Sci. Nat. (III.) xiv. 129; *Pleroma paniculare*, Triana, Trans. Linn. Soc. xxviii. 46.) Yungas, 4,000 ft. (2327).

TIBOUCHINA CAPITATA (Naud.) Cogn. mss. (*Micranthella capitata*, Naud. l.c. xiii. 350; *Pleroma capitatum*, Triana, l. c.) Mapiri, 2,500 ft. (2727). Det. Cogniaux.

TIBOUCHINA LATIFOLIA (Naud.) (*Micranthella latifolia*, Naud. l. c. 351; *Pleroma latifolium*, Triana, l. c. 47). Yungas, 4,000 ft. (2337); 6,000 ft. (2338).

TIBOUCHINA RUSBYI, Cogn. sp. nov. (sect. *Dictanthera*): ramis junioribus petiolis pedunculis calycibusque brevissime et densiuscule hirtellis; foliis breviter petiolatis, oblongis, basi

rotundatis, apice acutis, integerrimis, 7-nerviis utrinque brevissime dense molliterque villosis; paniculis magnis, terminalibus, pyramidatis, multifloris, inferne foliatis; floribus breviuscule pedicellatis; calycis tubo ovoidea lobis triangulari-lanceolatis, obtusiusculis, tubo paulo brevioribus, staminibus valde inæqualibus, filamentis glabris, majorum connectivo basi breviter producto; stylo glabro.

Rami satis graciles, obtuse tetragoni. Petiolus 1-1½ cm. longus. Folia submembranacea, 7-10 cm. longa, 3-4 cm. lata. Pedicelli graciles, ½-1 cm. longi, minute bracteolati. Calycis tubus 5 mm. longus; lobi 3-4 mm. longi. Petala anguste obovata, brevissime ciliata, 8 mm. longa. Staminum filamenta 3-4 mm. longa; antheræ satis arcuatæ, majores 6 mm. minores 3-4 mm. longæ. Stylus filiformis, 10-12 mm. longus. Unduavi, 8,000 ft. (2339).

TIBOUCHINA BRITTONIANA, Cogn. sp. nov. (sect. *Dictanthera*); ramis junioribus pedunculisque brevissime denseque hirtellis; foliis parvis, breviter petiolatis, anguste ovatis, basi rotundatis, apice obtusis, integerrimis, 5-nerviis, supra brevissime denseque strigillosis, subtus brevissime denseque villosis; paniculis majusculis, terminalibus, multifloris, inferne foliatis; floribus longiuscule pedicellatis; calyce brevissime denseque adpresse hirtello, tubo ovoideo, lobis lanceolato-linearibus, acutis, tubo paulo brevioribus; staminibus satis inæqualibus, filamentis glabris, majorum connectivo basi breviuscule producto; stylo glabro.

Rami satis graciles obscure tetragoni, ferruginei. Petiolus 5-8 mm. longus. Folia rigida, cinerea, 2-3½ cm. longa, 8-14 mm. lata. Pedicelli graciles, ½-1 cm. longi, minute bibracteolati. Calycis tubus 5-6 mm. longus; lobi 3 mm. longi. Petala obovata, tenuissime ciliata, 8-9 mm. longa. Staminum filamenta 4 vel 5 mm. longa; antheræ satis arcuatæ, 6 vel 8 mm. longæ. Stylus filiformis, 12-14 mm. longus. Yungas 4,000 ft. (2341).

TIBOUCHINA LANCEOLATA Cogn. sp. nov. (sect. *Dictanthera*); ramis acutiuscule tetragonis, junioribus pedunculisque calycibusque setulis brevibus adpressis rigidiusculis sparse armatis; foliis subparvis, breviter petiolatis anguste lanceolatis, basi obtusiusculis, apice acutis, integerrimis, 5-nerviis, supra breviter sparse adpresse strigillosis, subtus sparse adpresse hirtellis, paniculis brevissimis, paucifloris, floribus brevissime

pedicellatis; calycis tubo anguste campanulato, basi acuto, lobis triangularibus, acutis, tubo multo brevioribus; staminibus paulo inæqualibus, filamentis glabris, majorum connectivo breviter producto, stylo glabro.

Rami graciles, purpureo-fusci. Petiolus 2-5 mm. longus. Folia rigidiuscula, 3-6 cm. longa, 7-10 mm. lata. Pedicelli filiformes, basi minute bracteolati, 2-3 mm. longi. Calycis tubus cinereo-fuscus, 4 mm. longus; lobi brevissime ciliati, 1 mm. longi. Staminum filamenta capillaria, 3-4 mm. longa; antheræ subrectæ, 3-4 mm. longæ. Stylus filiformis, 5 mm. longus. Yungas, 4,000 ft. (2343).

TIBOUCHINA STENOPHYLLA Cogn. sp. nov. (sect. *Dictanthera*); ramis obscure tetragonis, junioribus petiolisque setulis longiusculis adpressis rigidiusculis basi tuberculatis sparse armatis; foliis subparvis, breviter petiolatis, anguste lanceolatis, basi subacutis, apice acutis, integerrimis, trinerviis, utrinque sparse adpresseque setulosis; paniculis brevissimis, paucifloris; floribus longiuscule pedicellatis; calyce setis brevibus patulis glandulosis sparse hirtello, tubo oblongo-campanulato, inferne attenuato, lobis triangularibus, acutis, tubo multo brevioribus; staminibus satis inæqualibus, filamentis glabris, majorum connectivo basi longiuscule producto; stylo glabro.

Rami graciles, fuscescentes. Petiolus 3-7 mm. longus. Folia tenuiter membranacea, 3-6 cm. longa, 5-8 mm. lata. Pedicelli filiformes, basi minute bibracteolati, 5-8 mm. longi. Calycis tubus cinereus, 4 mm. longus; lobi ciliati, 1 mm. longi. Staminum filamenta capillaria, 4 vel 5-6 mm. longa; antheræ leviter arcuatæ, 4 vel 6 mm. longæ. Stylus filiformis, 8-9 mm. longus. Capsula ovoidea, 5 mm. longa. Guanai, 2,000 ft. (2323).

TIBOUCHINA PURPURASCENS, Cogn. sp. nov. (sect. *Dictanthera*); ramis obscure tetragonis, junioribus petiolis foliisque calycibusque pilis rigidiusculis patulis longiusculis subsparse hirtellis; foliis parvis, breviter petiolatis, lanceolatis, basi subrotundatis, apice acuminatis, obscure denticulato-crenulatis, trinerviis; floribus breviter pedicellatis, solitariis, vel subsolitariis; calycis tubo late campanulato, lobis ovato-triangularibus, apiculatis tubo dimidio brevioribus.

Fruticulus 3-4 dm. altus, ramis gracilibus. Petiolus 2-4 mm. longus. Folia tenuiter membranacea, dilute purpureo-

violacea præcipue subtus, 2-4 cm. longa, 6-11 mm. lata. Pedicelli 2-3 mm. longi, ebracteolati. Calyx purpurascens, tubo 4 mm. longo, lobis rigidiusculis, 2 mm. longis. Mapiri, 2,500 ft. (2616).

TIBOUCHINA: sect. nov. OCTOMERIS, Cogn.

Flores 8-meri, pedicellis supra medium bibracteatis. Calycis segmenta persistentia. Antheræ lineares, superne satis attenuatæ, connectivo basi paulo incrassato.

TIBOUCHINA OCTOPETALA, Cogn. sp. nov. (sect. *Octomeris*); ramis junioribus petiolis pedunculisque breviter denseque hirsutis; foliis longiuscule petiolatis, ovato-oblongis, basi rotundatis, apice acutis, integerrimis, 7-nerviis nervis intermediis basi coalitis, supra dense strigoso-hirsutis, subtus breviter denseque villosis; paniculis terminalibus axillaribusque, paucifloris; floribus longiuscule pedicellatis; bracteis subpellucidis, sessilibus, obovato-cuneatis, extus densiuscule breviterque villosis, intus glabris; calyce subadpresse longiuscule denseque striguloso-setoso, tubo subhemisphærico, lobis lanceolato-linearibus, tubum subæquantibus; petalis brevissime ciliatis; staminibus satis inæqualibus, filamentis glabris, majorum connectivo infra loculos breviuscule producto; stylo inferne hirsuto.

Rami robustiusculi, obscure tetragoni, ferruginei. Petiolus 2-3 cm. longus. Folia submembranacea, 1-1½ dm. longa, 5-6 cm. lata. Paniculæ 6 cm. longæ; pedicelli 1-2 cm. longi. Bracteæ purpurascens, adpressæ, circiter 1 cm. longæ. Calyx purpurascens, tubo 8 mm. longo, 10 mm. lato, lobis 7-8 mm. longis. Petala purpureo-violacea, anguste obovata, 1½ cm. longa. Staminum filamenta 8 vel 10 mm. longa; antheræ majores satis arcuatæ purpurascens 8 mm. longæ, minores subrectæ, flavæ, 6 mm. longæ. Stylus crassiusculus, 1 cm. longus. Yungas, 4,000 ft. (2332).

Brachyotum microdon (Naud.), Tri. l. c. 49. Unduavi, 8,000 ft. (2340).

Aciotis paludosa (Mart.), Tri. l. c. 51. Mapiri, 5,000 ft. (2333).

Aciotis annua (Mart.), Tri. l. c. 52. Falls of the Madeira (2582).

AXINÆA SPECIOSA, Britt. spec. nova. Arbor; foliis 15 cm. longis, 6 cm. latis, oblongis, coriaceis, utrinque acutis, glabris, 5-nerviis, integris, supra opacis, subtus pallidis, nervis prominentibus; paniculis terminalibus, decompositis, 12 cm. longis, 10 cm. latis; ramis densifloris; floribus 4 cm. latis, pedicellis

15 mm. longis; calycis tubo 6 mm. diametro, hemispherico, 5-dentato; petalis obovatis, obtusis. Mapiri, 2,500 ft. (2328).

Meriania macrophylla (Benth.), Tri. l. c. 66. Yungas, 6,000 ft. (2329).

MERIANIA BOLIVIENSIS, Cogn. sp. nov. (sect. *Eumeriania*); ramis obscure tetragonis, junioribus, petiolis pedunculisque vix furfuraceis; foliis longiuscule petiolatis, anguste ovatis, basi subacutis, apice brevissime et obtusiuscule acuminatis, integerrimis vel vix undulato-denticulatis, 5-plinerviis, supra glaberrimis, subtus vix furfuraceis præcipue ad nervos; paniculis terminalibus axillaribusque, parvis, paucifloris, umbelliformibus; floribus breviuscule pedicellatis, calyce brevissime denseque puberulo, tubo teretiusculo, anguste campanulato, dentibus exterioribus linearibus, tubum æquantibus.

Rami satis graciles, pallide virides. Petiolus 2-2½ cm. longus. Folia tenuiter membranacea, 7-12 cm. longa, 4-6 cm. lata. Paniculæ 4-6 cm. longæ; pedicelli densiuscule puberuli, basi bracteati, 3-5 mm. longi. Bracteæ caducæ, lineares, densiuscule furfuraceo-puberulæ, 1 cm. longæ. Calyx cinereus, tubo 7-8 mm. longo, lobis interioribus ovatis, 3 mm. longis, dentibus exterioribus 6-7 mm. longis. Petala purpurascens, obovata, 2 cm. longa. Antheræ 4-5 mm. longæ. Stylus filiformis, 10-12 mm. longus. Aff. *M. quintuplinervis* Naud. Yungas, 6,000 ft. (2246).

Adelobotrys adscendens (Sw.), Tri. l. c. 67. Mapiri, 5,000 ft. (2441).

Græffenriedia emarginata (R. & P.), Tri. l. c. 71. Mapiri, 2,500 ft. (2335). A form or variety with very lax inflorescence.

Leandra crenata (Don), Cogn. in Mart. Fl. Bras. xiv. (4) 137. Unduavi, 8,000 ft. (2306); Mapiri, 2,500 ft. (2307).

Leandra aurea (Cham.), Cogn. l. c. 140. Yungas, 6,000 ft. (2304; 2312).

Leandra reversa (DC.), Cogn. l. c. 198. Mapiri, 2,500 ft. (2302).

Leandra dichotoma (Don), Cogn. l. c. 200. Mapiri, 2,500 ft. (2235).

LEANDRA STELLULATA, Cogn. sp. nov. (sect. *Carassanæ*); ramis junioribus petiolis pedunculis foliisque subtus ad nervos pilis patulis breviusculis crispulis apice stellulato-ramosis dense vestitis; foliis longiuscule petiolatis, oblongis, basi subrotundatis, apice acutis, minute denticulatis ciliatisque, leviter 5-plinerviis, supra glabratis, subtus vix furfuraceo-puberulis; pani-

culis parvis, paucifloris, diffusis, floribus breviter pedicellatis; calyce leviter puberulo, tubo ovoideo, lobis triangularibus, acutis tubo 2-3 plo brevioribus; petalis anguste triangularibus, acuminatis.

Rami graciles, teretiusculi, cinerei. Petiolus $1\frac{1}{2}$ -3 cm. longus. Folia membranacea, in eodem jugo satis inæqualia, 6-12 cm. longa, $2\frac{1}{2}$ -5 cm. lata. Paniculæ 3-4 cm. longæ, pedicelli basi bracteolati, 2-4 mm. longi. Calycis tubus 2-2 $\frac{1}{2}$ mm. longus; lobi circiter 1 mm. longi. Petala subreflexa, $1\frac{1}{2}$ mm. longa. Stylus 2-3 mm. longus. Affinis *L. subseriata*, Cogn. Yungas, 6,000 ft. (2311a).

Miconia spennerostachya, Naud. l. c. xvi. 187. Guanai, 2,000 ft. (2278). Det. Cogniaux.

Var. ANGUSTIFOLIA, Cogn. Folia oblonga, breviuscule acutique acuminata, 12-18 cm. longa, 4-6 cm. lata. Mapiri, 5,000 ft. (2268).

MICONIA PERSICARIÆFOLIA, Cogn. sp. nov. (sect. *Eumiconia*, A. Aplostachyæ, Fl. Bras.); ramis teretiusculis, superne vix compressis, junioribus petiolis pedunculis calycibusque densiuscule stellato-furfuraceis; foliis breviter petiolatis, anguste lanceolatis, longe acuminatis, basi acutiuscule attenuatis, integerrimis, trinerviis, supra glabris, subtus ad nervos nervulosque densiuscule stellato-puberulis, cæteris glabratis; paniculis spiciformibus, brevibus; floribus sessilibus, glomerulatis, basi bracteolatis; calyce brevissime 5-lobato; antheris linearibus, subrectis, connectivo basi incrassato, antice minute biauriculato, postice gibboso; stylo apice truncato vix incrassato.

Rami satis graciles, cinerei. Petiolus 1-1 $\frac{1}{2}$ cm. longus. Folia membranacea, 8-14 cm. longa, 1-2 cm. lata. Pedunculus communis gracilis, 4-5 cm. longus. Calycis tubus cinereus anguste campanulatus, obscure angulatus, 3 mm. longus. Petala obovata, subacuta, 2 mm. longa. Staminum filamenta 2 mm. longa; antheræ pallidæ, 3 mm. longæ. Stylus filiformis 4 mm. longus.—Aff. *M. aplostachya*, DC. Guanai, 2,000' ft. (992).

Miconia albicans (Sw.), Tri. l. c. 116. Yungas, 6,000 ft. (2299).

Miconia stenostachya, DC. Prodr. iii. 181. Yungas 6,000 ft. (2258).

Miconia Organensis, Gardn. in Hook. Lond. Journ. Bot. ii. 345.

Falls of the Madeira (2281).

Miconia tiliaefolia, Naud. l. c. xvi. 151. Mapiri, 5,000 ft. (2322).

Miconia argyrophylla, DC. l. c. 181. Mapiri, 5,000 ft. (2248).

- Miconia lepidota*, DC. l. c. 180. Mapiri, 2,500 ft. (2253); 5,000 ft. (2271).
- Miconia*, near *M. rhytidophylla*, Naud. Yungas, 6,000 ft. (2269).
- Miconia sessilifolia*, Naud. l. c. 181. Yungas, 4,000 ft. (2270).
- Miconia desmantha*, Benth. Pl. Hartw. 181. Yungas, 4,000 ft. (2265).
- Miconia Ibaguensis* (Bonpl.), Tri. l. c. 110. Yungas, 6,000 ft. (2262; 2289); Guanai, 2,000 ft. (2277). The latter specimen det. Cogniaux.
- Miconia macrophylla* (Don). Tri. l. c. 103. Guanai, 2,000 ft. (2249).
- Miconia tomentosa*, Don. Mem. Wern. Soc. iv. 316. Junction of the Rivers Beni and Madre de Dios (2251).
- Miconia*, related to the last. Mapiri, 5,000 ft. (2248).
- Miconia calvescens*, DC. l. c. 185. Mapiri, 5,000 ft. (2264).
- Miconia prasina* (Sw.), DC. l. c. 188. Mapiri, 5,000 ft. (2257; 2267). A variable species.
- MICONIA MULTIFLORA, Cogn. sp. nov. (sect. *Eumiconia*, F. Paniculares, Fl. Bras.); ramis superne valde compressis, junioribus petiolis paniculis calycibus foliisque subtus dense stellato-puberulis et ferrugineis; foliis longiuscule petiolatis, anguste obovatis, abrupte brevissime obtuseque acuminatis, basi late cuneatis, integerrimis, adjecto utroque nervulo marginali 5-nerviis, supra primum dense stellato-puberulis demum glabris; paniculis majusculis, thyrsoideis, ramosissimis, valde multifloris; floribus minute fasciculatis, sessilibus, ebracteolatis; calycis limbo obscure obtuseque 5-lobato; antheris linearibus, paulo arcuatis, connectivo basi brevissime producto et leviter incrassato, sparse glanduloso; stigmatibus subpeltatis.
- Rami robusti. Petiolus robustus, 3-4 cm. longus. Folia subcoriacea, supra pallide viridia, 2 dm. longa. 12 cm. lata, nervis nervulisque subtus valde prominentibus. Paniculæ 2½ dm. longæ. Calyx campanulatus, teretiusculus, 2½ mm. longus. Petala obovata, 2 mm. longa. Stamina filamenta capillaria, 1½ mm. longa; antheræ 2 mm. longæ. Stylus 4 mm. longus. Yungas, 4,000 ft. (2254).
- Miconia ternatifolia*, Tri. l. c. 118. Mapiri, 5,000 ft. (2255); Yungas, 4,000 ft. (2273).
- Miconia minutiflora* (Bonpl.), DC. l. c. 189. Mapiri, 5,000 ft. (2276; 2294).

An Enumeration of the Plants Collected by Dr. H. H. Rusby in South America, 1885-1886.—XII.

(Continued from p. 60).

Miconia fulva (Rich.), DC. Prodr. iii. 180. Falls of the Madeira, Brazil (2290).

Miconia dolichorhyncha, Naud. l. c. xvi. 166. Guanai, 2,000 ft.; (2252).

Miconia annulata (Naud.), Tri. l. c. 121. Yungas, 6,000 ft. (2272; 2295); Yungas, 4,000 ft. (2285).

Miconia livida, Tri. l. c. Yungas, 6,000 ft. (2296); Guanai, 2,000 ft. (2548).

MICONIA ELONGATA, Cogn. sp. nov. (Sect. *Amblyarrhena*); glaberrima; ramis subacute tetragonis; foliis breviter petiolatis, elongato-lanceolatis, longiuscule acuminatis, inferne alternatis acutisque, integerrimis vel tenuissime remotisque denticulatis, triplinerviis vel subtrinerviis; paniculis mediocribus, pyramidatis, multifloris; floribus 5-meris, breviter pedicellatis, ebracteolatis; calycis tubo ovoideo, limbo leviter dilatato, lobis late triangularibus, brevissimis; antheris oblongo-linearibus, connectivo postice brevissime calcarato; stigmatibus pel-tatis.

Rami robustiusculi, pallide cinerei. Petiolus 1-1½ cm. longus. Folia submembranacea, 17-20 cm. longa, 3½-5 cm. lata, nervis subtus valde prominentibus, nervulis numerosis, coloratis. Paniculæ 7-8 cm. longæ. Pedicelli 1-2 mm. longi, ad medium articulati. Calyx fuscescens, 1½ mm. longus. Petala obovata, ¾ mm. longa. Staminum filamenta capillaria, geniculata, 1½ mm. longa; antheræ ⅔ mm. longæ. Stylus 2-2½ mm. longus. Yungas 6,000 ft. (2283).

Miconia Ruizii, Naud. l. c. 192. Yungas, 6,000 ft. (2308).

Miconia plumifera, Tri. l. c. 124. Unduavi, 8,000 ft. (2331).

Miconia papillosa (Desr.), Naud. l. c. 316. Beni River (2305); Guanai, 2,000 ft. (2313).

Miconia cremophylla, Naud. l. c. 228. Yungas, 6,000 ft. (2266).

Miconia cælestis (Don), Naud. l. c. 245. Mapiri, 5,000 ft. (2279), det Cogniaux; Unduavi, 8,000 ft. (2284); Mapiri, 2,500 ft. (2261), the latter determination somewhat doubtful.

Miconia cyanocarpa, Naud. l. c. 221. Mapiri, 2,500 ft. (2274). Det. Cogniaux.



MICONIA BRITTONII, Cogn. sp. nov. (Sect. *Cremanium*); ramis obscure tetragonis, junioribus petiolis paniculis calycibus foliisque subtus ad nervos pilis brevissimis patulis papilloso densissime hirtellis; foliis breviter petiolatis, anguste ovatis, basi subrotundatis, apice obtusiusculis, remotiuscule breviterque aculeolato-denticulatis, 5-plinerviis, supra brevissime subsparsaque strigillosis, subtus brevissime et densiuscule villosis; paniculis mediocribus, thyrsoideis, multifloris; floribus sessilibus, minute bracteolatis, subfasciculatis, calycis lobis anguste ovatis, acutis, tubo dimidio brevioribus, antheris parvis, biporosis, anguste obovoideis; stigmatē peltato.

Rami robustiusculi, cinerei. Petiolus robustus, 1-2 cm. longus. Folia rigidiuscula, subtus cinerea, 12-16 cm. longa, 6-7 cm. lata, nervis subtus valde prominentibus. Paniculæ satis ramosæ, 8-10 cm. longæ. Calyx cinereus, tubo ovoido-campanulato, 1½ mm. longo, lobis ⅔ mm. longis. Petala ovato-oblonga, subacuta, 1 mm. longæ. Stylus filiformis, 1½ mm. longus. Aff. *M. cyanocarpa*, Naud. Yungas, 4,000 ft. (2309), Det. Cogniaux. Mapiri, 5,000 ft. (2292), Det. N. L. B.

MICONIA POLYGAMA, Cogn. sp. nov. (Sect. *Cremanium*); ramis obtuse tetragonis, superne leviter compressis junioribus petiolis, paniculis foliisque subtus ad nervos pilis patulis brevibus apice stellulato, ramosis, densiuscule hirtellis; foliis longiuscule petiolatis, ovatis, breviter acuminatis, basi rotundatis, integerimis vel obscure undulato-denticulatis, 5-7-nerviis, supra minute subbullatis, subtus leviter foveolatis, utrinque brevissime subsparsaque hirtellis; paniculis mediocribus, pyramidatis, multifloris, compactis; floribus 5-meris, subdioicis, sessilibus vel brevissime pedicellatis, bracteolis subulato-setosis suffultis; calyce glabro, ovoideo, minute 5-denticulato; antheris late obovoideis, apice truncatis et late biporosis; stigmatē peltato.

Rami graciles, cinereo-fusci. Petiolus satis gracilis, 3-5 cm. longus. Folia submembranacea, 8-11 cm. longa, 5-8 cm. lata. Paniculæ 6-8 cm. longæ. Flores interdum omnes masculi, interdum plerumque feminei rarius hermaphroditi. Calyx 1½ mm. longus. Petala late ovata, ⅔ mm. longæ. Stamina alternatim satis inæqualia, filamentis capillaribus, ¾-1 mm. longis; antheræ ⅔ mm. longæ, connectivo tenuissimo, basi longe producto. Stylus filiformis, 2½ mm. longus. Bacca nigra, subglobosa, 3 mm. crassa. Guanai, 2,000 ft. (2519 ♂); Unduavi, 8,000 ft. (2282 —sub ♀).

MICONIA RUSBYANA, Cogn. sp. nov. (Sect. *Cremanium*); ramis obscure tetragonis, glabris; foliis breviter petiolatis, lanceolatis, subacute breviterque acuminatis, inferne longe attenuato-cuneatis, integerrimis, triplinerviis, supra ad nervum medianum brevissime hirtellis cæteris glabris et scabriusculis, subtus glaberrimis; paniculis mediocribus, late pyramidatis, multifloris, densiuscule breviterque hirtellis; floribus 5-meris sessilibus, ebracteolatis, subfasciculatis; calyce glabro, subhemisphærico, brevissime 5-denticulato; antheris late obovoideis, apice truncatis et latissime biporosis.

Rami graciles. Petiolus gracilis, 1-2 cm. longus. Folia membranacea, 1-1½ dm. longa, 3-4 cm. lata, nervis nervulisque subtus satis prominentibus. Paniculæ 8-10 cm. longæ, ramis patulis, elongatis. Calyx 1 mm. longus. Petala obovato-angulata, ¾ mm. longa. Staminum filamenta capillaria, 1-1½ mm. longa; antheræ ⅔ mm. longæ, connectivo tenuissimo, basi longe producto. Stylus ignotus. Yungas, 6,000 ft. (2259).

MICONIA FLAVESCENS, Cogn. sp. nov. (Sect. *Chænopleura*); ramis teretiusculis, junioribus petiolis paniculis foliisque subtus ad nervos brevissime denseque furfuraceo-papillosis et ferrugineis; foliis breviuscule petiolatis, ovato-oblongis, acutis, basi rotundatis, margine remote minuteque spinuloso-denticulatis, trinerviis, supra glabris, subtus primum leviter, punctato-furfuraceis demum glabratis, paniculis parvis, paucifloris; floribus 5-nervis, breviter pedicellatis, ebracteolatis; calyce glabro, subhemisphærico, minute remoteque 5-denticulato.

Rami graciles, breves, ramulosi. Petiolus 1-2 cm. longus. Folia rigidiuscula, utrinque flavescencia, 5-7 cm. longa, 2-3 cm. lata, nervis subtus satis prominentibus, nervulis paulo distinctis. Paniculæ 2-4 cm. longæ, paulo ramosæ, pedicelli graciles, 1-3 mm. longi. Calyx siccitate nigricans, 2 mm. longus, 3 mm. latus. Aff. *M. andina*, Naud. Unduavi, 10,000 ft. (2288).

Miconia andina, Naud. l. c. 236. Unduavi, 8,000 ft. (2286).

Miconia Mandoni, Cogn. in Herb. Kew. Unduavi, 8,000 ft. (2287). The same as Mandon's No. 646.

Miconia nervosa, (Smith), Tri. l. c. III. Yungas, 6,000 ft. (2280).

Junction of the rivers Beni and Madre de Dios (2201).

Miconia eriodonta, DC. l. c. 185. Yungas. 4,000 ft. (2726).

Miconia rubiginosa, (Bonpl.), DC. l. c. 183. Yungas 6,000 ft. (2300); Mapiri 5,000 ft. (2298); the latter a form with long acuminate leaves.

Miconia Fothergilla, (DC.), Tri. l. c. 119. Mapiri 5,000 ft. (2293).

Miconia persicariæfolia, Cogn. Guanai, 2,000 ft. (992); det. Cogniaux.

Miconia caulescens, DC. Mapiri, 5,000 ft. (2256). Matching specimens so named in Herb. Kew.

Miconia Boliviensis, Cogn. Unduavi, 8,000 ft. (2260). Det. Cogniaux.

Miconia novemnervia, Naud. l. c. 217. Mapiri, 5,000 ft. (2316).

Miconia lanata, (DC.), Tri. Falls of the Madeira, Brazil. (2303).

Miconia holosericea, (L.), Tri. l. c. 101. Guanai, 2,000 ft. (2250); Mapiri, 5,000 ft. (2297).

Miconia, "parait une nouvelle espèce, mais trop incomplet pour le decrire; aspect du *M. polyneura*, Tri. mais distinct"—Cogniaux. Yungas, 6,000 ft. (2263).

Miconia, "espèce peut-etre nouvelle?"—Cogniaux. Mapiri, 2,500 ft. (2275).

"*Miconia* ou *Leandra*? espece nouvelle"—Cogniaux. Yungas, 4,000 ft. (2334).

Tococa Guianensis, Aubl. Pl. Gui. i. 428. Beni River (2242).

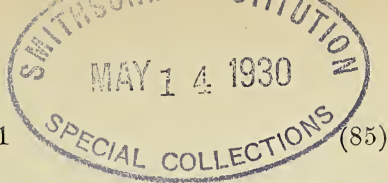
Tococa coronata, Benth. in Hook. Journ. Bot. ii 303. Junction of the rivers Beni and Madre de Dios, (2321). A variety with thin, membranaceous leaves, perhaps a distinct species.

Clidemia hirta, (L.), Don. Mem. Wern. Soc. iv. 309. Falls of the Madeira, Brazil, (2239, 2240). Mapiri, 5,000 ft. (2236).

Clidemia dependens, (Pav.), Don. l. c. 307. Mapiri, 5,000 ft. (2237).

Clidemia rubra, Aubl. Mapiri, 5,000 ft. (2318); Mapiri, 2,500 ft. (2319).

CLIDEMIA BOLIVIENSIS, Cogn. sp. nov. (Sect. *Staphidium*, Cogn. Fl. Bras.); ramis teretiusculis, junioribus petiolis pedunculisque pilis longissimis patulis mollibus subsparse hirtellis; foliis majusculis, anguste ovatis, longiuscule acuminatis, basi inæquilateris et rotundatis vel leviter emarginatis, levita undulato-crenulatis, 5-nerviis, supra breviuscule sparseque pilosis, subtus sparse longeque hirtellis præcipue ad nervos; cymis brevibus, 3-5 floris; calyce leviter furfuraceo et sparse longeque piloso, tubo oblongo, lobis brevissimis, dentibus exterioribus subulatis, tubo sublongioribus.



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(Continued from page 94.)

Rami graciles, fuscescentes. Petiolus 3-6 cm. longus. Folia tenuiter membranacea, in eadom jugo satis inæqualia, majora 13-18 cm. longa, 6-10 cm. lata. Cymæ 1-2 cm. longæ. Calycis tubus 4 mm. longus; dentes exteriores erecti, 4-5 mm. longi. Baccæ subglobosæ, circiter 1 cm. crassæ. Aff. *Cl. hirta*. Mapiri, 2,500 ft. (2238).

CLIDEMIA CORDATA, Cogn. sp. nov. (Sect. *Sagræa*, Cogn.); fere glaberrima; ramis teretibus, superne leviter compressis, junioribus vix furfuraceis; foliis longe petiolatis, late ovato-cordatis, acutiuscule beviterque acuminatis, minute crenulato-denticulatis, 7-9-nerviis, subtus ad nervos leviter furfuraceis; cymis brevibus, diffusis, paucifloris; floribus 4-meris, brevissime pedicellatis, basi minutissime bibracteolatis; calycis tubo ovoideo, lobis brevissimis, dentibus exterioribus oblongo-linearibus, obtusiusculis, tubo paulo brevioribus.

Rami satis graciles, elongati, fuscescentes. Petiolus 6-10 cm. longus. Folia tenuiter membranacea, 11-16 cm. longa, 9-13 cm. lata. Cymæ 3-5 cm. longæ; pedicelli 1-3 mm. longi. Calycis tubus 2 mm. longus; dentes reflexi, 1½-2 mm. longi. Mapiri, 2,500 ft. (2311).

CLIDEMIA RUSBYI, Britt. spec. nova. Sect. *Sagræa*. Frutex erectus, ramosus; flores in axillis foliorum sessiles congesti; foliis glabris, 5-nerviis, oblongis, acuminatis, basi acutis, 7-9 cm. longis, 3-4 cm. latis; petiolis 1-2 cm. longis; rami tereti; calycis tubus furfuraceis, dentes tubo multo breviores. Mapiri, 2,500 ft. (2320). Nearest *Clidemia septuplinervia*, Cogn. ex descriptio.

CLIDEMIA PILOSISSIMA, Britt. spec. nova. Frutex ascendens, ramosus; flores in paniculas axillares digesti; folia 7-nervia, cordata, acuminata vel acuta, 10-15 cm. longa, 5-8 cm. lata, utrinque stellato-pubescentia, membranacea, longe petiolata; petiolis marginis venisve longe rufo-pilosis; pedicellis longiusculis, crassis, rufo-pilosis, stellato-pubescentibus; fructus globosus, 6 mm. longus. Mapiri, 5,000 ft. (2234). Related to *S. umbrosa*.

CLIDEMIA OBLIQUA, Griseb. Mapiri 2,500 ft. (2317).

Calophysa pilosa, (Don.), Tri. l. c. Mapiri, 5,000 ft. (2315).

- Microphysa quadrialata*, Naud. l. c. 99.? Falls of the Madeira, (2241).
- Bellucia grossularioides*, (L.), Tri. l. c. 141. Guanai, 2,000 ft. (2314).
- Bellucia imperialis*, Sald. and Cogn. in Mart. Fl. Bras. xiv. (4), 515? Mapiri, 5,000 ft. (2330).
- Ossæa petiolaris*, (Naud.), Tri. l. c. 147. Mapiri, 5,000 ft. (2301; 2310).
- Blakea repens*, (R. & P.), Don. l. c. 325. Guanai, 2,000 ft. (2342).
- Mourinia parvifolia*, Benth. in Voy. Sulphur, 97. Mapiri, 5,000 ft. (2681).
- Mourinia princeps*, Naud. l. c. xviii. 283. Junction of the rivers Beni and Madre de Dios, (2666).
- Mourinia?* Same locality. (2682).

I am indebted to M. Cogniaux of Verviers, Belgium, the distinguished monographer of this difficult order for the Brazil Flora and DeCandolle's "Monographiæ Phanerogamorum," for many notes and determinations.

LYTHRARIÆ.

- Adenaria floribunda*, H. B. K. Nov. Gen. vi. 188. Sorata, 8,000 ft. (1419).
- Var. *grisleoides*, (H. B. K.), Kœhne in Mart. Fl. Bras. xiii. (2), 210. Guanai, 2,000 ft. (1966).
- Cuphea micrantha*, H. B. K. loc. cit. 196. Guanai, 2,000 ft. (1858).
- Cuphea Spruceana*, Kœhne. Mapiri, 5,000 ft. (1924).
- Cuphea verticillata*, H. B. K. loc. cit. Sorata, 8,000 ft. (1070).
- Cuphea ianthina*, Kœhne. Yungas, 4,000 ft. (1068); Sorata, 10,000 ft. (1067); 8,000 ft. (1066); Unduavi, 8,000 ft. (1064); near La Paz, 10,000 ft. (1065). Also a form with narrower leaves from Unduavi, 8,000 ft. (1069).
- Physocalymna scaberrimum*, Pohl, Flora, 1827, 153. (*P. floridum*, Pohl, Pl. Bras. i. 100). Junction of the Rivers Beni and Madre de Dios (2444).
- Punica Granatum*, L. Sp. Pl. 427. Tacna, Chili. Cultivated. (464).

ONAGRARIÆ.

Epilobium andicolum, Haussk. Cest. Bot. Zeit. 1879. Near La Paz, 10,000 ft. (1805); Yungas, 6,000 ft. (1807); Unduavi, 8,000 ft. (1808). The same as Mandon's No. 626.

Epilobium denticulatum, R. & P. Fl. Per. iii. 78. Near La Paz, 10,000 ft. (1806).

Epilobium, a single incomplete specimen from Valparaiso, Chili (2510).

Jussiaea Peruviana, L. Sp. Pl. 555. Mapiri, 2,500 ft. (1794).

Jussiaea latifolia, Benth. in Hook. Journ. Bot. ii. 317. Falls of the Madeira, Brazil (1796).

Jussiaea nervosa, Poir. in Lam. Encycl. Suppl. iii. 199. Guanai, 2,000 ft. (1799).

Jussiaea nervosa, Poir. var. *pubescens*, Mich. in Mart. Fl. Bras. xiii. (II), 155. Guanai, 2,000 ft. (1221). A broad-leaved form, possibly a distinct species.

Jussiaea densiflora, Mich. Flora, 1874, 300. Beni River, Bolivia (1235); Falls of the Madeira, Brazil, (1792).

Jussiaea erecta, L. Sp. Pl. 556. Guanai, 2,000 ft. (1095).

Jussiaea affinis, DC. Prodr. iii. 53. Reis, Bolivia (1793); Falls of the Madeira, Brazil (1795).

Jussiaea octonervia, Lam. Dict. iii. 332. Beni River, Bolivia (1798); Falls of the Madeira, Brazil (1797).

ÆNOTHERA COCCINEA, spec. nova. Caulis basi sublignosus, simplex, $\frac{1}{2}$ met. altus, pubescens, pilis brevioribus; folia alterna, sessilia, lanceolata 5-8 cm. longa, 8-20 mm. lata, remote denticulata, utrinque parce pilosa vel glabrata; flores axillares, solitarii, sessiles, coccinei, 2 cm. lat.; petala ovata, obtusa, integra; capsula cylindrico-ovoidea, hirsuta, 15 mm. longa, 4 mm. lata; semina numerosa, oblonga, compressa, $\frac{1}{4}$ mm. longa.

Ingenio del Oro, 10,000 ft. (1815; 1976). A very showy species, related to *O. mollissima*, L.

Ænothera rosea, Ait. Hort. Kew. ii. 3. Sorata, 8,000 ft. (1814).

Fuchsia rosea, R. & P. Fl. Per. iii. 89. Near Valparaiso (1800; 1852). Named by Dr. Philippi.

Fuchsia serratifolia, R. & P. l. c. 86. Yungas, 6,000 ft. (1801).

Fuchsia dependens, Hook. Ic. Pl. t. 65. Yungas (1071; 1802); Unduavi (1804).

Fuchsia Magellanica, Lam. Yungas, 4,000 ft. (1812).

FUCHSIA BOLIVIANA, Britt. spec. nova. Arbor vel frutex glabra.

Folia opposita, petiolata, membranacea, ovalia, 6 cm.-12 cm. longa, 3cm.-4cm. lata, utrinque acuta, minute serrulata, petiolis 1 cm. longis. Flores rosei, 2 cm.-3cm. longi, gracile pedicellati, in paniculas foliosas terminales dispositi; calycis tubus tubulosus, lobi lineares, acuti, tubo breviores; petala calycis lobis similia, paulo breviora; stamina petalis paulo breviora; ovarium oblongum; stylo paulo exserto.

Yungas, 6,000 ft. (1813). The same as Mandon's No. 624, Herb. Kew. Related to the Mexican *F. arborescens*, Sims.

F. salicifolia, Hemsl. Unduavi, 8,000 ft. (1803).

Fuchsia, a fragment of a species near *F. ampliata*, Benth., but corolla tube more slender and leaves acuminate. Probably undescribed.

SAMYDACEÆ.

Casearia Javitensis, H.B.K. Nov. Gen. v. 366. Falls of the Madeira, Brazil (2415).

Casearia spinosa, Willd. Sp. Pl. ii. 626. Junction of the Rivers Beni and Madre de Dios (1382).

Casearia sylvestris, Sw. Fl. Ind. Occ. ii. 752. Reis, 1,500 ft. (1383).

Casearia punctata, Spr. Neue Entd. ii. 154. Guanai, 2,000 ft. (1384). The same as Lechler's No. 2514 from Peru, Herb. Kew.

Casearia oblongifolia, Camb. in St. Hil. Fl. Bras. Merid. Guanai, 2,000 ft. (1974), also 1977 from same locality, also 2494, collected in fruit, all doubtfully referred to this species. ~~1974?~~

Casearia bracteifera, Sagot in Herb. Kew.? Falls of the Madeira, Brazil (2574).

CASEARIA MEMBRANACEA, spec. nova. Arbor inermis, ramulis cinereis. Folia ovalia, tenuiter membranacea, utrinque acuta, 9-13 cm. longa, 3-5 cm. lata, minute serrulata, glabra, petiolata, punctata. Flores in fasciculas numerosa; calycis pedunculisque pubescentibus, staminibus 10. Junction of the Rivers Beni and Madre de Dios (2074).

Casearia, species collected in fruit. Falls of Madeira (2614 a).

ABATIA BOLIVIANA (Mandon & Wedd.). (*Graniera Boliviana*, Mandon & Wedd. Pl. And. Boliv. No. 1511). Sorata, 10,000 ft (2468).

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(Continued from page 214.)

LOASEÆ.

LOASA CANARINOIDES (Leune et C. Koch) (*Illiaria canarinoides* Leune et C. Koch, Flore des Serres t 913). This very beautiful vine, supposed by M. Planchon to have been introduced to German gardens from Central America, was found by Dr. Rusby in considerable quantities on the slopes of the Andes near Unduavi, Bolivia, at an altitude of 8,000 feet. His specimens differ slightly from the type of t. 5022 of Bot. Mag., in having blunter petals. Unfortunately all the specimens yet preserved are in flower only.

Loasa heptamera, Wedd. Chlor. And. 218, ex descr. (*L. horrida* Britt. mss.). Near La Paz, 11,000 ft. (663): The same as Mandon's 619.

Blumenbachia lateritia, Hook. f. Same locality (664). The same as Mandon's 618.

TURNERACEÆ.

(Named by Mr. R. A. Rolfe.)

Periqueta cistoides (L.) Meyer; Steud. Nomencl. 724. Falls of Madeira, Brazil (1451).

Turnera odorata, Rich. Act. Soc. Hist. Nat., Paris, 1792, 107. Falls of Madeira (1792).

Turnera Weddelliana, Urb. & Rolfe. Reis, 1,500 ft. (2094); Guanai, 2,000 ft. (2653).

PASSIFLORACEÆ.

(Species of *Tacsonia* and *Passiflora*, determined by Dr. M. T. Masters.)

Tacsonia insignis, Mast. in Gard. Chron. (1873) p. 1112, fig. 239. Near Yungas, Bolivia, 4,000 ft. (2465).

Passiflora fetida, var. *nigelliflora*, Mast. (*Passiflora nigelliflora*, Hook.) Falls of the Madeira, Brazil (2457).

Passiflora tricuspis, Mast. in Flor. Brazil xiii, part 1. (1872), p. 587. Mapiro, Bolivia, 5,000 ft. (928 and 496).

Rami compressi asperati. Species adhuc imperfecte cognita. Specimina a cl. Rusby lecta quoad folia omnino cum illis a Bur-



chellio carptis sub numero 6.988-2 conveniunt. Exemplaria tamen manca Gardneri (1631) et Weddell (3025.) a me hic relata paullulum diversa videntur. Sequitur floris descriptio a specimine Rusbyi desumpta:—Flores patelliformes diametro pollicares. Sepala pilosula oblonga ecarinata mutica. Petala sepalis paulo breviora conformia tenuiora albida. Corona faucialis externa filamentosa filis sepalis paulo brevioribus, filis secundæ seriei liguliformibus apice clavatis procedentibus dimidio brevioribus. Corona media procedenti approximata membranacea annularis valde plicata horizontaliter inflexa. Corona infra mediana annularis crassiuscula. Cœt. non visa. Species c. *P. trifasciata* aliquando comparanda.

Passiflora cœrulea, L. Sp. Pl. 959. Tacna, Chili. Cultivated (489).

Passiflora triloba, Ruiz et Pavon; Mast, loc. cit. p. 560. Junction of Rivers Beni and Madre de Dios. (490).

Passiflora coccinea, Aublet; Mast. l. c. p. 605. Junction of Rivers Beni and Madre de Dios. (492.) Yungas, 4,000 ft. (493).

PASSIFLORA RUSBYI, spec. nova. Fruticosa cirrhosa, cirro supra basin deciduo parte residua spinam fingente ramis teretibus sulcato-striatis; petiolis eglandulosis; stipulis * * * foliis circa 6 poll. long. $2\frac{1}{4}$ poll. lat. membranaceis glabris ovato-lanceolatis acuminatis; floribus racemosis, pedunculo elongato; bracteis foliaceis deciduis lineari-oblongis a flore distantibus; floribus $1\frac{1}{2}$ poll. long. extus aurantiacis puberulis; floris tubo pollicari basi ventricoso superne sensim dilatato; sepalis subcoriaceis oblongis obtusis ecarinatis imbricatis partibus obducatis glabris rubro-aurantiacis; petalis conformibus paulo brevioribus; corona fauciali duplici filis extremis petalis dimidio brevioribus flavidis capitatellis apicem versus tuberculatis; filis interioribus dimidio brevioribus linearibus; corona media e tubo paulo infra medium emergente basi membranacea tubulata superne filamentosa filis subulatis elongatis erectis; gynophoro glabro basi pentagono alato, alis ad parietes tubi ita transeuntibus ut tubus basi quinque locularis evadat; ovario oblongo flavido puberulo; stylis basi a sese remotiusculis; fructu * * *

Junction of Rivers Beni and Madre de Dios, (2089.) *P. spinosæ* Poeppig arcte affinis differt tamen petiolis eglandulosis, coronâ mediana, filamentis basi liberis aliisque notis.

PASSIFLORA NEPHRODES, sp. nov. § *Guanadilla*. Fruticosa ramis hirsutis teretibus sulcato-striatis; petiolis pollicaribus eglandu-

losis; foliis 3 poll. long. $2\frac{3}{4}$ poll. lat, membranaceis cordato 3-lobis lobis ovatis acutis, medio multo majore; stipulis pollicaribus foliaceis dimidiato-reniformibus aristatis grosse serratis; pedunculo * * * bracteis * * * floribus diametro 2 pollicaribus; sepalis oblongis hirsutis cornutis; petalis sepalis parum brevioribus; corona fauciali filamentosa filis extimis petalis parum brevioribus, cæteris numerosissimus brevioribus capitatellis; corona media * * * ovario globoso hirsuto * * * Unduavi, 8,000 ft. (494).

Passiflora? Mapiri, 2,500 ft. (2525). Foliage only collected.

Malesherbsia linearifolia, Poir. Near Valparaiso, Chili (2419).

Carica microcarpa, Jacq. Hort. Schœn. iii. 32, t. 309, 310. Yungas, 6,000 ft. (1764); 4,000 ft. (1766).

Carica? Yungas, 4,000 ft. (1765).

Carica? Junction of Rivers Beni and Madre de Dios (1762).

CUCURBITACEÆ.

Luffa cylindrica (L.), Rœm. Syn. fasc. 2, 63. Beni River (2064).
Cultivated and spontaneous.

Melothria Cucumis, Vell. Fl. Flum. i. t. 70. Guanai, 2,000 ft. (2066).

Melothria Fluminensis, Gardn. in Hook. Journ. Bot. i. 173. Junction of the rivers Beni and Madre de Dios (2067).

Melothria Hookeri, Cogn., in D.C. Monog. Phan. iii. 588. Mapiri, 5000 ft. (2065).

Gurania spinulosa (Pœpp. and Endl.), Cogn. Diag. Cucurb. i. 17. Mapiri, 5,000 ft. (2061; 2062); 2,500 ft. (2063); (*Anguria spinulosa*, Pœpp and Endl.)

Gurania? Beni River (2662).

Cayaponia pentaphylla, Cogn. loc. cit. 760? Reis 1,500 ft. (2069).

Cayaponia coriacea, Cogn. in Mart. Fl. Bras. Cucurb. 79. Falls of Madeira, Brazil (497).

Cayaponia Tayuya (Vell.), Cogn. in D.C. Monog. Phan. iii. 772. Mapiri, 5,000 ft. (495).

Cyclanthera pedata (L.), Schrad. Index. Sem. Hort. Gott. 1831. Yungas, 4,000 ft. Cultivated (491).

Cyclanthera Matthewsii, Arn. in Hook. Journ. Bot. iii. 280? Guanai, 2,000 ft. (2071).

Cyclanthera, probably undescribed. Yungas, 6,000 ft. (2059).

CYCLANTHERA (?) RUSBYI, spec. nova. Caulis paulo ramosus, sulcatus, puberulus. Petiolus 8-10 mm. longus. Folia submembranacea, ovata, 8-10 cm. longa, 4-6 cm. lata, acuta vel obtusa, supra papillosa, subtus pubescentia, margine remote denticulata, sinus basilaris late rotundatus. Cirrhi bifidi, graciles, elongati. Pedunculus communis 1-3 cm. longus, multiflorus. Pedicelli 2 mm. longi. Corolla virescens, segmentis triangularibus, acutis, 1 mm. longis. Pedunculus fructiferus crassus, 1-2 cm. longus, striatus. Fructus oblique ovoideus 4-5 cm. longus, 2 cm. crassus. Aculei numerosi, compressi, 1 mm. longi. Yungas, 6,000 ft. (2589); Unduavi, 8,000 ft. (2068). If correctly referred to this genus, appears nearest related to *C. subinermis*, Cogn.

Elaterium Amazonicum, Mart. in Cogn. Diag. Cucurb. ii. 55. Yungas, 6,000 ft. (2070).

ECHINOCYSTIS MACROCARPUS, spec. nova. Caulis sulcatus, sparse villosus-hirsutus. Petiolus gracilis, sulcatus, longe villosus-hirsutus. Folia suborbicularia, 10-15 cm. lata, 5-loba, utrinque puberula, lobis acutis vel acuminatis, sinus basillaris rotundus, 2-3 cm. latis. Pedunculus communis masculus gracilis, sparse villosus, 10-15 cm. longus. Inflorescentia mascula paniculata. Cirrhi ramosi elongati. Fructus sessilis, 5-6 cm. longus, 2 cm. latus, horride aculeatus. Aculei inæquales, majores 2 cm. longi. Rostrum conicum, acuminatum, sparse aculeatum, tomentosum. Yungas, 6,000 ft. (2060). Apparently nearest *E. longispina*, Cogn.

Alsomitra Brasiliensis, Cogn. in Mart. Fl. Bras. Cucurb. 115. Junction of Rivers Beni and Madre de Dios. (547).

BEGONIACEÆ.

Begonia pleiopetala, A. D.C. Ann. Sci. Nat. (4) xi. 121. Unduavi, 8,000 ft. (682).

Begonia Weddelliana, A. D.C. loc. cit. ex. descrip. Yungas, 6,000 ft. (679).

Begonia, related to the preceding. Ingenio del Oro, 10,000 ft. (681).

Begonia, apparently allied to *B. Boliviensis*, A. D.C. Yungas, 6,000 ft. (683).

Begonia fagopyroides, Kunth et Bouché, Ind. Hort. Berl. 1848. Yungas, 4,000 ft. (686).

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(Continued from Vol. xvii. p. 284.

Begonia Altoperuviana, A. D.C. loc. cit. 123. ex. descrip. Yungas, 6,000 ft. (684).

Begonia ulmifolia, Humb. in Willd. Sp. Pl. iv. 418. Yungas, 6,000 ft. (690).

Begonia. Unduavi, 8,000 ft. (677).

Begonia scandens, Sw. Prodr. Fl. Ind. Occ. 86. Unduavi, 8,000 ft. (685, 689); Yungas, 6,000 ft. (678).

Begonia parviflora, Poepp. and Endl. Nov. Gen. i. 7. Yungas, 4,000 ft. (692).

BEGONIA MYRIANTHA, spec. nova. § Wageneria. Ramis, petiolus, foliis subtus et inflorescentia dense fulvo-hispidis. Folia oblique ovata vel orbicularia, cordata, 7-9 loba, majores 25 cm. lata, denticulata 7-9-nervia, supra sparce hispida. Cymis masculis dichotomo-cymosis, multifloris. Flores 6 mm. lati, petalis obovatis, sepalis orbicularis, glabris.

Unduavi, 8,000 ft. (691). Related to *B. hispida*, Schott.

Begonia Clarkei, Hook. f. Ingenio del Oro, 10,000 ft. (680).

The same as Mandon's No. 1090. Herb. Kew.

Begonia glandulosa, A. D.C.? Locality uncertain (688).

Begonia. Flowers of *B. parviflora*? Leaves of a plant of some different genus. Near La Paz, 10,000 ft. (687).

CACTEÆ.

Cereus, sp. Near La Paz, 10,000 ft. (2040).

Cereus, sp. Near La Paz, 10,000 ft. (2043).

HARIOTA CRENATA, sp. nov. § Alatae. Caule ramisque folia-

ceo-dilatatis, lævibus, nervo medio valido, ad margines crenatis. Ramis undique sub-15-crenatis, 20-30 cm. longis, 3-6 cm. latis. Nervo medio striato. Flores parvi, laterales, sessiles. Bacca (immatura ?) 7mm. diametro. Setæ 2-5,2 mm. longæ. Calycis tubus exsertus.

Nearest *Rhipsalis platycarpa*. The generic name *Hariota* antedates *Rhipsalis*. Yungas, 6,000 ft. (2047).

Hariota? Yungas, 6,000 ft. (2048).

Opuntia, sp. Guanai, 2,000 ft. (2044).

Mamillaria? Yungas, 6,000 ft. (2045).

FICOIDEÆ.

Mollugo verticillata, L. Sp. Pl. 89. Falls of Madeira, Brazil (1159). Collected also at Sorata, 10,000 ft.

Mollugo Glinus, A. Rich. Fl. Abyss. i. 48. (*M. glinoides*, Camb.) Falls of Madeira, Brazil (1503).

UMBELLIFERÆ.

Hydrocotyle Bonplandi, Rich. Hydroc. No. 27, f. 7. Unduavi, 12,000 ft. (1358); Sorata, 13,000 ft. (1778). The same as Holton's No. 637 from New Grenada.

Hydrocotyle quinqueloba, R. & P. Fl. Per. iii. 25, t. 248. f. b. Yungas, 6,000 ft. (1759).

Hydrocotyle Bonariensis, Lam. Encycl. iii. 147. Tacna, Chili (1760).

Hydrocotyle ranunculoides, L. f. Suppl. 177. Near Valparaiso, Chili (1110).

HYDROCOTYLE? ECCENTRICA, sp. nov. Caulis repens ad nodos radicans; foliis eccentrico-peltatis, longe et gracile petiolatis utriusque glabris, ovatis, tenuis, 6-8 cm. longis, apice longe acuminiatus, margine serrulatis, 5-7 lobatis; pedunculis petiolis æqualis; capitulis multifloris; pedicellis 2mm. longis. Fructus non visus.

Yungas, 6,00 ft. (1761). A curious member of the group, perhaps representing a distinct genus.

Azorella biloba, Wedd. Chlor. And. ii. 195. Sorata, 10,000 ft. (1952).

Spananthe paniculata, Jacq. Coll. iii. 247. Yungas, 4,000 ft. (873).

Bowlesia lobata, R. & P. Fl. Per. iii. t. 251. f. b. Unduavi, 8,000 ft. (1958); Ingenio del Oro, 10,000 ft. (1234).

Bowlesia palmata, R. & P. loc. cit. f. a. Near La Paz, 10,000 ft. (1355).

Asteriscium Chilense, C. & S. Linnæa, i. 354. Near Valparaiso, Chili (1930).

Eryngium paniculatum, Laroche. Eryng. 59, t. 26. Yungas, 6,000 ft. (576); Unduavi, 8,000 ft. (578); near Valparaiso, Chili (607).

Eryngium elegans, C. & S. loc. cit. 348? Reis, 1,500 ft. (577).

Eryngium fœtidum, L. Sp. Pl. 336. Mapiri, 5,000 ft. (905).

ARRACACIA ANDINA, sp. nov. Erectus, 30-40 cm. altus; foliis 1-2-pinnatis, 10-15 cm. longis; segmenta 5-7, late ovata, utriusque glabra, acuminata, petiolulata vel sessilia, lobata vel divisa, serrulata; involucro 0; pedunculæ numerosæ, 2-3 cm. longæ; umbellulæ multifloræ, pedicellis 2mm. longis; fructus ovoideus, 4mm. longus. Related to *A. esculenta*.

Ingenio del Oro, 10,000 ft. (1776). The same as Mandon's 590 and 595.

Apium leptophyllum (Pers.) F. Muell. in Benth. Fl. Austral. iii. 372. Near La Paz, 10,000 ft. (1768).

Oreosciadium dissectum (Benth.) Wedd. Chlor. And. ii. 204. Unduavi, 10,000 ft. (1767).

Oreomyrrhis andicola (Lag.) Hook f. Fl. Antarc. Unduavi 8,000 ft. (1769); near La Paz, 10,000 ft. (1770).

Fœniculum vulgare, Gærtner. Tacna, Chili (1777).

Daucus montanus, Willd. in Schult. Syst. vi. 482. Near La Paz, 10,000 ft. (1763).

ARALIACEÆ.

Sciadophyllum pentandrum (R. & P.) Poir. in Lam. Encycl. vi. 747. Yungas, 6,000 ft. (609).

SCIADOPHYLLUM PANICULATUM sp. nov. Caule arboreo? Foliis 8-9-digitatis, crasse petiolatis folioles longe petiolulatis ovalis vel ellipticis, apice acuminatis, basi rotundis, margine integris, supra glabris, subtus velutinis, 12-15 cm. longis, 6-7 cm. latis inflorescentia paniculata; floribus capitatis, capitulis 8-10 mm. diametro. Apparently nearest *S. angulatum*.

Mapiri, 5,000 ft. (608).

Dendropanax arboreum, Dec. & Pl. Guanai, 2,000 ft. (2691).

OREOPANAX RUSBYI, sp. nov. Arbor? Folia simplicia, coriacea, petiolata, ovato lanceolata, serrulata, trinervia, 10-15 cm. longa, 5-7 cm. lata, supra glabra, subter pallida, reticulata velutina; capitula breve et crasse pedunculata, 2 cm. diametro (fruct); flores sessiles; bacca 6-7 mm. diametro. Yungas, 6,000 ft. (2654).

CAPRIFOLIACEÆ.

Sambucus Peruviana, H.B.K. Nov. Gen. iii, 429. Unduavi, 8,000 ft. (727). The same as Mandon's No. 325, Herb. Kew.
Viburnum glabratum, H.B.K. loc. cit. 428. Mapiri, 5,000 ft. (2469). Yungas, 4,000 ft. (2584).
Viburnum Ayavacense, H.B.K. loc. cit. Guanai, 2,000 ft. (2560).
Viburnum tinoides, L. f. Suppl. 184. Unduavi, 10,000 ft. (725).
Viburnum lasiophyllum, Benth. Plant. Hartweg, 189. Sorata, 10,000 ft. (726).

RUBIACEÆ.

Ourouparia Guianensis, Aubl. Plant. Guian. i. 177. Guanai, 2,000 ft. (2104).
Cinchona condaminea, Humb. & Bonpl. Pl. Æquin. i. 33. Yungas, 6,000 ft. (2347).
Cinchona succirubra, Pav. Yungas, 4,000 ft. (2348).
 Other species of *Cinchona* were collected but were not included in the general distribution.
Cascarilla, sp. Junction of the Rivers Beni and Madre de Dios (2867).
Manettia ignita (Vell.) Schum. in Mart. Fl. Bras. vi. Pars. vi. (2) 171. Mapiri, 5,000 ft. (1126).
Manettia luteo-rubra, Benth. Linnæa, xxiii. 445. Yungas, 6,000 ft. (2159).
Manettia splendens, Gardn. in Herb. Kew. Guanai, 2,000 ft. (1127). Name not in Schumann's Rubiaceæ of the Brazil Flora.
Manettia Lygustum, Sw. Prodr. Fl. Ind. Occ. 37? (*M. coccinea*, Willd.). Junction of the Rivers Beni and Madre de Dios (2478). The same as Spruce's No. 3874, Herb. Kew.
Mantitia, sp. Collected only in fruit. Probably undescribed. Mapiri, 2,500 ft. (2158).

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(Continued from p. 38.)

MANETTIA (?) DIFFUSA, sp. nov. Ramulis gracillimis glabris, teretibus; foliis gracile petiolatis, ovatis tenuis glabris acutis vel acuminatis, 5-6 cm. longis, basi obtusis vel cordatis; inflorescentia axillari et terminali, cymosa-paniculata; pedunculis pedicellique gracilibus, glabris; bracteis minutis; corolla 6mm. longa, cylindracea, tubus basi constricta. Resembling *M. paniculata*, Poepp. and Endl. in habit but very different from that plant. Guanai, 2,000 ft. (2121).

Cosmibuena obtusifolia, R. & P. Fl. Peruv. iii. 3. Mapiri, 2,500 ft. (2103).

Condaminea corymbosa (R. & P.), D.C. Prodr. iv. 402. Yungas, 6,000 ft. (1898).

Chimarrhis, sp. Yungas, 6,000 ft. (2446).

Chimarrhis, sp. Same locality (2447).

Pogonopus tubulosus (D.C.), Schum. in Mart. Fl. Bras. vi. Pars. vi. (2), 265. Guanai, 2,000 ft. (2090).

Warszewiczia coccinea (D.C.), Klotzch, Mon. Ber. Akad. Wiss. Berl. 1853, 496. Guanai, 2,000 ft. (1953); Yungas, 6,000 ft. (1954); Falls of the Madeira, Brazil (1955).

Sipanea pratensis, Aubl. Guian. i. 147. (*S. hispida*, Benth. Hb. Kew). Mapiri, 2,500 ft. (2461).

Oldenlandia herbacea, D.C. Prodr. iv. 425. Falls of the Madeira, Brazil (2156).

Isertia bullata, Schum. loc. cit. 286 (?). Mapiri, 2,500 ft. (1895).
 I have not seen the type of Herr Schumann's species described as having cordate leaves. The leaves of our plant are narrowed at the base, otherwise much like those described by him.

Sabicea cana, Hook. f. Ic. Pl. t. 247. Mapiri, 2,500 ft. (1905).

Sabicea aspera, Aubl. Guian. 194, t. 76. (*S. hirsuta*, H.B.K.) Guanai, 2,000 ft. (1897); Mapiri, 2,500 ft. (1904).

Coccocypselum canescens, Willd. ex Cham. & Schlecht. Linnæa, iv. 139. Yungas, 4,000 ft. (1397); Mapiri, 2,500 ft. (1896); Falls of the Madeira, Brazil (2099).

COCCOCYPSELUM MACROPODUM (R. & P.) (*Psychotria macro-poda*, (R. & P.) Mapiri, 2,500 ft. (2098).

COCCOCYPSELUM GLABRUM. sp. nov. Herba ascendens, caulibus acutangulis glabris, 15-20 cm. altus. Petiolus 1 cm. longus; stipulæ subulatae; folia ovato-lanceolata, acuta, basi obtusa, 4-6 cm. longa, 2-3 cm. lata, glabra; inflorescentia capitata, 5-10 mm. diametro; pedunculus 2 cm. longus; bacca 2 mm. diametro.

Yungas, 4,000 ft. (2479). The same as Matthew's Nos. 850 and 1943 from Peru, Herb. Kew.

Hamelia patens, Jacq. Stirp. Amer. 74, t. 50. Mapiri, 5,000 ft. (2105).

HOFFMANNIA BRACHYCARPA, sp. nova. Ramis adscendentibus vel erectus obtusangulis; foliis breve petiolatis vel sessilibus, obovatis, apice acuminatis basi cuneatis, supra glabris, subtus minute ferrugineo-pubescentibus, 20-30 cm. longis, 7-8 cm. longis, margine integris; inflorescentia axillaris, pedunculi gracili, 2 cm. longi; corolla ovarium aequale; bacca 2½ mm. longa 2 mm. lata. Yungas, 4,000 ft. (2522).

Bertiera Guianensis, Aubl. Guian. i. 180, t. 69. Guanai, 2,000 ft. (2118).

Posoqueria longiflora, Aubl. Guian. i. 134. t. 51. Junction of the Rivers Beni and Madre de Dios (2220).

Basanacantha spinosa (Jacq.), Schum. in Mart. Fl. Bras. vi. Pars. vi. 2, 376. Junction of the Rivers Beni and Madre de Dios (2157) (*Randia glabrescens*, Spruce).

Genipa Americana, L. Sp. Pl. Ed. 2, 251, var. *latifolia*, Spruce, Herb. Kew. Junction of the Rivers Beni and Madre de Dios (1899).

Chomelia paniculata, Benth. in Herb. Kew. Junction of the Rivers Beni and Madre de Dios (1878); Mapiri, 2,500 ft. (2117).

Chomelia, sp. Falls of the Madeira, Brazil (1490). I determined this at Kew as "*C. pubescens*, Benth" but there is a *C. pubescens*, C. & S. described in Schumann's Rubiaceæ of the Brazil Flora, p. 36. with which the plant does not agree.

Chomelia, sp. Guanai, 2,000 ft. (2659).

Coffea Arabica, L. Unduavi, 8,000 ft. Cultivated. (1900).

Coussarea, apparently undescribed. Junction of the Rivers Beni and Madre de Dios (2402).

Coussarea, sp. Beni River (2677) collected in fruit only.

Coussarea? Mapiri, 2,500 ft. (2559). The same as Fendler's No. 1990, from Tovar, Venezuela.

Faramea salicifolia, Presl. Symb. Bot. 24, t. 70. Yungas, 6,000 ft. (1869); Unduavi, 8,000 ft. (1870); Mapiri 2,500 ft. (2120), (2626), the later collected in fruit and referred to this species with some hesitation.

Faramea Montevidensis, D.C. Prodr. iv. 497. Junction of the Rivers Beni and Madre de Dios (1874).

Faramea breviflora, Benth. in Herb. Kew. Falls of Madeira, Brazil. (2571.) Name not in Schumann's Rubiaceæ of the Brazil Flora.

Psychotria alba, R. & P. Fl. Peruv. ii. 58, t. 205. (*Mapouria alba*, Muell. Arg.). Yungas, 4,000 ft. (2110) (1866); Guanai, 2,000 ft. (1889); Junction of Rivers Beni and Madre de Dios (1877) (1875).

Psychotria Casiquiaria, Muell. Arg. in Schum. Mart. Fl. Bras. vi. Pars v. 324. Mapiri, 2,500 ft. (2109). The same as Spruce, Rio Negro, No. 3436.

Psychotria lupulina, Benth. in Hook. Journ. Bot. iii. 230. Falls of the Madeira, Brazil (1873); Beni River (1872).

Psychotria brachybotra, Muell. Arg. in Schum. loc. cit. 327. Yungas, 6,000 ft (1887). The same as Spruce, Rio Negro, No. 2190.

Psychotria barbiflora, D.C. Prodr. iv. 509? Mapiri, 2,500 ft. (2112). Specimens too old for certain determination.

Psychotria Marcgravii, Spreng. Syst. Cur. Post. 79. Yungas, 6,000 ft. (1893).

Psychotria Paraensis. Muell. Arg. in Schum. loc. cit. 244. Falls of Madeira, Brazil (2114).

Psychotria brachyloba, Muell. Arg. loc. cit.? Mapiri, 5,000 ft. (1864).

PSYCHOTRIA CHIONANTHA (D.C.) (*Palicourea chionantha*, D.C. Prodr. iv. 526; *Psychotria Luschnathii*, Mart. Herb. Fl. Bras. 311). Mapiri, 5,000 ft. (1883).

PSYCHOTRIA BRACHYPODA (Muell. Arg.) (*Mapouria brachypoda*, Muell. Arg. in Schum. loc. cit. 422). Mapiri 2,500 ft. (1882). The same as Burchell's No. 3318 from San Paulo, Brazil.

- Psychotria flexuosa*, Willd. Sp. Pl. i. 966. Mapiri, 5,000 ft. (1884).
Psychotria racemosa, Willd. Sp. Pl. i. 966. Mapiri, 2,500 ft. (1867).
Psychotria tabacifolia, Muell. Arg. loc. cit. 236. Mapiri, 2,500 ft. (1880).
Psychotria viridis, R. & P. Fl. Per. t. 210. Guanai, 2,000 ft. (2515). The same as Matthews, No. 1949, Peru, Herb. Kew.
 PSYCHOTRIA CROCEA (Schlecht.) *Palicourea crocea*, Schlecht, Linnæa, xxviii. 525 Beni River (2116).
Psychotria pilosiuscula, Griseb. Mapiri, 2,500 ft. (2480).
Psychotria crassa, Benth. Mapiri, 2,500 ft. (2113).
Psychotria cornigera, Benth. Yungas, 4,000 ft. (1865; 1881).
Psychotria, near *P. venulosa*, Muell. Arg. Falls of Madeira, Brazil (1879).
Psychotria near *P. idotricha*, Muell. Arg. Mapiri, 2,500 ft. (2489).
Psychotria leiocarpa, C. & S. Linnæa, 1829, 22. Guanai, 2,000 ft. (2161).
 PSYCHOTRIA NIVEO-BARBATA (Muell. Arg.) (*Mapouria niveo-barbata*, Muell. Arg.; Schum. in Mart. Fl. Bras. vi. Pars. vi. 2. 401). Mapiri, 2,500 ft. (1886). The same as Glaziou's No. 7684 from Rio Janeiro, Herb. Kew.
 PSYCHOTRIA UMBROSA (Muell. Arg.) (*Mapouria umbrosa*, Muell. Arg. Flora 1876, 459). Mapiri, 2,500 ft. (1868). The same as Spruce's No. 660, Herb. Kew.
Psychotria. Guanai, 2,000 ft. (2558).
Psychotria. Mapiri, 2,500 ft. (1894).
Psychotria (?) Yungas, 6,000 ft. (1885).
Psychotria. Junction of the Rivers Beni and Madre de Dios (2575).
Psychotria. Mapiri, 2,500 ft. (1871).
Psychotria tomentosa (Willd.), Muell. Arg., Schum. loc. cit. 370. Mapiri, 2,500 ft. (853); Mapiri, 5,000 ft. (854; 855).
Rudgea micrantha, Muell. Arg. Flora, 1876, 454. Falls of the Madeira, Brazil (2108).
Rudgea Amazonica, Muell. Arg. loc. cit. 449. Junction of the Rivers Beni and Madre de Dios (1890).
Rudgea Hostmanniana, Benth. Yungas, 4,000 ft. (1888; 1892). Mapiri, 5,000 ft. (1891).
Rudgea. Mapiri, 2,500 ft. (1876).



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- Geophila violæfolia*, DC. Prod. iv. 537. Mapiri, 5,000 ft.
(2102).
- Geophila cordata*, Miq. Linnæa, 1843, p. 72. Mapiri, 5,000 ft.
(2106). The same as Spruce No. 3870.
- Nertera depressa*, Banks in Gært. Fruct. i. 124. Near La Paz.
10,000 ft. (1359).
- Diodia hyssopifolia*, Cham. & Schlecht. Linnæa, iii. 350 (*Diodia
articulata*, D.C. Prod. iv. 564). Falls of Madeira, Brazil
(2101).
- Diodia* (?). Sorata, 10,000 ft. (2580).
- Endlichera umbellata* (Spr.), Schumann in Mart. Flor. Bras.
vi. part 6, 38. Mapiri, 2,500 ft. (2100).
- Borreria ocymoides*, D.C. Prod. iv. 544. Yungas, 4,000 ft. (1944);
Mapiri, 5,000 ft. (1939); Falls of Madeira, Brazil (1940).
- Borreria eryngioides*, Cham. & Schlecht, Linnæa, iii. 319. Falls
of Madeira, Brazil (1941).
- Borreria lævis* (Lam.), Griseb. Flora. Brit. W. Ind. 349. Mapiri,
2,500 ft. (1857); Reis, 1,500 ft. (1937).
- Borreria corymbosa* (R. & P.), D.C. Prod. iv. 550. Reis, 1,500 ft.
(2107).
- Borreria capitata* (R. & P.), D.C. Prod. iv. 545. Yungas, 4,000
ft. (1936).

- Borreria verticillata* (L.), Meyer. Prim. Fl. Essequib. 83, t. 1. Guanai, 2,000 ft. (1401).
- Borreria latifolia* (Aubl.), Schumann in Mart. Flor. Bras. vi. part 6, 61. Mapiri, 5,000 ft. (1938; 1942).
- Spermacoce tenuior* (L.), Lam. Yungas, 4,000 ft. (1943).
- Mitracarpus hirtus* (L.), D.C. Prod. iv. 572. Guanai, 2,000 ft. (1856).
- Richardsonia scaber*, Linn. Spec. Plant. 330. Yungas, 6,000 ft. (1969); same as Mandon's 337.
- Relbunium vaillantoides* (C. & S.). Schumann in Mart. Flor. Bras. vi. part 6, 115. This is exactly the plant so named at Kew, but it differs somewhat from Schumann's description. Near La Paz, 10,000 ft. (1828).
- Relbunium hypocarpium* (Elmg.), Hemsley, Biol. Centr. Am. ii. 63. Unduavi, 8,000 ft. (1833); Near La Paz, 10,000 ft. (1834); Mapiri, 5,000 ft. (1830); Yungas, 4,000 ft. (1836); Valparaiso, Chili (1827).
- Relbunium hirtum* (Lam.), Schum. l. c. Unduavi, 8,000 ft. (1838).
- Relbunium pusillum* (Endl.), Schumann, Mart. Flor. Bras. vi. part 6, 117. Sorata, 10,000 ft. (1842).
- Relbunium ciliatum* (R. & P.), Hemsley, Biol. Centr. Am. ii. 62. Sorata, 10,000 ft. (1825, 1843); near La Paz, 10,000 ft. (1837). The latter a smooth form and the same as Mandon's 326.
- Relbunium hirsutum* (R. & P.), Schumann Mart. Flor. Bras. vi. part 6. 116. Sorata, 10,000 ft. (1826; 1840). Same as Mandon's No. 329.
- Galium Aparine*, Linn. Spec. Plant. 108. Unduavi, 8,000 ft. (1829); Ingenio del Oro, 10,000 ft. (1919).
- Galium obovatum*, H. B. K. Nov. Gen. Pl. ii. 334. Sorata, 10,000 ft. (1832), the same as Spruce 5214; Unduavi 10,000 ft. (1841).
- Galium Chilense*, Hook. f. Ant. Voy. 302. Unduavi, 10,000 ft. (1835), the same as Mandon's 331, so named at Kew, but not *G. Chilense*, Endl., which name has priority. Philippi in Cat.

Pl. Vasc. Chil. 113, refers Hooker's *G. Chilense* to *G. Cho-noense*, Hook.

GALIUM MANDONI, sp. nov. Caule decumbente, gracile, flaccide, angulis retrorse scabris; foliis quaternis, lineari-oblongis, sessilibus, acutis, 5-10 mm. longis, margine carinaque retrorse scabris; pedunculis solitariis, axillaribus, recurvis, unifloris, puberulis; fructibus 2 mm. longis, glabris.

Sorata, 10,000 ft. (1831); Unduavi, 10,000 ft. (1839). The same as Mandon's 334, Herb. Kew, and 333 Herb. Col. Coll.

VALERIANEÆ.

PHYLLACTIS MAPIRENSIS, spec. nov. Cæspitosis, subacaulis; foliis spathulatis, glabris, integris, obtusis, patentibus 5-6 cm. longis; caulibus simplicibus, glabris, gracilibus 10-20 cm. altus; vaginus linearibus; cymis terminalibus, 1-2 cm. latus.

Mapiri, 5,000 ft. (876). Apparently nearest to *P. spathulata* (R. & P.), Pers., but with looser cymes and entirely glabrous leaves.

Valeriana paniculata, R. & P. Fl. Per. i. 41 t. 70. Unduavi, 8,000 ft. (883); near La Paz, 10,000 ft. (870). Same as Mandon's 317.

Valeriana micropterina, Wedd. Chloris Andina, ii. 26. Mapiri, 5,000 ft. (881). The same as Mandon's 319. Unduavi, 8,000 ft. (1174).

Valeriana Pavoni, Poepp. in Herb. Kew. Yungas, 6,000 ft. (2160). The same as Mandon 304 and Spruce 5077.

Valeriana polemonoides, H.B.K. Nov. Gen. Am. iii. p. 331. Yungas, 4,000 ft. (879). Unduavi, 10,000 ft. (884); near La Paz, 10,000 ft. (880). No. 884 is nearly the same as Spruce's No. 5,000 in Herb. Kew, determined as this species; the other two specimens are less pubescent and perhaps distinct.

VALERIANA BOLIVIANA, spec. nova. Herbacea, adscendens vel scandens, caulis fistulosus, striatis, 1m.-2m. altus, ad nodos pilosis vel glabris. Folia pinnata, vel superiores pinnatifida. Petiolus basi dilatatis. Foliola 3-7, sessiles vel breve petiolulata, ovata, lanceolata vel oblonga, obtuse dentata, vel superiores integra, supra glabra subtus principue ad venulos plus

minus pilosa; inflorescentia laxe paniculata; corolla 1 mm. longa; fructus ovatis $1\frac{1}{2}$ mm. longis; calycis limbo breve papposo-coronatus.

Yungas, 6,000 ft. (871, 875); Unduavi, 10,000 ft. (872, 877). Sorata, 10,000 ft. (1237). Nearest to *V. scandens*, L. The same as Mandon's 313 and 315. I may have included more than one species in this description, but I do not see any satisfactory way of separating the several specimens. I am regarding No. 871 as the type.

VALERIANA RUSBYI, spec. nova. Herbacea, erecta, pubescens, 40 cm. 50 cm. alta. Folia simplicia, integra vel undulata, ovato-lanceolata, petiolata 3 cm. 5 cm. longa, acuminata, basis cordatis. Corolla 4-5 mm. longa. Inflorescentia repitite dichotomis ramis primariis 2-3 cm. longis; fructus ovato-oblongis, 2 mm. longis.

Unduavi, 8,000 ft. (2097).

VALERIANA (?) ANDINA, spec. nova. Herbacea, glabra, erecta, 15 25 cm. alta. Caulis subaphyllis. Folia radicalia, spathulata, 5-7 cm. longa, grosse undulato-dentata, apice obtusa. Bractae 1-2, foliacea. Inflorescentia corymboso-capitata. Corolla 1 mm. longa. Near *V. oblongifolia*, R. & P., of which there is a type in Herb. Mus. Brit.

Near La Paz, 10,000 ft. (878). The same as Mandon's 307.

VALERIANA MANDONI, spec. nova. Herbacea, glabra, erecta, caule simplici, 30-50 cm. alto, glabro. Folia radicalia longe petiolata, ovata, cordata, sinuato-dentata, 2-3 cm. longa, apice obtusa; folia caulina similia minores, sessiles vel breviter petiolata. Inflorescentia e cymulis laxifloris confecta. Corolla 3 mm. longa. Achenia late ovata 2 mm. longa.

Sorata, 10,000 ft. (874); Unduavi, 5,000 ft. (882). Same as Mandon's 303. Near *V. urticæfolia*, H.B.K.

DIPSACEÆ.

Scabiosa maritima, Linn. Amœn. Ac. iv. 305. Tacna (1788).

CALYCERÆÆ.

Acicarpha procumbens, Less. Linnæa, 1831, 527. Sorata, 10,000 ft. (1376).

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(Continued from page 264.)

COMPOSITÆ.

Sparganophorus Vaillantii, Gærtn. Fruct. ii. 396. Falls of Madeira, Brazil (1628).

Vernonia coriacea, Lessing, Linnæa, 1831, 661. Reis, 1,500 ft. (1588).

Vernonia pycnantha, Benth. Yungas, 6,000 ft. (1728). The same as Hartweg, Peru, 754.

Vernonia simplex, Lessing, Linnæa, 1829, 280. Sorata, 13,000 ft. (2669).

Vernonia scabra, Pers. Ench. ii. 404. Reis, 1,500 ft. (1589).

Vernonia mollis, H.B.K. Yungas, 6,000 ft. (1658). The same as Lechler's Peru, 2351.

Vernonia scorpioides, Pers. Ench. ii. 404. Yungas, 6,000 ft. (1704).

VERNONIA SENECTIONÆFOLIA, spec. nov. Fruticosa, ramosa, ramulis teretibus plus minusve pubescentibus; foliis petiolatis (petiolus 8-12 mm. longus), ovalis 8-12 cm. longis, utrinque glabris viridibusque, ad apicem acuminatis, basi acutis, margine remote denticulata; capitula pauca, campanulata, multiflora, regulariter corymboso-paniculata, 15-20 mm. lata; involucri squamæ persistentes, 6-8 seriatae, interiores ligulatae obtusae, exteriores breviores, lanceolatae, acutae; pappus uniserialis, setis albidisom, minute scabris.

Yungas, 6,000 ft. (1730). Plant with much the aspect of a *Senecio*.

Vernonia laurifolia, DC. Prodr. v. 30 (?). Yungas, 4,000 ft. (1617). Agrees well with the description. I have not seen a named specimen of the species.

Vernonia arborescens, Sw. var. CUNEIFOLIA, var. nov. Folia ad basim cuneata. Reis, 1,500 ft. (2148), apparently differing from the wide-spread tropical American species only in the cuneate bases of the leaves.

VERNONIA BAKERANA, spec. nov. Fruticosa, alte ramosa, dense et minute tomentosa; foliis petiolatis, lanceolatis, utriusque

attenuatis, integris, supra glabris, valde viridibus, subtus dense albo-pubescentibus, 5-7 cm. longis, 10-15 mm. latis; capitulis copiose scorpiodo-paniculatis, sessilibus, late campanulatis, 5-6 mm. latis, 3-4 mm. longis; involucri squamis 4-5 seriatis, interioribus lanceolatis, acutis, exterioribus subulatis; pappi albidus, setis interioribus exteriores 5-6-plo superantibus.

Yungas, 6,000 ft. (2147).

VERNONIA ARISTOSQUAMOSA, spec. nov. Fruticosa, ramosa, ramis teretibus pubescentibus; foliis sessilibus, lanceolatis, coriaceis, integris, acuminatis, 3-6 cm. longis, 10-12 mm. latis, supra glabris, subtus sparse pubescentibus; capitulis sessilibus campanulatis multifloris, 10-15 mm. latis, 10-12 mm. longis, bracteatis, laxe scorpiodo-paniculatis; involucri squamis 4-5-seriatis, exterioribus subulatis, longe aristatis, interioribus lanceolatis, mucronatis; pappi fusci, setis interioribus exteriores 5-6-plo superantibus; acheniis dense pubescentibus.

Yungas, 6,000 ft. (1657). Near *V. muricata*, DC. and *V. aurea*, Mart.

VERNONIA YUNGASENSIS, spec. nov. Fruticosa, ramosa, ramis dense puberulentis; petiolis 10-15 mm. longis; foliis ovatis vel ovato-lanceolatis, denticulatis, longe acuminatis, ad basim rotundatis, supra scabridis, subtus reticulatis, dense griseo-pubescentibus; capitulis campanulatis 6-7 mm. latis, copiose sub-scorpioideo-paniculatis; involucri squamis 3-4 seriatis, ovatis vel interioribus lanceolatis, obtusis, pubescentibus; pappi albidus setis exterioribus brevissimis, acheniis striatis, glabris.

Yungas, 4,000 ft. (1731; 1732).

VERNONIA BOLIVIANA, spec. nov. Fruticosa, copiose ramosa, ramis angulatis, glabris; petiolis 6-12 mm. longis; foliis ovatis, coriaceis, utrinque glabris, nitidis viridibusque, integris, acuminatis, ad basim rotundatis, integris, 8-12 cm. longis, 4-5 cm. latis; capitulis campanulatis, paucifloris, copiose sub-scorpioideo-paniculatis; involucri squamis 2-3 seriatis, ovato-oblongis, obtusis, glabris; pappi albidus, setis uniserialibus 3 mm. longis; acheniis striatis.

Yungas, 4,000 ft. (1729). Related to Spruce's No. 4865 from Tarapoto, Peru.

Elephantopus tomentosus, L. Sp. Pl. 814 (*E. mollis*, H.B.K.)

Mapiri, 5,000 ft. (1105); Yungas, 6,000 ft. (1106).

- Elephantopus angustifolius*, Sw. Prodr. 115. Guanai, 2,000 ft. (1591).
- Elephantopus spicatus*, B. Juss. in Aubl. Guian. 808. Mapiri, 5,000 ft. (1109).
- Adenostemma triangulare*, DC. Prodr. v. 113. Mapiri, 5,000 ft. (1673).
- Ageratum conyzoides*, L. Sp. Pl. 1175. Mapiri, 5,000 ft. (1643).
- Stevia Boliviensis*, Sch. Bip. Bull. Soc. Bot. France, xii. 81, name only. Yungas, 4,000 ft. (1614); Unduavi, 8,000 ft. (1615). The same as Mandon's 242, Herb. Kew.
- Stevia compacta*, Benth. Pl. Hartw. 191. Near La Paz, 11,000 ft. (1613).
- Eupatorium squalidum*, DC. Prodr. v. 142. Mapiri, 5,000 ft. (1622).
- Eupatorium conyzoides*, Vahl., Symb. iii. 96. Sorata, 8,000 ft. (1624); Guanai, 2,000 ft. (1621).
- Eupatorium conyzoides*, Vahl. var. *incanum*, Baker in Mart. Fl. Bras. vi. Pars. II. 278 (*E. Clematitidis*, DC. var. *tomentosum*, Sch. Bip. Bull. Soc. Bot. France, xii. 81, name only). Yungas, 4,000 ft. (1625); Sorata, 8,000 ft. (1626).
- Eupatorium scabrum*, L. f. Suppl. 354. Guanai, 2,000 ft. (1623).
- Eupatorium extensum*, Gardn. in Hook. Lond. Journ. Bot. vi. 440, ex descr. Guanai, 2,000 ft. (1627).
- Eupatorium iresinoides*, H.B.K. Nov. Gen. iv. 106, t. 340. Near La Paz, 10,000 ft. (1637).
- EUPATORIUM GUANAIENSE, spec. nov. § Osmia. Suffruticosum, erectum, 5-7 dm. altum, ramosum; caule ramisque pilosis; foliis sessilibus, lanceolatis, acutis vel acuminatis, coriaceis, integris, trinervis, utrinque viridis, supra scabris, subtus hispidis; capitulis cylindrico-campanulatis, 8-10 mm. longis, multifloris; squamis 3-4 seriatis, linearibus, obtusis vel truncatis, glabris, trinervis; pappi setis griseis; acheniis 2 mm. longis, linearibus, costatis, glabris.
- Guanai, 2,000 ft. (1735). Related to *E. verbenaceum*, Mart.
- Eupatorium Vauthierianum*, DC. Prodr. v. 159. Beni River (2126).
- Eupatorium Guadalupense*, Spreng. Syst. Veg. iii. 414. Yungas, 6,000 ft. (1609); Guanai, 2,000 ft. (1603; 1606). Same as Holton's 319, New Granada.

- Eupatorium steviæfolium*, DC. Prodr. v. 158. Junction of the rivers Beni and Madre de Dios (1656).
- Eupatorium Sternbergianum*, DC. Prodr. v. 167. Yungas, 6,000 ft. (1608); Guanai, 2,000 ft. (2719). The same as Mandon's 252, so determined by Schultz.
- Eupatorium kleinoides*, H.B.K. Nov. Gen. iv. 120. Guanai, 2,000 ft. (1734).
- Eupatorium macrophyllum*, L. Sp. Pl. 1175. Yungas, 6,000 ft. (1610); Mapiri, 2,500 ft. (2125); junction of the rivers Beni and Madre de Dios (1605) (*E. populifolium*, Mart).
- Eupatorium inulæfolium*, H.B.K. Nov. Gen. iv. 109. Yungas, 4,000 ft. (1607).
- Eupatorium glomeratum*, DC. Prodr. v. 154. Yungas, 4,000 ft. Same as Mandon's 256.
- EUPATORIUM RUSBYI, spec. nov. § Conoclinium. Suffruticosum, erectum, ramis pubescentibus; foliis oppositis, ovato-lanceolatis, acuminatis, in petiolum late marginatum attenuatis, utrinque viridis et scabro-pubescentibus, membranaceis, acute dentatis, 10-15 cm. longis, 3-4 cm. latis; capitulis numerosis pedicellatis corymboso-paniculatis, campanulatis, multifloris, 5-6 mm. latis; involucri squamis linearibus, obtusis; pappi setis albis, tenuibus; involucre hemispherico, nudo, papilloso.
- Mapiri, 2,500 ft. (2723).
- Eupatorium amygdalinum*, Lam. Encycl. ii. 408. Yungas, 4,000 ft. (1635); 6,000 ft. (1636).
- Eupatorium glechonophyllum*, Less. Linnæa, 1831, 105. Near Valparaiso, Chili (1604).
- Eupatorium Salvia*, Colla. Pl. Chil. 8, f. 2. Near Valparaiso, Chili (2514).
- Eupatorium heptanthum*, Sch. Bip. Bull. Soc. Bot. France, xii. 82, name only. Near La Paz, 10,000 ft. (1733). The same as Mandon's 260. Closely related to if not identical with *E. Azangaroense*, Sch. Bip., based on Lechler's No. 1776 from Peru.
- Eupatorium hecatanthum* (DC.), Baker in Mart. Fl. Bras. vi., Pars. ii. 365. Yungas, 6,000 ft. (2127). The same as Mandon's 262, so determined by Schultz, but differing somewhat from Baker's description.



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EUPATORIUM THYMIFOLIUM, spec. nov. § Praxelis. Suffruticosum, ramosum, 7-8 dm. altum; ramis gracilibus, ascendentibus minute pubescentibus; foliis ovatis ovalibusque, integris, obtusis, supra scabris, intense viridibus, subtus punctatis, pubescentibus, 8-15 mm. longis, 3-6 mm. latis, breviter petiolatis; capitulis gracile pedicellatis, campanulatis, 1 cm. longis; involucri squamis 2-3-seriatis, obtusis, minute pubescentibus, interioribus linearibus, exterioribus brevioribus, lanceolatis, pappi setis griseis, flexuosis; acheniis linearibus, infra attenuatis.

Ingenio del Oro, 10,000 ft. (1747). Related to *E. erythrolepis*, Sch. Bip. based on Mandon's 261.

Eupatorium dendroides, Spreng. Syst. Veg. iii. 466. Yungas, 4,000 ft. (1580).

Mikania scandens (L.), Willd. Sp. Pl. iii. 1743. Yungas, 6,000 ft. (1645); Guanai, 2,000 ft. (1644); Mapiri, 5,000 ft. (1647). Junction of the rivers Beni and Madre de Dios (1646).

Mikania cordifolia (L.), Willd. Sp. Pl. iii. 1746 (*M. gonoclada*, DC.). Near La Paz, 10,000 ft. (1648); Guanai, 2,000 ft. (1649).

Mikania psilostachya, DC. Prodr. v. 190. Yungas, 6,000 ft. (1702); Mapiri, 2,500 ft. (1701; 1703).

Mikania Lindbergii, Baker, in Mart. Fl. Bras. vi. Pars. ii. 233. Yungas, 6,000 ft. (1736).

Mikania angularis, Humb. & Bonpl. Pl. Æquinoc. ii. 87, t. 106. Yungas, 4,000 ft. (1740).

- Mikania Hookeriana*, DC. Prod. v. 195. Mapiri, 5,000 ft. (1738).
The same as Matthew's No. 1368 from Peru.
- Mikania amara* (Vahl.), Willd. var. *Guaco* (Humb. & Bonpl.),
Baker in Mart. Fl. Bras. vi. Pars. II. 237. Junction of the
rivers Beni and Madre de Dios (1650). The same as Lech-
ler's No. 2477 from Peru.
- Mikania rufa*, Benth. Pl. Hartw. 201. Unduavi, 8,000 ft. (1737).
- Grindelia glutinosa* (Willd.), Dunal. Mem. Mus. Par. v. 49.
Tacna, Chili (1612).
- Solidago polyglossa*, DC. Prodr. v. 332. Yungas, 6,000 ft. (1629).
- Læstadia Lechleri*, Wedd. Chlor. And. i. 184. (*Lagenophora*
Lechleri, Sch. Bip. Bonplandia, 1856, 54, name only). Un-
duavi, 8,000 ft. (2667).
- Aster marginatus*, H.B.K. Nov. Gen. iv. 91. Sorata, 10,000 ft.
(1659).
- Aster marginatus*, var. *acaulis*, Sch. Bip. Bull. Soc. Bot. France,
xii. 81, name only. Sorata, 13,000 ft. (1718).
- Aster divaricatus*, T. & G., var. *graminifolius* (Spreng.), Baker
in Mart. Fl. Bras. vi. Pars. III, 22 (*A. exilis*, Ell. var. *aus-
tralis*, A. Gray). Near La Paz, 10,000 ft. (1712). Among
the numerous names which have been applied to this plant I
am unable to ascertain definitely which is the oldest available
one. I am following Mr. Baker in the name I here adopt,
but am of the opinion that the plant is specifically distinct
from the North American.
- Aster Vahlia* (Gaud.) H. & A. Comp. Bot. Mag. ii. 49. Sorata,
10,000 ft. ? (2720). Slightly different from the Patagonian
specimens. Locality and determination uncertain.
- Diplostephium Mandoni*, Sch. Bip. Bull. Soc. Bot. France, xii.
81, name only. Unduavi, 8,000 ft. (1660).
- Erigeron Pazensis*, Sch. Bip. Bull. Soc. Bot. France, xii, 80,
name only. Near La Paz, 10,000 ft. (1662; 1663).
- Erigeron lanceolatum*, Wedd. Chlor. And. i. 193, ex. descr.
Yungas, 6,000 ft. Sorata, 8,000 ft. (1661).
- Erigeron linifolium*, Willd. Sp. Pl. iii. 1955. Near Valparaiso,
Chili (2722).
- Erigeron Canadense*, L. Sp. Pl. 1211. (?) Near La Paz, 10,000
ft. (1666).

- Erigeron Bonariense*, L. Sp. Pl. 1211. Junction of the Rivers Beni and Madre de Dios (1664). Unduavi, 8,000 ft. (1665).
- Erigeron floribundus* (H.B.K.), Sch. Bip. Bull. Soc. Bot. France, xii. 81. Sorata, 10,000 ft. (2713). The same as Mandon's 218, Herb. Kew.
- Erigeron spiculosum*, H. & A. Bot. Beechey, 32. Near Valparaiso, Chili (1667).
- Erigeron hieracioides*, Wedd. Chlor. And. i. 194. Sorata, 10,000 ft. (2717); 13,000 ft. (2716).
- Erigeron rosulatum*, Wedd. Chlor. And. 193. Sorata, 13,000 ft. (1616). Possibly distinct, as Dr. Rusby's specimens are more silvery pubescent than Mandon's 224, so named by Schultz.
- Conyza Chilensis*, Spreng. Nov. Prov. 14. Near Valparaiso (2513).
- Baccharis sagittalis*, DC. Prodr. v. 425. Near Valparaiso, Chili (1563).
- Baccharis genistelloides*, Pers. Syn. ii. 425. Unduavi, 8,000 ft. (1564).
- Baccharis retusa*, DC. Prodr. v. 412. Yungas, 6,000 ft. (1572.)
- Baccharis cassinoides*, DC. Prodr. v. 412. Yungas, 6,000 ft. (1570).
- Baccharis riparia*, H.B.K. Nov. Gen. iv. 65. Yungas, 4,000 ft. (1571); near La Paz, 10,000 ft. (1573).
- Baccharis floribunda*, H.B.K. Nov. Gen. iv. 64, t. 325. Unduavi, 8,000 ft. (1583).
- Baccharis Radin*, Ph Linn. xxxiii. 146. Tacna, Chili (1586).
- Baccharis trinervis* (Lam.) Pers. Syn. ii. 423. Yungas, 6,000 ft. (1575; 1574); Mapiri, 5,000 ft. (1576).
- Baccharis salicifolia* (R. & P.) Pers. Syn. ii. 425. Reis, 1,500 ft. (1584).
- Baccharis serrulata* (Lam.), Pers. Syn. ii. 423. Near Valparaiso, Chili (1668).
- Baccharis glutinosa*, Pers. Syn. ii. 425. Near Valparaiso, Chili (1561).
- Baccharis scandens* (R. & P.), Pers. Syn. ii. 424. Sorata, 10,000 ft. (1585).
- Baccharis alpina*, H.B.K. Nov. Gen. iv. 48. Sorata, 13,000 ft. (1632).

- Baccharis microphylla*, H.B.K. Nov. Gen. iv. 53. Near La Paz, 10,000 ft. (1581); Yungas, 6,000 ft. (1566); Sorata, 8,000 ft. (2614).
- Baccharis microphylla*, H.B.K. var. *linearifolia*, Wedd. in Bull. Soc. Bot. France xii. 81. Sorata, 8,000 ft. (1577).
- Baccharis dracunculifolia*, DC. Prodr. v. 421. Yungas, 4,000 ft. (1568); Unduavi, 8,000 ft. (1569), the latter a narrow-leaved form.
- Baccharis aphylla*, DC. var. *Bolivienensis*, Sch. Bip. Bull. Soc. Bot. France, xii. 81. Unduavi, 8,000 ft. (1567).
- Baccharis Pingræa*, DC. Prodr. v. 420. Near Valparaiso, Chili (1567).
- Baccharis rosmarinifolia*, H. & A. Bot. Beechey, 30. Valparaiso, Chili (1560).
- Baccharis cuparioides*, H. & A. Journ. Bot. iii. 122. Valparaiso, Chili (1559).
- Baccharis spartea*, Benth. Sorata, 8,000 ft. (1587).
- Baccharis hemiprionoides*, Buck., fide Sch. Bip. Bull. Soc. Bot. France, xii. 81. Near La Paz, 10,000 ft. (1578). The same as Mandon's 186.
- Baccharis pulchella*, Sch. Bip. Bull. Soc. Bot. France, xii. 81, name only. Sorata, 8,000 ft. (1746).
- Baccharis*, resembling *B. cassinefolia*, DC., but stem densely pubescent above. Probably an undescribed species. Mapiri, 10,000 ft. (1579).
- BACCHARIS HETEROHALMOIDES, spec. nova. Fruticosa, erecta, ramosa, 10-16 cm. alta; ramulis gracilibus, angulatis, glabris; foliis lineari-subulatis, rigidis 1-2 cm. longis, $\frac{1}{2}$ mm. latis; capitulis foeminis terminalibus, solitariis, pedunculatis, 1 cm. altis; involucrium 3-4-seriale, squamis lanceolatis, acuminatis, $\frac{1}{2}$ mm. latis; receptaculo plano, punctato; achenia striata, linearia; pappus sub 2-serialis, scaber.
- Yungas, 4 000 ft. (1709).
- Baccharis?* Unduavi, 8,000 ft. (1727).
- Heterothalmus Bolivienensis*, Wedd. Chlor. And. i. 179, t. 31 A. Near La Paz, 10,000 ft. (1698).
- Dolichogyne* (?) Unduavi, 8,000 ft. (1711).
- Pleuchea odorata* (L.), Cass. Dict. 42, 3. Yungas, 4,000 ft. (1726). Same as Mandon's 206.

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(Continued from page 4).

Tessaria integrifolia, R. & P. Syst. 213. Guanai, 2,000 ft.
(1714).

Tessaria absinthioides, DC. Prodr. v. 457. Tacna, Chili (1715).

Pterocaulon virgatum (L.), DC. Prodr. v. 454. Unduavi, 8,000
ft. (1611).

Loricaria thyioides (Lam.), O. Kuntze, Gen. Pl. Rev. i. 352.
Unduavi, 8,000 ft. (1565).

Achyrocline satureioides (Lam.), DC. Prodr. v., Guanai, 2,000 ft.
(1601); near La Paz, 10,000 ft. (1596).

ACHYROCLINE RAMOSISSIMA (Sch. Bip.) (*Gnaphalium ramosis-*
simum, Sch. Bip. Bonplandia, iv. 52, name only). Near La
Paz, 10,000 ft. (1602). Same as Mandon's 157.

Gnaphalium purpureum, L. Sp. Pl. 854. Near La Paz, 10,000
ft. (1594); Sorata, 10,000 ft. (1595).

Gnaphalium cheiranthifolium, Lam. Encycl. ii. 752. Near La
Paz, 10,000 ft. (1593); near Valparaiso (1597). (*G. panicu-*
latum, DC.).

Gnaphalium viravira, Mol. Hist. 354. Valparaiso (1377).

Gnaphalium Mandoni, Sch. Bip. Bull. Soc. Bot. Fr. xii. 80, name
only (1598). Sorata, 13,000 ft. The same as Mandon's 155.

LEONTOPODIUM LINEARIFOLIUM (Wedd.) (*Antennaria linear-*
ifolia, Wedd. Chlor. And. i. 150). Mapiri, 10,000 ft.
(1599); Unduavi, 10,000 ft. (1600). Same as Mandon's 160
and Spruce's 5885.

Elvira biflora (L.), DC. Prodr. v. 503. Yungas, 4,000 ft.
(2351).

Clibadium asperum (Aubl.), DC. Prodr. v. 506. Mapiri, 5,000
ft. (2144); Reis, 1,500 ft. (2145); Yungas, 4,000 ft. (2146).

Acanthospermum australe (L.), Kuntze, Rev. Gen. Pl. 303.
Mapiri, 5,000 ft. (1348).

Polymnia glabrata, DC. Prodr. v. 515. Sorata, 8,000 ft. (1669).
Same as Mandon's 30, distributed as *Trigonospermum multi-*
florum, Sch. Bip., but referred by Schultz in Bull. Soc. Bot
Fr. xii. 79 to this species.



Franseria artemisioides, Willd. Sp. Pl. iv. 374. Sorata, 8,000 ft. (1590).

Xanthium spinosum, L. Sp. Pl. 987. Unduavi, 8,000 ft. (1929).

Siegesbeckia orientalis, L. Sp. Pl. 900. Yungas, 4,000 ft. (2124).

The same as Mandon's 231 and 232, called *S. Mandoni* by Schultz.

Jageria hirta (Lag.), Less. Syn. Comp. 223. Sorata, 10,000 ft. (2132); Mapiri, 5,000 ft. (1618).

Eclipta alba (L.), Hassk. Pl. Rav. Jav. 528. Junction of the rivers Beni and Madre de Dios (1631; 1630).

Wulfia baccata (L. f.) Kuntze, Rev. Gen. Pl. 373. (*Coreopsis baccata*, L. f. Suppl. 380; *Wulfia stenoglossa*, DC.). Mapiri, 5,000 ft. (1705); Reis, 1,500 ft. (1706).

Wedelia subvelutina, DC. Prodr. v. 540 (*W. scandens*, Gardn.). Falls of the Madeira, Brazil (2141).

Zexmenia rudis, Baker, in Mart. Fl. Bras. vi. Pars. iii. 188. Falls of the Madeira (2142).

OYEDÆA BOLIVIANA, sp. nova. Fruticosa, ramosa, dense et minute pubescentia, 30+ cm. alta; foliis ovato-lanceolatis, serrulatis, acuminatis breve petiolatis, oppositis, 8-10 cm. longis, 3-4 cm. latis, supra scabris, subtus dense pubescentibus; capitulis (cum radiis) 2-3 cm. latis. laxe corymbosis; involucris hemisphericis, bracteis lanceolatis vel oblongo-lanceolatis, acutis subcoriaceis; acheniis linearibus, exalatis, minute pubescentibus, 4 mm. longis; pappus florum disci 2-aristatus cum fere 5 aristis minutis; pappus florum radii 3-aristatus. Yungas, 6,000 ft. 2143).

VIGUIERA CALVA (Sch. Bip.) (*Helianthus calvus*, Sch. Bip. Bull. Soc. Bot. France, xii. 79. Sorata, 8,000 ft. (1690). The same as Mandon's No. 34.

Viguiera Mandoni, Sch. Bip. Bull. Soc. Bot. France, xii. 79. Near La Paz, 10,000 ft. (1684, 1683; 2714).

VIGUIERA LANCEOLATA, sp. nova. Fruticosa vel herba perennis, erecta, ramosa; caulibus scabris; foliis lanceolatis, crenulatis, acuminatis, basi acutis, supra scabris subtus pilosis, 3-nervis, oppositis vel superne alterni, 8-10 cm. longis, 1.5-2 cm. latis; capitulis paucis, cum radiis 5-6 cm. longis, pedunculatis; involucris hemisphericis; bracteis ovato-lanceolatis, pilosis, acutis, 3-nervis; acheniis glabris.

Yungas, 4,000 ft. (2140).

Viguiera, a narrow-leaved species apparently undescribed. Near La Paz, 10,000 ft. (1689).

Viguiera. Near La Paz, 10,000 ft. (2556).

Viguiera. Unduavi, 8,000 ft. (2715). Perhaps the same as 2556.

Helianthus (?) Sorata, 8,000 ft. (2139). The same collected also by Pearce in Bolivia. Probably undescribed.

Encelia ? Unduavi (2712).

Verbesina Soratæ, Sch. Bip. Bull. Soc. Bot. France, xii. 79, name only. Sorata, 8,000 ft. (1722).

Verbesina Mandoni, Sch. Bip. Bull. Soc. Bot. France, xii. 79, name only (1721). Near La Paz, 10,000 ft. A lanceolate-leaved form.

Verbesina diversifolia, DC. Prodr. v. 615. Yungas, 4,000 ft. (2135).

Verbesina, a large-leaved species related to *V. diversifolia*, but probably distinct. Guanai, 2,000 ft. (1693).

Spilanthes Acmella, L. Mant. ii. 475. Yungas, 4,000 ft. (919).

Salmea scandens (L.), DC. Prodr. v. 493. Junction of the rivers Beni and Madre de Dios (1741).

SALMEA MIKANIOIDES, sp. nov. Fruticosa, scandens (?) pubescens, divaricate ramosa, ramulis teretibus; foliis oppositis oblongo-lanceolatis, integris, valde 3-nervis, acuminatis, 8-10 cm. longis, 2-3 cm. latis, supra scabris et intense viridis, subtus puberulentis pallidisque; petiolis 1 cm. longis; capitulis corymboso-paniculatis, numerosis pedicellatis; involucris oblongo-campanulatis 3-4 mm. altis; bracteis ovato-oblongis, obtusis, acheniis linearibus, biaristatis.

Reis, 1,500 ft. (1739).

Trichospira menthoides, H.B.K. Nov. Gen. iv. 27. Falls of Madeira, Brazil (1700).

Coreopsis spectabilis, A. Gray, Proc. Amer. Acad. v. 125. Near La Paz, 10,000 ft. (1685).

Bidens pilosus, L. Sp. Pl. 1166 (*B. leucantha* (L.), Willd.) Tacna, Chili (1620); Yungas, 6,000 ft. (1619).

Bidens rubifolia, H.B.K. Nov. Gen. iv. 237. Guanai (1642).

Bidens andicola, H.B.K. Nov. Gen. iv. 237. Near La Paz, 10,000 ft. (1688, 1687). The same as Mandon's No. 44.

Bidens humilis, H.B.K. Nov. Gen. iv. 234. Near La Paz, 10,000 ft. (2129). The same as Mandon's No. 51.

- Bidens macranthus*, Griseb. Pl. Lorentz. 138. Near La Paz, 10,000 ft. (1686).
- Cosmos pulcherrimus*, Sch. Bip. Bull. Soc. Bot. France, xii. 79, name only. Sorata, 10,000 ft. (1682). The same as Mandon's No. 54, and perhaps identical with *C. diversifolius*, Otto.
- Galinsoga parviflora*, Cav. Icon. iii. 41, t. 281. Sorata, 8,000 ft. (2130).
- CALEA ROBUSTA, sp. nov. Suffruticosa, erecta, ramosa, ramulis densissime puberulentis; foliis sessilibus vel breviter petiolatis, coriaceis, ovatis, acutis, cordatis, reticulatis, dentatis, supra scabris, subtus glabris, 5-7 cm. longis, 2-4 cm. latis; capitulis heterogamis, corymbosis, pedunculatis, 2-3 cm. latis, multifloris; involucri hemispherici, bracteis oblongis, obtusis, imbricatis; pappi paleis subulatis, 3 mm. longis.
- Yungas, 4,000 ft. (2137). Apparently the same as specimens in Herb. Kew collected by R. Pearce at Puente Grande and Quichara; these have somewhat smaller heads.
- Calea*, probably undescribed. Reis, 1,500 ft. (2138). Distributed as *Zexmenia* (?).
- Tridax procumbens*, L. Sp. Pl. 900. Unduavi, 8,000 ft. (2721).
- Madia sativa*, Mol. et. Don, Chil. 113. Valparaiso, Chili (2136).
- Villanova oppositifolia*, Lag. Nov. Gen. & Sp. 21. Sorata, 10,000 ft. (1707).
- Tagetes Mandoni*, Sch. Bip. Bull. Soc. Bot. France, xii. 79, name only. Sorata, 8,000 ft. (1641). The same as Mandon's No. 68.
- Tagetes pusilla*, H.B.K. Nov. Gen. iv. 194. Yungas, 6,000 ft. (2133). Same as Mandon's No. 69.
- Porophyllum ellipticum*, Cass. Dict. xliiii. 46. Mapiri, 5,000 ft. (1697).
- Chrysanthemum Parthenium* (L.) Pers. Syn. ii. 462. Near La Paz, 10,000 ft. (1634).
- Cotula pygmaea* (H.B.K.), Hemsl. Bot. Biol. Cent. Amer. ii. 230. Near La Paz, 10,000 ft. (2154); Unduavi, 10,000 ft. (2552).



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South America, 1885-1886.—XXI.

(Continued from page 151.)

Liabum hastifolium, Poepp. & Endl. Yungas, 4,000 ft. (1742);
6,000 ft. (1743).

I brought these plants home from Kew with this name taken from Spruce's No. 4073 in the Kew Herbarium, but I now fail to find it published. They are the same as this specimen of Spruce, and related to but not identical with Mandon's No. 240 from Sorata, given in Bull. Soc. Bot. France xii. 81, as *L. corymbosum*, Sch. Bip.

LIABUM OVATUM (A. Gray). *Paranephelius ovatus*, A. Gray.
Sorata, 13,000 ft. (1633). The same as Mandon's No. 239 from the same locality.

LIABUM HASTATUM (Wedd.). *Munnozia hastata*, Wedd. Chlor.
And. i. 211, note. Yungas, 6,000 ft. (1744).

LIABUM RUSBYI, spec. nova. Caule folioso, pubescente, 30+
cm. alto; foliis breviter petiolatis, lanceolatis, apice basique
acutis, serratis, 6-10 cm. longis, 1.5-3.5 latis, superne glabris
et intense viridibus, subtus dense albo-tomentosis; capitulis
corymbosis, pedunculatis, 3-4 cm. latis; involucro hemispher-
ico, bracteis 3-5-seriatis, triangulari-lanceolatis vel ovatis,
acuminatis, puberulentis ciliatisve; radiis augustis disco du-
plo superantibus; acheniis glabris, 1 mm. longis; pappus
sordidus, rigidus 8-10 mm. longis.

Mapiri, 10,000 ft. (1745).

Erchthites valerianæfolia (Wolf), DC. Prodr. vi. 295. Mapiri,
5,000 ft. (1671).

Senecio multinervis, Sch. Bip. Bull. Soc. Bot. Fr. xii. 80, name only. Yungas, 4,000 ft. (1640); Unduavi, 8,000 ft. (2,128). The same as Mandon's 142. Schultz remarks that this is related to *S. castaneæfolius*, DC., a species which I have not seen.

Senecio clivicolus, Wedd. Chlor. And. i. 130. Near La Paz, 10,000 ft. (1679, 1681); Unduavi, 8,000 ft. (1670). The same as Mandon's 140.

Senecio volubilis, Hook. Tacna, Chili (1696).

Senecio Bridgesii, H. & A. Valparaiso, Chili (1675).

Senecio culcitoides, Sch. Bip. Bonplandia, 1856, 55, name only. Wedd. Chlor. And. i. 103. Unduavi, 8,000 ft. (1692).

Senecio formosus, H.B.K. Nov. Gen. iv. 177. Mapiri, 5,000 ft. (1672).

Senecio vulgaris, L. Sp. Pl. 1216. Near La Paz, 10,000 ft. (1674).

Senecio attenuatus, Sch. Bip. Bull. Soc. Bot. Fr. xii. 80, name only. Near La Paz, 10,000 ft. (1717). The specimens of this species were inadvertently distributed as from Tacna, Chili. Same as Mandon's 139.

Senecio attenuatus, Sch. Bip., var. *MICROPHYLLUS*, var. nov. Foliis spatulatis-oblongis, acutis, 4-6-dentatis, 1-1.5 cm. longis, 3-4 mm. latis. Near La Paz, 10,000 ft. (1691).

SENECIO YUNGASENSIS, sp. nov. Suffruticosus, valde ramosis, caulibus 6-8 dm. altis, puberulentis; foliis sessilibus, oblongis, apice acuminatis, basis augustis, utrinque puberulentis, denticulatis, 10-15 cm. longis, 3-5 cm. latis; capitulis radiatis, pedunculatis, numerosis, paniculatis, 1.5-2.5 cm. latis; involucri hemispherico, bracteis sub 2-seriatis, oblongo-lanceolatis, puberulentis, acutis, margine scariosis; radiis oblongis, obtusis, disco superantibus; acheniis glabris, oblongis, 1-5 mm. longis; pappus albidus, 5 mm. longus.

Yungas, 4,000 ft. (1719). Related to *S. myriocephalus*, Baker, of Brazil.

SENECIO FLOSCOSUS, sp. nov. Herbaceus, carnosus, caulibus superne tomentosus, 5-7 dm. altus; foliis utrinque glabris, petiolatis, ovato-oblongis, apice basiue acutis, integris, 8-10 cm. longis, 3-4 cm. latis; capitulis numerosis, dense corymbosis, pedunculatis, radiatis, 2-3 cm. latis; involucri anguste campanulatis, bracteis sub 2-seriatis, lineari-oblongis, acutis, tomentosus, margine scariosis; radiis disco sub-duplo longior-

ibus; acheniis glabris, 2 mm. longis; pappus copiosus, albidus, 1 cm. longus.

Near La Paz, 10,000 ft. (1680); Unduavi, 8,000 ft. (1720).

SENECIO SPRUCEI, sp. nov. Fruticosus, scandens, caule parce ramoso, tomentosus, striato, 1 m. +longo; foliis petiolatis, ovatis, integris, apice acutis, basi rotundis vel truncatis, superne glabris, subtus tomentosus, 6-10 cm. longis, 3-6 cm. latis; petiolis 2 cm. longis; capitulis paucis, paniculatis, sessilibus, eradiatis, 4 mm. latis; involucre auguste campanulatis, bracteis oblongis, acutis obtusisve, glabratis, 3 mm. longis; acheniis pubescentibus, 1 mm. longis; pappus albidus, 3 mm. longis.

Yungas, 4,000 ft. (1695). The same as Spruce's No. 4811 from Tavalosus, Herb. Kew., except that that specimen has longer petioles. Related to Lechler's 2608 from Peru.

Gynoxys alternifolia, Sch. Bip. Bull. Soc. Bot. Fr. xii. 80, name only. Yungas, 4,000 ft. (1639). The same as Mandon's 131.

Gynoxys laurifolia (H.B.K.), Cass. Dict. xlviii. 435. Sorata, 10,000 ft. (1638).

Gynoxys baccharoides (H.B.K.), Cass. Dict. xlviii, 455. Unduavi, 8,000 ft. (1676). The same as Mandon's 84, called *G. Mandoni* by Schultz.

Werneria pygmæa, H. & A., Journ. Bot. iii. 348. Near La Paz, 10,000 ft. (2520).

Centaurea Militensis, L. Sp. Pl. 1297. Near Valparaiso, Chili (1554).

Barnadesia polyacantha, Wedd. Chlor. And. i. 13. Unduavi, 8,000 ft. (1552); Sorata, 10,000 ft. (1553), The same as Mandon's No. 4.

Mutisia subulata, R. & P. Syst. 193, Near Valparaiso, Chili (1548).

Mutisia viciæfolia, Cav. Ic. v. 62, t. 490. Near La Paz, 10,000 ft. (1550); Yungas, 4,000 ft. (1551).

Mutisia Bipontini, Mandon, Bull. Soc. Bot. Fr. xii. 79, name only. Yungas, 6,000 ft. (1549), The same as Mandon's No. 6.

Chuquiragua oppositifolia, Gill. et Don. Phil. Mag. 1832, 392. Near La Paz, 10,000 ft. (1555); Unduavi, 8,000 ft. (1556).

CHUQUIRAGUA FEROX (Wedd.). (*Flotowia ferox*, Wedd. Chlor. And. i. 5.) Near La Paz, 10,000 ft. (1558). The same as Mandon's No. 2.

LYCOSERIS BOLIVIANA, sp. nov. Fruticosus, ramosus, caule parce tomentosus, ramulis striatis; foliis oblongis, sessilibus, acutis vel acuminatis, denticulatis, 4-nervis, superne glabris et intense viridibus subtus parce tomentosus, 8-12 cm. longis, 2-4 cm. latis; capitulis ad apices ramorum solitaribus, 6-8 cm. latis; involucri hemispherico, bracteis sub 7-seriatis, ovatis vel lanceolatis, acutis, puberulentis; radiis brevibus, apice dentatis; acheniis oblongis, glabris, 2 mm. longis; pappus ochroleucus, glabris, 1.5 cm. longis.

Guanai, 2,000 ft. (1557). Sterile heads not seen.

Chaptalia nutans (L.), Hemsley, Bot. Biol. Centr. Amer. ii. 255. Mapiri, 5,000 ft. (1677); Yungas, 6,000 ft. (1351).

Chaptalia integrifolia (Cass.), Baker in Mart. Fl. Bras. vi. Pars. III. 378. Yungas, 6,000 ft. (1678).

Proustia pungens, Poepp. in Less. Syn. 110. Near La Paz, 10,000 ft. (2680).

Perezia multiflora (H. & B.), Less. Linnæa, 1830, 15. Unduavi, 12,000 ft. (2668).

Perezia pungens (H. & B.), Less. Linnæa, 1830, 20. Yungas, 6,000 ft. (1725). The same as Mandon's 25, regarded by Schultz as a variety.

Trixis divaricata (H.B.K.), Spreng. Syst. iii. 501. Guanai, 2,000 ft. (1699). A form similar to *T. calcarea*, Gardn.

Jungia floribunda, Less. Linnæa, 1830, 38. Yungas, 4,000 ft. (1708). A form or variety the same as Lechler's No. 2126 from Peru.

HIERACIUM MANDONI (Sch. Bip.). (*Pilosella Mandoni*, Sch. Bip. Bull. Soc. Bot. Fr. xii. 82, name only.) Sorata, 13,000 ft. (1651). The same as Mandon's 271.

HIERACIUM TRICHODONTUM (Sch. Bip.). (*Pilosella trichodonta*, Sch. Bip. Bull. Soc. Bot. Fr. xii. 82, name only.) Unduavi, 8,000 ft. (1654). The same as Mandon's 270.

Hieracium microcephalum, Sch. Bip. Bonplandia, 1856, 55. Mapiri, 10,000 ft. (1652). The same as Lechler's 1820 from Peru.

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South America, 1885-1886.—XXII.

(Continued from page 266.)

HIERACIUM MAPIRENSE, spec. nov. Caule gracile, erecto, parce ramoso, pubescens, 30-40 cm. alto, superne nudo. Foliis oblongis vel lanceolatis, obtusis, denticulatis vel summis linearibus, integris, supra glabris, subtus parce pubescentibus, radicalibus petiolatis, 6-10 cm. longis, 1 cm. latis; capitulis paucis, gracile, pedunculatis, 3-4 cm. latis; involucri campanulato, bracteis lineari-lanceolatis, acutis, pubescentibus; radiis apice dentatis, disco duplo superantibus; pappus sordidus, glaber, 8 mm. longis.

Mapiri, 10,000 ft. (1694).

HIERACIUM ADENOCEPHALUM (Sch. Bip.). (*Pilosella adenocephala*, Sch. Bip. Bull. Soc. Bot. Fr. xii. 82, name only.) Near La Paz, 10,000 ft. (1653). The same as Mandon's 272.

Hypochæris elata (Wedd.), Griseb. Symb. Fl. Argent. 218. Near La Paz, 10,000 ft. (1723). The same as Mandon's 285.

HYPOCHÆRIS TARAXICOIDES (Walp.). (*Achyrophorus taraxioides*, Walp. Rep. vi. 336.) Unduavi, 10,000 ft. (2134). The same as Mandon's 275. = *A. stenocephalus*, A. Gray.

HYPOCHÆRIS ACAULIS (Remy). (*Achyrophorus acaulis*, Remy in Gay, Fl. Chil. iii. 448.) Near La Paz, 12,000 ft. (1716).

HYPOCHÆRIS CHILENSIS (Sch. Bip.). (*Achyrophorus Chilensis*, Sch. Bip. Bull. Soc. Bot. Fr. xii. 82, name only.) Near La Paz, 10,000 ft. (1724). The same as Mandon's 284.

Sonchus asper (L.), Vill. Fl. Delph. iii. 158. Near La Paz, 10,000 ft. (1655).

CAMPANULACEÆ.

Centropogon Surinamense (L.) Presl. Prodr. Mon. Lobel. 48. Mapiri, 5,000 ft. (635); Unduavi, 8,000 ft. (637); Yungas, 4,000 ft. (1093).

CENTROPOGON YUNGASENSE, sp. nov. Herbaceum, ramis teretibus, glabris, divaricatis; foliis oblongis, obtusis, brevissime petiolatis, crenulatis, utrinque glabris, 6-7 cm. longis, 3-4 cm. latis; floribus terminalibus breviter racemosis 3 cm. longis; pedicelli graciles, canescentes, ebracteati, 1-2 cm. longi; calycis



tubus brevis, puberulus, basi truncatus, lobis lineari-oblongis, basi patentibus; corollæ extus tomentulosæ; stigma inclusum.

Yungas, 4,000 ft. (642).

Siphocampylus augustiflorus, Schlecht. Unduavi, 12,000 ft. (653); Yungas, 4,000 ft. (646); locality uncertain (2550). The same as Lechler's 2,649, Herb. Kew. Mandon's No. 499 may be the same.

Siphocampylus Bolivianus, Zahlbr. Ann. k. k. Hof-Museum, vi. 443. Sorata, 8,000 ft. (645).

Apparently the same as Mandon's 496, the type of Dr. Zahlbrucker's species. Our specimens are stouter and with broader and thinner leaves than Mandon's. The plant was also collected by Pearce, somewhere in Bolivia, and his specimens are in the Kew Herbarium, under No. 712.

Siphocampylus Orbignyanus, A. DC. Prodr. vii. 405. Unduavi, 12,000 ft. (652).

Siphocampylus volubilis (H. B. K.) Don, Gen. Syst. Gard. iii. 703. Sorata, 8,000 ft. (650); Guanai, 2,000 ft. (643).

SIPHOCAMPYLUS MEMBRANACEUS, n. sp. Caule gracile, volubile, parce pubescente, 1-2 m. alto. Foliis oblongis, viridis, tenuibus, acuminatis, basi attenuatis, margine glanduloso-denticulatis, breviter petiolatis, supra glabris, subter minutissime puberulis, 10-15 cm. longis, 4-5 cm. latis; floribus paucis; pedicellis gracilibus, puberulis, 4-5 cm. longis; calycis tubus campanulatus 2 mm. longus, lobis subulato-linearibus, 1 cm. longis; corolla glabra, angusta, rubra, 4-5 cm. longa, lobis lanceolatis, acuminatis.

Yungas, 6,000 ft. (651).

SIPHOCAMPYLUS RUSBYANUS, n. sp. Caule ramisque glabris, teretibus. Foliis ovatis coriaceis, apice acutis, basi rotundatis vel subcordatis margine denticulatis, supra glabris, rugosis, subter valde reticulatis canescentibus, 6-10 cm. longis, 3-5 cm. latis; petiolis 5-15 mm. longis; pedicellis puberulis, 4-5 cm. longis; calycis tubo obconico 1 cm. alto, lobis lanceolato-linearibus, acutiusculis, 1 cm. longis, 1 mm. latis; corolla puberula, 2 cm. longa, 1 cm. diametro, valde lobata; antheræ omnes glabræ.

Mapiiri, 5,000 ft. (644). Collected also by Pearce at Callcan, Nov. 1864.

SIPHOCAMPYLUS UNDUAVENSIS, n. sp. Dense stellato-pubes-
cens. Foliis oblongo-lanceolatis, apice acuminatis, basid
angustis, brevis petiolatis, minute glanduloso-denticulatis 10-15
cm. longis, 2-4 cm. longis, subter reticulatis; pedunculis 3-5
cm. longis; calycis tubo subgloboso vel ovoideo, 1 cm. lato,
lobis lanceolatis acuminatis, 5-7 mm. longis; corolla superne
ampliata, puberula, 2-3 cm. longa, 1-1.5 cm. lata; antheræ
apice hirtellæ; fructus subglobosus, 1-5 cm. diametro, dense
stellato-pubescentis.

Unduavi, 8,000 ft. (649).

SIPHOCAMPYLUS INCANUS, n. sp. Caule ramisque dense
floccoso-incanis. Foliis late oblongis vel oblanceolatis apice
abrupte acuminatis, basi attenuatis vel cuneatis, margine
glanduloso-denticulatis, supra floccosis, subtus dense albo-
incanis, 18-30 cm. longis, 7-10 cm. latis; petiolis 2-3
cm. longis; pedunculis crassis, floccosis, erectis, 10-15 cm.
longis; calycis tubo oblongo-obovoideo, 1-2 cm. longo, incano,
lobis lineari-lanceolatis, acuminatis, incanis, 3-4 cm. longis,
2-4 mm. latis; corolla dense floccosa, 4-5 cm. longa, 2 cm.
lata, lobis oblique lanceolatis, acuminatis; antheræ dense hir-
sutæ.

Yungas, 6,000 ft. (648). Near *S. lanatus*, Benth.

SIPHOCAMPYLUS GLORIOSUS, n. sp. Ramis, petiolis, peduncu-
lisque dense stellato-tomentosis. Foliis oblongis, apice acutis vel
acuminatis, basi rotundis, margine glanduloso denticulatis,
supra scabris rugulosis, subter reticulatis, stellato-tomentosis,
10-15 cm. longis, 4-6 cm. latis; petiolis crassis, 5-10 mm.
longis; pedunculis crassis, folia æquantibus; calycis tubo late
ovoideo, costato, 1.5 cm. longo, dense stellato, basi truncato,
lobis foliaceis, late lanceolatis, reflexis, acuminatis, glanduloso-
dentatis; corolla 4-5 cm. longa, superne ampliata, stellato-
pubescentis, lobis lanceolatis; antheræ dense hirsutæ.

Unduavi, 10,000 ft. (647). Near *S. giganteus*.

Siphocampylus giganteus (Cav.), Don., var. *LATIFOLIUS*, n. var.
Foliis oblongis, acutis, 5.6 cm. latis. Unduavi, 8000 ft. (638).

SIPHOCAMPYLUS ANDINUS, n. sp. Glabrescens vel superne
minutissime puberula, ramis gracilibus. Foliis lanceolatis
utrinque viridis, acuminatis vel acutis, basid rotundatis,
margine remote denticulatis, 5-8 cm. longis, 1-2 cm. latis;
petiolis gracilibus, 5-1.2 cm. longis; pedunculis folium
æquantibus; calycis tubo depresso-hemispherico, 2-3 mm.
alto, 1 cm. lato, lobis foliaceis lanceolatis, acutis, erectis, integris,

1 cm. longis; corolla glabra, angusta, 4-5 cm. longa; antheræ apice pilosæ.

Unduavi, 8,000 ft. (641).

Resembles Mandon's No. 498; but leaves and calyx-teeth shorter, flowers larger and venation different.

SIPHOCAMPYLUS GRACILIS, n. sp. Molliter pubescens, caulis erectis, gracilibus, $\frac{1}{2}$ -1 m. altis. Foliis ovatis, acuminatis, basis truncatis vel subcordatis, margine irregulariter dentatis, utrinque pubescentibus, breviter petiolatis, 4-5 cm. longis, 2-4 cm. latis; flores in axillis summis; pedicellis gracilibus glabris 4-5 cm. longis; calycis tubo hemispherico, puberulo, 2-3 mm. alto, 4-5 mm. lato, lobis lanceolatis, acuminatis, integris 2 mm. longis; corolla glabra, angusta, 4 cm. longa, 5 mm. diametro, lobis angustis; antheræ glabræ.

Unduavi, 12,000 ft. (640.) Collected also by Bridges in Bolivia.

Var. GLABRIS, n. var. Tota planta glabra; foliis glanduloso-denticulatis.

Unduavi, 12,000 ft. (639). This was distributed as *Scorymbiferus*, Pohl, a Brazilian species which it resembles

Siphocampylus tupæformis, Zahlbr. Ann. k. k. Hof. Mus. vi. 440. Unduavi, 8000 ft. (636). Distributed as *Tupa Feuillei*, Don.

Tupa salicifolia, Don, Gard. Dict. iii. 700. Valparaiso, Chili (634).

Lobelia micrantha, H. B. K. Nov. Gen. iii. 316. Mapiri, 5,000 ft. (1967).

Lobelia nana, H. B. K. Nov. Gen. iii. 317, t. 272. Sorata, 10,000 ft. (1075). The same as Mandon's 1463.

Rhizocephalum pumilum, Wedd. Chlor. And. ii. 13. Unduavi, 8,000 ft. (2,445). The same as Mandon's 492.

Wahlenbergia linarioides (Lam.) A. D. C. Mon. Camp. 158. Near Valparaiso, Chili (632); Yungas, 6,000 ft. (631); Sorata, 10,000 ft. (633). Same as Mandon's 1664.

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VACCINIACEÆ.

Psammisia leucostoma, Benth.; Meisn. in Mart. Fl. Bras. vii. 127.
Mapiri, 2,500 ft. (2038). The same as Spruce, No. 2465 from
Brazil.

Psammisia pauciflora, Griseb. in Pl. Lechl. Exc. 2386. Mapiri,
5,000 ft. (2037). The same as Lechler, 2386 from Peru. This
may be a *Macleania* as indicated by Bentham and Hooker, Gen.
Pl. ii. 567.

EURYGANIA ELLIPTICA (R. & P.) (*Thibaudia elliptica*, R. & P. Fl.
Per. iv. t. 384, f. B). Mapiri, 2,500 ft. (2219); Yungas, 4,000
ft. (2034).

CERATOSTEMMA HOOKERI, Britton. (*Thibaudia elliptica*, Hook. Icon.
Pl. t. 108, not R. & P.). Mapiri, 10,000 ft. (2036).

CERATOSTEMMA MANDONI, n. sp. Sect. Euceratostemma. Ramis
glabris, striatis; foliis breviter petiolatis, integris, ovatis vel
ovato-oblongis, approximatis, concoloribus, supra glabris,
subter parce nigro-punctatis, utriusque obtusis, 1-1.5 cm.
longis, 5-8 mm. latis, 5-venosis; pedunculis, calycibusque to-
mentos; floribus terminalibus, solitariis geminibusve, 3 cm.
longis; calyx 5-fidus, lobi lanceolati, acuti; corolla extus
puberulenta, cylindræa, apice 5-fida, calyce 4-5-plo longiora.

Mapiri, 10,000 ft. (2632). Same as Mandon's 748, and prob-
ably the same as Lechler's 2693 and 2585 from Gatchapota, Peru,
Herb. Kew.

CERATOSTEMMA SERRATA, n. sp. Sect. Siphonandra. Ramulis
rugosulis, glabris; foliis breviter petiolatis, ovato-oblongis,
utrinque pallidis, subter parce nigro-punctatis, apice acutis, basi
rotundatis, margine remote denticulatis, 5-8 cm. longis, 3-4
cm. latis; floribus axillaribus, umbellatis, 3-4 cm. longis; caly-

cibus oblongo-campanulatis, breviter 5-dentatis; corollis glabris, cylindraceis, calyce 2-3-plo longioribus, apice 5-dentatis.

Unduavi, 8,000 ft. (2035).

CAVENDISHIA PUBESCENS (H. B. K.) (*Thibaudia pubescens*, H. B. K. Nov. Gen. iii. 273). Yungas, 6,000 ft. (2033).

Cavendishia, sp. Mapiri, 5,000 ft. (2403).

Vaccinium empetrifolium, H. B. K. Nov. Gen. iii. 263, t. 248 ? Unduavi, 10,000 ft. (2022).

Vaccinium floribundum, H. B. K., l. c. 266, t. 251. Mapiri, 10,000 ft. (2028). The same as Mandon's 551.

Vaccinium didynanthum, Dun. in D. C. Prodr. vii. 575. Mapiri, 10,000 ft. (2026).

Vaccinium epacridifolium, Benth. Pl. Hartw. 221. Mapiri, 10,000 ft. (2027).

Vaccinium polystachyum, Benth, l. c. 140. Mapiri, 10,000 ft. (2024).

Vaccinium pernettioides, Griseb. in Lechler Pl. Excs. 2113a. Yungas, 6,000 ft. (2029). The same as Lechler's 2113a.

Vaccinium, sp. Ingenio del Oro (2021).

Sophoclesia, sp. Mapiri, 5,000 ft. (2696).

Rusbya taxifolia, Britton, Bull. Torr. Bot. Club, xx. 68. Yungas, 4,000 ft. (2692).

ERICACEÆ.

Pernettya Pentlandii, D. C. Prodr. vii. 587. Sorata, 13,000 ft. (2017) Yungas, 6,000 ft. (2018).

Pernettya Pentlandii, D. C. var. *parvifolia* (Benth.) Wedd. Chlor. And. ii. 170. Unduavi, 8,000 ft. (2023).

Gaultheria anastomosans (L. f.) H. B. K. Nov. Gen. iii. 285. Yungas, 6,000 ft. (2025; 2095).

Gaultheria cordifolia, H. B. K. Nov. Gen. iii. 285, t. 261. Yungas, 6,000 ft. (2016).

- Gaultheria brachybotrys*, D. C. Prodr. vii. 595. Sorata, 13,000 ft. (2014).
- Gaultheria rufescens*, D. C. Prodr. vii. 595. Unduavi, 8,000 ft. (2013); 10,000 ft. (2011). The same as Mandon's 557.
- Gaultheria reticulata*, H. B. K. Nov. Gen. iii. 284. Ingenio del Oro, 10,000 ft. (2030).
- Gaultheria glabra*, D. C. Prodr. vii. 596. Yungas, 6,000 ft. (2015).
- Gaultheria tomentosa*, H. B. K. Nov. Gen. iii. 287, t. 262. Unduavi, 8,000 ft. (2032). The same as Mandon's 559.
- Gaultheria Pinchinchensis*, Benth. Pl. Hartw. 225. Yungas, 6,000 ft. (2012).
- Gaultheria conferta*, Benth. Pl. Hartw. 219. Unduavi, 10,000 ft. (2020).
- Gaultheria vaccinioides*, Griseb. Pl. Lechler Excs. 1900. Unduavi, 10,000 ft. (2019); Ingenio del Oro, 10,000 ft. (2031).
- Befaria glauca*, H. & B. Pl. Æquin. ii. 118, t. 177. Mapiri, 5,000 ft. (2010); Yungas, 6,000 ft. (2123).
- Clethra fimbriata*, H. B. K. Nov. Gen. iii. 290, t. 264. Unduavi, 12,000 ft. (2073). The same as Mandon's 562.
- Clethra Brasiliensis*, Cham. Linnæa, viii. 510. Yungas, 6,000 ft. (2091).

PLUMBAGINEÆ.

- Plumbago scandens*, L. Sp. Pl. Ed. 2, 215. Tacna, Chili (1158); Yungas, 6,000 ft. (1917 and 1073).

MYRSINEÆ.

- Myrsine dependens* (R. & P.) Spreng. Syst. i. 664. (*M. ciliata*, H. B. K.) Unduavi, 10,000 ft. (2491.)
- Myrsine erythroxyloides*, Benth. Voy. Sulph. 123. Guanai, 2,000 ft. (867).
- Myrsine latifolia* (R. & P.) Spreng. Syst. i. 664. Yungas, 4,000 ft. (868).
- Myrsine Gardneriana*, A. D. C. Ann. Sci. Nat. (II.) xvi. 86. Yungas, 4,000 ft. (866 and 869). The same as Spruce's No. 4251.

GEISSANTHUS BOLIVIANA, n. sp. Arbor glabra. Foliis oblanceolatis, coriaceis, integris, multinervis, subtus dilute viridis, apice obtusis, base cuneatis, 15-20 cm. longis, 5-8 cm. latis; petiolis crassis, 2 cm. longis; floribus 2-3 mm. latis, dense paniculatis; paniculis 10-15 cm. longis; calycibus campanulatis, punctatis, 5-lobatis, tubo lobis æqualibus; corollis calyce duplo longioribus.

Mapiri, 5,000 ft. (562). Related to Spruce's No. 5176, Herb. Kew.

Cybianthus, sp. Mapiri, 5,000 ft. (2346). Collected only in fruit.

Cybrianthus, sp. Guanai, 2,000 ft. (1218). Collected only in fruit.

I did not match either of these at Kew. In all probability they are undescribed species.

Ardisia acuminata, Willd. Sp. Pl. i. 1062. Junction of the Rivers Beni and Madre de Dios (2490).

Clavija spathulata, R. & P. Syst. Fl. Per. i. 285 (?). Junction of Rivers Beni and Madre de Dios (2650).

Clavija lancifolia, Desf. Nouv. Ann. Mus. Hist. Nat. i. 402, t. 14. Guanai, 2,000 ft. (1219).

SAPOTACEÆ.

Mimusops Surinamensis, Miq. in Mart. Fl. Bras. vii. 43. Junction of the Rivers Beni and Madre de Dios (729).

Lucuma procera, Mart.; A. D. C. Prodr. viii. 170. Falls of the Madeira, Brazil (2618).

Sideroxylon, sp. Junction of the Rivers Beni and Madre de Dios (2703).

STYRACEÆ.

Styrax ovatum (R. & P.) A. D. C. Prodr. viii. 267. Yungas, 6,000 ft. (838).

Symplocos Matthewsii, A. D. C. Prodr. viii. 250. Mapiri, 5,000 ft. (2686).

Symplocos, sp. Mapiri, 2,500 ft. (2685).

OLEACEÆ.

Jasminum grandiflorum, L. Sp. Pl. Ed. 2, 9. Yungas, 6,000 ft. (1244). Cultivated and escaped.

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