



III. *The Phanerogamic Botany of the Matto Grosso Expedition, 1891-92.* By  
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(Plates XXI.-XXXIX., and Map.)

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NARRATIVE.

IN the month of June 1891 I heard from Mr. Carruthers, Keeper of the Botanical Department of the British Museum, that a botanist was required to join an expedition about to explore the Brazilian province of Matto Grosso. As I had been for years desirous of rendering my botanical education less incomplete by a visit to the Tropics, I readily acquiesced in Mr. Carruthers's suggestion that I should offer my services in the above capacity. On enquiry it was understood that a syndicate had obtained mineral rights over two large tracts of land in the province, the conditions comprising a survey and a geological and botanical examination of the territories in question, which included the country to the east of Cuyabá, the capital, and the large and almost entirely unknown region lying west of the fifty-seventh meridian, and between the tenth and fifteenth parallels of latitude. My offer was accepted on the part of the syndicate, and on July 2nd, after hasty preparation, I left Southampton in the company of Dr. John William Evans, who had been appointed geologist to the expedition.

Matto Grosso has been visited by several botanists, and, thanks to their united labours, the vegetation of a considerable part of the province is now fairly well known. The van appears to have been led by a Portuguese doctor, Alexandre Rodriguez Ferreira, who, departing from Pará towards the end of last century, made his way up the Madeira and Guaporé rivers to the then flourishing city of Matto Grosso (Villa Bella). He returned by the same route, and deposited his plants in the Museum at Lisbon, whence a set was, a few years ago, sent to the Herbarium at Kew. In 1825 Riedel, botanist to the Russian



expedition under Langsdorff, after collecting in Eastern Brazil, crossed the Paraná river, and entered Matto Grosso from the south. Riedel travelled up the Rio Pardo to Camapuan, and proceeded *viâ* the Taquari, Paraguay, São Lorenzo, and Cuyabá rivers to Cuyabá. Unaccompanied by Langsdorff, who selected the Arinos and Tapajos route, he advanced to Villa Maria and Matto Grosso city, thence descending the Guaporé and Madeira rivers to the Amazon. Then we find Dr. Patricio da Silva Manso, a Cuyabá physician who flourished during the earlier half of the century, sending to Lhotsky many plants from Cuyabá and the neighbourhood. These plants came into possession of Von Martius, and were distributed to various herbaria. Gaudichaud entered Matto Grosso during the second of his three voyages, that of the *Herminie* (1830–33). I have been unable to get any information about this voyage, of which no narrative, it would appear, was ever written—a singular fact, seeing that the other two journeys were so well and so exhaustively described. For this reason, it is impossible to say to which part of the province Gaudichaud went. Only a small district of Matto Grosso was visited by D'Orbigny, viz. the neighbourhood of the Forte do Principe de Beira on the Guaporé, whence he brought home a few plants. Ten years after Gaudichaud, Dr. Weddell began those travels which have made his name so famous. Finding himself at Goyaz, Weddell moved northward along the Araguaya to its junction with the Tocantins, which river he ascended, and, returning to Goyaz, entered Matto Grosso from the east and proceeded over the plateau to Cuyabá. Here he turned northward, reached Diamantino, and made a short circuit to the Arinos valley and back. Retracing his steps to Cuyabá, Weddell went down the Cuyabá, São Lorenzo, and Paraguay rivers as far as Olympe; whereupon, being refused admission into Paraguay, he turned back, visited Miranda on the Mondego river, and ascended the Paraguay as far as Villa Maria. A journey to Cuyabá and back precluded his advance over the watershed to Matto Grosso city, and from there he turned southward into Bolivia. Weddell's valuable collections are at the Paris Museum, and comparatively few of his plants have been taken up in the 'Flora Brasiliensis' of Von Martius. Finally the name of Tamberlik now and again occurs in the work just named, as that of a collector in "Western Brazil," but of the date as of the locality of his explorations I am in complete ignorance, and so cannot even say whether he was in Matto Grosso at all.

Arriving at Buenos Ayres we, on July 28th, transhipped into the Brazilian mail-boat, and proceeded up the River Plate. Our journey was uneventful, and on the morning of August 5th the Rio Apa was reached and we entered Matto Grosso. The most remarkable feature of this part of the river is the occurrence of forests composed exclusively of the Caranda Palm (*Copernicia cerifera*, Mart.). Extending for a considerable distance along the shore, these forests reach northward as far as the neighbourhood of Coimbrá. The massing of these Palms has a very peculiar effect, the grey stems simulating fog, from which the feathery crowns emerge clearly into view. Wherever a forest fire has raged, the base of their stem is blackened and the lowest leaves are apt to lose colour and hang pendent; otherwise fire has no apparent effect upon them. The vegetation bordering this part of the river appears, so far as one can judge, to be composed largely of *Cassia* and *Mimosa* scrub, with Malvaceæ, trailing Ipomœas,

*Calystegia sepium*, &c. The large, handsome, upright *Ipomœa fistulosa*, Mart., is also a prominent feature in the landscape, and the Lepacho tree (*Tabebuia Avellanedæ*, Lorentz), leafless, and covered, at this season, with a cloud of pink blossom, affords a fine spectacle to the traveller.

We steamed into Corumbá early in the morning of the 7th. Here it is necessary to tranship into a smaller vessel, and as this had not yet arrived at Corumbá on its downward journey, we were detained a day at that place, the fiscal capital of the province, and, as such, a town of some importance. Advantage was taken of this delay, and we went for a ramble through the woods, but with disappointing results, as, owing to its being the middle of the dry season, but few flowers were to be seen and most of the trees and shrubs were denuded of their leaves. A *Stephanophysum*\* was common, and a lovely purple-flowered *Buellia*; I also noted a *Waltheria* (probably *W. viscosissima*, A. St.-Hil.), a small *Croton*, *Momordica Charantia*, Linn., and the fine shrub *Cordia insignis*, Cham., then in full flower, while by the inundated bank of the river were *Eichornea azurea*, Kunth, and *Ipomœa fistulosa*, Mart., accompanied in places where the current was not felt by *Azolla americana* in plenty.

Next morning our boat left for Cuyabá, which city was reached on the 13th. While taking in wood at the various log-cutting settlements *en route* a few small specimens were hastily gathered; of these some have proved to belong to new species. An exceedingly common feature of the riverside flora is the prevalence of the willow-like *Alchornea castanoplia*, A. Juss., which forms a close fringe to the banks for a long distance.

On the 21st, favourable chances having been meanwhile seized of collecting in the neighbourhood of the city, a small expedition set off, under the charge of Mr. Arthur Whitehorn, a gentleman then resident in Paraguay, for the Chapada plateau, lying several leagues to the east of Cuyabá, and the westernmost extension of the great plateau of Matto Grosso. The country round Cuyabá consists of gently rolling land, fairly well timbered, and with abundance of shrubby vegetation. The subsoil is a red argillaceous earth, during the dry season baked as hard as a brick; this rests upon a platform of ancient slates, well exposed on the sides of deep watercourses which are dry at this time of the year. The traveller is struck by the curious appearance of the ground hereabout; this is due to the fact that, for miles around the city, the red earth has been turned over by gold-seekers, large quantities of the precious metal having been extracted here during the latter half of last century. As we passed, the woodlands were rather desolate, much of the vegetation being parched by the drought. Among the trees was seen a *Cochlospermum* (probably *C. insigne*, A. St.-Hil.), leafless now, but adorned with yellow blossom and cottony capsule; a Bignoniacea, most likely *Tabebuia aurea*, Benth. & Hook. f., bearing masses of golden flowers, and the Vochysiaceous *Salvertia convallariodora*, A. St.-Hil., its coarse ragged branches crowned with large woody fruits. Of shrubs one may mention the very common *Bauhinia obtusata*, Vog., with thick leaves, white petals, and lanky pods; Composites such as *Vernonia obovata*, Less., and *V. scabra*, Less.; Malpighiaceæ (*Heteropteris nudicaulis*, S. Moore; *Tetrapteris præcox*, S. Moore;

\* My presses being packed up, no specimens were collected during this ramble.

*Banisteria constricta*, Griseb., an Amazonian plant); *Cassia dysophylla*, Benth.; Myrtles (*Myrcia dasyblasta*, Berg, *Eugenia miniata*, S. Moore); the pretty *Lippia lasiocalycina*, Cham., and many others. Grassy vegetation is abundant wherever circumstances favour its obtaining a foothold. *Arthropogon villosus*, Nees, *Andropogon (condensatus)*, H. B. K., *ternatus*, Nees, *virginicus*, Linn.), *Melinis minutiflora*, Beauv. (the well-known "capim gordura" of the Brazilians), *Paspalum tropicum*, Doell, and the local *Panicum ansatum*, Trin., are all to be found here. On stream-sides you will see *Jussiaea nervosa*, Poir.; and although, with the exception of grasses, lowly vegetation is not abundant in August, yet such does occur; *Justicia metallicorum*, S. Moore, *Buchnera palustris*, Spreng., and the terrestrial orchid *Stenorhynchus australis*, Lindl., may be cited in support of the statement.

Through romantic scenery you ascend the plateau by a fairly good road, a creditable piece of engineering in so remote a part of the republic. Dr. Fonseca\*, judging from the supposed heights of various places up the river from Buenos Ayres and Rosario to Corumbá (which place he considers to be nearly 400 feet above the sea), puts the elevation of Cuyabá at about 500 feet. This is at the port †, above which the ground whereon the city is built rises at least 150 feet higher. There is no sensible increase of level until the entrance to the pass is reached; approaching this, the escarpment of the plateau is seen extending on either hand far as the eye can reach, and rising to about 1800 feet above the lower country, this giving a total elevation of about 2500 feet above sea-level. It must be remembered, however, that this estimate, although probably fairly correct, is approximate only, the country never having been levelled. At the entrance to, or in, the pass I gathered *Erythroxyton daphnites*, Mart.; *Helicteres chapadensis*, S. Moore; the milk-white trusses of *Serjania perulacea*, Radlk., a beautiful climber; *Hirtella americana*, Aubl., and *H. collina*, S. Moore; the tall *Justicia oreadum*, S. Moore; *Piper asperiplium*, Ruiz & Pav.; *Spiranthes grandiflora*, Lindl.; *Renealmia foliosa*, S. Moore, with leaves a metre long, scarlet scapes and purple leaf-sheaths, as well as other plants.

The plateau is a good instance of that type of country called by Brazilians "cerrado." It consists of neglected-looking land with small, copiously branching trees, a certain amount of shrubby undergrowth, and grass in plenty, the latter sometimes forming small, almost treeless "campos." It is not without justice that travellers have compared these cerrados with orchard-land in our own country. Somewhat deep valleys, well timbered, and of which the bottoms are the beds of streams, often dry in August, cut into the plateau, whose uppermost portion is composed of brick-red sandstone, which weathers in places into grey castellated forms of wonderful variety. Among the trees on the plateau may be noticed *Byrsonima verbascifolia*, Rich., with a plentiful show of saffron flowers; the Lythraceous *Physocalymna scaberrima*, Pohl, its cloud of purple blossoms affording a splendid sight; *Luhea speciosa*, Willd.; Euphorbiaceæ such as *Maprounia guianensis*, Aubl., and *Mabea fistulifera*, Mart., *Connarus fulvus*, Planch., and many others. You are still accompanied by *Tabebuia aurea*?, Benth. & Hook. f.; this you can distinguish even to the far distance by a golden gleam amidst surrounding bosage. The grassy plots are now and

\* 'Viagem ao redor do Brasil (1875-1878),' Rio, 1881, (p. 35).

† Derby ('Physical Geography and Geology of Brazil,' p. 11, translated from 'O Brasil geographico e historico,' of J. E. Wappæus) gives 123 metres (about 400 feet) as the height of Cuyabá port.

again lit up by the carnation flowers of *Pavonia Rosa-sinensis*, A. St.-Hil., and in its neighbourhood you may gather sweet-scented *Kielmeyera* (*K. amplexicaulis*, S. Moore), *Turnera chrysodoxa*, S. Moore, tufted *Æschynomene oroboides*, Benth., and the straggling *Manihot tripartita*, Muell. Arg., var. *vestita*. The Labiate *Hyptis effusa*, S. Moore, remarkable for its long, capillary, almost invisible peduncles, rises to a man's height. Melastomaceæ are common—Miconias, *Clidemia rubra*, Mart., *Tococa fornicaria* Mart., the gorgeous *Tibouchina stenocarpa*, Cogn., &c.; *Lippia lasiocalycina*, Cham., *Chaptalia integrifolia*, Baker, *Trixis ophiorrhiza*, Gardn. (here, as in Eastern Brazil, a reputed alexipharmic), the fine heads of *Chuquiraga chapadensis*, S. Moore, the lowly *Cuphea micrantha*, H. B. K., *Eupatorium megaphyllum*, Baker, and masses of the common weed *Stachytarpheta dichotoma*, Vahl, will also be met with. Nor will a yellow-flowered Rubiaceæ (*Chomelia ribesioides*, Benth.) escape notice, if only from the peculiar habit shown by its inflorescences of sheltering themselves from the broiling sun beneath a neighbouring leaf. The grasses, much the same as those met with in the low country, are frequently burnt by campo fires, but they suffer no permanent injury. Indeed, specimens belonging to this order, with charred outer leaf-sheaths, are common in herbaria, and most of my Chapada grasses show unequivocal signs of the action of fire.

We reached the decayed village of Sant' Anna da Chapada on the 25th and, the weather being superb, proceeded to sling our hammocks in a wood hard by. A little mountain stream, one of the feeders of Coxipo river, flows past the village, and in wet ground on its margin *Eleocharis sulcata* and *E. ochreatea*, Nees, *Rynchospora glauca*, Vahl, and *Mayaca Sellowiana*, Kunth, were found, while *Eragrostis Vahlia*, Nees, and *E. multipes*, S. Moore, grew in plenty upon a bank skirting the stream. Other grasses of the place are *Paspalum paniculatum*, Linn., and *P. conjugatum*, Berg., *Panicum horizontale*, G. Mey., and *Melinis minutiflora*, Beauv. In shady places *Ichnosipha concinnus*, S. Moore, is to be seen, and you may collect *Xylopia grandiflora*, A. St.-Hil., Myrtaceæ (*Myrcia ambigua*, DC., and *M. chapadensis*, S. Moore), Miconias, a tree-fern, *Psychotria tomentosa*, Muell. Arg., &c., in the course of a short ramble. Noteworthy, too, is *Banisteria constricta*, Griseb., with its remarkable dimorphism. This shrub usually branches somewhat sparingly, and the branches bear large leaves; in places, however, the branches are much more numerous, and the leaves upon these are very small. We had, unfortunately, but two pack-mules, so that my supply of paper was soon exhausted, otherwise a larger collection could have been made upon this interesting plateau. We returned to Cuyabá on August 30th.

I continued collecting at Cuyabá, and, although Manso appears to have secured a considerable number of specimens here, was not unsuccessful in finding new species. The small tree *Anona Walkeri*, S. Moore, growing on the city outskirts, and *Eupatorium cuyabense*, S. Moore, may be cited in instance. Here I found *Copaifera elliptica*, Mart., the Apocynacea, *Anisolobus Zuccarinianus*, Mart., *Alibertia myrciifolia*, K. Schum. (a common shrub), *Bowdichia virgilioides*, H. B. K., *Hyptis* (*glauca*, A. St.-Hil., *crenata*, Pohl, *brunnescens*, Pohl), and the elegant little *Auratea Riedeliana*, Engl., rare in herbaria, but here abundant.

At Cuyabá we were joined by Lieut. Olaf Storm, of the Argentine Navy, prospective leader of the expedition, and by his brother Mr. John Storm, second in command, and it

being deemed advisable that a party in advance should make its appearance, as soon as possible, within the district embraced by the Western Concession, on September 7, after an interview with the Governor of the Province, we set off under the leadership of Mr. John Storm, for Santa Cruz (Barra dos Bugres), situated on the Paraguay river, about 100 miles to the north-west of the city. Lieut. Storm himself proposed returning to Corumbá, where he expected to receive from Europe the necessary funds. There he was to engage men, and transfer to the Villa Maria mail-boat the stores already at Corumbá. Meanwhile a small stern-wheeler, the *Explorer*, was on its way to Villa Maria under the charge of Mr. Noel Lofft Holden, who had directions to ascend the Paraguay and join us at Santa Cruz. Thence some of the party were to return at once by the *Explorer*, the rest proceeding with the mules by a difficult track to the Sipotuba river, on the banks of which a junction was to be effected. As we took but three pack-mules, the bulk of the scientific apparatus had to be sent back to Corumbá, a circumstance which, although absolutely essential, was most unfortunate, since our stay at Santa Cruz lasted much longer than had seemed at all likely when we set out.

The country between Cuyabá and the Paraguay river resembles in its external features that which we had already passed through to the east of the city, but it differs in being traversed by limestone and sandstone hills having a N.E. and S.W. trend. One of these hills, "Arara" by name, is probably nearly 2000 feet high. But before we reached the hills, on our arrival at the little settlement of Jangada, the temporary illness of one of the party brought us to a halt, which I turned to account by collecting specimens. The beautiful Vochysiaceous tree *Callisthene fasciculata*, Mart., was here in full bloom, as also was its lowly ally *Camarea ericoides*, A. St.-Hil. Here, too, were growing the dwarf Palm *Diplothemium jangadense*, S. Moore, *Byrsonima cydoniaefolia*, A. Juss., *Tocoyena hirsuta*, Moric., with large sweet-scented *Gardenia*-like flowers, the tiny *Pectis jangadensis*, S. Moore, most nearly allied to two Mexican species, *Piper tuberculatum*, Jacq., *Julocroton humilis*, Didr., a lanky, nearly leafless *Eranthemum*, with blue flowers (*E. congestum*, S. Moore), the pretty *Zephyranthes lactea*, S. Moore, &c. In front of the principal inhabitant's house were a couple of large Taruma trees (*Vitex cymosa*, Bert.), almost leafless at this season of the year, but with a plentiful show of Oxford blue blossoms. These trees were festooned with the remarkable Loranthad *Struthanthus polyanthus*, Mart., var. *mattogrossensis*, which was in full flower at the time of our visit. Melastomaceæ I saw nothing of, a rather curious circumstance.

It is necessary to ford several streams on the journey to Santa Cruz. These streams, many of which are running throughout the year, flow in the bottom of shallow, well-wooded valleys. In the case of one of them, the rapid Curupira, the track runs for some distance through its valley, so that a person might fancy himself to be in a great forest did he not know the contrary. The reason for these narrow riverain mattos is undoubtedly that given by Liais\*, who holds that the water needful to the growth of the trees is derived, while the dry season lasts, from the thick morning mists caused by excess in the temperature of the water over that of the air during the early morning hours.

\* 'Climat, Géologie, Fauna et Géog. Bot. du Brésil,' p. 597.

Leaving Jangada on the 13th, we crossed the hilly country and at noon on the 15th dismounted before a "fazenda" on the Jocoara river, a tributary of the Paraguay. Upon the banks of this river grows a plant, presumably a species of *Ilex*, which furnishes a *maté* and is largely used by the inhabitants of the district. At the fazenda they were drying leafy branches of the shrub in a store, and when dry pounding them with strong wooden rods in a deep vessel made of wood. I did not secure specimens of the plant at that time; but soon after our arrival at Santa Cruz I instructed a messenger from Cuyabá, on his return, to beg the people to send me some material, and a small party from the *Explorer*, who went into the city on business some weeks after, also preferred the same request, and compliance was promised; for some reason, however, no specimen ever reached me. This *maté* is somewhat darker in colour than the Paraguayan kind, and yields a browner liquor, which is decidedly bitter to the taste. On September 16th we saw the waters of the Paraguay flashing in the morning sun, and our journey was at an end.

Santa Cruz, better known in the neighbourhood by the name of Barra dos Bugres, is situated on a low bluff upon the further, or, since its course is here almost due east and west, northern side of the Paraguay. On the southern side of the river there is here much low-lying open campo, and the river is approached through Bromeliaceous scrub. The bluff is composed of exceedingly fine-grained red shales, often greasy to the touch—these Dr. Evans distinguishes as Matto shales. The ground rises rapidly from the river, above which the upper part of the settlement stands some 100 feet; it is here of cerrado nature, but immediately beyond you suddenly enter a dense virgin forest, extending many miles to the northward. Close by, the small Rio dos Bugres joins the Paraguay, and this gives the place its alternative name. The Rio dos Bugres flows northward to the hills forming the southern escarpment of the great Amazonian plateau; it receives in its course the tributary Rio Brasinho, of which the feeders traverse the forest just referred to.

Of trees at Santa Cruz there are plenty, but the bulk of the vegetation consists of tall evergreen shrubs, usually more or less deprived of leaves in their lower part. Agreeably with what one sees in the country to the eastward, the trees for the most part do not grow very high, and they often have stout, greatly divaricated branches, invested in thick, sometimes locally swollen "bark," in all probability functioning as a preventive of evaporation. In a ramble round the settlement you will see the Vochysiaceous *Callisthene fasciculata*, Mart., and species of *Qualea* (*grandiflora*, Mart., *parviflora*, Mart., *pilosa*, Warm.), *Rheedia Guacopary*, S. Moore, with pleasantly acid yellow fruits used in place of vinegar by the people and esteemed as a bait for certain fish, and the Sterculiaceae *Guazuma ulmifolia*, Lam., much like a Lime in general appearance, its sweet-scented flowers the resort of neighbouring bees. For the fruit of the tall Siputa tree (*Salacia Siputa*, S. Moore) you must go to the river-banks, where will also be found the Cajá (*Spondias lutea*, Linn.), *Brosimopsis lactescens*, the type of a new genus of Artocarpeæ, also the myrmecophilous *Triplaris formicosa*, S. Moore. *Jacaranda cuspidifolia*, Mart., a species confined to the province, flaunts its dark blue



blossoms in the breeze; nor should *Curatella americana*, Linn., *Vismia japurensis*, Reichardt, and the Lepacho\* be omitted.

Among shrubs Anonaceæ are conspicuous, especially *Anona coriacea*, Mart., var. *dioica*, A. St.-Hil., and *Stormia brasiliensis*, S. Moore. Species of *Helicteres*, including the curious *H. orthotheca*, S. Moore, with large straight capsule-valves, are common, as are the *Erythroxyloids*, especially *E. nitidum*, Spreng. Bauhinias (*Bauhinia obtusata*, Vog., *B. cumanensis*, H. B. K., and others) frequently occur, and Malpighiaceæ (*Heteropteris*, *Banisteria*, *Byrsonima*), Myrtaceæ (*Eugenia*, *Myrcia*, *Psidium Araçu*, Raddi, yielding a pleasant fruit), Melastomaceæ (*Miconia*, *Clidemia*, &c.), and Cocolobas, the red-plumed tiny flower-heads of *Calliandra parviflora*, Benth., *Heisteria rubricalyx*, S. Moore, the tall *Oxalis hirsutissima*, Zucc., *Turnera odorata*, Rich., *Siparuna guianensis*, Aubl., *Nua hermaphrodita*, S. Moore, *Sorocea grandifolia*, S. Moore, may be mentioned among many others, as well as the East Brazilian *Brosimum Gaudichaudii*, Tréc. Palms, such as the Urubamba, the Tocúm, the Bocaúba, the Guacory, occur here and there †. Climbers are plentiful: *Hiræas* (*volubilis*, S. Moore, and *sepium*, A. Juss.), Passion-flowers (*Passiflora tricuspis*, Mast., *P. coccinea*, Aubl.), Bignonias, *Dalechampia cuiabensis*, Muell. Arg., looking like a *Bougainvillea* with its pink involucral bracts, the fine red-flowered *Anguria gloriosa*, S. Moore, and *Smilax medicinalis*, S. Moore, are worthy of notice. Another common order is that of the Rubiaceæ. You will often find little sandy stretches by the river-side brightened by the small pink-blossomed gregarious *Sipanea veris*, S. Moore, and *Richardsonia grandiflora*, Cham. & Schlecht., and *R. pilosa*, H. B. K.; *Borreria cupularis*, DC., *Diodia saponarioides*, Presl, and *D. multiflora*, DC., as well as *Sabicea humilis*, S. Moore, are all lowly members of this order, belonging to which one may cite, among the shrubs, Coussareas, *Faramea coussarioides*, S. Moore, *Rudgea viburnioides*, Benth., *Mapourea tomentella*, S. Moore, *Psychotria subcrocea*, Muell. Arg., resplendent with coralline peduncles and yellow flowers, *Chiococca brachiata*, Ruiz & Pav., the Amazonian *Randia Ruiziana*, DC., var. *longiflora*, K. Schum., and the remarkable new *Alibertia verrucosa*, with warted berries, made into a preserve by the Santa-Cruzans. Among monocotyledonous herbs you will see, nestling in the shade of shrubby covert, the delicate trumpet-shaped golden flowers of *Costus acaulis*, S. Moore, *Calatheas*, the new *Maranta longiscapa*, and *Renealmia Holdenii*, *Zygella graminea*, S. Moore, ground aroids (*Caladium heterotypicum* and *Aphyllarium tuberosum*, both new to science), *Herreria Salsaparilha*, Mart., and several others. A small brook, nearly dry in October, runs through the settlement. On its bank or growing in its bed you may come across, *inter alia*, *Aciotis dichotoma*, Cogn., and *Acisanthora inundata*, Triana, both Melastomaceæ; Heliotropes (*Heliotropium indicum*, L., *inundatum*, Sw., *filiforme*, H. B. K.), *Conobea scrophularioides*, Benth., a little blue-flowered Scrophularia, and *Polygonum acre*, H. B. K. *Peperomia*

\* I did not see this tree in flower at Santa Cruz, but our woodcutters by preference selected dead Lepacho wood all the way up the river. If the Santa Cruz plant be not true Lepacho, it is most probably closely allied to it; at any rate, it has the same peculiar greenish wood.

† I did not pay special attention to this group, and, judging from the few specimens brought back, the various local names are here applied to Palms specifically distinct from those known by the same names in the eastern provinces.

*nummularifolia*, H. B. K., clings to the shady trunks of trees, wherefrom hang the gorgeous trusses of *Cattleya superba*, Schomb., the hitherto nearest known habitat of which lies hundreds of miles to the north.

In grassy places one can gather Paspalums, Panicums, Setarias, *Eleusine indica*, Gaertn., *Leptochloa domingensis*, Trin., and the little new *Luziola pusilla*, with which specimens absolutely identical from Guiana are in the Herbarium at Kew. One may complete the list by citing the names of a few lowly dicotyledons, such as *Ruella humilis*, Pohl, with milk-white flowers, Stenandriums, the exceedingly common *Scoparia dulcis*, Linn., *Dianthera polygaloides*, S. Moore, the peculiar Amazonian *Stilpnopappus viridis*, Benth., *Rhodocalyx rotundifolius*, Muell. Arg., and the pretty little *Desdemona pulchella*, the type of a new genus of Scrophulariaceæ.

The *Explorer* not having yet succeeded in surmounting the difficulties of navigation between Villa Maria and Santa Cruz, an expedition was arranged with the object of making its way through the forest to the Serra de Tapirapuan, the geology of which, it was thought, might prove interesting. The forest covers a tract of land lying some 150 feet above the Paraguay. At intervals small streams, most of which run eastward into the Brasinho, traverse the line of route, which latter soon becomes a narrow foot-track used by the "poayeros," or gatherers of ipecacuanha. There are no inhabitants except during the period of securing the valuable root, which, in this part of Brazil, is the wet season. For the accommodation of the poayeros small groups of palm-thatched huts have been erected at various points in the forest. As will readily be understood, the obstacles to the passage of a mule-train along such a track, ever liable to obliteration by the encroachment of vegetation, are by no means slight, and it is owing partly to this that my collection from the forest-region is not a large one; it was also necessary to hurry on our way, as our supply of food was limited.

To judge from the descriptions of travellers, this forest has many points of resemblance with other primeval forests of the country. Trees, supported sometimes on gigantic boles, raise their lofty crowns far above the traveller; lianes of various kinds everywhere interpose to entangle the steps of his mule; tree-aroids may be seen perched far beyond his reach; epiphytic orchids abound. Except for the roar of an occasional storm as it sweeps by, the deepest silence prevails—silence broken only now and again by the *crick-crick* of a Cicada. Shafts of light slant through the living canopy to illuminate the metallic lines of great *Morpho* butterflies heavily flopping through the semi-darkness. Before you entered the forest, the probability is that the intense heat of the sun was mitigated by a fresh breeze, and although the sun's rays cannot penetrate the sylvan recesses, the wind also is shut out, and you experience a feeling of oppression in consequence. Everywhere you will find the same kinds of shrubby vegetation, vegetation specially adapted to flourish in deep shade. Foremost among these shade-loving plants are Rubiaceæ, especially species of *Psychotria*; the epiphytic aroids are Anthuriums and Monsteras; Peppers are conspicuous from the curious way in which their flower-spikes stand out rigidly from their leaves, as if movements of the latter against the flowers might cause loss of pollen; the little *Peperomia nummularifolia*, H. B. K., is everywhere; tall Solanums, *Tabernæmontana* bushes bearing white flowers exhaling a strong scent as

of new-mown hay, and species of *Erythroxylon*, *Alloplectus*, *Bignonia*, *Ischnosiphon*, *Dalechampia*, *Guarea*, *Allophyllus*, swell the list of these dwellers in the twilight glades. Orchids you may gather in plenty, most of these, however, not in flower during September; chief among those then in bloom are *Cattleya superba*, Schomb., and *Rodriguezia secunda*, Ruiz & Pav. (the latter, like the former, hitherto not found in this part of Brazil), also *Dichæas*, *Notylas*, &c. The chief feature to notice about this forest-flora is its strongly pronounced affinity with that of the great Amazonian country to the north. I shall return to this matter later on.

Now and again the track will emerge from dense forest to cross a short stretch of campo, at the most not more than a few hundred yards in width. The origin of these small campos must, I think, be ascribed to fires, for it is difficult to understand how conditions favourable to forest-growth should suddenly cease and become operative again at so short a distance. There is, of course, the alternative suggestion that the district has been the theatre of much physical change, and that these strips of campo occupy the sites of large rivers which formerly drained the region. But there are reasons for preferring the former view. Close to Tapirapuan, however, the case is different. There the forest ends suddenly, and after passing a narrow fringe of cerrado, you descend upon a grassy campo about a mile in width, beyond which, flanked by a similar cerrado fringe, suddenly rises the tree-clad Serra de Tapirapuan, here trending almost due east and west. One is led to suspect that the waters of a broad river may at one time have flowed down this grassy valley, and to-day a small stream, probably larger during the rainy season, does actually meander through it. I obtained but few plants on the campo, *Bletia catenulata*, Ruiz & Pav., a beautiful ground orchid, hitherto found, unless I mistake, only in Guiana and Peru, the new *Herpestis parvula*, a tiny inhabitant of the streamlet, and the Cycad, *Zamia Brongniartii*, Wedd., being almost all. This Cycad I afterwards found in plenty at Santa Cruz, which place marks the S.E. limit of known Cycad distribution in South America.

Our provisions being nearly exhausted, we hastened back to Santa Cruz, from which place we had been absent a week, and a few days after, on Oct. 5th, we were joined by the party in the *Explorer*. With the boat two expeditions were made: in the first of these we ascended the Rio dos Bugres, which was soon found to be no longer navigable, whereupon we proceeded in a canoe up that river and up the Rio Brasinho for some distance through the forest. Among the plants found hereabout may be named *Mouriria guianensis*, Aubl., *Mapourea Martiana*, Muell. Arg., *Psychotria subcrocea*, Muell. Arg.; *Anæmopægia sylvestre*, a new Bignoniad with white flowers; a new *Dichæa* (*D. cornuta*), near *D. graminoides*, Lindl., from Guiana; *Epidendrum variegatum*, Hook., very common on trees overhanging the river; another orchid, apparently an *Epidendrum* belonging to the section *Amphiglottium*, with the curious habit of producing new shoots from its persistent flower-scapes; and *Randia Ruiziana*, DC., var. *longiflora*, again. Our second journey was up the Paraguay, with the object of reaching Diamantino if possible. The river runs through a belt of forest, beyond which, out of the reach of the precipitated moisture derived from fluvial mists, there is much open campo. In the shade of these riverside strips of forest grow plants often conspecific with or nearly related to

those found in the great forest; and the flora as a whole has a large Amazonian element, not unalloyed, however, with a considerable proportion of East-Brazilian types. It must suffice to mention here Ingas (*Inga nobilis*, Willd., and *I. edulis*, Mart.), the flowers of which are often haunted by clouds of white and yellow butterflies belonging to the genus *Callidryas*; a *Sloanea* (probably *S. Maximowiczii*, K. Schum.); the beautiful shrub *Miconia stenostachya*, DC., with masses of white bloom variegated by the yellow of its anthers; the red-blossomed Passion-flower, *Passiflora vitifolia*, H. B. K.; *Faramea bracteata*, Benth., a Goyaz plant; Psychotrias; *Ipomœa setifera*, Poir.; the Amazonian *Croton Cajucara*, Benth.; a *Vanilla* with ensiform leaves, probably *V. ensifolia*, Rolfe—a New Granada species; the new *Bromelia sylvicola*; and *Epidendrum imatophyllum*, Lindl., a Guiana orchid.

We did not succeed in reaching Diamantino, and, on our return to Santa Cruz, were still without satisfactory intelligence concerning the prospects of the main expedition. It was now the rainy season, and the district was frequently visited by thunderstorms, which almost always came, so far as one was able to note, from the north, north-east, or north-west. In consequence of the rain, a number of plants growing in the drier situations suddenly burst into flower, so that collecting became very profitable. Things continued in this state till Dec. 8th, when we received directions to come down to Corumbá. On the way I made use of several small opportunities to collect plants while wood was being cut. We stayed a few hours at Villa Maria, now better known by its modern name, San Luiz de Caceres, and arrived at Corumbá soon after midnight on Dec. 17th.

Corumbá is situated on the western—here, in consequence of a turn in the river, southern—side of the Paraguay, almost the 19th parallel of south latitude. The town stands upon a bluff overlooking a wide expanse of low-lying country to the north, much of which is said to be under water during some period of the year. The geological structure is a hard limestone, the age of which Dr. Evans was unable to ascertain in consequence of the absence of fossils, but which is almost certainly Palæozoic. Considerable quantities of rain having fallen since the time of our passage up the river, the aspect of things vegetable was now very different, and many plants were preparing to blossom or were actually in flower. Several rough tracks run out from the city through dense boscaje, consisting for the most part of tall shrubs or small trees, larger trees being now and again met with. Fringing the river-side is a low-lying sandy area plentifully strewn with bushes and variegated with ponds and small pools, the haunt, I was told, of the *Victoria regia*, a statement I was unable to confirm. In one place this low-lying land is about 400 yards wide; elsewhere it is narrower, or the bluff may come close up to the water. At the time of our former visit, the greater part of this ground was under water although it was the dry season—the fact being that during the up-country wet season the water is low at Corumbá, and *vice versâ*; yet the seasons are synchronous, or nearly so, in the two regions—a striking testimony, this, to the extent of country drained by the Paraguay river. Walking by the river-side you will be surprised at the large amount of *Croton* scrub (*C. nivifer*, *corumbensis*, *doctoris*, all new species) exhaling its peculiar aromatic odour, evidently very attractive to insects; Cassias (*Cassia alata*, Linn.,

and *Tora*, Linn.) are in full flower in January. *Dianthera paludosa*, Sm., *Cuscuta obtusiflora*, H. B. K., *Ipomœa fistulosa*, Mart., sometimes forming dense thickets, *Leonotis nepetifolia*, R. Br., frequently occur, and *Momordica Charantia*, Linn., spreads a literal carpet over large spaces of ground. Climbing the shrubs are the Amazonian *Centrosema vexillatum*, Benth., also *Phaseolus lasiocarpus*, Mart., Bignoniads, Ipomœas, and Passion-flowers; and the Goyaba tree, here often attacked by the Loranthad *Psittacanthus cordatus*, Blume, and covered with its red blossoms at this time of year, is a feature in the landscape. On the slopes facing the river and on the top of the bluff many plants will be found: such as Coccolobas; *Jatropha vitifolia*, Mill., in wearying iteration; an orange-flowered *Cereus*; *Pereskia Bleo*, DC., with its pale purple flowers; *Thyallis Laburnum*, a Malpighiaceous shrub new to science, reminding one, when blossoming, of our familiar Laburnum tree; a fine Leguminous tree, *Pterocarpus Rohrii*, Vahl, with species of *Sesbania*, *Bauhinia*, *Psidium*, *Ranwolfia*, *Thevetia*, *Julocroton*, and many others; while of climbers we have Bignoniads, *Teramnus volubilis*, Sw. (like *Centrosema vexillatum*, Benth., an Amazonian species), a flowerless *Dioscorea* with bright purple leaves, *Rhabdadenia Pohlii*, Muell. Arg., *Thinouia sepium*, S. Moore, &c. The pretty little *Talinum crassifolium*, Willd., grows in masses upon the open ground, accompanied by a *Cyphiacanthus*, flowering specimens of which I, by some oversight, failed to secure. The streets of the town are enlivened by the brilliant blossoms of *Casalpinia pulcherrima*, Sw., planted here of course; and at the custom-house are some fine fig-trees (*Ficus Elliotiana*, S. Moore). *Cratæva Tapia*, Linn., too, with its spreading leafy branches, affords most grateful shade. The river has its usual fringe of "camalote" mingled with grasses, Jussieas, &c., and large islands composed of these plants float out from the neighbouring "riacho" or backwater called the Bahia de Caceres and become stranded along the shore, where the camalote is greedily eaten by cattle and pigs.

Our stay at Corumbá lasted six weeks; it was varied by a short trip to Carandajinho, a small wood-cutting and cattle-raising station a few leagues up river. Here I found, upon marshy ground liable to inundation, large pink trusses of *Rhabdadenia Pohlii*, Muell. Arg.; *Cassia aculeata*, Benth., *Æschynomene sensitiva*, Sw., *Byttneria campestris*, S. Moore, and a *Corynostylis*, an Amazonian genus of which I saw no signs further up the river, were also gathered. In the ponds here were found the handsome aquatics, *Thalia geniculata*, Linn., and *Echinodorus paniculatus*, Micheli. Festooning the trees on the river-bank was *Macfadyenia laurifolia*, Miers; but I was able to do but little work here, and that only in the immediate neighbourhood of the boat, to which latter I was confined by indisposition during most of the time our visit lasted.

We left Corumbá in the *Explorer* on Feb. 1st, having a few days previously been joined by Lieut. Storm, who in the meanwhile had gone to Buenos Ayres with the view of placing himself in telegraphic communication with Europe, and had returned with intelligence of so unsatisfactory a character that no option was left him but to abandon the expedition. On our way down we called at Coimbrá, picturesquely placed on the western bank of the river. Here we paid a visit to some limestone caves, which Weddell\* tells us he also explored. To reach the caves you have to make your way

\* Ann. d. Sc. Nat. 3<sup>me</sup> série, xiii. p. 61 (in note).

through tall grass, as high as a man. This grass is *Andropogon condensatus*, H. B. K., var. *paniculatus*. Growing in the grass you will see here and there the *Allamanda*-like *Thevetia bicornuta*, Muell. Arg., a Paraguayan species found as far to the north as Corumbá, and on the river-bank you will find *Angelonia Gardneri*, Hook., *Teramnus volubilis*, Sw., the curious *Baillonia amabilis*, Bocq., *Tephrosia brevipes*, Benth., *Mimosa cinerea*, Vell., and grasses (*Panicum*, *Setaria*, *Imperata brasiliensis*, Trin., and the new genus *Pogochloa*), while the inevitable camalote swarms at the waterside.

There is little more to tell. Soon after leaving Coimbrá we reached the region of the Caranda forests; dead logs of these trees were taken on board, for they yield excellent fuel. On Feb. 3rd we were at Puerto Pacheco, a small settlement founded by the Bolivians, but then in possession of a Paraguayan force. A short ramble in the neighbourhood yielded several plants of interest, including *Prosopis ruscifolia*, Griseb., a Chaco type with very large and strong spines; the Argentine *Tabebuia nodosa*, Griseb., a curious plant having Cuban affinities; *Coccoloba paraguariensis*, Lindau; *Paspalum simplex*, Morong; and new species of *Wissadula*, *Mimosa*, *Morrenia*, *Croton*, and *Julocroton*. But we could make no stay here; our funds were exhausted, and it was necessary to hasten on to Asuncion; at that place, which we reached on Feb. 7th, the expedition was disbanded.

#### SHORT SKETCH OF THE CLIMATOLOGY OF MATTO GROSSO.

In order that we may understand the origin and nature of, and satisfactorily study the relations borne by the flora of a country to that of neighbouring regions, some knowledge of its climate, if it be not essential, is, at least, manifestly advantageous. I trust therefore that no apology is needed for presenting to the reader the following short sketch, to a large extent compiled from various available sources. Nor have I refrained from adding a few observations made by myself during our expedition. It must be understood that at Santa Cruz, the climatology of which is quite unknown, with the exception of a couple of ordinary thermometers, we had no recording instruments whatever; that we went there in the expectation of making but a short stay; and that, for all we knew, the order for our departure might arrive any day. Hence it did not seem worth while to commence a series of observations which must necessarily have proved most imperfect, and were liable to cease at a short notice.

The dry season lasts from March or April to September, and during this period storms and rain are exceedingly rare. They do sometimes occur, however; thus, on the night of Aug. 11th, when we were nearing Cuyabá, on our upward journey, a violent thunder-storm, accompanied by a perfect deluge of rain, broke over the country. At the beginning of September a premonitory storm or two pass over, soon followed by the regular wet season. For a tropical country the rainfall is not high. Dr. Morsback\*, as the result of three years' observations, got an annual average of 1166 mm., that is between 45 and 46 inches, only a trifle greater than the rainfall at Rio. The reason for this must, I think, be sought in the geographical position of the city, and in the nature and direction of the prevailing winds, which blow mostly from the north, north-west, and north-east.

\* 'Revista do Observatorio,' Rio, 1890, p. 91.



These winds bring moisture from the low-lying Amazonian region, moisture which is, however, largely intercepted by the high plateaux lying to the north of the province. On the other hand, south winds, generated in or having to pass over the dry Pampas, will not carry much moisture with them. To judge from our experience at Santa Cruz and at Corumbá, there is much fine weather during the wet season, several days of brilliant sunshine sometimes intervening between the storms; and this is borne out by the observations of Lt.-Col. Americo Rodrigues de Vasconcellos\* at Cuyabá, this observer recording for January and February 1889, the middle of the wet season, only 11 and 15 rainy days respectively.

The main feature in the temperature is its liability to great and sudden variations. I may cite in illustration the testimony of Dr. João Severiano da Fonseca †, who accompanied as doctor the Brazilio-Bolivian Boundary Commission of 1875-78. On June 19th of one of these years, on the Cuyabá river, he noted a temperature of 35° C. at 2 o'clock P.M., and by 10 o'clock that night the mercury had fallen to 7°·5 C.: that is, an oscillation of more than 50 degrees F. within eight hours! This is, of course, an extreme case. On another occasion he recorded a sudden fall, during a hailstorm, of as much as 18°·7 C. In the highlands frosts are reported to occur sometimes, nearly every year, between June and September, and the Indians are occasionally frozen to death; moreover, the young coffee-bushes are then liable to destruction. Fonseca also says that one morning, near the 16th parallel of south latitude, he saw the ground covered with hoar-frost and the puddles frozen over, and this at the level of the river! During Dr. Morsback's three years at Cuyabá, the temperature varied between 41°·9 C. and 7°·2 C. This temperature of 41°·9 C. (upwards of 107° F.) is, so far as I am aware, the highest on record for the province. Our highest at Santa Cruz was 38°·5 C. on Monday, Oct. 12th.

As an instance of the daily range of temperature, I take the opportunity of citing the following figures, deduced from De Vasconcellos's observations at Cuyabá for July 1888 ‡ :—

	7 A.M.	10 A.M.	1 P.M.	4 P.M.
Average monthly temperature in the shade.....	19°·06 C.	25°·98 C.	30°·63 C.	30°·81 C.

The hottest period of the day is usually some time between 1 and 4 P.M. At Santa Cruz the maximum was generally reached at about 3 P.M., though exceptions often occur, the mercury at 6 o'clock sometimes standing higher than at any earlier hour of the day. Moreover, the morning hours are occasionally the hottest.

The oscillations of the barometer are but slight; the maximum monthly oscillation, as set forth in the tables to which I have had access, amounts to rather more than 13 millimetres (Cuyabá, August 1888, De Vasconcellos), but this is quite exceptional, as the subjoined figures will show :—

\* 'Revista do Observatorio,' Rio, 1889, pp. 66 and 83.

† 'Viagem ao redor do Brazil,' Rio, 1881.

‡ 'Revista do Observatorio,' Rio, 1888, p. 185.

*Observations at Cuyabá made by Lt.-Col. Americo Rodrigues de Vasconcellos\*.*

<i>Month.</i>	
July 1888.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 751.73 mm.} \\ \text{Min. 745.28 ,,} \\ \text{Mean 748.34 ,,} \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 36° 3 C. (lowest day max. 34° 9 C.).} \\ \text{Min. 14° 5 C. (highest night min. 20° 9 C.).} \\ \text{Mean 28° 0 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 12.76.$ Relative humidity : 53.9. Wind : variable on 17 days ; N. or N.W. 8 days ; S. or S.E. 6 days. No rain fell during the month.

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August 1888.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 754.44 mm.} \\ \text{Min. 741.37 ,,} \\ \text{Mean 746.24 ,,} \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 39° 9 C. (lowest day max. 17° 7 C.).} \\ \text{Min. 10° 5 C. (highest night min. 24° 6 C.).} \\ \text{Mean 30° 2 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 13.38.$ Relative humidity : 44.6. Wind : N., N.E., or N.W. during greater part of month ; S. or S.W. on 4 days. Rainfall : 0.4 mm. on one day only.
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September 1888.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 747.48 mm.} \\ \text{Min. 740.16 ,,} \\ \text{Mean 747.48 ,,} \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 40° 9 C. (lowest day max. 26° 9 C.).} \\ \text{Min. 20° 5 C. (highest night min. 27° 1 C.).} \\ \text{Mean 30° 6 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 20.4.$ Relative humidity : 63.8. Wind : N., N.E., or N.W. 14 days ; S.W. 2 days ; variable 14 days. Rainfall : 52.07 mm. Rainy days 10.
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\* 'Revista do Observatorio,' 1888 and 1889, *passim*.

<i>Month.</i>	
October 1888.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 746.96 mm.} \\ \text{Min. 730.12 } ,, \\ \text{Mean 743.27 } ,, \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 37°.4 C. (lowest day max. 28°.9 C.).} \\ \text{Min. 21°.8 C. (highest night min. 26°.1 C.).} \\ \text{Mean 31°.0 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 21.60.$ Relative humidity : 66. Wind : N., N.E., or N.W. 15 days ; S. or S.E. 2 days ; variable 14 days. Rainfall : 38.8 mm. Rainy days 10.
January 1889.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 747.10 mm.} \\ \text{Min. 741.04 } ,, \\ \text{Mean 744.30 } ,, \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 39°.9 C. (lowest day max. 29°.4 C.).} \\ \text{Min. 22°.1 C. (highest night min. 25°.4 C.).} \\ \text{Mean 30°.4 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 21.87.$ Relative humidity : 68.7. N.W. wind predominant. Rainfall : 145.7 mm. Rainy days 11.
February 1889.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 747.19 mm.} \\ \text{Min. 740.90 } ,, \\ \text{Mean 744.67 } ,, \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 37°.9 C. (lowest day max. 29°.9 C.).} \\ \text{Min. 22°.2 C. (highest night min. 22°.2 C.).} \\ \text{Mean 30°.7 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 21.90.$ Relative humidity : 68.0. Predominant wind : N.W. Rainfall : 138.8 mm. Rainy days 15.
March 1889.	Barometer reduced to 0° C. : $\left\{ \begin{array}{l} \text{Max. 747.9 mm.} \\ \text{Min. 740.99 } ,, \\ \text{Mean 744.62 } ,, \end{array} \right.$ Temperature in the shade : $\left\{ \begin{array}{l} \text{Max. 38°.5 C. (lowest day max. 27°.9 C.).} \\ \text{Min. 22°.5 C. (highest night min. 24°.6 C.).} \\ \text{Mean 29°.8 C.} \end{array} \right.$ Average tension of aqueous vapour : $\left. \right\} 21.44.$ Relative humidity : 69.8. Predominant wind : N.N.W. Rainfall not given.

<i>Month.</i>	
April 1889.	Barometer reduced to 0° C. : { Max. 748·58 mm. Min. 741·32 „ Mean 745·50 „
	Temperature in the shade : { Max. 37°·8 C. (lowest day max. 21° C.). Min. 15°·3 C. (highest night min. 23°·5 C.). Mean 29°·5 C.
	Average tension of aqueous vapour : } 19·95.
	Relative humidity : 66·8.
	Predominant wind : N.
	Rainfall not entered.

It will here be useful to append Dr. Morsback's \* results, obtained at the cost of three years' observation at Cuyabá, from July 1884 to June 1887 :—

Barometer :	{ Highest mean 750-757 mm. Lowest mean 738-740 „ Annual mean 744-745 „
Temperature in the shade :	{ Max. 41°·9 C. Min. 7°·2 C. Mean 26°·25 C.
	Monthly mean { highest 25°·0 C. Sept.-May. lowest 25°·0 C. June-Aug.
	Mean temperature at 7 A.M. 21°·9 C. „          „          „ 2 P.M. 33°·77 C. „          „          „ 9 P.M. 23°·06 C.
Average annual rainfall : 1166 mm. Mean of rainy days : 85.	

A few figures have recently been obtained for Corumbá ; they are here recorded :—  
*Observations made at Corumbá by the Matto Grosso Military Engineering Commission under Capt. Jorge dos Santos Almeida †.*

<i>Month.</i> November 1889.	Barometer : { Max. 751·0 mm. Min. 740·9 „ Mean 746·4 „
	Temperature in the shade : { Max. 36°·4 C. (lowest day max. 26°·5 C.). Min. 17°·5 C. (highest night min. 27°·4 C.).
	Rainfall : 189·9 mm. Rainy days : 13.
	Predominant winds : N.E. and N.W.
December 1889.	Barometer : { Max. 751·1 mm. Min. 739·3 „ Mean 745·9 „
	Temperature in the shade : { Max. 35°·8 C. (lowest day max. 23°·4 C.). Min. 18°·3 C. (highest night min. 27°·5 C.).
	Rainfall : 240·9 mm. Rainy days : 15.
	Wind : Generally N.E. or N.W.

\* 'Revista do Observatorio,' Rio, 1890, p. 91.

† *Ibid.* 1890, pp. 30, 47, 63.

<i>Month.</i> January 1890*.	Barometer :	{	Max. 753.3 mm. Min. 742.0 „ Mean 747.5 „
	Temperature in the shade :	{	Max. 33°·8 C. (lowest day max. 24°·7 C.). Min. 19°·8 C. (highest night min. 27°·0 C.).
	Rainfall : 150.5 mm. Rainy days : 11.		
	Wind : Predominantly N.E. or N.W.		

Here follow a few figures obtained by myself at Santa Cruz during the few days of my confinement to the boat from indisposition, which prevented collecting :—

*Shade Temperatures at Santa Cruz, Nov. 1891 (Centigrade scale).*

Nov. 19th.	P.M. 1, 33°·5 ; 2.30, 34° ; 3.0, 35°·5 ; 4, 35°·3 ; 4.30, 35°·3 ; 5, 33°·5 ; 5.30, 29°·7.
Nov. 20th.	{ A.M. 7, 26° ; 8, 26°·8 ; 9.15, 29° ; 10.15, 30°·5 ; 11.15, 32°·3. P.M. 12.15, 33° ; 1.30, 34° ; 2.30, 35°·5 ; 4, 35° ; 5, 34°·8 ; 6, 32°·5 ; 7, 29°.
Nov. 21st.	{ A.M. 6, 19° ; 7, 19° ; 8, 26°·8 ; 9, 30°·4 ; 10.30, 34°·2 ; 11.30, 35°·8. P.M. 12.30, 35°·2 ; 1.30, 35° ; 2.30, 36°·5 ; 3.30, 36°·2 ; 4.30, 32° ; 5.30, 28°·8 ; 6.30, 27°·3.
Nov. 27th.	{ A.M. 8.30, 23°·5 ; 9.30, 24°·7 ; 10.30, 28°·8 ; 11.30, 29°·2. P.M. 12.30, 31°·2 ; 2, 32° ; 3, 32° ; 4, 30° 5, 26°·4 ; 7.15, 25°.
Nov. 28th.	{ A.M. 6.45, 20°·6 ; 7.45, 21°·3 ; 9.15, 24°·5 ; 10.15, 27°·8 ; 11.15, 30°·4. P.M. 1, 31°·6 ; 2, 32° ; 3.15, 32°·5 ; 4.15, 32°·2 ; 5.30, 31°·8 ; 6.45, 30°·4 ; 8, 26°·3.
Nov. 29th.	{ A.M. 6.30, 20°·2 ; 7.30, 22°·6 ; 9, 26°·8 ; 10.30, 31°·2 ; 11.30, 33°·5. P.M. 2.15, 33°·5 ; 3.15, 34° ; 5.15, 34°·5 ; 6.15, 34° ; 7.15, 30°·2 ; 8, 28°·4.
Nov. 30th.	{ A.M. 7, 22°·2 ; 8, 23°·5 ; 9, 27° ; 10, 32°·2 ; 11, 33°·3. P.M. 12.30, 35° ; 1.30, 35° ; 2.30, 33°·8 ; 3.30, 34°·8 ; 5, 35°·7 ; 6, 35° ; 7, 33°·2.

*Weather at Santa Cruz.*

- Nov. 16th. Fine day with fresh breeze ; no rain ; distant thunder. Temperature at 1 o'clock 32°·2 C.  
 17th. Fine day, fresh breeze. A little rain in morning. Temperature at 2 o'clock 34° C.  
 18th. Distant thunder early afternoon : thunderstorm from N.E. early evening. Temperature shortly after 2 o'clock 36° C.  
 19th. Distant thunder heard in the south at 4 P.M.  
 20th. Overcast morning ; fine afternoon ; no rain ; no thunder.  
 21st. Fine morning ; short rainstorm in afternoon, with a little distant thunder. Lightning in S.E. during evening.  
 22nd. Heavy thunderstorm from N.E. lasted several hours this morning.  
 23rd. Rain during night, with some lightning.  
 24th. Heavy rain for upwards of an hour in morning. Fine afterwards.  
 25th. Heavy shower from S.W. during morning. No thunder.  
 26th. Fine day ; no rain ; no thunder.  
 27th. Thunderstorm from S.E. between 7 and 8.30 A.M. with heavy rain. Lightning in evening.

\* By a clerical error this is given as a result for Dec. 1889.

- Nov. 28th. Brilliant day ; no rain ; no thunder.  
 29th. Fine day, only very slight shower of rain.  
 30th. Early part of evening stiflingly hot ; thunderstorm burst soon after 8 P.M.  
 Dec. 1st. Fine day. Highest temperature  $37^{\circ}3$  C., just before 5 o'clock.  
 2nd. Fine day, without rain. Highest temperature precisely as on preceding day.  
 3rd. Fine morning. Afternoon a distant thunderstorm, with little rain.

The above figures show the diurnal range of temperature, and bring out clearly the fact that, at least in November, the air is hottest after 2 P.M. ; indeed, on Nov. 29th and 30th the maximum was not reached before 5 o'clock, and, remarkably enough, at 7 in the evening of the latter day the mercury actually stood higher than at any hour of the two days preceding the 29th. A cursory inspection of the weather column will show a confirmation of the statement already made, that intervals of brilliant weather may be experienced during the wet season ; thus, for the week ending Dec. 2nd we find, but for a couple of thunderstorms, fine weather prevailing throughout.

#### THE BOTANICAL GEOGRAPHY OF BRAZIL.

For the earliest generalizations of any practical value bearing upon the botanical geography of Brazil we must go to Von Martius, whose views were adopted in those earlier volumes of his great 'Flora Brasiliensis' which were published before the eminent traveller's death, and are still recognized in the various parts issued and now issuing. Martius distinguished the low watered plains of Brazil as the *Naiad* region, while to the tropical mountain forests of Rio de Janeiro and the eastern coast he applied the term *Dryad* region. The back parts of the provinces of Bahia and Pernambuco have an exceedingly hot and dry climate, which the uplands of Ceará, Piauhy, and the neighbouring provinces also share ; this is the *Hamadryad* region. An *Oread* region is also distinguished ; it comprises the uplands of Minas Geraes, Goyaz, Matto Grosso, and São Paulo. The small portion of the country lying south of the Tropic of Capricorn Von Martius distinguishes as the *Napæa* region. In the year 1872 appeared Grisebach's 'Vegetation der Erde,' a work which may fitly be called the first modern attempt to grapple with the problems pertaining to the distribution of plants over the whole globe. For the bulk of Brazil Grisebach recognizes only two regions ; his extra-tropical part he includes in his Pampas region. The northern of these two regions, or *Amazon* region, corresponds with the *Naiad* region of Von Martius ; its northern limit runs nearly parallel with and close to the Equator, while in the south-east its boundary includes Ceará, Piauhy, and Maranhão, and is continued westward to the neighbourhood of the Andes, but without anywhere reaching the limit of  $10^{\circ}$  S. latitude. The rest of tropical Brazil Grisebach unites into one large *Brazilian* region. Engler's\* views are somewhat different. He objects to the inclusion in the Amazon region of the dry Piauhy, Ceará, and Maranhão uplands, and he sees no reason why the whole of the country drained by the Amazon and Tocantins rivers and their feeders should not be included in one province †, with which he throws

\* 'Versuch einer Entwicklungsgeschichte der Pflanzenwelt.'

† He excludes, of course, the strip of country bordering on the Andes ; this constitutes his *Subandine* province.



in Guiana, a country united by Grisebach with Venezuela and parts of Colombia and Central America to form his Cis-Equatorial region. In this way Engler defines a *North-Brazil-Guiana* province. Besides the rest of Brazil, his *South-Brazilian* province comprises Uruguay, Paraguay, the Argentine provinces of Entre Rios and Corrientes, Eastern Bolivia, and the comparatively high-lying country immediately westward of the Chaco. This latter he considers doubtful land, possibly with a predominating Pampas flora. Engler's North-Brazil-Guiana province—taking in, it may also be said, the Venezuelan savannas—thus includes almost the whole of Goyaz, as well as the little-known northern part of Matto Grosso; the southern boundary of this province will be the watershed between the Xingu, Tapajos, and Guaporé rivers to the north and the Paraguay and its feeders to the south. From Drude's \* *Amazonas* region the highlands of Guiana are excluded, but all the N.E. of Brazil, including the littoral almost to the 20th parallel, forms part of the region whose southern limit practically coincides with that of Engler's North-Brazil-Guiana province. All the south of Brazil, with Uruguay, Argentina east of the Paraná, the country behind the Chaco, and Eastern Bolivia together make up the *Paraná* region of Drude, which thus largely corresponds with Engler's South-Brazilian province.

There can, I think, be but little doubt that Engler's views are founded upon reason. Bounded on the north-east by the uplands of Maranhão and Piauí, which, to say nothing of the tract of country lying still further to the east, are scarcely to be considered as having much in common with the moist Amazon forest-zone—in the east and south-east separated from Minas Geraes and Southern Goyaz by several ranges of high hills, such as the Serras do Duro, da Tabatinga, and divisões do Rio Claro,—orographical data are certainly on the side of the Berlin Professor. The weak point in his position consists in the fact that the watershed separating the Paraguay head-waters from those of the Xingu, Tapajos, and Guaporé is a remarkably low one; well, therefore, might the thoughtful student doubt whether that watershed really marks the boundary between the two great provinces, and, as will shortly be shown, the collections which I have just brought back prove such a doubt to be warranted. A few words will first be devoted to the flora of Cuyabá and the Chapada Plateau, after which we will consider the flora of Santa Cruz and, more interesting still, that of the forest-region situated to the north of that settlement.

#### FLORA OF CUYABÁ AND THE CHAPADA PLATEAU.

The city of Cuyabá lying fifteen and a half degrees south of the line, cursory inspection will convince the reader that it is well within the limits of Engler's South-Brazilian province as of Drude's Paraná region. We should therefore expect its flora—especially the plateau portion thereof—to show much similarity to that of some of the eastern provinces, especially the upland country of Minas Geraes and Southern Goyaz. At the same time the provincial boundary is not very far off, the distance between Cuyabá and the sources of the Arinos being only about a hundred miles. Consequently no surprise should

\* 'Die Florenreiche der Erde.' Reprinted from Petermann's 'Mittheilungen,' 1883-84.

be felt at stray plants characteristic of the Amazonian country turning up near Cuyabá; I did not meet with many such plants, but there is a certain percentage of that element in the flora, as will directly be shown.

For the purpose of this and the following chapters, as also in the systematic portion of the present memoir, I have employed certain geographical expressions which must now be explained. The term "Bras. Or." is used to denote the whole of the eastern and south-eastern part of the country, from Ceará and Piahy to Rio Grande do Sul, including Bahia and the neighbouring littoral provinces, Minas Geraes and the southern end of Goyaz. By "Amazonia" I mean the whole of the Amazon and Tocantins basin with the exception of the former's extreme western end, which comes within the Subandine province; excluding, too, Northern and Central Goyaz, a district in my opinion certainly forming part of the North-Brazil-Guiana province, but kept distinct as tending to show, more satisfactorily than would otherwise be the case, the relations of the Matto Grosso floras to the flora of different portions of the above-named province. For the same reason Guiana—restricted to English, French, and Dutch—receives separate mention. The other districts are political, as it is sometimes extremely difficult if not impossible to discover of what botanical province a given plant is a denizen—a remark of special reference to the north-western parts of the continent.

With a view to making the following statements as wide in their application as possible, I have diligently sought out the affinities of the species considered to be new, entering the result within brackets at the end of each description, but in these cases using italics. On the other hand, the known distribution of a species already described is given in a similar way, but without italics. This method of ascertaining the affinity of a new species, and considering such affinity when found as evidence of phytogeographical value, has much to be said in its favour, especially in the case of one who has exhaustively monographed the genus to which is referable any given plant so dealt with; though, in less favourable circumstances, explicit reliance upon an author's conclusions can hardly be expected, however laboriously he may have reached them. The only alternative is, when tabulating one's results, to omit all the new species from the calculation, an unsatisfactory method when, as in the present case, a large number of species are new.

Of the flora now to be considered, as of most of the other floras, the chief factor is the Tropical American, consisting, that is to say, of species having a wide range through the American, or at least South-American tropics. No less than thirty-five per cent. of the flora is of this nature\*. There is also a large contingent (twenty-six per cent.) of types occurring both in Eastern Brazil and in some part of the North-Brazil-Guiana province. The element next in importance is the East Brazilian (twenty-four per cent.); while the North-Brazil-Guiana province is represented to the extent of only ten per cent. Other small elements of the flora are the East-Brazil-Paraguay, the East-Brazil-Goyaz-Paraguay, and the East-Brazil-Amazonia-Paraguay, together making up between two and three per cent. In accordance with Engler's scheme, the first of these should be included in the South-Brazilian flora, and the two latter dealt with in the enumeration of species

\* Here and elsewhere decimals are omitted.

common to the two provinces into which the Berlin Professor divides Brazil. Making the requisite modifications in the foregoing statement, the flora of Cuyabá and the Chapada Plateau may be said to be made up of the following factors :—

Diffused Tropical American .....	35 per cent.
Common to the two Brazilian provinces .....	28 „ „
South Brazilian .....	25 „ „
North-Brazil-Guiana .....	10 „ „

Of this last factor it may be added that—

{	Types restricted to Amazonia constitute .....	40 per cent.
	Types restricted to Goyaz „ .....	40 „ „
	Types of wider distribution „ .....	20 „ „

We have already seen the rainfall of Cuyabá to be, for a tropical country, but scanty ; moreover, the dry season, while it is of long duration, is very seldom interrupted by storms. The vegetation of the open country, as distinguished from that of the moister valleys, should therefore show some adaptation to xerophilous conditions. The swollen rootstocks, characteristic of many Matto Grosso herbs and small shrubs, are undoubtedly in point here ; an examination of the underground parts of trees and the larger shrubs would probably show this adaptation to be very common. Coriaceous leaves also are the rule ; and the trunks of trees are often thickly covered with cork, apparently functioning as a hindrance to transpiration. The same end is often served by great diminution in the number of leaves, so that it is by no means unusual to see shrubs perfectly leafless except immediately beneath the inflorescence. The assumption by leaves of a position of least insolation is rarely observed : *Xylopia grandiflora*, A. St.-Hil., which has them vertically pendent, and *Myrcia ambigua*, DC., are the best cases noted by me. Spiny plants do not occur in any great quantity.

Among noteworthy North-Brazil-Guiana species, or species having their nearest affinity with such, may be cited *Banisteria constricta*, Griseb., *Bauhinia cumanensis*, H. B. K., *Inga nobilis*, Willd., and the new species *Guatteria sylvicola*, *Glianthus collinus*, *Ladenbergia chapadensis*, and *Ajouea pruinosa*. Among genera abundantly represented in Eastern Brazil, but here dying down, none is more noteworthy than the Labiate *Hyptis*. Of this genus no less than a hundred and sixteen species are peculiar to the South-Brazilian province, while those endemic in North-Brazil-Guiana number but five, and of the forty-five species common to both provinces only six reach Amazonia. Similar facts may be cited for the genus *Begonia* and others ; they might well lead us to suspect, as is actually the case, that at Cuyabá we are near the limits of a botanical province.

#### FLORA OF JANGADA.

The flora of this place may be taken as representing that of the large district to the north of Cuyabá lying between the Cuyabá and the Paraguay rivers. The various factors of the flora, as shown in my collection, may be stated thus :—

Diffused Tropical American .....	27 per cent.
Common to the two Brazilian provinces .....	37 „ „
South Brazilian .....	24 „ „
North-Brazil-Guiana .....	8 „ „

Comparing this with the Cuyabá flora, one notes diminution in the Tropical American as also in the North-Brazil-Guiana element, compensated, however, by an increase in the number of types common to the two Brazilian provinces. The South-Brazilian contingent is approximately identical in the case of both floras. One may conclude that the present flora, like that of Cuyabá, is markedly South Brazilian in character, and except for the high percentage of species common to the two Brazilian floras, yields but slight indications of the fact that at Jangada we are in the neighbourhood of another floristic province.

#### FLORA OF SANTA CRUZ AND THE NEIGHBOURHOOD.

For the purpose of the following computation, I have included under this head not only the plants found in the open country at and close to Santa Cruz, but also those gathered during our expeditions above that settlement up the rivers Paraguay, dos Bugres, and Brasinho. Since it is highly probable that the two latter flow through the primeval forest at least in the upper part of their course, the plants gathered upon their banks should perhaps have been added to the primeval forest list. It is, however, very difficult, in passing up a river with densely wooded banks, to say how far the thick boscage extends, and whether or no the country soon becomes more open. Mr. Holden, who, at our halting-places, used to push his way through the littoral "matto" in search of sport, is of opinion that, at least in the case of the Paraguay, open campo is soon reached. This, however, can scarcely be correct so far as the Brasinho is concerned; for although in our forest expedition we did not strike this river, yet several of its feeders, such as the San Pedro, Alegria, and Palmitar, were forded, and the banks of these streams showed striking similarity to those of the Brasinho. Moreover, the fact of ipecacuanha being found near the latter river points to the existence of much forest-land there.

The flora is composed of the following items :—

Diffused Tropical American .....	37 per cent.
Common to the two Brazilian provinces .....	28 „ „
North-Brazil-Guiana .....	19 „ „
South Brazilian .....	13 „ „

If the reader will take the trouble to refer to the Cuyabá figures, he will find the second item precisely the same in both cases, and the first approximately so. The percentage of South-Brazilian types has, however, fallen from twenty-five to thirteen, while the North-Brazil-Guiana percentage, at Cuyabá but ten, is now nineteen; or, speaking roughly, one element has undergone lessening and the other increase to the extent of a hundred per cent.

It may, perhaps, not be wholly uninteresting to show the distribution of the species common to the two provinces, as of those endemic in the North-Brazil-Guiana province.

Of the species common to the two Brazilian provinces we have :—

From Goyaz and Bras. Or.	(or with nearest affinity to such species) .....	38 per cent.
From Amazonia, Goyaz, and Bras. Or.	” ” .....	23 ” ”
From Amazonia and Bras. Or.	” ” .....	13 ” ”
From Goyaz, Bolivia, Peru, Colombia, and Bras. Or.	” ” .....	10 ” ”
From Goyaz, Guiana, and Bras. Or.	” ” .....	7 ” ”
From Bolivia and Bras. Or.	” ” .....	4 ” ”
From Guiana and Bras. Or.	” ” .....	2 ” ”
From Goyaz, Amer. Cent., Bras. Or.	” ” .....	1 ” ”
From Goyaz, Paraguay, Bras. Or.	” ” .....	1 ” ”

Of the North-Brazil-Guiana species there occur :—

In Amazonia and Goyaz .....	76 per cent.
In Guiana .....	13 ” ”
In Colombia .....	5 ” ”
In Peru .....	3 ” ”

It must not be forgotten that the inclusion in the Santa Cruz flora of plants found growing on the banks of the Rio dos Bugres and Brasinho tends somewhat to enlarge the North-Brazil-Guiana factor in that flora. In spite of this, one may consider the flora as containing a comparatively large North-Brazil-Guiana element and a smaller South Brazilian. At Santa Cruz, therefore, we have a mixed flora in which North-Brazilian plants somewhat predominate, and the assertion that Santa Cruz ought to be included within the bounds of the North-Brazil-Guiana province will, it is trusted, be deemed in no way unreasonable.

The statement just made may be supported by some additional data. One of the most singular facts in the whole range of phytogeography is the South-American distribution of Cycads, an order which, although in the northern hemisphere reaching to Florida and the Bahamas, is nowhere represented in the eastern part of South America. This is the more remarkable because in the Old World we find Cycads as far north as the thirty-third parallel, while in Australia and at the Cape they almost or quite attain to the thirty-fifth degree of south latitude. Moreover, most of eastern South America is of high geological antiquity, so that *a priori* one would certainly expect to find Cycads there. But whatever be the reason of their absence, the occurrence of a *Zamia* (*Z. Brongniartii*, Wedd.) at Santa Cruz close to the fifty-seventh parallel of longitude is worthy of notice. This species has been found in Eastern Bolivia at St. Xavier (lat. 16° 10'), a place about a degree further south than Santa Cruz, and this, so far as is known, is the southern limit of the order in America. The nearest neighbour of this *Zamia* is *Z. Poeppigiana*, Mart. & Endl., found by Poeppig on the banks of the Tocache river in Eastern Peru, just within the bounds of the Subandine province; but, as Eichler\* observes, it will probably be discovered within the Amazonian region, a region within which no Cycad has yet been met with. But although Cycads are not known from the North-Brazil-Guiana province, as defined by Engler, the occurrence of *Zamia Poeppigiana* near the boundary of that

\* Mart. Fl. Bras. iv. pars i. p. 416.

province and of other Cycads further to the north-east, coupled with the entire absence of the order from Eastern South America, justifies us in viewing the existence of a *Zamia* at Santa Cruz as an indication of a North-Brazil-Guiana affinity as distinguished from a South-Brazilian affinity in the Santa Cruz flora.

Negative evidence is also of value in considering the nature of a flora; and although I do not propose to deal with this part of the subject at all exhaustively, a few facts may here be mentioned. I saw no species of *Begonia* at Santa Cruz or in the neighbourhood\*. Now, of eighty-three species of *Begonia* enumerated by Alphonse de Candolle in the fourth volume of Martius's 'Flora Brasiliensis,' all are East Brazilian except one Amazonian and one from Matto Grosso. Among Malvaceæ the absence of the genus *Abutilon*—a genus abundantly represented in the South-Brazilian province—is worthy of remark, as is also the paucity of *Compositæ*, which in the same province appear in great force, both generically and specifically. Neither is the rarity of Labiateæ without significance, of which order several genera and many species are endemic in Eastern Brazil: not one of these genera, such as *Cunila*, *Hedeoma*, *Keithia*, *Glechon*, was met with at Santa Cruz. Moreover my collection from Santa Cruz does not contain any representative of such preponderantly South-Brazilian genera of Scrophulariaceæ as *Angelonia*, *Schwenkia*, *Brunfelsia*, or *Stemodia*. The Gesneras, too, are wanting at Santa Cruz; according to Hanstein †, Eastern Brazil claims nearly 80 per cent. of Brazilian species, the localities of the remainder being doubtful. On the other hand the genus *Drymonia*, with headquarters in Costa Rica, is endemic at Santa Cruz.

The occurrence at Santa Cruz of the new genus *Brosimopsis* is an indication of the affinity of its flora with that of Amazonia, where several small or monotypic genera of Artocarpeæ flourish. *Brosimum Gaudichaudii*, Tréc., however, a characteristic East-Brazilian plant, is also met with at Santa Cruz. Unfortunately most of the orchids there were out of flower during our stay, but the short list of those in flower is very suggestive of the flora's northern affinity. Thus the Amazonian and Guiana *Cattleya superba*, Schomb., flourishes at Santa Cruz, as also do *Epidendrum imatophyllum*, Lindl., a Guiana species, *Notylia bisepala*, S. Moore, of which *N. Huegelii*, Reichb. f., from Mexico, seems the nearest ally, and *Dichæa cornuta*, S. Moore, a species coming nearest to the Guiana *D. graminoides*, Lindl. A curious narrow-leaved *Vanilla*, which, when its flowers are known, will probably prove identical with *V. ensifolia*, Rolfe, from New Granada, should also be noticed. Lastly we have two remarkable grasses: one of these is the lowly *Luziola pusilla*, S. Moore, a species found also in Guiana; the other, a new species of *Pariana* belonging to the section with scapose inflorescences, a section found in Amazonia, but banished from Eastern Brazil.

In addition to those above-named, the following is a short list of some remarkable Amazonian plants, or plants with Amazonian affinity, met with at Santa Cruz and in the neighbourhood:—

\* In fact, no species of this large tropical genus was seen by me in Matto Grosso.

† In Martius's 'Flora Brasiliensis,' vol. viii.



<i>Vismia japurensis</i> , Reichardt.	<i>Stilpnopappus viridis</i> , Benth.
<i>Psidium insulicola</i> , S. Moore.	<i>Tabernamontana hirtula</i> , Mart.
<i>Passiflora coccinea</i> , Aubl.	<i>Madosperma oblongum</i> , S. Moore.
<i>Anguria gloriosa</i> , S. Moore.	<i>Oryctanthus ruficaulis</i> , Eichl.
<i>Randia Ruiziana</i> , DC., var. <i>longiflora</i> , K. Schum.	<i>Croton Cajucara</i> , Benth.
<i>Faramea bracteata</i> , Benth.	<i>Neea hermaphrodita</i> , S. Moore.
<i>Salicea novo-granatensis</i> , K. Schum.	<i>Renealmia Holdenii</i> , S. Moore.

Of the more remarkable Eastern Brazilian plants at Santa Cruz, the subjoined is a short list, viz. :—

<i>Oxalis hirsutissima</i> , Zucc.	<i>Rhodocalyx rotundifolius</i> , Muell. Arg.
<i>Hirca sepium</i> , A. Juss.	<i>Brosimum Gaudichaudii</i> , Tréc.
<i>Baccharis tridentata</i> , Vahl.	<i>Herreria Salsaparilha</i> , Mart.

But with regard to this list one must remember how little—really almost nothing—is known of the South-Amazonian region. This it is which renders doubtful the exclusion of any of these plants from Amazonia proper.

#### THE PRIMEVAL FOREST FLORA.

It has already been mentioned that the forest extends northward from the immediate neighbourhood of Santa Cruz over a gently undulating upland of low elevation as far as to the Campos de Tapirapuan. In the gloomy recesses of the forest we should expect to meet with a flora different from that of the more open country, so that, instead of the latter's xerophilous vegetation, we ought there to be confronted with hygrophilous types. Moreover, in passing northward through the forest, we are ever approaching the Amazonian plateau. Seeing, therefore, that the North-Brazil-Guiana element is already strongly represented in the flora of Santa Cruz, one would *a fortiori* expect the forest flora to show even more affinity with that of the country lying to the north. My results under this head are somewhat unsatisfactory in consequence of the slender opportunities of collecting afforded me during our expedition through the forest, and the consequent small number of species secured. It is conceivable, however, that a few specimens, plucked hap-hazard may well represent the affinities of a flora; and in the present case the remarkable series of Amazonian species, and species with Amazonian or rather North-Brazil-Guiana affinity, can scarcely be a false indication as to the nature of the flora as a whole.

In this flora we find a large preponderance of North-Brazil-Guiana types, and, as compared with the Cuyabá and Santa Cruz floras, marked decrease in the diffused Tropical American and East Brazilian factors, as the following figures show :—

The constituents of the forest flora are

Diffused Tropical American .....	28 per cent.
North-Brazil-Guiana .....	47 " "
Common to the two Brazilian provinces .....	9 " "
South Brazilian .....	9 " "
Mexican .....	4 " "

The reader will also notice here the extremely small contingent of species common to the two Brazilian provinces; so that while at Cuyabá no less than eighty-eight per cent., and even at Santa Cruz seventy-eight per cent., of the vegetation consists of species one might expect to find anywhere in Eastern Brazil, or of plants most nearly related to such species, this element of the forest flora amounts to no more than forty-six per cent., the proportion of species endemic in regions outside Eastern Brazil being at Cuyabá seventy-three, at Santa Cruz eighty-four, and in the forest eighty-eight per cent.

Here is appended a short list of some forest plants with Amazonian distribution or Amazonian affinity; the distribution or affinity is shown within brackets:—

- Guarea sylvestris*, S. Moore. (Near the N.-Brazil-Guiana *G. paraensis*, C.DC.)  
*Pithecolobium stipulare*, Benth. (N.-Brazil-Guiana.)  
*Bertiera guianensis*, Aubl. (N.-Brazil-Guiana, West Indies.)  
*Psychotria triphylla*, Muell. Arg. (N.-Brazil-Guiana.)  
*Psychotria homoplastica*, S. Moore. (Near *P. lupulina*, Benth., from Amazonia.)  
*Bletia catenulata*, Ruiz & Pav. (Guiana, Peru.)  
*Rodriguezia secunda*, H. B. K. (N.-Brazil-Guiana, Central America, West Indies.)  
*Anthurium gracile*, Lindl. (N.-Brazil-Guiana, Central America, Trinidad.)  
*Anthurium sylvestre*, S. Moore. (Near *A. Martini*, Schott, from Guiana.)  
*Hypolytrum longifolium*, Nees. (N.-Brazil-Guiana, Trinidad.)

My notes contain no record of the finding in the forest of a single plant restricted to the South-Brazilian province, and there are only four with exclusive South-Brazilian affinity; these are the new species *Herpestis parvula*, *Solanum saltiense*, *Dalechampia sylvestris*, and *Ischnosiphon nemorosus*.

The smallness of the collection gives one but slight opportunity to study the ordinal peculiarities of this flora. It may, however, be stated that the Rubiaceæ, Orchids, and Aroids show decided affinity with those of the North-Brazil-Guiana province. Moreover, one meets with *Zamia Brongniartii*, Wedd., on the Tapirapuan campos. *The foregoing facts, it is submitted, force upon one the conclusion that, unless the evidence yielded by my collection be deceptive, the forest-region, although lying well within the Paraguay Valley, must be included within the bounds of the North-Brazil-Guiana, and not, as would naturally be supposed, within those of the South-Brazilian province.*

#### FLORA OF CORUMBÁ AND COIMBRÁ.

Corumbá is situated close to the nineteenth parallel of south latitude, and Coimbrá still further south. The extreme northern end of the Gran Chaco being not far off, one might expect to find, in the flora now to be considered, indications of the proximity of a region of comparative drought; and this, as will soon appear, is to some extent the case. The climate of Corumbá is much like that of Cuyabá, but I do not know what is its annual rainfall. To judge from our own experience, we having spent six weeks here in the middle of the wet season, the rainfall is probably less than at Cuyabá. Throughout those weeks I do not remember a single day during at least some part of which botanizing was impracticable; and although the district was occasionally visited by violent storms, bright sunshine followed by a brilliant sunset was the general rule—

weather which could scarcely have been exceptional, as I was informed by an intelligent old inhabitant, who expressed no surprise at the absence of rain, that Corumbá is a "dry place."

The flora of this southern part of Matto Grosso is made up of the following factors:—

Diffused Tropical American .....	42 per cent.
South Brazilian .....	34 " "
Common to the two Brazilian provinces .....	15 " "
North-Brazil-Guiana .....	5 " "

The relatively large number of diffused species will be noticed, as also the great decrease in the proportion of types common to the two provinces. The South-Brazilian contingent appears in great force, and the North-Brazil-Guiana is correspondingly diminished. The South-Brazilian factor is composed as under:—

Bras. Or. ....	54 per cent.
Paraguay (extending into Argentina) .....	27 " "
Bras. Or., Paraguay, Uruguay .....	18 " "

And the common element thus:—

N.-Brazil-Guiana and Bras. Or. ....	63 per cent.
N.-Brazil-Guiana, Bras. Or., and Paraguay .....	26 " "
N.-Brazil-Guiana, Paraguay, and Argentina .....	10 " "

Amazonian species, or species with Amazonian affinity, met with in the district under notice are:—

- Corynostylis pubescens*, S. Moore. (This genus is not found in East Brazil, neither did I come across it further to the north.)  
*Centrosema vexillatum*, Benth. (A North-Brazil-Guiana plant.)  
*Teramnus volubilis*, Sw. (Amazonia, Colombia, Central America, West Indies.)  
*Tephrosia brevipes*, Benth. (Guiana, Colombia, Porto Rico.)  
*Pterocarpus Rohrii*. (N.-Brazil-Guiana.)  
*Pacourina edulis*, Aubl. (N.-Brazil-Guiana, Colombia, recently found in Paraguay.)  
*Macfadyenia laurifolia*, Miers. (Venezuela.)

The Argentine and Paraguayan element is illustrated by such types as:—

<i>Stigmaphyllon calcaratum</i> , N. E. Br.	<i>Thevetia bicornuta</i> , Muell. Arg.
<i>Thinouia sepium</i> , S. Moore.	<i>Tabebuia Avellaneda</i> , Lorentz.
<i>Paullinia angusta</i> , N. E. Br.	<i>Coccoloba sarmentosa</i> , S. Moore.
<i>Zizyphus oblongifolius</i> , S. Moore.	<i>Ficus Elliottiana</i> , S. Moore.
<i>Pereskia Bleo</i> , DC.	<i>Tillandsia streptocarpa</i> , Baker.

Adaptations to xerophilous conditions in the form of swollen rootstocks, leathery leaves, and stems invested in a thick clothing of cork are frequently met with in this region. Several of the genera, such as *Cercus*, *Pereskia*, and *Talinum*, have fleshy leaves or stems. Another interesting xerophilous plant is the new *Zizyphus oblongifolius*; this has the narrow leaves characteristic of species endemic in warm or temperate climates, and in habit is quite different from tropical species with their reduced spines and large leaves; in fact, the plant is closely allied to one from the dry Argentine country.

## REMARKS ON THE PROBABLE ORIGIN OF THE FOREGOING FLORAS.

It will scarcely be disputed that the whole of Eastern and Central Brazil has, in times past, been a great area of evolution and of dispersal. Indeed, the large number of peculiar genera endemic there—genera, many of them, monotypic or oligotypic—the wide distribution of many of the species, and the high geological antiquity of this part of South America are all evidence in favour of the proposition. To the student of phytogeography the question of interest here raised is, by what means was dispersal effected? Doubtless the movements of quadrupeds and of birds, wind, dust-storms, &c. have played their part in South America as elsewhere, but I cannot help thinking another and even more effectual means to have been brought into operation. A glance at the map of Brazil will show that the country has two large water-sheds—an eastern, dividing the waters of the São Francisco and Parahyba on the east and north-east from those of the Tocantins on the west; and a western, running more or less east and west, interposed between the numerous feeders of the Araguaya, Xingu, Tapajos, and Guaporé flowing northward and westward, and those of the Paraguay with a southward flow. When these rivers are in flood many fruits and seeds must certainly be carried down to the lower country; consequently in the disposition of these water-sheds we can see means for ensuring, firstly, wide disposal of species through Eastern Brazil, and secondly dispersal of Central Brazilian types northward to Amazonia, and southward to the country watered by the Paraguay and its feeders, such as the Cuyabá, Sipotuba, Cabaçal, and Jauru rivers. Moreover, from the São Francisco-Tocantins water-shed may well have been derived species whose distribution is Northern Goyaz and Eastern Brazil; and this may be offered as a plausible explanation of the considerable resemblance there is between the floras of Minas Geraes and Northern Goyaz, although the two districts fall within the bounds of different phytogeographical provinces. Further, the large percentage of diffused Tropical American types in the floras already dealt with receives a simple elucidation from the fluvial geography of Brazil. The density of the vegetation upon the river-banks and its comparative sparseness elsewhere have already been mentioned; this fact must obviously enhance the importance of the rivers as distributing agents. One may here refer to the occurrence at Corumbá, as far south as the nineteenth parallel, of several Amazonian plants not found in any immediate station, and, in spite of the strongly South-Brazilian character of the Corumbá flora, quite unknown in the eastern part of the country. What hypothesis sounder than that here advocated can possibly be put forward to account for this?

But, besides this north and south distribution, there are clear indications as to the range of many species of the Matto Grosso flora being dependent upon latitude. This fact will be made clear to the reader on cursory examination of the distribution of species given in the following pages. He will see that a considerable percentage of East-Brazilian types pass through Matto Grosso to Eastern Bolivia, but do not occur to the northward. Similarity in the matter of rainfall is probably the reason of this, there being a marked difference in that respect between South and North Brazil, and marked agreement between the eastern provinces and Matto Grosso.

I have already shown how greatly the flora of the primeval forest lying between Santa Cruz and Tapirapuan differs from that of the open country extending to the eastern bank of the Paraguay river. That such diversity should exist is not difficult to understand. The flora of the open country behind the forest (Campos de Tapirapuan), so far as my rapid visit enables me to judge, does not show much affinity to that of the district round Santa Cruz, although external features are the same in both districts. The interposition of a wide tract of forest land is undoubtedly answerable for this diversity. In the forest peculiar conditions of light, heat, and moisture prevail—conditions unfavourable to most plants adapted to the drier, hotter, and sunnier open country. We may, therefore, regard the forest as a dense barrier impenetrable from either side. Winged, bladdery, and pappose seeds and fruits might occasionally be conveyed by winds across this barrier, but this would not be likely to happen often if the strip of forest were broad. Berries and drupes, too, would not be distributed by birds, seeing how different is the bird-fauna of the forest on the one hand and of open land on the other, and for analogous reasons hooked fruits would be little likely to penetrate far. On the whole, then, so slight are the means of communication between two open regions separated by a broad strip of dense forest, that it would probably not be incorrect to infer more floristic dissimilarity under these circumstances than if we had to do with an equal breadth of water. Similarly, shade-loving forest plants would only occasionally be transported across extensive intervening dry districts freely exposed to the ardours of a tropical sun; and this obvious consideration leads one to believe that almost continuous forest must extend from the Upper Amazonian basin to that of the Upper Paraguay, most probably *viá* the Guaporé river.

Lastly, a quickly flowing river like the Paraguay at and near Santa Cruz must, in some degree, tend to keep neighbouring floras distinct. Plants with edible fruits would indeed be disseminated by birds; but ordinary fruits and seeds, and often also those provided with wings or a pappus, &c., would fall into the water to be hurried away down stream. At Santa Cruz I was prevented by indisposition from paying much attention to the eastern bank of the river, but what little I saw of its flora pointed to decided floristic difference between the two river-banks, difference which, at the time, seemed to me accountable only in the way just mentioned. Further observations, however, may prove this impression to be unsupported by facts.

The collection has been worked up partly at the British Museum, partly at Kew. At the former institution the Brazilian flora is illustrated by sets of Gardner, Spruce, Pohl, Blanchet, Sello, Poeppig, Von Martius, Bowie and Cunningham, Weir, Claussen, Widgren, de Mello, and Messrs. Ridley, Lea, and Ramage. Kew, with most of the above sets, boasts the splendid results of the intrepid Burchell's wanderings in the eastern part of the country.\* A fine set of Riedel's plants, a collection but poorly represented at the Museum, is also preserved at Kew; so, too, are Professor Trail's Amazon specimens, and a set of the very large and remarkable collections made by that enterprising veteran,

\* One cannot but regret that much of the 'Flora Brasiliensis' should have been written without examination of British herbaria, especially the two under notice. For this reason, many nondescripts, chiefly of Gardner's and Burchell's collecting, exist in this country.

M. Glagiu. Moreover, a number of A. St.-Hilaire's types have recently been presented to the Thames-side institution. I take this opportunity of expressing my conviction that, when one remembers the comparatively small amount of attention devoted by Britishers to the Brazilian flora as contrasted with their energy elsewhere, one has every reason to be proud of both our National Herbaria, which, although probably not so rich in plants of Brazil as the kindred establishments at Berlin and Paris, do certainly afford help quite invaluable to the student.

It were to shirk a pleasant duty to end this introduction without recognition of kindness received from many quarters in the course of my work. Thanks are especially due to Mr. Carruthers, who allowed the plants to be stored at and distributed from the British Museum, and who, in every other possible way, has furthered my labours. Mr. Carruthers also examined and confirmed my determination in respect of the only Cycad in the collection. The other members of the Museum botanical staff have, each in his special department, most obligingly permitted me to take advantage of their knowledge. I am indebted to the Officers of the Linnean Society for kindly seeing the proofs of this memoir through the press in my absence from England. All my friends at Kew without exception, from Mr. Baker downwards, were ready with help in cases of difficulty; and more than once, when thoroughly beaten owing to the imperfect state of a specimen, I was put upon the right track by Professor Oliver. Mr. C. B. Clarke very kindly undertook the Cyperaceæ, an order upon which he has bestowed an immense amount of time and trouble; Commelynaceæ also were determined by the same botanist. Mr. Scott Elliott looked at the Figs, and indicated the novelty and affinity of one of these. Mr. Daydon Jackson allowed me to consult advance sheets and MSS. relating to his great "Index Kewensis," and this saved me much trouble, and prevented some errors. Nor must I omit the names of several foreign botanists, who were good enough to examine and compare certain specimens and send information on critical points; the list is, I believe, exhausted on mentioning the following:—Professors Engler and Radlkofer, Drs. Schumann and Taubert, of Berlin, Dr. Warburg, and the late Dr. Morong. To these gentlemen my best thanks are here recorded.

To Lieut. Olaf Storm and Mr. John Storm I am greatly obliged for doing all in their power to further my work in every possible way, and also for allowing me to make use of the map accompanying this memoir. Dr. Evans, Mr. Holden, and the other members of the expedition rendered me much kind assistance, which I here gratefully acknowledge.

I have also to acknowledge indebtedness to the Royal Meteorological Society, through their courteous Assistant Secretary, Mr. William Marriott, for the opportunity of access to records relating to the climate of Brazil. Nor should the great pains taken by Mr. R. Morgan with the plants figured be left unmentioned.

Of the plants, the first set, with notes, &c., goes to the British Museum, the second set to Berlin, and the third to Columbia College, New York; Vienna has the fourth, and Kew the fifth. Small sets have also been sent to Paris, Rio de Janeiro, and Edinburgh.

## SYSTEMATIC PORTION.

## DIALYPETALÆ.

## THALAMIFLORÆ.

## DILLENACEÆ.

DAVILLA LUCIDA, Presl, Reliq. Hænk. ii. p. 73.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi mens. Aug. floret. (N. 109.)  
[Amer. Trop., Ind. Occ.]

DAVILLA LACUNOSA, Mart. in Flora, xxi. (1838), II. Beibl. p. 49.

*Hab.* Matto Grosso (*Leeson* (n. 7) in Herb. Brit. Mus.). [Bras. Or.]

CURATELLA AMERICANA, L. Syst. ed. X. 1079; Sp. Pl. ed. II. 748.

*Hab.* Reperi inter Cuyabá et Serra da Chapada mens. Aug. florentem, itaque ad Santa Cruz, ubi *Licha* nuncupatur. (Nn. 54, 423 a.) [Amer. Trop., Ind. Occ.]

DOLIOCARPUS DENTOSUS, Mart. in Flora, xxiv. (1841), II. Beibl. p. 65.

*Hab.* Ad Santa Cruz flores præbet mens. Nov. (N. 535.) [Bras. Or.]

## ANONACEÆ.

EPHEDRANTHUS, e tribu Uvariearum gen. nov.

(Plate XXI.)

Flores actinomorphi. Sepala 3, æstivatione valvata. Petala 6, libera, biseriata, omnia superne imbricata, inferne aperta, subæqualia, erecto-potentia. Stamina indefinita, dense pluriseriatim imbricata, cuneata, a dorso compressa; connectivus sursum dilatatus, incrassatus, truncatus; antheræ extrorsæ. Torus hemisphæricus. Frutex diffusus, ramosus. Folia disticha, penninervia. Flores pusilli, unisexuales (an dioici?), feminei ignoti, masculi extus sericeo-tomentosi, in axillis foliorum solitarii, brevissime pedunculati; pedunculi bracteis latis 3-seriatis distichis, arete imbricatis, alabastra obtegentibus onusti. Carpella et baccæ ignotæ.

EPHEDRANTHUS PARVIFLORUS, S. Moore; ramulis teretibus pubescentibus, demum subobsolete puberulis; foliis breviterpetiolatis, ovato-lanceolatis vel obovato-oblongis, obtusis acutisve, interdum breviter cuspidatis, basi gradatim angustatis ibique subrotundatis, rarius levissime cordatis, tenuiter coriaceis, supra glabris, subtus, præsertim in nervis, appresse pubescentibus, dein glabris; costis secundariis utroque latere 6-9, adjectis pluribus tertii ordinis, angulis variis, plerumque vero latis, insertis, primo nunc leviter, nunc levissime arcuatis, deinde undulatim-fornicatim-conjunctis, supra impressis, subtus eminentibus; pedicellis ferrugineo-tomentosis, bracteis absconditis; bracteis rotundatis vel rotundato-ovatis, obtusis obtusissimisve, extus ferrugineo-sericeis, intus levibus, puberulis; sepalis rotundato-ovatis, obtusis; petalis sepala paullo excedentibus, sericeo-tomentosis, exterioribus ovato-oblongis, quam interiora

oblonga paullulum brevioribus, omnibus obtusis; staminibus circa 8-seriatis parvis, subsessilibus, antherarum loculis basi obliquis.

*Hab.* Crescit in sylvulis juxta Santa Cruz, ubi flores præbet mens. Sept. (N. 310.)

Ramuli usque 0·4 cm. diam., ultimi vero vix 0·1 cm., fusco-grisei, longitrorsum rimosi, minute lenticelliferi. Folia 5·5-11·0 cm. long., 2·0-4·5 cm. lat., supra vix nitidula, subtus paullo pallidiora. Pedunculi 0·2 cm. long. Bracteæ basi late insertæ, infimæ exiguæ, superiores majores, illæ equidem 0·08 cm. long., intermediæ infimas plus quam duplo excedentes, summæ 0·35 cm. long., omnes coriaceæ. Flores circa 0·8 cm. diam., dilute virides. Sepala vix 0·4 cm. long., 0·37 cm. lat., coriacea, extus ferrugineo-sericea, intus appresse puberula et saltem in sicco castanea. Petala submembranacea, exteriora 0·5 cm. longa, omnia intus plus minus puberula. Torus 0·1 cm. alt. Stamina modo 0·07 cm. long.; antherarum loculi 0·04 cm. long.

Genus verisimiliter juxta *Guatteriam* interponendum, abs quâ optime abhorret floribus unisexualibus parvulis subsessilibus bracteis obtectis, petalis omnibus manifeste imbricatis nec unquam subvalvatis, et toro hemisphærico.

This plant, on account of its æstivation and the structure of its andrœcium, is undoubtedly to be referred to the tribe Uvariæ. Probably it will come nearest to *Guatteria*, but this will depend on the nature of the placentation. Should the carpels prove to be many-ovulate, *Ephedranthus* will have to be placed in the neighbourhood of the East Indian *Sageræa* and *Stelechocarpus*, the former of which may have unisexual flowers, while the latter is dioecious.

I have examined all the flowers it was possible to sacrifice, in order to ascertain whether carpels are present, but in no case could a trace of one be found. The flowers, therefore, if they be not dioecious, are at least unisexual; for myself I strongly incline to the former supposition. Upon either view, the genus would be markedly different, exclusive of other characters, from *Guatteria*, the flowers of which are always hermaphrodite.

Here follow a few notes upon various points of interest possessed by the plant:—

The stem\* (Plate XXXVIII. fig. 1) is in no way abnormal as respects its structure. The protoxylem is situated at the extremity of each mass of xylem, which projects some distance into the pith; in its immediate neighbourhood are a number of small fibres and tracheïdes, and these latter are succeeded further outwards by pitted tracheïdes and fibres of ordinary appearance; the xylem parenchyme, which is comparatively rare, shows a tendency to arrange itself in tangential lines. The soft bast is normal, while the hard bast in each phloem region is composed of two or three masses of fibres, of which the outermost has the greatest thickness. These masses frequently run right across and so stop up the medullary rays. There is a narrow pericycle; it is bounded externally by a layer, in some places double, of thick-walled cells forming a well-marked endoderm. The cortex, especially its outer portion, is strengthened by means of frequent thick-walled sclerotic parenchyme cells, a little way outside which, and close to the epiderm, is the phellogen

\* Here and elsewhere in this part of my report on the botany of our expedition only a few of the more obvious facts of structure have been recorded.



layer. The medullary rays vary considerably in width; like the cells of the comparatively small pith-region, they are filled with spherical or elliptical simple or more usually compound starch-grains, varying greatly in size, the largest being usually found in the pith.

The leaves are inserted on a strictly distichous plan, but material for the study of the arrangements of the leaf-traces is not available. The one point worthy of mention *à propos* of the leaf-structure is that the stereome protecting the vascular bundles runs right up to the epiderm, which latter tissue, where it overlies the bundles, is composed of smaller cells than usual, and of cells often with somewhat thicker walls than elsewhere; in other words, the epiderm itself can to a certain extent assume the appearance of stereome, and this arrangement must obviously give great strength to the leaf. Beneath the midrib, however (that is, on the lower side of the leaf), parenchyme intervenes between the stereome and the epiderm (fig. 3). Fig. 2 shows the upper surface of the leaf seen from above; over the palisade tissue the epiderm cells are larger and have the wavy borders so frequently possessed by epiderm; but the cells lying over the vascular bundles are shorter and more angular, and usually, though not quite always, each of them contains a single rhomboidal crystal. The leaves are bifacial in the most marked degree, there being no stomates on the upper surface; each stomate is accompanied by two subsidiary cells, often very unequal in size (fig. 4). Near the vascular bundles the mesophyll seems to be continuous, without any intercellular spaces; further away, however, it becomes "spongy." Many Anonaceæ have glandular leaves, and *Ephedranthus* is no exception to this, as sections show several glands immersed in the lower part of the mesophyll. These glands are similar in appearance to those of *Stormia*, shown in fig. 7 of Plate XXXVIII.

Like the leaves, the three series of bracts are strictly distichous. In the case of one flower, however, which I examined, the sixth bract did not stand exactly over the fourth, but had been deflected to a trifling extent towards one side, probably as a result of abnormal pressure in the bud. In the diagram (Plate XXXVIII. fig. 5) it will be seen that the position of the axis is not indicated; this I have not been able to ascertain, owing to want of material.

The small pollen-grains are ellipsoidal in shape, and, except for a few fine striations, are quite smooth. I could make out two pores, but never more.

GUATTERIA SYLVICOLA (sp. nov.); caule subtereti, leviter undulato, nigrescenti-purpurascente rufo-tomentoso, dein pubescente, demum glabro; foliis maxime inæqualibus, subsessilibus, elongatis, anguste oblongo-obovatis, cuspidatis, obtusis, basi cuneatim angustatis, coriaceis, supra fere glabris, subtus, præsertim secus nervos, rufo-tomentellis; pedunculis solitariis, foliis longioribus, prope basin articulatis, indumento rufo-villoso-tomentoso instructis; bracteis minutis; sepalis late ovatis, basi paullo cordatis, obtusiusculis; petalis obovato-oblongis, obtusis vel retusis vel brevissime bilobis, sepala duplo excedentibus; staminibus late linearibus obtusissimis; baccis ignotis.

*Hab.* In sylvis ad Serra da Chapada, alt. circiter 2000 ped. supra mare. Fl. Aug. (N. 142.)

Folia 10·0-27·0 cm. long., medio 3·5-8·0 cm. lat. Arbuscula habitu fruticis elati. Caulis undulatus, demum reticulato-insculptus, 0·4 cm. diam., margine undulato; costæ secundariæ utrovis latere 15-20, adjectis paucis tertii ordinis, angulis latis alternatim insertis, raro suboppositæ, rectæ, infra marginem subito fornicatim conjunctæ, costis pag. sup. eminentibus, nervis laxè reticulatis, parum prominulis; petiolus 0·5 cm. long., incrassatus, late canaliculatus, rufo-tomentosus. Bracteæ ovatæ, acutæ, tomentosæ, 0·2 cm. long. Pedunculi 1·0-1·5 cm. long., erecti. Sepala et petala crassa, illa extus rufo-tomentosa, 0·8 cm. long. et lat., hæc 1·5 cm. long., apice vix 1·0 cm. lat., paullo supra basin ad 0·6 cm. angustata, juxta basin rufo-, superne cinereo-tomentosa. Torus stamincus 0·14 cm. alt. Stamina 6-seriata, circiter 0·12 cm. long. Gynæcium 0·3 cm. diam., 0·22 cm. alt., medio levissime elevatum; carpella tetragona, rufo-tomentosa, cum stigmatè prominulo 0·2 cm. longo.

Videtur prope *G. Ouregou*, Dun., ponenda, sed diversa, præter alia, ob folia majora et comparate angustiora, basi cuneatim angustata, pedunculos solitarios foliis breviores, &c. [*Amazonia*.]

DUGUETIA FURFURACEA, Benth. & Hook. f. Gen. Pl. i. p. 24.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi fructificantem habui mens. Aug. (N. 163.) [Bras. Or.]

DUGUETIA SANCTÆ-CRUCIS (sp. nov.); caule tereti, in sicco rimoso, leviter furfuraceo, deinde fere glabro et suffuscente; foliis coriaceis, breviter petiolatis, elongatis lanceolatis, obtusis, acutis, vel cuspidato-acuminatis, supra nitentibus, subtus arctissime furfuraceo-tomentosis, nervis subtus eminentibus; pedunculis solitariis, erectis, petiolos longe excedentibus, juxta medium articulatis; bracteis parvis, rotundatis, obtusis; ovariis linearibus, apice in stylum gracilem rectum vel incurvum et ovario duplo brevioribus; carpidiis (vix maturis) obovoideo-oblongis, angularibus, sericeo-fusco-tomentosis, basi aspermis, rostro recto vel plerumque incurvo coronatis.

*Hab.* Crescit in sylvaticis ad Santa Cruz, mens. Nov. florens. (N. 576.)

Arbor parvus, circa 6 met. alt., habitu fruticoso. Caulis ascendens, sat crebro ramosus. Petiolus 0·4-0·5 cm. long., sulcatus, incrassatus, arcte annulatim striatus, furfuraceo-tomentellus; lamina 9·0-21·0 cm. long., 2·5-5·2 cm. lat., basi angustata vel levissime rotundata, utrinque reticulato-nervosa; costæ secundariæ utrovis latere 12-16, adjectis paucis tertii ordinis, angulis variis latis insertæ, primo rectæ vel undulatæ, dein dichotome fractæ et antrorsum et retrorsum arcuatim porrectæ, nunc simpliciter ac magnopere arcuatæ. Bracteæ circa 0·5 cm. long., amplexicaules. Pedunculi 2·0 cm. (sub fructu attamen 3·5 cm.) longi, superne leviter incrassati, furfuraceo-tomentosi. Sepala, petala, et stamina desunt. Torus stamineus 0·15 cm. alt. Gynæcium 0·45 cm. diam. Ovaria 0·22 cm. long., dorso compressa. Fructus immaturus fere 2·5 cm. diam. Carpidium basi carinatum 0·6-1·0 cm. long., basis asperma compressa, 0·2-0·6 cm. long.; rostrum 0·1-0·2 cm. long., subulatum, dorso compressum.

Species propria ob pedunculos bracteatos forsam ad *D. bracteosam*, Mart., accedens, ab ea vero affatim distat. [Bras. Or.]

STORMIA, e tribu Unonearum gen. nov.

(Plate XXII.)

Flores actinomorphi, hermaphroditi. Sepala 3, reduplicato-valvata, crasse coriacea. Petala 6, biseriata, æstivatione valvata, in corollam gamopetalam inferne connata, interiora quam exteriora paullo minora, exteriora a calyce paullulum superata. Stamina  $\infty$ , pluiseriata, arcte imbricata, anguste cuneata, connectivo apice truncato-dilatato, loculis transverse rugatis, uniseriatim plurilocularibus, extrorsis. Torus parum elevatus, apice late truncatus. Carpella 14–21, sessilia, circa 7-ovulata, stylo infundibulari majusculo incrassato elongato integro coronata; ovula sub-1-seriata, anatropa. Baccæ (ex St.-Hil. & Tul.) “septis spuriis transversim multiloculares.” Frutex altus, vel potius arbuscula. Folia breviter petiolata, costis secundariis plurimis percursa. Flores mediocres, solitarii, pedunculis exaxillaribus insidentes. Receptaculum dilatatum, laminatum, paullo ultra sepalorum insertionem annulatim productum.

STORMIA BRASILIENSIS, S. Moore.—*Hexalobus brasiliensis*, A. St.-Hil. & Tul. in Ann. Sc. Nat. sér. II. xvii. p. 133.—*Trigyneia brasiliensis*, Benth. & Hook. f. Gen. Pl. i. p. 24.—*Unona brasiliensis*, Baill. Adansonia, viii. p. 305. Stirps fere 4-metralis, ramosa. Rami abundanter foliati, subteretes, arcte tomentelli, nunc pubescentes, deinde fere glabri et rimis anguste ellipticis notati, fuscii. Folia oblongo-lanceolata vel oboculato-oblonga, breviter cuspidata, obtusa, raro obtusissima vel emarginata vel retusa, basi sæpissime paullo obliqua angustata vel subrotundata, cito costâ mediâ appresse tomentellâ exemptâ glabra, nitida; costæ secundariæ utrinque 15–20, angulis fere rectis paullulum decurrentim insertæ, juxta marginem subito arcuatim-undulatim conjunctæ, utrinque prominulæ; venulæ laxè reticulatæ, utrinque eminentes. Petioli circa 1.0 cm. long., aliquatenus complanati, tomentelli. Pedunculi circa 1.0 cm. long., plerumque plus minus decurvi, arcte albido-sericei. Flores pallide virides. Alabastra trigona, paullulum ante floritionem circa 1.0 cm. diam. Sepala ovata, obtusa, extus albido-sericeo intus tomento dilute ochraceo munita, 1.2 cm. long., 0.8 cm. lat. Petala ovata, obtusa, interdum inæqualia; lamina libera, basi leviter cordata, albido-sericea, intus in sicco fusca. Receptaculum 0.4 cm. diam., aliquanto triangulare. Torus circa 0.15 cm. alt., apice 0.25 cm. diam. Stamina 0.3 cm. long.; filamenta brevissima; connectivus sursum gradatim amplificatus, apice parum incrassatus. Carpella linearia, albo-sericea, arcte conferta, 0.2 cm. long.; styli ovarium semiæquantes, apice pilis stigmatosis instructi. Baccæ non suppetebant.

*Hab.* Ad Santa Cruz, floret mens. Nov. (N. 523.)

Genus ad *Unonam*, necnon ad *Asiminam*, spectans. Ab illâ attamen divergit imprimis receptaculo dilatato, petalis parvis connatis, et staminibus rugatis; hæc, contra, receptaculo normali, petalis liberis, toro subgloboso, staminibus et stigmatibus disparibus, ovulis biseriatis gaudet. Cum *Trigyneiâ*, cujus flores pusilli, receptaculum haud

dilatatum, et petala libera, et carpella indefinita, certe non congenerica. *Hexalobus* tametsi petala basi connata, itaque flores parvos, receptaculum normale, stigmata bipartita, carpella pluriovulata plerumque biseriata præbet.

Undoubtedly the most noteworthy feature about *Stormia* is the curious dilated receptacle. On turning the flower upside down this appears as a membranous obscurely triangular expansion of the top of the peduncle, the sepals being inserted well within its free rim. In this respect *Stormia* holds to other Anonaceæ the position of *Eschscholtzia* to normal Papaveraceæ, but the comparison must not be carried too far, as there is not the least sign, in the Anonaceæ, of that perigyny which is so remarkable a feature in *Eschscholtzia*. Curiously enough, authors have completely overlooked this dilatation of the receptacle, although it is somewhat obscurely figured by St.-Hilaire and Tulasne. The Australian *Eupomatia*, it may be observed, also has a dilated receptacle; but, inasmuch as the carpels are immersed in it, no valid comparison of that genus with *Stormia* is possible. I cannot endorse Prof. Baillon's remarks ('Adansonia' viii. p. 306):—"MM. Bentham et Hooker ont très-sagement rapporté au genre *Trigyneia* l'*Hexalobus brasiliensis*, A. St.-Hil. et Tul." Baillon's views are very original, and if they were accepted the genera of Anonaceæ would be greatly reduced in number. Thus, he sinks not only *Trigyneia*, but *Melodorum* and *Cananga* also in *Unona*, a genus which he regards as embracing no less than fifteen sections, all founded on genera of former authors. Moreover, Baillon, speaking of our plant, says ('Histoire des Plantes,' i. p. 212):—"Sauf l'union de ses pétales, cette espèce est très-voisine de notre *Unona Oliveriana*;" and this leads one to doubt whether the Paris Professor could have examined the Brazilian type.

The structure of the curious corrugated anthers of *Stormia* is alluded to further on. It must suffice here to point out their resemblance to those of that singular genus *Hornschuchia* of Nees von Esenbeck. This genus Nees at first referred to Sapotaceæ, soon removing it to Olacineæ, and afterwards to Sapindaceæ. Endlicher placed it doubtfully at the end of Ebenaceæ; Lindley, also with doubt, among the Sapindaceæ; Meissner considered it to be a Sapotacea, while Miquel, after thorough examination, suggested an entirely new affinity, viz., with Lardizabalæ. In the 'Genera Plantarum,' on the other hand, Bentham and Hooker express their belief in its being Anonaceous. Here is disagreement among the doctors indeed! The description of the flower is briefly as follows:—There is a deep cup-shaped outer organ, presumed to be a calyx; the petals are 6, biseriata and valvate in æstivation; 6 stamens are inserted on a slightly raised torus, and the anther-cells are transversely corrugated, and divided each into a longitudinal series of chambers; the pollen is compressed. There are three free carpels, each with 4 or 5 uniseriate anatropous ovules, and each crowned with a small stigma. The fruit is a berry, to some extent spuriously septated; the ripe seed, unfortunately, is not known.

Were the receptacle of *Stormia* to become deepened, we should get something like the calyx of *Hornschuchia*. But I suppose the latter organ must be a true calyx; otherwise, on the hypothesis of affinity between *Hornschuchia* and *Stormia*, what has become of one of the three outer whorls of its floral leaves? The paucity in stamens, when contrasted with *Stormia*'s multiple andrœcium, is a striking point of difference between the two genera; this, however, seems over-ridden by the remarkable septation of the anther-cells in both.

The pollen of *Hornschuchia* takes the form of large multicellular masses; that of *Stormia*, though often consisting of single grains, is frequently found, even when obtained from anthers apparently adult, to be more or less aggregated owing to persistence of the special anther-cell's walls (Plate XXXVIII. fig. 12). Except for the number of its carpels, the gynæcium of *Hornschuchia* well stands comparison with that of *Stormia*, and the septation of the berry is another point of agreement. Bearing all these facts in mind, I certainly think the above-stated view of Bentham and Hooker to be that one for which there seems to be the most warrant.

In the structure of its stem (Plate XXXVIII. fig. 5) *Stormia* presents no point of special interest. There is a relatively reduced pith, of which the cells are filled with small spheroidal or ellipsoidal starch-grains, sometimes simple, sometimes compound. In the xylem there are numerous (about twenty) masses of protoxylem, and tracheïdes are fairly abundant. Fibres of normal appearance make up most of the remaining part of the xylem, parenchyme-cells being rare. In the phloem the fibres, parenchyme, and small sieve-tubes with companion-cells are in every respect normal. The sections made by me showed usually four groups of bast-fibres; of these the three inner have their long axes tangential, the outer group being elongated in a radial plane. There is a well-marked endoderm. The medullary rays, one, two, or three cells thick in the xylem, become widened on passing into the phloem, and are here sometimes strengthened by single or aggregated sclerotic parenchyme elements; similar elements are also to be seen in both cortex and pith. The phellogen layer lies close to the epiderm.

The venation of the leaf is peculiar and reminds one more of a *Clusia* than of an Anonacea. The peculiarity is mainly owing to the presence of three nerves of tertiary order in the interspace between a secondary nerve and its successor. These nerves run more or less parallel with the secondary nerves, and they may anastomose with these or with each other. There are no stomata on the upper surface of the leaf, and the epidermal cells here contain each a single spheraphidal mass. The palisade parenchyme is one cell deep, the layer immediately below it having its cells somewhat elongated perpendicularly. But few air-spaces occur in the spongy mesophyll, and even these are small. Immersed in the lower part of this tissue are numerous glands of normal appearance. The cells of the lower epiderm usually contain one small mass of spheraphides; rarely two such masses are seen, or a prismatic crystal takes the place of the spheraphides. Stomates are numerous in this layer, each stomate having a couple of subsidiary cells (fig. 6).

The arrangement of the leaf-traces is simple. The three bundles of the petiole unite at the axil into a single strong common bundle which courses down through two internodes, and forks at the second node below that at which it entered the stem. Each of these forks is markedly thinner than the parent bundle, and the shorter of them inserts itself on the neighbouring trace of its own side close to the node, while the longer runs some distance down the third internode to finally unite with the same trace.

By referring to figs. 9-12 of Plate XXXVIII., the reader will at once understand the structure of the anther. As seen in transverse section, the greater part of this organ consists of the relatively large connective, composed mainly of a plexus of delicate cells with brown

walls, in which are immersed numerous sclerenchyme-cells of a yellowish colour; this tissue is traversed by the exceedingly slender vascular bundle. Outside this come two layers of larger cells with light brown walls, and of these the outer abuts on the delicate epiderm. At each end of these two masses of light brown cells is a group of colourless cells with somewhat thickened walls. The exothecium and endothecium are both normal, and, even in the case of anthers from dried flowers, which are all that I have been able to examine, remains of the more or less disorganized tapetum can be made out.

As has already been explained, the anther is multitubular, with loculi arranged one beneath the other in linear series to the number of about fifteen (figs. 8 & 9). Between each pair of loculi is interposed a delicate septum, of which the structure is difficult to make out from dried anthers; each in surface view is seen to be composed of exceedingly thin-walled cells, decreasing in size from periphery to centre. When the development of these anthers comes to be worked out, I suppose it will be found that the archesporial cells, instead of forming a continuous series, are interrupted by thin strips of indifferent tissue. The anther-cells open in the usual way, beginning from above downward, and it would appear that the septa are ruptured during the process; at any rate, in anthers from which the pollen has fallen I could see no trace of septa. With the exception of *Hornschuchia*, I know of no anthers with these serial loculi; they recall to a very slight extent the anthers of the Mimoseæ.

*ROLLINIA INCURVA* (sp. nov.); foliis brevipetiolatis, lanceolatis vel lanceolato-oblongis, obtusis, basirotundatis, coriaceis, supra nitidis vel nitidulis, glabris, subtus pallidioribus, minute puberulis; costis secundariis utrinque circa 12, angulis latis insertis, sub margine undulatim et fornicatim conjunctis; pedunculis solitariis bigeminisve, petiolos excedentibus, basi bracteatis, et juxta vel supra, nonnunquam vero infra medium bracteolâ parvâ onustis, puberulis; floribus modicis, calyce ferrugineo-pubescente, corollæ arcte ferrugineo-tomentosæ alis spathulato-oblongis ascendenti-incurvis; fructu ignoto.

*Hab.* Crescit in sylvestribus ad Santa Cruz, ubi mens. Nov. floret. (N. 522.)

Frutex diffusus longiramosus, vix usque trimetralis. Ramuli teretes, purpurascens vel purpureo-grisei, leviter undulati, creberrime longitrorsum rimati, juveniles puberuli. Foliorum lamina plerumque 10·0-14·0 cm. long., et 3·5-4·5 cm. lat., deorsum parum obliqua; costa media supra impressa, subtus admodum eminens; costæ secundariæ utrinque prominulæ; venulæ arcte reticulatæ, supra maxime aspectabiles; petioli 0·8-1·0 cm. long., supra anguste canaliculati, puberuli. Pedunculi usque 3·0 cm. long., superne ampliati. Bracteæ bracteolæque ovatæ, acutæ, extus ferrugineo-tomentellæ, circa 0·15-0·2 cm. long. Flores lutescenti-virides. Calycis lobi abbreviati, rotundati, carnosuli, concavi, dorso carinati, 0·25 cm. long. Corollæ basi 0·7 cm. diam., alæ usque 1·5 cm. long., superne 0·65 cm. lat. Antheræ 0·1 cm. long. Torus stamineus 0·2 cm. alt., 0·25 cm. diam., pubescens. Carpella albo-sericea, 0·15 cm. long.

Ex affinitate *R. orthopetalæ*, A. DC., arbor cujus folia diversiformia, et petala majora una cum calyce canescenti-tomentosa. [Amazonia, Guiana.]

ANONA CORIACEA, Mart. Fl. Bras. xiii. I. p. 6, ex icon. et descript.

—, var. AMPLEXICAULIS (S. Moore). A typo distat imprimis foliis minoribus insigniter amplexicaulibus. Forsan pro specie propriâ existimanda.

*Hab.* Floret ad Santa Cruz mens. Nov. *Arrichicúm* incolarum. (N. 517.)

Petala admodum incrassata, intus luteola.

Rhizomatis fimbriæ ad vulnera a morsibus serpentum facta applicantur.

In habit our plant, which is frequent at Santa Cruz, is apparently different from typical *A. coriacea*, which Martius describes as having tortuous branches, inasmuch as it is a lanky erect shrub, 4-6 feet high, and very sparingly branched, if at all.

The popular name "Arrichicúm" is obviously merely a local variation of the Araticú of East Brazil, a term applied to several species of *Anona* there native. [Bras. Or.]

ANONA DIOICA, A. St.-Hil. Fl. Bras. Merid. i. p. 34 (ex descript.).

*Hab.* Viget in locis apertis arenosis ad Santa Cruz, mens. Nov. florens. (N. 693.)

Eandem plantam legerunt beat. Gardner ad Santa Rosa in provincia Pernambuco (n. 2774 in hbb. Brit. Mus. et Kew) et beat. Burchell (n. 6390 in Hb. Kew). Crescit itaque in Paraguaria, unde misit cl. Balansa (n. 2298). [Bras. Or., Paraguaria.]

ANONA (§ GUANABANI) WALKERI (sp. nov.); caule abunde ramoso, ramulis subteretibus, juvenilibus rufulo-tomentosis, mox glabris, sparsim lenticelliferis; foliis brevipetiolatis, parvis, maxime inæqualibus, ovatis, obtusissimis vel breviter apiculatis, basi paullo rotundatis, interdum leviter coarctatis, supra puberulis, subtus piloso-pubescentibus, membranaceo-coriaceis, obscure pellucide punctatis; pedunculis folia subæquantibus vel quam ea brevioribus, arcte rufo-tomentosis; basin versus minute 1-bracteatis; bracteis subulato-linearibus, rufo-tomentosis; sepalis parvis late triangularibus, longe acuminatis, rufo-tomentosis; petalis exterioribus late ovatis, pet. interioribus quam exteriores paullo brevioribus lineari-oblongis, omnibus acutiusculis, arcte velutinis; gynæcio depresso subgloboso rufo-velutino; fructu ignoto.

*Hab.* Crescit juxta urb. Cuyabá, ubi flores mens. Aug. præbet. (N. 38.)

Frutex erectus, circa 3 met. alt. Ramuli fusco-cinerei, saltem in sicco crebro et alte rimati. Folia majora cum minoribus mixta, 2.4-5.8 cm. long., medio 2.3-3.6 cm. lat., subtus pallidiora ibidemque eximie nervosa; costæ secundariæ utrinque 6-8, levissime curvatæ, marginem versus dichotomæ indeque arcuatim conjunctæ; venulæ laxè reticulatæ, parum prominulæ; petioli non ultra 0.3 cm. long., canaliculati, basi ampliati, rufo-tomentosi. Pedunculi ad 3.2 cm. long., medio 0.13 cm. crass., erecti, sub flore sensim incrassati, usque ad 0.8 cm. a basi bracteati. Bracteæ circa 0.25 cm. long., pedunculo appressæ. Flores vix 3.0 cm. diam. Sepala viridia, vix 1.0 cm. long., basi 0.5 cm. lat., eorum acumen 0.7 cm. long. Petala exteriora 1.4 cm. long., medio 1.2 cm. lat., pet. interiora 1.2 cm. long., nec ultra 0.7 cm. lat.; pet. omnia carnosæ, extus lutea, intus lactea, et secus medium purpurea. Stamina 0.2 cm. long. Gynæcium 0.2 cm. alt., 0.3 cm. diam.

Videtur cum *A. cornifolia*, A. St.-Hil., et *A. spinoscenti*, Mart., comparanda, ab illâ abhorrens staturâ altiore, foliis minoribus, pedicellis nec supra medium bracteatis, sepalis

longe acuminatis, ab hac vero ob spinarum absentiam, foliorum indumentum, pedicellos 1-bracteatos dispar, et, alias inter notas, sepalis omnino diversis facile dignoscenda.

The species has been named after Mr. J. C. Walker, a gentleman interested in botany, whose acquaintance I made at Cuyabá, and who very kindly accompanied and helped me while collecting near the city. [Bras. Or.]

ANONA (§ ATTÆ; PILEFLORÆ) SANCTÆ-CRUCIS (sp. nov.); caule erecto, ramoso, ramulis teretibus, rufo-pubescentibus, dein fere glabris, pallide bruneis, abunde necnon grosse lenticelliferis, in longitudinem crebre rimosis; foliis brevipetiolatis, oblongis vel obovato-oblongis, obtusissimis, basi coarctatis, supra fere glabris, subtus, præsertim in nervo medio, minute rufo-pubescentibus, coriaceo-membranaceis, crebre ac minute punctatis; pedunculis quam petioli longioribus, crassis, juxta basin 1-bracteatis, sericeo-velutinis; bracteis late ovatis, crini brevissimo coronatis; sepalis deltoideo-ovatis, obtusiusculis, arcte velutinis; petalis exterioribus ovato-rotundatis, obtusis, arcte rufulo-velutinis; gynæcio subgloboso, tomentoso; fructu subgloboso, superne paullo coarctato, sparsim ac brevissime tuberculato.

*Hab.* In nemorosis ad Santa Cruz (Barra dos Bugres), ubi floret mens. Nov. et mens. insequente fructum præbet. Nom. vernac. *Ata*. (N. 585.)

Arbor parva, circa 6 met. alt., erecta, ramos crebros patulos elongatos gerens. Folia ad 15·5 cm. long. (pleraque vero circa 12·0 cm.), medio 4·7-6·5 cm. lat., margine levissime undulata, utrinque pulchre reticulato-nervosa; nervus medius supra impressus, subtus valde eminentis; petiolus crassus, puberulus, saltem in sicco arcte transversim rimatus, 0·7 cm. long., 0·2 cm. crass., late canaliculatus. Pedunculus vix 1·5 cm. long. (sub fructu vero 3·5 cm.), medio 0·25 cm. crass. (sub flore ipso vix 0·4 cm., et sub fructu prorsus 0·4 cm.). Bracteæ 0·4 cm. long., 0·3 cm. lat., firmæ, velutinæ, margine ciliolata, crebre punctata. Flores virides, forsau circa 2·5 cm. diam. Sepala 0·5 cm. long., 0·6 cm. lat., firma, arcte albo-ciliata, punctata. Petala (vix matura) circa 1·5 cm. long., et medio 1·6 cm. lat., carnosa, utrinque velutina; petala interiora nobis non obvia. Gynæcium floris vix maturi circa 1·5 cm. diam. Fructus (edulis et ab incolis magni laudatus) fere maturus magnitudine eam *Citri aurantii* æquans, 6·0 cm. long., medio 6·0 cm. lat. (sub apice modo 3·0 cm.), viridis, tuberculis nec ultra 0·1 cm. e superficie minute scrobiculatâ eminentibus (nonnunquam vero evanidis) sparsim obtectus. Semina 1·3-1·4 cm. long., medio 0·9 cm. lat., ad hilum 0·5 cm. lat.; testa crustacea, lutescenti-brunea, nitens; albumen normale.

Speciebus ab omnibus e subseccione Oblongifloræ distat imprimis petalis ovato-rotundatis. Inter reliquas forte juxta *A. echinatham*, Dun., intercalanda, sed multis de signis ab illa abhorret. [Guiana.]

XYLOPIA GRANDIFLORA, A. St.-Hil. Fl. Bras. Merid. i. p. 40.

*Hab.* Ad Serra da Chapada mens. Aug. fructificat. (N. 202.) [Bras. Or., Amazonia.]



## MENISPERMACEÆ.

CISSAMPELOS PAREIRA, Linn. Sp. Pl. ed. I. p. 1031.

*Hab.* Ad Santa Cruz floret mens. Oct. (N. 475.) (In tropicis late disseminata.)

CISSAMPELOS TROPÆOLIFOLIA, DC. Syst. i. p. 532.

*Hab.* Reperi ad Santa Cruz mens. Nov. florentem. (N. 555.) [Peruvia.]

## CRUCIFERÆ.

NASTURTIUM PUMILUM, Cambess. in St.-Hil. Fl. Bras. Merid. ii. p. 119.

*Hab.* Floret et fructificat ad Santa Cruz mens. Nov. (N. 479.) [Bras. Or., Goyaz.]

## CAPPARIDEÆ.

CAPPARIS CYNOPHALLOPHORA, Linn. Sp. Pl. ed. II. p. 721, var. MICROPHYLLA.

*Hab.* Inter Corumbá et Ladario reperi mens. Jan. fructificantem. (N. 1045.)  
[Amer. Trop. Austr., Ind. Occ.]

CRATÆVA TAPIA, Linn. Sp. Pl. ed. I. p. 444.

*Hab.* Ad Corumbá floret et fructificat mens. Jan. (N. 949.) [Amer. Trop., Ind. Occ.]

## VIOLACEÆ.

CORYNOSTYLIS PUBESCENS (sp. nov.); caule folioso, subtereti, in longitudinem rimoso, crebre lenticellifero, pubescente, demum glabro; foliis sat parvis (maxime inæqualibus), breviter petiolatis, ovato-vel obovato-lanceolatis, obtusis vel obtusissimis vel æqualiter inæqualiterve retusis, margine leviter undulatis seu serrulatis, pag. sup. fere glabris, inf. pubescentibus vel puberulis; pedunculis gracilibus, folia excedentibus vel subæquantibus, pubescentibus; sepalis inæqualibus, oblanceolatis vel oblongo-ovatis, obtusis; petali antici limbo ovato, obtuso, margine undulato; tubo insuper amplo hinc deorsum sensim angustato, apice dilatato; pet. lateralibus late oblongis, margine undulatis, pet. posticis quam lateralia multo brevioribus, obovatis, obtusis; staminibus oblongo-linearibus, quam sepala longioribus, apiculo rotundato-reniformi coronatis; ovario oblongo compresso; stylo stamina subæquante, basi filiformi, superne incrassato; capsulâ non visâ.

*Hab.* In campis juxta ripas fl. Paraguay ad Carandazinho, inter Corumbá et Dourados, mens. Januar. simul floret et fructificat. (N. 910.)

Suffrutex parvus, crebre ramosus, circa 1 met. alt. Folia 1·8–5·5 cm. long., 1·0–3·0 cm. lat., coriaceo-membranacea, eximie nervoso-reticulata, paginâ superiore nitentia; costæ secundariae utrinque 5–6, aperte arcuatæ, sub margine tandem conjunctæ; petioli ad 0·5 cm. long., pubescentes. Pedunculi usque ad 5·0 cm. long. Sepala 0·3–0·35 cm. long., 0·1–0·18 cm. lat., uninervia. Flores albi, odorati. Petali antici limbus 0·7 cm. lat., hujus calcar 2·5–2·7 cm. long., sub apice 0·4 cm. lat., parte angustiore 0·2 cm. lat., rectum vel parum curvatum. Petala lateralia 1·0 cm., antica

vix 0·6 cm. long. Stamina loculi fere 0·5 cm., apiculus 0·1 cm. long., hic dimidio superiore aurantiacus.

*Corynostylidi hybantho*, Mart., arcte affinis, diversa videtur equidem indumento, foliis minoribus aliquanto diversiformibus, corolla tubo infra apicem insigniter angustato, &c. [Amazonia, Guiana, Nov. Granat., Venezuela, Ind. Occ.]

**IONIDIUM LACTEUM** (sp. nov.). Suffrutex? vix spithameus, dense flavescenti-villosus, caule e rhizomate tenui albido obscure annulatim constricto, erecto, leviter angulato, imâ basi cataphyllis parvis flavescenti-bruneis, sursum gradatim in folia transeuntibus instructo; foliis vix sessilibus, oblongo-ovatis, basi parum angustatis, antice dentato-serratis, utrinque flavescenti-villosis; pedunculis quam folia brevioribus, villosis; sepalis semipinnatifido-pectinatis, villosis; petalis dorso villosulis, intus glabris, petali antici, calycem sub 3-plo excedentis, laminâ transversim oblongâ; staminum anticorum filamentis dorso sub anthera incrassatis; glabris, antheris brevissime appendiculatis; ovario villosulo.

*Hab.* In campis ad Serra da Chapada alt. circa 1800 ped. Fl. Aug. (N. 187.)

Folia ad 1·2 cm. long., in sicco subtus pallidiora. Flores lactei. Sepala usque ad 0·7 cm. long., anticum falcato-lanceolatum reliquis paullo majus. Petalum anticum, calycem sub 3-plo excedens, ungue concavo angulato, calyci æquilongo, basi leviter dilatato, laminâ transversim oblongâ, obtusâ, nervosâ, margine crispulâ et dorso villosulâ, vix 1·5 cm. lat.; intermedia duo antico haud multo breviora, lineari-oblonga, dorso villosula; postica duo sepala subæquantia, lineari-oblonga, obtusa, 1-nervia, dorso villosula. Genitalia calyce breviora; antheræ ovatæ, apiculo tenuiter membranaceo spathulato parvo coronatæ, loculis paullo obliquis; filamenta antheris longiora, complanata, glabra. Ovarium ovoideum, dense villosum: stylus sursum dilatatus, glaber; stigma obliquum.

*I. Ipecacuanhæ* proxima, distat vero ob folia minora, sepala breviora, petalum anticum minus et obtusum (haud aperte emarginatum), petala intermedia lineari-oblonga haud ovate-suborbicularia), antheras apiculo membranaceo loculis multoties breviora coronatas, filamenta staminum anticorum glabra. *I. villosissimum*, A. St.-Hil., ob pedunculum folio suffulciente longiorem, *I. Poayam*, A. St.-Hil., et *I. lanatum*, A. St.-Hil., ob sepala integerrima facilliter nostrâ a stirpe dignoscere potes. [Amer. Trop.]

**IONIDIUM COMMUNE**, A. St.-Hil. Pl. Rem. p. 295.

*Hab.* Crescit juxta Corumbá, mens. Jan. fiorens. (No. 1048.) [Bras. Or.]

**IONIDIUM OPPOSITIFOLIUM**, Roem. & Schult. Syst. Veg. v. p. 395.

*Hab.* Crescit juxta fl. Paraguay inter Santa Cruz et Villa Maria, itaque inter Villa Maria et Corumbá. (Nn. 822, 1023.) [Amer. Trop. Austr.]

**ALSODEIA**, sp. nov.? aff. A. OVALIFOLLÆ, Britton in Bull. Torr. Bot. Club, xvi. p. 18.

*Hab.* Viget in ripâ fl. Paraguay inter Santa Cruz et Tres Barras, ubi fructificat mens. Oct. (N. 502.)

This has almost exactly the leaves of *Alsodeia antifolia*, except for the absence of soft pubescence on the back and on the petiole. The capsule is longer and nearly glabrous, and, if the only capsule on the type-specimen at Kew be mature, firmer in consistence, besides having narrower, more sharply acuminate and prominently reticulated valves. I have not seen flowers. [Bolivia.]

SAUVAGESIA ERECTA, Linn. Sp. Pl. ed. II. p. 203.

*Hab.* Ad Santa Cruz floret mens. Sept. (N. 754.) [Amer. Trop., Afr. Trop., Ind. Arch.]

#### BIXINEÆ.

COCHLOSPERMUM INSIGNE, A. St.-Hil. Pl. Us. sub tab. 57, var. ? An sp. diversa ?

*Hab.* Florebat et fructificabat, foliis orbium, juxta Cuyabá mens. Aug. (N. 29.)

Dr. Warburg, who saw my specimens, considered it unsafe, in the absence of leaves, to absolutely identify them. [Amer. Trop.]

#### POLYGALACEÆ.

POLYGALA RHODOPTERA, Mart. ex A. W. Benn. in Mart. Fl. Bras. xiii. pars iii. p. 11.

*Hab.* Ad Santa Cruz flores dilute viridi-purpurascens præbet mens. Nov. (N. 669.) [Bras. Or., Goyaz, Amer. Centr.]

POLYGALA HIRSUTA, A. St.-Hil. Fl. Bras. Merid. ii. p. 45.

*Hab.* Crescit ad Serra da Chapada. (No. 193.) [Bras. Or.]

POLYGALA HYGROPHILOIDES, (sp. nov.); caule quadrangulari, sursum sparse ramoso; foliis brevissime petiolatis, infimis verticillatis, reliquis approximatis vel subdistantibus, lanceolatis, apice acute mucronatis; racemis terminalibus, elongatis, pedunculatis, cylindricis, densifloris; sepalis exterioribus oblongo-ovatis, apiculatis; alis corollæ multo longioribus, late obovatis, obtusissimis; carina cristâ bipartitâ, segmentis iterum bifidis superne dorso instructâ; seminibus subcylindricis, horum carunculâ breviter biappendiculatâ.

*Hab.* Matto Grosso (*Leeson*, in Herb. Brit. Mus.).

Planta spithamea, radice brevi sparsim ramoso instructa. Caulis in longitudinem striatus, obscure 4-alatus, superne puberulus. Folia  $\pm$  2.0 cm. long., 0.4–0.7 cm. lat., glanduloso-punctata. Racemi pedunculis 2.0 cm. long. attingentibus insidentes, usque ad 6.0 cm. long., vix 1.0 cm. diam., sursum angustati, apice inconspicue comosi, deorsum cicatriculis florum dilapsorum muniti. Bracteæ linearilanceolatae, longe acuminatae, dorso obtuse carinatae ibidemque nigro-glandulosæ. Sepala exteriora inæqualia, carinata, sep. maximum 0.2 cm. long.; alæ 0.33 cm. long., 0.27 cm. lat., dorso carinulatae et nigro-glandulosæ. Petala oblongo-ovata, obtusa, vix usque ad medium tubo staminali adnata, carinam galeatam in fructu persistentem superantia. Antheræ filamenta libera subæquantes. Stylus brevis, crassiusculus, ovario æquilongus. Stigma cucullatum et cristâ elongatâ

superne præditum. Capsula cordato-suborbicularis, membranacea, 0·2 cm. long. Semina fusco-brunea, hispidula, 0·15 cm. long., 0·08 cm. lat.; carunculæ appendices late oblongæ, quam semen saltem triplo breviores.

*Polygala Timoutou*, Aubl., *P. timoutoidi*, Chodat, et *P. hygrophilæ*, H. B. K., affinis, ab illis vero primo obtutu secernenda ob habitum ramosum et racemos elongatos pedunculatos. Ceterum *P. timoutoides* sepala exteriora calva, carinæ cristam parvam, necnon seminum minorum carunculam longe appendiculatam ostendit, et *P. Timoutou* racemos conspicue comosos, alas acutas, et semina appendicibus seipsam saltem semiæquantibus instructa. *P. hygrophila*, planta elatior, foliis angustis, racemis et floribus minoribus, carinæ cristâ dentatâ, seminum carunculâ longius appendiculatâ gaudet. [Amer. Trop.]

POLYGALA ANGULATA, DC. Prod. i. p. 328.

*Hab.* Reperi ad Serra da Chapada. (N. 188.) [Amer. Trop.]

#### VOCHYSIACEÆ.

CALLISTHENE FASCICULATA, Mart. Nov. Gen. et Sp. i. p. 126.

*Hab.* Ad Jangada flores suaveolentes præbet mens. Sept. ; mens. seq. floret ad Santa Cruz. (Nu. 260, 539.) [Bras. Or., Goyaz, Bolivia.]

CALLISTHENE, sp. nov., ex affinitate præcedentis, abs qua diversa videtur ob folia majora (usque ad 16·0 cm. long. et 7·0 cm. lat. interdum attingentes) per paria plerumque 4-8 ramulis florentibus insidentia. Flores non suppetebant. Fructus admodum minutissimi solummodo obvii, cylindrici, glabri, rugati, 0·5 cm. long., pedunculis crassiusculis pubescentibus usque 1·0 cm. long. fulti, et stylo paulisper persistente sæpe incurvo iis ipsis æquilongo coronati.

*Hab.* Frutex altus, vel potius arbuscula ; crescit ad Santa Cruz. (N. 731.) [Bras. Or., Goyaz, Bolivia.]

QUALEA GRANDIFLORA, Mart. Nov. Gen. et Sp. i. p. 133.

*Hab.* Crescit juxta Santa Cruz, mens. Nov. florens. *Pautéra* incolarum. (N. 740.)

The popular name, spelt as above, was given me by an intelligent inhabitant of Santa Cruz. Martius spells it *Pão terra*, and this I suspect to be the correct rendering. The fruit is mashed up and applied to sores at Santa Cruz. [Bras. Or., Goyaz, Amazonia.]

QUALEA PARVIFLORA, Mart. Nov. Gen. et Sp. i. p. 135.

*Hab.* Ad Santa Cruz mens. Oct. florescit. (N. 486.)

Mine is the "forma glaberrima"—very different in its leaves from typical *Q. parviflora*, but apparently identical in its flowers. [Bras. Or.]

QUALEA PILOSA, Warm. in Mart. Fl. Bras. xiii. pars ii. p. 45.

*Hab.* Crescit ad Santa Cruz, Dec. florens. (N. 751.)

VOCHYSIA DIVERGENS, Pohl, Pl. Bras. Ic. ii. p. 19 (ex icon. et descript.).

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Bras. Or., Goyaz.]

SALVERTIA CONVALLARIODORA, A. St.-Hil. in Ann. Mus. Paris, vi. (1820) p. 266.

*Hab.* Viget passim prope Cuyabá, fructus gerens mens. Aug. (N. 28.) [Bras. Or., Goyaz, Amazonia.]

#### CARYOPHYLLÆ.

POLYCARPON APURENSE, H. B. K. Nov. Gen. et Sp. vi. p. 33 (*Pharnaceum depressum*, Linn.).

*Hab.* Crescit ad Santa Cruz, ubi floret mens. Nov. (N. 601.) [In tropicis utriusque orbis late dispersa.]

#### PORTULACACEÆ.

PORTULACA OLERACEA, Linn. Sp. Pl. ed. I. p. 445.

*Hab.* Reperi ad Santa Cruz. (N. 664.) [Latissime disseminata.]

PORTULACA PILOSA, Linn. Sp. Pl. ed. I. p. 445.

*Hab.* Viget ad Puerto Pacheco. (N. 1052.)

I refer my specimen to Rohrbach's Lusius I., forma *a*. [Amer. Trop. et Subtrop.]

TALINUM CRASSIFOLIUM, Willd. Sp. Pl. ii. p. 864.

*Hab.* Floret ad Corumbá mens. Jan. (N. 1030.) [Amer. Trop. Austr., Ind. Occ.]

#### HYPERICACEÆ.

VISMIA DECIPIENS, Cham. et Schlecht. in Linnæa, iii. p. 116.

*Hab.* Reperi in cacumine montium Serra da Chapada. (N. 137.) [Bras. Or.]

VISMIA JAPURENSIS, Reichardt in Mart. Fl. Bras. xii. pars i. p. 209, ex icon. et descript.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 609.) [Amazonia.]

#### GUTTIFERÆ.

RHEEDIA GUACOPARÝ (sp. nov.). Glaber, caule erecto, ramoso, plus minus quadrangulari, in sicco manifeste canaliculato; foliis petiolatis, oblongo-ovatis, acutis, basi rotundatis vel paullo coarctatis, margine undulatis vel undulato-repandis, coriaceis; pedunculis quam petioli brevioribus, plerumque solitariis; petalis ovatis, obtusis, reflexis; toro stamineo inferne lato, nequaquam acuto; staminibus circa 19, quam petala brevioribus; ovario depresso ovoideo, staminibus plerisque longiore, 1-2-loculari; fructu globoso 1-spermo.

*Hab.* Frequens ad Santa Cruz et juxta ripas vicinas fl. Paraguay, ubi menss. Sept.-Nov. flores et fructus simul gerit. *Guacoparý* incolarum. (Nn. 332, 365, 467.)

Frutex altus vel arbor parva, ad 9 met. alt. Rami crassi, nonnunquam fere teretes, cinerei; ramuli sæpe per paria supra axillares orti. Folia maxime inæqualia, 3.0-15.0 cm. long., medio 1.5-7.5 cm. lat., obscure inæquilateralia, haud in sicco nitentia, nec subtus decoloria, nervi omnes utrinque eminentes; petioli 0.7-vix 2.0 cm. long., pingues, basi ampliati, canaliculati, in sicco transversim corrugati.

Pedunculi e nodis plus minus tumidis provenientes, circa 1.0 cm. long. et 0.05 cm. crass., in longitudinem striati. Flores 0.7 cm. diam., albi, inodorati. Petala 0.5 cm. long., 0.3 cm. lat., minutissime pellucido-punctata. Filamenta diversæ longitudinis, longiora 0.25 cm., breviora nec ultra 0.15 cm. long., inferne parum ampliata; antheræ didymæ, minutæ; torus stamineus circa 0.075 cm. alt. Ovarium 0.2 cm. long., sub stigmate eminente parum coarctatum. Fructus magnitudine nunc baccam *Ribis Grossulariæ*, nunc drupam parvam *Pruni domesticæ* æquans, luteus, exocarpio tenui coriaceo nitido obtectus; semen 1.5 cm. long., 0.7 cm. lat., compressum, succo subacido grato circumfusum et endocarpio membranaceo-carnoso albo inclusum.

Videtur ad *R. Gardnerianam*, Planch. & Triana, et *R. Spruceanam*, Engl., proxime accedere, abs quâ, notas inter alias, foliis diversiformibus necnon floribus majoribus stirpem nostram facile dignoscere potes.

Of this plant, which appears in two forms, one with smaller leaves narrowed below, the other having larger leaves rounded at the base, the fruit is highly esteemed at Santa Cruz, and its juice is frequently employed in place of vinegar; the berries also are said to be a good bait for certain of the Paraguay fish. [Bras. Or., Amazonia, Peruvia.]

PLATUNIA ?, sp. nov. Arbor elata, glaberrima, ramulis subteretibus, inter se 4.0-7.0 cm. distantibus, foliigeris; foliis oblongis vel obovato-oblongis, obtusis vel retusis, basi obtusis, 15.0-18.0 cm. long., 5.0-7.0 cm. lat., vivis saturate viridibus, in sicco pallidis; costis secundariis distantibus circa 8, angulis latis insertis, fere rectis, demum subito undulato-arcuatis, supra impressis, subtus parum eminentibus; petiolis vix usque ad 1.0 cm. long. crassiusculis, longitrorsum rugatis, superne anguste canaliculatis; floribus ignotis; baccis indehiscentibus, pyriformibus, magnitudine *Fici*, aurantiacis, coriaceis, intus carnosis, 2-4-locularibus, usque ad 5.0 cm. long., 4.0 cm. diam.; seminibus 2-4 in pulpo sapido jacentibus, oblongis, usque ad 2.0 cm. long., 1.0 cm. diam.

*Hab.* Crescit in ripa fl. Paraguay ad Santa Cruz et alibi in vicinia, ubi mens. Nov. fructificat. *Bacurý* incolarum. (N. 462.)

According to authors, *Bacurý* is the name given to the fruit of *Platonia insignis*, Mart., and of *Rheedia macrophylla*, Planch. & Triana. The present plant is, however, quite different from either of these, the venation of its leaves being more like what we find in the genus *Tovomita*, although, from the nature of the seed, I conclude that it cannot be placed in the latter genus. From the fact of our Paraguayan peons knowing this fruit well, it is to be presumed that the tree has a considerable range to the southward.

#### TERNSTRÆMIACEÆ.

KIELMEYERA (§ CORYMBOSÆ) AMPLEXICAULIS (sp. nov.). Suffrutex, caule erecto, crassiusculo, tereti, glabro; foliis vix omnino sessilibus, oblongis vel oblanceolato-oblongis, obtusis vel obtusissimis, leviter amplexicaulibus, coriaceis, glabris; paniculis corymbiformibus, folia haud excedentibus, foliis hebetatis interjectis; sepalis subæqualibus, ovato-lanceolatis, acutiusculis, dorso carinatis; petalis ovatis vel ovato-oblongis, obtusis,

vel obscure retusis, breviter lateque unguiculatis, planis vel carinatis; staminibus quam petala duplo brevioribus; antheris linearibus, obtusis, apice glandulâ minutâ instructis; connectivo latiusculo; ovario ovoideo trigono, in stylum crassum staminibus subæquilongum subito desinente; stigmatibus depresso pyramidali; fructu . . . . .

*Hab.* Viget in campis ad Serra da Chapada, alt. circa 1800 ped. supra mare. Fl. Aug. (N. 183.)

Crescit circa ad  $\frac{2}{3}$  met. alt. Caulis simplex, basi incrassatus, e rhizomate lignoso cortice squamoso oblecto, plenitudine pennam anserinam duplo excedente. Folia plerumque 10·0–12·0 cm. long., 3·5–4·5 cm. lat., nervo medio subtus eminente, nervis laterilibus impressis, copiose glandulosa; folia hebetata reliquis subconformia, 0·6–1·7 cm. long. Paniculæ ad 10·0 cm. long., circa 5·0 cm. diam. Flores albi, odorati. Sepala 0·8 cm. long., 3·0–4·5 cm. lat., glabra vel medio dorso leviter rufo-puberula. Petala fere omnino glabra, margine undulata, 1·7 cm. long. Ovarium 0·4 cm. long.; stylus ovario subæquilongus.

A *Kielmeyerá corymbosá*, Mart., cujus vix est varietas, differt præsertim foliis amplexicaulibus et petalis majoribus glabris. [Bras. Or., Goyaz.]

#### MALVACEÆ.

*SIDA CORDIFOLIA* ?, Linn. Sp. Pl. ed. I. p. 684.

*Hab.* Crescit ad Santa Cruz, ubi *Tamarindo do Campo* nuncupatur.

The leaves of this plant, boiled, are used as an emollient. [In regionibus tropicis et subtropicis vulgatissima.]

*WISSADULA DECORA* (sp. nov.). Tenuiter lanato-tomentosa, caule copiose ramoso, subtereti; foliis petiolatis ovatis, nonnunquam vero ovato-lanceolatis, obtusis, basi alte cordatis, inæqualiter vel subæqualiter crenato-dentatis, 6–7-nerviis, stipulis setaceis petiolo multo brevioribus; floribus in paniculas subbreves digestis; pedicellis pro genere brevibus, calycis tomentosi lobis deltoideis, acutatis, subæqualibus; petalis calycem 3-plo excedentibus; andrœcio quam calyx longiore; ovario 3-mero, 3-loculari, glabro; stylis 3 basi ipsâ connatis; ovulis 2 vel 3 pendulis: si 2, ambobus juxta apicem loculi affixis; si 3, duobus apicalibus, tertio in medio loculo posito.

*Hab.* Abundat in campis juxta fl. Paraguay ad Puerto Pacheco. Fl. Feb. (N. 1061.) Suffrutex ? parvus, erectus, decorus. Ramuli tenues, vix 0·2 cm. crass. Foliorum lamina 1·5–3·5 cm. long., 1·0–2·0 cm. lat., subtus pallida; petioli filiformes, 1·0–ultra 2·5 cm. long., patuli; stipulæ 0·2 cm. long., deciduæ. Paniculæ circa 10·0 cm. long., subpyramidales, multifloræ, graciles; pedicelli ad 2·0 cm. (plerumque vero circa 0·5–1·0 cm.) long., filiformes, tomentosi; bracteæ stipulis subsimiles, deciduæ. Flores lutei, 1·5 cm. diam. Calycis tubus 0·3 cm. long.; lobi 0·14–0·2 cm. lat., vix 0·2 cm. long. Petala obovata, obtusissima, delicatula, basi leviter pilosa, 0·8 cm. long. Andrœcium 0·4 cm., tubo circa 0·15 cm. long. Ovarium 0·1 cm. long., puberulum; styli filiformes, andrœcio longiores, stigmatibus capitatis, circa 0·025 cm. diam. Capsula deest.

Planta cum *Wissadulá gymnanthemá*, K. Schum., comparanda, specie quæ ovario trimero sæpe gaudet, ab illâ vero optime abhorret habitu et foliis omnino disparibus, calyce minore, ovario nunquam tetramero, etc.

This is a very elegant little plant, which, in the absence of capsules, I regret my inability to assist in introducing into cultivation.

Schumann (Mart. Fl. Bras. xii. pars iii. p. 438) correctly states that the ovules of this genus are all pendulous, and not, as say the authors of the 'Genera Plantarum,' some pendulous and some ascending. With respect to the constant trimerous symmetry of the carpel, which is abnormal for the genus, I may here add that the carpellary symmetry of *W. periplocifolia*, Presl, said by Schumann to be pentamerous, is by no means so always, as on several occasions I have had before me 3- and 4-lobed carpels respectively with three or four styles. [Argentina.]

ABUTILON CRISPUM, Sweet, Hort. Brit. ed. I. p. 53.

*Hab.* Crescit ad Santa Cruz, mens. Sept. florens. (N. 296.)

Mine is a monospermous form, the ovules being always solitary in the cells, and the seeds of course solitary. Moreover, the stems, petioles, and fruits are pubescent merely, never hirsute, as is almost always the case with *A. crispum*. The plant is certainly not a good *Abutilon*, and perhaps it would be better to keep up the genus *Belœre*, Shuttlew., for the reception of monospermous Malvaceæ with *Abutilon*-like unappendaged seeds. That genus would then comprise, besides the present plant, one from Brazil recently described by Schumann under the name of *A. monospermum*, and several others with carpels constantly 1-seeded. The attachment of the ovule, too, to the septum, instead of to the bottom or top of the cell, is a fact full of suggestion. This is a question, however, on which I am not disposed to give a definite opinion. [Amer. Trop. et Subtrop., Ind. Or.]

SPHÆRALCEA MINIATA, Spach, Hist. Nat. Vég. iii. p. 352.

—, var. LEIOCARPA, S. Moore; foliis ovato-oblongis, crenatis vel breviter lobulatis, supra minute pubescentibus, subtus molliter tomentosus; inflorescentiis sessilibus vel breviter pedunculatis, floribus aggregatis; carpidiis intus basi levibus vel apice obscure reticulatis, sæpe 3-spermis.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Argentina.]

PAVONIA SPECIOSA, H. B. K. Nov. Gen. et Sp. v. p. 231.

—, var. POLYMORPHA, Garcke.

*Hab.* Reperi ad Jangada, mens. Sept. florentem. (N. 281.) [Amer. Trop., Ind. Occ.]

PAVONIA MORONGII, S. Moore ex Morong & Britton in Ann. N. York Acad. Nat. Sc. vii. p. 58; caule erecto, ramulis subpatulis, ramoso, piloso-tomentoso; foliis parvis, petiolatis, ovatis, obtusis, basi rotundatis necnon aliquanto cordatis, margine impariter grosse crenato-serratis, 7-nerviis, tenuiter tomentosus, subtus albidis; stipulis fugaceis, subulato-setaceis, petiolo brevioribus; floribus in axillis fol. superiorum vel ad apicem ramulorum solitariis, longius pedunculatis; involucri phyllis 6-9, tomentosi-pilosis,



calyce circa duplo longioribus; calycis tubo ampliato, basi 10 superne 15-nervato, lobis ovato-lanceolatis tubo subæquilongis; floribus circa 1·2 cm. diam.; carpidiis calvis, maxime depressis, ecarinatis, facile in valvulas duas dehiscentibus.

*Hab.* Crescit prope Corumbá sine numero; fl. Jan.

Suffrutex parvus, vix  $\frac{1}{2}$  met. alt. Radices albi, sparsim fibrosi. Caulis demum fere omnino glaber; pallide bruneus, juxta basin crebre longitudinaliter rimosus; ramuli graciles, teretes. Folia 1·2–2·0 cm. long., medio 1·0–2·0 cm. lat.; stipulæ puberulæ 0·35 cm. long; petioli ad 2·2 cm. long. (plerique vero breviores), graciles, pilosi-tomentosi. Pedunculi ad 3·5 cm. long. (plerumque circa 3·0 cm.), graciles, supra medium articulati, pilosi-tomentosi. Involucri phylla circa 1·0 cm. long., filiformia. Calycis piloso-tomentosi tubus 0·3 cm. long.; lobi 0·4 cm. long., 3-nervati. Flores lutei. Carpidia 0·4 cm. long. et 0·4 cm. lat., venosa (nervo medio parum eminente), in sicco virentia. Semina obconica, vix 0·3 cm. diam., glabra.

Affinis *Pavonia Balansæ*, Guerke, et *P. Hieronymi*, Guerke, sed multis notis ab ambabus dispar.

The easy splitting of the carpidia, seen also in the case of *P. Balansæ*, is curious, and might perhaps justify the creation of a new genus. The greatly depressed form of the same organs is also unlike what we usually find among the Pavonias. [Paraguaria.]

PAVONIA MUTISII, H. B. K. Nov. Gen. et Sp. v. p. 283.

—, var. HEXAPHYLLA, S. Moore. A typo discrepans vestitu pilorum patentium, habitu gracili, pedunculis tenuibus, involucris phyllis plerumque 6, raro 7, angustis (0·05 cm. lat.), sed vix, me judice, species propria.

*Hab.* Crescit ad ripam fl. Paraguay, prope Barra do São Lorenzo. (N. 10.)

Hujus varietatis exstant formæ duæ, foliis alterius subtus canescenti-tomentosis, alterius canescenti-pubescentibus, dein pubescentibus. Hæc involucris phyllis brevibus calycem vix excedentibus gaudet, illius involucris phylla contra calyce duplo longiora. [Bras. Or., Colombia.]

PAVONIA ROSA-CAMPESTRIS, A. Juss. in A. St.-Hil. Flor. Bras. Merid. i. p. 236.

*Hab.* Crescit in cacumine montium Serra da Chapada, mens. Aug. florens. (N. 181.) [Bras. Or.]

PAVONIA OPULIFOLIA (sp. nov.); caule erecto, subtereti, stellatim tomentoso, mox appresse pubescente; foliis petiolatis, late cordatis, 3–5-lobatis (plerumque 3-lobatis), impariter grosse crenato-serratis, 7–9-nerviis, sparsim stellatim pubescentibus et ad nervos tomentosis; stipulis lanceolatis ovato-lanceolatisve, quam petioli brevioribus; floribus in axillis fol. superiorum solitariis; pedunculis quam petioli longioribus; involucris phyllis 13–14, calyci subæquilongis; calycis lobis lanceolatis, tubo longioribus; corollâ vix 2·0 cm. diam.; tubo stamineo 0·6 cm. long.; stylis obscure puberulis; carpidiis calvis, medio dorso leviter carinatis.

*Hab.* Inveni mens. Aug. ad ripas fl. Cuyabá vigentem, loco longinquo ab urbe Cuyabá iter duorum dierum. (N. 3.)

Suffrutex incertæ altitudinis, erectus. Internodia 1·0-2·7 cm. long. Folia 2·0-5·0 cm. long., medio 2·0-4·5 cm. lat., subtus decoloria; petioli 1·2-2·0 cm. long., patuli, tomentosi; stipulæ 0·4 cm. long., scariosæ, pubescentes. Pedunculi 1·5-2·5 cm. long., tomentosi. Involucri phylla anguste linearia, tomentosa, usque ad 1·1 cm. long. Calycis tomentosi tubus amplius, 10-nervosus, 0·3 cm. alt.; lobi vix 0·8 cm. long., 3-nervosi, recte vel oblique acuti. Petala lutea, parum obliqua, obovata, obtusissima, breviter lateque unguiculata, circa 2·0 cm. long., medio 1·0 cm. lat. Andrœcium circa 1·5 cm. long. Styli andrœcium paullo excedentes. Carpidia 0·5-0·6 cm. long., medio dorso 0·35 cm. lat., lateribus eximie venosis fere cristatis, apice obtusa.

Affinitatem præbet cum *Pavoniâ humifusâ*, A. Juss., quæ habitu dispari, foliis majoribus longius petiolatis haud impariter crenato-serratis, internodiis longioribus, stipulis subulato-filiformibus, involucri phyllis 14-18 inter alia propria gaudet.

PAVONIA OPULIFOLIA, var. MAJOR, S. Moore. A typo divergens habitu robustiore, staturâ altiore? (ultrametrâli), floribus majoribus, involucri phyllis calyce fere duplo longioribus (vix ad 2·0 cm. long.) hirsutis, necnon carpidiis paullo majoribus (0·6-0·7 cm. long.) apice acutis, in sicco fuscioribus.

*Hab.* Crescit in campis ad ripas fl. Paraguay juxta Corumbá, ubi mens. Jan. flores et fructus præbet. (N. 913.)

At first sight this plant and the type seem very unlike, but close examination reveals so many points of agreement that I refrain from making two species of them. The specimens which have served for the description of the type are small pieces hastily gathered, on our way up to Cuyabá, at one of the log-cutting settlements; hence they probably do not do full justice to the species—an additional reason, this, for the course here taken. The difference in time of flowering of type and variety is noteworthy.

In the description of the length of the staminal tube (in species of *Pavonia*) I have measured only the distance between its bottom and the point whence the first batch of stamens is given off. [Bras. Or.]

PAVONIA VELUTINA, A. Juss. in A. St.-Hil. Fl. Bras. Merid. i. p. 233.

*Hab.* Fructificat ad Serra da Chapada mens. Aug. (N. 140.) [Amer. Austr. Trop.]

CIENFUEGOSIA PHLOMIDIFOLIA, Garcke, in Bonplandia, viii. p. 148.

*Hab.* Floret ad Jangada mens. Sept., itaque ad Santa Cruz mens. seq. (Nn. 270, 452.) [Amer. Austr. Trop.]

CIENFUEGOSIA SULPHUREA, Garcke, in Bonplandia, viii. p. 148.

*Hab.* Reperi ad Puerto Pacheco mens. Feb. florentem. (N. 1056.)

The first recorded tropical habitat for this plant. [Uruguaria, Argentina, Paraguaria.]

BOMBAX?, sp., forsan ex affinitate *B. parvifloræ*, Mart. et Zucc. Arbor 6-metralis, capsulis oblongis lanâ fulvescenti repletis, valvis 8·0 cm. long., 1·5-2·0 cm. lat., nitidulis, extus

ochraceo-bruneis, intus cinereis; seminibus, magnitudine pisi, testâ bruneâ obtectis.  
Nec flores nec folia suppetebant.

*Hab.* Ad Cuyabá mens. Aug. fructificat. (N. 41.)

The wool is used for stuffing purposes at Cuyabá.

#### STERCULIACEÆ.

*HELICTERES GUAZUMÆFOLIA*, H. B. K. Nov. Gen. et Sp. v. p. 304.

*Hab.* Crescit ad Santa Cruz, necnon juxta Corumbá. (Nn. 383\*, 904, 1002.) [Amer. Trop.]

*HELICTERES CORYLIFOLIA*, Nees & Mart. in Nov. Act. Acad. Nat. Cur. xii. p. 44.

*Hab.* Ad Santa Cruz flores præbet mens. Sept.—Nov. (N. 294.) [Bras. Or.]

*HELICTERES CHAPADENSIS* (sp. nov.); caule erecto, tereti, sparsim foliato, molliter lanato-tomentoso, demum fere glabro; foliis parvis, petiolatis, ovatis, obtusis vel obtusissimis, margine impariter serratis, molliter ac tenuiter lanato-tomentosis; stipulis subulato-filiformibus, petiolo fol. evulutorum brevioribus, firmis, tomentosis, deciduis; dichasiis 2-3-floris ad apicem ramulorum brevium digestis; prophyllis filiformibus, tomentosis, caducis; floribus horizontalibus; calycis elongati, anguste tubulosi, basi sensim coarctati, lanato-tomentosi lobis inæqualibus lanceolatis vel ovato-lanceolatis, acuminatis, tubo 3-plo brevioribus; petalis calycem circa  $\frac{1}{4}$  excedentibus, anguste spathulatis, obtusis, longius unguiculatis, supra unguem dentibus 2 paullo curvatis auctis vel omnino calvis; gynophoro calycem ultra 3-plo excedente, curvato, filiformi, glabro; tubo stamineo vix evoluto; staminodiis spathulatis, acutis; ovario quam calyx multo brevior, oblongo, leviter contorto; stylis connatis, tortis; fructu ignoto.

*Hab.* In convalle ad Serra da Chapada reperi mens. Aug. (N. 76.)

Suffrutex erectus, 1 met. alt., inferne aphyllus, sparsim ramosus. Ramuli breves (nec ultra 1.0 cm. long.), ex axillis fol. dilapsorum soli floriferi. Foliorum lamina ad 3.0 cm. long., medio ad 3.2 cm. lat., subtus eximie reticulato-venosa et 5-nervia; petiolus ad 1.3 cm. long., pinguis, lamina sub ipsa incrassatus, lanato-tomentosus; stipulæ circa 0.5 cm. long. Pedicelli 0.5-0.7 cm. long., 0.075-0.1 cm. crass., tomentosi. Prophylla ad 0.8 cm. long., plerumque incurva. Calycis tubus 1.3-1.6 cm. long., imâ basi tantummodo 0.2 cm. lat., superne usque 0.4 cm. amplificatus, haud nervosus; lobi circa 0.5 cm. long. Petala 2.2-2.4 cm. long., coccinea, eorum unguis 0.7 cm. long. Gynophorum 6.5-7.0 cm. long., superne attenuatum. Stamina 10; antheræ 0.13 cm. long.; staminodia antheris subæquilonga. Ovarium vix 0.2 cm. long.

Cum *H. molli*, K. Schum., comparanda, abs quâ nullo negotio dignoscenda, imprimis foliis minoribus, subtus eminenter nervosis, haud argute serratis, calycis tubo coarctato, etc. [Bras. Or., Goyaz.]

*HELICTERES BREVISPIRA*, A. St.-Hil. Fl. Bras. Merid. i. p. 274.

*Hab.* Floret ad Santa Cruz mens. Oct. (N. 650.) [Bras. Or., Nov. Granat.]

*HELICTERES ORTHOTHECA* (sp. nov.); caule erecto, tereti, tomentoso, demum fere glabro, cortice subcinereo, crebro lenticellifero, anguste elliptice rimoso oblecto; ramulis tomentosis, copiose foliatis; foliis petiolatis, ovatis, acutis vel obtusis, impariter crenato-serratis, supra stellatim pubescentibus, subtus albide tomentosis; stipulis subulato-filiformibus, quam petioli brevioribus, concinnis, pedunculatis, 4-7-floris, nonnunquam apicem versus ramulorum subcongestis; prophyllis caducissimis; floribus horizontalibus, calyce amplo tubuloso inæqualiter 5- (an semper?) lobo tomentoso, lobis tubo 3-plo brevioribus; petalis calycem circa  $\frac{1}{4}$  excedentibus, spathulato-panduriformibus, apice bilobis, ungue quam lamina duplo brevioribus; gynophoro calycem 4-plo excedente, curvato, in sicco plerumque subligulato, glabro; tubo stamineo evoluto; staminodiis lineari-spathulatis; ovario quam calyx multoties brevioribus, oblongo, recto; stylis rectis; fructu elongato, recto, 5.3 cm. long.

*Hab.* Frequens in fruticetis ad Santa Cruz, ubi fl. et fruct. gerit mens. Nov. et Dec. (N. 556.)

Frutex circa ad 3 met. alt. Caulis circa 0.6 cm. diam. Foliorum lamina 3.0-8.0 cm. long., 2.0-7.5 cm. lat., 7-8-nervia, chartacea; petioli 1.0-1.5 cm. long., tomentosi. Stipulæ circa 0.8 cm. long., tomentosæ. Pedicelli 0.2-0.7 cm. long., tomentosi. Calycis utrinque tomentosi tubus vix 1.5 cm. long., medio 0.8 cm. lat., eminenter 10-nervatus; lobi 0.5 cm. long., late ovati, obtusi vel obtusiusculi, 0.4-0.6 cm. long. Petala 2.5 cm. long., juxta apicem 0.7 cm. lat., rubra. Gynophorum vix 8.0 cm. long., vix 0.1 cm. lat., sub fructu 0.35 cm. lat. Tubus stamineus 0.3 cm. lat., et circa 0.3 cm. long., late cyathiformis, glaber, eminenter nervosus. Stamina 10. Staminodia 0.4 cm. long., 1-nervosa. Ovarium vix 0.3 cm. long., tenuiter tomentosum. Fructus oblongi; valvulæ apice sat subito coarctatæ, dorso tomento tenui gaudentes, eminenter nervosæ, leviter carinatæ.

Species ob fructum magnum, elongatum, rectum nulli nisi *H. Rusbyi*, Britton (*Balansa*, n. 1602), affinis, cujus folia attamen disparia longius petiolata utrinque tomentosa, gynophorum longius, fructus brevior (4.5-5 cm. long.), etc. [Bolivia, Paraguaria.]

*MELOCHIA GRAMINIFOLIA*, A. St.-Hil. Flor. Bras. Merid. i. p. 160.

*Hab.* Crescit ad Jangada, itaque ad Santa Cruz. (Nn. 258, 311.) [Bras. Or., Goyaz, Nov. Granat., Guiana.]

*MELOCHIA* (§ *RIEDLEA*) *CORUMBENSIS* (sp. nov.). Suffruticosa, molliter pubescenti-tomentosa, caule stricto subtereti; foliis petiolatis, oblongo-ovatis, obtusis, basi rotundatis vel obtusis; irregulariter dentatis vel dentato-crenatis; inflorescentia petiolo brevioribus (nonnunquam vero subæquali vel longiore), cymosa, pluriflora; prophyllis linearibus, acutis; calycis cupuliformis lobis subdistantibus, deltoideo-acuminatis; petalis obovato-oblongis, obtusis, basi breviter unguiculatis, glabris; tubo stamineo puberulo (floris brevistyli petalis brevioribus); ovario sessili.

*Hab.* Viget in locis planis juxta Corumbá, mens. Jan. fl. (N. 905.) Eandem plantam in Matto Grosso legit Leeson, in speciminibus in Herb. Brit. Mus. servatis. Caulis 3.0-4.5 cm. crass., arcte in longitudinem sulcatulus. Stipulæ deciduæ, lineari-

subulatae, acuminatae, pilosi-tomentosae, circa 0.4 cm. long. Petioli 1.2–3.2 cm. long., sub laminâ paullo ampliati ibidemque nonnunquam arctissime bialati, piloso tomentosi; lamina 4.0–7.0 cm. long., basi 5–8-nervis. Prophylla piloso-tomentosa, 0.2 cm. long. Cymae ad 2.0 cm. diam. Calycis lobi 0.2 cm., tubus vix 0.3 cm. long. Petala 0.7 cm. long., purpurea. Filamenta fl. brevistylum gynæcio duplo longiora. Capsula hirsuto-tomentosa, oblate sphaeroidea, pentagona, vix 0.5 cm. diam. Semina bilateraliter compressa, levia, nigra, 0.2 cm. long.

*Melochia cinerascens*, A. St.-Hil. et Naud., arcte affinis, sed indumento, cymis plurifloris, floribus majoribus, calycis lobis deltoideo-acuminatis nec subulato-filiformibus, petalis longioribus, basi ipsâ (nec abrupte mediocriter) unguiculatis, et staminum tubo puberulo vix conspecifica. [Amazonia.]

WALTHERIA VISCOSISSIMA, A. St.-Hil. Fl. Bras. Merid. i. p. 150.

*Hab.* Crescit prope Barra da São Lorenzo. (N. 9.) [Bras. Or., Goyaz, Guiana, Nov. Granat.]

GUAZUMA ULMIFOLIA, Lam. Encyc. iii. p. 52.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 578.) [Amer. Trop.]

BYTTNERIA CAMPESTRIS (sp. nov.). Arbuscula debilis, spinosa, ramosissima; ramulis patulis, pubescentibus, mox glabris et cinereis, internodiis brevibus, saepe curvatis; foliis parvis, coriaceo-membranaceis, breviter petiolatis, oblongis, obtusis, basi parum rotundatis, integerrimis, supra glabris, subtus in axillis nervorum praecipuorum barbatis, nervo medio subtus eminente ibidemque juxta basin glandulâ oblongâ vel oblongo-ovali notato; umbellis plerumque solitariis, 2–6-floris (rarissime 1-floris); pedunculis brevibus vel longiusculis; calyce pubescente; petalorum ungue late lineari, alis exiguis, patentibus, subdeltoideis, glabris; ligulâ filiformi, tenui, villosulâ: ovario ovoideo, tuberculato; stigmatibus obscurissime 5-lobulato.

*Hab.* Crescit in campis ad ripas fl. Paraguay ad Carandajinho, inter Corumbá et Dourados. (N. 1015.)

Frutex ascendens, spinis minutis disjectis obtectus. Foliorum lamina ad 4.7 cm. long., 1 cm. lat.; costae secundariae utrinque 6–8, erecto-ascendentes, rarius leviter fornicatae, ipso sub margine subito arcuatim-conjunctae; petioli vix ad 0.4 cm. long., puberuli. Stipulae minutae, subulatae, caducissimae. Pedunculi ad 0.8 cm. long., filiformes; pedicelli 0.5 cm. vel ultra long., capillares, glabri. Calycis lobi ovato-lanceolati, acuminati, 0.35 cm., long., nervosi. Petala 0.6 cm. long.; unguis 0.15 cm. long. Tubus stamineus 0.1 cm. long., primâ quartâ parte divisa; antherae 0.05 cm. long., 0.16 cm. lat., approximatae. Pistillum 0.1 cm. long., ovario duplo longius.

*B. filipedi*, Mart., proxima, sed habitu ramosissimo, ramulis pubescentibus, spinis minutis, foliis diversiformibus, brevius petiolatis, nequaquam obliquis, basi glanduliferis, necnon flore dispari inter capita alia speciem propriam rite dijudicari. [Bras. Or., Paraguaria.]

**BYTTNERIA LEESONI** (sp. nov.). Suffruticosa, ramosa, inermis; ramulis 5-angulatis vel 5-quetris, glabris; foliis superioribus solummodo visis, parvis, linearibus, brevipetiolatis, integerrimis, glabris, lævibus; inflorescentiâ ut in *B. ramosissimâ*, Pohl; calycis laciniis ovato-lanceolatis acuminatis, integris; petalorum cucullo obovato; alis pilosis; ligula calycem bene superante, pilosâ; staminodiis tridentatis; ovario globoso, tuberculato, basi incrassato.

*Hab.* Matto Grosso (*Leeson*, in Herb. Brit. Mus.).

Ramuli rigidi, usque 0.3 cm. diam., in sicco pallide brunei. Folia rigida, modo 1.5 cm. long., vix 0.1 cm. lat., petiolis laminæ æquilatis vix ultra 0.1 cm. long. fulta, basi glandulosa. Pedunculi et pedicelli graciles, usque 0.8 cm. long., hi sæpe sub flore incrassati. Calyx totus 0.5 cm., tubus 0.15 cm. long. Petalorum unguis vix 0.1 cm. long.; cucullus circa 0.1 cm. lat.; ligula 0.7 cm. long., filiformis, basi ampliata. Tubus stamineus 0.13 cm. alt. Staminodia medio dorso dente minuto munita. Pistillum totum 0.15 cm. long. Capsula 0.6 cm. long., 0.7 cm. lat., depressa, globosa, alba, tuberculis acutis, erectis, apice curvatis, fuscis, densiuscule oblecta. Semina 0.4 cm. long., 0.2 cm. lat., pallide grisea, verrucis parvis nigris instructa.

Ab affini *B. ramosissimâ*, Pohl, abhorret foliis alienis, petalorum ligulis multo longioribus et una cum alis pilosis, ovario majore basi incrassato, necnon capsulis aliquatenus diversis. [Goyaz.]

**BYTTNERIA MURICATA** (sp. nov.). Fruticosa, ramosa, ramis et ramulis spinis abbreviatis parum recurvis sparsim vel sat abunde munitis, his primo minute tomentosus, deinde puberulis vel glabris; foliis omnibus longiuscule petiolatis, late cordatis, nunc obtusis, nunc obtusissimis, membranaceo-coriaceis, palmatim 5-7-nervibus, utrinque scabridis; inflorescentiâ axillari vel terminali; floribus ignotis; capsulâ globosâ, tuberculis pyramidalibus, basi ampliatis, apice spinuloso-acuminatis dense muricata.

*Hab.* Crescit ad ripas fl. Paraguay inter Santa Cruz et Diamantino, ubi mens. Oct. fructificat. (N. 636.)

Rami teretes, arrecti, juveniles minute tomentosi, mox puberuli, dein scabriusculi et cortice purpureo-cinerascenti crebre longitrorsum rimoso obducti; rami usque 0.5 cm., ramuli 0.1-0.2 cm. diam. Foliorum lamina 7.0-10.0 cm. long., 4.5-11.0 cm. lat. (mediocris 8.5×7.0 cm.), inermis, margine impariter crenulata, raro obscurissime lobulata, utrinque pilis stellatis depressis scabrida, subtus decolor; costæ secundariæ (basalibus exemptis) 4-5, patulo-ascendentes, usque ad marginem rectæ vel fere rectæ, rarius leviter arcuatæ, costas rectas tertii ordinis abundanter emittentes, costæ omnes supra planæ, vix impressæ, subtus eminentes, et basi glanduliferæ vel nonnullæ glandulâ carentes, raro omnes eglanduliferæ; petioli 2.0-4.0 cm. long., minute tomentelli, deinde pubescentes vel puberuli, subquadrangulares, breviter canaliculati, nunc aculeis paucis (1-2) parvis recurvis onusti, nunc inermes. Pedunculus sub fructu incrassatus, 0.5-0.8 cm. long., 0.15 cm. lat. Pedicellus sub fructu pedunculo subæquilongus et subsimilis. Capsula 1.5 cm. long., 1.3 cm. diam., scabrida, tubercula 0.15-0.2 cm. long., basi 5-6-angularis. Semina 0.7 cm.

long., 0·3 cm. lat., subtrigona, apice breviter spinuloso-acuminata, obsolete rugata, brunea; hilum albidum; chalaza purpurea.

Planta forte cum *Byttneriâ catalpæfoliâ*, Jacq., comparanda, specie inermi, cujus folia nequaquam scabrida, pedicelli et capsulæ omnino dispares, etc. [Bras. Or., Amazonia, Peruvia, Venezuela.]

**BYTTNERIA CHARAGMOCARPA** (sp. nov.). Suffruticosa, sparsim ramosa, inermis; ramis crebre foliatis, leviter undulatis, subteretibus, pubescentibus, deinde glabris; foliis omnibus breviter et patule petiolatis, oblongis vel anguste oblongo-ovatis, obtusis, basi leviter coarctatis, subrotundatis, interdum levissime cordatis, coriaceo-membranaceis, mox, axillis nervorum pag. inf. exemptis, glabris vel fere glabris; costis secundariis 7–10 approximatis distantibusve, angulis latis insertis, rectis vel levissime arcuatis, juxta marginem subito fornicatim-conjunctis, subtus admodum, supra leviter eminentibus; inflorescentiâ abbreviatâ, ex umbellâ solitariâ brevipedunculatâ 4-flora (an semper?) composita, floribus parvis, calycis pubescentis lobis triangulari-lanceolatis, breviter acuminatis; petalorum cucullo late lineari, superne subito amplificato; ligulâ e basi latâ lineari-lanceolatâ, sursum acuminatâ, puberulâ; alis parvis deltoideis incurvis; staminodiis breviter 3-lobulatis; ovario globoso, albido-tomentoso, mox plane tuberculato; stigmatibus obscure 5-lobulatis; capsulâ subglobosâ, tuberculis subcylindricis admodum elevatis, apice clavellatis, densissime obsitâ.

*Hab.* Scheda prætermissa, locum natalem indicare nequeo, sed verisimiliter crescit ad Santa Cruz vel alibi in viciniâ.

Ramuli 0·2–0·3 cm. diam., grisei, rimis anguste ellipticis abundanter insculpti, intervallis plerumque 1·0–1·5 cm. long. foliigeri. Folia pleraque 7·5–10·0 cm. long., et 3·5–5·0 cm. lat., margine tenuiter cartilaginea ibique obsolete undata; costa media dorso basi glandulifera; petioli plerumque 0·5–0·7 cm. long., patuli, sæpe decurvi, supra breviter canaliculati, pubescentes vel puberuli. Pedunculus sub flore modo 0·25 cm. long., sat validus, puberulus, sub fructu incrassatus et usque ad 1·3 cm. elongatus; pedicelli pedunculo dimidio longiores, puberuli. Calycis lobi circa 0·25 cm. long., nervosi. Floris nondum expansi petala 0·28 cm. long., ungue vix 0·1 cm. long. Tubus stamineus ejusdem floris circa usque ad  $\frac{1}{2}$  divisus, et antheræ circa 0·03 cm. long. Pistillum 0·1 cm. long., ovarium solum duplo excedens. Capsula 1·2 cm. long. et lat., minute tomentella, tubercula summa erecta, 0·3–0·5 cm. long., inferiora patula vel decurva et paullo breviora. Semina 0·7 cm. long., 0·4 cm. lat., subtrigona, ferruginea, levia; hilum albidum; chalaza ferruginea.

Species nulli mihi cognitæ affinis, et ob fructum singularem facili obtutu cognoscenda.

#### TILIACEÆ.

**CORCHORUS ARGUTUS**, H. B. K. Nov. Gen. et Sp. v. p. 262.

*Hab.* Inveni juxta Corumbá mens. Jan. (N. 1006.) [Bras. Or., Guiana, Nov. Granat.]

**LUHEA UNIFLORA**, A. St.-Hil. Fl. Bras. Merid. i. p. 290.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 591.) [Bras. Or., Bolivia.]

LUHEA SPECIOSA, Willd. in Neue Schr. Gesell. nat. Fr. Berlin, iii. p. 409.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi floret mens. Aug. (N. 139.)  
[Amer. Trop., Cuba.]

SLOANEA MAXIMOWICZIANA (?), K. Schum. in Mart. Fl. Bras. xii. pars iii. p. 192.

*Hab.* Viget in ripâ fl. Paraguay inter Santa Cruz et Diamantino. (N. 614.)

The specimens are without flowers, hence I am unable to determine the species with certainty. If not *S. Maximowicziana*, we have here a new species closely allied to it.  
[Bras. Or.]

#### LINACEÆ.

ERYTHROXYLON ANGUIFUGUM, Mart. in Abhandl. k. bayer. Akad. Wiss. iii. p. 362.

*Hab.* Crescit in ripâ fl. Paraguay, haud procul a Tres Barras, mens. Oct. florens.  
(N. 620.) [Matto Grosso.]

ERYTHROXYLON DAPHNITES, Mart. in Abhandl. k. bayer. Akad. Wiss. iii. p. 363.

*Hab.* Reperi in angustiis ad Serra da Chapada, ubi floret mens. Aug. (N. 77.)

After spending much time over this plant, I come to the conclusion that the above is its correct name. Mine is a form with long stamens, much longer than in the figures of this species in Mart. Fl. Bras. xii. pars iii. tab. 26. [Goyaz.]

ERYTHROXYLON NITIDUM, Spreng. Syst. Veg. ii. p. 390.

*Hab.* Reperi ad Santa Cruz mens. Nov. (N. 452.) [Bras. Or., Guiana.]

ERYTHROXYLON CAMPESTRE, A. St.-Hil. Fl. Bras. Merid. ii. p. 97.

*Hab.* Legi aut ad Cuyabá aut ad Serra da Chapada mens. Aug. (N. 151.)

By an oversight I omitted to note at the time the habitat of this plant. [Bras. Or., Goyaz, Guiana.]

ERYTHROXYLON PRÆCOX (sp. nov.); ramulis gracilibus, brachycladis, ramentis arcte imbricatis instructis; foliis juvenilibus oblongo-ovatis, basi angustatis, apice mucronatis, adultis verisimiliter membranaceis, subtus plicis destitutis; stipulis petiolos paullo excedentibus, crebre striatis, dorso primo ferrugineo-tomentosis, dein glabris, floribus præcocibus, pedicellatis; sepalis parvis 0.12 cm. long.; petalis vix 0.3 cm. long.; drupa . . . .

*Hab.* Crescit in sylvâ primævâ ad Santa Cruz, ubi floret mens. Sept. (N. 341.)

Frutex paullo ultrametralis, deorsum aphyllus. Rami 0.3-0.4 cm. diam., teretes cortice cinereo longitrorsum rimoso obtecti, ramuli brachycladigeri erecto-ascendentes, circa 0.1 cm. diam. Novelli compressi. Folia vix omnino evoluta 2.0 cm. long., 1.2 cm. lat., glabra, subtus pallida, adulta desiderantur; costa media utrinque prominula, costæ secundariæ plures, debiles, angulo fere recto insertæ; venulæ arcte reticulatæ, supra vix aspectabiles; petioli (an omnino evoluti?) 0.2 cm. long. Stipulæ oblongæ, dorso carinatæ, apice breviter bisetuliferæ, striis pluribus instructæ, subscariosæ, 0.25 cm. long. Ramenta triangulari-lanceolata, inferiora obtusa, dorso brevissime aristata vel nuda, superiora acuminata et basi aristâ dorsali circa 0.1 cm. long. munita, omnia carinata, crebre striata, membranacea. Prophylla 0.1 cm. long., spathulato-oblonga, superne ciliato-erosula ibique dorso pilifera. Pedicelli 0.3-0.5 cm. long., sursum dilatati. Sepala basi connata, tri-



angulari-oblonga, acuta. Petala alba, oblonga, obtusa, ligula duplicata; lobi laterales antici, late ovati, lobo intermedio minimo lanceolato rigide acuminato multo longiores; lobi laterales postici anticos semiaequantes, connati, apice inflexi. Tubus stamineus calyci subaequilongus, ore breviter lobulatus; filamenta subaequilonga, tubum stamineum et stylos florum brachystylorum tantum scrutatorum circa 2-plo excedentia. Ovarium oblongo-ovoideum, tubum stamineum aequans; styli 3, discreti; stigmata clavellato-capitata.

Species fortasse juxta *Erythroxyton myrsinite*, Mart., interponenda, ab eo attamen multis signis gravioris momenti insigniter abhorret. [*Bras. Or.*]

*ERYTHROXYLON DURUM* (sp. nov.). Fruticosa, ramosa, glabra, ramulis teretibus, sat crassis, in longitudinem eximie rimatis, cinereis, foliis brevipetiolatis, majusculis vel submediocribus, oblongo-obovatis, obtusis vel obtusissimis, basin versus sensim angustatis, rigide coriaceis; stipulis elongatis, lineari-lanceolatis, basi amplexicaulibus, petiolo longioribus; ramentis stipulis conformibus, apice longiuscule apiculatis, superioribus dorso prope basin aristatis: sepalis sub anthesi 0.25 cm. long., sub fructu paullulum (usque 0.3 cm.) auctis, ovatis, breviter acuminatis, medio nervis parallelis approximatis percursis, petalis vix 0.4 cm. long.

*Hab.* Reperi in sylvâ primævâ prope Santa Cruz, necnon in ripa fl. Brasinho; floret mens. Sept. et Oct. (Nn. 342, 500.)

Frutex diffusus, ramosus. Rami obsolete-puberuli, mox glabri. Foliorum lamina usque 17.5 × 9.0 cm., modica 11.0 × 6.5 cm., supra nitida, subtus pallida; costa media supra impressa, subtus admodum eminentes; costæ secundariæ utrinque circa 12, sæpius plus minus undulatæ, dein subito fornicatim-conjunctæ, subtus prominulæ; venulæ laxè reticulatæ, parum eminentes; petioli circa 0.5 cm. long., sat obesi, supra late canaliculati. Stipulæ sagittato-lanceolatæ, dorso bicarinatæ, longitrorsum striatæ, membranaceæ, 0.12 cm. long., apice setis tribus 0.12–0.2 cm. long. instructæ, castaneæ. Ramenta mox laxiuscula, inferiora superioribus multo breviora, illa triangularia, hæc lanceolata et apice tri-setulifera, inferiora dorso breviter aristata vel nuda, superiora basi aristâ vix usque 0.2 cm. long. onusta. Prophylla conferta, ovato-lanceolata, acuminata, subscariosa. Flores nodis bracteatis plurifloris insidentes, et pedicellis ± 1.0 cm. long. quadrangularibus fulti. Sepala basi connata, in anthesi 0.2 cm. lat. Petala alba, oblonga, obtusa, circa 0.18 cm. lat.; ligula duplicata, petali laminâ circa duplo brevior; lobi laterales antici concavi, ovati, obsolete undulati, lobum intermedium oblongum bifidum bene superantes; lobi laterales postici anticos semiaequantes, connati, apice inflexi. Tubus stamineus circa 0.12 cm. long., i. e. calycem semiaequans, ore undulato. Florum dolichostylorum a me tantummodo scrutatorum filamenta ejusdem seriei inaequilonga, breviora tubum stamineum ½-plo excedentia, et filamenta longiora sæpissime ⅔ æquantia. Ovarium subglobosum, tubum stamineum paullo excedens; styli 3, discreti; stigmata capitata. Drupa ovoideo-oblonga, 0.7 cm. long.

Ex affinitate *E. macrophylli*, Mart., abs qua facili obtutu secernendum ob folia minora diversiformia, stipulas longius setuliferas, inflorescentiam disparem, sepala breviora ovata nequaquam flabellatim-nervosa, tubum stamineum calycem semiaequantem neque eo multo brevior, drupam fere duplo minorem, etc. [*Amazonia, Guiana.*]

## MALPIGHIACEÆ.

BYRSONIMA VERBASCIFOLIA, Rich. in Ann. Mus. Paris, xviii. p. 481.

*Hab.* Ad Serra da Chapada satis abundat, mens. Aug. florens. (Nn. 154, 155.) [Amer. Austr. Trop.]

BYRSONIMA CYDONIÆFOLIA, A. Juss. in A. St.-Hil. Fl. Bras. Merid. iii. p. 77.

*Hab.* Crescit ad Santa Cruz, ubi floret mens. Sept.-Nov. et Dec. fructificat.

This seems to be the var. *chiquitensis* of Jussieu's Monograph (p. 27).

A very common small tree, of which, by some oversight, I failed to obtain flowering specimens.

BYRSONIMA CYDONIÆFOLIA, A. Juss., var. CUNEATA, S. Moore, a typo abhorrens foliis lanceolatis deorsum cuneatis, pedunculis et pedicellis gracilibus, his elongatis. An potius species propria?

*Hab.* Fruticulus  $\frac{2}{3}$ -metralis; floret ad Jangada mens. Sept. (N. 274.) [Bras. Or., Bolivia.]

BYRSONIMA COCCOLOBÆFOLIA, H. B. K. Nov. Gen. v. p. 148.

*Hab.* Ad Santa Cruz flores albos ostendit mens. Nov. (N. 782.) [Amer. Austr. Trop.]

BYRSONIMA INDORUM (sp. nov.). Arbuscula, abunde ramosa; foliis brevipetiolatis, anguste obovato-oblongis, raro obovatis, obtusis, nunc brevissime et obtuse cuspidatis, basi acuminatis, tenuiter coriaceis, appresse pilosulis, fere glabris; racemis terminalibus paucifloris, subferrugineo-tomentosis; bracteis bracteolisque approximatis, illis triangulæ-oblongis; pedicellis  $\frac{1}{2}$ -plo brevioribus has rotundato-ovatas 2-plo excellentibus; petalis flavis; antherarum sagittatarum loculis ultra connectivum obtusum brevissime productis una cum ovario piliferis.

*Hab.* Reperi in ripâ fl. dos Bugres mens. Oct. florentem. (N. 501.)

Rami usque 0.5 cm. diam., teretes, cinerei, rimosi, et lenticelliferi; ramuli appresse hirsutuli, cito glabri. Foliorum lamina supra haud nitida, subtus paullulum decolor, modica 10.0 cm. long., 4.5-6.0 cm. lat.; costæ secundariæ utrinque 8-10 angulis fere rectis insertæ, leviter arcuatæ, marginem versus undulatim et arcuatim conjunctæ, una cum costâ mediâ supra parum subtus maxime eminentes; venulæ arcte reticulatæ utrinque prominulæ; petioli usque 1.0 cm. long., appresse hirsutuli. Racemi 3.0-7.0 cm. long. Bracteæ apice acutæ, dorso appresse puberulæ, 0.2 cm. long. Bracteolæ 0.1 cm. long., obtusæ, puberulæ. Pedicelli 0.3 cm. long., patuli, subferrugineo-tomentosi. Flores expansi (ex schedis meis flavi) desiderantur. Calycis 10-glandulosi lobi ovati, obtusi, puberuli, margine ciliolati, 0.28 cm. long.; glandulæ 0.12 cm. long., oblongo-obovatae. Petala extus glabra. Filamenta brevissima, dense pilifera; antheræ 0.2 cm. long., 0.06 cm. lat. Ovarium triangulæ-ovoideum, vix 0.1 cm. long.; styli crassiusculi, glabri, paullo ultra 0.2 cm. long., apice incurvi. Fructus ignotus.

Forsan cum *Byrsonima intermedia*, A. Juss., et *B. leviqata*, DC., componenda, ab

ambabus revera sat discrepat ob folia necnon bracteas dissimiles. Illius antheræ insuper apice cuspidato-acuminatæ, hujus antheræ necnon ovarium glabrum, etc. [Bras. Or., Amazonia.]

**THRYALLIS LABURNUM** (sp. nov.). Frutex volubilis, caule sat tenui, subtereti, tenuiter sublutescenti-tomentoso, abunde ramuloso; foliis amplis, petiolatis, late ovatis, obtusis vel acutis, basi rotundatis, supra mox (præter nervos) glabris, subtus tenuiter albo-tomentosis, chartaceo-membranaceis, in sicco virescentibus; floribus ultra 2·0 cm. diam. ex axillis foliorum superiorum ortis et in racemis pauci- vel plurifloris foliis hebetatis seu validis, intermixtis, digestis, aut paniculas terminales plurifloras patulas conficientibus; calycis ampli tenuiter tomentosi segmentis inæqualibus, ovatis vel ovato-oblongis, obtusis; petalis inæqualibus, longe unguiculatis, rotundatis vel rotundato-reniformibus, margine erosulis; staminibus calyce duplo brevioribus; fructibus magnis triquetris, fere 0·5 cm. diam.

*Hab.* Crescit in nemorosis prope Corumbá, mens. Jan. florescens. (N. 970.) Incolit itaque Brasiliam Orientalem, scilicet provinciam S. Catharinam, unde misit Tweedie (ex spec. in Hb. Kew.) et Fritz Müller (n. 188 in Hb. Kew.).

Ramorum floriferorum caulis 2·0–3·0 cm. diam., demum glaber et subcinereus et in longitudinem ramosus. Foliorum pagina nonnunquam basi parum obliqua, ad 11·0 cm. long. (plerumque vero 8·0–10·0 cm.) et 5·0–6·0 cm. lat. (raro 8·0 cm.), margine obscure undulata, subtus imâ basi (sub apice petioli ipsius) glandulas duas elevatas tomentosas rotundas vel parum ellipticas 0·1 cm. diam. præstans; costæ secundariæ utrinque plerumque 5–8 angulis latis insertæ, primo rectæ, marginem versus subito arcuatim-conjunctæ, una cum costâ mediâ supra impressâ subtus eminentes; venulæ laxè reticulatæ, inconspicuæ; petioli 0·8–1·7 cm. long., pingues, breviter canaliculati, ima basi subito incrassati, molliter tomentosi. Inflorescentiæ axis molliter tomentosâ; racemi foliis breviores, paniculæ pleræque folia superantes; bracteæ caducissimæ, haud visæ; pedicelli graciles, tomentosi, 0·7–1·0 cm. long. Flores 2·5 cm. diam. Calycis segmenta ad 0·85 cm. long., utrinque tenuiter tomentosa, obscure nervosa. Petala lutea, vix 1·0 cm. long., usque ad 0·8 cm. lat., eorum unguis ad 0·6 cm. long., tenuis vel firmior ac (saltem in sicco) fuscior. Antheræ oblongæ, filamentis compressis æquilongæ. Ovarium trigonum, tomentosum, 0·2 cm. diam.; styli glabri, stamina æquant. Calycis persistentis segmenta sub fructu firma, leviter tomentosa, circa 1·0 cm. long., 0·5–0·6 cm. lat., plana, patentia, intus manifeste reticulato-nervosa; fructus tomentosi cristâ dorsali valde prominente.

Species distinctissima et facile recognoscenda.

Recourse has been had to Tweedie's specimen for the description of the fruit of this beautiful plant.

Hujus stirpis reperi ad Corumbá mens. Jan. (n. 969) varietatem insequentem:—

Var. **MINOR**, a typo distans habitu (frutex 3 met. alt.) haud volubili (ascendente, an nonnunquam scandente?), ramulis gracilioribus, foliis minoribus (ad 6·5 cm. long., plerumque vero brevioribus), 2·0–3·5 cm. lat., floribus minoribus (2·0 cm. diam.), calycis lobis et petalis minoribus.

A small specimen in the Herbarium at Kew, collected by Blanchet (no. 3628), is perhaps to be referred to this variety, though its thicker leaves are stellately pubescent on their underside, not tomentose. [Bras. Or.]

GALPHIMIA BRASILIENSIS, A. Juss. in A. St.-Hil. Fl. Bras. Merid. iii. p. 71.

*Hab.* Floret ad Jangada mens. Sept. (N. 288.) [Bras. Or., Goyaz, Amazonia.]

HETEROPTERIS (§ PTYCHETEROPTERIS ?) NUDICAULIS (sp. nov.); caule erecto, ramoso, tereti, rufo-tomentoso, demum glabro; foliis breviter petiolatis, oblongis, obtusiusculis vel acutis, plerisque brevissime acuminatis, membranaceo-coriaceis, supra appresse pubescentibus, demum glabris et pallide nitentibus, subtus molliter rufo-tomentosis, prope basin brevissime cordatam biglandulosis; umbellis paucifloris (plerumque 2-4-floris) paniculas breves axillares vel terminales foliis subæquilongas efformantibus, et sæpe foliis hebetatis mixtis rufo-tomentosis; prophyllis maxime inæqualibus, ovatis, basi biglandulosis, rufo-tomentosis; bracteis parvis bracteolas æquantibus, pedicellis tenuibus, nequaquam incrassatis, juxta basin articulatis ibidemque bibracteolatis; calycis 8-glandulosi segmentis late oblongis, obtusis, glandulas duplo excedentibus, superne paullo incurvis; petalis ovatis obtusissimis, longiuscule ac crassiuscule unguiculatis; samaris rufo-tomentosis lateribus gibbis planis, alis æquimagnis vel subæquimagnis vel inæqualibus, necnon interdum alâ unâ solummodo evolutâ.

*Hab.* In fruticetis reperi ad Cuyabá (n. 16) et ad Santa Cruz (Barra dos Bugres) (n. 335). Floret mens. Aug.; fructus (vix maturos?) præbet mens. Sept.

Frutex gracilis, 1-vix 2 met. alt. e rhizomate pingui erectus, basi aphyllus, sæpe post foliorum casum florens. Folia 3·5-8·0 cm. long. (raro ad apices ramulorum folia minora posita sunt), 1·5-3·5 cm. lat., sæpe subtus ad sinistrum latus glandulâ tertiâ aucta; costæ secundariæ utrinque 5-6, leviter arcuatæ, sub margine conjunctæ, subtus eminentes; venulæ laxè reticulatæ; petioli 0·2-0·4 cm. long., crassiusculi, rufo-tomentosi. Paniculæ pleræque 3·0-4·0 cm. long. (occurrunt vero ad 8·0 cm. long.), subcongestæ; prophylla ad 0·4 cm. long. (ac igitur reverâ in folia hebetata trans-euntia), pleraque vero circa 0·2 cm. long. Pedicelli 0·7-1·2 cm. long., subcongesti; bracteæ bracteolæque oblongo-lanceolatæ, rufo-tomentosæ, circa 0·15 cm. long. Flores lutei, 1·0 cm. diam. Calycis segmenta 0·35 cm. long.; glandulæ 0·16 cm. long., anguste ellipticæ; segmentum quintum lineas duas elevatas pro glandulis ostendens. Petala 0·6 cm. long., margine undulata; unguis vix 0·2 cm. long. Ovarium leviter triquetrum, rufo-tomentosum. Samara (vix matura) 1·8 cm. lat., 0·6 cm. long.

Species forsitan juxta *H. confertifloram*, A. Juss., ponenda, sed multis notis dispar.

The Cuyabá specimens are in flower, those from Santa Cruz in the fruiting stage, and except for the former having somewhat larger leaves, less rusty beneath, I can see no difference between them. [Bras. Or.]

Verisimiliter in hoc genus digerenda et juxta speciem præcedentem interponenda exstat planta fruticosa metralis quam ad Santa Cruz legi (n. 336), caule erecto, tereti, superne

tantum foliigero; foliis minimis, subsessilibus, nummulariis, apiculatis, margine revolutis, coriaceis, glabris, 0·8–1·0 cm. long. et lat.; umbellis paucifloris (4), ferrugineo-pubescentibus, in paniculas effusas folia multo excedentes digestis; bracteis parvis, lanceolatis, ferrugineis, circa 0·1 cm. long.; pedicellis gracilibus, centimetralibus vel ultra, ferrugineo-pubescentibus, paullo infra medium articulatis et bracteolis caducis onustis; calycis 8-glandulosi segmentis ovato-oblongis, dorso ferrugineis, 0·23 cm. long.; glandulis oblongis, 0·12 cm. long., filamentis glabris, ovario tomentoso, fructu ignoto.

Ad Serra da Chapada mens. Aug. (n. 81) legi specimen forsitan in hoc genus trahendum, foliis lanceolatis acuminatis, basi obtusis, glabris, coriaceis, supra nitidis, subtus pallidis, imâ basi glandulis duabus circularibus 0·04 cm. diam. instructis, 10·0–17·0 cm. long. et 3·5–5·5 cm. lat.; costis secundariis utrinque circa 10, angulis latis insertis, aperte arcuatis, una cum costâ mediâ subtus conspicuis; venulis arcte reticulatis, supra admodum aspectabilibus; petiolis incrassatis, transverse rugatis, 0·5–0·8 cm. long.; paniculis terminalibus, quam folia brevioribus, laxe plurifloris, appresse strigoso-pubescentibus; bracteis bracteolisque parvis, subulatis, 1·0–1·5 cm. long.; pedicellis elongatis, gracilibus, juxta basin articulatis, puberulis, 0·1 cm. long.; floribus luteis; calycis 8-glandulosi lobis oblongis, obtusis, 0·2 cm. long., glandulis oblongis 0·15 cm. long.; petalorum laminâ 0·5 cm. long., 0·3 cm. lat., et ungue 0·1 cm. long.; antherarum dorso strigoso-pubescentium connectivo apice mucronato, loculis 0·25 cm. long., filamentis strigose pubescentibus 0·12 cm. long., ovario sericeo, samarâ ignotâ.

*BANISTERIA PUBIPETALA*, A. Juss. in A. St.-Hil. Fl. Bras. Merid. iii. p. 41.

Ad Santa Cruz flores luteos ostendat mens. Dec. (n. 792), itaque ex Matto Grosso a cl. Leeson missa (n. 11 in Herb. Mus. Brit.). [Bras. Or., Goyaz, Amazonia.]

*BANISTERIA CONSTRICTA*, Griseb. in Mart. Fl. Bras. xii. pars i. p. 46.

*Hab.* Juxta Cuyabá et ad Serra da Chapada satis abundat, mens. Aug. florens et fructificans. (Nn. 15, 104.) [Amazonia.]

*PEIXOTOA HIRTA*, Mart. ex A. Juss. Monog. Malp. p. 176.

*Hab.* Legi ad Serra da Chapada mens. Aug. (N. 153.)

Samaræ sericeo-tomentellæ, virides, alæ late oblongæ, apice truncatæ et undulatæ, marginibus ambobus rectis vel fere rectis, 2·0 cm. long., 1·2–1·5 cm. lat., crebre nervosæ. [Bras. Or., Goyaz.]

*STIGMAPHYLLON CALCARATUM*, N. E. Br. [in Trans. Bot. Soc. Edinb. xx. (1894) 48].

*Hab.* Viget in paludibus juxta Corumbá, mens. Jan. florens. (N. 1012.) [Paraguaria.]

*TETRAPTERIS* (§ *PENTAPTERIS*) *PILIFERA* (sp. nov.); caule ramoso, ramulis subteretibus, ad nodos parum tumidis, villosito-tomentosis, demum glabris; foliis subsessilibus, oblongo-ovatis, obtusis vel acutis vel brevissime cuspidato-acuminatis, supra pilosis, subtus lanato-villosis, vix tomentosis; corymbis 4-floris, quam folia brevioribus; pedicellis gracilibus, medio articulatis ibidemque bibracteolatis; bracteis lineari-

lanceolatis, bracteolas excedentibus; calycis villosi segmentis lanceolato-oblongis, obtusiusculis, sub fructu glandulas plus quam 2-plo excedentibus; samaræ alis lateralibus 4, discretis, inæqualibus, nunc late obovatis, nunc oblongo-spathulatis, margine eroso-undulatis; alâ dorsali subquadratâ, erosâ, quam laterales breviores.

*Hab.* Viget in nemorosis ad Santa Cruz, mens. Nov. fructum præbens. (N. 562.)

Frutex incertæ altitudinis, copiose ramosus. Folia ad 8.0 cm. long., medio ad 3.3 cm. lat. basin versus leviter coarctata, margine undulata et basin versus passim glandulifera, membranacea subtus aliquanto decoloria; nervus medius pag. superiore appresse tomentosus pag. inferiore eminens; costæ secundariæ utrinque circa 6, oblique insertæ, erecto-ascendentes, parum aspectabiles; venulæ subobsoletæ. Petiolus 0.2-0.25 cm. long. lanato-villosus, ad apicem faciei superioris glandulis duabus rubellis parvis (vix 0.05 cm. long.) gaudens. Pedicelli 1.1-1.3 cm. long., lanato-villosi. Bracteæ lineari-lanceolatæ, dorso lanato-villosæ, inferne glanduloso-bidenticulatæ, 0.3 cm. long. Bracteolæ bracteis similes nisi minores, 0.2 cm. long. Flores desunt. Calycis segmenta sub fructu 0.4 cm. long.; glandulæ 0.2 cm. long., ellipticæ, superne coarctatæ. Fructus circa 2.5 cm. diam. Samaræ rubellæ alæ laterales majores 0.9 cm. long., 0.8 cm. lat.; minores majoribus æquilongi, 0.5 cm. lat.; alâ dorsalis 0.5 cm. long., 0.6 cm. lat.; alæ omnes papyraceæ, eximie nervatæ.

Ex affinitate *Tetrapteridis metallicoloris*, A. Juss., sed aliquot notis dispar.

I have ventured to describe this plant, although the only specimen which has survived is without flowers. A plant of Burchell's collecting (n. 5754 in Herb. Kew.) should perhaps be referred to this species. [Bras. Or.]

**TETRAPTERIS** (§ **PENTAPTERIS**) **PRÆCOX** (sp. nov.); caule ramoso, tereti, lanato-tomentoso, demum glabro, cortice fusco-cinereo crebre lenticellifero obtecto; foliis petiolatis (ut apparet) ovatis seu ovato-oblongis, margine obscure undulatis, chartaceis, supra glabris, subtus tomentoso-pilosis; ramis sæpe umbellis præcocibus instructis, umbellis lateralibus plerumque 2-6-floris; pedunculis sæpissime subsessilibus, prophyllis pluribus parvis linearibus sericeis instructis; pedicellis gracilibus, pedunculo multoties longioribus, supra medium articulatis et juxta medium bibracteolatis; bracteis parvis linearibus, bracteolis conformibus; calycis sericeo-velutini segmentis lanceolato-ovatis, quam glandulæ vix duplo longioribus; petalis inæqualibus, unguiculatis, ovatis vel panduriformibus, apice retusis; samaræ alis lateralibus omnino disjunctis, subæqualibus, late linearibus, retusis vel margine apicali eroso-undulatis, alâ dorsali lateralibus subsimili, sed plus quam duplo breviores.

*Hab.* Juxta urb. Cuyabá abundat, et mens. Aug. flores necnon fructus vix maturos præbet. (N. 17.)

Frutex prolixus, circa 1 met. alt., inferne aphyllus. Folia, ut videtur, ad circa 5.5 cm. long. et 3.0 cm. lat.; petiolus ad 0.6 cm. long., lanato-tomentosus, sat pinguis, glandulas 3 parvas in sicco atras et nitentes circa 0.015 cm. long. gerens. Pedunculi raro ad 0.5 cm. long., recti, sericei; prophylla vix ultra 0.15-0.2 cm. long. Bracteæ usque ad 0.38 cm. long., una cum bracteolis 0.2 cm. long. sericeæ. Pedicelli 1.0-vix

1.5 cm. long., subcongesti, sericei; eorum bracteae 0.2–0.3 cm. long. Flores lutei, circiter 1.0 cm. diam. Calycis segmenta acutiuscula, 0.4 cm. long.; glandulae anguste ellipticae, margine rugatae, 0.2–0.25 cm. long. Petala 0.5–0.7 cm. long., eorum unguis ad 0.15 cm. long., nunc crassus, nunc tenuis. Ovarium sericeum, subglobosum, circa 0.22 cm. diam.; styli crassi, puberuli. Samarae sericeo-tomentosae, vix maturae, alae laterales ad 0.7 cm. long., 0.25 cm. lat.; ala dorsalis 0.3 cm. long.; omnes fere omnino glabrae, virescentes, papyraceae, in longitudinem crebre nervosae.

Cum *Tetrapteridi ramiflorá*, A. Juss., comparanda, specie mihi descriptione tantum cognita, sed ob pedunculos copiose prophyllis instructos, pedicellos elongatos, etc., certe distincta.

This is one of the commonest plants round Cuyabá, but I had to search some time before finding flowering shoots still bearing leaves, and then the latter were in a very imperfect state. [Bras. Or.]

*HIRÆA* (§ *MASCAGNIA*, *PLEUROPTERIS*) *NITENS* (sp. nov.); caule terete, cinereo vel fusco-cinereo, glabro; foliis breviter petiolatis, ovatis vel ovato-oblongis, obtusis vel obtuse acutis, nonnunquam leviter cuspidatis, basi rotundatis vel levissime coarctatis, coriaceis, glabris, nitentibus, eglandulosis; floribus breviter racemosis vel paniculatis, paniculis congestis, subthyroideis; prophyllis minutis; pedicellis infra medium minute bibracteolatis; bracteis bracteolis similibus; calycis 8-glandulosi segmentis late oblongis, obtusiusculis, quam glandulae haud duplo longioribus; samaris (an maturis?) parvis, dorso eximie carinatis et argute scrobiculatis, alis oblongis, margine inciso-undulatis.

*Hab.* In convalle ad Serra da Chapada mens. Aug. fructus gerens. (N. 74.)

Frutex scandens, a basi foliatus. Folia ad 15.0 cm. long. (plerumque 8.0–11.0 cm.), 4.0–6.0 cm. lat., reticulato-nervosa; petioli 0.5–0.8 cm. long., crassi, juxta medium glandulas duas parvas ellipticas in sicco fuscas vix 0.2 cm. long. praebentes. Costae secundariae circa 8, angulis latis plerumque insertae (inferiores raro erecto-ascendentes), aperte arcuatae, deinde margine parallelae et maxime undulatae; venulae arcte reticulatae, utrinque conspicuae. Inflorescentiae axis appresse pubescens, demum glaber. Panicula terminalis ad 5.0 cm. long., inferne vix 5.0 cm. diam. Prophylla et bracteae subulatae, illa 0.15 cm., haec 0.1 cm. long. Pedicelli 0.8–1.0 cm. long., pubescentes. Calycis segmenta rufulo-tomentosa, vix 0.3 cm. long., glandulae vix 0.2 cm. long., anguste ellipticae. Petala haud visa. Ovarium subtrigonum, tomentosum; styli glabri, ovario breviores. Samarae (an maturae?) 0.7 cm. long. et lat., membranaceae, virescentes.

Ex affinitate *H. chlorocarpae*, A. Juss., abs qua ob foliorum formam et magnitudinem plura inter propria eximie discrepat; videtur itaque ad *H. hippocrateoidem*, Planch. et Triana, accedere, sed foliis latioribus, petiolis biglandulosis, inflorescentia saepe racemiformi, bracteis minutis, etc., certe ab illa diversa. [Bras. Or., Nov. Granat.]

*HIRÆA* (§ *MASCAGNIA*, *EUMASCAGNIA*) *VOLUBILIS* (sp. nov.). Frutex volubilis, caulibus teretibus, pubescentibus, demum fere glabris, in longitudinem rimosis; ramulis abunde foliosis, rufo-tomentosis; foliis petiolatis, obtusis vel acutis vel breviter acuminatis,

basi rotundatis, nervo medio excurrente apiculatis, supra piloso-pubescentibus, demum præter ad nervos glabris, subtus piloso-pubescentibus, membranaceis, eglandulosis; petiolis rufo-tomentosis, utrinque basi glandulâ auctis; inflorescentiâ axillari vel terminali, corymbosâ, vel floribus in paniculas paucifloras corymbiformes dispositis; pedicellis gracilibus, juxta medium minute bibracteatis; calycis 8-glandulosi segmentis glandulas haud superantibus; petalis ovato-oblongis, breviter unguiculatis; samaris albo-tomentosis, immaturis, alâ dorsali parvâ, laterali samaram cingente amplâ suborbiculari.

*Hab.* In nemorosis viget ad Santa Cruz, menss. Sept.—Nov. florens. (Nn. 340, 647.)

Caulis 2·5–3·0 cm. crass., purpureo-brunus. Folia pleraque 7·5–9·0 cm. long. (raro ad 10·0 cm.), plerumque 4·0–7·0 cm. lat., margine ciliata, pagina super. ad nervum medium plus minus appresse pubescenti-tomentosa, pagina infer. pallida, nervis aliquanto elevatis plus minus pubescenti-tomentosis; petioli 0·7–1·5 cm. long., pingues, glandulis late ellipticis vel fere orbicularibus 0·1 cm. diam. Pedunculi rufo-tomentosi, plerumque 1·0–3·0 cm. long. Prophylla subulata, rufo-tomentosa, circa 0·2 cm. long. Pedicelli plerique circa 1·0 cm. long., subcongesti, rufo-tomentosi, bracteæ prophyllis subsimiles. Flores rosei, circa 1·2 cm. diam. Calycis segmenta 0·3 cm. long., ovata, obtusa, pubescentia; glandulæ ellipticæ, calycis segmentis æquilongæ. Petala 0·6 cm. long. et 0·45 cm. lat., nervo medio in sicco eminente; unguis modo 0·1 cm. long., sat pinguis. Ovarium trigonum, albo-tomentosum; styli vix omnino glabri. Samaræ immaturæ circa 0·6 cm. long. et 0·5 cm. lat., ala dorsali circa 0·1 cm. alt.

Species accedens ad *Hiræam rubram* (*Mascagniam*, Griseb.), quæ forsan ad sectionem *Eumascagniam* transferri debet, sed foliorum crassitudine ac vestitu, corymbis brevibus nec solis terminantibus, pedicellis brevioribus, bracteis omnino diversis, etc., optime divergens.

*HIRÆA SEPIUM*, A. JUSS. in A. St.-Hil. Fl. Bras. Merid. iii. p. 19.

*Hab.* Ad Santa Cruz flores et fructum simul ostendit mens. Nov. (N. 520.)

*HIRÆA SEPIUM*, A. JUSS., var. *NITENS*, S. MOORE, foliis quam ea typi firmioribus supra nitidis et puberulis, samaris ignotis.

*Hab.* Ad Corumbá floret mens. Jan. (N. 1008.)

Quum samaras non examinavissem, exstitit quædam quæstio num mera pro varietate haberi debeat. [Bras. Or.]

*HIRÆA CUJABENSIS*?, Griseb. in Mart. Fl. Bras. xii. pars i. p. 100.

*Hab.* Crescit in loco ignoto, verisimiliter ad Santa Cruz.

The specimen is very incomplete, and, owing to the loss of the label accompanying it, I am unable to give its locality. [Matto Grosso.]

*HIRÆA* (§ *MASCAGNIA*) (sp. nov.); foliis et floribus ignotis; samaris magnis, papyraceis, glabris, viridibus, alâ dorsali 2·0 cm. long. et usque ad 1·3 cm. lat., alis lateralibus late obovatis, truncatis, margine superiore dentato-undulatis, 3·0 cm. long. et lat.



*Hab.* Matto Grosso (*Leeson*, in *Herb. Brit. Mus.*).

A fine species, with fruits much like those of *Hircea glaucescens*, Griseb., but much larger. Perhaps it is still nearer the Mexican *H. macroptera*, DC.

CAMAREA ERICOIDES, A. St.-Hil., *Pl. Rem.* i. p. 158.

*Hab.* Crescit ad Jangada, mens. Sept. florens. (N. 286.) [Bras. Or.]

Specimina manca reverâ fructibus carentia, quâpropter quoad genus omnino dubia:—

(i.) Volubilis, caulibus foliosis, strigose pubescentibus, cito glabris; foliis oblongo-ovatis, obtusis obtusissimisve, nonnunquam retusis, basi rotundatis, supra glabris, haud nitentibus, subtus pilis strigosis arcte appressis vestitis, tenuiter coriaceis, 5·0–10·0 cm. long., 3·0–5·0 cm. lat.; petiolis 0·5–0·7 cm. long., appresse et strigose puberulis, basi biglandulosis insidentibus; costis secundariis utrinque 8–10, primo fere rectis, dein dichotomis et arcuatim junctis; paniculis terminalibus axillaribusve (et tunc ex axillis superioribus ortis), quam folia multo brevioribus (2·0–3·5 cm. long.), appresse ferrugineo-hirtulis, in umbellas brevipedunculatas plerumque 3–4-floras digestis; prophyllis lanceolatis, ferrugineo-hirtulis; bracteis bracteolisque approximatis, lanceolatis, illis has duplo excedentibus et vix 0·2 cm. long.; pedicellis 0·4–0·6 cm. long.; calycis 8-glandulosi segmentis oblongis dorso ferrugineo-hirtis 0·25 cm. long., glandulis nunc minimis, nunc usque ad 0·16 cm. long., oblongis; petalis luteis, filamentis glabris, ovario tomentoso.

*Hab.* Reperi juxta Corumbá mens. Jan. florentem. (N. 945.)

(ii.) Fruticosa? ramosa, ramis subteretibus, strigose pubescentibus, mox glabris; foliis ovatis, breviter acuminatis, rarius cuspidulatis, basi rotundatis, nunc utrinque glabris, supra haud nitidis, subtus pallidioribus, imâ basi biglandulosis, 7·5–9·0 × 4·0–5·0 cm.; petiolis vix usque 1·0 cm. long., villosulis, cito glabris, inflorescentiis terminalibus axillaribusve; floribus nunc racemosis, nunc in umbellas paucas 2–4-floras brevipedunculatas paniculatim digestis, semper quam folia brevioribus nec ultra 6·0 cm. long.; bracteis 0·25 cm. long., lanceolatis, pedicellos ferrugineo-hirtulos semiaquantibus; bracteolis sub flore insertis ovatis, obtusis, basi biglandulosis, 1·5 cm. long.; calycis 8-glandulosi segmentis oblongis, obtusis, dorso appresse hirtulis, 0·3 cm. long., glandulis oblongis subæqualibus usque ad 0·25 cm. long.; filamentis glabris; ovario tomentoso.

*Hab.* Ad Corumbá floret mens. Jan. (N. 1095.)

(iii.) Fruticosa, deorsum aphylla, ramis erecto-ascendentibus, subteretibus, cinereo-purpurascens; foliis oblongis vel oblongo-lanceolatis, obtusis, basi parum coarctatis, utrinque (costâ mediâ subtus brevissime albido-sericeo-tomentellâ exemptâ) glabris, coriaceo-membranaceis, subtus nitentibus, costis secundariis utrinque circa 10 fere rectis, deinde margini parallelis, subtus conspicuis, costis tertii ordinis plurimis maxima pro parte secundariis plus minus perpendicularibus; petiolis circa 0·5 cm. long., sericeo-tomentellis, sursum glandulis duabus pedicellatis onustis; floribus umbellatis, umbellis abbreviatis, 3–4-floris, 1·5 cm. long., sericeo-tomentellis; bracteis bracteolisque minutis, approximatis, æqualibus, ovatis, sericeis; pedicellis 0·7 cm.

long. et reverâ pedunculum vix 2-plo excedentibus; calycis 8-glandulosi segmentis ovatis, obtusis, dorso sericeis, 2·3 cm. long., glandulis ellipticis 0·1 cm. long.; filamentis pilosulis; ovario trilobo tomentoso.

*Hab.* Verisimiliter inveni ad Santa Cruz, ob schedulam vero prætermisam locum accurate indicare nequeo.

## GERANIACEÆ.

OXALIS HIRSUTISSIMA, Zucc. Monog. Amer. Oxal. p. 179.

*Hab.* Ad Santa Cruz floret mens. Nov. Nom. vernac. *Azedinha*. (N. 608.)

Frutex altus, interdum orgyalis. Flores lutei. Capsulæ virides, ovoideæ, angulis appresse hirtulæ, 0·6 cm. long. Semina elliptica, 0·15 cm. long., transverso-rugata, brunea. [Bras. Or.]

OXALIS SEPIUM, A. St.-Hil. Fl. Bras. Merid. i. p. 111, var. PICTA.

*Hab.* Crescit ad Jangada neonon ad Santa Cruz, mens. Sept.-Nov. florens. (Nn. 263, 328, 561, 645.) [Bras. Or., Guiana, Ind. Occ.]

OXALIS CATHARINENSIS, N. E. Br. in Gardn. Chron. 1887, I. p. 140.

*Hab.* Crescit in sylvulis umbrosis juxta Corumbá, ubi flores albos mens. Jan. præbet. (N. 967.)

My specimens differ from the type (F. Mueller, no. 395, in Herb. Kew.) in having somewhat sharper-angled leaves. In cultivation this beautiful little plant woefully deteriorates, possibly in consequence of exposure to light of too high intensity; in its native woods, at least at Corumbá, it prefers the darkest recesses. [Bras. Or.]

## RUTACEÆ.

MONNIERIA TRIFOLIA, Linn. Syst. Nat. ed. X. p. 1153.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Tapirapuan, itaque ad ripas fl. Paraguay inter Santa Cruz et Diamantino. (Nn. 396, 625.) [Bras. Or., Amazonia, Guiana, Nov. Granat.]

## SIMARUBACEÆ?

Planta incertæ sedis, forsan inter Simarubaceas difficile digerenda. Arbuscula, ramulis teretibus striatis, cortice cinerascente amaro cincta; foliis alternis imparipinnatis, foliolis 8-10 alternatim insertis, oblongo-obovatis, basi longe et sensim cuneatis; acuminatis, glabris, utrinque nitidis, creberrime et minute glanduloso-punctatis, spicis elongatis, exaxillaribus vel ex axillis foliis orbis ortis, simplicibus, raro bifurcatis; calyce 5-partito; petalis cum calycis lobis alternantibus, staminibus . . . ; ovario omnino integro, 2-oculari, stigmatibus 2 brevibus sessilibus divaricatis coronato, ovulis quove in loculo 2, ab apice pendulis; raphe ventrali, micropyle superiore; baccis oblongis, 1-2-ocularibus, loculis abortu 1-spermis; seminibus testâ tenui arcte adhærente obtectis, exalbuminosis; cotyledonibus carnosus, radiculâ inconspicuâ.

*Hab.* Reperi in ripâ fl. Paraguay inter Santa Cruz et Tres Barras, ubi floret mens. Oct. (N. 491.)

Rami spicigeri, crassi, usque ad ultra 1.0 cm. diam. Foliorum rhachis 23.0–37.0 cm. long., 0.2 cm. diam., rigida, subtetragona, intervallis 2.0–3.5 cm. long. folioligera. Foliola 12.0–16.0 cm. long. (raro usque ad 8.0–10.0 cm. miniata), 4.5–6.0 cm. lat., firme membranacea, subtus pallidiora, petiolis crassiusculis in sicco rugatis 0.3–0.6 cm. long. insidentia; costæ secundariæ utrinque circa 8, plerumque angulis latis insertæ, aperte arcuatæ. Spicæ pendulæ, usque ad 27.0 cm. long. (exstant nonnullæ vero sæpe 10.0–16.0 cm. long.), 1.5–2.0 cm. diam., rigidæ, minute pubescentes, imâ basi incrassatæ. Bractæ nobis haud suppetunt. Flores pedicellis brevibus, crassiusculis, subtetragonis, 0.1–0.15 cm. long. fulti. Calycis lobi ovati, obtusi, puberuli, circa 0.1 cm. long. Petala calycem paullo excedentia. Ovarium oblongo-ovoideum, sursum angustatum, arcte tomentosum, 0.25 cm. long. Stigmata ligulata, obtusa, 0.004 cm. long. Baccæ oblongo-ovoideæ, 0.8 cm. long., 0.6 cm. diam., primo coccineæ, deinde nigræ.

In general appearance this plant resembles a *Picramnia*, but the gland-dotted leaves are peculiar, and may indicate a Rutaceous affinity. Unfortunately, mature flowers are not present, hence the impossibility of definitely placing the plant.

#### OCHNACEÆ.

*OURATEA PURPURIPES* (sp. nov.). Fruticosa, ramulis gracilibus, teretibus, glabris, cortice papyraceo brunescente vel cinerascete obtectis; foliis mediocribus, tenuiter coriaceis, glaberrimis, oblanceolatis vel oblanceolato-oblongis, basi coarctatis, margine serrulatis, petiolis brevibus crassiusculis insidentibus; costâ mediâ utrinque prominente, costis secundariis parum conspicuis, utrinque circa 10–12, aperte arcuatis; venulis pluribus horizontalibus, raro dichotomis; paniculis terminalibus axillaribusve, quam folia brevioribus, racemiformibus, paucifloris, eorum ramulis verisimiliter ebracteatibus, fuscis, minute pubescentibus; pedicellis gracilibus, alabastra ovoidea acutiuscula subæquantibus; sepalis inæqualibus, oblongis vel ovato-oblongis; petalis obovato-oblongis, basi late cuneatis, antheras bene excedentibus; antheris lineari-oblongis, breviter acuminatis, rugulosis; gynophoro ovario æquilongis; stylo incrassato, ovarium 4-plo excedente; drupâ solitariâ (an semper?), anguste ovoideâ, gynophorum ovoideum triplo excedente.

*Hab.* Reperi in ripâ fl. Paraguay juxta Santa Cruz mens. Oct. florentem et fructificantem. (N. 512.)

Ramuli 0.1–0.3 cm. diam., intervallis plerumque 1.0–3.0 cm. long. foliigeri. Folia pleraque 7.0–10.5 cm. long., 2.0–3.5 cm. lat., nitidula, subtus pallidiora, creberrime ac minutissime pellucido-punctata, margine breviter cartilaginea, basi integra; petioli crassiusculi, superne late excavati, dorso transverse rugati, 0.3 cm. long. Stipulæ ovato-lanceolatæ, acuminatæ, 0.35 cm. long. Paniculæ circa 4.0 cm. long., basi semel ramosæ vel ad meros racemos reductæ. Pedicelli sæpe bini vel terni, ascendentes, sub flore 0.4 cm. long. Alabastra 0.5 cm. long. Sepala 0.4–0.45 cm. long., 0.2–0.25 cm. lat., margine nunc late, nunc vix scariosa. Petala vix omnino matura 0.5 cm. long., basi 0.17, superne 0.3 cm. lat. Antheræ 0.3–0.35

cm. long., basi 0·5 cm. lat., apice ipso flavescens, ceteroquin aurantiaco-rubescens. Gynophorum pentagonum, 0·06 cm. long., sub fructu purpureus, 0·3 cm. long. et 0·25 cm. diam. Stylus 0·24 cm. long. Drupæ vix 0·9 cm. long., 0·5 cm. diam., basi ipsâ breviter attenuatâ, politâ, vivæ virides.

Speciei nulli mihi cognitæ affinis, et imprimis venatione, foliis mediocribus utrinque glaberrimis, tenuiter coriaceis, margine serrulatis, inflorescentiâ racemiformi, pedicellis et alabastris æquilongis facili negotio recognoscenda.

Huic affinis, ab ea racemorum et pedicellorum indumento discrepans, petalis majoribus, antheris longioribus, drupis parvis binis gynophoro subgloboso roseo insidentibus, exstat insequens:—

*OURATEA ROSIPES* (sp. nov.). Fruticosa, ramulis sat validis, teretibus, cortice crustaceo-cinereo obductis; foliis glaberrimis, breviter petiolatis, tenuiter coriaceis, oblongis vel oblongo-ob lanceolatis, obtusis, deorsum cuneatim angustatis, margine inferne integris, superne serrulatis, costâ mediâ utrinque prominente, costis secundariis ægre spectabilibus intrusis latere circa 12 aperte arcuatis, demum margini parallelis, interjectis costis pluribus tertii ordinis subparallelis, crebre ramosis; inflorescentiâ racemosâ (an semper?), axillari vel terminali, foliis brevioribus, basi bracteâ pauciflorâ, fulvo-tomentosâ, dein puberulâ, pedicellis fulvo-tomentosis, alabastris oblongis obtusis æquilongis; sepalis inæqualibus, oblongis vel ovato-oblongis, plus minus scariose marginatis; petalis obovatis, basi late cuneatis, antheras subæquantibus; antheris linearibus, acuminatis, rugulatis; gynophoro ovario vix æquilongo, stylo filiformi, ovarium triplo excedente; drupis binis ovoideis, gynophorum subglobosum duplo excedentibus.

*Hab.* Ad Santa Cruz mens. Oct. floret et fructificat. (N. 364.)

Frutex diffusus, ultrametralis. Ramuli erecti, usque ad 0·4 cm. diam. Folia 7·5-11·0 cm. long., 2·0-3·5 cm. lat., utrinque nitidula, subtus parum decoloria, minute pellucido-punctata, margine breviter cartilaginea; petioli 0·2 cm. long., superne excavati, dorso rugati. Stipulæ firmæ, lanceolatæ, 0·2-0·25 cm. long., in sicco fuscæ. Racemi usque 3·0 cm. long., bracteæ stipulis similes. Pedicelli et alabastra 0·4 cm. long., hæc basi 0·22 cm. lat. Sepala 0·5 cm. long., 0·2-0·3 cm. lat., apice obtusa vel acutiuscula, dorso minute pubescentia. Petala inæqualia, 0·6-0·7 cm. long., ima basi 0·12 cm. lat., superne usque 0·4 cm. lat. Antheræ 0·5-0·6 cm. long., in sicco, apice flavescens exempto, fusco-brunæ. Gynophorum subpentagonum 0·08 cm. long., sub fructu roseum, 0·3 cm. long. Ovarium 0·1 cm. long., 0·13 cm. diam. Stylus 0·32 cm. long. Drupæ 0·5-0·7 cm. long., 0·4-0·5 cm. diam., nitidulæ, vivæ virides.

*OURATEA RIEDELIANA*, Engl. in Mart. Fl. Bras. xii. pars ii. p. 322.

*Hab.* Ad Cuyabá satis abundat, reperi itaque ad Santa Cruz. Floret mens. Sept.-Nov. (Nn. 24, 474.)

The Santa Cruz plant has larger and more deeply serrated leaves than those of the type: the leaves attain a length of 14 centimetres; and the nerves also are more plainly marked. [Bras. Or.]

*OURATEA ORGYALIS* (sp. nov.). Erecta, glaberrima, ramulis subtetragonis, cortice cinereo obtectis; foliis coriaceo-membranaceis, oblongo-ob lanceolatis, obtusissimis vel obtusis, basi acutis, margine (parte infimâ integrâ exemptâ) impariter spinuloso-serrulatis, petiolis brevibus fultis; costis secundariis utrinque circa 10, plus minus fornicatis, demum margini parallelis, supra eminentibus, venulis perplurimis rarius anastomosantibus, magnâ pro parte costis secundariis perpendicularibus vix prominulis; stipulis parvis lineari-lanceolatis acuminatis; paniculâ terminali anguste thyrsoida, ejus ramulis superioribus abbreviatis, ramis omnibus subsimplicibus et paucifloris; pedicellis tenuibus, alabastra paullulum superantibus; petalis late obovatis, dimidio inferiore gradatim cuneatis; antheris attenuatis, rugulosis, inæquilongis, longioribus, quam petala paullo brevioribus; ovario 5-gyno, gynophoro brevi insidente; carpidiis ovoideis; stylo superne sensim angustato, antheras haud superante.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 455.)

Frutex prolixus, erectus, orgyalis, caule gracili, apice solummodo foliigero. Ramuli pauci, ascendentes, 0.2-0.3 cm. diam. Folia et flores iisdem temporibus geniti, illa 12.0 cm. long., vix 4.0 cm. lat., supra nitidula, subtus pallidiora; petioli 0.3 cm. long., crassiusculi, supra canaliculati; stipulæ 0.8 cm. long., crebre nervosæ. Panicula 14.0 cm. long., inferne circa 4.0 cm. lat., mox usque ad 2.0 cm. attenuata. Pedicelli 0.8 cm. long. Alabastra anguste ovoidea, acuta, 0.6 cm. long., 0.3 cm. lat. Sepala oblonga, sub apice breviter mucronulata, 0.75 cm. long., exteriora crassiuscula, interiora margine scariosa. Petala 0.75 cm. long., summum 0.6 cm. lat. (ima basi vix 0.1 cm. lat.), margine undulata vel crenellata. Antheræ longiores 0.6 cm., breviores vix 0.45 cm. long., omnes tenues et fere a basi sensim angustatæ. Gynophorum abbreviatum, crassum, circa 0.04 cm. alt. Carpidia 0.07 cm. et stylus vix 0.5 cm. long. Bacca ignota.

Sine dubio præcedenti admodum affinis, etiam cum *O. hexasperma*, Baill., rite componenda; ab ambabus attamen insigniter distat ob folia floribus coætanea, inflorescentiam anguste thyrsoidam, et antheras inter se inæquales. Folia hujus insuper obsolete serrata, et stipulæ duplo longiores, panicula densiflora, pedicelli necnon styli longiores, illa contra flores majores alabastra abbreviata obtusa, antheras nec ultra 0.35 cm. long., præbet. [Bras. Or., Goyaz.]

*OURATEA SIMULANS* (sp. nov.); ramis glaberrimis, subtetragonis, sat validis, in sicco bruneis; foliis elongatis, brevipetiolatis, lineari-lanceolatis, acute acuminatis, basi obtusis, fere toto margine crebre serrulatis, coriaceis, glaberrimis, costâ mediâ lata, paginâ superiore basi impressa, superne eminente, subtus prorsus prominula, costis secundariis perplurimis utrinque impressis; paniculis terminalibus vel ex axillis summis ortis, earum ramulis plurifloris patentibus subtetragonis; pedicellis abbreviatis, alabastra ovoidea acuminata haud excedentibus; sepalis oblongis obtusis; petalis late rhombeo-obovatis, basi longe cuneatis, quam sepala paullo longioribus; antheris rugulatis, petala  $\frac{5}{6}$  æquantibus; gynophoro ovarium subæquante; stylo quam stamina paullo brevioribus; drupâ subcylindricâ, in sicco bruneâ, nitidâ.

*Hab.* Legi in ripâ R. Paraguay juxta Santa Cruz, ubi mens. Oct. floret et fructificat. (N. 461.)

Frutex elatus. Foliorum lamina usque ad 30·0 cm. long. et 7·0 cm. lat. (mediocris 22·0 × 6·0 cm.), utrinque pallide nitens, subtus vero decolor, in sicco lutescenti-brunea, sæpe plus minus, more *Erythroxyli Coca*, Lam., et specierum *Triplaridis*, longitrorsum striata; petioli crassi, alte canaliculati, 0·6-0·9 cm. long., 0·25 cm. lat., dorso transverse rugosi. Paniculæ thyrsoidæ, usque 12·0 cm. long., basi plerumque 4·0-7·0 cm. lat., ramulis plerisque 2·0-5·0 cm. long., plurifloris; pedicelli graciles, circa 0·4 cm. long. Alabastra paullulum ante floritionem 0·5 cm. long., 0·4 cm. lat. Sepala 0·5 cm. long., juxta medium 0·2 cm. lat., margine breviter scariosa. Petala 0·6 cm. long., usque 0·5 cm. lat. Antheræ 0·5 cm. long., apiculo in sicco flavescente, ceterum bruneæ. Gynophorum 0·05 cm. long. Ovarium 0·06 cm. long., stylo 0·4 cm. long. coronatum. Gynophorum fructiferum subcylindricum, admodum curvatum, 0·5 cm. long. et 0·3 cm. diam. Drupæ 1·0 cm. long. vel paullulum ultra, 0·6 cm. lat., læves.

Mihi videtur *Ouratea tenuifolia*, Engl., proxima, abs quâ foliis longe aliis, alabastris majoribus, petalis latioribus, antheris longioribus inter alia optime abhorret.

This species is remarkably homoplastic with the Amazonian *O. verruculosa*, Engl., so much so that it would be difficult to distinguish the two without flowers. In the flowering state, however, there is much difference. A precisely similar homoplasmy will be mentioned when treating of the genus *Psychotria* (see p. 379). [Amazonia.]

#### MELIACEÆ.

*GUAREA SYLVESTRIS* (sp. nov.); foliis longiuscule petiolatis, 3-5-jugis, foliolis oppositis, petiolulatis, oblongis vel oblongo-lanceolatis, cuspidato-acuminatis, basi acutis, supra glaberrimis, subtus, costis appresse pubescentibus, mox minute puberulis exceptis, glabris; petiolulis una cum rhachi tomentosis, cito puberulis; paniculis brevipedunculatis, simplicibus, quam folia multo brevioribus; alabastris late oblongis; floribus tetrameris, calycis cupuliformis extus puberuli vel pubescentis ore impariter 4-dentato; petalis breviter sericeo-tomentosis, in sicco haud rubescentibus; tubo stamineo cylindrico, crenellato; ovario subgloboso, gynophoro æquilongo, dense albido-sericeo.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Tapirapuan. (N. 400.)

Arbuscula (ex schedis meis), forsitan potius frutex altus trimetralis, trunco gracili. Ramuli cinerascens, juveniles griseo-tomentosi, dein puberuli, crebre striati, 0·4 cm. diam. Foliorum rhachis 24·0 cm. long. Foliolorum juga inæqualia, foliola basalia 7·0-11·0 cm. long., superiora 15·0-18·0 cm. long., 4·2-5·0 cm. lat., creberrime ac minutissime pellucido-punctata, coriaceo-membranacea; costæ secundariæ utrinque circa 10, angulis latis insertæ, aperte arcuatæ, dein margini parallelæ, una cum costâ mediâ subtus prominulæ; venulæ arcte reticulatæ, utrinque, præsertim vero subtus, conspicuæ. Petioluli incrassati, rugati, 0·5 cm. long. Petioli 0·7-0·9 cm. long., superne late canaliculati. Paniculæ 7·0-12·0

cm. long., minute pubescentes; cymulæ pedicellis 0·3–0·5 cm. long. fultæ. Flores virides, 0·5 cm. long., pedicellis 0·1 cm. long. insidentes. Calyx 0·1 cm. long. Petala vix 0·5 cm. long., lineari-oblonga, obtusa. Tubus stamineus 0·42 cm. long. Antheræ lineares, 0·1 cm. long. Ovarium 0·1 cm. long., stylo angulato appresse sericeo-pubescente 0·2 cm. long. coronatum. Capsulæ non suppetebant.

Mihi videtur ad *Guaream paraensem*, C.DC., accedere, cujus folia admodum similia, ob alabastra ejus vero angusta, elongata, longipedicellata facili obtutu nostra a stirpe dignoscenda. [Amazonia.]

*GUAREA RUBRICALYX* (sp. nov.). Fruticosa, foliis longiuscule petiolatis, 2–4-jugis, foliolis oppositis, petiolulatis, oblongis vel oblongo-oblanceolatis, breviter et obtuse cuspidatis, basi acutatis, supra glaberrimis, subtus, costâ mediâ appresse pubescente exempta, glabris; petiolulis una cum rhachi primo appresse tomentosis, cito pubescentibus puberulisve; paniculis elongatis, folia subæquantibus, inferne breviter ramosis, superne simplicibus, pluri- et densifloris; alabastris late oblongis; floribus tetrameris; calycis cupuliformis extus puberuli ore inæqualiter 4-dentato; petalis breviter sericeo-puberulis, in sicco rubescentibus; tubo stamineo urceolari, ore obsolete undulato; ovario depresso subgloboso, gynophoro æquilongo, sericeo-puberulo.

*Hab.* Reperi in ripâ fl. Paraguay, prope Tres Barras, mens. Oct. florentem. (N. 513.)

Ramuli teretes, usque 0·6 cm. diam., primo ochraceo-tomentosi, cito puberuli, cortice tenuissimo cinerascete obducti. Foliorum rhachis 14·0–16·0 cm. long., superne canaliculata. Foliola superiora majora 14·0–16·0 cm. long., inferiora 5·0–10·0 cm. long., illa 4·0–5·0 cm. lat., hæc sæpe usque ad 2·0 vel 3·0 cm. attenuata, coriaceo-membranacea, opaca; costa media supra impressa, subtus prominens; costæ secundariæ utrovis latere circa 10, aperte arcuatæ, demum margini parallelæ, una cum venulis arcte reticulatis subtus eminentiores. Petioluli incrassati, rugati, anguste canaliculati, 0·3 cm. long. Petioli 4·0–10·0 cm. long., late canaliculati. Paniculæ usque 22·0 cm. long., pleræque vero circa 14·0 cm. (occurrunt nonnullæ modo 11·0 cm. long.), pubescentes, ramulos patulos, usque 1·5 cm. long., densifloros inferne ferentes, mediâ parte cymulas abbreviatas circa 0·3 cm. long. sustinentes. Flores albi; calyces rubri. Pedicelli sub floribus 0·1 cm. long. Alabastrum aperiens 0·45 cm. long., vix 0·3 cm. lat. Calyx vix 0·15 cm. long. Petala oblonga obtusa, 0·5 cm. long. Tubus stamineus 0·4 cm. long., basi 0·32 cm. lat. Antheræ oblongæ 0·08 cm. long. Ovarium paullo ultra 0·1 cm. long., 0·15 cm. lat. Stylus 0·16 cm. long., minute puberulus. Stigma brevissime exsertum. Capsula ignota.

Cum *G. spiciflorâ*, A. Juss., componenda, distinctissima vero ob foliola opposita (nec alternantia), flores minores, alabastra abbreviata, etc. [Bras. Or.]

#### CHAILLETIACEÆ.

*TAPURA AMAZONICA*, Poepp. & Endl. Nov. Gen. et Sp. iii. p. 41, var. *CILIATA*, Baill.

*Hab.* Fructificat ad Santa Cruz mens. Nov. (N. 411.) [Bras. Or., Amazonia, Guiana.]

## OLACINEÆ.

*HEISTERIA RUBRICALYX* (sp. nov.). Fruticosa, glabra, caule erecto, ramoso, tereti, internodiis 1·0-6·0 cm. long. (plerisque vero 1·5-3·0 cm.); foliis petiolatis, elongatis, linearilanceolatis vel lanceolatis, obtusis, sæpe plus minus cuspidatis, basi eximie coarctatis, margine leviter undulatis et saltem in sicco recurvis, coriaceis; pedicellis quam petiolus brevioribus ac tenuioribus; alabastro puberulo, leviter pentagono; floribus 10-andris; calycis lobis deltoideo-lanceolatis, acutiusculis; calycis fructiferi distincte 5-lobati radio drupæ longitudinem superante, ejus lobis reflexis.

*Hab.* In fruticetis juxta Santa Cruz mens. Sept. flores et fructus gerit. (N. 292.)

Frutex altus (veram altitudinem haud observavi), ramosus, copiose foliatus. Caulis spec. meorum ad 3·5 cm. crass., cortice pallide bruneo vix rimoso obtectus. Foliolorum lamina ad 19·0 cm. long. (plerumque vero 10·0-15·0 cm.), medio 2·0-5·3 cm. lat., inâ basi 0·2-0·3 cm. lat., nervus medius supra impressus, subtus prominens; costæ secundariæ utrovis latere circa 12, primo rectæ vel fere rectæ, dein furcatae et sæpe dichotomæ, supra sæpe latere altero eminentes, altero inconspicuæ vel lateribus ambobus inconspicuæ, subtus magis prominulæ; petiolus 1·0-1·7 cm. long., 0·15-0·2 cm. crass., alte caniculatus, et saltem in sicco leviter tortus. Pedunculi sub fructu 0·7-1·0 cm. long., 0·075 cm. crass., sub flore circa 0·1 cm. long., erecti. Inflorescentiæ basis tumida, plerumque 0·3-0·4 cm. diam. (raro in toto ambitu caulis insidens). Calycis lobi circa 0·05 cm. long. Alabastra vix 0·2 cm. long., 0·1 cm. diam., oblongo-ovoidea. Calycis fructiferi rubri 1·8 cm. diam. lobi inæquales, late ovato-rotundati, obtusi, 0·35-0·4 cm. long., 0·5-0·7 cm. lat. Drupa 1·0 cm. long., 0·6 cm. diam., oblongo-ovoidea, apice brevissime apiculata; sarcocarpio tenui, extus læte viridi, endocarpio fragili.

Juxta *H. laxifloram*, Engl., interponenda, cujus folia, calyces, et drupæ plane dispares. *H. salicifolia*, Engl., folia membranacea et drupæ ovato-globosæ modo 0·8 cm. long. [Bras. Or., Amazonia.]

*XIMENIA AMERICANA*, Linn. Sp. Pl. ed. I. p. 1193.

*Hab.* Reperi ad Santa Cruz mens. Nov. florentem. (N. 458.)

*XIMENIA AMERICANA*, Linn., forma *INERMIS*.

*Hab.* Matto Grosso (*Leeson*, in Herb. Brit. Mus.). [Bras. Or., Amazonia, Guiana, Ind. Occ., Ind. Or. et Arch.]

## CELASTRINEÆ.

*HIPPOCRATEA OVATA*, Lam. Illustr. i. p. 100. Forma foliis crenatis vel plus minus crenulatis, usque ad 14·0 cm. long. et 5·5 cm. lat., cymis laxifloris, floribus 0·5-0·6 cm. diam., verisimiliter ad var. *parvifloram*, Peyr., referenda.

*Hab.* Viget juxta Corumbá et mens. Dec. floret. (N. 1016.) [Amer. Trop.]

*HIPPOCRATEA* (sp. indet.); ramulis patentissimis, foliis oblongis lanceolatisve, nunc oblongo-ovatis, obtusis vel obtusissimis, basi obtusis, crenatis, usque ad 15·0 cm. long.



et 5.5 cm. lat. (sæpe 12.0 × 4.0 cm., vel 8.0 × 4.0 cm.), firme coriaceis; costis secundariis circa 6 aperte arcuatis, demum margini undulatim parallelis; petiolis crassiusculis, late canaliculatis, 0.8–1.0 cm. long.; carpidiis lanceolato-obovatis, apice truncato-emarginatis vel cuspidulatis, 4.5 cm. long., juxta basin 1.0 cm., superne 2.0 cm. lat., seminibus in quoque carpidio 4 (an semper?) biseriatis; funiculo basi leviter incrassato, late alato; ala 1.3–1.5 cm. lat. et 2.5–2.8 cm. long., ovato-oblongâ, basi rotundatâ, striâ longitudinali medio percursâ, margine raphigero incrassato; nucleo 1.5–1.7 cm. long., 0.5–0.8 cm. lat., oblongo.

*Hab.* Verisimiliter Santa Cruz, sed, schedulâ prætermisâ, non sine dubio habitationem dico. (N. 527.)

The arrangement of the species of this genus depends primarily upon floral characters, and, inasmuch as I have no flowers, the position of this plant cannot be satisfactorily determined.

*SALACIA* (§*PERITASSA*) *SIPUTA* (sp. nov.). *Ramosa, ramulis teretibus, ad nodos parum tumidis, fusco-cinereis, glabris; foliis longipetiolatis, oblongo-ovatis, obtusis, plerisque breviter cuspidatis, margine repando-undulatis, basi subrotundatis vel leviter coarctatis, nonnunquam aliquanto obliquis, coriaceo-chartaceis, glabris; cymis patulis, petiolos 1½–4-plo excedentibus; bracteis minutis, quam pedicelli graciles sub flore leviter ampliati brevioribus; floribus vix 0.5 cm. diam.; petalis oblongo-spathulatis, obtusis, margine eroso-ciliolatis; antherarum connectivo loculos manifeste excedente; disco cyathiformi ovarium subæquante plano, ovarii loculis 2-ovulatis; stylo levi quam ovarium multo brevior, stigmate obscurissime trilobo, fructu ovoideo.*

*Hab.* Ad ripas fl. Paraguay et dos Bugres prope Santa Cruz (Barra dos Bugres), menss. Jul.–Oct. florens, et Sept.–Oct. fructum præbens. “*Siputá*” sive “*Cyputá*” incolarum. (N. 432.)

Arbor circa 12 (?) met. alt., rami sæpe supra fluvium impendentes. Folia 9.0–14.0 cm. long., medio 4.0–5.5 cm. lat.; costæ secundariæ utrinque 6–8, angulis latis insertæ, aperte arcuatæ, marginem versus dichotomæ et anastomosantes; petioli 1.0–1.5 cm. long., in sicco longitudinaliter rugati. Cymæ usque ad circa 5.0 cm. diam. Bracteæ ovatæ, acuminatæ, 0.1 cm. long., glabræ. Pedicelli plerique 0.3–0.5 cm. long. Flores luteo-virescentes. Calycis lobi rotundati, vix 0.15 cm. long. Petala 0.3 cm. long., 0.15 cm. lat. Fructus maturus flavus, sapidus, 3.0–3.5 cm. diam. Semina 2–4 in pulpâ gratissimâ inclusa.

Certe ad *S. dulcem*, Benth., spectat, ob folia vero firmiora, longius petiolata, basi haud cuneata, cymas laxiores, bracteas minutas, flores majores, discum haud plicatum, etc., speciem propriam esse arbitror.

Of the fruit of this tree, which is greatly esteemed at Santa Cruz, the edible portion consists of a small quantity of luscious substance closely investing the 2–4 large seeds. I was fortunate in finding flowers, as, for some time, fruits only were to be seen, and I had been told that it was useless to expect flowers in September. However, one day in October I came upon a tree bearing both flowers and fruit, greatly to the surprise of an intelligent Santa-Cruzan who, with others, had declared the flowering season to have passed. [Amazonia.]

## RHAMNACEÆ.

*ZIZYPHUS OBLONGIFOLIUS* (sp. nov.). Abundanter ramosa, ramis teretibus, plus minus sinuatis, sat crassis, crebre lenticelliferis, puberulis, mox glabris, spinis mediocribus rectis; foliis petiolatis, oblongis vel oblongo-lanceolatis, obtusis, basi coarctatis, apice calvis vel mucronulatis, impariter serratis vel serrulatis, nonnunquam crenulatis vel modo undulatis, basi, præsertim inter nervos, breviter plus minus arcte pilosis, juvenilibus puberulis; cymis pubescentibus, quam folia brevioribus, plurifloris, axillaribus vel terminalibus; calycis pubescentis segmentis ovatis obtusis, petalis reflexis; ovario biloculari, stylo 2-fido.

*Hab.* Reperi ad viam inter Corumbá et Ladario, ubi mens. Jan. flores et fructus præbet. (N. 1029.)

Frutex circa 2 met. alt. Ramuli vix ad 0.5 cm. crass., grisei, patuli. Spinæ pleræque 0.5-1.0 cm. long., basi 0.1-0.2 cm. crass., teretes, acutatae. Foliorum lamina 3.5-6.0 cm. long., 1.0-2.5 cm. lat., trinervia, in sicco utrinque virentes, subtus vero paullo pallidior; petioli 0.4-0.6 cm. long., 0.05-vix 0.1 cm. crass., canaliculati, plani, pubescentes, in sicco pallide bruni. Cymæ pubescentes, pleræque 0.5-1.0 cm. long., congestæ, plerumque circa 0.8-1.0 cm. diam. Pedicelli 0.3 cm. long., sub fructu incrassati (vix 0.2 cm. crass.) et paullo elongati. Flores lutescenti-virides, 0.4 cm. diam. Calycis segmenta vix 0.2 cm. long., 0.17 cm. lat., facie superiori manifeste carinata. Petala spathulata, calycis lobos haud excedentia. Stamina calyce breviora (0.13 cm. long.). Discus margine undulatus. Ovarium ovoideum, pubescens, stylo crasso brevi coronatum. Drupa immatura ovoidea, 1.3 cm. long., 1.0 cm. lat., viridis.

Species distinctissima, cum nullâ Brasiliensi hucusque cognitâ comparanda; proxime accedit ad *Z. Mistol*, Griseb., plantam Argentinam, cujus folia diversa, spinæ majores, etc.

Extremely close to this, if not conspecific with it, is a plant of Balansa's (no. 2436), collected at Concepcion, in Northern Paraguay, and described as a shrub 2-3 metres high, with fleshy brown fruit; but, seeing that Balansa's specimen is without flowers, the question as to specific identity cannot be answered. There is also in the Herbarium at Kew a small specimen, gathered by Tweedie at Buenos Aires, which, on superficial examination, closely resembles the Matto Grosso plant, but of which I can find no description. [Argentina.]

*RHAMNIDIUM ELÆOCARPUM*, Reiss in Mart. Fl. Bras. xii. pars i. p. 94 (ex icon. et descript.).

*Hab.* Crescit ad Santa Cruz, et in ripâ fl. Paraguay in viciniâ. (Nn. 536, 631.)  
[Bras. Or. ?]

## AMPELIDÆ.

*VITIS EROSA*, Baker in Mart. Fl. Bras. xiv. pars ii. p. 210.

*Hab.* In ripâ fl. Paraguay inter Santa Cruz et Tres Barras frequens. (N. 497.)  
[Amer. Trop.]

*VITIS* (sp. indet.). Specimen mancum, caule sarmentoso, cirrhifero, suberoso, arcte cervino-tomentoso, cirrho elongato tomentello, apice dichotome fisso, 12.0 cm. long.; foliis

ternatim compositis, brevipetiolatis; foliolis ovatis, obtusiusculis, basi obliquis et late rotundatis, margine impariter serrulato-dentatis vel serrulatis, chartaceis, supra, nervis tomentellis exclusis, appresse puberulis, subtus cervino-tomentosis, 5·0–8·5 cm. long., 3·5–5·0 cm. lat.; costis secundariis 6–8 erecto-ascendentibus, leviter arcuatis paribus duobus infimis venuligeris; cymis oppositifoliis, longipedunculatis, pedunculo folia saltem  $\frac{1}{2}$ -plo excedente; inflorescentiæ ramulis una cum pedunculo cervino-tomentosis, basi glanduliferis; pedicellis tomentosis, plerisque alabastra duplo excedentibus; floribus 4-meris, calycis lobis deltoideis obtusis, petalis lanceolato-oblongis acutiusculis 0·2 cm. long.; staminibus petala semiæquantibus; ovario disco admodum incrassato immerso; baccis ignotis.

*Hab.* Crescit forsitan ad Corumbá vel ad Santa Cruz, sed, ob schedulam prætermissam, habitationem indicare nequeo.

Probably a new species near *Vitis albida*, Baker, which I do not feel justified in describing, the specimen being so poor and without fruit.

#### SAPINDACEÆ.

SERJANIA OBTUSIDENTATA, Radlk. Monog. Serj. p. 233.

*Hab.* Floret ad Cuyabá mens. Aug. (N. 31.) [Bras. Or.]

SERJANIA HEBECARPA, Benth. in Hook. Lond. Journ. Bot. iii. p. 192.

*Hab.* Schedulâ prætermissâ, planta incertæ habitationis, forsan ad Santa Cruz lecta. [Bras. Or.]

SERJANIA PERULACEA, Radlk. Monog. Serj. p. 227.

*Hab.* Crescit in angustiis ad Serra da Chapada, necnon ad Jangada; mens. Aug. et Sept. floret et fructificat. (Nn. 75, 267.)

The Jangada specimen has samaras agreeing well with the description of Radlkofer; those from the Serrada Chapada are usually larger, and may almost attain a length of three centimetres, with a width at the loculi of one centimetre. Some of the samaras, however, are typical in respect of size. [Bras. Or., Bolivia, Paraguaria, Argentina?]

PAULLINIA ELEGANS, Cambess. in A. St.-Hil. Fl. Bras. Merid. i. p. 370.

*Hab.* Ad Santa Cruz et in vicinia floret mens. Nov. (Nn. 521, 629.) [Bras. Or., Paraguaria, Argentina.]

PAULLINIA ANGUSTA, N. E. Br. [in Trans. Bot. Soc. Edinb. xx. (1894) 49].

*Hab.* Ad Puerto Pacheco fructificabat mens. Feb. (N. 1063.) [Paraguaria.]

ALLOPHYLLUS EDULIS, Radlk. MSS. (*Schmidelia edulis*, A. St.-Hil., Pl. U.S. sub tab. 67.)

*Hab.* Crescit in sylvulis ad Santa Cruz, ubi floret mens. Sept.; ad Corumbá fructus coccineos ostendit mens Jan. (Nn. 313, 973.) [Bras. Or.]

A third specimen (no. 449), common in the forest between Santa Cruz and Tapirapuan, but found in fruit only, Professor Radlkofer, to whom I sent a sketch, thinks may also belong to this species. The fruits are considerably smaller than those of *A. edulis*, and yellow in colour.

ALLOPHYLLUS SEMIDENTATUS, Radlk. MSS. (*Schmidelia semidentata*, Miq. in Linnæa, xxii. (1849), p. 798.)

*Hab.* Reperi in ripâ fl. Paraguay inter Santa Cruz et Diamantino mens. Oct. florentem. (N. 616.) [Bras. Or.]

Professor Radlkofer was good enough to determine my specimens of this puzzling genus.

THINOUIA SEPIUM (sp. nov.). Scandens, ramulis gracilibus, teretibus, puberulis, mox glabris; foliis longipetiolatis, ternatis; foliolis petiolulatis, ovatis, obtusis, mucronatis, basi late truncato-cordatis, margine crenato-lobulatis, tenuiter membranaceis, cito utrinque glabris vel fere glabris; cymulis longiuscule pedunculatis, solitariis vel racemosis, plurifloris, globosis, nunc cirrho unico, nunc cirrhis binis onustis, nunc ecirrhosis; sepalis oblongis, ciliolatis; petalis pugioniformibus, sepala excedentibus; staminibus 6-8, exsertis; disco hypogyno integro; carpellorum alis erectis ad columellam centram affixis; fructus immaturi loculo ovoideo.

*Hab.* Crescit ad Corumbá, ubi mens. Jan. floret. (Nn. 943, 1076.)

Ramuli 0.2-0.3 cm. diam., in sicco pallidi, crebre striatuli, lenticillis parvis elevatis muniti. Petioli patuli, graciles, 3.0-5.0 cm. long. (superiores vero breviores), obsolete puberuli. Foliola in sicco viridia, pleraque 4.0-6.0 cm. long., et 3.0-6.0 cm. lat., fol. terminale reverâ quam lateralia longius et eximie latius; costæ secundariæ utrinque 4-5, ascendentes, primo rectæ, dein leviter arcuatæ, sæpe in dentem brevem desinentes; fol. lateralium petioluli patuli, circa 0.5 cm. long., fol. terminalis petiolulus 1.0-1.5 cm. long., superne anguste alatus. Pedunculi cymarum solitariarum sæpe 4.0 vel 5.0 cm. attingentes, cymularum racemosarum  $\pm$  2.0 cm. long., minute puberuli, graciles. Cymulæ 1.0 cm. diam., si racemosim dispositæ pedunculis (neque ultra 0.8 cm. long.) insidentes. Flores albi. Pedicelli puberuli, usque ad 0.2 cm. long. Sepala 0.08 cm. long. Petala 0.1 cm. long., longiuscule pilosa. Filamenta inferne pilosa, superne sensim attenuata et glabra, 0.17 cm. long.; antheræ ovato-oblongæ, pilosæ. Fructus nondum maturus stipite 0.6 cm. long. insidens, oblyratus, apice retusus, minute puberulus, usque ad 1.4 cm. long., sursum 0.8 cm. lat., ejus locus 0.6 cm. long. 0.5 cm. lat.

Non dubito quin affinis sit *T. paraguensi* (*Thouinia paraguensi*, Britton, in Ann. N. York Acad. Sc. vii. (1893) p. 75; Balansa 2486, 2486 a, et 2488 in Herb. Kew.), abs quâ reverâ primo obtutu cognoscenda, inter alia, foliolis disparibus, membranaceis, nec subtus molliter pubescentibus.

While agreeing with Radlkofer that the nature of its inflorescence and fruit justifies the separation of *Thinouia* from *Thouinia*, I cannot but regret that the former name should be used in preference to Karsten's *Carpidiopteryx*, published at the same time as *Thinouia*, and free from the objection of being a mere anagram, and, moreover, a puzzling one. As, however, Radlkofer adheres to *Thinouia* in the recently published first part of the Sapindaceæ of Von Martius's 'Flora Brasiliensis,' there seems to be no option but to follow his lead. [Paraguaria.]

MATAYBA GUIANENSIS, Aubl. Pl. Guian. i. p. 331.

*Hab.* Ad Santa Cruz flores albos præbet mens. Dec. (N. 765.) [Bras. Or., Guiana, Amazonia.]

## ANACARDIACEÆ.

[ANACARDIUM OCCIDENTALE, Linn. Sp. Pl. ed. I. p. 383, in provinciâ sæpe colitur.

Ad Serra da Chapada et alibi sæpe vidi hujus generis speciem nanam, floriferam, rarius fructificantem, verisimiliter ad *A. pumilum*, A. St.-Hil., relegandam.

By some oversight I omitted to dry specimens of this curious little Cashew.]

SPONDIAS LUTEA, Linn. Sp. Pl. ed. II. p. 613.

*Hab.* Ad Santa Cruz fructus immaturos præbet mens. Dec. *Cajá* incolarum. (N. 802.)

The people at Santa Cruz mash the ripe fruit and make a pleasant drink of the juice with sugar, and according to Miers ('Woods of Brazil,' MSS. in Herb. Brit. Mus.) the same course is pursued in Eastern Brazil. Miers notes that the fruit is intensely sour. [Amer. Trop., Ind. Occ., Afr. Occ. Trop., Ind. Arch.]

TAPIRIRA GUIANENSIS, Aubl. Pl. Guian. i. p. 470.

*Hab.* Crescit ad Santa Cruz, ubi mens. Oct.–Dec. floret. (Nn. 466, 468, 764.) [Amer. Austr. Trop.]

## CONNARACEÆ.

ROUREA DONIANA, Baker in Mart. Fl. Bras. xiv. pars ii. p. 179 (ex descript.).

*Hab.* Ad Santa Cruz mens. Sept. floret et fructificat. (N. 291.)

Flores albi. Capsulæ oblongo-cylindraceæ, breviter apiculatæ, vivæ coccineæ, 1·0–1·25 cm. long., 0·4 cm. diam. [Amazonia.]

CONNARUS FULVUS, Planch. in Linnæa, xxiii. p. 434.

*Hab.* Ad Serra da Chapada floret mens. Aug. (N. 150.) [Bras. Or., Goyaz.]

## LEGUMINOSÆ.

CROTALARIA ANAGYROIDES, H. B. K. Nov. Gen. et Sp. vi. p. 404.

*Hab.* Reperi ad Coimbrá mens. Feb. florentem. (N. 1065.) [Amer. Austr. Trop.]

TEPHROSIA BREVIPES, Benth. in Ann. Nat. Hist. iii. p. 432.

*Hab.* Floret ad Coimbrá mens. Feb. (N. 1075.)

The flower varies in colour, Schomburgk describing it as blue, and Weddell as yellow; at Coimbrá it was dark purple. [Bras. Or., Peruvia, Guiana, Trinidad.]

TEPHROSIA ADUNCA, Benth. in Ann. Nat. Hist. iii. p. 432.

*Hab.* Schedulâ prætermisâ, locus natalis incertus. [Bras. Or., Goyaz, Guiana, Paraguaria, Uruguaria.]

SESBANIA MARGINATA, Benth. in Mart. Fl. Bras. xv. pars i. p. 43.

*Hab.* Crescit ad Corumbá, ubi flores præbet mens. Jan. (N. 1040.) [Uruguaria, Paraguaria.]

*SESBANIA* ?, sp. nov. Herbacea, foliis elongatis petiolatis, paripinnatis, foliolis 8-9-jugis brevissime petiolulatis, oblongo-oblanco-latis, obtusissimis, basi obtusis, 2.0-3.5 cm. long., 0.8-1.2 cm. lat., una cum rhachi piloso-pubescentibus; racemis quam folia brevioribus, paucifloris, pubescentibus; floribus albis; calycis pubescentis lobis triangularibus, longe acuminatis; vexillo late obovato, apice emarginato, alas oblongas et carinam obtusam paullo superante; fructu ignoto.

*Hab.* Ad Coimbrá floret mens. Feb. (N. 1068.)

*ÆSCHYNOMENE SENSITIVA*, Sw. Fl. Ind. Occ. iii. p. 1256.

*Hab.* In paludosis inter Corumbá et Dorados floret mens. Jan. (N. 1005.) [Amer. Trop., Ind. Occ., Afr. Trop., Madagascaria.]

*ÆSCHYNOMENE HISPIDA*, Willd. Sp. Pl. iii. p. 1163.

*Hab.* Legi prope Corumbá mens. Jan. florentem. (N. 914.) [Amer. Trop. et Subtrop.]

*ÆSCHYNOMENE OROBOIDES*, Benth. in Mart. Fl. Bras. xv. pars i. p. 64.

*Hab.* Ad Serra da Chapada floret mens. Aug. (N. 194.) [Bras. Or., Goyaz.]

Rhizoma crassum, leviter nodulosum, 0.7 cm. diam., in sicco fusco-bruneum.

*DISCOLOBIUM PULCHELLUM*, Benth. in Mart. Fl. Bras. xv. pars i. p. 73, var. *MAJOR*, S. Moore.

A typo divergens foliis longioribus usque ad 10-jugis, foliolis longiuscule petiolulatis (petiolulis fere 0.3 cm. long.), ad 4.0 cm. long., medio 1.1 cm. lat., pedunculis 1.0 cm. long., floribus 2.0 cm. long.

*Hab.* Schedulâ prætermisâ, habitationem indicare nequeo: forsitan Coimbrá, nisi Puerto Pachieco. [Bras. Or., Paraguaria.]

*STYLOSANTHES VISCOSA*, Sw. Fl. Ind. Occ. iii. p. 1285.

*Hab.* Crescit ad Cuyabá mens. Aug. florens. (N. 25.) [Amer. Trop., Ind. Occ.]

*ZORNIA DIPHYLLO*, Pers. Syn. ii. p. 318, var. *GRACILIS*, Benth.

*Hab.* Ad Santa Anna da Chapada legi mens. Aug. (N. 132.) [In tropicis et subtropicis late disseminata.]

*DESMODIUM INCANUM*, DC. Prod. ii. p. 332.

*Hab.* Crescit ad Santa Cruz. (Nn. 421, 453.) [Amer. Trop., Ind. Occ.]

*DESMODIUM AXILLARE*, DC. Prod. ii. p. 333.

*Hab.* Crescit in sylvâ primævâ prope Santa Cruz. (N. 343.) [Amer. Trop., Ind. Occ.]

*DESMODIUM PLATYCARPUM*, Benth. in Mart. Fl. Bras. xv. pars i. p. 100.

*Hab.* Legi inter Cuyabá et Serra da Chapada mens. Aug. florentem. (Nn. 20, 64.)

Rhizoma maxime incrassatum, nodulosum, interdum usque 2.0 cm. diam. dilatatum, in sicco fusco-purpureum. [Bras. Or., Goyaz.]

CENTROSEMA VEXILLATUM, Benth. in Ann. Nat. Hist. iii. (1839) p. 435.

*Hab.* Reperi in loco paludoso juxta Corumbá mens. Jan. florentem. (N. 968.)  
[Amazonia, Guiana.]

TERAMNUS VOLUBILIS, Sw. Fl. Ind. Occ. iii. p. 1241.

*Hab.* Crescit prope Corumbá neonon ad Coimbrá. (Nn. 1010, 1073.) [Amazonia, Nov. Granat., Amer. Centr., Ind. Occ.]

GALACTIA GLAUDESCENS, H. B. K. Nov. Gen. et Sp. vi. p. 431.

*Hab.* Flores purpureos præbet ad Santa Cruz mens. Oct. (N. 651.) [Bras. Or., Goyaz, Columbia.]

GALACTIA RUGOSA, S. Moore. (*Collæa rugosa*, Benth. in Ann. Wien. Mus. ii. (1838) p. 128.)

*Hab.* Ad Jangada floret mens. Sept. (N. 268.) [Goyaz.]

GALACTIA (§ EUGALACTIA) WHITEHORNII, S. Moore. Volubilis, glabriuscula, foliolis 3 (f. terminali paullo majore et petiolato) lanceolatis, apice mucronatis, basi angustatis, membranaceo-coriaceis, puberulis, paginâ superiore pallide nitentibus, inferiore eximie nervoso-reticulatis; pedunculis axillaribus, quam folia longioribus, erectis; pedicellis brevibus, sericeo-tomentosis; calycis pubescentis laciniis elongatis; corollâ calycem duplo excedente; stamine vexillari omnino libero; ovario sericeo-tomentoso.

*Hab.* In angustiis ad Serra da Chapada alt. circ. 300 met. floret mens. Aug. (N. 200.)

Caulis gracilis, teres, in sicco rarus. Stipulæ subulatæ, 0·2 cm. long.; foliola usque ad 8·7 cm. long. et 3·1 cm. lat.; costa mediâ subtus eminens; costæ secundariæ utrovis latere 9–10, 2 infimæ approximatae, oblique insertæ, levissime arcuatæ, deinde margini undulatim parallelæ, subtus prominulæ; venulæ laxè reticulatæ, subtus eminentes, pulvinuli pubescentes, fusco-rufi; folioli terminalis petiolulus ad 1·5 cm. long.; foliola lat. omnino sessilia. Pedunculi ad 15·0 cm. long., teretes, puberuli, demum fere glabri; pedicelli albide pubescentes, mox puberuli, ad 0·5 cm. long. Bracteæ firmæ, ovatae, acutiusculæ, striatæ, obtuse carinatae, puberulæ, 0·2 cm. long. Flores purpurei. Calycis tubus 0·7 cm. long., longitudinaliter nervosus; laciniæ longiores 0·8 cm. long., laterales 0·6 cm. long.; lacinia antica anguste lineari-oblonga acuta, laciniæ laterales quam lac. anticam latius lineares et fere glabræ. Vexillum oblongo-spathulatum, basin versus margine recurvum, 3·0 cm. long.; alæ lineares, breviter 1-auriculatæ, 2·7 cm. long.; carina recta, alas paullo excedens. Ovarium sessile.

Species nulli affinis; flores præbet eos *G. rugosæ* in mentem revocantes, sed, præterquam filamentum vexillare omnino liberum, foliis prorsus diversis gaudet.

DIOCLEA LASIOCARPA, Mart. ex Benth. in Ann. Wien. Mus. ii. p. 133.

*Hab.* Crescit ad ripas fl. Cuyabá prope Melgaço, mens. Aug. florens. (N. 7.)  
[Amer. Austr. Trop.]

PHASEOLUS APPENDICULATUS, Benth. in Ann. Wien. Mus. ii. p. 137.

*Hab.* Ad Serra da Chapada floret mens. Aug. (N. 203.) [Bras. Or.]

PHASEOLUS LASIOCARPUS, Mart. ex Benth. in Ann. Wien. Mus. ii. p. 140.

*Hab.* Crescit in paludibus prope Corumbá, mens. Jan. florens. (N. 1001.) [Bras. Or. (?), Amazonia, Guiana.]

RHYNCHOSIA PHASEOLOIDES, DC. Prod. ii. p. 385.

*Hab.* Crescit ad Serra da Chapada prope pagum Santa Anna da Chapada. (N. 126.)  
Caulis e rhizomate admodum incrassato, leviter tortuoso, usque 1.5 cm. diam. assurgens.  
[Amer. Trop.]

ERIOSEMA SIMPLICIFOLIUM, Walp. Rep. ii. p. 902.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 593.) [Bras. Or., Amazonia, Guiana, Columbia.]

PLATYPODIUM ELEGANS, Vog. in Linnæa, xi. p. 422.

*Hab.* Crescit ad ripas fl. Paraguay prope Tres Barras. (N. 492.) [Bras. Or., Goyaz, Bolivia.]

PTEROCARPUS ROHRII, Vahl, Symb. ii. p. 79.

*Hab.* Ad Corumbá reperi mens. Jan. florentem. (N. 942.) [Goyaz, Amazonia, Guiana, Venezuela.]

PLATYMISCIUM FLORIBUNDUM, Vog. in Linnæa, xi. p. 199.

*Hab.* Ad Jangada floret mens. Sept. (N. 271.)

Arbuscula circa 4-metralis, trunco gracili, crebre ramoso. Folia pallide virentia.  
Flores aurantiaci. [Bras. Or.]

GEOFFRÆA, sp. indet., ex affinitate *G. superbæ*, H. B. K.

*Hab.* Crescit in ripâ fl. Paraguay juxta montem Pão d'Assucar dictum, mens. Feb. fructus vix maturos ferens. (N. 1043.) [Bras. Or., Peruvia, Venezuela.]

BOWDICHIA VIRGILIOIDES, H. B. K. Nov. Gen. et Sp. vi. p. 376, var. FERRUGINEA, Bth.

*Hab.* Circum Cuyabá sat frequens, mens. Aug. florens. (N. 26.) [Bras. Or., Goyaz, Amazonia, Guiana, Venezuela.]

CÆSALPINIA TAUBERTIANA (sp. nov.). Arborea, inermis; foliis brevipetiolatis, nunc impari- nunc paripinnatis, 8-10-jugis; foliolis parvis 20-28, raro usque ad 16 reductis, sæpius alternis, ovato-oblongis, basi maxime obliquis, coriaceis, utrinque reticulato-venosis; floribus parvis paniculatis, paniculis quam folia brevioribus floribundis, calycis lobis imbricatis, staminibus quam petala paullulum brevioribus.

*Hab.* Crescit ad Corumbá, ubi mens. Jan. floret. (N. 1037.)



Arbuscula. Ramuli subteretes, mox glabri, cortice brunescente vel erubescente, pallide nitido, lenticellis parvis albidis abunde obsito tecti. Foliorum rhachis cum petiolo 10·0–13·0 cm. long. (foliorum summorum vero usque ad 8·0 cm. miniata), basi eximie pulvinata, arcute tomentosa; petioluli communes 4·0–6·0 cm. long., pulvinulati, pubescentes. Foliola 0·7–1·0 cm. long., summum usque ad 0·5 cm. lat., apice obtusissima, supra pallide nitidula, subtus aliquatenus decoloria, margine ciliata, ceteroquin (interdum obsolete) piloso-puberula. Stipulæ caducissimæ. Paniculæ 8·0–9·0 cm. long., anguste thyrsoidæ, ferrugineo-tomentosæ; ramuli erecti vel ascendentes, tomentosi, glandulis parvis obsiti. Pedunculi erecti, rigidi, ipso sub flore articulati, ferrugineo-tomentosi, nunc ultra 1·0 cm. long., nunc usque ad 0·5 cm. abbreviati. Bracteæ lanceolatæ, 0·15 cm. long., longe ante floritionem evanidæ. Calycis ferrugineo-tomentosi tubus amplus, lobis brevior, lobus infimus elongatus, ovato-oblongus, obtusissimus, 0·7 cm. long., 0·45 cm. lat., lobi reliqui ovati, acuti, 0·55 cm. long. Petala lutea, 1·2–1·4 cm. long., obovata, unguibus latis tomentoso-villosis insidentia, glandulis paucis immersis instructa. Filamenta crassiuscula, complanata, 1·0–1·15 cm. long., sursum attenuata, basi villosa, tomentosa, glandulis stipitatis sparsis prorsus plus minus munita; antheræ oblongæ, 0·2 cm. long. Ovarium lineari-oblongum, tomentellum, 0·3 cm. long., in stylum pubescentem, apice glabrum, 1·0 cm. long. desinens. Stigma parvum, clavellatum. Legumen haud obvium.

Species juxta *Cæsalpiniam microphyllam*, Benth., interponenda, cujus ramuli glandulosi, folia et foliola minora (hæc itaque pauciora), inflorescentia racemosa glanduloso-tomentosa, calyx dispar, etc. *C. peltophoroides*, Benth., inflorescentiâ racemosâ, foliorum rhachi abbreviatâ, foliolis membranaceis evenosis gaudet.

Dr. Taubert kindly examined a specimen of this plant for me.

CÆSALPINIA GILLIESII, Wall. ex Hook. Bot. Misc. i. p. 129.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Argentina.]

[CÆSALPINIA PULCHERRIMA, Sw. Obs. Bot. p. 166.

*Hab.* Ad Corumbá colitur.

I did not press specimens of this common plant.]

CASSIA OCCIDENTALIS, Linn. Sp. Pl. ed. I. p. 377.

*Hab.* Frequens ad Corumbá, Coimbrá, et alibi in provinciâ. (N. 967 a.) [In tropicis late disseminata.]

CASSIA TORA, Linn. Sp. Pl. ed. I. p. 376.

*Hab.* Reperi ad Corumbá. (N. 968 a.) [Frequens in regionibus tropicis.]

CASSIA PILIFERA, Vog. Syn. Gen. Cass. p. 23, var. SUBGLABRA, S. Moore; caule fere omnino glabro pilis brevibus sparsissime induto, foliolis oblongis quam ea typi angustioribus, floribus minoribus. An species propria inter *C. piliferam* et *C. Tora*, medium tenens?

*Hab.* In paludibus ad Carandajinho juxta Corumbá floret mens. Jan. (N. 919.)  
[Bras. Or., Goyaz, Bolivia, Amer. Centr.]

CASSIA VELUTINA, Vog. Syn. Cass. p. 24.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Bras. Or.]

CASSIA DYSOPHYLLA, Benth. in Mart. Fl. Bras. xv. pars ii. p. 117.

*Hab.* Frutex fere orgyalis fructificat ad Cuyabá mens. Aug. (N. 36.) [Goyaz.]

CASSIA ALATA, Linn. Sp. Pl. ed. I. p. 378.

*Hab.* Crescit in paludosis ad Corumbá, ubi floret mens. Jan. (N. 967.) [In tropicis  
vulgatissima.]

CASSIA ACULEATA, Pohl, ex Bth. in Mart. Fl. Bras. xv. pars ii. p. 127.

*Hab.* Viget in paludibus ad Carandajinho mens. Jan. florens. (N. 907.) [Bras.  
Or., Goyaz.]

BAUHINIA OBTUSATA, Vog. in Linnæa, xiii. 1839, p. 305.

*Hab.* Circum Cuyabá sat frequens, itaque ad Santa Cruz. (N. 21.)

My Santa Cruz specimens were lost, but I feel sure that the plant occurs at that  
place. [Bras. Or., Goyaz.]

BAUHINIA MICROPHYLLA, Vog. in Linnæa, xiii. 1839, p. 301.

*Hab.* Juxta montem Pão d'Assucar flores virides præbet mens. Feb. (N. 1082.)  
[Bras. Or., Cuba.]

BAUHINIA HETERANDRA, Benth. in Mart. Fl. Bras. xv. pars ii. p. 196.

Frutex orgyalis; flores virides ad Corumbá mens. Jan. fert. (N. 952.) [Bras.  
Or., Goyaz.]

BAUHINIA (§ PAULETIA) VESPERTILIO (sp. nov.). Sparsim debiliterque aculeolata, caule  
ascendente, subtereti, tomentoso-hirsuto, deinde glabro vel fere glabro et cinereo;  
stipulis setaceis, hirsutis, quam petiolus brevis dense hirsuto-tomentosus brevi-  
oribus; foliis coriaceo-membranaceis, quadrangulati-ovato-cordatis, breviter bilobis,  
9-11-nerviis, supra glabris, subnitentibus, eminenter reticulato-venosis, subtus, præ-  
cipue secus nervos, crebre hirsutis, margine ciliatis, lobis late triangulari-deltoideis,  
obtusis vel obtusissimis; alabastris elongatis anguste clavatis, obtusis, apice breviter  
5-setosis; petalis lineari-spathulatis, obtusis; antheris omnibus subæquilongis, linea-  
ribus; ovario longe stipitato, tomentoso; stylo crasso, stigmatibus dilatato, legumine  
stipitato hirsuto-tomentoso.

*Hab.* Santa Cruz, mens. Nov. florens. (N. 587.)

Frutex gracilis, ad 2·5 met. alt., sparsim ramosa; aculei 1·0 mm. long., brunei.  
Folia ad 7·0 cm. long., medio ad 9·0 cm. lat.; lobi ad 2·3 cm. long. Pedicelli  
solitarii vel gemini, hirsuti, 2·4-4·0 cm. long., demum recurvi. Bracteæ et

bracteolæ setaceæ, 0·5–1·0 cm. long., hirsutæ. Calycis hirsuto-tomentosi tubus longitudinaliter striatus, circa 1·5 cm. long., 0·7 cm. lat.; lacinie spathulato-lineares, circa 3·0 cm. long. Petala obtusa, margine crispata, glabra, alba. Filamenta imâ basi connata, glabra. Stylus calycis laciniis brevior, glaber. Legumen (haud maturum) 11·0 cm. long., basi angustatum, sub apice attenuatum.

Proxime accedit ad *Bauhiniam mollem*, Walp., discedit vero indumento, foliis diversiformibus, alabastris apice 5-setosis, necnon punctis aliis. [Goyaz.]

BAUHINIA (§ PAULETIA) CORUMBENSIS, (sp. nov.). Aculeata, ramosa, caule subtereti longitudinaliter striatulo, glabrato; stipulis parvis, setiformibus; foliis membranaceis, ovate cordato-rotundatis, breviter bilobis, 9–11-nervis, supra glabris, subtus appresse pubescentibus puberulisve, in sicco fere concoloribus, eximie reticulato-nervis, lobis rotundatis, obtusissimis; alabastris mediocribus, oblongis, basi angustatis, juxta medium attenuatis, apice obtusis et integris vel brevissime 5-apiculatis; petalis linearibus, obtusis; antheris subæqualibus; ovario longe stipitato, tomentoso; stylo superne incrassato, stigmatate dilatato; legumine stipitato, basi angustato, appresse sericeo-tomentello.

*Hab.* Juxta Corumbá, mens. Jan. florens et fructum gerens. (N. 1039.)

Frutex ramosus; aculei recti vel paullo recurvi, 0·3 cm., ramulorum ultimorum 0·15 cm. long. Foliorum lamina ad 3·5 cm. long., medio ad 5·0 cm. lat. nervo medio calvo vel apiculo debili ad 0·3 cm. long. coronato; lobi ad 1·2 cm. longi.; petiolus ad 2·0 cm. long., demum glaber. Stipulæ ad 0·3 cm. long. Pedicelli ad 1·5 cm. long., tomentelli demum glabri. Bracteæ et bracteolæ setaceæ, 0·25 cm. long. Calycis tomentelli tubus ventricosus, in sicco longitudinaliter striatus, 1·2 cm. long., 0·7 cm. lat.; lacinie lineares, acutiusculæ, margine crispatæ, circiter 3·0 cm. long. et 0·25 cm. lat. Petala anguste spathulata, ut opinor alba. Filamenta basi connata, puberula. Stylus ovarium subæquans, vix omnino glaber; ovula ad 23. Legumen usque ad 17·5 cm. long., 1·0–1·3 cm. lat., obtusiusculum, ipso sub apice rostratim constrictum.

Accedit ad *B. brevilobam*, Benth., sed ob spinas rectas vel paullo recurvas, formam diversam lorum foliorum minorum, alabastra breviora latiora, necnon petala angustiora, præter alias notas, optime distincta. [Bras. Or.]

BAUHINIA RUBIGINOSA, Bong. in Mém. Acad. Pétersb. sér. VI., iv. (1836), p. 112.

*Hab.* Ad Santa Cruz floret mens. Sept. (N. 363.)

Forma foliolis discretis. [Bras. Or., Goyaz, Guiana, Amazonia.]

BAUHINIA CUMANENSIS, H. B. K. Nov. Gen. et Sp. vi. p. 321.

*Hab.* Frequens circum Cuyabá, ubi floret mens. Aug.; ad Santa Cruz mens. Nov. fructificat. (Nn. 32, 592.) [Goyaz, Guiana, Columbia.]

COPAIFERA ELLIPTICA, Mart. Herb. Fl. Bras. 127.

*Hab.* Ad Cuyabá fructificat mens. Aug. (N. 27), itaque sine loci indicatione Leeson in Brit. Mus. [Matto Grosso.]

PROSOPIS RUSCIFOLIA, Griseb. Pl. Lorentz. p. 82.

*Hab.* Legi ad Puerto Pacheco et floribus et fructibus orbam. (N. 1053 a.) [Paraguaria, Argentina.]

ACACIA FARNESIANA, Willd. Sp. Pl. iv. p. 1083.

*Hab.* Matto Grosso (*Leeson* in Herb. Brit. Mus.). [Late diffusa.]

MIMOSA VELLOZIANA, Mart. Herb. Fl. Bras. 185. Forma parva, ægre semimetralis, spinis minutis, foliolis angustis. Vix, me iudice, species propria.

*Hab.* Ad Jangada floret mens. Sept. (N. 252.) [Bras. Or., Columbia, Amer. Centr.]

MIMOSA (§ EUMIMOSA PECTINATA) PACHECENSIS (sp. nov.). Suffruticosa, caule pubescente, deinde glabra, aculeis parvis infrastipularibus sæpe ternis, pinnis unijugis, foliolis 18-20-jugis anguste lineari-oblongis, obliquis, obtusis vel breviter apiculatis, margine passim setuloso-serratis, subtus (in sicco) pallidioribus et pilis strigosis appressis sparsim obtectis, rhachide pubescente; pedunculis axillaribus, capitulis globosis; floribus 4-meris 4-andris; legumine inchoato lineari marginibus setis munito, valvis spinuloso-hispidulis.

*Hab.* In campis prope Puerto Pacheco, inter Asuncion et Corumbá. (N. 1058.)

Caulis ramosus, cortice fusco. Spinæ rectæ, bilateraliter compressæ, pallide fulvæ, 0.15-0.25 mm. long. Stipulæ firmæ, lineari-subulatæ, acutæ, pubescentes, margine rigide ciliatæ, 0.15-0.2 cm long. Petioli circa 0.8 cm. long., appresse pubescentes; pulvinus minutus; stipellæ subulatæ 0.1 cm. long.; foliola ad 0.5 cm. long. et 0.15-0.2 cm. lat., foliolorum rhachis usque ad 4.0 cm. long. Capitulum 0.8 cm. diam. Corolla 0.2 cm. long., obconica; petala obtusa, apice leviter incrassata. Filamenta vix 0.5 cm. long. Legumen 2.0-2.2 cm. long., 0.3 cm. lat.

*M. polycarpæ*, Kunth, proxima, sed aculeis parvis sæpe ternis, foliolis minimis paucius-jugis, leguminis setis debilioribus ab eâ clare dignoscenda. [Bras. Or., Goyaz., Bolivia, Peruvia, Columbia.]

MIMOSA HEXANDRA, M. Micheli, Contrib. Fl. Paraguay, p. 91, var. TROPICA, S. Moore. A typo distat spinis parvis, pedicellis gracilibus, ovario omnino glabro nec apice piloso.

*Hab.* Suffrutex parvus diffusus; ad Puerto Pacheco mens. Feb. floret et fructus immaturos fert. (N. 1078.) [Paraguaria.]

MIMOSA CINEREA, Vell. Fl. Flum. xi. t. 35.

*Hab.* Floret ad Coimbrá mens. Feb. (N. 1072.) [Bras. Or., Goyaz, Uruguaria.]

CALLIANDRA CHAPADÆ (sp. nov.). Frutex, caule ascendente glabro, cortice bruno-cinereo; pinnis plerumque 7-jugis (3-8-jugis, rarissime 3-jugis); foliolis multijugis, obliquis, oblongo-linearibus, acutis, nitidis; capitulis a pedunculis axillaribus vel terminalibus crassis tomentosissimis quam folia brevioribus suffultis; floribus breviter

pedicellatis dense lanato-velutinis, corollâ calycem amplum vix duplo excedente, legumine (immaturo) recto, sublignoso, flavescenti, sericeo-velutino.

*Hab.* Serra da Chapada, circa 1800 ped. supra mare. Fl. Aug. (N. 160.)

Frutex prolixus ad 6 met. alt. Caulis subteres, longitudinaliter striatus. Stipulæ firmæ, lanceolato-oblongæ, acutæ, glabratae, usque ad 0·7 cm. long. Petiolus communis manifeste pulvinatus, 0·5–2·0 cm. long.; pinnæ confertæ, ad 6·0 cm. long.; foliola ad 38-juga, subtus albida, foliorum majorum 0·7 cm. longa. Pedunculus 2·0–4·0 cm. long. Capitula plerumque 10–15-flora. Stipulæ lineares, scariosæ, 0·3 cm. long. Pedicelli 0·3 cm. long., crassi. Calyx 0·5 cm. long., medio 0·4 cm. lat.; lobi ovati, obtusi, 0·15 cm. long. Corolla 0·9 cm. long., extus plane sericeo-velutina. Staminum alborum tubus 0·3 cm. long., filamenta 4·5 cm. Legumen immaturum 4·5 cm. long.

Affinis *Calliandra Tweediei*, Benth., abs quâ pinnis plurijugis, pedunculis necnon pedicellis crassis tomentosis, floribus majoribus dense lanato-velutinis, staminibus albis insigniter abhorret. [Bras. Or.]

*CALLIANDRA PARVIFLORA*, Benth. in Hook. Lond. Journ. Bot. iii. p. 112.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 737.) [Bras. Or., Goyaz, Amazonia, Bolivia.]

*PITHECOLOBIUM STIPULARE*, Benth. in Mart. Fl. Bras. xv. pars ii. p. 450.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Tapirapuan, mens. Sept. florens. (N. 395.) [Amazonia, Guiana.]

*INGA NOBILIS*, Willd. Enum. Hort. Berol. 1047.

*Hab.* Crescit ad Serra da Chapada, necnon ad ripas fl. Paraguay prope Tres Barras (Nn. 69, 621.) [Goyaz, Amazonia, Guiana, Peruvia, Columbia.]

*INGA* (§ *PSEUDINGA*, *PILOSIUSCULÆ*) *SANCTÆ-ANNÆ* (sp. nov.). Rufo-pilosula, petiolo alato, apice calvo (vulgo haud setifero), biglanduloso, glandulis crateriformibus sessilibus; foliolis bijugis, mediocribus, ovato-lanceolatis, cuspidatis vel acuminatis, basi angustatis, utrinque (imprimis præter nervum medium paginæ inferioris) rufo-pilosulis, membranaceo-coriaceis; floribus in racemis paucifloris, pedunculis foliolis brevioribus suffultis digestis; pedicellis calycem longitudinaliter striatum obscure pilosiusculum fere subæquantibus; corollâ sericeo-villosâ, quam calyx duplo longiore; staminum tubo paullo exserto.

*Hab.* Crescit ad ripas fl. Santa Anna, ubi floret mens. Oct. (N. 611.)

Arbor circa 25 (?) met. alt. Caulis obscure angulatus, cortice cinereo lenticellifero obtectus. Foliorum rhachis ad 4·5 cm. long.; alæ 0·6–1·0 cm. lat. jugum proximum 6·0–10·5 cm., jugum remotum 6·5–16·0 cm. long.; foliola subtus pallidiora; costæ secundariæ utrinque 10–14 (adjectis paucis secundi ordinis), oblique ascendentibus, juxta marginem arcuatim et undulatim conjunctis, supra impressis, subtus eminentibus. Pedunculi ad 5·5 cm. long., rufo-pilosuli, leviter sulcati; bractæ setaceæ vix 0·2 cm. long.; pedicelli 0·4 cm. long., graciles. Flores lutei. Calyx 0·5 cm. long., urceolatus. Corollæ lobi triangulares, acuti, circiter 0·2 cm. long. Filamenta corollâ duplo longiora, lutea. Legumen ignotum.

Nobis videtur proxime accedere ad *I. setiferam*, DC., sed statim diversa adjudicari, præter alia (ex. gratiâ, petiolum vulgo calvum, foliola minora), ob pedicellos calycem pæne subæquantés. [Amazonia, Guiana, Ins. Trinitatis.]

INGA EDULIS, Mart. Herb. Fl. Bras. 113.

*Hab.* Crescit ad ripas fl. Paraguay juxta Santa Cruz. (N. 508.) [Amazonia, Guiana, Columbia, Amer. Austr.]

#### ROSACEÆ.

MOQUILEA TURIUVA, Hook. f. in Mart. Fl. Bras. xiv. pars ii. p. 25.

*Hab.* Ad Santa Cruz floret mens. Nov. (Nn. 564, 586.)

Frutex ramosus, trimetralis, inferne aphyllus. Flores albi. [Amazonia, Guiana, Venezuela.]

HIRTELLA AMERICANA, Aubl. Pl. Guian. i. p. 247.

*Hab.* Crescit in angustiis ad Serra da Chapada, mens. Aug. florens. (N. 78.) [Amer. Trop., Ind. Occ.]

HIRTELLA COLLINA (sp. nov.). Fruticosa, ramosa, ramulis copiose foliatis, teretibus, hirtulo-pubescentibus dein glabris; foliis subsessilibus, nonnunquam subamplexicaulibus, lanceolatis, acutis vel breviter cuspidato-acuminatis, basi rotundatis, parum attenuatis, firme coriaceis, subtus plerumque puberulis vel omnino glabris, eximie reticulate nervosis; paniculis racemiformibus, elongatis, pendulis, multifloris, plerumque quam folia circa duplo longioribus, hirtulo-pubescentibus; pedicellis hirtulo-pubescentibus, glandulis instructis; bracteis setaceis pedicellos subæquantibus; calycis tubo urceolari limbo æquilongo; petalis calycis lobos subæquantibus; staminibus (an semper?) 7; stylo, stamina excedente, inferne sericeo.

*Hab.* Reperi in angustiis ad Serra da Chapada mens. Aug. florentem. (N. 141.)

Ramuli 0·2-0·3 cm. diam., nunc fusci, nunc cinerei, nitidi, verruculis minimis præditi.

Folia 7·5-12·0 cm. long., 2·7-4·0 cm. lat., firme coriacea; costæ secundariæ utrovis latere circa 10, dein dichotomæ et arcuatim junctæ, una cum costâ mediâ utrinque, præsertim vero subtus, eminentes; venulæ laxè reticulatæ, utrinque prominulæ; petioli ad 0·3 cm. long., hirtulo-pubescentes; stipulæ setaceæ, hirtulæ, 0·4 cm. long. Paniculi evoluti 14·0-26·0 cm. long., axillares vel terminales, tenues; bracteæ 0·3-0·4 cm. long. Pedicelli patuli, hirtuli, 0·25 cm. long. uni- vel biglandulosi, si biglandulosi glandulâ inferiore plerumque plus minus cassâ, glandulæ usque 0·1 cm. long. Flores circa 0·6 cm. diam. Calycis hirtuli tubus vix 0·35 cm. long., juxta medium 0·2 cm. lat., basi usque 0·1 et sub limbo ad 0·15 cm. contractus; lobi oblongi, obtusi, margine membranacei. Petala, ut opinor alba, oblongo-vel anguste oblongo-ovovata, 0·15 cm. lat. Filamenta glaberrima, sursum angustata, paullulum ultra 1·0 cm. attingentia. Ovarium anguste ovoideum, longe sericeum, 0·1 cm. long. Stylus 1·5 cm. long., triente inferiore sericeus, ceteroquin glaberrimus. Drupam non vidi. Stirps ab *H. Burchellii*, Britton, ita distinguenda:—

*Hirtella collina.*

Folia non bullata, summum subamplexicaulia, subtus plerumque puberula vel omnino glabra.  
 Ramuli et paniculæ hirtulo-pubescentes.  
 Calyx extus hirtulus, intus pubescens.  
 Petala oblonga vel anguste obovato-oblonga, vix 0·3 cm. long. et 0·15 cm. lat.  
 Filamenta filiformia, tandem vix ultra 1·0 cm. long.  
 Stylus inferne sericeus.

*H. Burchellii.*

Folia bullata, amplexicaulia, subtus plus minus hirsuta.  
 Ramuli et paniculæ hirsutissimi.  
 Calyx hirsutissimus, intus hirsutus.  
 Petala obovato-oblonga, fere 0·4 cm. long. et 0·25 cm. lat.  
 Filamenta crassiuscula, fere 1·5 cm. long.  
 Stylus inferne longe villosus.

Ante oculos habui specimen Bolivianum in Hb. Kew. conserv., a cl. Rusby (N. 1222) lectum, quod cl. Britton (Bull. Torr. Bot. Club, xviii. p. 10) conspecificum cum plantâ Burchellianâ intuitur; ab illâ vero ex meâ sententiâ certe abhorret, et forsan pro specie tertiâ rite habendum paniculis hirsutissimis *H. Burchellii* et floribus parvis *H. collinæ*. [Bras. Or., Bolivia.]

## COMBRETACEÆ.

**TERMINALIA FESTINATA** (sp. nov.). Fruticosa, crebre ramosa, ramulis juvenilibus appresse sericeo-pubescentibus, dein fere glabris; foliis nondum evolutis parvis, petiolatis, appresse sericeo-tomentosis, adultis verisimiliter ovato-lanceolatis, acuminatis; floribus præcocibus in spicas abbreviatas densifloras ex axillis ramentorum parvorum singillatim ortas dispositis; bracteis ovarium excedentibus; ovario subtrigono, fructu ignoto.

*Hab.* Ad Santa Cruz floret mens. Oct. (N. 450.)

Rami nudi, usque ad 0·4–0·5 cm. diam., cortice cinereo levissime striato, mox transverse dirupto et evanido, interiorem cervinum proponente; ramuli teretes, 0·15–0·2 cm. diam., erecto-ascendentes. Ramenta parva, lanceolata vel ovato-lanceolata, longe acuminata, dorso sericea, mox pubescentia, 0·2–0·3 cm. long. Pedunculi erecti, graciles, appresse pubescentes, 1·0–2·0 cm. long. Spicæ 0·8–1·3 cm. long., circa 0·7 cm. diam., pleræque 15–24-floræ. Bracteæ lineari-subulatæ, appresse sericeæ, 0·2 cm. long. Flores lutei. Calycis appresse piloso-pubescentis usque ad medium 5-partiti lobi triangulares, acutiusculi, paullulum ultra 0·1 cm. long. Staminum antisepalorum filamenta brevia, vix 0·2 cm. long., staminum alternisepalorum usque ad 0·3 cm. long., filamenta omnia imâ basi pilosiuscula, æstivatione involuta. Antheræ cordatæ. Discus annulatus. Ovarium 0·12 cm. long., usque ad 0·05 cm. lat., dense sericeum. Stylus crassiusculus, 0·3 cm. long., dimidio inferiore sericeo-pilosus.

Species singularis, nulli mihi cognita affinis, habitu præcocifloro *T. Riedlii*, Eichl., in mentem revocat, abs quâ attamen pluribus de signis affatim distat.

**COMBRETUM SECUNDUM**, Jacq. Sel. Stirp. Amer. Hist. p. 103.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Amer. Austr.]

## MYRTACEÆ.

*PSIDIUM* (§ APERTIFLORÆ) *INSULINCOLA* (sp. nov.); ramulis pedunculisque hirsuto-pubescentibus; foliis brevissime petiolatis, chartaceis, lanceolatis, obtusis vel obtusiusculis, amplexicaulibus, præsertim ad nervum medium piloso-pubescentibus, mox glabris, utrinque elevato-glandulosis, supra subnitentibus, reticulatim et arcuatim nervosis; paniculâ terminali pauciflorâ, foliis hebetatis interjectis; calyce quam pedicellus longiore vel brevior, campanulato, aperto, subæqualiter 5-lobo (rarius lobis duobus, inseparatis inæqualiter 4-lobo), albido-tomentoso; ovario 2-loculari; fructibus pyriformibus tomentoso-pubescentibus, lobis calycinis persistentibus coronatis.

*Hab.* In insulis planis nacta fl. Paraguay tempore pluvioso inundatis inter Santa Cruz et Diamantino, ubi fl. et fruct. gerit mens. Oct. (N. 624.)

Frutex erectus, diffusus, ramosus, usque biorgyalis. Folia per paria inæqualia vel subæqualia, 4.0-10.0 cm. long., medio vix 2.0-3.5 cm. lat., nonnunquam subfalci-formia, basi parum obliqua, margine leviter undulata vel undulato-repanda; costæ secundariæ utrovis latere circa 12, pluribus tertii ordinis adjectis, aperte arcuatæ, dein prope marginem sæpe dichotomæ, ibique conjunctæ, venulâ unâ cum costis utrinque prominulâ. Panicula foliis brevior; pedicelli 0.3-1.0 cm. long. Flores subcongesti, circa 1.5 cm. diam., albi. Calycis lobi rotundati, 0.2-0.4 cm. long., 0.4 cm. lat., intus pubescentes. Petala 1.0 cm. long., circa 0.7 cm. lat., oblongo-ovata, conspicue glandulosa. Filamenta vix 1.0 cm. long.; torus stamineus hirsutus. Ovarium circa 0.6 cm. long. et 0.3 cm. crass., teres, albido-tomentosum; stylus incurvus, 0.9 cm. long., apicem versus sensim angustatus, glaber. Fructus usque ad 3.2 cm. long., 1.5 cm. lat. (basi vix 0.3 cm. lat.), pedicellis 0.5-0.6 cm. long. tomentoso-pubescentibus suffulti, raro sessiles.

Species *P. paraensi*, Berg, arcte affinis, ob folia vero angustiora, minus amplexicaulia, ramulos hirsuto-pubescentes nec rufo-tomentosos, inflorescentiam laxiorem, flores pedicellatos, necnon ovarium biloculare (nec triloculare) optime dignoscenda. [Amazonia.]

*PSIDIUM* (§ COSTATA) *TRIPARTITUM* (sp. nov.). Ramosa, ramulis crebro foliatis, subtere-tibus, interdum compressiusculis, pubescentibus puberulisve, subinde glabris; foliis parvis, breviter petiolatis, lanceolatis vel ovato-lanceolatis, sæpe cuspidatis, rarissime oblanceolatis et retusis, raro ovatis et obtusis, nonnunquam breviter mucronulatis, basi angustatis, interdum obliquis, tenuiter coriaceis, supra nitidis, subtus paullo decoloribus, imâ basi puberulâ exemptâ glabris, elevato- et impellucido-punctatis; pedunculis axillaribus solitariis, unifloris, puberulis; alabastris pyriformibus, sub calyce constrictis, glabris; ovario 3-loculari glabro; calyce usque ad anthesin clauso demum tripartito; baccâ globosâ, polyspermâ.

*Hab.* Ad Corumbá floret et fructificat mens. Jan. (N. 971.)

Arbuscula vel potius frutex, circiter trimetralis. Ramuli cinerei, plerique 0.2-0.3 cm. diam., intervallis plerumque 1.0-2.0 cm. foliigeri. Folia pleraque 3.0-4.0 cm. long. (raro 4.5 cm. attingentia), 1.2-2.0 cm. lat., margine leviter vel levissima undulata, sæpe revoluta; costæ secundariæ utrinque plerumque 6-8, rectæ, sub



marginē dichotomæ, ramis subinde margini parallelis arcuatim conjunctis; costa media supra impressa, subtus admodum prominens; petioli plerique 0·4 cm. long., puberuli. Pedunculi 1·0–1·2 cm. long., ascendentes, cito obsolete puberuli; alabastra obtusissima, in toto 0·7 cm. long., sursum 0·5 cm. lat., sub calyce ad 0·3 cm. angustata. Flores 1·5 cm. diam. Calycis lobi plerumque inæquales, ovati, obtusissimi, utrinque glabri. Petala 5, ovata, obtusissima, glabra, pellucido-punctata. Bacca sicca, paullo ultra 1·0 cm. diam., ex schedis meis magnitudine pruni parvi. Semina hippocrepica, 0·4 cm. diam. Embryo normalis.

Species distincta, cum nullâ hujus sectionis componenda.

PSIDIUM ARAÇU, Raddi, Opus. Sc. iv. p. 854.

*Hab.* Floret et fructificat ad Santa Cruz mens. Oct. et Nov., itaque ad Jangada floret Sept. (Nn. 253, 770 *a.*) [Amer. Trop.]

MYRCIA (§ ACUMINATÆ) GOVINHA (sp. nov.); ramulis, foliorum novellorum petiolis, et paginæ inferioris nervo medio pubescenti-tomentosis, demum glabriusculis; foliis breviter petiolatis, coriaceis, ovatis vel ovato-oblongis, cuspidatis, acuminatis, basi leviter coarctatis, reticulato-nervosis, crebre pellucido-punctatis, in sicco virescentibus, nequaquam decoloribus; paniculis ab axillis foliorum superiorum ortis vel subterminalibus, multifloris, maxime effusis, quam folia longioribus vel ea subæquantibus; germine 4-loculari, albo-sericeo; sepalis subæqualibus, obtusis, puberulis.

*Hab.* Viget in nemorosis ad Santa Cruz, mens. Dec. florens. Nom. vernac. *Govinha*. (Nn. 784 *a.*, 784 *b.*)

Frutex elegans, ramosus. Caulis teres, cinereus; ramuli ultimi aliquanto compressi. Folia supra nitida, maxime inæqualia, 4·0–14·5 cm. long. (pleraque 9·0–11·0 cm. long.), 1·5–6·5 cm. lat.; costa media supra impressa, subtus eminens; costæ secundariæ utrinque circa 20, angulis latis insertæ, rectæ, sub margine costam marginalem undulatam incidentes, utrinque prominulæ; venulæ arctissime reticulatæ, supra eminentes; petiolus circa 0·5 cm. long., in sicco manifeste canaliculatus. Bracteæ caducæ, scariosæ, lanceolatæ vel lineares, circa 0·15–0·25 cm. long. Flores sessiles vel breviter pedicellati, 0·5 cm. diam. Alabastra depresso globosa, obtuse pentagona, pubescentia, 0·2 cm. diam. Sepala ovata, 0·13 cm. long. Petala late obovata, obtusissima, concava, vix 0·3 cm. long., 0·25 cm. lat. Germen circa 0·15 cm. long. et 0·1 cm. lat.; stylus crassiusculus, staminibus brevior. Fructus haud visus.

Species inter *M. ovatam*, Cambess., et *M. phæocladam*, Berg, medium tenens, ab ambabus vero primo intuitu diversa adjudicari paniculis effusis germine albo-sericeo 4-loculari.

The fruit is known as *Fruito de Pombe*, and its juice is said to yield a red indelible ink. [Bras. Or., Guiana.]

MYRCIA AMBIGUA, DC. Prod. iii. p. 252.

*Hab.* Floret ad Serra da Chapada mens. Aug. (Nn. 118, 145.)

Frutex altus vel arbuscula, trunco basi circa 60·0 cm. diam. [Bras. Or., Goyaz, Amazonia, Guiana.]

MYRCIA (§ TOMENTOSÆ) CHAPADENSIS (sp. nov.); caule primo lateraliter compresso vel subtereti, demum tereti, rufo-tomentoso; foliis majusculis, petiolatis, chartaceo-coriaceis, ovato-lanceolatis, acuminatis, vel minoribus et obtusis, basi sensim coarctatis, raro rotundatis, supra, nervo medio rufo-tomentoso excluso, glabris et virescentibus, subtus tenuiter rufo-tomentosis et decoloribus; paniculis axillaribus vel terminalibus, subeffusis, plurifloris, quam folia brevioribus vel subæquilongis; germine biloculari, apice albido-velutino; sepalis subæqualibus, obtusissimis, rufo-tomentellis.

*Hab.* Crescit ad Serra da Chapada, prope Santa Anna da Chapada, circa 600 met. supra mare. Fl. Aug. (N. 164.)

Arbor venusta, copiose florifera, circa 10 met. alt., e basi abunde ramosa, cortice cinereo obtecta. Foliorum majusculorum margine leviter undulatorum lamina ad 16·5 cm. long. et vix ad 6·5 cm. lat.; fol. minorum lamina, circa 5·0 cm. long.; costa media supra impressa, subtus valde eminentis, costæ secundariæ et venulæ ut in *M. effusâ*; petiolus 0·6-1·2 cm. long., rufo-tomentosus, in sicco canaliculatus. Panicula compressa vel subteres, rufo-tomentosa. Flores sessiles vel subsessiles vel (interdum longius) pedicellati, circa 0·7 cm. diam. Alabastra globosa, obscure pentagona, tomentosa, 0·3 cm. diam. Sepala rotundata, tomentosa, pellucide glandulata, 0·2 cm. long. Petala ovata, obtusa, vix 0·5 cm. long., concava. Germen rufo-tomentosum, circa 0·15 cm. long. et crass., obconicum, subteres; styli filiformis stamina excedentis dimidium superius cum dimidio inferiore angulum obtusum vel rectum, nonnunquam vero acutum, formans. Fructus abest.

Videtur *M. Sellowianæ*, Berg, affinis, sed multis propriis dispar. [Bras. Or.]

MYRCIA (§ CORDIFOLIÆ) VERRUCULATA (sp. nov.); ramulis incanis, demum glabris; foliis breviter petiolatis, rigide coriaceis, ovatis vel ovato-lanceolatis, apice breviter mucronatis, basi leviter cordatis, juvenilibus præsertim in costâ centrali pilosis, mox glabris, pellucido-punctatis, adultis supra nitidulis, subtus decoloribus; costâ mediâ subtus admodum eminente, costis secundariis utrinque circa 7-8, pluribus tertii ordinis interjectis, angulis latis insertis, rectis vel fere rectis, mox in costam submarginalem desinentibus; venulis arctissime reticulatis, utrinque eminentibus; paniculis axillaribus terminalibusve, folia excedentibus; alabastris incanis; floribus ultimis solitariis vel binis; ovario albido-incano, 2-loculari, disco plano, baccâ globosâ vel depresso subglobosâ, sepalis patentibus, arcte applicatis, triangulari-ovatis, acuminatis, intus glabris coronatâ.

*Hab.* Ad Jangada floret mens. Sept. (N. 276.)

Ramuli subteretes, cortice tenuissimo cinereo lenticellifero obducti. Novelli compressi, incani. Folia maxime inæqualia, 2·0-7·0 cm. long., 1·2-3·5 cm. lat., marginibus revolutis; costa submarginalis undulato-fornicata, 0·3 cm. a margine folium percurrens; petioli sat incrassati, late canaliculati, dorso pubescentes, 0·3 cm. long. Paniculæ usque 5·0 cm. attingentes, pilosæ; ramuli ascendentes, 1·0-1·5 cm. long. Pedicelli sub flore circa 0·2-0·3 cm. long. Flos totus vix 0·5 cm. long. Ovarium 0·13 cm. diam., 4-ovulatum. Sepala 5, 0·3 cm. long., extus sericeo-pilosa, margine longe ciliata, post anthesin patentia, demum recurva. Petala ovata,

ciliolata, 0·4 cm. long. Bacca 2-3-sperma, 0·6-1·0 cm. diam., sæpe lobulata, parce pilosula, brunea. Semina usque 0·6 cm. long.

Juxta *Myrciam canescentem*, Berg, intercalanda, cujus folia minora, sessilia, subtus canescentia, nervo marginali nec submarginali percursa, paniculæ tomentosæ, etc. [Bras. Or.]

MYRCIA DASYBLASTA, Berg, in Mart. Fl. Bras. xiv. pars i. p. 207.

*Hab.* Frutex ramosus, metralis; floret ad Cuyabá mens. Aug. (N. 30.) [Matto Grosso.]

MYRCIA (§ CORDIFOLIÆ) COLLINA (sp. nov.); ramulis ultimis tomentellis, cito puberulis; foliis brevipetiolatis, parvis, coriaceis, ovato-oblongis, apice obtusissimis, raro retusis, basi leviter cordatis, cito utrinque glaberrimis, pellucido-punctatis; costis secundariis utrinque circa 10, supra eminentibus, subtus vix conspicuis, subrectis, a costâ marginali undulatâ conjunctis; venulis paucis sublaxe reticulatis; paniculis extra-axillaribus, folia excedentibus, paucifloris, haud raro racemosis; alabastris pubescentibus; ovario appresse pubescente, 2-loculari; floribus ultimis 1-3-nis; sepalis ovatis obtusissimis, mox patentibus, extus pubescentibus, intus puberulis; baccâ ignotâ.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi mens Aug. floret. (N. 93.) Ramuli subtetragoni, deinde glabri et cortice tenui cinereo obtecti, 0·2-0·3 cm. diam., novelli compressi, minute pubescentes, in sicco fusco-rubescentes. Folia pleraque 2·5-3·5 cm. long., 1·3-2·3 cm. lat., supra vix nitidula, subtus pallida et fere evenosa, margine cartilaginea; petioli 0·1-0·15 cm. long., crassiusculi. Paniculæ circa 0·1-0·2 cm. ultra axillas ortæ, ascendentes, distantifloræ, mox glabræ, usque ad 5·0 cm. long.; ramuli non ultra 0·7 cm. attingentes, 1-3-flori. Pedicelli sub flore nunc usque 0·5 cm., nunc obsoleti. Alabastra subglobosa, circa 0·2 cm. diam. Flos totus circa 0·45 cm. long., 0·5 cm. diam. Ovarium circa 0·07 cm. diam., 4-ovulatum. Sepala paullo ultra 0·1 cm. long. Petala ovata, 0·33 cm. long., nonnunquam erosula.

Accedit ad *M. dasyblastam*, Berg, cujus folia parum diversiformia, flores vero longe alieni. [Matto Grosso.]

EUGENIA (§ UMBELLATÆ) SPARSA (sp. nov.); ramulis glabris, sat validis; foliis membranaceis, brevipetiolatis, oblongis vel oblongo-ob lanceolatis, breviter mucronatis, basi longe et sensim angustatis, glabris, crebre pellucido-punctatis; costis secundariis circa 20, rectis, leviter decurrentibus, costâ marginali ad 0·2-0·3 cm. a margine folium percursante; pedicellis 2-4-nis, unifloris, e nodis defoliatis ortis; alabastris obovoideis, glabris; ovario biloculari; sepalis subæqualibus, rotundatis, obtusissimis, ciliolatis.

*Hab.* Crescit in ripâ fl. Paraguay inter Santa Cruz et Tres Barras, ubi floret mens. Oct. (N. 623.)

Rami subteretes, nodulosi, 2·5-5·0 cm. diam., cortice crassiusculo cinerascente plano vel rimoso obtecti. Folia sæpe subopposita, 8·0-11·5 cm. long., 3·0-3·5 cm. lat., supra haud nitida, subtus paullulum pallidiora; costa media supra alte impressa, subtus prominula; venulæ arcte reticulatæ, parum conspicuæ. Petioli 0·8 cm. long.,

anguste canaliculati, in sicco atrati. Pedicelli 0·3 cm. long., crassiusculi, pubescentes vel puberuli, basi bracteâ parvâ ovatâ vix 0·2 cm. long. muniti, et sub flore bracteolas duas ovatas acutas sub alabastris 0·1 cm. long., mox usque ad 0·2 cm. auctas ferentes. Flores albi, in sicco lutei. Ovarium cylindricum, obsolete puberulum, minute verrucosum, 0·25 cm. long. Sepala 4, 0·15 cm. long., post anthesin patula vel recurva. Petala 4, late ovata, 0·5 cm. long., ciliolata. Stamina 0·6 cm. et stylus 0·5 cm. long.

Mihi videtur ad *Eugeniam flavescens*, DC., spectare, ob foliorum vero formam et magnitudinem, pedicellos abbreviatos, flores majores, certe non cum eâ conspecifica. [Bras. Or., Guiana.]

EUGENIA (§ RACEMOSÆ) TINGE-LINGUA (sp. nov.); ramulis racemisque sæpissime minute puberulis; foliis oppositis, coriaceo-membranaceis, petiolatis, lanceolatis vel ovato-lanceolatis, raro ovatis, breviter vel longiuscule obtuse cuspidatis, basi leviter angustatis et obtusis, sparse pellucido-punctatis; costis secundariis utrinque circa 8, rectis, costâ submarginali eximie arcuatâ ad 0·4-0·6 cm. a margine folium percurstante; racemis quam folia brevioribus oppositis, lateralibus axillaribusve, 3-5-carpicis; baccâ subglosâ, 1-2-spermâ, sepalis brevibus plus minus conniventibus coronatâ.

*Hab.* Frequens ad Santa Cruz et in vicinia, mens. Oct. fructificans. *Tinge lingua* incolarum, *Oumahun* Paraguariensium. (N. 463.)

Ramuli compressi, juniores in sicco brunei, demum cinerei. Folia 8·0-12·0 cm. long., 3·0-4·5 cm. lat., margine revoluta, supra haud nitida, subtus pallidiora; costa media supra alte impressa, subtus admodum eminens; costæ secundariæ et costa submarginalis supra obscuræ, subtus aliquanto prominulæ; venulæ arcte reticulatæ; petioli vix usque ad 1·0 cm. long., supra canaliculati, rugulosi, in sicco fusci. Racemi fructiferi 2·0-4·0 cm. long., ascendentes; pedicelli 0·3-0·5 cm. long., patentes, basi bracteâ parvâ ovatâ puberulâ circa 0·08 cm. long. aucti. Sepala 4, rotundata, ciliolata, supra fructum 0·1 cm. long. Flores non suppetebant. Bacca edulis, usque ad 0·8 cm. long. et diam. (sæpe vero circa 0·65 cm.), viva nigro-purpurea, in sicco verruculosa. Semen 0·5 cm. long.

Accedit ad *E. Gardnerianam*, Berg, cujus ramuli et racemi appresse hirti, folia latiora, pedicelli elongati pluriflori, etc.

From the fact of this plant being well-known to our Paraguayan peons, I infer for it a southward range, unless indeed, as is probable, the *Oumahun* be a nearly allied species of *Eugenia*. [Bras. Or.]

EUGENIA (§ RACEMOSÆ) PSEUDOVERTICILLATA (sp. nov.). Suffruticosa, erecta, ramulis subteretibus, strictis, molliter pubescentibus, primo tomentellis; foliis petiolatis, membranaceis, plerisque ternatim, rarius binatim, rarissime quaternatim verticillatis vel subverticillatis, nonnunquam plane solitariis, oblanceolatis, raro obovato-oblanceolatis, plerumque breviter ac late cuspidatis, obtusis, basi sensim cuneatis, utrinque molliter pubescentibus; costis secundariis parum conspicuis utrinque circa 12, rectis vel fere rectis, costâ marginali ad 0·1-0·15 cm. a margine folium percurstante;

racemis axillaribus folia excedentibus vel subæquantibus, erectis, 3–6-floris, una cum pedicellis elongatis pubescentibus; floribus exiguis; ovario biloculari; sepalis ovatis, obtusis, ciliolatis, utrinque minute puberulis.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 607.)

Suffrutex semimetralis vel ultra. Ramuli e caule valido, sæpe procumbente et radicante, cortice papyraceo pallide ochraceo-puniceo obducto circa 0·7 cm. diam. assurgentes, 0·2–0·25 cm. diam., copiose foliati. Folia pleraque 4·0–5·0 cm. long., 1·2–1·5 cm. lat., subtus pallidiora, crebre pellucido-punctata; costa media supra plana, subtus prominula; venulæ inconspicuæ; petioli 0·3 cm. long., pubescentes. Racemi usque ad 6·0 cm. long., plerique attamen 3·0–4·0 cm., gracillimi; pedicelli patentes, filiformes, circa 0·7 cm. long., basi bracteâ minutâ lanceolatâ pubescente vix 0·1 cm. long. muniti, sub flore bracteolas duas parvas ovatas ciliolatas gerentes. Ovarium ovoideum, pubescens, 0·07 cm. long. Sepala 4, inæqualia, usque ad 0·12 cm. long. Petala ovata, ciliolata, 0·23 cm. long. Stamina et stylus 0·25 cm. long., hic puberulus. Baccæ desiderantur.

Species affinitate dubiâ et ob habitum, indumentum molliter pubescens, folia et flores exiguos facile recognoscenda.

*EUGENIA* (§ *RACEMOSÆ*) *MINIATA* (sp. nov.); ramulis gracilibus, puberulis, deinde glabris; foliis brevipetiolatis, parvis, chartaceis, glabris vel minutissime puberulis, lanceolatis, obtusis, nonnunquam leviter cuspidulatis, basi sensim attenuatis, supra haud nitidis, subtus pallidis; costis secundariis circa 12, oblique ascendentibus, utrinque obscuris, costâ marginali marginem fere attingente; racemis axillaribus terminalibusve quam folia brevioribus, gracillimis, 3–6-floris, puberulis; floribus minimis; pedicellis elongatis, patentibus vel ascendentibus; ovario 2-loculari, glabro; sepalis 4 inæqualibus, ovatis, ciliolatis; baccâ ignotâ.

*Hab.* Ad Cuyabá floret mens. Aug. (N. 14.)

Suffrutex parvus. Ramuli subteretes, 0·1–0·2 cm. diam., mox cortice tenui cinereo obducti. Folia 3·0–4·0 cm. long., 1·0–1·3 cm. lat., pellucido-punctata; costa media supra impressa, subtus parum eminens; petioli 0·2 cm. long. Racemi 1·5–vix 3·0 cm. long., ascendentes. Pedicelli filiformes, 0·7 cm. long., basi bractea subulata 0·1 cm. long. puberulâ stipati, et sub flore bracteolis duabus parvis ovatis ciliolatis onusti. Ovarium ovoideum, 0·06 cm. long. Sepala acuta vel obtusa, 0·1 cm. long. Petala 4, oblongo-ovata, 0·2 cm. long. Stylus 0·25 cm. long.

Verisimiliter præcedenti affinis, sed multis notis ab eâ dispar.

*EUGENIA* (§ *STENOCALYX*) *PROLIXA* (sp. nov.); ramulis e caule valido piloso-pubescentibus, deinde glabris; foliis adultis chartaceis, breviter petiolatis, anguste lanceolato-obovatis, cuspidatis, acutiusculis, subtus, præsertim in nervis, sparse pilosis, ceterum glabris, crebro elevato-pellucido-punctatis; costis secundariis utrinque circa 8, rectis, costâ submarginali ad 0·3–0·4 cm. a margine folium percursante, admodum fornicatâ; pedunculis solitariis, oppositis, ex eâdem gemma 2–4, basi squamâ lineari-lanceolatâ

munitis; ovario piloso, 2-loculari, obscure costato; baccâ immaturâ ovoideâ, sepalis 4 ovatis, extus sericeo-pilosis, ascendentibus coronata.

*Hab.* Ad Santa Cruz mens. Oct. floret. (N. 410.)

Caulis e rhizomate crasso erectus, deorsum nudus,  $\frac{2}{3}$ -metralis, cortice tenui cinereo striatulo obtectus, basin versus 0.5 cm. diam. Ramuli patuli vel ascendentes, graciles. Folia adulta 11.0-12.0 cm. long. (raro modo 6.5 cm.), supra nitidula, subtus paullo decoloria; costa media supra impressa, subtus prominula; costæ secundariæ utrinque conspicuæ; venulæ subtus obscuræ; petioli 0.5 cm. long., puberuli, in sicco fusci. Pedunculi tenues, pubescentes, sub flore vix 1.0 cm. long., post anthesin usque ad 1.5 cm. elongati. Squamæ 0.5 cm. long., albo-sericeæ. Flores præoces. Ovarium obovoideum. Sepala 4, inæqualia, obtusa vel acuta, ciliolata, 0.3 cm. long. Petala 4, oblonga, inferne parum attenuata, 0.8 cm. long. Filamenta 1.0 cm. long. Stylus vix 1.0 cm. long., a basi crassiusculâ sensim attenuatus. Bacca nondum matura 0.45-0.5 cm. long., obsolete pilosula.

Mihi videtur cum *Eugeniâ Michellii*, Lam., componenda, sed ob habitum disparem (*E. Michellii* equidem arbuscula saltem humanâ altitudine), folia multo majora, squamas sericeas, pedunculos pubescentes, præter alia, optime discrepat.

Ita variat:

Var. *vestita*, a typo distans præsertim foliis juvenilibus sericeo-tomentosis vel appresse sericeo-pubescentibus, squamis latioribus, floribus majoribus (petala equidem saltem 1.0 cm. long.), et ovario dense albo-sericeo.

*Hab.* Reperi ad Santa Cruz mens. Sept. florentem. (N. 295.) [Bras. Or.]

#### MELASTOMACEÆ.

MICROLICIA EUPHORBIOIDES, Mart. Nov. Gen. et Sp. iii. p. 107, var. PARVIFOLIA, Cogn.

*Hab.* In cacumine montium Serra da Chapada flores roseos præbet mens. Aug. (N. 146.) [Bras. Or., Goyaz.]

RHYNCANTHERA (§ ANISOSTEMONES) LEUCORRHIZA (sp. nov.); caule e radice fibroso et patulo et pilis albis densissime oblecto ascendente, basi quadrangulari, superne subtereti, sparsim piloso-hispido, demum glabro; foliis oppositis, breviter petiolatis, ovatis vel ovato-lanceolatis vel oblanceolato-oblongis, basi coarctatis vel rotundatis, nequaquam cordatis, obtusis, 3-nerviis, paginâ superiore pilis perpaucis strigosis appressis instructâ, pag. inf. fere omnino calvâ; floribus in axillis fol. superiorum solitariis, brevissime pedunculatis; calycis tubulosi medio leviter angustati piloso-hispidi dentibus tubo brevioribus.

*Hab.* In loco humido ad Santa Cruz (Barra dos Bugres) nitet atque mens. Oct. florescit. (N. 465.)

Herba ramosa, patula, circiter  $\frac{1}{3}$  met. alt. Radicis fibræ primariæ circa 0.25 cm. crassæ, in sicco quasi pallide bruneo cinctæ, vivæ vero albæ. Folia inter se inæqualia (paria majora cum paribus exiguis mixta), 1.0-2.5 cm. long., 0.5-1.2 cm. lat., margine serrulato-pilosa, subtus in sicco pallida; petioli 0.3-0.4 cm. long.,

glabri vel pilosi. Pedunculus 0·1 cm. long. Flores purpurei. Calycis tubus 10-nervis, 0·65 cm. long., medio 0·2 cm. et basi vix 0·3 cm. lat.; dentes lanceolati, acuminati, vix 0·4 cm. long. Petala ovato-oblonga, obtusa, 1·3 cm. long. Stamina maximi filamentum lateraliter compressum, crassiusculum, 0·8 cm. long.; antheræ pes incurvus, haud rugatus, 1·0 cm. long., dimidio superiore incrassato, basi brevissime biapiculato; anthera ipsa superne sensim coarctata, 0·4 cm. long.; rostrum recurvum, filiforme, 0·5 cm. long.; staminum minorum filamentum circa 0·5 cm. long., pedi filiformi basi bicorniculato subæquilongum, antheræ et rostra iis stam. maj. similes; staminodia filiformia, vix 0·3 cm. long. Stylus 3·0 cm. long., undulatus. Fructus abest.

Videtur cum *Rhynchanthera secundiflora*, Naud., specie mihi tantum ex descriptione cognitâ, comparanda, abhorrens vero indumento, foliis diversis, inflorescentiâ nequaquam paniculatâ, petalis minoribus obtusis, stylo longiore. [Paraguaria.]

**RHYNCHANThERA** (§ ANISOSTEMONES) RIPARIA (sp. nov.). Ramosissima, ramis glanduloso-piloso-hispidis; foliis petiolatis, 5-nerviis (obscurè 7-nerviis), ovato-lanceolatis, supremis lanceolatis, obtusis vel obtusiusculis, basi obtusis angustatisve, utrinque (subtus, præcipue secus nervos) pilis paucis strigosis appressis munitis, serraturis longe vel longiuscule simpliciter vel glanduloso apiculatis; calycis tubo (sub anthesi) utrinque aliquanto dilatato, lobis subsetaceis tubo æquilongis, calyce toto longe glanduloso-piloso-hispido; capsulâ ovoideâ, conspicue longitudinaliter nervosâ, sparsim piloso-hispidâ.

*Hab.* Ad ripas fl. Cuyabá prope Melgaço. Fl. Aug. (N. 6.)

Frutex circa 1 met. alt. Folia majora paginâ 4–4·5 cm. long. (fol. suprema vix 1·0 cm. long.), in sicco subtus pallidiora. Petiolus ad 1·5 cm. long., glanduloso-piloso-hispidus. Flores breviter pedicellati. Calycis tubus 0·6 cm. long., longitudinaliter nervosa. Petala purpurea, acutiuscula, vix 1·3 cm. long. Antheræ 0·8–0·9 cm. long. (rostrò inclusò). Capsula (an matura?) 0·7 cm. long., 0·5 cm. lat.

Ad *R. Hænkeanam*, DC., proxime accedit, abs quâ divergit ob habitum graciliorem, foliorum minorum indumentum dispar, calycis indumentum necnon lobos setaceos, flores minores, etc. [Peruvia.]

**ACISANTHERA INUNDATA**, Triana, in Trans. Linn. Soc. xxviii. p. 33, var. PUSILLA, Cogn.

*Hab.* Ad Santa Cruz floret mens. Dec. (N. 752.) [Bras. Or., Goyaz, Guiana.]

**PTEROLEPIS TRICHOTOMA**, Cogn. in Mart. Fl. Bras. xiv. pars iii. p. 261.

*Hab.* Crescit ad Santa Cruz, ubi mens. Dec. floret. (N. 753.) [Amer. Trop.]

**TIBOUCHINA STENOCARPA**, Cogn. in Mart. Fl. Bras. xiv. pars iii. p. 344.

*Hab.* Ad Serra da Chapada floret mens. Aug. (Nn. 82, 110.) [Bras. Or., Goyaz, Bolivia.]

ACIOTIS DICHOTOMA, Cogn. in Mart. Fl. Bras. xiv. pars iii. p. 460, var. LONGIFOLIA, S. Moore. Planta 15·0-20·0 cm. alt., caule distincte alato, interdum fere glabro; foliis lanceolatis, 3-nerviis (obscure 5-nerviis), inferne sensim in petiolum attenuatis usque ad 5·5 cm. long.; floribus fructibusque quam in typo leviter majoribus.

Forma inter *A. dichotomam*, Cogn., et *A. amazonicam*, Cogn., medium tenens, sed vix, ex meâ sententiâ, species propria.

*Hab.* In paludibus ad Santa Cruz floret mens. Dec. (N. 730.) [Guiana, Venezuela, Ins. Trinitatis.]

ACIOTIS INDECORA, Triana, in Trans. Linn. Soc. xxviii. p. 52.

*Hab.* Crescit ad Santa Cruz, mens. Dec. florens. (N. 471.)

Flores albi; antheræ purpureæ. [Bras. Or., Amazonia, Guiana, Peru.]

MICONIA TOMENTOSA, D. Don, in Mem. Wern. Soc. iv. 2, p. 316.

*Hab.* Reperi ad Santa Anna da Chapada. (N. 143.) [Bras. Or., Amazonia, Guiana, Ins. Trinitatis.]

MICONIA LEPIDOTA, DC. Prod. iii. p. 180.

*Hab.* Ad Santa Cruz floret mens. Dec. (N. 782 a.) [Amazonia, Guiana, Nov. Granat., Peruvia, Bolivia.]

MICONIA ALBICANS, Triana, in Trans. Linn. Soc. xxviii. p. 116.

*Hab.* Juxta Santa Anna da Chapada floret mens. Aug. (Nn. 89, 138.) [Amer. Trop., Ind. Occ., Paraguaria.]

MICONIA FALLAX, DC. Prod. iii. p. 181.

*Hab.* Ad Serra da Chapada mens. Aug. floret. (N. 156.) [Bras. Or., Amazonia, Paraguaria.]

MICONIA STENOSTACHYA, DC. Prod. iii. p. 181.

*Hab.* Crescit in ripis fl. Paraguay juxta Tres Barras, itaque ad Santa Cruz; mens. Oct.-Nov. floret et fructificat. (Nn. 420, 490, 610.)

There are two forms of this plant, if, indeed, they be not two distinct species. One of these, the *Miconia argyrophylla*, Benth. (non DC.), has fruits not more than half the size of the other form. My n. 610 belongs to the latter, the other two to the former of these. [Amer. Trop., Ind. Occ.]

MICONIA HELIOTROPOIDES, Triana, in Trans. Linn. Soc. xxviii. p. 116.

*Hab.* Viget ad Santa Cruz, mens. Nov. florens. (Nn, 345, 469.) [Goyaz.]

MICONIA PRASINA, DC. Prod. iii. p. 188.

*Hab.* Ad Santa Cruz floret et fructificat mens. Nov. (N. 457.) [Amer. Trop., Ind. Occ., Paraguaria.]



*MICONIA* (§ *EUMICONIA*, *PANICULARES*) *CORALLIOCARPA* (sp. nov.); ramulis patulis, petiolis paniculisque adpresse tomentoso-setulosis; foliis longe petiolatis, ovatis vel ovato-ellipticis, obtusis vel cuspidatis, crenato-dentatis, basi angustatis ibidemque plus minus obliquis, plerumque supra basin 7-nerviis, interdum vero 6-nerviis, paginâ superiore præcipue secus nervos pilis strigosis adpressis hirtis, pagina inferiore præcipue secus nervos adpresse hirsutis; paniculis gracilibus, quam folia brevioribus, subspicatis, paucifloris; floribus 5-meris, sessilibus, basi strigillosis; calycis strigoso-pubescentis tubo campanulato, limbo truncato, obscure 5-denticulato; petalis lineari-spathulatis, apice undulatis, glabris; staminibus subæqualibus, filamentis glabris; connectivo infra loculos breviter producto, basi inappendiculato; ovario triloculari, dimidio superiore libero.

*Hab.* Serra da Chapada, ad 1000 ped. alt. Fl. Aug.

Frutex, 4 met. alt. Petioli 1.5–6.0 cm. long., strigoso-hirsuti. Foliorum pagina 8.0–20.0 cm. long., 4.5–12.0 cm. lat., subtus pallida. Calyx vix 0.5 cm. long. Petala alba, 0.5 cm. long., 0.15 cm. lat. Filamenta tenuissima, superne levissime incrassata, obscure flexuosa, 0.4 cm. long.; antheræ lineares, attenuatæ, fere rectæ, vix 0.5 cm. long., 0.3 cm. crassæ, loculis undulatis. Ovarium ovoideum. Stylus tenuis, rectus, apice incrassatus, truncatus, vix 1.0 cm. long. Bacca immatura corallina, ovoidea, 0.5 cm. long., 0.35 cm. crassa.

Ex affinitate *M. Pseudo-nervosa*, Cogn., cujus folia vix oblique angustata, paniculæ plurifloræ longiores et robustiores, calyx paullo major setulosus, petala rubra breviora et latiora, staminum breviorum et crassiorum connectivum basi vix productum, stylus brevior, bacca fuscescens. [Bras. Or., Goyaz.]

*TOCOCA FORMICARIA*, Mart. ex DC. Prod. iii. p. 165.

*Hab.* Ad Serra da Chapada floret mens. Aug. (N. 120.)

I saw no ants upon this plant. [Bras. Or., Goyaz.]

*CLIDEMIA HIRTA*, D. Don, in Mem. Wern. Soc. iv. 2, p. 309.

*Hab.* Crescit ad Santa Cruz, mens. Dec. florens. (N. 795.)

*CLIDEMIA HIRTA*, D. Don, var. *ELEGANS*, Griseb.

*Hab.* Crescit ad Santa Cruz, necnon in ripâ fl. Paraguay inter Santa Cruz et Tres Barras. (Nn. 507, 799a.)

The specimens gathered from the latter locality have large berries from 1 to nearly 1.5 cm. in length and not much less in breadth. Cogniaux describes the berry, the length of which he gives as only 0.8 cm.) as “nigricans,” but in the ‘Botanical Magazine’ (sub tab. 1971) it is said to be blue. My fruits were green below and purple above, and apparently not quite ripe: I did not try their edible qualities. [Amer. Trop., Ind. Occ., Ind. Arch.]

*CLIDEMIA RUBRA*, Mart. Nov. Gen. et Sp. iii. p. 152, var. *INTERMEDIA*, S. Moore; foliis 3.5–6.0 cm. long., ovato-lanceolatis, acuminatis.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi mens. Aug. simul floret et fructificat. (Nn. 88, 99.) [Amer. Trop.]

CLIDEMIA SPICATA, DC. Prod. iii. p. 159.

*Hab.* Ad Santa Cruz floret mens. Oct. (N. 496). [Amer. Trop., Ind. Occ.]

MOURIRIA GUIANENSIS, Aubl. Pl. Guian. i. p. 453.

*Hab.* In ripa fl. dos Bugres mens. Oct. floret. (N. 437.) [Braz. Or., Amazonia, Guiana.]

#### LYTHRACEÆ.

CUPHEA MICRANTHA, H. B. K. Nov. Gen. et Sp. vi. p. 196.

*Hab.* Ad Serra da Chapada mens. Aug. et ad Santa Cruz Dec. floret. (Nn. 111, 755.) [Amer. Austr. Trop., Ind. Occ.]

CUPHEA RETRORSICAPILLA, Koehne in Mart. Fl. Bras. xiii. pars ii. p. 279.

*Hab.* Ad Santa Cruz mens. Nov. reperi florentem. (N. 597.) [Braz. Or., Goyaz.]

CUPHEA MELVILLA, Ldl. Bot. Reg. sub tab. 852.

*Hab.* Crescit in ripâ fl. Paraguay, mens. Dec. florens. (N. 767.) [Amer. Austr. Trop. et Subtrop.]

PHYSOCALYMNA SCABERRIMUM, Pohl, in Flora, x. (1827) p. 153.

*Hab.* Serra da Chapada, etiam (fructificans) Santa Cruz mens. Nov. Floret Aug. (Nn. 122, 454.) [Goyaz, Amazonia, Peru, Bolivia.]

#### ONAGRACEÆ.

JUSSIEA NERVOSA, Poir. Encyc. Suppl. iii. p. 199.

*Hab.* Frequens ad Cuyabá et ad Serra da Chapada. (N. 42.) [Bras. Or., Goyaz, Guiana, Nov. Granat.]

JUSSIEA SUFFRUTICOSA, Linn. Sp. Pl. ed. I. p. 388.

*Hab.* Floret ad Cerumbá mens. Jan. (N. 1091.) [In tropicis late disseminata.]

JUSSIEA DECURRENS, DC. Prod. iii. p. 56.

*Hab.* Crescit ad Santa Cruz, mens. Dec. florens et fructificans. (N. 781.) [America ab Amazonia et Nov. Granat. usque ad Carolinam.]

JUSSIEA PILOSA, H. B. K. Nov. Gen. et Sp. vi. p. 101.

*Hab.* Reperi ad ripas fl. Cuyabá prope Melgaço mens. Aug. fructificantem. (N. 5.) [Amer. Trop. et Subtrop., Afr. Trop.]

#### SAMYDACEÆ.

CASEARIA (§ IROUCANA) RIPARIA (sp. nov.) Inermis, ramulis juvenilibus fulvo-tomentosis, paulisper glabris; foliis ad apices ramorum confertis, obovato-oblongis, nunc obtusissimis, nunc breviter obtuse cuspidatis, margine glanduloso-denticulatis vel crenulatis,

tenuiter membranaceis, basi in petiolum brevem gradatim attenuatis, crebre pellucido-punctatis, supra cito, costis pubescentibus exceptis, fere glabris, subtus molliter pubescentibus; costis secundariis utrinque 6-7, aperte arcuatis, sub margine undulatim conjunctis; florum fasciculis solemniter ad nodos defoliatos sessilibus, paucifloris; pedicellis floribus parvis æquilongis, una cum calyce appresse pubescentibus; capsulâ subglobosâ, pilosâ.

*Hab.* Ad ripas fl. Paraguay prope Santa Cruz mens. Oct. simul floret et fructificat. (N. 509.)

Ramosa; ramuli ascendentes vel divaricati, subteretes, leviter undulati, cortice cinereo leviter striato obtecti, usque ad 0.4 cm. diam. Folia 5.0-7.0 cm. long., 2.5-3.0 cm. lat., inferne longe et sensim cuneata; costæ subtus setis prominulæ; venulæ laxæ, reticulatæ, obscuræ; glandulæ nunc circulares, nunc bacterioideæ; petioli 0.3 cm. long., fulvo-tomentosi. Stipulæ minutæ, caducæ, lineari-subulatæ, modo 0.2 cm. long., fulvo-tomentosæ. Pedicelli pubescentes, 0.2 cm. long. Calycis pubescentis lobi alte partiti, lineari-oblongi, obtusi, 0.25 cm. long. Stamina 8, glabra, basi cum disci lobis connatas. Disci lobi late lineares, filamentis æquilongi, intus barbati. Ovarium ovoideo-oblongum, pilosum, in stylum brevem pilosum desinens. Stigma discoideum. Capsula vix matura 0.3-0.35 cm. long. Semina non suppetebant.

Accedit ad *Caseariam hirtam*, Sw., abhorret attamen, præter alia, habitu inermi, foliis tenuibus minoribus, stipulis abbreviatis, floribus exiguis, capsulis parvis pilosis. [Nov. Granat., Ind. Occ.]

CASEARIA JAVITENSIS, H. B. K. Nov. Gen. et Sp. v. p. 366.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 470.) [Amer. Trop.]

#### TURNERACEÆ.

PIRIQUETA VISCOSA, Griseb. Cat. Pl. Cub. p. 114, subsp. AUSTRALIS, Urban.

*Hab.* Crescit in ripâ fl. Paraguay ad Dourados, mens. Aug. florens. (N. 12.) [Bras. Or., Guiana, Venezuela, Ind. Occ., Paraguaria.]

PIRIQUETA LANCEOLATA, Benth. in Hook. Journ. Bot. iv. p. 117. (P. CISTOIDES, Mey.), var. LATIFOLIA, Urb.

*Hab.* Reperi ad Santa Cruz mens. Nov. florentem et fructificantem. (N. 590.) [Amer. Trop., Ind. Occ.]

PIRIQUETA FULVA, Chapm. Fl. South. U. S. p. 146.

*Hab.* [America a Matto Grosso et Bahia usque ad Carolinam Sept.]

TURNERA (§ LEIOCARPÆ ?) CHRYSODOXA (sp. nov.); caulibus erectis, 24-29 cm. alt., crassis prorsus lutescenti-villoso-tomentosis, apicem versus foliatis, ceterum fere nudis; foliis subsessilibus, nunc obovatis, nunc oblongo-ovatis, obtusis, nonnunquam vero distincte breviter bilobis, subtus basi glandulis duabus (utrinque unâ) crateriformibus

rubellis gaudentibus; pedunculis brevissimis adnatis; prophyllis lineari-lanceolatis, villosa-tomentosis, circa 0.4 cm. long.; floribus axillaribus, iis ex axillis superioribus ortis subcongestis ex axillis inferioribus sparsis; calyce tertiâ parte coalitâ 1.5 cm. long., filamentis subæquilongis, stylis subæqualibus penitus pilosis, ovario ultra 20-ovulato, fructu non viso.

*Hab.* In campis siccis apricis ad Serra da Chapada alt. circa 1800 ped. Fl. Aug. (N. 184.)

Caules e rhizomate lignoso, vix ad 1.5 cm. crass., cortice fusco oblecto globati, 0.25 cm. crass., siccitate striati, infra foliis hebetatis passim gaudentes. Folia congesta, 1.0-3.0 cm. long., 1.0-2.5 cm. lat., inæqualiter crenato-serrata, tomentosa, subtus decoloria, glandula vix 0.1 cm. diam. Flores lutei. Calycis hirsuti tubus 10-nervius, intus pilosulus, 0.5 cm. long.; lobi lineari-lanceolati, 3-nervii vel, nervis duobus debilitatis utrinque adjectis, 7-nervii, nervo medio superne breviter producto, acuti, 1.0 cm. long. Petala obovata, obtusa, glabra, delicatula, calycis lobos parum excedentia. Filamenta tubo calycino vix 0.15 cm. long. adnata, a lateribus maxime compressa, glabra, 0.4-0.5 cm. long. Styli multipartiti, 0.5-0.7 cm. long.; flagelli longiores 0.5 cm. long. Ovarium hirsutum, subglobosum, 0.2 cm. long.

Nisi ad sectionem *Leiocarpæ* non referri debeat hæc stirps, arcte est *T. dolichostigmati*, Urban, affinis, speciei ex descriptione optimâ a cl. Urbano proditâ mihi tantum cognitæ, distare vero ab eâ videtur caulis indumento tomentoso-villoso, altitudine majore, foliis superne congestis nonnunquam bilobis, calyce majore, petalis diversis, filamentis subæquilongis, stylis brevioribus et penitus pilosis. [Bras. Or.]

TURNERA ODORATA, Rich. in Act. Soc. Nat. Hist. Paris, 1792, p. 107.

*Hab.* Ad Santa Cruz floret mens. Oct. (N. 476. Goyaz, Guiana, Venezuela, Ins. Trinitatis.]

#### PASSIFLORACEÆ

PASSIFLORA FÆTIDA, Linn. Sp. Pl. ed. I. p. 959; var. STRIGOSA, S. Moore; caule fere omnino glabro, foliis pilis sparsis appresse strigosis munitis.

*Hab.* In ripâ fl. Paraguay inter Santa Cruz et Villa Maria, itaque juxta Corumbá. Floret mens. Dec. et Jan. (Nn. 820, 915.) [Amer. Trop.]

PASSIFLORA TRICUSPIS, Mast. in Mart. Fl. Bras. xiii. pars i. p. 587.

*Hab.* Ad Santa Cruz floret et fructificat mens. Nov. (N. 579.)  
Folia saturate viridia. Flores albi. Nom. vernac. *Mão d'Anta*.

PASSIFLORA TRICUSPIS, Mast., var. MINOR, S. Moore.

*Hab.* Crescit ad Santa Cruz, ubi flores albos præbet mens. Dec. (N. 793.) [Bras. Or., Goyaz.]

PASSIFLORA COCCINEA, Aubl. Pl. Guian. ii. p. 828.

*Hab.* Reperi in sylvestribus ad Santa Cruz, ubi mens. Sept. floret. (N. 312.) [Amazonia, Guiana, Peruvia.]

PASSIFLORA VITIFOLIA, H. B. K. Nov. Gen. et Sp. ii. p. 138.

*Hab.* Crescit ad Santa Cruz, necnon in ripâ fl. Paraguay inter Santa Cruz et Tres Barras. (Nn. 498, 824.) [Amer. Trop.]

PASSIFLORA CININNATA, Mast. in Gard. Chron. 1868, p. 966.

*Hab.* Ad Corumbá floret mens. Jan. (Nn. 917, 961.) [Bras. Or.]

#### CUCURBITACEÆ.

MOMORDICA CHARANTIA, Linn. Sp. Pl. ed. I. p. 1009.

*Hab.* Vulgatissima, viget ad Corumbá. (N. 904a.) [Per regiones tropicas utriusque orbis late diffusa.]

ANGURIA GLORIOSA (sp. nov.); foliis trifoliolatis, foliolis oblongis vel oblongo-obovatis, margine lobulatis vel lobulato-dentatis, rarius fere integris, glaberrimis, lateralibus asymmetricis, semicordatis vel unilateraliter truncatis; floribus magnis; calyce ventricoso; antheris elongatis, rectis, anguste lineari-lanceolatis, appendice lanceolata majusculâ papillosâ instructis.

*Hab.* Crescit in sylvestribus ad Santa Cruz, ubi flores mens. Nov. præbet. (N. 659.)

Caulis in sicco striatus, glaber vel minutissime puberulus. Petioli crassi, patuli, glabri vel obsolete puberuli, plerique 2·5–3·5 cm. long., petioluli usque 1·0 cm. long. Foliola viva saturate viridia, sicca pallentia, subtus pallidiora, apice breviter cuspidato-acuminata, fol. terminalia lateralibus similia nisi basi æquilaterali cuneatim angustata, pleraque 8·0–14·0 cm. long., 4·5–7·0 cm. lat.; costæ secundariæ paucæ, angulis latis insertæ, apertæ, arcuatæ; costæ omnes utrinque planæ. Cirrhi nonnunquam usque ad 20·0 cm. long., sat validi, striati, glabri vel imâ basi obsolete puberuli. Pedunculus communis elongatus, basi obsolete puberulus, crassiusculus, 13·0–22·0 cm. long., apice circa 8–12-florus. Flores rubri, inferiores longe (usque ad 2·5 cm.) vel breviter pedunculati, superiores verisimiliter sessiles. Calycis viridis puberuli tubus inferne ventricosus, striatus, 1·2–1·5 cm. long., basi 0·5–0·6 cm. lat., superne usque ad 0·27 cm. sensim coarctatus, intus superne pubescens; lobi lanceolati vel triangulari-lanceolati, erecti, 0·3–0·5 cm. long. Petala oblonga vel ovata, obtusa, nervosa, basi late unguiculata, extus glabra, intus basi levissime pilosula, 2·3–3·3 cm. long., 1·2–2·0 cm. lat. Antheræ (appendice inclusâ) 1·1 cm. long., 0·12 cm. lat., appendice 0·15 cm. long. Flores feminei et fructus non suppetebant.

Sine dubio accedit ad *A. grandifloram*, Cogn., cujus vix varietas ob foliola minora brevius petiolata, margine haud integerrima, calycis longioris tubum ventricosum nec cylindraceum, intus apice pubescens nec longe denseque villosum, petala minora nequaquam villosa, antheras longiores, angustiores, longius appendiculatas. [Peruvia, Bolivia.]

A transverse section of this beautiful plant's stem shows ten vascular bundles, of course bicollateral. Four of these are larger and central, six smaller are peripheral. Comparing a section with one of such a familiar type as the vegetable marrow, the much closer arrangement of the central bundles will be noticed; this closeness of

position causes much compression of the internal phloëm. The cortex is less voluminous than is that of the vegetable marrow, so much so that the outer bundles often run close to the sclerenchyme ring, which latter greatly resembles that of the vegetable marrow; as is so frequently the case with Cucurbitaceæ, there are small sieve-tubes in the cortex; the collenchyme is but slightly developed. I have had no opportunity of examining the leaf-traces.

## CACTACEÆ.

PERESKIA BLEO, DC. Prod. iii. p. 475.

*Hab.* Ad Corumbá floret mens. Jan. (N. 955.) [Bras. Or., Nov. Granat., Amer. Centr., Mexico.]

## FICOIDEÆ.

MOLLUGO GLINOIDES, Cambess. in A. St.-Hil. Fl. Bras. Merid. ii. p. 171.

*Hab.* Crescit in ripâ fl. Paraguay inter Santa Cruz et Tres Barras. (N. 634.) [Bras. Or., Cuba, Chili, Argentina.]

## GAMOPETALÆ.

## RUBIACEÆ.

LADENBERGIA (§ CASCARILLA) CHAPADENSIS (sp. nov.); ramis crassis, subobsolete tetragonis, sursum complanatis, obscure puberulis vel glabris, nunc fistulosis, nunc solidis; foliis modice petiolatis, late ovatis, obtusis, basi obtusis vel rotundatis, supra glaberrimis, subtus, præsertim secus nervos, piloso-puberulis, margine revolutis, obsolete undatis vel integris; inflorescentiâ terminali, abbreviatâ, subthyrsoideâ; bracteis exiguis, nunquam foliaceis; bracteolis binis minutis, sæpe diu persistentibus; pedicellis crassiusculis; ovario oblongo-turbinato, rufulo-tomentello; alabastris superne angustatis; calyce cupulari, usque ad medium 5-lobo, lobis ovatis, obtusissimis, obsolete puberulis; corollâ floris longistyli tantummodo a nobis scrutati in lacineas lineares, obtusas, crassiusculas, extus una cum tubo tomentellas divisa; staminibus juxta medium tubum affixis; antheris linearibus, obtusis, alabastris tubo duplo brevioribus: disco cupulari, saltem in sicco compresso; stylo alabastris tubum subæquante; capsulis linearibus utrinque parum angustatis, sæpissime unilateraliter dehiscentibus; seminibus anguste fusiformibus, utrinque caudatis et plus minus erosulis, nucleo parvo elliptico.

*Hab.* Crescit in cacumine montium Serra da Chapada, alt. circa 700 met. super mare, mens. Aug. florens et fructificans. (N. 144.)

Frutex altus (vel potius arbuscula?), circa 3-metralis. Ramuli 0.4-0.5 cm. diam., cicatriculis soleæformibus foliorum dilapsorum notati, cortice cinereo vel fusco, leviter striatulo obducti. Foliorum lamina usque ad 17.0 cm. long. et 12.0 cm. lat. (medio-cria vero 12.0 × 7.5 cm.), coriacea, plerumque siccitate aliquanto rubescens, facie superiore polita, subtus pallidior; costæ secundariæ utrovis latere 6-10, plerumque subopposite et oblique insertæ, primo fere rectæ, sub margine arcuatim incurvæ, ibique plerumque parum prominulæ, aliter una cum costâ mediâ eminentes; petioli

1.0–3.0 cm. long., validi, facie superiore anguste canaliculati, obsolete puberuli. Stipulæ ovato-oblongæ, obtusæ, pleræque 2.0 cm. long. Inflorescentia tempore florendi non ultra 10.0 cm. long. et 6.0 cm. diam.; rhachis tetragona, rufo-tomentella, mox puberula. Bracteæ usque ad 0.3 cm. long., lanceolato-vel triangulari-subulatae; bracteolæ vix 0.1 cm. long. Ovarium, sub flore aperiente, 0.4 cm. long. Calyx 0.32 cm. long., 0.35 cm. diam., intus obsolete puberulus. Floris aperientis corolla 2.3 cm. long., alba; tubus 1.5 cm. long. et vix 0.2 cm. diam.; limbi lobi 0.8 cm. long., vix 0.1 cm. lat., intus rufulo-puberuli. Stamina 0.25 cm. supra basin affixa; antheræ 0.35 cm. long. et 0.07 cm. lat. Stigmata 0.3 cm. long. Capsulæ pleræque 4.0–5.0 cm. long., vix usque ad 0.5 cm. diam., calyce persistente connatæ. Semina 1.0–1.4 cm. long.; nucleus 0.25 cm. long., 0.13 cm. lat.

Accedit ad *Ladenbergiam magnifoliam*, Klotzsch, sed plane abhorret foliis minoribus, inflorescentiâ abbreviatâ subthyrsoidæ, calycibus plane majoribus segmentis latioribus obtusissimis, alabastris diversiformibus, corollæ lobis disparibus elongatis, antheris multo brevioribus, disco altiore, capsulis angustioribus plerumque uno latere dehiscentibus. Propius etiam videtur plantæ Venezuelianæ (Moritz, n. 965 in Herb. Brit. Mus.), cujus capsulæ iis stirpis nostræ simillimæ, sed flores ante oculos non habui et folia indumento et nervatione dispari gaudent, bracteas insuper multo majores ostendit.

The habit of the capsules of splitting usually down one side only is very peculiar, and were it universal might well justify the making of a new genus. But I find that one of my capsules has split in the regulation way, and, as all the other characters are those of *Ladenbergia*, I have decided upon describing my plant as a member of that genus. [Peruvia, Nov. Granat., Venezuela.]

MANETTIA, sp. indet.; caule pubescente, nunc puberulo; foliis lanceolato-obovatis, plerumque gradatim acuminatis, puberulis, usque ad 10.0 cm. long. et 4.0 cm. lat., plerisque vero minoribus; petiolis pubescentibus usque ad 3.0 cm. long., superne paullo ampliatis; pedunculis pubescentibus; calycis laciniis linearibus, 0.2 cm. long. Nec flores expansi nec fructus suppetebant. Flores, ex schedis meis, coccinei.

*Hab.* Crescit ad Santa Cruz, mens. Nov. florens. (N. 553.)

SIPANEA PRATENSIS, Aubl. Pl. Guian. i. p. 147. (*S. hispida*, Benth. MSS.)

*Hab.* Ad Santa Cruz mens. Dec. flores puniceos præbet. (N. 801.)

I have named this plant as above in deference to Dr. K. Schumann, who unites several forms which, at first sight, look very distinct. My specimens agree fairly well with Spruce's, except in the uniformly smaller size of their parts. [Amer. Austr. Trop.]

SIPANEA (§ PANISEA) VERIS (sp. nov.). Herbacea, caule procumbente, hinc atque illinc radicante; caulibus floriferis, erectis, raro ramulosis, gracilibus, appresse pubescentibus; foliis parvis, petiolatis, ovatis vel ovato-lanceolatis, obtusis vel obtuse acutis, nonnunquam obscure mucronulatis, basi plus minus acutatis, fere omnino glabris; inflorescentiâ spurie terminali cicinnoideâ, 1–2-florâ; rhachi gracili, subtereti, appresse pubescente; bracteis lineari-lanceolatis, ovario brevioribus vel subæqualibus; ovario

ovoideo, appresse strigoso-pubescente; calycis lobis elongatis, subulato-setaceis, ovarium circa 3-plo excedentibus, appresse puberulis; corollâ hypocraterimorphâ, calycem circa 2-plo superante, laciniis obovatis, obtusissimis, extus glabris, tubum plus quam  $\frac{1}{2}$  excedentibus; tubo extus in nervis minutissime et appresse albo-puberulo, intus superne, præsertim fauce, aureo-villoso, inferne puberulo; staminibus paullo supra medium tubi affixis; filamentis brevissimis, quam antheræ multo brevioribus; stylo quam tubus brevior, stigmatibus elongatis coronato; capsulâ (immaturâ) complanato-subglobosâ, pilis brevibus strigosis obtectâ; seminibus . . .

*Hab.* Crescit in apertis arenosis ad ripas fl. dos Bugres, itaque ad confluentes fl. Paraguay et dos Bugres prope Santa Cruz. Floret Oct. (N. 435.)

Caulis omnes tenues, radicanter, nec ultra 0.75 cm. diam., nodis tumidis. Folia usque ad 2.0 cm. long. (mediocri 1.5 cm.), 0.5-0.8 cm. lat., tenuiter membranacea, costæ secundariæ perpaucæ, obscuræ, obliquæ; petioli 0.1-0.2 cm. long., patuli vel ascendentes; stipulæ ovatæ, 0.1 cm. long. Flores punicei, nunc sessiles vel subsessiles, nunc pedicellis brevissimis fulti. Ovarium floris expansi 0.15 cm. long. et 0.1 cm. diam. Calyx usque ad 0.5 cm. long., pars indivisa brevissima et laciniæ usque ad 0.45 cm. long.; glandulæ interstitiales minutæ, rubræ. Corollæ tubus plerumque 0.8-1.0 cm. long. et 0.1 cm. diam., dimidio superiore ampliatus; limbus circa 1.0 cm. diam., lobi 0.6 cm. long. Stamina 0.5 cm. a basi affixa, filamenta non ultra 0.1 cm. antheræ 0.25 cm. long. Stylus 0.25 cm. long., apice in stigmata 0.15 cm. long. desinens. Capsula immatura 0.35 cm. long., 0.27 cm. lat.

*Sipanea bifloræ*, Linn. fil., affinis, sed distinctissima ob habitum humiliorem, folia minora, calycis majoris lobos latiores, corollam brevior, antheras subsessiles et longiores, necnon stylum et stigmata disparia. [Bras. Or., Guiana, Venezuela.]

SABICEA NOVO-GRANATENSIS, K. Schum. in Mart. Fl. Bras. vi. pars vi. p. 303.

*Hab.* Crescit ad Santa Cruz, ubi flores albos præbet mens. Dec. (N. 785.)

SABICEA HUMILIS (sp. nov.); caulibus e rhizomate valde incrassato humilibus, erectis, simplicibus, subtetragonis, junioribus (saltem in sicco) lateraliter compressis prorsus dense lanugino-tomentosis; foliis subsessilibus, oblongis ovatis vel anguste obovato-oblongis, nunc obtusis, nunc obtusissimis, nunc acutis vel brevissime acuminatis, basi acutis vel obtusis, supra longiuscule et appresse tomentoso-pubescentibus, dein pubescentibus, subtus dense et molliter albo-lanato-tomentosis; stipulis late ovato-rotundatis, acutis vel breviter acuminatis; inflorescentiâ axillari pluriflorâ; bracteis exterioribus late ovatis acutis, dorso præsertim inferne et intus basi villosulis, margine longe ciliatis; bracteolis linearibus vel spathulatis, dorso villosis; ovario 4-loculo, dense villosulo; calyce ovario æquilongo, segmentis inæqualibus, lanceolatis obtusis, parte indivisâ multo longioribus, extus villosulis, intus fere glabris; corollâ calycem plus quam duplo superante, ad  $\frac{1}{3}$  in lacinias oblongas, obtusas, extus villosulas, intus minutissime puberulas divisâ; corollæ tubo extus fere glabro, intus parce villosulo, ceteroquin minute puberulo; staminibus juxta medium tubum affixis, inclusis, filamentis brevissimis; antheris oblongis, obtusis,



integrîs; stylo corollæ tubum subæquante, apice in laciniâs stigmatosâs sat elongatas 3-4 diviso; baccâ ignotâ.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 472.)

Fruticulus pusillus nec ultra 26.0 cm. alt., vulgo 12.0-16.0 cm., caulibus nunquam ramosis. Rhizoma usque ad 2.0 cm. diam., in sicco bruneum, inferne radices paucas tenuissimas sparsim ramosas, superne caules stipatos emittens. Caulis strictus, 0.3-0.4 cm. diam., basi sæpe squamas vel folia hebetata (intermedia brevia, plerumque 1.5-3.0 cm. long.) ostendens. Folia modica, 3.5-7.0 cm. long., 2.5-3.5 cm. lat., pergamena, supra viridia nec in sicco nigricantia; costæ secundariæ 8-10, leviter et gradatim arcuatæ, oblique insertæ, subtus prominulæ; petioli nec ultra 0.3 cm. long.; stipulæ 0.4-0.8 cm. long., membranacæ, extus villosulæ, intus glabræ vel pilosæ, persistentes. Inflorescentia circa 10-flora. Bracteæ circa 0.4 et bracteolæ 0.25-0.3 cm. long., in sicco bruneæ. Ovarium 0.25 cm. long., vix 0.2 cm. diam. Calyx vix 0.4 cm. long.; segmenta 0.22-0.25 cm. long. Corolla alba, 0.9 cm. long.; tubus 0.65-0.7 cm. long., limbi 0.7 cm. diam., lobi 0.2-0.3 cm. long. Discus crateriformis, 0.7 cm. alt. Stamina 0.4 cm. supra basin corollæ inserta; antheræ 0.15 cm. long. Stylus 0.65 cm. long., glaber. Stigmata usque ad 0.15 cm. long.

Nulli nisi *Sipanea cana*, Hook., affinis, sed multis signis ab illâ discrepat, scilicet staturâ humili, indumento, foliis disparibus, corollâ, etc., toto cælo diversa. [Bras. Or., Goyaz, Peru.]

Hujus forsân varietatem insequentem inveni ad Santa Cruz mens. Dec. florentem, videlicet (n. 794): var. *lanceolata*, quæ a typo divergit ob staturam paullo elatiorem (25.0-30.0 cm. alt.), folia paullo majora supra parce villosulo-pilosa, in sicco nigricantia, stipulas lanceolatas, bracteas exteriores majores (0.6 cm. long.), corollæ tubum longiorem (0.8 cm. long.), stamina sub fauce inserta, antheras paullo longiores, angustiores, apice acuto, necnon stylum brevior.

This is probably the short-styled form, the other being the long-styled, but the variation in length of the styles and position of insertion of the stamens is accompanied by so much difference in the purely vegetative organs of the plant that this view must remain a mere surmise for the present.

**BERTIERA GUIANENSIS**, Aubl. Pl. Guian. p. 180.

*Hab.* Incolit sylvam primævam inter Santa Cruz et Campos de Tapirapuan, ubi inveni mens. Sept. (N. 372.) [Amazonia, Guiana, Peruvia, Nov. Granat., Ind. Occ.]

**ALIBERTIA MYRCIIFOLIA**, K. Schum. in Mart. Fl. Bras. vi. pars vi. p. 393.

*Hab.* Juxta urbem Cuyabá frequens, necnon ad Serra da Chapada: floret mens. Aug. (Nn. 33, 37, 53, 158.)

Frutex metralis. Flores albi.

There are two forms of this in the collection, one (no. 33, from the Chapada Plateau) has larger leaves and somewhat longer corollas than the other; its branches also are white, those of the other form being purplish. [Bras. Or., Goyaz, Amazonia, Guiana.]

**ALIBERTIA AMPLEXICAULIS** (sp. nov.); ramis erectis, rigidis, complanatis, arcte pubes-

centibus, dein glabris, internodiis sat elongatis; foliis ovatis vel ovato-oblongis, obtusissimis, basi cordatis, amplexicaulibus, rigidissime coriaceis, supra eximie reticulato-nervosis; inflorescentiâ ♂ 4-6-florâ, foliis 2 summis et vaginâ stipulari superposita suffultis; calyce brevi cupulari truncato integro vernicoso, intus crebro glanduloso; corollâ hypocraterimorphâ, calycem circa 8-plo excedente, ad  $\frac{1}{4}$  in lacinias breves, deltoideo-ovatas obtusas, extus ut tubus et intus puberulas, diviso, tubo tetragono, vernice copiosa superfuso, intus glabro; staminibus infra medium tubi affixis; antheris anguste fusiformibus; baccâ vix maturâ, magnitudine pisi magni, globosa, levi.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi floret et fructificat mens. Aug. (N. 148.)

*Frutex*, altitudine prætermissa. Rami 0.3-0.5 cm. diam., purpureo-cinerei. Folia usque ad 8.5 cm. long. et 5.7 cm. lat. (mediocria 3.5-5.5 cm. long.), margine revoluta, supra nitida, glaberrima, subtus pallida et obsolete pubescentia; costa media supra maxime eminent, sæpe apicem versus folii dichotoma vel obsoleta; costæ secundariæ utrovis latere 6-8, angulis variis sæpissime latis insertæ, nonnunquam undata et mox dichotomæ, paginâ superiore eminentes, inferiore sæpe impressæ, venulæ pag. sup. arcte reticulatæ, pag. inf. obsoletæ; petioli brevissimi (nec ultra 0.1 cm. long.), sæpe omnino obsoleti. Stipulæ brevissimæ rotundatæ, obtusæ, glabræ, longitrorsum rugatæ, 0.15-0.2 cm. long. Calyx masc. circa 0.1 cm. alt. et 0.25 cm. diam. Corolla in toto 0.8 cm. long., tubus superne ampliatus ibique 0.17 cm. diam.; lobi vix 0.2 cm. long. Stamina 0.22 cm. supra basin corollæ tubi inserta. Antheræ 0.5 cm. long. Discus pulvinatus, vernicosus. Bacca 0.8 cm. long., 0.7 cm. diam., calyce 0.075 cm. alt. et 0.2 cm. diam. coronata. Flores fem. non suppetebant.

Species cum *Alibertiâ obtusâ*, K. Schum., comparanda, et facili obtutu notata, inter plura alia, habitu nequaquam toruloso, foliis amplexicaulibus latioribus et maxime coriaceis, itaque stipulis brevibus rotundatis nec acutis. [Bras. Or.]

*ALIBERTIA VERRUCOSA* (sp. nov.). Rami compressiusculo-subtetragonis, novellis glabris, internodiis sat elongatis; foliis breviter petiolatis, amplis, cuneato-obovatis, sæpissime obtusissimis, interdum breviter cuspidatis, nunc tenuiter coriaceis, subtus in axillis costarum secundariarum breviter barbellatis, ceteroquin glabris; flore femineo solitario, sessili; calyce brevissimo, cupulari, integro; disci ore incrassato, lobulato; baccâ globosâ, verrucis elongatis densissime obtectâ.

*Hab.* Viget in sylvis ad Santa Cruz, ubi fructus maturos præbet (ut nunciabant incolæ) mens. Dec. Nom. vernac. *Mermelado con spini*. (N. 540.)

*Arbuscula* ramosa (potius frutex elatus?), altitudine prætermissâ, fortasse circa bior-gyalis. Ramuli 0.3-0.4 cm. diam., erecto-ascendentes, ad nodos tumidi, cortice albicante rimoso cincti; intermedii usque 11.0 cm. long., plerumque minores, raro ad 0.5 cm. abbreviati; stipulæ ovatæ, obtusissimæ, 0.25 cm. long., mox deciduæ. Foliorum lamina 11.0-16.0 cm. long., 3.5-9.0 cm. lat. (modica 6.0-7.0 cm.), margine leviter cartilaginea; costæ secundariæ 6-8, distantes, angulo circa 45° raro sub-

opposite insertæ, fere rectæ, juxta marginem subito arcuatæ; petioli 0·5–1·5 cm. long., validi, facie superiori canaliculati. Flores ignoti. Calyx fem. supra fructum 0·1 cm. alt., 0·3 cm. diam. Bacca unilocularis, immatura 2·0 cm. diam., viridis. Semina ignota.

Species insignis, et ob baccas verrucosas omnibus ab aliis hucusque descriptis facile distinguenda.

The warted fruits are so striking a character that I have ventured to describe this plant, although both male and female flowers are unknown. The fruits, which were rapidly increasing in size at the time we had to leave Santa Cruz (the beginning of December), were said by the people of that place to ripen before the end of the year; they are then made into a preserve.

*BASANACANTHA ARMATA*, Hook. f. in Gen. Pl. ii. p. 83, var. et typica forma *pubiloba*.

*Hab.* Crescit ad Santa Cruz, ubi mens. Nov. floret. (N. 464.) [Amer. Austr. Trop., Paraguaria.]

*TOCOYENA HIRSUTA*, Moric. DC. Prod. iv. p. 375.

*Hab.* Reperi florentem ad Jangada mens. Sept. (N. 261.)

Arbuscula 3-metralis, sursum foliata. Corollæ odoratæ tubus pallide viridis, limbus niveus. [Bras. Or., Amazonia, Guiana.]

*RANDIA RUIZIANA*, DC. Prod. iv. p. 388, var. *LONGIFLORA*, K. Schum.

*Hab.* In ripâ inveni fl. Brasinho, itaque fl. Paraguay prope Santa Cruz, mens. Oct. florentem. (Nn. 441, 630.)

The ovary of a flower examined by me certainly had parietal placentas, so that, if this be a character of the plant named by De Candolle *Randia Ruiziana*, the latter is not a good *Randia*.

Although included by K. Schumann among the Brazilian Rubiaceæ, there can be but little doubt that this was done without warrant. Spruce's specimens formed part of a collection made upon the Cassiquari, Vasiva, and Pacimone rivers; the first and last of these are plainly in the Amazonas province of Venezuela, and the Vasiva is probably one of the small neighbouring affluents of the Rio Negro.

From the phytogeographical point of view, this plant, of which I saw plenty, is one of the most interesting in the collection. [Venezuela, Guiana, Nov. Granat., Peruvia, Amer. Centr.]

*GUETTARDA VIBURNOIDES*, Cham. & Schlecht. in Linnæa, 1829, p. 182, var. *α. PANNOSA*, Muell. Arg.

*Hab.* Viget ad Santa Cruz, mens. Nov. florens. (N. 661.) [Bras. Or., Goyaz.]

*GUETTARDA MATTOGROSSENSIS* (sp. nov.); ramulis patentibus, hinc inde ad spinas validas leviter curvatas per paria dispositas vel ramulis foliigeris oppositis et nunc solitariis reductis; stipulis parvis, ovato-lanceolatis; petiolis mediocribus, paginâ foliorum obovato-oblongâ vel ovato-lanceolatâ, plerumque acutâ vel cuspidato-

acuminatâ, inferne sensim plus minus coarctatâ, costis secundariis utroque latere 7-11 oblique insertis, leviter arcuatis, utrinque sat prominulis; pedunculis folia subæquantibus validiusculis; cymis bis vel ter dichotome divisis; bracteis linearilanceolatis vel linearibus, calycem subæquantibus; calycis parte liberâ tubulosâ, ovarium quater æquante, inæqualiter ac prominule 2-3-lobâ, extus sericeo-tomentosâ, intus fere omnino glabrâ; corollâ extus sericeo-tomentosâ, intus secus medium loborum pilosula, ceterum glabrâ, tubo lobis circa 4-plo longiore, pro genere sat crasso; antheris faucem attingentibus 10-plo longioribus quam latis, paullo supra medium fixis; stylo basin versus longiusculo, tractu incrassato glabro excepto, pubescente; stigmatibus capitato; ovario anguloso, 4-5 loculari; drupâ non visâ.

*Hab.* Viget ad Santa Cruz, mens. Nov. florescens. (N. 742.)

Frutex circa  $2\frac{1}{2}$ -metralis, ramis abundans. Ramuli validi, teretes, rufo-tomentosi, deinde glabri. Spinæ 0.4-1.2 cm. long., annulatim notatæ, acuminatæ. Foliorum paginæ pleræque 5.0-10.0 cm. long., 2.5-vix 6.0 cm. lat., basi paullo obliquæ, apice acutæ vel breviter cuspidato-acuminatæ, utrinque secus nervos appresse rufo-tomentellæ, ceterum puberulæ; petioli plerique 0.4-0.9 cm. long., rufo-tomentosi. Stipulæ ad 0.5 cm. long., et circa 0.75 cm. lat. Pedunculi plerumque 4.5-8.0 cm. long., rufo-tomentosi. Cymæ pleræque 10-16-floræ; cymulorum pedicelli communes ad circa 0.5 cm. long., rufo-tomentosi. Bracteæ 0.4-0.6 cm. long., pubescentes. Calycis tubus superus vix 3.0 cm. long., breviter ac irregulariter denticulatus, rufo-tomentosus. Corollæ tubus ad 1.33 cm. long., superne sensim ampliatus, ibique 0.2 cm. lat.; limbus 0.8 cm. diam.; lobi 0.4 cm. long., 0.2 cm. lat.

Species critica; a *Guettardâ Burchellianâ*, Muell. Arg., cui proxima, distat ob nervos secundarios oblique insertos (haud semirectos), petiolos longiores, stipulas diversiformes, corollæ tubum multo brevioris, stylum basi glabrum, etc. *G. Pohliana*, Muell. Arg., petiolis longioribus, stipulis diversiformibus et majoribus, corollâ et stylo disparibus gaudet [Bras. Or., Goyaz.]

**CHOMELIA MYRTIFOLIA** (sp. nov.). Fruticosa, inermis; ramulis juvenilibus fulvo-hirto-pubescentibus; stipulis triangulari-ovatis, acuminatis; foliis subsessilibus, ovatis, basi brevissime cordatis, supra glabris, subtus, præsertim in nervis, piloso-pubescentibus; costis secundariis utrovis latere 4-5; cymarum pedunculis quam folia brevioribus, plurifloris vel paucifloris; calycis profunde 5-partiti lobis ovario longioribus, inæqualibus, foliaceis oblongis vel oblongo-spathulatis, obtusis, in sinu glanduligeris; corollæ gracilis, extus appresse sericeo-pubescentis, intus glabræ, tubo lobis 5-plo longiore; antheris tubo inclusis, ad  $\frac{1}{3}$  altitudinis affixis, filamentis brevissimis, 8-plo longioribus quam latis; disco epigyno glabro; stylo elongato, gracillimo, glabro; ovario cylindrico, hirsuto.

*Hab.* Crescit ad Santa Cruz, ubi floret mens. Dec. (N. 776 a.)

Ramuli teretes, demum glabri et cortice albido obtecti. Folia 2.0-3.5 cm. long., 1.3-2.0 cm. lat., coriaceo-membranacea, supra pallidissime nitentia, subtus aliquanto decoloria; petioli 0.1 cm. long., hirto-pubescentes. Stipulæ 0.2 cm. long., appresse hirtulæ. Pedunculi usque ad 1.0 cm. long., superiores vero breviores, graciles,

piloso-hirti. Calycis extus piloso-hirti lobi 0·15 cm. long. Corollæ tubus superne sensim ampliatus, 1·2 cm. long., sub limbo 0·12 cm. lat.; limbi 0·4 cm. diam., lobi 0·25 cm. long. Stamina ad 0·2 cm. infra fauces inserta; antheræ 0·17 cm. long., 0·02 cm. lat. Ovarium sub flore vix 0·1 cm. long. Stylus breviter exsertus, 1·25 cm. long. Stigmatis lobi lineares, abbreviati, 0·06 cm. long. Baccæ ignotæ.

Ex affinitate *Chomelia gracilis* (*Anisomeris gracilis*, K. Schum.; Glaziou, n. 19441 in Herb. Kew.), cujus calyx minor et minus foliaceus, stamina breviora tubo inserta, stigmatis lobi abbreviati et lineares nec elongati et spathulati, etc. [Bras. Or.]

The vernacular name of this shrub was given me as *Govinha do Campo*, and it (the berries I presume) was said to be used in flavouring caña. *Myrcia effusa* is called *Govinha*, and I think it quite possible that my informant may have mistaken the *Chomelia* for the *Myrcia*, the former having much the habit of a Myrtacea. Moreover, *Myrcia*-berries are much more likely to be used as a flavouring than those of *Chomelia*. The root of the word is perhaps *gorvo*, the Portuguese for a clove.

CHOMELIA RIBESIOIDES, Benth. ex A. Gray in Proc. Amer. Acad. iv. p. 38.

*Hab.* Crescit in cacumine montium Serra da Chapada, et floret mens. Aug. (N. 168.) Frutex circa metralis, copiose ramosus. Flores lutei, foliis quasi umbraculo contra solis injuriam tecti.

Both Mueller Arg. and the authors of the 'Genera Plantarum' agree in describing the flowers as tetramerous, but some of the flowers of my specimens are pentamerous, as is also the case with herbarium specimens examined by me. [Bras. Or., Goyaz, Amazonia.]

CHOMELIA, sp. nov. ? Frutex diffusus; ramis rigidis, subteretibus, hâc atque illâc tumidis, 0·3 cm. diam.; ramulis ramis similibus, sed spinescentibus; foliis parvis, brevissime petiolatis, ovatis, obtusis, basi rotundatis vel obtusis, nonnunquam levissime cordatis, coriaceis, subtus in nervis barbellatis, 1·5–3·0 cm. long., 1·0–2·3 cm. lat.; costis secundariis perpauca, supra impressis, subtus eminentibus; baccâ oblongâ, 0·7 cm. long., 0·2 cm. lat., pilosâ, viva purpureo-nigrâ, calycis reliquiis extus pilosis, recurvis, linearibus, obtusis, 0·2 cm. long. coronatâ. Flores non vidi.

*Hab.* Crescit in sylvestribus ad Santa Cruz, ubi mens. Sept. fructificat. (N. 321.)

CHIOCOCCA BRACHIATA, Ruiz & Pav. Fl. Peruv. ii. p. 67: var.  $\beta$ . *lanceolata*, Muell. Arg.

*Hab.* Crescit in fruticetis ad Santa Cruz, mens. Nov. florens. (N. 741.) [Amer. Austr. Trop., Ind. Occ.]

COUSSAREA HYDRANGEÆFOLIA, Benth. & Hook. f. Gen. Pl. ii. p. 121.

*Hab.* Floret ad Santa Cruz mens. Dec. (N. 739.) [Bras. Or., Goyaz.]

COUSSAREA FRONDOSA (sp. nov.); stipulis interpetiolaribus amplis, rotundatis, muticis, crasse coriaceis, deciduis, intus annulo dentium scariosorum subulorum satis elongatorum auctis; foliis valide petiolatis, amplis, late oblongo-ovatis vel obovato-oblongis, subito longiuscule cuspidatis, basi plus minus attenuatis, interdum cuneatis, coriaceo-membranaceis; costis secundariis 6–8, inferioribus approximatis, oblique insertis, sub margine undulatim-fornicatis, ibique tandem conjunctis; venulis

arcte reticulatis, utrinque (præsertim vero subtus) eminentibus; paniculis terminalibus abbreviatis, sc. quam folia multoties brevioribus, breviter pedunculatis, nonnunquam fere subsessilibus; ramulis conferto-ascendentibus, apice bi-trichotomis, paucifloris; calycis parte liberâ ovarium circa  $2\frac{1}{2}$ -plo superante tubulosâ, ore breviter 4-dentato, intus glandulis parvis crebris instructo, alabastris anguste claviformibus; corollæ elongatæ obsolete puberulæ lobis lineari-lanceolatis, tubo limbo 3-plo excedente ad  $\frac{4}{5}$  altitudinis staminifero; antheris comparatione parvis, 7-plo longioribus quam latis, dorso ad  $\frac{1}{3}$  altitudinis fixis; stylo filiformi, glabro; stigmatibus elongatis, stylo plane latioribus.

*Hab.* Crescit ad Santa Cruz, mens. Nov. florens. (N. 524.)

Arbuscula ramosa, 5-metralis. Ramuli validi, compresso-subtetragoni, grisei, puberuli, longitrorsum striati. Petioli 1.0-2.5 cm. long., patentes, validi, anguste canaliculati, minute pubescentes; foliorum lamina usque ad 25.0 cm. long. et 13.5 cm. lat. (modica 20.0 × 10.5 cm.), utrinque nitida, subtus vero paullulum decolor, supra, costis minute puberulis exemptis, glabra, subtus, præsertim in nervis, patenti-pubescentis. Stipulæ circa 0.5 cm. long., extus puberulæ. Inflorescentia nec ultra 5.0 cm. long. et 4.0 cm. lat., axes obesi, puberuli, grisei; cymulæ satis brevipedunculatæ, pleræque 6-12-floræ. Flores albi, pedicellis obesis ovario æquilongis suffultis. Ovarium 0.1 cm. long., calyce paullo angustius, una cum calyce minutissime pubescens. Calyx 0.25 cm. long., vix 0.2 cm. lat. Corolla tota 3.8 cm. long.; lobi vix 1.0 cm. long., 0.1 cm. lat., apice obtusa; tubus inferne vix 0.1 cm. lat., in faucibus usque ad 0.25 cm. dilatatus, intus puberulus. Stamina 2.3 cm. supra basin corollæ fixa; filamenta glabra, complanata, antheris distincte breviora; antheræ apice acutatae, vix 0.3 cm. long., 0.04 cm. lat. Stylus circa 1.0 cm. long., deorsum paullo incrassatus. Stigmata 0.65 cm. long. Baccæ non suppetebant.

*Coussareæ macrophyllæ*, Muell. Arg., proxima, sed foliis angustioribus, costis secundariis paucis, paniculis abbreviatis, corollæ lobis tubo 3-plo brevioribus nec tubum semi-æquantibus, antheris multo brevioribus, stigmatibus latis, inter alia, bene distinguenda. *C. Regnelliana*, Muell. Arg., foliis latioribus basi subcaudatis, calyce longe diverso, et antheris duplo longioribus gaudet; itaque stipulæ *C. amplæ* auct. laudati intus haud denticuligeræ, inflorescentia hirta-puberula, ovarium necnon calyx admodum diversus. [Amazonia.]

In hoc genus verisimiliter trahendum est specimen nanum ad Santa Cruz mens. Nov. lectum (n. 546), cujus folia breviter petiolata, membranacea, oblongo-obovata, acuminata, summum minute puberula, 11.0-17.0 cm. long.; inflorescentiæ terminales foliis breviores; cymulæ patentes, paucifloræ; flores ignoti; baccæ ovoideæ, minute puberulæ, 1-spermæ, 0.5 cm. lat., vix 1.0 cm. long.

FARAMEA (§ HYPOCHASMA ?) COUSSAROIDES (sp. nov.); stipulis intrapetiolaribus brevibus, latis, apice obtusis, basi breviter connatis, caducis; foliorum laminâ amplâ e basi rotundata vel obtusa, late elliptica, cuspidato-acuminata, papyracea, supra, præsertim in costis, puberulâ vel minute pubescente, nitidâ, subtus pubescente; costis secundariis circa 8, rarius opposite vel subopposite insertis, ipso sub margine arcuatim junctis, ceteroquin rectis; cymis abbreviatis, plurifloris, pedunculis quam folia multoties bre-

vioribus suffultis; calycis parte liberâ satis elongatâ, anguste tubulosâ, ore brevissime et inæqualiter 4-dentato; alabastris anguste claviformibus; corollæ lobis tubo  $2\frac{1}{2}$ -plo brevioribus, oblongo-linearibus, obtusis, tubo elongato tenui, sursum leviter ac gradatim amplificato, prope faucem staminigero, obsolete puberulo; antheris breviter exsertis, 10-plo longioribus quam latis, dorso vix ad  $\frac{1}{4}$  longitudinis affixis; stigmatibus filiformibus; ovarii dissepimento sursum evanido.

*Hab.* Floret ad Santa Cruz mens. Dec. (N. 750.)

Arbuscula circa 4-metralis. Ramuli subtetragoni, sæpe geniculati, pubescentes, mox glabri, et cortice leucophæo undato-striato obducti, 0.35–0.6 cm. diam. Stipulæ 0.2 cm. long., firmæ, extus pubescentes, nunc caducissimæ, nunc paulisper persistentes. Foliorum limbus usque ad 18.0 cm. long. et 10.5 cm. lat., in sicco supra nigricans, subtus pallidior; petioli patuli, validi, pubescentes, 1.0–2.0 cm. long. Cymæ 4.0–6.0 cm. long., 4.0–5.0 cm. lat., sat incrassatæ; pedunculus circa 2.0 cm. long., una cum cymæ ramulis pubescens. Flores albi. Ovarium vix 0.15 cm. long., albo-tomentosum. Calycis pars libera circa 0.17 cm. long. et lat., minute pubescens; dentes obtusi, ciliati. Corollæ tubus vix 2.5 cm. long., basi 0.1 cm. lat., sub limbo fere ad 0.2 cm. amplificatus; lobi vix 1.0 cm. long., 0.2 cm. lat. Antheræ 0.45 cm. long., 0.04 cm. lat., apice curvatæ, acutæ. Discus 0.05 cm. alt. Stylus paullo ultra 2.0 cm. attingens, puberulus. Stigmata 0.35 cm. long. Bacca ignota.

Species nulli affinis, sed fortasse juxta *F. coronatam*, Muell. Arg., difficile interponenda. Cum habitu *Coussarearum* præbet attamen placentationem Faramearum.

FARAMEA BRACTEATA, Benth. in Linnæa, xxiii. p. 452.

*Hab.* Florescit in ripâ fl. Paraguay inter Santa Cruz et Diamantino mens. Oct. (N. 638.)

Involucrum album, flores cyanei. [Goyaz.]

PSYCHOTRIA (§ EUPSYCHOTRIA) OREADUM (sp. nov.); stipulis in vaginam intra- et inter petiolarem brevem, utrinque juxta petiolos subulato-unidentatam connatis; limbo foliorum lanceolato vel ovato-lanceolato acuto, nonnunquam breviter cuspidato; costis secundariis utrinque latere 8–10 aperte arcuatis, ipso sub margine irregulariter junctis; venis late reticulatis; paniculâ terminali modice pedunculatâ, congestim corymbiformi, dense bracteâtâ; ramulorum bracteis lanceolatis, puberulis, albidis, flores longitudine excedentibus; calycis parte liberâ ovario paullo brevior, tenuiter cyathiformi, minute ac inordinatim denticulatâ, obscure pilosiusculâ; tubo intus pauci-glanduloso; corollâ aperiente claviformi, apice minute puberulâ, intus medio staminigerâ ibique sparsim pubescente, fauce dense ac minute pubescenti-pulvinatâ; lobis lanceolatis,  $\frac{1}{2}$  longitudinis tubi æquantibus; antheris dorso  $\frac{1}{3}$  supra basin fixis; disco epigyno, incrassato, urceolari, 10-lobulato; stylo superne ampliato, longe bifido, ramis parum complanatis, integris; baccâ ignotâ.

*Hab.* Ad Santa Cruz, necnon in ripâ fl. Paraguay inter Santa Cruz et Villa Maria, floret Nov.–Dec. (N. 810.)

Frutex parvus e rhizomate sat crasso, leviter toruloso erectus, crebre ramosus, circa  $\frac{2}{3}$ -metralis. Caules et ramuli graciles, glabri. Folia 6.0–12.0 cm. long., 2.0–5.5

cm. lat., glabra, membranacea, sicca læte viridia. Petioli brevissimi, nec ultra 0·2 cm. long., interdum obsoleti. Pedunculi 1·5-3·0 cm. long., pubescentes, dein fere glabri. Paniculæ 2·5-3·0 cm. diam., puberulæ vel pubescentes. Bracteæ usque ad 1·3 cm. long. et 0·4 cm. lat., plerumque vero minores, albæ, in sicco stramineæ. Flores albi. Ovarium sub flore 0·06 cm. long. et lat., costulatum, glabrum. Calyx 0·04 cm. long. Corollæ lobi vix 0·2 cm. long., acuti, extus, præsertim apice, pilosuli. Antheræ 0·2 cm. long., 0·04 cm. lat., apice obtusæ, breviter exsertæ. Stylus 0·25-0·25 cm. long., glaber. Stigmata 0·2 cm. long., sursum ampliata, obtusa.

Cum *Psychotriá lupuliná*, Benth., et *P. leucophæá*, Poepp. et Endl., componenda, ab illâ vero distans bracteis necnon floribus disparibus, ab hâc præter alia stipulis diversis, foliis minoribus nec longe acuminatis, bracteis comparative exiguis, floribus diversiformibus et albis nec violaceis. [Amazonia.]

PSYCHOTRIA OREADUM, var. ? VIRIDIS (nov.).

Cum *P. Oreadum* optime congruens, sed bracteæ latiores, firmiores, virides, nec albi.

Flores desunt. Baccæ late depresso ovoideæ, nunc didymæ, nunc integræ, vivæ luride virides. Fruticulus semimetralis.

*Hab.* Crescit inter Santa Cruz et Villa Maria in ripâ fl. Paraguay. Floret mens. Dec. (N. 838.)

PSYCHOTRIA TRIPHYLLA, Muell. Arg. in Mart. Fl. Bras. vi. pars v. p. 233.

*Hab.* Frutex altus; viget in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan, itaque ad Santa Cruz. Floret menss. Sept.-Nov. (Nn. 375, 563.) [Amazonia, Guiana.]

PSYCHOTRIA MARCGRAVII ?, Spreng. Syst. Veg. iv. Cur. Post. p. 79.

*Hab.* Reperi in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan mens. Sept. (N. 402.)

Suffrutex metralis. Pedunculus necnon pedicelli rubri, flores violacei.

Owing to the immaturity of the flowers, I find it impossible to name this plant without some doubt as to the identification.

PSYCHOTRIA CUJABENSIS, Schlecht. in Linnæa, xxviii. (1856) p. 507.

*Hab.* In sylvis juxta fl. Paraguay, inter Santa Cruz et Diamantino, mens. Oct. florens. (N. 618.)

Frutex metralis. Flores albi. [Matto Grosso.]

PSYCHOTRIA SUBCROCEA, Muell. Arg. in Mart. Fl. Bras. vi. pars v. p. 244.

*Hab.* Crescit juxta Santa Cruz, necnon ad ripas fl. Paraguay inter Santa Cruz et Diamantino, mens. Dec. florens. (Nn. 606, 812.)

Frutex metralis. Pedunculi et pedicelli corallini; flores lutei, nitentes. Specimina mea a typo divergunt foliis longius petiolatis (pet. usque ad 1·0 cm. long.) et corollæ tubo abbreviato, neque ultra 0·9 cm. long.

I have been in much doubt about this identification. The chief points of difference between my specimens and the type are the longish petioles, which in the type are only



0.2–0.3 cm. long, and the smaller corollas, never more than 0.9 cm. long. instead of 1.2–1.3 cm. Since, however, Pohl's no. 845, referred by Mueller Arg. to *Psychotria subcrocea*, has long-petioled leaves, and Blanchet's no. 2699, which Mueller names *P. subcrocea*, var. *confusa*, has short corollas, I have decided to refrain from adding another to the long list of species ranged under this troublesome genus. [Bras. Or., Goyaz.]

**PSYCHOTRIA SUBCROCEA, Muell. Arg., var. CONFUSA.**

*Hab.* Fruticem altum, pedicellis rubris et floribus luteis, inveni in ripâ fl. dos Bugres mens. Oct. (N. 434.)

**PSYCHOTRIA (§ EUPSYCHOTRIA) HOMOPLASTICA (sp. nov.) (Tab. XXVI.);** stipulis magnis, late ovatis, acute bilobis, scarioso-membranaceis, nec vaginantibus; foliorum limbo amplo lanceolato vel obovato-oblongo, breviter cuspidato, membranceo-papyraceo; costis secundariis circa 21–28, sensim arcuatis, sub margine junctis; venis transversis, parum reticulatis, pag. inf. impressis, pag. sup. eminentibus; paniculâ terminali, pedunculatâ, sublaxiuscule compactâ, crebre bracteosâ; bracteis elongatis, oblongo-lanceolatis; calycis parte liberâ tubulosâ, quam ovarium brevior, ore breviter 5-fidâ, intus eglandulosa; corollâ aperiens apice glabrâ, intus, supra medium tubi, juxta fauces staminigeras, pubescente, ceterum glabrâ; antheris circa 6-plo longioribus quam latis, dorso mediâ altitudine fixis; stylo filiformi conspicue bifido, ramis complanatis pubescentibus, disco crassiusculo, alte bilobo.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan, ubi mens. Sept. floret. (N. 381.)

Frutex usque bimetralis. Ramuli compresso-subtetragoni, læves, sicco virides, nodis leviter tumidis, 0.4 cm. lat.; intermedii plerumque 5.0–12.0 cm. long. Foliorum lamina usque ad 18.0 cm. long. et 6.5 cm. lat. (mediocris 14.0 × 6.0 cm.), basi acuta, margine obsolete undulata, in sicco nigricans, subtus dilutissime virens, glaberrima, juvenilis vero subobsolete puberula; costa media in sicco straminea, subtus eminens. Petioli 1.0 cm. long., patuli, in sicco virides, facie superiori late canaliculati. Stipulæ + 2.0 cm. long. 1.0–1.5 cm. lat., omnino liberæ, pleræque ad 1.0–1.5 cm. bilobæ, longitrorsum nervosæ, in sicco virides. Pedunculi 4.0–5.0 cm. long., glabri. Inflorescentiæ usque ad 4.5 cm. diam. Bracteæ vix 2.0 cm. attingunt, plerumque circa 1.0–1.5 cm., membranaceæ, obsolete puberulæ. Calycis lobi deltoidei, obtusi vel acuti, vel brevissime cuspidulati, nonnunquam bicuspidulati. Corolla expansa 1.2 cm. long.; tubus 1.0 cm. long., basi 0.12 cm. diam., superne gradatim vix ad 0.3 cm. amplificatus; lobi ovato-oblongi, obtusi, 0.35 cm. long. Stamina 0.8 cm. supra basin corollæ tubi affixa, filamenta exserta 0.5 cm. long., complanata; antheræ 0.2 cm. long., apice cuspidulatae. Discus floris aperiens 0.08 cm. alt. Ovarium 0.1 cm. long., glabrum, longitrorsum rugulatum. Stylus vix 0.6 cm. et stigmata 0.2 cm. long. Bacca ignota. Videtur ad *P. lupulinam*, Benth., accedere, sed certe diversa multis signis, nempe bracteis angustioribus, stipulis et foliis omnino disparibus, etc. A *P. (§ Cephaëli) stipulosâ*, Muell. Arg., cujus ramos, folia, et stipulas miro modo mentitur, distat inflorescentiâ et bracteis toto cælo diversis.

I have shown specimens of this species side by side with those of *Psychotria stipulosa* to several of my friends, and all have been struck by the remarkable homoplasy. It has in fact been suggested that the two are really one species, but the inflorescences are so unlike that I cannot think this to be possible. [Amazonia.]

PSYCHOTRIA (§ CEPHAËLIS) SCIAPHILA (sp. nov.); stipulis parvis, utrinque geminis, inferne in vaginam inter- et intrapetiolarum connatis; foliorum subsessilem limbo lanceolato, raro ovato-lanceolato, cuspidato-acuminato, basi paullo coarctato ibique obscure obliquo, membranaceo; costis secundariis utroque latere circa 14, late arcuatis; floribus in capitulum terminale breviter pedunculatum, nonnunquam a foliis summis plus minusve oclusum, digestis; bracteis indivisis, lanceolatis, setoso-pilosis, florum et bracteolis 0; calycis maxime setosæ parte superiori, ovarium pluries æquante, fere usque ad basin 5-partito laciniis setaceis, elongatis, setoso-pilosis; corollæ lobis extus setosis, tubo extus puberulo 4-plo brevioribus, tubo supra medium staminifero et pubescente; antheris circa 5-plo longioribus quam latis, dorso fere medio affixis; styli filiformis ramis brevibus obscure complanatis; baccâ ignotâ.

*Hab.* Abundat in sylvis juxta ripas fl. Paraguay inter Santa Cruz et Diamantino. Floret Oct. (N. 643.)

Bispithamea, caulis e rhizomate repente pallide bruneo, crassitudine pennæ corvinæ ascendens, tenuis, leviter flexuosus, sursum foliigerus ibique hispido-pilosus, ceterum glaber. Stipularum setacearum hispido-pilosarum 2.5-5.0 cm. long., vagina 0.2 cm. alt. Folia 4.0-vix 9.0 long. 2.0-3.0 cm. lat., utrinque appresse hispido-pilosa, membranacea. Capitulum basi bracteis circa 7 omnino liberis sessilibus, floribus subæquilongis, involucreto. Calycis laciniæ 0.5 cm. long. Corollæ albæ tubus 0.8 cm. long., sursum ampliatus, basi 0.1, sub faucibus 0.2 cm. diam.; lobi ovati, acuti, 0.2 cm. long. Stamina 0.65 cm. supra basin tubi corollæ inserta; filamenta 0.1 cm. long., filiformia; antheræ 0.17 long.; discus crassus, urceolatus, 5-lobatus.

Habitus *P. trichophoræ*, Muell. Arg., stirpis mihi descriptione solummodo notæ, sed præter alia bracteis florum et bracteolis absentibus ab illâ manifeste recedit. [Goyaz.]

[PSYCHOTRIA IPECACUANHA, Stokes, Bot. Mat. Med. i. p. 365. (*Cephaëlis Ipecacuanha*, A. Rich.)

*Hab.* Abundat in sylvâ primævâ inter Santa Cruz et Tapirapuan, ubi mens. Sept. florescit.

Dried material of this very important plant is scarce; in fact I do not remember to have seen one really good specimen. This has caused me greatly to regret not having brought specimens home with me. I did not do so, thinking that, on arriving in this country, I should find so well-known a plant plentifully represented in herbaria.]

PSYCHOTRIA TOMENTOSA, Muell. Arg. in Mart. Fl. Bras. vi. pars v. p. 370. (*Cephaëlis tomentosa*, Willd.)

*Hab.* Crescit in cacumine montium Serra da Chapada prope Santa Anna da Chapada, ubi floret mens. Aug. (N. 91.)

Mueller (*l. c.*) distinguishes under the name of *Psychotria Poeppigiana* a form with

calyx three times as long as the ovary, while the calyx of *P. tomentosa* is said to have a calyx which equals the ovary in length. The calyx of my specimens is about half as long again as the ovary. Strange to say, however, the figure in Mart. Fl. Bras. *l. c.* (t. 57) which purports to be that of *P. Poeppigiana* represents a plant whose calyx is but little, if at all, longer than the ovary. This has caused me much difficulty in naming my specimens. I should suggest the probability of four of Mueller's species, evidently closely allied as they are, being mere varieties of one; these four are *P. Barcellana*, *Poeppigiana*, *tomentosa*, and *Uberabana*. [Brasilia, Guiana, Venezuela.]

MAPOURIA ALBA, Muell. Arg. in Mart. Fl. Bras. vi. pars v. p. 393.

*Hab.* Reperi in ripâ fl. Paraguay, inter Santa Cruz et Diamantino, mens. Oct. florens. (N. 632.)

The stamens of this plant are often inserted at different heights upon the corolla; so, too, are the hairy pads near the points of insertion of the stamens. The figure in Mart. Fl. Bras. (t. 59) is misleading, as it does not show the pads, although Mueller correctly describes them. [Bras. Or., Goyaz, Amazonia, Peruvia.]

MAPOURIA MARTIANA, Muell. Arg. in Mart. Fl. Bras. vi. pars v. p. 394.

*Hab.* Frutex altus, sursum foliatus, crescit in ripâ fl. dos Bugres, ubi mens. Oct. flores albos ostendit. (N. 439.) [Bras. Or., Goyaz.]

MAPOURIA CORUMBENSIS (sp. nov.). Tota glabra, stipulis late ovatis vel rotundatis, obtusis; foliorum limbo lanceolato acuto, nonnunquam leviter cuspidato, basi sensim angustato; costis secundariis utroque latere circa 11, pag. sup. distinctissimis, venulis ultimis reticulum patens constituentibus; paniculis terminalibus breviter pedunculatis, quam folia brevioribus, plus minusve laxiuscule corymbiformibus; bracteis exiguis, triangularibus, obtusis, acutis vel acuminatis; floribus sessilibus; calycis parte superiore quam ovarium paullo brevioris eoque latiore, ore breviter 5-dentato, tubo intus haud glandulifero; alabastro obtuso; corollæ lobis tubum subæquantibus, tubo  $\frac{1}{3}$ -plo longiore quam lato, juxta medium staminifero ibique piloso-hispido; antheris circa 3-plo longioribus quam latis, dorso vix ad  $\frac{1}{2}$  longitudinis fixis.

*Hab.* Viget haud procul a Corumbá, ad ripas fl. Paraguay, mens. Jan. flores præbens. (N. 900.)

Frutex parvus, altitudinis prætermisæ. Caulis ramosus, crassiusculus, sursum in sicco (an etiam vivus?) aliquanto complanatus, nitidus, mox in longitudinem striatus; internodia brevia, 1.0-4.0 cm. long. Folia coriaceo-membranacea, petiolis brevibus obscure alatis 0.5 cm. long. fulta; lamina subtus decolor 3.5-10.0 cm. long. medio 1.5-3.5 cm. lat., ita folia valde inæqualia ac reverâ parva et majora mixta asservare potes; costæ in sicco paullo bruneo-rubræ; margines revolutæ. Paniculæ ad 6.0 cm. long., et deinde totidem diam., complanatæ. Bracteæ circa 0.1 cm. long., ciliolatæ. Flores albi. Calycis pars libera circa 0.05 cm. long. Corolla 0.43 cm. long.; tubus ejus 0.2 cm. long., 0.15 cm. lat.; lobi oblongi, incurvo-acuti. Stamina ad 0.13 cm. supra basin tubi corollæ inserta; antheræ 0.07 cm. long. Ovarium circa 0.08 cm. long. Bacca obovoidea, longitrorsum rugata, 0.6 cm. long., 0.4 cm. lat.

Mihi videtur juxta *Mapouriam Burchellianam*, Muell. Arg., ponenda, sed foliis diversiformibus, inflorescentiâ corymbosâ, necnon punctis aliis ab illa rite secernenda.

The filaments may vary much in length in the same flower, while the anthers fluctuate in correspondence, being sometimes greatly reduced in size. [Bras. Or.]

MAPOURIA TOMENTELLA (sp. nov.); stipulis amplis ovato-oblongis, acutis, membranaceis; foliorum subsessilium laminâ lanceolatâ vel ovato-lanceolatâ, utrinque breviter acuminata, margine repanda, firme membranaceâ, supra fere glabra, subtus, præsertim in nervis, arcte pubescente; costis secundariis utroque latere 10-12 alternatim, rarius subopposite insertis, fere rectis, sub margine subito arcuatim junctis; paniculâ terminali foliis brevioribus una cum inflorescentiæ ramulis minute tomentellâ; bracteis ovatis, acuminatis, bracteolis minutis; floribus sessilibus; calycis partem liberam ovario æquilongâ, cyathiformi, breviter 5-lobâ; corollæ parvæ tubo lobos subæquante, tubo paullo infra medium staminifero ibique dense villosa, ceteroquin minute pubescente; antheris 3-plo longioribus quam latis, dorso, paullo supra basin, filamentis insidentibus; stylo obsolete puberulo; baccâ ignotâ.

*Hab.* Viget ad Santa Cruz, mens. Dec. florens. (N. 791.)

Fruticulus  $\frac{3}{4}$ -metralis. Ramuli subteretes, arcte tomentelli, mox glabri, et cortice cinereo-striato obducti. Folia 8.0-12.0 cm. long., 3.0-4.0 cm. lat., in sicco nigricantia, petioli modo 0.1-0.2 cm. long., tomentelli. Stipulæ usque 0.7 cm. long. et 0.4 cm. lat., omnino liberæ, puberulæ, longitrorsum nervosæ. Pedunculus 4.5 cm. long., 0.1 cm. diam. Inflorescentia circa 3.0 cm. long. et 4.0 cm. diam., e cymulis pluribus parvis-patulo pedicellatis congestifloris constituta. Bracteæ 0.3 cm. long., extus minute pubescentes. Flores virescentes. Calycis pars libera ampla, 0.7 cm. long., pubescens. Corollæ tubus 0.2 cm. long., lobi lanceolato-triangulares, acuti, extus tomentelli. Stamina exserta, vix 0.1 cm. supra basin tubi corollæ fixa; filamenta vix 0.2 cm. long.; antheræ 0.1 cm. long. Discus pulvinatus, 0.08 cm. diam. Ovarium 0.7 cm. long., tomentellum

Affinis *M. luridæ*, Muell. Arg., mihi modo descriptione cognitæ, et facile dignoscenda ex indumento, stipulis haud acute acuminatis, calycis forma, corollâ extus tomentellâ, ejus tubo juxta medium staminifero, ore haud villosa, etc. Ob indumentum propius ad *M. puberulinam* fere accedere videtur, cujus stipulæ rotundato-obtusæ, corollæ tubus ore staminiferus ibique niveo-villosus, antheræ comparative breviores et stylus glaber. [Bras. Or.]

RUDGEA VIBURNOIDES, Benth., in Linnæa. xxiii. (1850) p. 458.

*Hab.* Crescit ad Santa Cruz, mens. Oct.-Nov. florens. (Nn. 551, 646.)

Frutex ramosus, sursum foliigerus. Flores albi vel dilute lutei, odorati. [Bras. Or., Goyaz.]

RUDGEA FRONDOSA (sp. nov.); ramulis subtetragonis, nodis tumidis, stipulis vaginanti-connatis, rigidis, basi diu persistentibus, dorso sub apice crebro aculioligeris; foliis majusculis brevipetiolatis, ovato-oblongis vel oblongo-obovatis, utrinque obtusis, apice breviter cuspidatis, basi nonnunquam cuneatis, coriaceis, glabris; costis

secundariis circa 8, distantibus angulis latis et sæpe opposite vel subopposite insertis, aperte arcuatis, ipso sub margine undulato-arcuatim junctis; pedunculo foliis adultis multo brevior, ejus ramulis solitariis vel bi-ternatis, plerisque di-trichotomis, ramulis ultimis sæpissime trifloris; bracteis exiguis, latis, acutis; calycis parte superâ quam ovarium circa ter brevior, breviter cyathiformi, intus eglandulosâ, ore breviter 5-lobâ; alabastris late obovoideis, corollâ circa usque ad medium 5-fidâ, extus puberulâ, intus infra medium tubi staminigerâ ibique dense albo-villosâ, tubi dimidio superiore villosa, inferiore glabro, lobis oblongis, obtusis, apice inflexis; antheris fere 5-plo longioribus quam latis, dorso ad  $\frac{1}{3}$  longitudinis fixis; disco calycis parti liberâ æqualto pulvinante; stylo corollæ tubum subæquante, gracili.

*Hab.* Incolit ripas fl. Paraguay, inter Santa Cruz et Diamantino, mens. Oct. florens. (N. 617.)

Suffrutex semimetralis, ramulis satis obesis, glabris, in sicco stramineis, ad 0.3 cm. diam. Folia usque ad 22.0 cm. long. et vix 11.0 cm. lat. (mediocria 16.0 × 8.0 cm.), in sicco, præcipue subtus, lutescenti-viridia, margine paullo cartilaginea, obsolete undulata, supra nitida; petioli 0.7–1.7 cm. long., validi, patuli, glabri, alte canali-culati, in sicco sæpe transversim rugati; stipulæ 0.25 cm. alt. Pedunculi 3.0 cm. long., 0.1 cm. crass.; panicula circa 5.0 cm. diam. Bracteæ vix 0.1 cm. long., apice sæpe minute ciliolatæ. Paniculæ ramuli patentes vel ascendentes, usque ad 1.5 cm. long., subobsolete puberuli, in sicco longitrorsum striatuli, superne gradatim amplificati. Flores albi. Calyx cum ovario fere 0.2 cm. long. Calyx extus 0.5 cm. alt.; lobi deltoidei, obtusi, puberuli. Corolla aperta vix 0.7 cm. long. Stamina 0.1 cm. supra basin tubi corollæ fixa, exserta; filamenta vix 0.35 cm. long.; antheræ vix 0.2 cm. long. Discus 0.5 cm. alt. Ovarium cylindræum, longitrorsum rugatum, obscure puberulum. Stylus vix 0.3 cm. long., superne paullo incrassatus; stigmata 0.1 cm. long.

Forsan *Rudgeæ palicourioidi*, Muell. Arg. (?), affinis, cujus folia minora, inflorescentia longius pedunculata, flores minores, calycis pars libera ovarium late obovoideum semi-æquans, corollæ extus glabræ lobi ovato-lanceolati, tubus medio staminigerus, etc. [Bras. Or.]

*RUDGEA*, sp. nov. Glabra, stipulis cuspidato-acuminatis, obscure aculeoligeris, 0.5 cm. long.; foliis in eodem ramulo breviter petiolatis vel subsessilibus vel arcte amplexicaulibus, lanceolatis vel ovato-lanceolatis, basi coarctatis vel, si amplexicaulibus, obscure cordatis, apice cuspidatis, 8.0–12.0 cm. long., 1.8–4.5 cm. lat.; paniculis terminalibus, subcorymbiformibus, quam folia brevioribus; cymulis trifloris; bracteis exiguis, subulatis, acuminatis; ovario ovoideo; calycis parte liberâ urceolatâ, brevissime 5-dentatâ, eglandulosâ; alabastris acutis; corollæ cyanæ nondum apertæ lobis fortasse tubum æquantibus, tubo juxta basin staminigero; stylo sursum incrassato; baccis haud visis.

*Hab.* Suffrutex parvus, semimetralis; viget in sylvis juxta ripam fl. Paraguay, inter Santa Cruz et Villa Maria, flores mens. Dec. præbens. (N. 811.)

Nisi fallor, rationem iniens de longitudine comparativâ corollæ tubi et loborum, stirps nostra cum *Rudgeá micranthá*, Muell. Arg., conferri debet, sed aliquot ob notas ab illâ abhorret.

In the absence of fully expanded flowers I have thought it better to refrain from giving this plant a specific name.

*DIODIA SAPONARIOIDES*, Presl, Bot. Bemerk. p. 87.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 548.) [Bras. Or., Amazonia.]

*DIODIA MULTIFLORA*, DC. Prod. iv. p. 564.

*Hab.* Herbam erectam, floribus albis, inveni prope rivulum ad Santa Cruz mens. Dec. (N. 729.) [Bras. Or.]

*BORRERIA LAGURUS* (sp. nov.). Herba humilis, 16.0 cm. alt., caule ascendente, subsimplici, herbaceo, tetraquetro, angulis acutis villosulis; foliis anguste lineari-lanceolatis, villosulo-pilosis, margine antrorsum serrulato-ciliolatis, apice breviter apiculatis, vaginâ stipulari abbreviatâ, apice setis circa 8 elongatis, deorsum piloso-ciliatis, longitudine diversis coronatâ; inflorescentiis terminalibus vel axillaribus, confertis; ovario brevissime pedicellato, cylindraceo, piloso; calycis lobis 4 ovario longioribus, subæqualibus, triangulari-lanceolatis, acutis, ciliatis, imâ basi connatis; corollâ calycem paullo excedente, ultra medium in lacinias oblongo-lineares, obtusas, utrinque villosulas divisâ, tubo fere glabro; staminibus imæ basi corollæ tubi affixis; antheris tubo multo brevioribus,  $\frac{1}{2}$ -plo longioribus quam latis; disci ore integro; stylo brevissimo, disco incluso; stigmatibus didymo; capsulâ subcylindraceâ, pilosulâ, membranaceâ; seminibus anguste ellipticis testâ fusco-bruneâ, nitidâ, minutissime serobiculatâ obtectis.

*Hab.* Crescit ad Santa Cruz, ubi floret mens. Nov. (N. 668.)

Caulis e radice fibrosa circa 0.15 cm. diam., demum glaber; internodia usque ad 4.0 cm. long. Folia pleraque circa 2.0 cm. long. et 0.5 cm. lat., rigida, trinervia, præsertim in nervis paginæ inferioris pilifera; vaginæ stipularis circa 0.1 cm. alt. dentes usque 0.25 cm. long., basi ampliores. Capitula circa 0.7 cm. diam. Flores albi. Calyx cum ovario vix 0.4 cm. attingens; calycis pars libera 0.25 cm. long., lobi erecti marginibus scariosis. Corolla 0.3 cm. long.; tubus 0.12 cm. long., intus superne villosulus, inferne glaber. Stamina 0.02 cm. supra basin tubi corollæ inserta; antheræ circa 0.03 cm. long., obtusissimæ. Discus circa 0.02 cm. alt. Capsula 0.2 cm. long., 0.15 cm. lat. paullulum didyma. Semina 0.18 cm. long., 0.7 cm. lat., ventre sulcata.

Proxima *B. tenui*, DC., cujus indumentum diversum, folia omnino disparia, stipulæ setis 1-3 instructæ, inflorescentia terminalis, calycis lobi subulati, corolla ob plura signa diversa, stylus discum superans, stigma capitatum necnon capsula globosa minor, et semina modo 0.05 cm. long. [Bras. Or., Goyaz.]

BORRERIA CUPULARIS, DC. Prod. iv. p. 543.

*Hab.* In ripâ fl. Paraguay, juxta Santa Cruz, floret mens. Sept.-Dec. (Nn. 324, 632 a.)

Herba  $\frac{2}{3}$ -metralis. Flores albi vel pallide lavandulacei. [Bras. Or., Goyaz.]

RICHARDSONIA PILOSA, H. B. K. Nov. Gen. et Sp. iii. p. 350. (*Richardia scabra*, Linn.)

*Hab.* Santa Cruz, mens. Nov. florens. (N. 672.)

Ab incolis *Ortelan* nuncupatur. [Amer. Trop.]

RICHARDSONIA GRANDIFLORA, Cham. & Schlecht. in Linnæa, iii. (1828) p. 351.

*Hab.* Inveni ad Santa Cruz. (N. 542 a.) [Bras. Or., Goyaz.]

#### COMPOSITÆ.

PACOURINA EDULIS, Aubl. Pl. Guian. p. 800.

*Hab.* Crescit in paludosis juxta Corumbá, mens. Jan. florens. (N. 912.)

Herba lepida, usque  $\frac{2}{3}$ -metralis. Flosculi purpurei. Involucri bracteæ late albo-marginatæ. [Amazonia, Guiana, Columbia, Paraguaria.]

VERNONIA DESERTORUM, Mart. in DC. Prod. iv. p. 43.

*Hab.* Inter Cuyabá et Serra da Chapada floret mens. Aug. (N. 65.) [Bras. Or. Goyaz.]

VERNONIA REMOTIFLORA, Rich. in Act. Soc. Hist. Nat. Par. 1792, p. 117, var. TRICHOLEPIS, Baker. (*V. tricholepis*, DC.)

*Hab.* Viget ad Coimbrá, mens. Feb. florens. (N. 1071.) [Bras. Or., Goyaz, Amazonia, Guiana.]

VERNONIA RUBRICAULIS, Humb. & Bonpl. Pl. Æquin. ii. p. 66.

*Hab.* Inveni in ripâ fl. Paraguay prope Corumbá mens. Dec., et ad Puerto Pacheco mens. Feb. florentem. (Nn. 1017, 1064.) [Bras. Or., Uruguaría, Argentina, Columbia.]

VERNONIA OBOVATA, Less. in Linnæa, iv. (1829) p. 279.

*Hab.* Crescit in graminosis inter Cuyabá et Serra da Chapada, mens. Aug. florens. (N. 62.) [Bras. Or., Goyaz, Bolivia.]

VERNONIA SCABRA, Pers. Syn. ii. p. 404.

*Hab.* Reperi inter Cuyabá et Serra da Chapada florentem mens. Aug. (N. 50.)

Forma foliis oblongis vel oblongo-obovatis, basi cuneatis, margine serrulatis (4.0-5.0 cm. long., 1.5-2.0 cm. lat.), capitulis parvis. [Amer. Austr. Trop.]

VERNONIA SCABRA, Pers., var. ACUMINATA, S. Moore; foliis serrulatis, acuminatis, usque ad 10.0 cm. long.

*Hab.* Crescit in angustiis itaque in cacumine montium Serra da Chapada, necnon ad Jangada, mens. Aug. et Sept. florens. (Nn. 119, 167, 265.)

VERNONIA FERRUGINEA, Less. in Linnæa, iv. 1829, p. 271.

*Hab.* Incolit angustias ad Serra da Chapada, ubi flores præbet mens. Aug. (N. 72.)  
Suffrutex metralis, deorsum aphyllus, sparsim ramosus.

VERNONIA FERRUGINEA, Less., var. PLATYCEPHALA, Baker.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Bras. Or., Amazonia, Bolivia.]

STILPNOAPPUS VIRIDIS, Benth. ex Baker in Mart. Fl. Bras. vi. pars ii. p. 137.

*Hab.* Floret ad Santa Cruz mens. Oct. (N. 478.)

Capitula pallide purpurea. [Amazonia, Guiana.]

ELEPHANTOPUS SCABER, Linn. Sp. Pl. ed. I. p. 814.

*Hab.* Mens. Aug. reperi ad Serra da Chapada. (N. 111.) [In tropicis late  
diffusus.]

ELEPHANTOPUS ANGUSTIFOLIUS, Sw. Prod. Fl. Ind. Occ. p. 115.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 598.) [Amer. Trop., Ind. Occ.]

AGERATUM CONYZOIDES, Linn. Sp. Pl. ed. I. p. 893.

*Hab.* Reperi ad Serra da Chapada. (No. 84.) [Late diffusum.]

EUPATORIUM SQUALIDUM, DC. Prod. v. p. 142.

*Hab.* Floret ad Cuyabá mens. Aug. (N. 28.) [Amer. Austr. Trop.]

EUPATORIUM VITALBÆ, DC. Prod. v. p. 163.

*Hab.* In sylva primæva inter Santa Cruz et Tapirapuan floret mens. Sept. (N. 394.)  
[Amer. Trop.]

EUPATORIUM DENTATUM, Gardn. in Hook. Lond. Journ. vi. p. 443.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Bras. Or., Goyaz.]

EUPATORIUM (§ HETEROLEPIS) CUYABENSE (sp. nov.); caule erecto, ramoso, obscure tetragono, hispido-pubescente, deinde glabro; foliis coriaceis, sessilibus vel brevissime petiolatis, lanceolatis, obtusis, inferne sensim longe attenuatis, margine revolutis, hinc atque illinc denticulatis, scaberrimis, subtus, præsertim in nervo mediano, hispidis, utrinque eminenter reticulato-nervosis, nitidis; capitulis medio-cribus circa 17-floris subcorymbosis, pedicellis hispido-pubescentibus fultis; involucri campanulati bracteis circa 25, exterioribus oblongis, interioribus linearibus, obtusiusculis vel acutis, 3-4 seriatis, dorso hispidulo-pubescentibus; receptaculo plano, nudo; pappi setis circa 20, albidis, rectis.

*Hab.* In graminosis inveni juxta Cuyabá mens. Aug. florentem. (N. 34.)

Rami brunei, ætate in longitudinem sulcati. Foliorum juga plerumque parum inæqualia, lamina 4.5-7.5 cm. long., medio 1.3-2.0 cm. lat., ima basi usque 0.2-0.3 cm.

coarctata; costæ secundariæ 4-6, adjectis pluribus tertii ordinis, mox dichotomis et



arcuatim junctis, venulis laxè reticulatis; petioli nec ultra 0·1 cm. long., hispidulo-pubescentes. Inflorescentiæ usque ad 6·0 cm. long. Pedunculi 3·0 cm. attingentes, tenues, hispidulo-pubescentes. Bracteæ inflorescentiarum lineares vel lineariblongæ, inferiores 0·3–0·6 cm. long., superiores sæpe usque ad 0·2 cm. imminutæ. Capitula 0·5 cm. diam. Involucri bracteæ extimæ 0·2 cm. long., 0·08–0·1 cm. lat.; mediæ circa 0·4 cm. long.; intimæ 0·1 cm. long. et 0·03 cm. lat., hæc (sc. intimæ) deorsum glabræ, omnes plerumque longitrorsum 3-nerves, raro 1- vel 2-nerves, in sicco plus minus rubescentes. Receptaculum vix 0·1 cm. diam. Corolla 0·55 cm. long., purpurea. Styli rami attenuati, vix ad 0·15 cm. exserti. Achænia angustissime linearia, 0·2 cm. long., appresse pilosula, pappo debili albido circa 0·4 cm. long. coronata.

Species verisimiliter juxta *Eupatorium serrulatum*, DC., intercalanda, cujus folia attamen disparia, et capitula majora, et involucri bracteæ latiores, et achænia longe diversa, sc. longiora et latiora, et complanata et glabra, necnon pappi setæ paucae. [Bras. Or.]

EUPATORIUM MEGAPHYLLUM, Baker in Mart. Fl. Bras. vi. pars ii. p. 322.

*Hab.* In angustiis reperi ad Serra da Chapada circa 300 met. supra mare, mens. Aug. florentem. (N. 170.)

Caulis ascendens, bimetralis, e basi foliigerus; folia inferiora maxima (usque ad 30·0 cm. long.). Capitula alba. [Bras. Or.]

EUPATORIUM KLEINIODES, H.B.K. Nov. Gen. et Sp. iv. p. 120.

Hujus reperi varietates duas insequentes, nempe:—

(a). Forma exigua monocephala, nec ultra 25·0 cm. alt., foliis pluribus sparsis, ambitum inter Cuyabá et Serra da Chapada habitans, ubi mens. Aug. floret. (N. 48.)

(b). Forma usque 30·0 cm. alt., monocephala vel dicephala, foliis rosulatis vel juxta basin caulis confertis, capitulis quam in forma (a) aliquanto minoribus, quæ eodem loco in graminosis viget. (N. 49.) [Bras. Or., Goyaz, Peruvia, Columbia.]

EUPATORIUM CONYZOIDES, Vahl, Symb. iii. p. 96.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Amer. Trop. et Subtrop.]

MIKANIA OFFICINALIS, Mart. in Isis, 1824, p. 587.

*Hab.* Crescit ad Santa Cruz, ubi flores albos præbet mens. Nov. (N. 583.) [Bras. Or., Goyaz.]

MIKANIA CORDIFOLIA, Willd. Sp. Pl. iii. p. 1746.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.) [Amer. Trop. et Subtrop.]

EGLETES VISCOSA, Less. Syn. Comp. p. 252.

*Hab.* In ripis fluvii prope Santa Cruz mens. Oct. floret. (N. 477.) [Amer. Trop. Austr.]

*CONYZA CAPILLIPES* (sp. nov.). Erecta, caule subtereti, piloso-hispidulo; foliis sessilibus, anguste linearibus, obtusis vel acutiusculis, appresse puberulis; capitulis parvis, apicem versus ramulorum parum confertis, subracemiformi-paniculatis, pedicellis tenuibus insidentibus; involucri campanulati bracteis anguste linearibus, acutis; floribus centralibus hermaphroditis paucis, pappo stramineo.

*Hab.* Crescit in ripis fl. Paraguay inter Santa Cruz et Villa Maria, mens. Dec. florens. (N. 827.)

Herba elata, ultrametralis. Caulis 0·3 cm. diam., striatus, deinde subglaber. Folia pleraque 1·5-2·0 cm. long., modo 0·1-0·2 cm. lat., membranacea, ascendente, 1-nervia. Inflorescentiæ 4·0-10·0 cm. long., usque ad 3·0 cm. diam.; earum bracteæ foliis similes nisi minores. Capitulum pedicelli usque 1·0 cm. long., ascendente vel patuli, piloso-pubescentes. Capitula demum 0·7 cm. diam. Involucri bracteæ 3-seriatæ, exteriores 0·15 cm. long., interiores 0·4 cm. attingentes; omnes brunæ, breviter piloso-pubescentes, intimæ fere glabræ. Flores hermaphroditi centrales circa 9, pappum subæquantes. Corollæ limbi lobi lanceolati, acuti. Achænia linearia, complanata, puberula, 0·1 cm. long., pappo stramineo e setis ipsa quater long. æquantibus constituto coronata.

Sine dubio cum *C. triplinervia*, Less., componenda, cujus capitula sat paria, sed folia omnino diversa, et inflorescentia, e capitulis confertis constituta, corymbiformis nec subracemiformi-paniculata. Itaque ejus involucri bracteæ glabræ, flores hermaphroditi centrales modo 3-6, etc. [Bras. Or.]

*BACCHARIS SERRULATA*, Pers. Syn. ii. p. 423.

*Hab.* Crescit juxta Corumbá, mens. Jan. florens. (N. 1004.) [Bras. Or., Uruguaría, Argentina, Chili.]

*BACCHARIS TRIDENTATA*, Vahl, Symb. iii. p. 98.

*Hab.* Ad Santa Cruz, mens. Oct. florens. (N. 409.) [Bras. Or., Paraguaria.]

*ICHTHYOTHERE OVATA* (sp. nov.); caulis humilis e rhizomate crasso ascendente simplici vel parce ramoso, hispido-pubescente, mox piloso; foliis parvis sessilibus, brevissime amplexicaulibus, obovatis vel oblongo-obovatis, obtusis, basi 5-nerviis, utrinque breviter hispidulo-puberulis; capitulis paucis, plerumque 2-3 ad apicem caulis confertis, nunc solitariis; involucri bracteis extimis dorso hispidulo-scabridis, interioribus fere glabris; receptaculi paleis oblongis vel lanceolato-oblongis, obtusis, superne eroso-ciliatis.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi mens. Aug. florescit. (N. 192.)

Herba perennis, nec ultra 19·0 cm. alt. Rhizoma 0·6-0·8 cm. diam., in sicco bruneum. Caulis sæpe plus minus stipati, saltem basi quadrangularis, plane striati, 0·2 cm. diam.; nodi inferiores squamis membranaceis parvis vaginanti-connatis, longitrorsum nervosis, sursum gradatim in folia transeuntibus ornati. Folia nunquam 2·5 cm. long. excedentia, pleraque circa 1·5 cm., 0·8-1·5 cm. lat., firme membranacea; costæ

laterales subobsoletæ; costæ intermediæ latæ mox dichotomæ, costæ centrali parallelæ. Capitula brevissime pedicellata, foliis floralibus folia vegetativa subæquantibus suffulta, quodvis circa 0·6 cm. diam. Involucri globosi bracteæ exteriores late ovatæ, 0·6 cm. long., 0·4 cm. lat., longitrorsum nervosæ. Receptaculum anguste oblongum, sursum paullulum coarctatum, vix 0·5 cm. alt., 0·08 cm. diam. Paleæ 0·3–0·4 cm. long., plane 1–3-nerves, deorsum marginibus calvis. Corollæ albidæ, 0·25 cm. long., sursum pilis minutis glandulosis instructæ. Stylus hirsutus.

Non dubito quin ad *Ichthyotheren integrifoliam*, Baker, spectet, certe dispar attamen primo obtutu foliis exiguis ovatis. Accedit quod, inter alia, planta nostra corollæ forma et indumento diverso et stylo hirsuto nec mere glanduloso gaudet. [Bras. Or.]

ACANTHOSPERMUM XANTHOIDES, DC. Prod. v. p. 521.

*Hab.* Ad Santa Cruz mens. Nov.–Dec. floret. (N. 761.) [America, a Florida usque ad Uruguariam et Argentinam.]

ECLIPTA ALBA, Hassk. Pl. Jav. Rar. p. 528.

*Hab.* Ad Santa Cruz floret mens. Sept. (N. 329.) [In regg. calid. late disseminata.]

WULFFIA STENOGLOSSA, DC. Prod. v. p. 563.

*Hab.* Reperi inter Villa Maria et Corumbá mens. Dec. vigentem. (N. 1011 a.) [Amer. Austr., Ind. Occ.]

Huc non sine dubio refero specimen miserum (N. 1074) ad Coimbrá mens. Feb. lectum, foliis parvis, subtus hirsutulo-pubescentibus, et involucri phyllis quam in typo majoribus.

SPILANTHES URENS, Jacq. Sel. Stirp. Amer. p. 214.

*Hab.* Reperi inter Cuyabá et Serra da Chapada, necnon ad Santa Cruz. (Nn. 45, 670.) [Amer. Trop.]

TRICHOSPIRA MENTHOIDES, H. B. K. Nov. Gen. et Sp. iv. p. 27.

*Hab.* Crescit ad Santa Cruz, necnon in ripa fl. Brasinho, mens. Oct.–Dec. florens. (Nn. 429, 503, 798.) [Bras. Or., Goyaz, Amazonia, Guiana, Venezuela, Chili.]

BIDENS BIPINNATA, Linn. Sp. Pl. ed. I. p. 832.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 581.) [Late diffusa.]

POROPHYLLUM RUDERALE, Cass. in Dict. Sc. Nat. xliii. p. 56.

*Hab.* In ripâ fl. Paraguay juxta Corumbá florebat mens. Dec. (N. 999 a.) [Amer. Trop. et Subtrop.]

POROPHYLLUM LINEARE, DC. Prod. v. p. 649.

*Hab.* Crescit ad Coimbrá et ad Puerto Pacheco, ubi mens. Feb. flores præbuit. (Nn. 1059, 1063 a.) [Bras. Or., Goyaz, Paraguaría, Argentina, Uruguaría.]

*PECTIS* (§ *PECTIDOPSIS*) *JANGADENSIS* (sp. nov.). Pusilla, annua, caulibus brevibus, crebre ramosis, tenuibus; foliis sparsis, nequaquam rosulatis, anguste linearibus; capitulis parvis, longipedunculatis; pedunculis squamis parvis distantibus munitis, circa 10-floris; involucri campanulati bracteis 4-5, disco brevioribus; pappi setis 2 vel 0, squamellis minutis intermixtis.

*Hab.* Crescit in loco arenoso tempore pluviorum inundato ad Jangada, ubi mens. Sept. floret. (N. 256.)

Herba diffusa nec ultra 8.0 cm. alt., ramulis crebris, patulis, foliatis. Radix tenuiter fibrosa, sparsissime radicellifera, saltem in sicco undulata. Caulis nec ultra 0.05 cm. diam., tetragonus, purpureus. Folia usque ad 1.0 cm. long., plerumque 0.5-0.7 cm., raro vix usque ad 0.2 cm. lat., plerumque circa 0.1 cm., acuta, juxta margines glandulosa, deorsum setoso-ciliata, firma. Pedunculi gracillimi, usque ad 3.0 cm. long., plerique 1.5-2.0 cm., squamæ eorum 1-3, lanceolatae vel subulatae, acuminatae, nec ultra 0.07 cm. attingentes. Capitula 0.3 cm. diam. Involucri bracteae lanceolato-oblongae, acutae, dorso carinatae, obsolete glandulosae, 0.4 cm. long., 0.1 cm. lat. Ligulae circa 5, vix 0.3 cm. long., supra luteae, dorso rubrae. Disci corollae 0.15 cm. long.; ejus lobi deltoidei, obtusissimi. Achænia angustissime linearia, sursum paullulum et sensim ampliata, leviter compressiuscula, longitrorsum costulata, puberula, atrata, 0.25 cm. long. Pappi setae debiles, paullo divergentes, scabriusculae, 0.15 cm. long.

Planta cum nullâ Brasiliensi hucusque cognitâ conferenda, nobis videtur ad *P. filipedem*, A. Gray, stirpem Mexicanam, spectare, sed certe haud conspecifica ob corollae minoris inapertae non acutae lobos altius connatos, et praesertim, inter alia, achænia et pappum longe diversum. A *P. jaliscana*, Hook. et Arn., etiam Reipublicae Mexicanae incola, distat, praeter alia, statura humiliori, involucri bracteis obsolete nec conspicue glandulosis, corollae lobis comparate latis et obtusissimis, achænio longiore ac crassiore pappo paullo brevioris coronato. [Mexico.]

Up till now no *Pectis* belonging to the section *Pectidopsis* has been reported from Brazil. These little plants are very liable to be overlooked owing to their small size, and I should not have secured my specimens but for the chance of being attracted to the abundant but lowly vegetation growing at one particular spot close to Jangada village. The same spot yielded *Oxypetalum clavigerum* and *Asclepias jangadensis*, both new species.

*CHUQUIRAGA CHAPADENSIS* (sp. nov.); caule erecto, ramulis ascendentibus, basi interdum breviter bispinosis, ramoso, subtereti, glabro, irregulariter striato; foliis sessilibus, ovato-oblongis ovatisve, acutis vel obtusis, raro obtusissimis, basi obtusis, 5-nerviis, coriaceis, utrinque appresse pilosis vel omnino glabris; capitulis majusculis, paucis, confertis vel subconfertis, sessilibus vel breviter pedunculatis, circa 50-floris; involucri campanulati bracteis extimis late ovatis, obtusissimis, bruneis, nitentibus, glabris vel puberulis, erosis, ciliolatis; pappi setis quam achænia fere 3-plo longioribus.

*Hab.* Crescit ad Serra da Chapada alt. 600 met. supra mare, mens. Aug. florens. (N. 166.)

*Fruticulus robustus*,  $\frac{2}{3}$ -metralis. Ramuli subteretes, cortice cinereo, crebre lenticelligero, mox obducti, usque ad 0.5 cm. diam. Spinæ axillares pleræque 0.4–0.6 cm. long., acuminatæ, plerumque rectæ. Folia pleræque 5.5–7.0 cm. long, 2.5–3.0 cm. lat.; costæ exteriores tenues; venulæ laxè reticulatæ, utrinque eminentes. Pedunculi ad 1.5 cm. long., glabri. Capitula vix 2.5 cm. long. et 2.0 cm. diam. Involucri bracteæ pluriseriatæ, extimæ 0.4 cm. long.; mediæ 1.0 cm. long. et 0.6 cm. lat.; intimæ usque 2.5 cm. elongatæ et modo 0.25 cm. lat. et revera hæ dorso lanatæ, omnes intus glabræ, politæ. Corolla alba, paullo ultra 2.0 cm. long., ejus tubus glaber, tenuis, et limbi lobi apice villosi. Achænia 0.6 cm. long., appresse albo-villosa. Pappi 1.7 cm. long. setæ sordide albidæ, plumosæ.

*Chuquiragæ Sprengelianæ*, Baker, et *C. Donianæ*, Baker, proxima. Illa vero bracteis involucri minoribus et acutis necnon pappo comparate brevior gaudet; hujus bracteæ involucri ut in *C. Sprengelianæ*, et pappus elongatus achæmium 4-plo excedit. [Bras. Or.]

**CHUQUIRAGA RETINENS** (sp. nov.); caule tereti, molliter tomentoso, hinc atque illinc spinis breviusculis recurvis basi tomentosis munito; foliis brevipetiolatis, oblongo-ovatis, acutis, nec spinoso-mucronatis, basin versus coarctatis, trinerviis, tenuiter coriaceis, supra longe et appresse pilosis, fere villosulis, subtus molliter tomentosis; capitulis parvis pluribus confertis vel subconfertis, pedunculis et pedicellis velutinis incidentibus circa 15-floris; involucri infundibularis bracteis lanceolatis, extimis apice breviter spinoso-aristulatis, omnibus villosulo-tomentosis; pappi setis quam achæmium 3-plo longioribus.

*Hab.* Crescit in angustiis ad Serra da Chapada circa 300 met. alt. supra mare (N. 198.)

*Suffrutex metralis*, sursum foliigerus. Ramuli teretes, tomento cinereo-velutino obtecti, 0.2–0.3 cm. long. Spinæ 0.5 cm. long., subteretes, acutæ, leviter arcuatæ. Folia 6.0 cm. long., 3.0–3.3 cm. lat., supra pallidissime nitentia, subtus decoloria; venulæ laxè reticulatæ. Capitulorum glomerulæ plerumque 2.5–4.0 cm. diam. Capitula vix 0.5 cm. diam. Involucri bracteæ extimæ 0.2 cm. long.; mediæ ad 0.4 cm. long. et 0.15 cm. lat. auctæ; intimæ lineari-lanceolatæ, acutæ, 0.6 cm. long., 0.12 cm. lat. Corolla alba, 0.5 cm. long., glabra, ejus lobi apice breviter pilosuli. Achænia 0.2 cm. long.; pappi setæ 0.6 cm. long.

Cum *C. vagante*, Baker, comparanda, abs qua abhorret primo obtutu, inter plura alia, foliis nec spinoso-mucronatis et capitulis minoribus arctius congestis. [Bras. Or., Goyaz.]

**CHAPTALIA INTEGRIFOLIA**, Baker, in Mart. Fl. Bras. vii. pars iii. p. 377.

*Hab.* Reperi ad Serra da Chapada mens. Aug. florentem. (Nn. 124, 178.) [Amer. Trop. et Subtrop.].

TRIXIS OPHIORRHIZA, Gardn. in Hook. Lond. Journ. vi. p. 461.

*Hab.* Floret ad Serra da Chapada mens. Aug. (N. 120.) [Bras. Or., Goyaz.]

#### LOBELIACEÆ.

CENTROPOGON SURINAMENSIS, Presl, Prod. Monog. Lob. p. 48.

*Hab.* Crescit ad Serra da Chapada, Aug. florens. (N. 157.) [Amer. Trop.]

SIPHOCAMPYLUS CORYMBIFERUS, Pohl, Pl. Bras. Ic. ii. p. 112.

*Hab.* Ad Serra da Chapada reperi mens. Aug. flores præbentem. (N. 195.)

#### MYRSINEÆ.

CYBIANTHUS (§ EUCYBIANTHUS) COLLINUS (sp. nov.); innovationibus arcte rubiginoso-tomentosis, foliis anguste obovato-oblanceolatis, basi longe et sensim cuneatis, apice brevissime acuminatis, pergamenis, supra pallidissime nitidis, subtus decoloribus, crebre minute glanduloso-punctatis; costa media subtus maxime eminente, supra plana vel leviter impressa, deorsum breviter canaliculata, costis secundariis utrovis latere circa 8 (adjectis pluribus tertii ordinis sæpe fere horizontalibus) angulis latis insertis, marginem versus valde arcuatis, racemis speciminis unici mihi obvii plus minus extra-axillaribus, nunquam vere axillaribus; floribus brevissime pedicellatis, bracteis lineari-lanceolatis pedicellos multo excedentibus; calycis lobis ovatis obtusis filamentis usque medium corollæ loborum adnatis, stylo incrassato sursum gradatim attenuato.

*Hab.* Incolit cacumen montium Serra da Chapada prope Santa Anna da Chapada, mens. Aug. florens. (N. 94.)

Frutex altus, deorsum aphyllus. Ramuli subteretes usque ad 0.4 cm. diam., primum ferrugineo-tomentosi, cito glabri et cortice griseo-brunco striatulo obducti. Folia matura 18.0-22.0 cm. long. (minora vero occurrunt), paullo infra apicem 5.5-vix 7.0 cm. lat., basi sæpe inæquilatera ad 0.2 cm. angustata, in sicco griseo-virescentia, nequaquam nigricantia, subtus pallidiora. Racemi 7.0-8.0 cm. long., vix ad 0.1 cm. diam., ascendentes, lepidoto-pubescentes, intervallis plerumque 0.2-0.4 cm. long., florigeri. Bracteæ acutatae, lepidotæ, circa 0.2 cm. long. Pedicelli 0.1 cm. long., 0.8 cm. crass., basi annulatim incrassati. Flores lutescenti-virides, 0.3 cm. diam., semper stricte racemosi calycis lobi 4, 0.1 cm. long. et lat., aliquatenus impares. Corollæ fere usque basin partitæ tubo intus puberulo, lobi 4 vel 5, oblongo-ovati, obtusi, circa 0.17 long., aliquanto recurvi. Filamenta 0.1 cm. infra apicem loborum insertæ; antheræ late ellipticæ, 0.03 cm. long. Ovarium ovoideum, 0.05 cm. diam., stylo æquilongo coronatum. Stigma plane bilobum. Fructus ignotus.

Ni fallor, species juxta *C. nitidum*, Miq., interponenda, sed certe diversa, præter alia, foliis disparibus in sicco haud nigricantibus, racemis semper exaxillaribus, calycis lobis diversis, corollæ lobis longioribus filamentisque iis altius adnatis, itaque stylo incrassato. [Amazonia.]

## SAPOTACEÆ.

LUCUMA RAMIFLORA, A. DC. Prod. viii. p. 168 (ex icon. et descript.).

Arbuscula circa 4-metralis, ramulis ultimis solummodo foliatis; ramuli ultimi insigniter geniculati, dense corticati, flores virides. [Bras. Or.]

*Hab.* Viget ad Serra da Chapada, ubi mens. Aug. florescit. (N. 161.)

Planta a typo, mihi descriptione et icone solummodo cognito, divergens præsertim ob folia conferta et florum fasciculos diffusos nec stricte axillares.

In other details there is so close a resemblance between my specimens and the figure and description of Miquel, that I cannot help thinking the comparatively unimportant divergences from the type to be individual peculiarities.

## LOGANIACEÆ.

STRYCHNOS (§ BREVIFLORÆ) MATTOGROSSENSIS (sp. nov.). Frutex scandens, strictirameus, ramulis crebris patentissimis, gracilibus, copiose foliatis, pubescentibus puberulisve, cito glabris, spinis sparsis brevibus vel elongatis rectis vel solemniter paullo recurvis, cirrhis rarissimis bifidis; foliis parvis, membranaceis, petiolatis, ovatis, acuminatis, basi rotundatis vel plerumque rotundato-obtusis, rarius acutis, imâ basi vel paullo supra basin triplinerviis, glabris; cymis quam folia brevioribus, terminalibus, plurifloris, in glomerulas parvas sublaxas dispositis, pubescentibus, glabratis; floribus breviter pedicellatis pentameris; calyce fere usque ad basin diviso, lobis lanceolatis, acuminatis; corollâ albâ usque  $\frac{2}{3}$  in lobos oblongos obtusos, intus medio longe villosos divisâ; antheris breviter exsertis, ovatis, apice obtusis vel brevissime mucronulatis.

*Hab.* Crescit ad Santa Cruz, mens. Nov. florens. (N. 675.)

Frutex ramis primariis elongatis, ramis secundi ordinis abbreviatis. Rami teretes, glabri, cortice griseo abundanter lenticellifero cincti, circa 0.5 cm. long. Ramuli plerique abbreviati, angulis latis sæpe recto vel fere recto inserti, tenues, circa 0.1–0.2 cm. diam. Spinæ raro usque ad 2.5 cm. long., basi 0.2 cm. diam., sæpissime vero breviores, apice acuminatæ, glabræ, oppositæ et æquimagnæ, vel solitariæ ramulo oppositæ, interdum oppositæ, sed maxime inæquales. Cirrhi usque ad 6.0 cm. long., tenues, glabri, sursum incurvi (an unquam visi amplectentes?), nonnunquam inter ramulos et cirrhos ambigentes. Foliorum laminæ pleræque 3.0–5.0 cm. long., 2.0–3.5 cm. lat., minimæ sæpe cum normalibus intermixtæ, basi sæpe paullulum obliquæ, supra obscure nitidæ, plus minus nigricantes, subtus virides; costæ laterales sursum undulato-arcuatæ, costa inframarginalis prope basin conspicua; venulæ laxè reticulatæ; petioli 0.3–0.5 cm. long., tenues, puberuli. Cymæ pedunculis brevibus nec ultra 0.8 cm. long. (sæpe brevioribus) fultæ, 1.5–2.0 cm. diam.; ramuli patentés, bracteis linearibus vel lanceolatis 0.1–0.2 cm. long. instructi; bracteolæ lanceolatæ, acuminatæ, calycem subæquantés. Flores odorati vix 0.2 cm. diam. Calyx vix 1.5 cm. long., usque  $\frac{3}{4}$  divisus. Corolla 0.2 cm. long.; tubus vix 0.07 cm. long. Filamenta ad 0.03 cm. exserta; antheræ 0.06 cm. long.; loculi basi conspicue divergentes. Ovarium glabrum, subglobosum; stylus crassiusculus ovario æquilongus. Bacca ignota.

Species *Strychno nigricanti*, Prog., arcte affinis, sed certe non conspecifica, a calyce fere usque ad basin divisâ (nec vix usque ad medium), corollæ lobis tubo duplo longioribus (nec ei æquilongis), staminibus exsertis, antheris ovatis, loculis basi divergentibus (nec oblongis, loculis basi parallelis), ovario subgloboso nec ovoideo differens. Flores insuper stirpis nostræ albi, nec virides.

Hujus inveni eodem loco mens. Nov. (n. 569) varietatem insequentem:—

Var. SARMENTOSA, nob. Haud scandens, ramosissima, spinis orba (an semper?).

This variety is merely the non-scandent form of the species. In this state the plant grows isolated, in the form of a shrub with exceedingly copious branching; but none of my specimens show either spines or tendrils, and moreover the internodes are shorter than is the case with the type. *S. nigricans*, Prog., I know only from the excellent figure and description in the volume of Martius. [Bras. Or.]

STRYCHNOS, sp. nov. (?). Frutex altus, forsan ex affinitate *S. smilacinae*, Benth., uncis magnis maxime incrassatis scandens. Folia magna, brevipetiolata, ovato-lanceolata, acuta vel obtusiuscula, interdum leviter cuspidata, basi attenuata, trinervia, glabra, coriacea, supra nitida, subtus decoloria, usque ad 16·0 cm. long. et 7·0 cm. lat. Bacca magnitudine pruni, sphæroidea, polita, oligosperma. Semina nummulariâ medio levissime elevata, vix circularia, diam. altero 1·7 cm., altero 1·5 cm., testâ membranaceâ bruneâ obducta. Reliqua desunt.

*Hab.* Inveni fl. Santa Anna imminentem mens. Oct. (N. 574.)

SPIGELIA HUMBOLDTIANA, Cham. & Schlecht. in Linnæa, i. p. 200.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Tapirapuan, mens. Sept. florens. (N. 374.) [Amer. Trop.]

#### APOCYNACEÆ.

RAUWOLFIA MOLLIS (sp. nov.); caule erecto, ramoso, subtereti, albide tomentello; foliis brevipetiolatis, ovatis, utrinque attenuatis, apice acutis, interdum breviter cuspidatis, membranaceis, præsertim pag. inf. molliter incano-pubescentibus; petiolis pauciglandulosis; cymulis paucifloris, micranthis, 1 vel 2 bi-tri-chotomis, tomentellis; pedunculis petiolos pluries excedentibus; pedicellis florum apertorum calycem bene excedentibus; calycis pubescentis lobis ovatis, acutis, ciliatis; corollâ calycem plus quam 2-plo excedente extus glabrâ, lobis lineari-oblongis, late truncatis, margine ciliatis, tubo obeso circa 2-plo brevioribus; staminibus prope sinus corollæ affixis; antheris brevissime exsertis; disco gynophoro æquilongo integro; ovario discum 3-plo excedente globoso, sæpe alte bilobo; stylo et stigmate generis; drupâ subovoideâ, aliquanto compressâ, plerumque satis alte bilobâ, lobis acutis.

*Hab.* Ad Corumbá inveni mens. Jan. flores et fructus simul ostendentem. (N. 950.)

Frutex, altitudine prætermisâ. Ramuli ascendentes, graciles, crebre foliati, dein glabri et fusi, lenticellis albidis sparsis rotundis vel ellipticis inspersi. Folia verticillata,



raro bina, plerumque inæqualia, sc. folium tertium quam alia minus; lamina 2·0–5·0 cm. long., 1·0–3·0 cm. lat., margine leviter undulata, supra viridis, subtus albida; costæ secundariæ 5–8 alternatim insertæ, sensim arcuatæ; petioli non ultra 0·2 cm. long., tomentelli, glandulis paucis stramineis usque ad 0·03 cm. long. onusti. Pedunculi 1·0–1·5 cm. long.; pedunculi secundi ordinis patuli, plerumque circa 0·5–0·8 cm. long. Bracteæ exiguæ, extus pubescentes, usque ad 0·08 cm. long. Cymulæ tempore florendi  $\pm$  1·0 cm. diam., 3–12-floræ, raro unifloræ. Pedicelli 0·5 cm. long., patuli. Flos totus vix 0·3 cm. long., virescens. Calyx fere 0·15 cm. long., usque ad medium divisus. Corollæ tubus 0·23 cm. long., vix 0·1 cm. lat., intus superne villosus; lobi intus villosi. Antheræ triangulares, sursum attenuatæ, 0·05 cm. long., apicibus solummodo exsertis. Drupa viva coccinea, in sicco brunea, 0·5 cm. long., vix totidem diam., lobi plerumque usque 0·15 cm. long.

*Rauwolfiæ canescenti*, Linn., proxima, cujus folia minus mollia, calycis lobi latiores, corollæ lobi breviores, antheræ majores, ovarium parvum discum duplo excedens, necnon drupa integra vel summum brevissime et obtuse biloba. Accedit itaque ad *R. Blanchetii*, A. DC., sed inter pluria alia folia stirpis mei longe disparia, cymulæ patulæ, calyx et corolla diversi, et baccae quam plurimum brevissime bilobæ. [Bras. Or., Venezuela, Nov. Granat., Ind. Occ.]

THEVETIA BICORNUTA, Muell. Arg. in Linnæa, xxx. p. 392. (*T. paraguayensis*, Britton, in Ann. New York Acad. Sc. vii. p. 158.)

Caulis erectus, nonnunquam ultrametralis. Flores decori, lutei. Bacca (ad Coimbrá solummodo visa) magnitudine pruni, flavo-brunea, lævis.

*Hab.* Crescit in paludosis prope Corumbá, mens. Jan. florens, itaque in graminosis ad ripas fl. Paraguay juxta Coimbrá flores et fructus fert mens. Feb. (Nn. 950 a, 1070 a.) [Paraguaria.]

To this species, of which authentic material does not exist in England, undoubtedly belong specimens recently collected by Mr. Graham Kerr on the Pilcomayo River and named by Mr. N. E. Brown, to whom and to Mr. Jackson's invaluable 'Index' I am indebted for the reference to Mueller's paper. Dr. Morong also brought back the same handsome plant from the Pilcomayo.

The original collector of this plant was the late Dr. Weddell, since whose time it was not collected until the Pilcomayo explorers came upon it. There is some doubt where Weddell actually gathered his specimens. In his time the Brazilian frontier did not extend south of Coimbrá, and inasmuch as he spent sixteen days in botanizing at Olympos, in the territory now disputed between Paraguay and Bolivia, it is most probable that he there found the plant now under notice. His party may well, however, have camped for the night upon the eastern side of the river, now, as far as the Rio Apa, in Brazilian hands, or indeed he might have secured the plant at some spot between Coimbrá and the small Rio Branco, at the junction of which with the Rio Paraguay stands the boundary-mark erected by the Brazilio-Bolivian Boundary Commission. In either event the locality would nowadays be a Brazilian one. The extension in the range of this species to Corumbá is interesting.

TABERNÆMONTANA HIRTULA, Mart. ex Muell. Arg. in Mart. Fl. Bras. vi. pars i. p. 73.

*Hab.* Inveni in fruticetis ad Santa Cruz mens. Sept., necnon in paludosis juxta Corumbá mens. Jan. (Nn. 304, 966.) [Amazonia, Venezuela.]

TABERNÆMONTANA OBLONGIFOLIA, A. DC. Prod. viii. p. 368.

Fruticulus erectus, metralis, superne ramosus ibique tantummodo foliosus. Folia quam in typo minora, scilicet 5·0-8·5 cm. long. et 2·0-3·5 cm. lat., et cum iis stirpis a cl. Glaziou lectæ (n. 14,068), quæ cl. Mez ad hanc speciem ascribit, optime congruentia.

*Hab.* Crescit ad Santa Cruz mens. Sept. (N. 289.) [Bras. Or., Guiana.]

The flowers of these Tabernæmontanas smell exactly like new-mown hay. I suppose *coumarin* to be the perfume exhaled by them.

SECONDATIA DENSIFLORA, A. DC. Prod. viii. p. 445.

*Hab.* Floret ad Santa Cruz mens. Nov.-Dec. (Nn. 368, 734.) [Bras. Or., Goyaz, Amazonia.]

PRESTONIA (§ HÆMADICTYON) EVANSII (sp. nov.); ramulis volubilibus, puberulis vel glabris, juxta nodos pubescentibus; foliis majusculis, brevipetiolatis, plerumque plus minus inæquilateralibus, late ovatis, obtusis vel obtusissimis, nonnunquam breviter bilobis aut certe emarginatis, basi rotundatis ibique paullo obliquis, papyraceis, subtus puberulis; cincinnis axillaribus, pedunculatis, quam folia insigniter brevioribus, plurifloris; bracteis ovatis, acuminatis, pedicellis multo brevioribus; calycis ampli fere usque ad basin 5-partiti lobis lineari-lanceolatis, acutis, aliquanto inæqualibus, extus pubescentibus vel puberulis, corollæ tubum subæquantibus; corollæ extus glabræ tubo sub limbo parum attenuato, lobos obovatos obtusos 2-plo excedente, intus faucibus annulo calloso instructis; squamis corollæ linguiformibus annulum haud excedentibus, antheris  $\frac{1}{3}$  alt. a basi insertis glabris inclusis, sc. annulum haud excedentibus; disci glandulis ovarium glabrum brevissime excedentibus.

*Hab.* Viget ad ripas fl. Paraguay inter Santa Cruz et Villa Maria, mens. Dec. florens. (N. 819.)

Ramuli 0·3-0·4 cm. diam., torti, in sicco dilute luteo-brunei. Foliorum lamina usque 15·0 cm. long. 10·0 cm. lat., sed sæpe minor (e. g. 11·0-7·0 cm.), supra nitida, subtus pallidior, in sicco lutescenti-viridis; costa media supra impressa, subtus valde eminens; costæ secundariæ utrinque 6-7 distantes, raro subopposite insertæ, plus minus aperte fornicatæ, sub margine undulatim junctæ; venis conspicuis, laxè reticulatis. Pedunculi 2·0-3·5 cm. long., circa 0·25 cm. diam., rigidi, una cum ramulis sparsim lenticelliferi. Cincinni axis usque ad 2·0 cm. long. (plerumque vero  $\pm$ 1·0 cm.) obesus (circa 0·3 cm. diam.), bracteis crebris 0·2-0·3 cm. long. onustus. Pedicelli 0·5-1·0 cm. long., pubescentes. Flores dilute virides. Calyx totus 1·3 cm. long., laciniæ 1·1 cm. long. 0·25-0·35 cm. lat., utraque basi intus squamâ late ovatâ, apice incisâ, sæpe plus minus alte bilobâ, circa 0·1 cm. long.

instructa. Corollæ tubus 1·5 cm. long. et 0·3 cm. lat. intus prope fauces villosulus, ceteroquin glaber, annulus 0·06 cm. lat.; squamæ 0·15 cm. long., 0·05 cm. lat., ad annulum attingentes, aut paullo breviores; limbi circa 2·0 cm. diam. lobi vix 0·8 cm. long., patuli. Filamenta basi pubescentia. Antheræ circa 0·4 cm. long. Discus paullo ultra 0·1 cm. alt. Stylus ultra 1·0 cm. long., juxta apicem rugatus.

Inter species Brasilienses accedit ad *Prestoniam Gaudichaudii* (*Hæmadictyon Gaudichaudii*, A. DC.), cujus folia disparia, nempe insigniter angustiora, pedunculi longiores, calyce et corolla minores, etc. [Bras. Or., Amazonia.]

ANISOLOBUS ZUCCARINIANUS, Miers, Apoc. S. Amer. p. 171. (*A. hebecarpus*, Muell. Arg., var. *erectus*.)

*Hab.* Crescit ad Cuyabá, ubi mens. Aug. floret. (N. 40.) [Bras. Or.]

The leaves of my plant are smaller than those of the type, and the disk is somewhat shorter, but I have no doubt about the identification, particularly as the type has been found at Cuyabá.

ECHITES (§ MESECHITES) SANCTÆ-CRUCIS (sp. nov.); ramulis tenuibus, puberulis; foliis distantibus breviter ac tenuiter petiolatis, ovato-oblongis, raro ovatis, cuspidatis vel breviter cuspidato-mucronatis, deorsum paullo attenuatis, et reverâ basi rotundatis vel brevissime cordatis, nonnunquam acutatis, tenuiter coriaceis, subobsolete puberulis; pedunculis quam folia brevioribus, rigidis, ascendentibus, puberulis; bostrycibus abbreviatis, simplicibus vel bifidis, congestifloris, crebre bracteatis, puberulis; bracteis exiguis, ovatis vel rotundatis, obtusis, extus puberulis; floribus longiuscule pedicellatis; pedicellis arrectis, puberulis; calycis puberuli pedicellis circa 2-plo brevioris lobis ovatis, obtusis vel subacutis; corollæ tubo extus puberulo, medio constricto, utrinque ampliato, paullo supra medium staminifero, lobis cordatis acutiusculis a tubo 4-plo superatis; disci glandulis elongatis, subliberis, ovario brevioribus; ovario elongato.

*Hab.* Crescit ad Santa Cruz, ubi floret mens. Nov. (N. 604.)

Ramuli teretes, 0·1–0·15 cm. diam., intervallis plerumque 5·0–14·0 cm. foliigeri. Folia pleraque 6·5–8·0 cm. long. et 2·5–3·5 (raro 2·0 vel 4·5) cm. lat., supra nitida, subtus pallida; costæ secundariæ utrinque 5–7, distantes, alternatim raro opposite vel subopposite insertæ, plus minus undulatim arcuatæ; petioli circa 1·0 cm. long., patentes, puberuli. Pedunculi 1·0–2·0 cm. long., 0·1 cm. diam. Bostryces plerumque 10–25-floræ, nec ultra 0·8 cm. long. et 0·2 cm. lat. Bracteæ usque ad 0·1 cm. long., margine ciliatæ. Pedicelli usque ad 1·0 cm. long. Calyx 0·4 cm. long., ad medium partitus, intus basi squamis late ovatis, apice erosis, plerumque alte bifidis, 0·06 cm. long. auctus. Corolla pæne 2·0 cm. long., viridis; tubus 1·7 cm. long, basi 0·3 cm. lat.; limbus 0·5 cm. diam. Disci lobi 0·18 cm. long., late lineares, obtusissimi, carnosuli. Ovarium 0·25 cm. long. sæpe inæquilaterale, puberulum. Follicula maxime immatura, apice solummodo connata, puberula.

Certe ad *E. trifidam*, Jacq. (*Mesechitem trifidam*, Muell. Arg.), spectat, sed ob indumentum, flores minores, ovarium et discum multo majores et reverâ illud hunc

bene excedens, præter alia, nullo negotio distinguenda. [Amazonia, Guiana, Venezuela, Ind. Occ.]

RHODOCALYX ROTUNDIFOLIUS, Muell. Arg. in Mart. Fl. Bras. vi. pars i. p. 173.

*Hab.* Juxta Santa Cruz mens. Oct. et Nov. flores theobrominos profert. (N. 460.)

Rhizoma siccum, ultra 1.0 cm. crass., longitrorsum sulcatum, pallide bruneum; ob ejusdem decocti proprium purgans ab incolis in loco medicamenti æstimatione dignandi habetur. [Bras. Or., Bolivia.]

RHABDADENIA POHLII, Muell. Arg. in Mart. Fl. Bras. vi. pars i. p. 174.

*Hab.* Incolit paludosos ad Carandajinho, inter Corumbá et Dorados; occurrit itaque ad Corumbá fl. mens. Jan. (Nn. 1007, 1044.) [Bras. Or.]

#### ASCLEPIADEÆ.

OXYPETALUM (§ LYRODUS) CLAVIGERUM (sp. nov.); caudice ignoto, caule recto, terete, molliter villosulo-tomentoso; foliis brevipetiolatis, angustis, lineari-lanceolatis, breviter acuminatis, mucronatis, basi truncato-rotundatis, utrinque (præcipue subtus) molliter tomentellis; pedunculis folii dimidium fere æquantibus erectis, villosulo-tomentosis; capitulis paucifloris; floribus brevissime pedicellatis, mediocribus; calycis hirsutuli segmentis lineari-lanceolatis, corollæ tubum paullo superantibus; corollæ tubo extus hirsutulo; limbi lobis lanceolatis, obtusis; coronæ phyllis exsertis, ovatis, usque ad medium bilobis; lobis lineari-lanceolatis, obtusis; acumine stylari coronæ phylla superante clavellato, apice breviter bilobo.

*Hab.* Ad Jangada floret mens. Sept. (N. 287.)

Caulis ex schedis meis circa 20.0 cm. alt., vix 0.2 cm. diam.; internodia 2.5-3.0 cm. long. Folia 2.5-3.5 cm. long., 0.7-1.0 cm. lat., firma; petioli 0.4 cm. long., villosulo-tomentosi. Pedunculi paullo ultra 1.0 cm. long. Capitula depresso sphaeroidea, vix 1.5 cm. diam., circiter 8-flora. Calyx 0.4 cm. long.; glandulæ, in seriebus segmentorum sursum sitæ, paucae (circa 3). Corollæ tubus 0.3 cm. attingens; lobi 0.4 cm. long., extus hirsutuli. Coronæ phylla 0.35 cm. long., vix 0.2 cm. lat. Stylus 0.25 cm. long., 0.08 cm. lat., lobi vix 0.1 cm. long., incurvi. Follicula ignota.

Differt inter alia:

- (1) Ab *O. Martii*, Fourn., floribus majoribus, calyce, corollâ, coronâ, stylo et stigmatate disparibus.
- (2) Ab *O. capitato*, Mart., calycis segmentis majoribus, lobis corollæ et coronæ phyllis diversis, acumine stylari abbreviato, incrassato, latius lobato.
- (3) Ab *O. stigmatoso*, Fourn., foliis minoribus, corollæ lobis basi nequaquam villosis, coronæ phyllis tantum bifidis nec fere usque ad basin fissis, necnon stylo et stigmatate disparibus.
- (4) Ab *O. proboscideo*, Fourn., foliis petiolatis, haud basi caudatis, calycis lobis

corollæ tubum excedentibus, corollæ lobis nec acutis nec rubro-vinosis, coronæ phyllis neque profunde fissis nec cristâ instructis.

- (5) *Ab Oxypetalo glomerato*, Fourn., foliis minoribus petiolatis, floribus haud umbellatis coronâ dispari, necnon stylo comparative abbreviato. [Bras. Or., Goyaz.]

*ASCLEPIAS JANGADENSIS*, S. Moore; caule humili, subsimplici, saltem in sicco ancipite, e rhizomate crassiusculo, fibras plures simplices deorsum corticato-incrassatas gerente, erecto; foliis sessilibus, elongatis, linearibus, acutis, basin versus coarctatis, papyraceo-coriaceis; pedunculis quam folia brevioribus, erectis, terminalibus vel ex axillis foliorum superiorum ortis; umbellis circa 12-floris; bracteis exiguis, subulato-linearibus; corollâ viridi, cucullorum dilute puniceorum ore superiore sat magno, ovato, obtusissimo, introrsum non producto, gynostegium excedente; corniculo faleiformi; folliculis ignotis.

*Hab.* Crescit ad Jangada in loco arenoso tempore pluviorum inundato; fl. mens. Sept. (N. 251.)

Radices usque ad 0.15 cm. diam., in sicco bruneæ. Rhizoma 0.5 cm. diam., abbreviatum.

Caulis circa usque 20.0 cm. alt., crasse corticatus, albide pubescens, superne sublanatus, 0.3 cm. diam., internodia ad 6, maxime inæquilonga. Folia 6.0–10.0 cm. long., exempli alterius nec ultra 0.3 cm., alterius 0.5–0.7 cm. lat., utrinque albido-pubescentia. Pedunculi 2.0–3.0 cm. long., sublanati. Umbella 2.5–3.5 cm. diam.; bracteæ 0.2 cm. long. Pedicelli patuli, circiter 1.0 cm. long. Flores expansi circa 1.2 cm. long. Calycis segmenta ovato-lanceolata, acuta, sublanata, vix usque ad 0.3 cm. long. Corollæ lobi oblongi, apice oblique et breviter inciso-retusi, 0.7 cm. long. Cuculli a basi sensim dilatati, gynostegio 0.2 cm. longiores, vix 0.5 cm. long., eorum os superius pæne 0.2 cm. long., 0.16 cm. lat., corniculus 0.35 cm. long. Gynostegium 0.26 cm. long.

Species inter *A. mellodoram*, St.-Hil., et *A. nervosam*, Decne., medium tenens. Cum hâc habitu optime congruit, quæ distat vero ob flores minores albos, lobos calycis minores necnon angustiores, corollæ lobos breviores et latiores, cuculli os superius introrsum dentatum. Habitus disparem ostendat *A. mellodora*, cujus folia latiora, calyx longior, cucullus minor pallide lutescens, gynostegium æquans, ore superiore exiguo gaudiens. [Bras. Or., Goyaz, Bolivia.]

*MORRENIA INCANA* (sp. nov.); novellis incano-tomentosis; ramis elongatis, incrassatis, teretibus, minute albido-tomentosis; foliis petiolatis, plus minus anguste hastatis, acuminatis vel acutis, basi truncatis vel parum ac latissime cordatis, supra pubescentibus vel puberulis, subtus incano-tomentosis; petiolis abbreviatis a laminâ insigniter superatis; corymbis fere subsessilibus, brevibus, densifloris, incano-tomentosis; pedicellis flores subæquantibus, incano-tomentosis; floribus mediocribus; calycis profunde 5-partiti segmentis lineari-lanceolatis, corollâ subtriplo brevioribus; corollâ viridi, paullo ultra  $\frac{2}{3}$  in lobos lanceolatos obtusos divisâ, membranaceâ, nunc breviter, nunc alte 5-lobâ, gynostegium paullo superante; corollâ subduplo brevior.

*Hab.* Reperi ad Puerto Pacheco florentem mens. Feb. (N. 1060.)

Caulis vix 0·3 cm. diam., tortus, intervallis usque 13·0 cm. long. (sæpe vero circa 7·0-8·0) foliigerus. Foliorum lamina 5·5-7·0 cm. long., basi 1·7-2·5 cm. lat. (medio 0·7-1·0 cm.), subtus perpetuo tomentosa; costa media lata, præsertim pag. inf. eminens. Pedunculi circiter 0·5 cm. long., satis crassi; pedicelli florum apertorum usque ad 0·7 cm. long. Calycis incani lobi 0·3 cm. long., acuti, intus pubescentes. Corolla 1·2 cm. diam., 0·8 cm. long., extus pubescens; tubus 0·25 cm. long., longitrosus rugatus, faucibus pilosulus; lobi intus glabri. Corona vix 0·3 cm. long., extus deorsum rugulata, intus ore albido-villosula. Antherarum membrana generis. Gynostegium 0·2 cm. alt. Acuminis stylaris lobi lineares, erecti, coronam paullo excedentes. Folliculi ignoti.

Speciebus ab duabus hucusque cognitis abhorret indumento tomentoso perpetuo, corymbis incanis, corollâ brevius divisâ, columnæ stylaris lobis longioribus, etc. [Uruguaria, Argentina, Paraguaria, Bolivia Or.]

An interesting addition to this small genus; the variation in the extent of lobing of the corona is curious.

Fournier speaks of the corona as being 10-lobed, the 5 alternate lobes being dentiform. Endlicher also mentions the interposed teeth. In the present species, as also in *M. brachystephana*, Griseb., the teeth certainly do not exist, although Grisebach, after describing the corona of *M. odorata* as 5-lobed, says that *M. brachystephanus* has it 10-lobed, which is certainly incorrect. Fournier's figure in Martius's Fl. Bras. (vi. pars iv. t. 83) shows the 5 interposed lobes very clearly; but I cannot help thinking that the supposed small lobes are really folds in the corona, the sides of whose lobes are folded inwards to a great extent so as to face one another.

**MARSDENIA CAULANTHA** (sp. nov.); novellis dense fulvo-tomentosis; caule volubili, subtereti, crassiusculo, velutino-tomentoso, dein cinereo et pubescente, vix glabro; foliis petiolatis, ovatis, acutis, sursum gradatim attenuatis, interdum leviter cuspidatis, basi obliquis, rotundatis, nonnunquam leviter cordatis, utrinque molliter velutinis, subtus pallidioribus; cymis brevipedunculatis, ex axillis foliorum evanidorum sæpe ortis, densifloris; pedicellis brevibus, tomentosis; calycis tomentosi lobis abbreviatis, obtusis, oblongo-ovatis, faucem corollæ nequaquam attingentibus; corollæ sordide viridis tubo mediocriter elongato-urceolari, intus medio villosulo, ceterum glabro vel aliquatenus puberulo, faucibus carnosulo-annulato, lobis ovatis obtusissimis, extus tomentosis, intus glabris; coronæ phyllis abbreviatis, obtusis; antherarum membranâ parvâ, ovatâ, stigma paullo excedente; stigmatis rostro pyramidali-subgloboso, muriculato; pollinibus inferne attenuatis, in stigmatibus incumbentibus, retinaculo insigniter longioribus.

*Hab.* Florescit ad Santa Cruz mens. Nov. (N. 407.)

Caulis proventu circa 0·5 cm. diam., ætate aphyllus, dense corticatus, cortice cinereo diu plus minus pilifero. Folia 4·5-6·0 cm. long., 3·0-3·3 cm. lat., aliquanto inæquilatera, margine ciliata, petiolis ascendentibus 1·0-1·3 cm. long. suffulta. Pedunculi usque ad 0·5 cm. long., sæpe subobsoleti, dense tomentosi. Calyx 0·3 cm. long., usque ad

$\frac{5}{8}$  divisa, lobi aliquanto impares, intus superne appresse puberuli, ceterum glabri. Corolla 0.6 cm. diam.; tubus 0.3–0.4 cm. long., 0.3 cm. lat., extus superne tomentellus, inferne glaber. Gynostegium vix 0.2 cm. alt. Coronæ squamæ et antherarum membranæ minutæ. Pollinia minima, minutissime verruculosa. Stigmatis rostrum circa 0.05 cm. alt.

Primo aspectu nullâ pro specie hujus generis haberi nisi pro *Marsdeniâ mollissimâ*, Fourn., quam habitu et indumento refert. Flores attamen *M. mollissimæ* multo majores, calycis lobi oblongo-lineares et comparative elongati, corolla infundibularis circa duplo longior lobis multo majoribus extus pubescentibus nec tomentosis instructa, gynostegium et coronæ squamæ et antherarum membranæ insigniter majores. Pollinia duplo majora lævia nec verruculosa. [Bras. Or., Guiana.]

**MADAROSPERMA OBLONGUM** (sp. nov.); caule volubili, gracillimo, apice defoliato, arcte pubescente; foliis petiolatis, oblongis vel lanceolato-oblongis, apice apiculatis, basi obtusis, molliter pubescentibus; cymulis sessilibus vel subsessilibus, paucifloris; pedicellis abbreviatis; calycis lobis ovatis, obtusis, corollæ tubo paullo brevioribus; corollæ tubo ventricoso, lobos ligulatos æquante; coronæ phyllis gynostegium paullo superantibus, ovatis, acuminatis, basi gynostegio breviter adnatis, omnino planis; gynostegio pentagonali; antherarum membranâ lanceolatâ, obtusâ; stigmatate prominulo.

*Hab.* Reperi in ripâ fl. dos Bugres vigentem et mens. Oct. florentem. (N. 431.)

Caulis nec ultra 0.1 cm. diam., subteres, leviter striatus. Folia 2.0–4.0 cm. long., 0.8–1.5 cm. lat., coriacea, sæpe in sicco fusco-virentia, subtus decoloria; costæ secundariæ utrinque 3–4, oblique insertæ, a costâ submarginali undulato-curvata conjunctæ, parum conspicuæ; venulæ subevanidæ. Cymulæ 2–6-floræ, raro ad florem unicum reductæ, usque ad 0.35 cm. diam., axillares vel terminales, nonnunquam ramulos abbreviatis coronantes et tunc pseudopedunculatæ. Flores virides. Calycis extus piloso-pubescentis lobi 0.1 cm. long. Corollæ tubus 0.13 cm. long., 0.17 cm. diam.; limbus 0.2 cm. diam. Coronæ phylla 0.1 cm. long. Fructus maturus haud visus.

A *M. Trailliano*, Benth., distat foliis disparibus, pedunculis et pedicellis abbreviatis, calycis lobis insigniter majoribus, coronæ phyllis disparibus et revera latioribus, basi planis, nec hippocrepiformibus. Flores virides nec lutei. [Amazonia.]

#### GENTIANEÆ.

**COUTOUBEA RAMOSA**, Aubl. Pl. Guyan. i. p. 74.

*Hab.* Crescit ad Santa Cruz, ubi flores albos præbet mens. Sept. (N. 302.) [Bras. Or., Goyaz, Guiana, Amazonia.]

#### HYDROPHYLLACEÆ.

**HYDROLEA SPINOSA**, Linn. Sp. Pl. ed. I. p. 328.

*Hab.* Ad ripas fl. Cuyabá, inter Dorados et Cuyabá, mens. Aug. floret et fructificat. (N. 1.)

HYDROLEA SPINOSA, Linn., var. INERMIS, Spruce.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 526.) [Amer. Trop. et Subtrop., Ind. Occ.]

#### BORAGINEÆ.

CORDIA (§ GERASCANTHUS) JUCUNDA (sp. nov.); ramulis validis, subteretibus, glabris; calyce elongato ventricosocylindrico, longitudinaliter sulcato, griseo-velutino, pluridentato, dentibus sæpe inæqualibus deltoideis, interdum longe acuminatis; corollæ magnæ tubo attenuato, in sicco calycem bene excedente, lobis late oblongis obtusissimis; staminibus juxta fauces corollæ insertis.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.).

Arbor parva, nisi fallor reminiscendo circa 4-metralis. Ramuli 0·6 cm. diam., cortice purpureo-bruneo nitente, in longitudinem crebre striato, albo-lenticellifero obducti. Folia desunt. Cymæ terminales, multifloræ, 11·0-14·0 cm. diam. Flores albi, dense aggregati, foliis haud coetanei. Pedunculi et pedicelli ferrugineo-tomentosi. Calyx 1·5 cm. long., inferne 0·6, superne 0·4 cm. diam., 10-sulcatus, utrinque tomentosus. Corolla subhypocraterimorpha, marcescens, 3·5 cm. diam., tubus circa 1·5 cm. long. et 0·12 cm. lat., deorsum subito ad 0·35 cm. amplificatus; fauces dilatatæ, pentagonæ; lobi 1·2-1·3 cm. long., 1·1 cm. lat., margine undulati, horum nervi extus prominuli et glabri. Stamina ad 1·25 cm. a basi tubi inserta; filamenta 1·0 cm. long., basi incrassata ibique sericeo-pubescentes; antheræ obliquæ, 0·4 cm. long. Ovarium anguste ovoideum, glabrum, vix 1·0 cm. long. prope apicem obtusum subito attenuatum. Stylus filiformis, circa 2·5 cm. long., basi incrassatus. Stigmata filiformia 0·3 cm. long., usque ad medium bifida.

*C. insigni*, Cham., proxima, at certe diversa species floribus dense glomeratis, foliis haud coetaneis, calycis minoris indumento et dentibus disparibus, corollæ tubo attenuato, lobi nervis glabris, staminibus juxta fauces nec infra medium tubi insertis, ovario anguste ovoideo nec cylindrico, etc. [Bras. Or.]

I feel sure that this is the *Cordia* I saw in flower in a wood close to Corumbá in the month of August, and in the above description of the habit and colour of the flowers that belief has been acted upon. The plant referred to bore similar dense masses of large flowers at a time when leaves were not to be seen, a fact, unless I mistake, not known of other species of *Cordia* § *Gerascanthus*.

CORDIA SALZMANNI, DC. Prod. ix. p. 494.

*Hab.* Suffrutex metralis, ramosus, viget in locis apertis in cacumine montium Serra da Chapada, mens. Aug. florens. (N. 129.) [Bras. Or., Goyaz, Amazonia, Peruvia, Bolivia, Paraguaria.]

CORDIA CURASSAVICA, Roem. & Schult. Syst. Veg. iv. p. 460.

*Hab.* In ripâ fl. Paraguay, haud procul a monte Pão d'Assucar dicto, floret mens. Feb. (N. 1086.) [Amer. Austr.]



HELIOTROPIUM FILIFORME, H. B. K. Nov. Gen. et Sp. iii. p. 86.

*Hab.* Abundat in humidis ad Santa Cruz, ubi flores albos mens. Nov. præbet; itaque inveni in ripâ fl. Brasinho mens. Oct. (Nn. 428, 589.) [Amer. Trop.]

HELIOTROPIUM INDICUM, Linn. Sp. Pl. ed. I. p. 130.

*Hab.* Frequens passim in provinciâ ad ripas fl. Paraguay, dos Bugres, et Brasinho. (N. 633.) [In tropicis late diffusum.]

HELIOTROPIUM INUNDATUM, Sw. Fl. Ind. Occ. i. p. 343.

*Hab.* Crescit in paludosis juxta Santa Cruz, mens. Sept.-Nov. florens. (Nn. 354, 603.) [Bras. Or., Amazonia.]

### CONVOLVULACEÆ.

IPOMŒA (§ PHARBITIS) CRINICALYX (sp. nov.). Volubilis, foliis parvis, petiolatis, late ovato-vel reniformi-cordatis acuminatis vel breviter bilobis, membranaceis, margine repandis, glabris; pedunculis petiolos subæquantibus, 1-3-floris, pedicellis medio-cribus; bracteis oblongo-ovatis vel lineari-lanceolatis, calyci subæquilongis vel eo brevioribus; pedicellis pedunculo brevioribus, glabris vel apice parce puberulis; calycis lobis oblongo-lanceolatis obtusis, dense et patule echino-hirtulis, interioribus latioribus et superne plus minus glabris.

*Hab.* Crescit ad Corumbá, ubi floret mens. Jan. (N. 953.)

Caulis glaber vel parce puberulus, 0·1-0·2 cm. diam. Foliorum lamina usque 4·0 cm. long. et 6·0 cm. lat. (mediocres 3·0 × 5·0 cm.), palmatim 5-6-nervis, sinu basali 1·5-3·0 cm. lat.; petioli 2·0-3·0 cm. long., patuli, glabri. Pedunculi axillares, 1·5-3·0 cm. long., glabri, deorsum incrassati. Pedicelli usque ad 2·0 cm. long. Calyx 1·6 cm. long., crinibus fulvis 0·4 cm. attingentibus dense obsitus. Corolla purpurea expansa 6·0 cm. long.; tubus basi 0·7 cm. lat., sub flore ad 2·5 cm. ampliatus; limbus circiter 4·5 cm. diam.

Species distinctissima; sine dubio ad *I. echinocalycem*, Meissn., spectat, divergit vero, ut ex icone optimâ patet, foliis omnino disparibus, scilicet multo minoribus, cordato-reniformibus, glabris, caule nequaquam hirsuto, pedunculis longioribus interdum 2- vel etiam 3-floris, bracteis insigniter longioribus, etc. [Bras. Or.]

IPOMŒA NIL, Roth, Catal. Bot. i. p. 36.

*Hab.* Crescit in campis juxta fl. Paraguay inter Villa Maria et Corumbá, mens. Dec. florens. (N. 848.) [Late diffusa.]

IPOMŒA FISTULOSA, Mart. ex Choisy in DC. Prod. ix. p. 349.

*Hab.* Occurrit ad ripas fl. Paraguay vulgatissima. (N. 908.) [Bras. Or., Goyaz, Paraguaria, Amazonia, Amer. Centr.]

This is one of the commonest, if not the commonest, of streamside plants edging the river Paraguay from Paraguay northward.

*IPOMŒA UMBELLATA*, G. Meyer, Prim. Fl. Esseq. p. 99.

*Hab.* Crescit ad ripas fl. Cuyabá passim, ubi flores mens. Aug. ostendit. (N. 4.)

Forma pusilla, umbellis bifloris. Flores flavi. [Amer. Trop.]

*IPOMŒA DIGITATA*, Linn. Syst. ed. X. p. 924.

*Hab.* Floret ad Corumbá mens. Jan. (N. 972.) [Late diffusa.]

*IPOMŒA SETIFERA*, Poir. Encyc. vi. p. 17. (*Calystegia setifera*, Meissn.)

*Hab.* Crescit ad ripas fl. Paraguay haud procul a Tres Barras, inter Santa Cruz et Diamantino, ubi mens. Oct. floret. (N. 488.) [Amazonia, Guiana, Amer. Centr., Ind. Occ.]

*CONVOLVULUS PRÆLONGUS* (sp. nov.); caule volubili, patule hispidulo-piloso; foliis longipetiolatis, indivisis, ovatis acuminatis, basi cordatis vel rotundatis, appresse pilosis, tenuiter membranaceis; pedunculis longissimis, folia multo excedentibus, sat validis, hispidulo-pilosis, plurifloris; floribus arete confertis, brevipedicellatis; bracteis maxime elongatis, lineari-lanceolatis, acuminatis, hispidulo-villosulis; calycis lobis tenuiter membranaceis, bracteis similibus nisi minoribus; corollâ pro genere magnâ, extus puberula; stigmatis lobis linearibus, parum complanatis; ovarii septo perfecto.

*Hab.* Viget in loco ignoto, verisimiliter aut ad Santa Cruz aut in ripâ fl. Paraguay inter Santa Cruz et Diamantino. (N. 1101 a.)

Caulis usque 0·2 cm. diam., tortus, in sicco dilute lutescenti-brunus, pilis albidis usque ad 0·25 cm. long. instructus. Foliorum lamina 7·0 cm. long., 4·0-4·5 cm. lat., basi in petiolum decurrens, sursum in acumen circa 1·0 cm. long. desinens, margine repanda, ciliata, basi palmatim 3-5-nervis; costis supra planis, subtus eminentibus; costa media (præsertim inferne) lata; costæ secundariæ (basalibus sæpe parumper dichotomis exemptis) utrovis latere 4-5, oblique insertæ, ascendentes, plus minus undulatae, parum arcuatae; petioli 4·0-5·0 cm. long., complanati, hispidulo-pilosi. Pedunculi 18·0-20·0 cm. long., teretes, deorsum fere 0·2 cm. diam., sursum debiliores et hispidulo-villosuli. Inflorescentia nonnunquam usque ad 12-flora, foliis floralibus paucis subruticillatis vegetativis subsimilibus nisi minoribus suffulta. Pedicelli usque ad 0·3 cm. long., basi bracteati, villosuli. Bractea florum apertorum circa 1·3 cm. long. et 0·25 cm. lat. Calycis lobi 1·0 cm. long., inferne 0·2 cm. lat., ibique glabri vel fere glabri, superne usque ad 0·02 cm. attenuati ibique hispidulo-pilosi. Corolla circa 2·5 cm. long. et 1·5 cm. diam. Filamenta inæqualia, glabra, basi parum dilatata; antherarum anguste oblongarum loculi basi divergentes ibique truncati, 0·2 cm. long. Ovarium oblongum, glabrum; stylus 1·0 cm. long.; stigmatis lobi 0·13 cm. long., apice obtusi. Fructus ignotus.

Species memorabilis, neque ulli ex Americâ australi missæ similis habitu; plures in Africâ tropicâ repertas aliquatenus refert.

EVOLVULUS NUMMULARIUS, Linn. Sp. Pl. ed. II. p. 391.

*Hab.* Floret in arenosis temp. pluviorum inundatis ad Jangada mens. Sept. (N. 259.)  
[Amer. Trop.]

CUSCUTA OBTUSIFLORA, H. B. K. Nov. Gen. et Sp. iii. p. 122.

*Hab.* Reperi ad Corumbá mens. Jan. florentem. (N. 1036.) [Late diffusa.]

#### SOLANACEÆ.

SOLANUM (§ PACHYSTEMONA, MEGALOPORA) CORUMBENSE (sp. nov.). Fruticosa, ramosa; ramulis undulatis, passim geniculatis, velutino-tomentosis, parumper glabris; foliis solitariis vel subgeminis, longiuscule petiolatis, ovatis acutis vel obtusis, nonnunquam leviter cuspidatis, basin versus in petiolum sensim et sæpe longiuscule attenuatis, utrinque minute puberulis vel solummodo subtus pubescentibus, cymis subcorymbiformibus, paucifloris, a pedunculis petiolos subæquantibus fultis; floribus parvulis; calycis campanulati piloso-pubescentis lobis brevibus, late triangularibus, apice sæpe induratis; corollâ subcarnosulâ; baccâ ignotâ.

*Hab.* Crescit ad Corumbá, mens. Jan. florens. (N. 974.)

Frutex circa trimetralis, abundanter ramosus. Rami defoliati 0·5–0·6 cm. diam., cortice bruneo lenticellis sparsis majusculis prominulis instructo obtecti; ramuli foliati usque ad 0·2 cm. diam., teretes. Folia 5·0–7·5 cm. long., 2·5–4·5 cm. lat., tenuiter membranacea; costæ secundariæ utrovis latere 6·7, ascendentes, leviter arcuatæ; petioli pubescentes, 1·0–1·5 cm. long., erecti vel patuli. Pedunculi plerique 1·5–2·5 cm. long., erecti, pubescentes. Cymæ plerumque 6–7-floræ, circa 1·5 cm. diam. Pedicelli graciles, puberuli, 0·5–1·2 cm. long. Flores albi, vix 1·5 cm. diam. Calyx vix 0·3 cm. long. et lat., supra medium breviter angustatus, lobi 0·1 cm. long., aliquatenus inæquilati. Corollæ longe ultra medium 5-partitæ, lobi oblongo-lineares, obtusi, marginibus inflexis, 0·7 cm. long., 0·3 cm. lat., extus sub margine pubescentes. Stamina parum inæqualia; antheræ corollæ lobis  $\frac{1}{2}$ -plo breviores, oblongæ, inferne paullulum angustatæ, 0·15 cm. lat., loculis interdum inæquilongis in filamentis complanatis 0·1 cm. long. insidentibus. Ovarium ovoideum, circa 1·0 cm. alt.; stylus superne curvatus, 0·65 cm. long. Stigma capitatum.

Ab *S. campaniformi*, Roem. & Schult., discrepat indumento, foliis basi in petiolum gradatim desinentibus, floribus minoribus, corollæ lobis angustioribus, staminibus longioribus, stylo elongato, etc. [Bras. Or.]

SOLANUM (§ PACHYSTEMONA, MEGALOPORA) SALTIENSE (sp. nov.). Fruticosa, ramosa; ramulis hirsuto-pubescentibus, glabris; foliis maxime inæqualibus, plerumque solitariis, interdum vero geminatis, lanceolatis, longe cordato-acuminatis, basi obtusis, obliquis, nunc in petiolis brevibus insidentibus, nunc subsessilibus, utrinque hirtulo-pubescentibus; cymis plerisque 4–8-floris, umbellatis; pedunculo brevissimo, incrassato; pedicellis elongatis et reverâ floribus multo longioribus, hirsuto-pubes-

centibus; floribus parvulis; calycis campanulati, hirsuto-pubescentis, longilobi lobis lanceolatis acutiusculis, apice haud induratis; corollæ membranaceæ tubo brevissimo; bacca ignota.

*Hab.* Viget in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan, ubi floret mens. Sept. (Nn. 377, 377 a.)

Rami crebre foliati, circiter 0·2-0·3 cm. diam. Folia 3·5-12·5 cm. long., 1·0-3·5 cm. lat. (mediocria 6·0-7·0 × 2·0-2·5 cm.); costæ secundariæ circa 8, erecto-ascendentes, parum arcuatæ; petioli 0·2-0·3 cm. long. Pedunculi 0·15 cm. long. et diam., hirsuti. Pedicelli sub flore 1·0-1·3 cm. long., cito usque ad 2·0 cm. elongati. Flores 1·0 cm. diam., albi. Calycis 0·6 cm. diam. tubus 0·2 cm. long., lobi 0·4 cm. long., parum inæquilati, post anthesin mox ampliati. Corollæ tubus vix ultra 0·1 cm. long., lobi ovato-lanceolati, extus apicem versus pubescentes, ceteroquin glabri, 0·3 cm. long. Antheræ 0·2 cm. long., late oblongæ, parum inæquales, filamentis brevissimis fultæ. Ovarium ovoideum, glabrum, 0·05 cm. long.; stylus 0·35 cm. long., inferne villosulus, superne glaber, curvatus; stigma anguste claviforme.

Mihi videtur ad *Solanum gemellum*, Mart., spectare, cujus indumentum molle, folia sæpius gemina, longius petiolata, basi rotundiora, et, præter alia, flores majores, calyx diversiformis, et corolla 5-angularis. [Bras. Or.]

**SOLANUM** (§ ACANTHOPHORA) **VEXANS** (sp. nov.); ramulis fistulosis, subteretibus, una cum foliis et petiolis arcte pubescentibus, aculeis longis, validis, stamineis subsparsum instructis; foliis longipetiolatis, minute pubescentibus, ovatis vel cordatis, subacutis, in utroque margine impariter 5-7-lobulatis, sursum lobulato-dentatis, lobulis triangularibus vel deltoideis acutis, plerumque integris, inermibus; cymis sæpe 4-floris, pedunculis brevibus fultis; pedunculis, pedicellis, calycibus, et corollis pubescentibus; floribus inermibus; calyce late campanulato ad usque medium 5-lobo, lobis triangulari-ovatis obtusissimis; corollâ membranaceâ, alte 5-partitâ; baccâ ignotâ.

*Hab.* Scheda prætermissa; incolit locum quendam ignotum, an Santa Cruz? (No. 1111 a.)

Frutex? altitudine incertâ. Ramuli usque ad 0·5 cm. diam., aculeis nunc brevibus (0·1-0·2 cm. long.), nunc elongatis (1·3-1·7 long.) instructi; aculei omnes recti, rarissime paullo recurvi, a latere compressi. Foliorum lamina usque ad 11·0 cm. long. et 8·0 cm. lat., firme membranacea; costæ secundariæ 5-6, angulis latis insertis rectis vel fere rectis, adjectis pluribus tertii ordinis, costæ omnes subtus eminentes, aculei foliorum sparsi, præsertim ex costâ mediâ orti, plerumque elongati; petioli 7·0 cm. long., validi, pubescentes. Pedunculi usque 1·0 cm. long., una cum pedicellis plerumque 0·5-0·8 cm. long., pubescentes. Calyx 0·4 cm. long., 0·6 cm. lat. Corollæ tubus 0·2 cm. long.; lobi ultra 1·0 cm. attingentes, lineari-lanceolati. Antheræ, filamentis brevissimis insidentes, lanceolatae, inæquales, 0·9-1·1 cm. long. Ovarium parvum, globosum, glabrum, stylo æquilongum; stylus glaber, crassiusculus, vix 0·1 cm. long. Stigma capitatum.

Nisi fallor, juxta *S. palinacanthum*, Dun., intercalandum; ab eo abhorret equidem

spinis paucioribus, calycis inermis lobis brevioribus et latioribus, corollæ lobis disparibus, antheris aliquanto latioribus et longioribus, stylo brevioribus, etc. Ob habitum accedere videtur ad *S. platanifolium*, Hook., cujus flores attamen longe dispares. [Bras. Or.]

*SOLANUM MACRANTHUM*, Dun. in DC. Prod. xiii. 1, p. 315.

*Hab.* Crescit ad Serra da Chapada, mens. Aug. florens. (N. 103.) [Amazonia, Guiana.]

*SOLANUM SISYMBRIFOLIUM*, Lam. Illustr. n. 2386.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.). [Bras. Or., Argentina.]

*CAPSICUM BACCATUM*?, Linn. Mant. i. p. 46.

*Hab.* Reperi ad Corumbá mens. Jan. (N. 948.)

Specimina nimis imperfecta, nondum fructifera. [Late diffusa.]

*NICOTIANA GLAUCA*, R. Grah. in Bot. Mag. sub tab. 2837.

*Hab.* Crescit juxta Corumbá, ubi mens. Jan. floret. (N. 965.) [Argentina, Uruguaria, Paraguaria.]

Frutex altus, vel etiam arbuscula trimetralis.

Possibly a garden escape, but thoroughly established near the eastern fort at Corumbá.

#### SCROPHULARIACEÆ.

*ANGELONIA GARDNERI*, Hook. Bot. Mag. sub tab. 3754.

*Hab.* Florebat ad Coimbrá mens. Feb. (N. 1066.) [Bras. Or., Amazonia, Bolivia, Paraguaria.].

*CONOBEA SCROPHULARIOIDES*, Benth. in DC. Prod. x. p. 391.

*Hab.* Floret et Santa Cruz mens. Oct. (N. 484.) [Amer. Trop.]

*HERPESTIS CHAMÆDRYOIDES*, H. B. K. Nov. Gen. et Sp. ii. p. 369.

*Hab.* Crescit juxta Santa Cruz, mens. Sept. florens. (Nn. 325, 355.) [Amer. Trop.]

*HERPESTIS PARVULA* (sp. nov.). Infraspithamea, debilis; caule erecto, capillari, quadrangulo; foliis exiguis, sessilibus, lineari-lanceolatis, obtusis, glabris vel obsolete puberulis; pedunculis capillaribus, minute puberulis, quam folia multo longioribus; floribus minimis; calycis puberuli lobis exterioribus lanceolatis, longe acuminatis, interioribus lineari-lanceolatis, quam exteriora paullo brevioribus; corollæ calycem fere duplo excedentis tubo superne gradatim ampliato, labio postico bilobo, lobis ovato-oblongis obtusis; antheris subdistantibus; stigmatibus bilobis.

*Hab.* Inveni in paludosis ad Campos de Tapirapuan mens. Sept. florentem. (N. 383.)  
Radix deest. Caulis 16.0 cm. alt., subsimplex, leviter undulatus, gracillimus, minute puberulus, deinde glaber, intervallis 2.0-3.0 cm. foliigerus. Folia neque ultra 0.4 cm. long. et 0.1 cm. lat., marginibus crenulata, omnino sessilia. Flores purpurei. Calycis lobi extimi 0.3 cm. long.; lobi intermedii paullo breviores et angustiores,

intimi 0.25 cm. long. Corollæ tubus 0.4 cm. long., inferne 0.08 cm. lat., sub limbo 0.2 cm. lat.; lobi postici 0.1 cm. lat., lobi antici inter se subæquales, late ovati, obtusi, 0.13 cm. diam. Genitalia inclusa. Stamina fere  $\frac{2}{3}$  a basi tubi inserta; filamenta glabra, complanata, staminum posticorum antheras circa duplo excedentia; anticorum antheris triplo longioribus; antheræ ellipticæ, 0.08 cm. long. Ovarium ovoideo-oblongum, obscure puberulum, 0.1 cm. long.; stylus complanatus, glaber, ovarium fere  $3\frac{1}{2}$ -plo excedens; stigmatis lobi abbreviati, subconoidei, circa 0.03 cm. long. Capsula vix matura subglobosa, calyce brevior, 0.2 cm. long., puberula.

Forsan juxta *Herpestem gracilem*, Benth., stirpem Mattogrossensem, interponenda, abhorret vero signis gravis momenti, scilicet staturâ humili, foliis minutis, calyce et corollâ disparibus, etc. [Matto Grosso.]

HERPESTIS ACUTA (sp. nov.); caule erecto, gracili, quadrangulari, ramoso, puberulo, ramulis ultimis fere capillaribus; foliis ultimis, solummodo visis, sessilibus, lanceolatis, acutis vel obtusis, integris serrulatisve, scabriusculo-puberulis; pedunculis gracilissimis, sub flore ipso subito amplificatis, puberulis; bracteis subulato-setaceis, calyce multo minoribus; calycis lobis exterioribus late ovatis, breviter acuminatis, lobis interioribus lineari-lanceolatis, longe acuminatis; corollæ calycem duplo excedentis tubo inferne angusto, superne subito ampliato, labio superiore emarginato, lobis latis rotundatis, antheris subdistantibus, stigmatibus bilobo.

*Hab.* In ripâ fl. Cuyabá prope Melgaço inveni mens. Aug. florentem. (N. 8.)

Herba ? metralis, copiose ramosa. Folia inferiora desunt, suprema 0.8-1.5 cm. long., 0.2-0.35 cm. lat., firme membranacea. Pedunculi 0.5-0.7 cm. long., erecti, ascendentes. Fructus 0.1-0.2 cm. long. Flores purpurei. Calycis lobi exteriores 0.7-0.8 cm. long., sub flore vere modo 0.4 cm., scabriusculo-puberuli; lobus extimus latior et basi cordatus; lobi intimi 0.4 cm. long., pubescentes, marginibus hyalinis. Corollæ tubus circa 0.7 cm. long., inferne paullo ultra 0.1 cm. lat., superne ad 0.6 cm. dilatatus, extus et intus puberulus; labium posticum 0.35 cm. lat.; labii antici lobi ovati, 0.2 cm. lat. Genitalia inclusa. Stamina juxta medium corollæ inserta; filamenta glabra, staminum posticorum antheris duplo longiora, anticorum antheris 4-plo longiora; antheræ ellipticæ, posticæ paullo ultra 0.1 cm. long., anticis distincte majores. Ovarium ovoideo-oblongum, obsolete puberulum, 0.1 cm. long.; stylus complanatus, glaber, ovarium fere 4-plo excedens; stigmatis lobi incrassati, subspathulati, ovario paullo breviores. Capsula ignota.

Videtur juxta *H. angulatam*, Benth., interponenda, abs quâ, ob habitum graciliorem, folia diversiformia, flores longius pedicellatos, calycem majorem insigniter acuminatum, præter alia, stirps nostra primo obtutu discernenda.

Huic proxima exstat specimen in Paraguariâ a cl. Balansâ lectum, vix attamen conspecificum videtur scabritie partium et foliis amplexicaulibus, ovatis, serratodentatis, 2.0-2.5 cm. long., et pedunculis etiam longioribus (plerumque circa 1.0 cm.), et floribus majoribus, pedunculos æquantibus, flavido-roseis, necnon habitu validiore. (*H. paraguariensis*, nob., Balansa, N. 2142.) [Bras. Or., Paraguaria.]

HERPESTIS SERPYLLIFOLIA, Benth. in DC. Prodr. xi. p. 398.

*Hab.* Crescit ad Santa Cruz. (N. 355 a.) [Bras. Or., Paraguaria.]

SCOPARIA DULCIS, Linn. Sp. Pl. ed. I. p. 116.

*Hab.* Abundat ad Serra da Chapada, ad Santa Cruz, et alibi in provinciâ. (Nn. 88, 799.) [Late diffusa.]

SCOPARIA PINNATIFIDA, Cham. & Schlecht. in Linnæa, viii. p. 22.

*Hab.* Inveni in ripâ fl. Paraguay inter Villa Maria et Corumbá mens. Dec. (N. 847.) [Amazonia, Argentina, Paraguaria.]

BUCHNERA ROSEA, H. B. K. Nov. Gen. et Sp. ii. p. 342.

*Hab.* Incolit locos apertos juxta Santa Cruz, ubi floret mens. Sept. et Oct. (N. 334.) [Amer. Trop.]

BUCHNERA PALUSTRIS, Spreng. Syst. Veg. iii. p. 805.

*Hab.* Crescit in graminosis udis inter Cuyabá et Serra da Chapada, mens. Aug. florens. (N. 59.) [Bras. Or., Guiana, Peruvia.]

DESDEMONA, Scrophulariaceorum genus novum. (Pl. XXVII. figs. 2-9.)

Flores lateraliter zygomorphi. Calyx abbreviatus alte 5-partitus, segmentis ovatis, imbricatis, subæqualibus. Corollæ subcampanulatæ tubus subbrevis, latus, leviter incurvus; limbus suberectus, labio postico in anthesi intimo bilobo, labio antico 3-lobo, quam posticum longiore, lobis omnibus planis, oblongo-ovatis. Stamina 4, didynama, juxta basin corollæ inserta, inclusa; antherarum loculi divergentes, apice approximati, distincti; connectivus maxime incrassatus. Staminodium nullum. Discus inconspicuus. Stylus paullulum exsertus, apice stigmatem parvo obtuso coronatus. Ovula in loculis bina, raro solitaria, fere ab apice pendula, anatropa; raphe ventralis, micropyle superior. Fructus et semina ignota.—Suffrutex humilis, perennis. Caulis e rhizomate crasso assurgens, erectus, crebre foliatus, simplex vel parce ramosus. Folia opposita et reverâ per paria decussate inserta, vel inferiora subopposita, raro plane alternantia, subintegra, membranacea, subsessilia. Pedicelli axillares vel terminales, abbreviati, bracteis parvis duabus instructi. Flores nutantes, parvuli.

DESDEMONA PULCHELLA (sp. nov.). Rhizoma corticatum, undulatum, interdum usque ad 0.5 cm. diam., sæpe vero tenuius, radices simplices, satis obesas, plagiotropicas vel orthotropicas passim emittens. Caulis gracilis, tetraqueter, glaber vel plurimum puberulus, 8.0-23.0 cm. alt., intervallis plerumque 1.0-3.0 cm. foliiger. Folia nunc ovato-oblonga, nunc oblongo-lanceolata, raro ovata, basi leviter coarctata, ibique raro paullo rotundata, apice sæpissime mucronata, marginibus breviter serrulatis, interdum undulatis; costæ secundariæ utrovis latere plerumque 4-5, infimæ

margine parallelae, fere rectae, superiores fornicate ascendentes, deinde undulatum conjunctae, venulae obscurissimae, arcte reticulatae. Pedunculi nutantes, puberuli, sursum ampliati, 0.2-0.3 cm. long. Bractea subulatae, puberulae, 0.15 cm. long. Flores albi, limbi lobi margine dilute citrini. Calyx totus 0.3 cm. long. et lat., subcampanulatus, puberulus; lobi acuti vel acuminati, ciliolato-fimbriolati, minute nervosi, 0.25 cm. long. Corolla in toto 0.8 cm. long., antice palato satis prominulo instructa, extus et intus minutissime pubescens; tubus 0.5 cm. lat., basi vero usque ad 0.3 cm. angustatus, limbi vix 0.7 cm. diam., labium posticum circa 0.3 lat.; labii antici lobi laterales 0.22 cm. lat., 0.18 cm. long., lobus anticus 0.15-0.2 cm. lat., 0.2-0.3 cm. long., lobi omnes obtusi vel leviter emarginati. Filamenta incrassata, complanata, basi parum curvata, puberula, longiora 0.3 cm., breviora paullo ultra 0.2 cm. long. Antherae 0.2 cm. lat., puberulae. Pollinis grana laevia, trigono-ellipsoidea, poris tribus induta. Ovarium ovoideo-oblongum, sursum attenuatum, glabrum, 0.08 cm. long. Stylus incurvus, complanatus, glaber, 0.4 cm. long.

The affinity of *Desdemona* is undoubtedly with *Scrophulariaceae*; its habit, its aestivation, the bilabiate corolla, and the stamens all support this conclusion; but the placentation is highly remarkable. Solitary or binary ovules are rare in the order; according to Bentham, two-ovuled cells are found only in *Leptorhabdis*, *Melampyrum*, *Tozzia*, and a few species of *Veronica*, while *Tonella* may have one, two, or three ovules in its cells. In these cases, however, the ovule is fixed to the septum, not pendulous from the top of the cell, and in other respects all the above genera are markedly different from *Desdemona*. The general appearance at first suggested *Solanaceae*, and there is a remarkable South-American genus, *Sclerophylax* of Miers, which that botanist himself, and it must be confessed not without reason, considered to be the type of a distinct order, which he proposed to call *Sclerophylaceae*. The chief peculiarity of *Sclerophylax* lies in its possession of uniovulate ovarian cells, the ovules being pendulous from the top of the cell. This genus is placed in the 'Genera Plantarum' at the end of *Solanaceae* with the remark—"Genus in ordine ab ovarii loculis 1-ovulatis valde anomalum, caetera tamen *Solanaceis* multo melius quam ulli alii ordini conveniunt." Precisely the same observation will apply to *Desdemona*, substituting "*Scrophulariaceis*" for "*Solanaceis*" of the just-quoted passage.

The habit of our plant is much that of the Brazilian *Ildefonsia*, though there are many points of difference between the two, *Ildefonsia* having a staminode and a bifid stigma, with normal placentation and a many-seeded capsule. Judging from appearances, the fruit of *Desdemona* is most probably baccate, as is the case with *Halleria* and a few other genera, of which *Leucocarpus* and *Dermatocalyx* alone are American; but the berry of both these is many-seeded.

Among *Solanaceae*, the affinity of the present genus is closest with the *Salpiglossidae*, the tribe which has repeatedly been bandied about from *Scrophulariaceae* to *Solanaceae* and back again; but of the plicate or induplicate or valvate aestivation of *Salpiglossidae* I find no trace, and their placentation is entirely different. Moreover, except for its placentation, *Sclerophylax* has nothing in common with *Desdemona*. Any external



resemblance between the latter and *Solanaceæ* is therefore doubtless merely homoplastic.

The placentation is perhaps more that of *Myoporineæ* than of any other order either of the Personal or the Lamial Cohort—with the exception of *Selagineæ*, which are manifestly out of the question; but their shrubby habit, their æstivation, and anthers with confluent cells all conspire, irrespective of geographical considerations, to negative the supposition of a Myoporineous affinity for *Desdemona*. The discovery of an undoubted Myoporineous genus in South America, although by no means impossible, is yet so improbable that the affinity would not be admitted without very strong evidence being adduced in its favour, and of such evidence there is scarcely any in the present case.

The stem of this plant very early becomes woody, so that study of the arrangement of the vascular bundles is rendered difficult, and, with the scanty material at my command, quite impossible. The structure is worthy of notice in consequence of the almost entire localization of the sclerenchyme to the four angles, and the great reduction in the hard bast (Tab. XXXIX. fig. 1). A transverse section of a stem of one year's growth shows a normal girth often, at least in the case of dried material, ruptured in many places, narrow masses of xylem with relatively small tracheïdes, and very numerous thin medullary rays, with walls, under a low power, not easily distinguishable from the xylem. The phloëm, much less extensive than the xylem, consists of the usual elements, but these are very small; at its outer side are seen at intervals isolated bast-fibres, or more usually small groups of them. The cells of the cortex are thin-walled, except for the masses of sclerenchyme (*sc.*) already mentioned; there are also a very few scattered sclerotic parenchyme cells (*sp.*). The epidermal cells are pleated upon their outer wall—this pleating is, however, seen better when the leaf is examined, it being sufficient to detach a small piece of epiderm from either side of the leaf (fig. 5). Besides this there is little worth noting in the leaf-structure, except the great midrib with its large collenchyme cells (fig. 2), and the small glands sessile upon the upper surface; the latter emerge from small hollows, close around which on all sides are the epidermal cells (figs. 3 & 4). Stomata are found only upon the underside of the leaf.

#### GESNERACEÆ.

*DRYMONIA* (§ *GENUINÆ*) *MACULATA* (sp. nov.); caule scandente sat crasso, plus minus tetragono, nitido, radices adventivas debiles, parce fibrillosas emittente; foliis petiolatis, ovatis acutis vel obtusis, interdum breviter cuspidatis, basi plus minus angustatis, margine dentatis, coriaceo-membranaceis, supra scabriusculo-pubescentibus, subtus arete tomentosis; floribus solitariis majusculis; calycis pubescentis lobis oblongo-ovatis, obtusis vel acutis, margine serrulatis, lobo postico plane minore; corollæ calycem circa duplo excedentis tubo postice saccato, limbi lobis ovatis fimbriatis posticis minoribus; disco postice prominulo, antice parvo; ovario ovoideo, tomentoso, stylo crassiusculo, pubescente, utrinque amplificato coronato.

*Hab.* In truncis arborum scandit ad Santa Cruz, ubi florere incipit mens. Nov. (N. 529.)

Caulis 0·5 cm. crass., ramulos angulo fere recto insertos sustinens; internodia breviam; cortex papyraceus, cervinus, longitrorsum rimosus; radices adventivæ 1·0-2·5 cm. long., capillares. Foliorum lamina 7·5-12·0 cm. long., 3·5-6·3 cm. lat.; costæ secundariæ subtus conspicuæ, utroque latere circa 7, oppositæ vel suboppositæ vel alternantes, aperte arcuatæ, sub margine conjunctæ; petioli 0·6-2·1 cm. long., sat validi, dense tomentosi. Pedicelli petiolis similes. Calyx vix 2·3-fere 3·0 cm. long., 2·0 cm. lat.; lobi majores basi levissime cordati, lobi postici non ultra 2·0 cm. long. Corolla alba puniceo-variegata, 3·5 cm. long., extus pubescens, imâ basi 1·0 cm. lat., mox ad 0·8 cm. angustata, hinc ad 1·3-1·5 cm. ampliata, ipso sub limbo iterum ad 1·0 cm. contracta; saccus 0·9 cm. long. et lat.; limbus circa 2·0 cm. diam., lobis circa 0·7 cm. long. Antheræ 0·65 cm. long. Ovarium 0·8 cm. long., 0·6 cm. lat., sensim paullo attenuatum; stylus circa 2·0 cm. long., complanatus; stigmati lobi usque ad 0·3 cm. long. Fructus immaturus paullo ultra 1·0 cm. long. et lat., minute tomentosus.

*Drymonia calcarata*, Mart., arcte affinis, speciei mihi descript. et icon. solummodo notæ, abs quâ stirpem nostram foliis minoribus dentatis nec serrulatis, basi angustatis nec rotundatis vel oblique cordatis, pedunculis brevioribus, calycis minoris lobis basi minus oblique cordatis, corollæ minoris tubo sub limbo ipso manifeste contracto nullo negotio dijudicare potes. [Amazonia.]

ALLOPLECTUS (§ ERYTHRANTHUS) SYLVARUM (sp. nov.); caule fistuloso, valido, tetragono, glabro, nitidissimo; foliis petiolatis, ovato-lanceolatis, utrinque acuminatis, apice cuspidatis, leviter undulato-repandis, firme membranaceis, sparsissime appresse puberulis; floribus solitariis (an semper?); pedunculis quam petioli circa 2-plo brevioribus, pubescentibus, basi a bracteis duabus parvis, inæqualibus, ovatis vel ovato-lanceolatis, extus puberulis instructis; calycis sparsissime puberuli lobis late ovatis, basi cordatis, apice acutiusculis, margine undulatis, lobis posticis insigniter minoribus; corollæ calycem  $\frac{1}{2}$ -plo excedentis tubo leviter ventricoso, recto, faucibus parum contracto, basi postice gibboso; filamentorum vaginâ corollæ tubo breviter adnatâ; antheris liberis, lineari-oblongis, sat elongatis, loculis contiguis; disco antice obsoleto; ovario ovoideo-oblongo, in stylum crassiusculum, complanatum, superne ampliaturum desinente; stigmati late infundibulari.

*Hab.* Reperi in sylvâ primigeniâ inter Santa Cruz et Campos de Tapirapuan, mens. Sept. florentem. (N. 390.)

Frutex altus. Caulis 0·6 cm. diam., aliquanto geniculatus, parce ac grosse lenticelliferus; cortex laxus, tenuis, cervinus; internodia 5·0-7·0 cm. long. Foliorum penninervium lamina subtus pallida, vulgo 10·0-16·5 cm. long., 3·5-5·0 cm. lat., basi nec ultra 0·3 cm. lat.; acumen 2·0 cm. long.; costæ secundariæ utroque latere 5-7, alternantes, aperte arcuatæ; petioli 2·0-4·0 cm. long., basi ampliati, puberuli. Pedunculi puberuli, 1·0-1·5 cm. long.; bracteæ 0·5-0·8 cm., verisimiliter virides. Calyx tempore florendi 3·0 cm. long., paullo post anthesin fere usque ad 4·0 cm. auctus; lobi basi oblique cordati, lobi postici vix usque ad 2·0 cm. long., 0·8 cm. lat., lobi majores ad 1·3 cm. lat., tenuiter membranaceæ, nervosæ, vivæ sanguineæ. Corolla lutea, extus pubescens, in toto circa 4·0 cm. long., tubus

basi 0·6 cm. diam., medio 1·0 cm., et sub faucibus ad 0·8 imminutus; limbus circa 1·7 cm. diam. Filamentorum vagina, more generis postice fissa, 0·6 cm., corollæ adnata; antheræ 0·7 cm. long., loculo altero sæpe paullo altius affixo. Ovarium minute tomentosum, 0·6 cm. long., superne sensim coarctatum; stylus puberulus, tempore florendi 2·5 cm. long., sub stigmate usque ad 0·2 cm. dilatatus; stigma 0·25 cm. diam. Fructus immaturus ovoideo-oblongus, minute pubescens, vix 1·5 cm. long. et 1·0 cm. lat.

Species distinctissima, ob flores parvibracteatos et calycis lobos amplos coccineos primo obtutu cognoscenda. *Alloplectum sparsiflorum*, Mart., aliquatenus simulat, sed bracteis magnis sanguineis stirpis illius omnino caret. Forte proxima *A. coriaceo*, Hanst., plantæ Costaricensi.

#### BIGNONIACEÆ.

**BIGNONIA** (ARRABIDEA, sensu Candolleano) **RUBESCENS** (sp. nov.). Scandens, crebre ramosa, ramulis sat gracilibus, teretibus, nitidis, striatis, minute puberulis; foliis petiolatis, 2- raro 3-foliolatis, foliolis petiolulatis, late ovatis obtusis, breviter cuspidatis, basi rotundatis, nonnunquam obscure cordatis, coriaceis, arcte reticulato-nervosis, obsolete puberulis, siccitate rubescentibus, costis secundariis 4-6 distantibus, raro suboppositis, plus minus arcuatis; paniculis terminalibus, multifloris, folia multo excedentibus, tomento perbreve incano, quasi pruinâ, obtectis, cito minute puberulis; floribus parvis, in pedicellis brevibus albido-tomentellis insidentibus, calycis tubulosi ore recto obscure 5-fido, dense albide vel roseolo-tomentoso; corollæ calycem 5-plo excedentis tubo subrecto, superne ampliata; limbo subdistincte bilabiato; labii postici lobis anticis manifeste minoribus, labio antico 3-partito; staminibus brevissime exsertis; antherarum loculis anguste linearibus, quam maxime divaricatis; disco elevato, incrassato, breviter cupulari, ovarium brevissime stipitatum, anguste lineare, superne coarctatum, semi-æquante, ovulis biseriatis.

*Hab.* Inveni ad Santa Cruz, ubi flores decoros mens. Nov. ostendit. (N. 663.)

Ramuli 2·5-3·5 cm. diam., ad nodos leviter tumidi. Petioli foliolis dimidio breviores vel ea subæquantes, patentés, subteretes, stricti, una cum petiolis non ultra 2·3 cm. long., in sicco nitescentibus; foliola plerumque 7·0-8·0 cm. long. et 4·5-6·0 cm. lat., basi paullo obliqua, crebre minutissime pellucido-punctata, in paginâ utrâvis (præsertim vero supra) nitida, folium terminale lateralia subæquans, sed duplo longius petiolulatum. Paniculæ usque ad 30·0 cm. long., validæ, intervallis plerumque 3·0-5·0 cm. long., ramulos florigeros albide tomentosos, nonnunquam ex axillis foliorum in cirrhos simplices mutatorum ortos, proferentes. Pedicelli usque ad 0·65 cm. long., plerique minus longi. Flores lilacini. Calyx 0·3-0·4 cm. long., 0·3-0·35 cm. lat., intus minutissime puberulus. Corollæ tubus vix 2·0 cm. long., basi 0·25 cm., sub limbo 0·6 cm. diam.; limbi lobi oblongo-ovati, obtusissimi, fere 0·5 cm. long.; labii postici lobi 0·3 cm. long. Filamenta 0·3 cm. supra basin tubi inserta, imâ basi pubescentia, ceteroquin glabra, complanata; antherarum loculi glabri, 0·24 cm. long. Discus fere 0·15 cm. alt., paullo ultra 0·1 cm. diam. Ovarium minutissime puberulum, vix 0·3 cm. alt., 0·05 cm. diam.; stylus 1·3 cm. long.; stigmatis lobi oblongi, 0·1 cm. long. Capsula ignota.

Nulli affinis, nisi specimini Pohliano (n. 1784) in Herb. Kew. asserv. et certe errore "*Arrabidea rosea*" denominato. Ab *A. rosea*, DC., sat discrepat, ut ex icone Delessertiano patet, foliolorum formâ, calyce amplo nec turbinato, aliisque signis. Habitum et folia spec. Pohliani supra citati planta nostra præbet (foliolis minus acuminatis, plerumque minoribus, vix rubescentibus exemptis), sed ob calyces suos minores et corollas diversas et fere  $\frac{1}{3}$  breviores vix conspecificæ videntur. [Bras. Or.]

**BIGNONIA** (ARRABIDEA, sensu Candolleano) **TOMENTELLA** (sp. nov.); ramis junioribus, petiolis, foliolorum paginâ inferiore, inflorescentiæ axibus arete albido-tomentosis; foliis bifoliolatis vel trifoliolatis, petiolo raro in cirrhum brevem simplicem excurrente, foliolis ovatis obtusis, interdum brevissime cuspidatis, basi nunc rotundatis, nunc sensim coarctatis, pag. sup. mox pubescentibus ibique nitescentibus; petiolulis foliolorum imparium petiolo plerumque duplo brevioribus, foliolorum lateralium petiolo duplo vel triplo brevioribus, nonnunquam subæquilongis; paniculis terminalibus, copiose ramosis, plurifloris, quam folia longioribus; pedicellis abbreviatis; calycis late tubulosi ore recto, leviter denticulato vel truncato, dense subroseolo-tomentoso; corollæ calycem 6-plo superantis tubo fere recto, basi angusto, superne ampliato, limbo subbilabiato; staminibus brevissime exsertis; antherarum loculis maxime divaricatis, angustissimis; disco elevato, cupulari, ovarium oblongum circa semi-æquante, ovulis 2-seriatis.

*Hab.* Juxta Corumbá mens. Jan. florescit. (N. 1035.) Itaque in Brasiliâ Orientali a cl. Glaziou lecta. (N. 11229 in Herb. Kew.)

Rami sat validi, teretes, dein glabri et cortice cervino crebre striato lenticellifero obtecti. Foliola 4.5-7.0 cm. long., 3.0-4.0 cm. lat. (imparia paullo majora); costæ secundariæ utroque latere 4-6, distanter insertæ, inferioribus exemptis raro suboppositæ, inferiores fere rectæ, superiores arcuatæ; petioli vix usque ad 3.0 cm. long., plerumque vero minores, ascendentes. Paniculæ ad 9.0 cm. long., intervallis 1.0-2.5 cm. ramuligeræ. Pedicelli circa 0.2 cm. long. Calyx 0.3 cm. long., 0.25 cm. lat. Corolla circa 1.7 cm. long., purpurea, ferrugineo-tomentella, tubus 1.3 cm. long., basi 0.15 cm., sub limbo 0.6 cm. lat., intus superne puberulus ceterum glaber; lobi intus pubescentes. Filamenta 0.35 cm. supra basin corollæ affixa, basi pilosa, alibi glabra; antherarum loculi 0.18 cm. long. Discus 0.8 cm. alt. Ovarium vix 1.5 cm. alt., dense tomentellum; stylus fere omnino glaber, 1.0 cm. long.; stigma infundibulare, 0.03 cm. diam.

Præcedenti affinis, sed indumento ac foliolis diversiformibus, præter plura alia, facili negotio distinguenda. [Bras. Or.]

**BIGNONIA** (ARRABIDEA, sensu Candolleano) **GREWIOIDES** (sp. nov.). Fruticosa, diffusa, ramis validis pubescentibus, proventu glabris, cortice cinereo manifeste striato, crebre lenticellifero obductis; foliis petiolatis, mediocribus, ecirrhosis, plerisque unifoliolatis, paucis superioribus bifoliolatis, foliolis ovatis vel late ovato-lanceolatis, breviter cuspidatis, obtusis, obscure mucronulatis, deorsum rotundatis vel sensim angustatis, margine undulatis, minutissime pulvereo-pubescentibus, dein fere glabris; paniculis axillaribus terminalibusve, plerumque foliis brevioribus, anguste thyrsoideis, plerisque

circa 20–30-floris, fulvo-tomentosis; floribus parvis subsessilibus; bracteis lanceolatis, fulvo-tomentosis, pedicellos excedentibus; calyce campanulato, ore recto, breviter et subæqualiter 5-dentato, fulvo-tomentoso; corollæ tubo calycem forte circa 2-plo excedente a basi gradatim amplificato; limbo sub-bilabiato; antherarum loculis divaricatis, oblongis; disco amplo cupulari, leviter incrassato, aliquatenus abbreviato; ovario anguste oblongo-lineari, arcte tomentello, paullulum ante anthesin discum breviter superante; ovulis uniseriatis.

*Hab.* Legi in viâ inter Corumbá et Ladario mens. Jan. florescentem et fructus immaturos proferentem. (N. 1028.)

Frutex trimetralis, abunde ramosus. Ramuli paniculiferi ad 0·3 cm. diam., fere recti, in nodis parum tumidi, internodia inæquilonga, nunc 1·0, nunc 4·0 vel 5·0 cm. long.; lenticelli parvi, punctiformes, eminentes. Foliola majora 8·0–11·0 cm. long., et 4·0–6·0 cm. lat., firme membranacea, subtus pallentia; costæ secundariæ 6–8, angulis variis insertæ, rectæ vel leviter arcuatæ, interdum insigniter bicurræ; venæ conspicuæ, rectæ vel undulatæ; petioli ascendentes, 0·7–2·0 cm. long., sæpe sursum et deorsum incrassati, minute pubescentes, demum glabri. Paniculæ 5·0–6·0 cm. long., ascendentes. Bracteæ plerumque 0·2–1·0 cm. long., acutæ. Calyx 0·4 cm. long., vix 0·3 cm. lat.; lobi 1·0 cm. long. Corollam albam expansam frustra quæsivi, forsitan long. circa 0·8 cm. attingat; tubus intus hinc atque illinc puberulus; lobi intus tomentelli. Filamenta basi pilosa, ceterum glabra; antherarum glabrarum loculi 0·1 cm. long. Discus 0·04 cm. alt. Ovarium paullulum ante anthesin 0·1 cm. long.; stylus glaber, complanatus; stigma infundibulare, parvum. Capsulæ vix maturæ exstant ad 4·5 cm. long., et 0·15–0·2 cm. lat., rectæ vel plus minus curvatæ, minute tomentellæ, calyce nondum exserto primo basi cinctæ.

Non dubito quin juxta *Bignoniæ Clausenii* (*Arrabideam Clausenii*, DC.) inserenda sit, cujus folia iis stirpis nostræ sat similia, nisi minora et semper simplicia, sed inflorescentia et flores et fructus longe alieni. *Arrabidea*? *platyphylla*, DC., a nobis non visa, foliis maximis semper simplicibus, basi 3–5-nervibus, paniculis terminalibus ramosissimis, calyce minutissime denticulato, etc., gaudet. [Bras. Or.]

The periodicity in the flowering and fruiting of this plant is noteworthy, for whereas young capsules were abundant, and multitudes of buds in various stages could be seen, I could not find a single expanded flower, and this was not a case of cleistogamy.

**BIGNONIA** (CLEMATITARIA, sensu Bureaviano) **MELIOIDES** (sp. nov.). Scandens, glabra, caule acute 4-angulari, vix 4-alato; foliis, petiolis patentibus fultis, membranaceis, unijugis, jugis biternatis, segmentis imparibus, ovato-lanceolatis, breviter cuspidato-acuminatis, basi rotundatis vel leviter angustatis; petiolo in cirrhum gracilem, elongatum, apice 2–3-fidum excurrente; stipulis magnis, rotundato-obovatis, basi leviter cordatis, amplexicaulibus, obtusissimis; racemis laxis, gracilibus, paucifloris, æquilongis; bracteis exiguis, subulatis; floribus mediocribus, longipedicellatis; calyce tubuloso mediocriter elongato, puberulo, ore obscure denticulato, breviter albociliato; corollæ calycem 7-plo excedentis tubo basi angusto, mox sensim ampliato; limbi sub-bilabiati lobis oblongo-ovatis obtusis; staminibus inclusis; antherarum

loculis divaricatis oblongo-linearibus; disco cupulari, incrassato, quam ovarium puberulum duplo brevior; ovulis pleiostichis.

*Hab.* Reperi juxta Santa Cruz vigentem, et mens. Oct. florentem. (N. 406.)

Caulis 2·3 cm. diam., internodia elongata (15·0-18·0 cm. long.). Folia (petiolo comprehenso) circa 13·0 cm. long.; petiolus solus 3·5-4·5 cm.; segmenta ultima 2·0-6·0 cm. long., 1·2-3·0 cm. lat., segmenta imparia lateralibus semper majora, reticulato-nervosa, nitida, subtus pallidiora; cirrhus circa 10·0 cm. long., sursum attenuatus, circa 1·0 cm. apice divisus; stipulæ 1·0 cm. long., 1·5 cm. lat., membranaceæ, reticulato-nervosæ. Racemi ad 13·0 cm. long., 8- vel pluri-flori; bracteæ 0·1-0·3 cm. long. Pedicelli sub flore subito ampliati, 1·5-2·0 cm. long. Calyx 0·8 cm. long., sursum vix 0·5 cm. lat. Corollæ puberulæ, albæ, tubus pallide viridis, 5·0 cm. long., deorsum 0·2-0·3 cm., sursum 2·5 cm. lat., juxta staminum insertionem pubescens, ceteroquin puberulus; limbi fere 3·5 cm. diam., lobi 1·0 cm. long., intus minute pubescentes. Filamenta 1·2 cm. supra basin corollæ inserta, glabra; antherarum glabrarum loculi vix 0·3 cm. long. Staminodium 0·5 cm. long., superne pilosum, apice capitellatum. Discus paullo ultra 0·1 cm. alt., 0·25 cm. diam. Ovarium vix 0·25 cm. long., 0·08 cm. lat.; stylus 2·5 cm. long., complanatus, glaber; stigma infundibulare, 0·15 cm. long., vix 0·1 cm. diam. Capsula ignota.

Affinis *Bignonia tetragonocaulæ*, DC., et *B. jasminifoliæ*, H. B. K., ab ambabus vero abhorret, præter alia, foliolis disparibus et racemis comparate elongatis. [Amazonia, Venezuela.]

**BIGNONIA** (§ CONJUGATÆ) CAUDIGERA (sp. nov.). Scandens, caule validiusculo, subterete, primo puberulo, mox glabro et refulgente; foliis petiolatis bifoliolatis, foliolis late ovatis, basi rotundatis ibique leviter cordatis, apice caudato-cuspidatis, mucronatis, tenuiter coriaceis, glaberrimis, petiolo interdum in cirrhum brevem producto; paniculis axillaribus terminalibusve folia subæquantibus vel ea paullo excedentibus, minute pubescentibus; bracteis exiguis; pedicellis quam calyces brevioribus, minute pubescentibus; calyce anguste tubuloso, arcte fusco-tomentello, ore obliquo 5-dentato, uno latere breviter fisso; corollæ calycem 3-plo excedentis tubo triente inferiore cylindræo, hinc subito ampliato; limbi sub-bilabiati lobis ovatis obtusissimis; staminibus inclusis; disco abbreviato, paullo incrassato, cupulari, ab ovario cylindræo tomentello 2½-plo superato; ovulis sub-biseriatis.

*Hab.* Crescit juxta Corumbá, ubi mens. Jan. florescit. (N. 971.)

Caulis 2·5-3·0 cm. diam., longitrorsum arcte striatus, lenticellis parvis punctiformibus conspersus. Foliola 8·0-9·5 cm. long., 4·5-5·5 cm. lat., parum obliqua, leviter undulata, impunctata, in sicco nigrescentia, utrinque fulgentia; costæ secundariæ utrovis latere 5-6, raro suboppositæ, aperte arcuatæ vel fere rectæ, venis (præsertim fac. sup.) eminentibus, plane reticulatis; petioli 1·0-1·5 cm. long., patentes, petiolulos graciliores subæquantibus; cirrhi non ultra 4·0 cm. long., simplices. Paniculæ plurifloræ, ad 10·0 cm. long. Bracteæ subulatæ, minute pubescentes, ±0·2 cm. long. Flores purpurei. Calyx vix 1·0 cm. long., 0·3 cm. lat., usque ad ¼ solummodo uno latere fissus; dentes erecti, angustissimi, 0·07 cm. long. Corolla

1.5 cm. long., basi 0.2 cm., sub limbo 0.5 cm. lat., extus superne tomentella, intus faucibus et limbi lobis tomentella, alibi summum puberula. Filamenta, 0.45 cm. supra basin corollæ inserta, basi pilosa; antheræ 0.2 cm. long. Discus 0.1 cm. alt. Ovarium 0.25 cm. long. et 0.08 cm. lat.; stylus teres, crassiusculus, glaber, 0.7 cm. long.; stigma elongatum, gracile, 0.25 cm. long.

Speciei nullæ mihi cognitæ affinis, et reverâ foliis nigrescentibus, caudato-acuminatis, basi rotundato-cordatis, et floribus comparative parvis et calycis dentibus prominulis haud difficiliter dignoscenda.

**BIGNONIA** (§ CONJUGATÆ) **MODESTA** (sp. nov.). Fruticosa, ramis teretibus, gracilibus, fusco-tomentosis, dein arcte pubescentibus; foliis petiolatis, bifoliolatis vel trifoliolatis, foliolis parvis lanceolatis acuminatis, raro obtusis, basi obliquis, obtusis, margine repandis vel repando-dentatis, membranaceis, subtus in nervis minute rufo-tomentosis, dein ibi pubescentibus; flore unico nobis obvio terminali, pedunculo rufo-tomentoso, basi biglanduloso, petiolo brevior fulto; calycis tubulosi, tomentosi, ore breviter ac impariter 5-lobi; corollæ calycem  $3\frac{1}{2}$ -plo excedentis tubo inferne angustissimo, superne gradatim dilatato; staminibus inclusis; antherarum loculis maxime divaricatis, oblongis, puberulis; disco crassiusculo, quam ovarium oblongum multo brevior.

*Hab.* Reperi in sylvâ primævâ florentem juxta Santa Cruz mens. Sept. (N. 338.)

Ramuli foliigeri 0.1 cm. diam., ad nodos aliquanto tumidos glanduliferi, internodia 4.0–7.0 cm. long. Foliola 3.3–5.5 cm. long., 0.8–1.4 cm. lat., foliolum terminale plerumque paullo majus et longius petiolulatum, foliola omnia creberrime pellucido-punctata; costæ secundariæ utroque 4–5, raro suboppositæ, inferiores fere rectæ, superiores leviter arcuatæ; petioli 1.2–1.5 cm. long., petiolulos laterales 3-plo excedentes et terminalem subæquantes, omnes rufo-tomentosi. Pedunculus 0.6 cm. long. Calyx vix 1.0 cm. long., medio fere 0.4 cm. lat.; lobi perbreves, rotundati, 0.1 cm. long. Corolla pallide purpurea, 3.5 cm. long., 0.9 cm. diam., deorsum modo 0.1 cm. lat., sub limbo 0.7 cm., extus tomentella, basi glabra. Filamenta, 1.0 cm. supra basin tubi corollæ inserta, inferne puberula; antheræ 0.22 cm. long. Staminodium circa 0.2 cm. long., apice capitellatum. Discus 0.07 cm. alt. Ovarium 0.25 cm. long., tomentellum; stylus glaber. Capsula ignota.

Species elegans, foliolis parvis, lanceolatis acuminatis, corollâ mediocri, inferne maxime attenuatâ, congeneribus ab omnibus distinctissima.

Huic generi referendæ, sed nimis mancæ, exstant insequentes:

- i. **BIGNONIA**, sp. Ramulis fulvo-tomentosis, demum glabris; foliis bifoliolatis, petiolatis, foliolis supra nitidis, subtus velutinis, ovatis, breviter acuminatis, 6.0–9.5 cm. long.; capsulis 10.0 cm. long., 3.5 cm. lat., pedunculo valido insidentibus; seminibus circa 4.5 cm. lat., nucleo paullo ultra 1.0 cm. diam. Flores desunt.

*Hab.* Crescit ad Serra da Chapada, ubi inveni mens. Aug. (N. 95.)

- ii. **BIGNONIA**, sp. Habitu *B. Unguis*, Linn., foliolis lanceolatis vel ovato-lanceolatis, 4.5–6.0 cm. long., 1.8–2.5 cm. lat., utrinque obtusis, apice breviter apiculatis. Nec flores nec fructus suppetebant.

*Hab.* Reperi ad Jangada mens. Sept. (N. 278 a.)

MACFADYENA LAURIFOLIA, Miers, in Proc. Hort. Soc. 1863, p. 200 (ex descr.). (*Spathodia laurifolia*, H. B. K.).

*Hab.* Flores dilute puniceos ostendit mens. Jan. in ripâ fl. Paraguay ad Carandajinho, inter Corumbá et Dorados. (N. 1018.)

I have seen no authentic specimens of this species, and so can only rely for this identification upon Kunth's description (Nov. Gen. et Sp. iii. p. 146). The four species *M. Coito*, Miers, *M. platypoda*, Miers, *M. corymbosa*, Griseb., and *M. laurifolia*, Miers, are evidently very closely allied. The first of these has, however, a calyx straight to the tip; the pedicels of *M. platypoda* are winged, while acuminate leaves subcordate at the base are characteristic of *M. corymbosa*. Our plant, with the recurved calyx-tip of *M. corymbosa* and *M. laurifolia*, has leaves which exactly agree with the description given of those of the latter species. [Venezuela.]

MACFADYENA RIPARIA (sp. nov.); caule gracili ascendente, ad nodos tumido, minute puberulo, mox glabro et cortice leucophæo eximie striato cincto; foliis plerisque simplicibus, supremis tantummodo bifoliolatis, brevipetiolatis, late ovatis, utrinque obtusis vel obtusissimis, coriaceo-membranaceis, glabris; inflorescentiæ axi terminali paucifloro, ramulis anguste alatis, minute puberulis; floribus mediocribus, pedicellis brevibus erectis sub flore obesis insidentibus; calyce amplo, membranaceo, paullo ultra  $\frac{1}{2}$  spathaceo-fisso, apice incrassato, recto; corollâ tubæformi superne gradatim ampliata; limbi lobis late ovatis obtusis; staminibus inclusis; disco abbreviato, quam ovarium oblongum puberulum multoties brevius; ovulis uniseriatis.

*Hab.* Crescit in ripâ fl. Paraguay, inter Santa Cruz et Villa Maria, mens. Dec. (N. 837.)

Caulis vix semimetralis rhizomate crasso ortus, 2.0-2.5 cm. diam., striatus; internodia usque ad 10.0 cm. long., suprema abbreviata. Foliorum subnitidorum juga nunc parva, nunc grandiora; petioli 0.5-1.2 cm. long., utrinque incrassati; lamina foliorum majorum 8.5-9.0 cm. long. et 4.5-6.0 cm. lat., foliorum minorum 5.5-7.0 cm. long. et 2.7-4.5 cm. lat., foliorum bifoliolatorum foliola ad 5.0 cm. long. et 2.7 cm. lat., et petiolulis 0.4 cm. fulta; omnium costa media supra impressa, subtus eminens; costæ secundariæ utrinque 4-6, rectæ vel leviter curvatæ, marginem versus arcuatim et undulatim conjunctæ. Inflorescentia speciminis unci meos ante oculos biflora, folia subæquans; pedicelli 0.7-0.8 cm. long. Calyx 2.3 cm. long., puberulus, longitrorsum crebre nervosissimus. Corollæ puberulæ, 5.0 cm. long., ut opinor purpureæ, tubus paullo supra calycem 0.7 cm. lat., sub limbo circa 2.0 cm.; limbus 3.0 cm. diam. Filamenta 0.8 cm. supra basin corollæ fixa, glabra; antheræ lineari-oblongæ, glabræ, vix 0.4 cm. long. Ovarium 0.35 cm. long., 0.15 cm. lat.; stylus complanatus, puberulus, 2.7 cm. long.; stigma spathulato-infundibulare, 0.3 cm. long., 0.15 cm. lat. Capsulæ non suppetebant.

Ex affinitate *M. Coito*, Miers, *M. platypodæ*, Miers, *M. corymbosæ*, Griseb., et *M. laurifoliæ*, Miers, a quibus foliis maximâ pro parte simplicibus primo visu distinguenda. [Bras. Or., Venezuela, Ind. Occ.]



*MACFADYENA BIPINNATA* (sp. nov.). Fruticosa, erecta, caule haud volubili, terete, minute fulvo-tomentoso, dein glabro vel fere glabro et nitido; foliis magnis, longipetiolatis, supremis simpliciter 2-3-jugim imparipinnatis, petiolulatis, inferiorum jugis proximis trifoliolatis, foliolis petiolulatis, oblongo-ovatis, obtusis, deorsum subito coarctatis, ibique plus minus obliquis, margine revolutis, penninerviis, coriaceis, velutino-tomentosis, supra metallicis, subtus subfulvis; inflorescentiâ axillari vel terminali; paniculis angustis, racemiformibus, in sicco nigricantibus, flores mediocres pedicellatos, plerumque oppositos gerentibus; pedicellis bracteas oppositas, multo breviores, ovatas vel lanceolatas, puberulas, ad medium gerentibus; calyce tubuloso-campanulari primo clauso per anthesin vix usque medium spathaceo-fisso, ore breviter et impariter lobulato; corollæ calycem circa  $2\frac{1}{2}$ -plo excedentis tubo basi satis lato mox subito amplificato; limbi lobis ovatis obtusis; staminibus verisimiliter inclusis, antheris divaricatis, disco quam ovarium oblongum insigniter brevior; ovulis uniseriatis.

*Hab.* Inveni ad Santa Cruz mens. Sept. florescentem. (N. 290.)

Caulis 0.2-0.3 cm. diam., longitrorsum striatulus, lenticellis parvis auctus. Folia (petiolo excluso) 18.0-20.0 cm., suprema 10 cm. long.; foliola impunctata 3.5-6.5 cm. long., 1.5-3.2 cm. lat.; costæ secundariæ utrinque 6-8, basales approximate oblique vel aperte arcuatæ, eæ lateris unius plerumque magis eminentes; petioli 7.0-9.0 cm. long. (fol. summorum 4.5 cm.), teretes, velutini, basi pulvinati, conspicue biglanduliferi, petioluli velutini, nunc elongati (3.5-4.0 cm. long.), nunc ad 0.2 cm. abbreviati. Paniculæ ad 12.0 cm. long.; pedicelli ascendentes, foliorum inferiorum ad 1.8 cm. long., superiorum breviores; bracteæ 0.2-0.25 cm. long., in sicco nigricantes. Calyx 1.3 cm. long., 0.5 cm. lat., usque ad 0.6 cm. spathaceo-fissus, puberulus. Corolla lutea, verisimiliter circa 4.0 cm. long., extus puberula. Filamenta 0.9 cm. supra corollæ basin inserta, glabra, antherarum loculi 0.35 cm. long., glabri. Discus 0.04 cm. alt.; ovarium 0.3 cm. long., glabrum; stylus complanatus circa 3.0 cm. long., stigma infundibulare circa 0.15 cm. long. et 0.1 cm. diam. Capsula ignota.

Sine ullâ dubitatione ad *M. fallacem* (*Bignoniâ fallacem*, Cham.) spectat, cujus folia sat similia nisi minora, flores vero longe alieni. [Bras. Or.]

*MACFADYENA PUBESCENS* (sp. nov.). Scandens, caulibus gracilibus, hâc atque illâc geniculatis, subteretibus; ramulis ultimis arete tomentosis, deinde glabris; foliis pro genere parvis, breviter petiolatis, bifoliolatis, petiolo haud producto vel in cirrhum brevem apice trifidum excurrente, vel ab apiculo pusillo nunc integro, nunc 2-3-fido coronato, foliolis lanceolatis vel ovato-oblanceolatis, obtusis vel obtusissimis, basi gradatim coarctatis, utrinque tomentellis, demum pubescentibus, membranaceis; pedunculis axillaribus, quam folia multoties brevioribus, oppositis, unifloris, tomentellis; bracteis exiguis lanceolatis vel linearibus, acuminatis, juxta medium pedunculum insertis, pubescentibus; calyce sat abbreviato late tubuloso, usque ad medium fissus, ore undulato vel impariter lobulato, apice haud incrassato; corollæ tubo elongato, deorsum coarctato, inde sensim amplificato, extus et intus sursum puberulo; limbi lobis late ovatis, obtusis; staminibus inclusis; disco maxime incrassato, abbreviato, ter latiore quam longo, ovario cylindraceo, puberulo, multo brevior; ovulis uniseriatis.

*Hab.* Viget in ripâ fl. Paraguay, inter Villa Maria et Corumbá, ubi reperi mens. Dec. florentem. (N. 1021.)

*Caulis* 2·0-3·0 cm. diam., lenticellis eminentibus passim obtectus. Foliola impunctata, pleraque 3·0-5·0 cm. long. et 1·5-3·0 cm. lat., apice nonnunquam apiculata; costæ secundariæ utroque latere circa 6, nunc approximatae, nunc distantes, fere rectæ, marginem versus subito arcuatae, venulis obsoletis laxè reticulatis; petioli ad 1·2 cm. long., plerumque vero breviores; petioluli nulli ultra 0·5 cm. long. (plerique 0·2-0·3 cm.). Pedunculi vix unquam ad 1·0 cm. long., erecti; bracteae 0·2-0·5 cm. long. Calyx 1·2 cm. long., 0·8 cm. lat., præsertim inferne pubescens. Corolla lutea, 6·5-7·0 cm. long., paullo supra basin 0·4 cm. lat., sursum 1·5 cm.; limbus extus fere omnino glaber, 3·5 cm. diam. Filamenta circa 1·0 cm. supra basin corollæ affixa, basi puberula, ceterum glabra; antheræ oblongæ, puberulæ, 0·3 cm. long. Discus 0·35 cm. lat., 0·12 cm. alt. Ovarium 0·3 cm. long., 0·08 cm. lat.; stylus subteres, fere glaber, 3·5 cm. long.; stigma spathulato-infundibulare, 0·35 cm. long. Capsula ignota.

Species distinctissima, nulli affinis, et foliis pro genere parvis pubescentibus illico agnoscenda.

*SALDANILÆA LATERIFLORA*, Bur. in *Adansonia*, viii. p. 355.

*Hab.* Juxta Santa Cruz viget et mens. Sept. flores purpureos ostendit. (N. 353.) [Bras. Or., Goyaz.]

*ADENOCALYMNA CROCEUM* (sp. nov.). Scandens, caule sat crasso, subterete, glabro, deinde cortice subfusco, nitido, striato, lenticellifero oblecto; foliis amplis, petiolatis, bifoliolatis, plerisque absque cirrho paucis longe ac simpliciter cirrhosis; foliolis late ovatis obtusis vel leviter emarginatis, basi paullo cordatis, eximie reticulato-nervosis, membranaceo-coriaceis, supra nitidis, vetustioribus in sicco subnigricantibus; racemis axillaribus vel terminalibus, folia majora subæquantibus, plurifloris; floribus mediocribus breviter pedicellatis, in sicco nigricantibus; bracteis parvis, obovatis, caducis; calyce alte cyathiformi, obsolete dentato, pedicellos excedente vel subæquante, glandulifero; corollæ calycem 4-plo excedentis tubo sursum sensim ampliato, sub limbo parum contracto; limbi lobis late obovatis obtusis; staminibus inclusis; disco brevi, carnosulo, quam ovarium lineari-oblongum multo brevioribus; ovulis biseriatis.

*Hab.* Crescit in sylvestribus juxta Corumbá, ubi florescit mens. Jan. (N. 980.)

*Caulis* ad 0·5 cm. diam., lenticellis punctiformibus adpersus. Foliola majora usque ad 13·0 cm. long. et 8·5 cm. lat., minora 6·0-1·0 cm. long. et 2·5-4·3 cm. lat., margine revoluta, subtus decoloria, minute et angustissime elliptica, pellucido-punctata; costæ secundariæ utrovis latere 6-8, inferiores distantes, angulis variis insertæ; venulis arcte reticulatis utrinque prominulis; petioli ad 2·0 cm. long., patentes, teretes, striatuli; petioluli petiolos subæquantes vel iis longiores brevioresve. Racemi puberuli, cito glabri, ad 11·0 cm. long.; pedicelli evoluti 0·5-1·0 cm. long. Bracteae 0·1-0·15 cm. long., ciliolatae. Flores crocei. Calyx 1·0 cm. long., circiter 0·6 cm. lat., carnosulus, scabriusculo-puberulus. Corolla extus minute pubescens,

4.0 cm. long.; tubus medio 0.8 cm. lat., limbus 2.5 cm. diam. Filamenta 0.8 cm. supra basin corollæ fixa, obsolete puberula; antheræ oblongæ, 0.3 cm. long., puberulæ. Discus 0.1 cm. alt. Ovarium 0.35 cm. long.; stylus complanatus, puberulus, vix 2.5 cm. long.; stigma bilobum, lobis oblongis, obtusis, vix 0.3 cm. long. attingentibus. De capsulâ inquirendum.

Videtur accedere ad *Adenocalymna nitidum*, Mart., sed foliis bifoliolatis comparative latioribus, racemis glabris, interdum vere terminalibus, folia subæquantibus, calyce obsolete dentato, bracteas longe superante, primo intuitu indubitate pro specie propriâ habendum. [Bras. Or.]

**ANEMOPÆGMA BREVIPES** (sp. nov.). Scandens, ramis teretibus, arcte striatis, fulvo-hirsuto-tomentosis, mox pubescentibus, dein glabris; foliis breviter petiolatis, bifoliolatis, plerumque ecirrhosis, petiolo in cirrhum brevem interdum excurrente, nonnunquam brevissime ultra foliolorum insertionem producto; foliolis mediocribus, breviter petiolulatis, ovatis, plerumque acutis vel breviter cuspidato-acuminatis, apice mucronulatis, utrinque minutissime tomentoso-pubescentibus, subtus etiam a pilis longioribus vestitis, membranaceo-coriaceis; stipulis foliaceis, petiolos ascendentes hirsute tomentosos subæquantibus, late obovatis, apice oblique emarginatis, nonnunquam mucronulatis, minutissime tomentoso-pubescentibus; floribus mediocribus terminalibus vel axillaribus nunc solitariis, nunc in racemos maxime contractos dispositis; pedunculis pedicellisque ascendentibus, hirsuto-tomentosis; bracteis minutis, quam pedicelli multoties brevioribus; calyce amplo, late infundibulari, plerumque truncato, raro obscure lobato, puberulo; corollæ tubæformis, fere omnino glabræ, calycem circa 6-plo excedentis tubo paullo supra basin coarctato, sursum amplificato; lobis rotundato-ovatis, obtusissimis; staminibus inclusis; disco brevi, incrassato, ore leviter undulato, quam ovarium oblongo-ovoideum  $2\frac{1}{2}$ -plo brevior; ovulis 4-seriatis.

*Hab.* Florescit in sylvestribus juxta Corumbá mens. Jan. (N. 1009.).

Ramuli 0.2–0.4 cm. diam., deinde cortice cinereo sparsim lenticellis parvis obsito tecti. Foliola 4.5–9.5 cm. long., 2.5–4.5 cm. lat., subnitescentia, impunctata; costæ secundariæ utrovis latere 4–6, aperte arcuatæ, venis pag. inf. eminentibus, laxe reticulatis; petioli 0.5–1.7 cm. long., subteretes, crebre striati; petioluli 0.5 cm. long. Stipulæ firmæ, pleræque 1.0–3.0 cm. long., 1.0–1.5 cm. lat., extant vero minores. Racemi non ultra 1.5 cm. long., hirsuto-tomentosi; pedicelli pubescentes, ipso sub flore leviter ampliati, 0.5–1.0 cm. long. Calyx 0.8–0.9 cm. long., vix totidem diam., carnosulus, puberulus. Corolla alba, 5.0–6.0 cm. long., extus pæne glabra, intus juxta staminum insertionem pubescens, ceteroquin glabra; tubus basi vix 0.5 cm. lat., paullo supra basin ad 0.3 cm. coarctatus, sub limbo 1.5 cm. diam.; limbus 3.0 cm. diam. Antherarum loculi divaricati, oblongi, puberuli, 0.4 cm. long. Discus vix 0.1 cm. alt., 0.3 cm. lat. Ovarium 0.25 cm. long., minutissime pubescens, longitrorsum costulatum; stylus incrassatus, glaber, 4.5 cm. long.; stigmatis brevissime exserti lobi rotundati, 0.15 cm. long.

Species distinctissima, ob indumentum et folia brevipetiolata faciliter cognoscenda.

*ANEMOPÆGMA DECORUM* (sp. nov.). Fere omnino glabrum, caule ascendente, gracili, quadrangulari; foliis modice petiolatis, bifoliolatis, ecirrhosis sive sæpissime longe ac simpliciter cirrhosis, foliolis petiolulatis, ovatis vel late ovatis, basi rotundatis, leviter cordatis, apice breviter cuspidatis, papyraceis, utrinque, præsertim vero pag. sup., refulgentibus; stipulis amplis, rotundato-ovatis, amplexicaulibus, quam petioli brevioribus; floribus solitariis, axillaribus vel paucis ex axillis foliorum superiorum ortis, subumbellatim dispositis; inflorescentiis ultimis cymulosis, plerumque bifloris; pedicellis, calycem excedentibus, una cum inflorescentiæ axibus, gracilibus; calyce abbreviato, tubuloso-campanulari, ore truncato, obsolete 5-dentato; corollæ calycem 8-plo excedentis tubo a basi sensim ampliato; limbi lobis rotundatis, obtusissimis; staminibus inclusis; disco parvo; ovario cylindrico minute tomentello, ovulis 4-serialibus.

*Hab.* Crescit ad Corumbá, ubi inveni florescentem mens. Jan. (N. 980.)

Caulis 0.15-0.2 cm. diam., longitrorsum striatus. Foliola 7.0-9.0 cm. long., 4.0-6.5 cm. lat., basi plus minus obliqua, margine repanda, minutissime pellucido-punctata; costæ secundariæ utroque latere 4-6, distantes, raro oppositæ vel suboppositæ, juxta marginem arcuatim et undulatim connexæ; petioli 2.0-3.0 cm. long., graciles, subteretes, petiolulos circa duplo excedentes; cirrhi tenues, sursum filamentosi, usque ad 12.0 cm. long.; stipulæ ad 1.5 cm. lat., modicæ vero 0.8-1.0 cm., obtusæ vel obtusissimæ, brevissime apiculatæ. Pedicelli plerumque 1.5-2.5 cm. long. Calyx 0.6-0.7 cm. long., carnosulus, puberulus, ore ciliato. Corolla obscure puberula, 5.0 cm. long., tubus basi 0.3 cm. lat., mox usque ad 1.0 cm. ampliatus, sub limbo circa 1.5 cm. diam., intus basi puberulus. Filamenta longiora 1.0 cm. supra basin corollæ fixa, omnia glabra et crassiuscula; antheræ divaricatæ, oblongæ, vix 0.4 cm. long.; staminodium filiforme 0.55 cm. long., 0.35 cm. supra basin corollæ insertum. Discus 0.04 alt., ore undulato. Ovarium 0.3 cm. long., paullo ultra 0.1 cm. diam., apice parum attenuatum; stylus crassiusculus, complanatus, glaber.

Species eximia, forte haud procul ab *A. Chamberlaynii* (*Bignonia Chamberlaynii*, Sims) intercalanda, insigniter divergens vero foliorum formâ, stipulis multo majoribus, etc. [Bras. Or.]

*ANEMOPÆGMA SYLVESTRE* (sp. nov.). Scandens, caulibus gracilibus, subteretibus, ad nodos tumidis, crebro patenti-fulvo-pubescentibus, mox glabris; foliis breviter vel longius petiolatis, bifoliolatis, nunc ecirrhosis, nunc petiolo pubescente, demum glabro, in cirrhum longum simplicem excurrente; foliolis, a petiolulis brevibus fulvo-pubescentibus suffultis, lanceolatis vel ovato-lanceolatis, acutis vel breviter cuspidato-acuminatis, basi aliquanto coarctatis, reticulato-nervosis, coriaceo-membranaceis, nitidis; stipulis magnis, rotundato-ovatis, acutis vel obtusis vel obtusissimis, quam petioli brevioribus vel subæquilongis; floribus sat magnis, pedunculo brevissimo insidentibus, solitariis vel binis; pedicellis abbreviatis, pedunculum multo superantibus; bracteis exiguis; calyce late tubuloso-campanulato, ore truncato vel summum undulato; corollæ calycem 6-plo excedentis tubo curvato, basi sat lato,

paullo supra calycem dilatato; staminibus inclusis; disco lato, crassiusculo, ovarium oblongum, compressum, puberulum, circa  $\frac{3}{8}$  æquante; ovulis 4-seriatis.

*Hab.* In ripis viget fl. Paraguay, dos Bugres, et Brasinho, ubi flores mens. Oct. præbet. (Nn. 433, 627, 634.)

Foliola ad 10·5 cm. long. (pleraque vero 7·5–9·0 cm.) et 3·0–4·5 cm. lat., glandulis vix pellucidis crebre instructa; costæ secundariæ utroque latere 6–8, distantes vel suboppositæ, inferiores oblique insertæ, supremæ patentēs; petioli vix ad 3·0 cm. long. (plerique 1·0–2·5 cm.), patentēs vel recurvi, petioluli plerumque 0·8–1·0 cm. long.; cirrhi usque ad 13·0 cm. long.; stipulæ pleræque circa 1·5 cm. long. et 1·0 cm. lat., glandulosæ. Pedunculi 0·2–0·3 cm. long., patenti-pubescentes. Pedicelli  $\pm$ 1·0 cm. long., patenti-pubescentes. Calyx subcarnosulus, fere glaber, 0·8 cm. long., ore 0·7–0·9 cm. lat., plus minus ciliato. Corolla fere glabra, alba, tubo dilute viridi in toto 5·0 cm. long.; tubus basi vix 0·5 cm. lat., sub limbo paullo ultra 1·0 cm. amplificatus, 4·0 cm. long., intus juxta staminum insertionem albo-pubescentis, ceterum glaber; limbi 3·0 cm. diam., lobi rotundato-ovati, obtusissimi, subæquales, 1·2–1·3 cm. lat. Filamenta 1·5 cm. supra basin corollæ inserta, complanata, crassa, glabra; antheræ glabræ, vix 0·35 cm. long. et 0·1 cm. lat. Discus circa 0·15 cm. alt. Ovarium 0·4 cm. long., superne sensim attenuatum; stylus complanatus, glaber, 4·0 cm. long.; stigma brevissime exsertum, lobi sui ovati, acuminati, vix 0·3 cm. long.

*Anemopaegmatis albæ*, Mart., proximum, speciei mihi nisi descriptione ignotæ; ab eâ, attamen, stirpem meam facili negotio discernere potes, præter alia, ob folia nunquam 3-foliolata. [Bras. Or.]

PITHECOCTENIUM SQUALUS, DC. Prod. ix. p. 194.

*Hab.* In sylvestribus ad Corumbá mens. Jan. florescit. (N. 979.) [Bras. Or.]

TABEBUIA NODOSA, Griseb. Pl. Lorentz. p. 175 (ex descript.).

Frutex altus vel arbuscula. Flores lutei. (N. 1053.)

*Hab.* Viget in ditone Chacoensi ad Puerto Pacheco, mens. Feb. florens.

I have no hesitation in naming my specimens as above. The species, curiously enough, is closely allied to some Cuban ones, notably *T. trachycarpa*, Griseb., as Grisebach himself notes. [Argentina.]

TABEBUIA CHAPADENSIS (sp. nov.). Fere glabra, fruticosa, ramosa, ramis validis, teretibus, glabris, sparsim foliatis; foliis longius petiolatis, trifoliolatis, foliolis breviter petiolulatis, ovatis, utrinque rotundatis, apice emarginatis, coriaceis, penninerviis; costis secundariis utroque latere 5–6 sub margine arcuatis; floribus pedicellatis in racemum corymbiformem pauciflorum, foliis brevioribus, e ramis defoliatis ortum dispositis; bracteis minutis, quam pedicelli multoties brevioribus; calycis tubuloso-campanularis ore breviter 5-dentato; corollæ calycem circa 5-plo excedentis tubo curvato, inferne gracili, imâ basi vero ampliore et superne sensim dilatato;

staminibus inclusis; disco incrassato, breviter cyathiformi; ovario cylindraco, ovulis 2-serialibus.

*Hab.* Crescit in cacumine montium Serra da Chapada, mens. Aug. florens. (N. 79.)

Frutex parvus, diffusus, præsertim sursum foliatus. Ramuli patentes et reverâ angulo fere recto ramis inserti, bruneo-cinerei, sparsim ac grosse lenticelliferi, longitrorsum crebre striati. Petioli 5.5-6.0 cm. long., subteretes, imâ basi leviter ampliati, striati; foliola paullo imparia (scilicet folium terminale paullo majus), 6.5-8.5 cm. long., 4.5 vix 6.0 cm. lat., basi parum obliqua, margine leviter undulata, impunctata, supra obscure nitida ibique manifeste reticulato-nervosa, subtus pallida; petioluli suffulciantes ad 1.0 cm. long., folioli terminalis petiolulus paullo longior. Racemus 5.0 cm. long., 6-florus. Pedicelli usque ad 1.7 cm. long., plerique minores ad vel infra medium bracteati. Bracteæ triangulares, villosa-ciliatæ, 0.04 cm. long. Calyx 0.8-0.9 cm. long., 0.6 cm. lat., puberulus, subcarnosulus. Corolla 4.5 cm. long., extus velutino-tomentosa, intus tomentella et ad staminum insertionem villosa, pallide purpurea, faucibus albis imâ basi 0.6 cm. lat., paullulum supra basin ad 0.3 cm. coarctata, sub limbo circa 1.5 cm. lat. Filamenta 0.6 cm. supra basin corollæ inserta, aliquanto incrassata, fere glabra; antheræ loculi divaricati, lineari-oblongi, 0.35 cm. long. Discus 0.1 cm. alt., vix 0.3 cm. diam. Ovarium 0.1 cm. lat.; stylus glaber, circa 2.5 cm. long.; stigmatis lobi ovati, acuminati, 0.25 cm. long. Capsula ignota.

Forsan ex affinitate *Tabebuia hemanthæ*, DC., et *T. tryphyllæ*, DC., sed multis signis ab ambabus dispar. [Ind. Occ.]

TABEBUIA AUREA?, Benth. et Hook. f. Gen. Pl. ii. 2, p. 1042. (*Bignonia aurea*?, Silva Manso.) Arbor formosa, usque ad 12-metralis, tempore florendi foliis orba vel etiamnum instructa, crebre ramosa, sursum solummodo foliigera; ramulis ultimis 0.6 cm. diam., fere rectis, ad foliorum insertionem paullo ampliatis, cinereis, lenticellis eminentibus ellipticis majusculis inspersis; foliis longipetiolaris (pet. usque ad 11.0 cm. long.), digitatim 5-foliolaris; foliolis oblongis vel oblongo-ovatis, obtusissimis, inferne obliquis ibique rotundatis, coriaceis, glabris (8.5-9.0 cm. long.), petiolulis elongatis fol. cent. eos fol. lat. semi-excedentibus, obesis, basi dilatatis, usque ad 5.0 cm. long. insidentibus; costâ mediâ subtus eminente; costis secundariis utrinque 6.7, angulo fere recto insertis, nonnunquam suboppositis, sub margine revoluto arcuatim et undulatim connexis; paniculæ quam folia breviores, ramis incrassatis, vix alatis, plurifloris; bracteis parvis, triangulari-ovatis, acutis, deciduis, 0.2 cm. long.; floribus brevipedicellatis; calyce 1.5 cm. long., medio 0.5 cm. lat., ad 0.4 cm. fisso; corollâ aureâ, vix 7.0 cm. long., sub limbo 2.0 cm. lat.

*Hab.* Inter Cuyabá et Serra da Chapada sat abundat, itaque ipsis in montibus; mens. Aug. floret. (N. 39.)

Silva Manso (Enum. Subst. Bras. p. 40) gives a very brief diagnosis of his *Bignonia aurea*, which was copied by De Candolle in the 'Prodromus.' My chief reason for thinking this plant to be the same as Manso's is that it is so common and so conspicuous an object near Cuyabá that it could scarcely have been overlooked by Manso's collectors;

moreover, I saw no other *Tabebuia* with golden flowers in the neighbourhood. On the other hand, mine differs from Manso's in the leaflets not being cordate at the base, and in being supported on petiolules sometimes at least half as long as the leaflet itself, and these could not be correctly described as "breviusculus," which is the term applied by Manso to the petiolules of his plant. Unfortunately, my only specimen of this tree is but a poor one, so that I cannot say whether the points of difference above-mentioned are or are not constant.

[*TABEBUIA AVELLANEDÆ*, Lorentz.

*Hab.* Crescit passim in provinciâ. Tempore florendi foliis caret. Flores rosacei.

This is the celebrated Lepacho tree, very well known in Paraguay, and a conspicuous feature in the August landscape some way up into Matto Grosso; our woodcutters found it even above Santa Cruz, the wood being in constant use for the furnace; indeed, for this purpose it is preferred to that of all other trees. Although I saw plenty of the trees, especially in passing up the river, I was unable to secure either flowering or fruiting specimens.] [Argentina, Paraguariâ.]

In hoc genus verisimiliter trahenda sunt specimina duo insequentia:—

- i. *TABEBUIA*, sp. indet. Arbuscula tempore florendi foliis orba, caule sat valido, undulato, a lateribus compresso, cinereo, glabro, longitrorsum striato; paniculis thyrsoides, pubescentibus, 15·0–18·0 cm. long., plurifloris; floribus purpureis, mediocribus, geminis, a pedicellis erectis, gracilibus, sub apice amplificatis fultis; calyce parvo, angusto, tubuloso, ore breviter subæqualiter 5-lobo, minute pubescente, 0·5 cm. long., 0·3 cm. lat.; corollæ, extus puberulæ, calycem 10-plo excedentis, tubo 5·0 cm. long., paullo supra calycem angustate, deinde sensim ampliato, sub limbo circa 1·5 cm. diam.; limbi 2·5 cm. diam., lobis rotundatis, obtusis; staminibus inclusis; filamentis, 1·0 cm. supra basin corollæ fixis, glabris. Nec folia nec fructus suppetebant.

*Hab.* Inveni in cacumine montium Serra da Chapada, inter Cuyabá et Santa Anna da Chapada, mens. Aug. florentem. (N. 201.)

This is closely related, in all probability, to the Lepacho, but very distinct in many points.

- ii. *TABEBUIA*, sp. indet. Fruticulus humilis, caule erecto, minute puberulo, subterete, inferne 0·7 cm. diam.; foliis longe ac obese petiolatis, 4–5-natis; foliolis exterioribus brevissime petiolatis, latere interiore basi excepto, omnibus coriaceis, supra puberulis, subtus minute pubescentibus, foliolorum reliquorum petiolulis laminâ 3–3½-plo brevioribus, foliolis obovato-oblongis, apice emarginatis, basi leviter cordatis; petiolis facie superiore late canaliculatis. Neque flores vidi nec fructus.

*Hab.* Crescit ad Santa Cruz, ubi *Para-todo* nuncupatur. (N. 555 a.)

Petiolis 11·0–15·0 cm. long., usque ad 0·5 diam., erecti, rigidi, longitrorsum striati, minute puberuli. Foliola exteriora 5·0–14·0 cm. long., paria interdum maxime inæqualia;

foliola interiora 12·0-18·0 cm. long., 5·0-9·0 cm. lat., omnia crebre pellucido-punctata; costæ secundariæ utrinque circa 6, una cum costâ mediâ subtus maxime eminentes: petioluli obesi, late canaliculati, 3·0-6·0 cm. long.

According to Silva Manso, the true *Para-todo* is his *Bignonia aurea*, already referred to, but the present plant is certainly different from that. Although I could get neither its flowers nor its fruit, I feel convinced that my plant is a *Tabebuia*, sessile external leaflets being characteristic of many species of the genus.

As its name implies, the plant is considered a universal specific by the credulous country-people.

JACARANDA CUSPIDIFOLIA, Mart. in Flora, xxiv. (1841) II. Beibl. 51.

*Hab.* Frequens in sylvestribus prope Santa Cruz, ubi flores et fructus simul fert mens. Sept. et Oct. (N. 337.)

Arbor gracilis, usque ad 12-metralis, ramis cinereis. Foliola 1·0-1·8 cm. long. Capsula 6·5 cm. long., 6·0 cm. diam. Semina 2·5 × 1·5 cm., nucleo 0·6 cm. diam.

The species is endemic in Matto Grosso.

#### ACANTHACEÆ.

HYGROPHILA LONGIFOLIA, Nees in Mart. Fl. Bras. ix. p. 21.

*Hab.* Crescit in ripis fl. Paraguay prope Santa Cruz, mens. Sept. florens. Erecta, ultrametralis. Flores purpurei. (N. 322.) [Bras. Or., Uruguaria, Mexico.]

STEPHANOPHYSUM LONGIFOLIUM, Pohl, Ic. Plant. Bras. ii. p. 85.

*Hab.* In sylvestribus montium Serra de Tapirapuan mens. Sept. floret. (N. 384.) [Bras. Or., Amazonia, Peruvia.]

RUELLIA PURI, Mart. ex Nees in Mart. Fl. Bras. ix. p. 35.

*Hab.* Crescit in angustiis montium Serra da Chapada, mens. Aug. florens. (N. 71.) [Bras. Or.]

RUELLIA PURI, Mart., var. LONGIPETIOLATA (var. nov.).

Foliorum inferiorum petioli 4·5 cm. long., et lamina dimidio breviores.

*Hab.* Reperi ad Serra da Chapada mens. Aug. florentem. (N. 174.) Planta deorsum aphylla. Flores purpurei.

RUELLIA GEMINIFLORA, H. B. K. Nov. Gen. et Sp. ii. p. 240.

*Hab.* Frequens inter Cuyabá et Santa Cruz, ubi floret mens. Sept.-Nov. (N. 605.) [Amer. Austr. Trop. et Subtrop., Ins. Trinitatis.]

RUELLIA GEMINIFLORA, H. B. K., var. NUDIPES (var. nov.). Caulis sursum solummodo foliatus. Folia parva, ovata vel lanceolata, 2·0- vix 3·0 cm. long., hirsutulo-pubescentia. Corolla, extus pubescens, 3·0-3·5 cm. long. Antheræ oblongæ, basi acutæ, 0·35-0·38 cm. long.



*Hab.* Inter Cuyabá et Serra da Chapada satis abundat, mens. Aug. flores lilacinos ostendens. (N. 43.)

*RUELLIA HUMILIS*, Pohl, ex Nees in Mart. Fl. Bras. ix. p. 39.

*Hab.* Crescit in arenosis apertis juxta Santa Cruz, mens. Nov. flores lacteos præbens. [Bras. Or., Goyaz, Guiana.]

Huic generi etiam refero specimina duo nimis manca et reverâ floribus orba, nempe:—

i. *RUELLIA* (§ *DIPTERACANTHUS*), sp. affinis *R. patulæ*, Salzmänn.

*Hab.* Fructificat ad Santa Cruz mens. Nov. (N. 582.)

ii. *RUELLIA* (§ *CRYPHIACANTHUS*), sp. nov. ? Accedens ad *C. udum*, Nees, plantam mihi non obviam et ex descriptione solum cognitam. Stirps nostra a *C. udo* abhorret foliis petiolatis, calycis glabri (nequaquam hirsuti) laciniis angustissimis, 1.1 cm. long., capsulam æquantibus.

*Hab.* Ad Corumbá lecta mens. Jan. (N. 964.)

*STENANDRIUM PRÆCOX* (sp. nov.). Scaposus, rhizomate valido, noduloso, radices longissimas parce fibrillosas emittente, scapis folio unico parvo nondum expanso basi munitis, pubescentibus, crassiusculis; floribus sat magnis, sessilibus, confertis; bracteis lanceolatis acutis vel acutiusculis, calycem excedentibus; bracteolis bracteis similibus nisi multo minoribus; calycis inæquipartiti lobis lanceolatis acutis; bracteolis longioribus; corollæ sat magnæ tubo parum curvato, faucibus brevibus et parum ampliatis; limbi lobis posticis brevioribus et altius connatis; antheris barbellatis; capsulâ ignotâ.

*Hab.* Exemplarium unicum reperi in sylvâ juxta Santa Cruz mens. Sept. florens. (N. 293.)

Rhizoma 0.4 cm. crass.; radices ad 22.0 cm. long., primo tenues, mox quodammodo incrassatæ; fibrillæ tenuissimæ, simplices vel subsimplices. Folia petiolata, adulta oblanceolata (?), obtusa, subtus fulvo-tomentosa. Scapi ad 14.0 cm. alt., triente superiore florigeri, minute pubescentes, saltem in sicco lateraliter compressi. Bracteæ 0.35–0.5 cm. long., firmæ, erectæ, utrinque minute pubescentes, albido-hirsutulo-ciliatæ; bracteolæ 0.2 cm. long., ciliatæ. Flores dilute purpurei. Calycis lobi 0.25–0.3 cm. long., usque ad 0.1 cm. lat., membranacei, extus puberuli, margine ciliolati. Corollæ extus pubescentis tubus 0.7 cm. long., basi 0.13 cm. lat., faucibus 0.3 cm. diam.; limbi circa 1.3 cm. diam., lobi antici 0.65–0.7 cm. long., 0.4 cm. lat., lobi postici 0.45 cm. long., vix 0.3 cm. lat.; corolla intus, palato crispe pubescente exempto, glabra. Filamenta antheris æquilonga, glabra, 0.5 cm. supra basin corollæ fixa; antheræ parum inæquales, usque ad 0.1 cm. long.

Nulli nisi *S. Riedeliano* affine, sed, præter alia, floribus præcocibus, confertis, majoribus, et bracteis longioribus, calycem inæquipartitum excedentibus, faciliter distinguendum. [Bras. Or.]

*STENANDRIUM AFFINE* (sp. nov.). Humilis, caulescens, radicibus pluribus orthotropis seu plagiotropis, in initio attenuatis, mox incrassatis, fere simplicibus; caule erecto-

simplici vel sursum parum ramoso, patenti-hirsuto-hispidulo, dein pubescente; foliis subsessilibus, raro brevissime petiolatis, lanceolatis vel lanceolato-oblongis, obtusis vel acutiusculis, basi leviter attenuatis, margine ciliatis, ceteroquin appresse pilosis, nequaquam nitentibus; spicis abbreviatis, paucifloris, pedunculis sat elongatis, sæpe folia excedentibus, axillaribus vel terminalibus, hispidulo-hirsutis, aphyllis; bracteis lanceolatis, acutis vel acuminatis, nunquam apice ipso leviter incrassatis, longe ciliatis; bracteolis subulatis, calycem semi-æquantibus, dorso puberulis, margine ciliolatis; calycis lobis parum inæqualibus, lineari-lanceolatis; corollæ tubo, calycem paullo excedente, parum curvato, faucibus brevibus, lobis posticis paullulum altius connatis, lobo antico majusculo; capsula ignota.

*Hab.* Viget circa Santa Cruz, ubi mens. Nov. floret. (N. 588.)

Radices ad 6·0 cm. long., nunc subito, nunc gradatim incrassatæ, undulatæ, nec ultra 0·15 cm. diam. Caulis semispithameus vel minus, teres, sursum tantummodo foliiger. Folia plerumque 2·0-3·5 cm. long., 0·8-1·0 cm. lat., inferiora plerumque minora et interdum fere obsoleta; costæ secundariæ utrinque modo 3-4, oblique insertæ, ascendentes, inde margini parallelæ, par infimum subobsoletum; costa media subtus maxime prominula, crassiuscula, in sicco pilis strigosis albidis plus minus dense obsita. Pedunculi plerique 1·0-4·0 cm. long., una cum caule pilis plerumque ochraceis vel subfulvis, raro albidis instructi. Spicæ pleræque circa 1·0 cm. long., raro 1·7 cm. attingentes. Bracteæ 0·5-1·0 cm. long., arcte imbricatæ, dorso appresse strigoso-pilosæ, 5-nerves, reticulato-nervosæ; bracteolæ circa 0·2 cm. long., firmæ, carinulatæ. Flores albi, faucibus luteolis. Calyx vix 0·4 cm. long.; lobi acuminati, dorso puberuli. Corollæ circa 0·7 cm. diam. tubus vix 0·5 cm. long., 0·07 cm. diam., faucibus antice fulvo-pubescentibus; limbi lobi postici obovati, 0·25 cm. long.; lobi laterales postici subsimiles nisi paullo longiores; lobus anticus rotundato-ovatus, extus pilosulus, intus basi fulvo-pubescentis. Filamenta antheris breviora, 0·23 cm. supra basin corollæ inserta; antheræ dense albo-barbellatæ, 0·12 cm. long. Ovarium oblongum, 0·12 cm. long., glabrum; stylus vix 2·5 cm. long.; stigma 0·03 cm. long.

Species inter *S. hirsutum*, Nees, et *S. villosum*, Nees, ambigens, et certo ambobus arcte affinis. Ab illo abhorret staturâ humiliore, spicis abbreviatis, bracteis minoribus haud elliptico-oblongis obtusis cum mucronulo, bracteolis puberulis comparate longioribus nec calyce  $\frac{1}{3}$  brevioribus et glabris, corollæ tubo brevioris et limbo diam. minore, etc. Ab *S. villoso* distat, inter alia, ob indumentum dispar, et corollam albam nec rubro-violaceam. [Bras. Or.]

**STENANDRIUM SPATHULATUM** (sp. nov.). Caulescens, herbaceum, subspithameum vel pusillum; radicibus elongatis, simplicibus, plus minus plagiotropicis, in initio tenuibus, mox paullo ampliatis; caule rhizomate brevi, erecto, simplici vel sparsim ramoso, minute tomentoso; foliis ovatis vel obovatis, obtusissimis, nonnunquam levissime emarginatis, in petiolum brevem sensim desinentibus, interdum vero basi subrotundatis, firmis, membranaceis; spicis simplicibus, brevibus, a foliis superatis, pedunculatis vel subsessilibus, densi- et paucifloris; bracteis elongatis, spathulatis,

calycem excedentibus, hispidulo-puberulis; bracteolis, calyce multo brevioribus, subulatis; calycis lobis manifeste inæqualibus; corollæ tubo, calyci subæquilongo, deorsum et in faucibus ampliato; lobis posticis reliquis minoribus et altius connatis; antheris apice barbellatis; capsulâ oblongâ, 4-spermâ, seminibus hispidulis.

*Hab.* Crescit ad Corumbá, ubi mens. Jan. florescit. (No. 958.)

Herba parva, interdum nec ultra 4·0 cm. alt. Rhizoma parum tortuosum vel rectum, usque ad 0·25 cm. diam., sæpe vero tenuius; radices ad 7·0 cm. long. et 0·1 cm. diam., in sicco una cum rhizomate bruneæ. Caulis teres, 0·1 cm. diam., rectus, nodis nequaquam tumidis. Folia spec. majoris ad 6·5 cm. long. et 3·6 cm. lat., specc. minorum nec ultra 3·3 cm. long. et 1·9 cm. lat., omnia subtus decoloria; costæ secundariæ utroque 4–6, suboppositæ vel alternantes, costæ mediæ oblique insertæ. Spicæ, pedunculo haud exempto, 1·0–2·0 cm. long.; pedunculi soli nonnunquam 1·0 cm. attingentes, minute tomentosi; spicæ ipsæ 1·0–1·5 cm. long., 1·0–1·3 cm. diam. Bracteæ 0·7–0·8 cm. long., inferne late lineares, superne subito spathulato-dilatatae, plane reticulato-nervosæ, margine ciliatæ. Bracteolæ vix 0·2 cm. long., puberulæ. Flores dilute punicei. Calycis 0·5 cm. long., lobi anguste lineares, acutati, puberuli. Corollæ extus puberulo-pilosæ tubus intus puberulus, vix 0·5 cm. long., basi 0·18 cm. lat., ad staminum insertionem usque ad 0·1 cm. coarctatus, faucibus circa 0·25 cm. diam.; labii antici, 0·65 cm. long., lobi laterales oblongi, lobus intermedius ovatus, basi pubescens, omnes obtusi; labii postici lobi ad  $\frac{1}{4}$  connati, oblongi, obtusiusculi, lobis anticis paullo breviores. Stamina 0·28 cm. supra basin corollæ affixa; filamenta antheris duplo breviora; antheræ anguste lineares, 0·12 cm. long.; staminodium brevissimum. Ovarium oblongum, apice ipso subito angustatum, puberulum, 0·17 cm. long.; stylus 0·25 cm. long., sursum parum incrassatus ibique pilosulus; stigmatis lobi abbreviati. Capsula pallida, 0·6 cm. long.; valvæ obtusæ, puberulæ. Semina brunea, 0·15 cm. diam., retinaculis apice dilatatis fulta.

Nulli nisi *Stenandrio mandioccano*, Nees, affine, abs quo abhorret staturâ humili, foliis disparibus, bracteis multo minoribus etiamsi satis similibus, floribus minoribus haud pubescentibus, capsulis haud fuscis. [Bras. Or.]

**ERANTHEMUM CONGESTUM** (sp. nov.); caule e rhizomate elongato, ascendente, parum ramoso, geniculato, pubescente, mox glabro et cortice laxo cervino annulatim et lemniscatim disrupto obtecto; foliis æqualibus vel subæqualibus, ad apicem ramulorum novellorum confertis, parvis, sessilibus, lanceolatis vel ovato-lanceolatis, raro ovatis, obtusis vel acutiusculis, deorsum attenuatis, subtus puberulis; floribus, ex axillis foliorum superiorum ortis, breviter pedunculatis; bracteis bracteolisque subæqualibus, lineari-lanceolatis, acuminatis, pedicello subæquilongis; calycis lobis linearibus, acuminatis; corollæ parvæ calycem circa 3-plo excedentis limbi lobis æqualibus; staminibus subsessilibus; antheris inclusis, basi obtusis; disco cupulari, ovario late oblongo, stylo apice bilobo, capsulâ generis.

*Hab.* In sylvis reperi prope vicum Jangada mens. Sept. pl. florentem et fructificantem. (N.º 264.)

Semimetrale vel minus. Caulis, ramulis novellis exemptis, omnino aphyllus, subteres, juveniles compressiusculi et, secus lineas duas crispe pubescentes, dein glabri. Folia usque ad 4.3 cm., plerumque vero 2.0-3.0 cm. long., 1.0-1.5 cm. lat., membranacea, subtus decoloria; costæ secundariæ utrinque circa 4, superiores eximie fornicatæ, inferiores primo subrectæ, dein arcuatæ. Pedunculi 0.25 cm. long., 0.075 cm. lat., puberuli. Bracteæ et bracteolæ circa 0.25 cm. long., dorso minute pubescentes. Flores dilute cærulei. Calyx 0.5 cm. long., fere usque ad basin minute pubescens. Corollæ tubus, extus puberulus, 1.4 cm. long., basi 0.16 cm., medio vix 1.0 cm., superne fere 0.2 cm. lat.; limbi lobi oblongi, obtusi, 0.55 cm. long. Filamenta, 1.0 cm. supra basin corollæ fixa, vix 0.1 cm. long.; antheræ 0.22 cm. long.; staminodia abbreviata, filiformia, filamentis paullo breviora. Ovarium 0.15 cm. long. Capsula 1.6-1.8 cm. long., obscure puberula, pars seminifera 0.9 cm. long.; valvæ acutatæ; retinacula obtusa, 0.2 cm. long. Semina 0.25 cm. diam., cinerea, minute scrobiculata

Affine *Eranthemo heterophyllo*, Nees, cujus folia attamen nequaquam congesta et multo majora, flores majores, antheræ multo breviores et filamentis duplo longioribus fultæ, ovarium anguste lineare nec late oblongum, et capsula longior. [Bras. Or.]

CHÆTOTHYLAX TOCANTINUS, Nees, in Mart. Fl. Bras. ix. p. 140.

*Hab.* Inveni in ripâ fl. Paraguay, juxta Santa Cruz, mens. Sept. (N. 306.) [Bras. Or., Goyaz.]

JUSTICIA (§ GENDARUSSA) OREADUM (sp. nov.); caule ascendente, obscure tetragono, passim geniculato, striato, pubescente, mox glabro et nitido; foliis amplis, late ovato-lanceolatis, longe acuminatis, basi in petiolum 1.2-2.5 cm. long. attenuatis, utrinque subappresse pilosis, tenuiter membranaceis; spicis solitariis, terminalibus, foliis brevioribus, simplicibus, pubescenti-tomentellis, pedunculo brevi pubescente vel puberulo insidentibus; bracteis parvis, lineari-lanceolatis, leviter acuminatis, calycem subæquantibus vel excedentibus; bracteolis lineari-lanceolatis, quam calycis segmenta inæqualia ejusdem formæ fere duplo brevioribus, omnibus (sc. brac., bracteol., et cal. seg.) pubescentibus; corollæ majusculæ tubo, calycem  $2\frac{1}{2}$ -plo excedente, quam limbus paullo longiore, recto, medio constricto, sursum valde amplificato; disco lobato, quam ovarium 3-plo brevior; ovario oblongo, obtuso, puberulo; stigmatate simplici.

*Hab.* Inveni in vallecule umbrosâ in montibus Serra da Chapada ad circa 300 met. alt. supra mare. (N. 172.)

Ultrametralis, diffusus, superne tantum foliatus. Folia ad 17.0 cm. long. (sæpius vero circa 12.0 cm.), 4.5-6.5 cm. lat., margine repanda, basi subito vel gradatim attenuata; costæ secundariæ utrinque circa 10, inferiores fere rectæ, superiores arcuatæ; venulæ laxè reticulatæ, inconspicuæ; petioli circiter 1.5 cm. long., mox piloso-puberuli, sursum anguste alati. Spicæ circa 6.0 cm. long., erectæ; pedunculi 1.3-2.0 cm. long. Bracteæ fl. inf. ad 0.8 cm., fl. sup. 0.4-0.5 cm. long., uninerviæ. Bracteolæ vix 0.3 cm. long. Calycis segmentum posticum reliquis fere 0.5 cm. long. paullo

angustius et modo 0·35 cm. long. Alabastrum aperiens 2·0 cm. long., extus minute pubescens. Corollæ subviridis purpureo-lineatæ tubus 1·1 cm. long., basi 0·2 cm., sursum 0·6 cm. lat.; labium anticum vix 1·0 cm. long. et lat., late obovatum, ad 0·15 cm. obtusissime trifidum; labium posticum antico paullo brevior, rotundato-ovatum, obtusum, integrum. Stamina ad 0·8 cm. a basi corollæ inserta; filamenta cava, aliquanto complanata, 0·7 cm. long.; connectivus crassiusculus; antherarum loculi elliptici, complanati; loc. superior apice breviter apiculato, loc. inferior calcari brevi albo curvato instructus. Discus conspicuus, 0·07 cm. alt. Ovarium circa 0·2 cm. long. et 0·08 cm. lat., subcompressum; stylus 1·2 cm. long., basi obsolete pilosula. Capsulæ desiderantur.

Species distinctissima, nec cum ullâ congenerum mihi cognitâ conferenda.

**JUSTICIA** (§ AMPHISCOPIA) **METALLICORUM** (sp. nov.). Spithamea, radicibus elongatis, fibratis, rectis vel paullo undulatis, cinereis, radicellis paucis tenuissimis exemptis simplicibus; caule e rhizomate brevissimo, crassiusculo, crebre radigero, assurgente, terete, simplici (an semper?), tenui, dimidio inferiore aphylo, obscure geniculato; foliis aliquanto confertis, ovatis acutis vel obtusis, raro parum cuspidatis, deorsum in petiolum perbreve gradatim desinentibus, membranaceo-coriaceis, puberulis; spicâ terminali foliis subæquilongâ deorsum e spicis oppositis brevibus sursum simplici pubescente; bracteis, bracteolis, calycisque segmentis pilis glandulosis et simplicibus, hirsutulis, illis obovatis acutis, calyce brevioribus; bracteolis lanceolatis, bracteis æquilongis; calycis 5-partiti segmentis linearibus acutis; corollæ mediocris tubo limbo subæquilongo, fere recto, sursum gradatim ampliato; disco cupulari; ovario oblongo, triquetro, pubescente; stigmati spatulari; capsulâ oblongâ, acuminatâ, compressâ, minute pubescente; seminibus 4, retinaculis truncatis suffultis.

*Hab.* Reperi inter Cuyabá et Serra da Chapada mens. Aug. flores et fructus simul ostendentem. (N. 44.)

Radices ad 13·0 cm. long., in initio 0·1 cm. diam., sensim attenuatæ. Caulis levis, in sicco prasinus, circa 0·15 cm. diam., in nodis vix tumidus, sed, floribus dilapsis, plane nodulosus; internodia lineâ longitudinali pilosâ instructa. Folia ad 6·0 cm. long., plerumque vero 4·0–4·5 cm., medio 2·2–2·8 cm. lat., pag. inf. dilutius virentia: costa media subtus eminens, costæ secundariæ utrinque 5–7, sub margine obscure arcuatim injectæ. Spica 6·0 cm. long., pedunculo 1·5 cm. long. sustenta. Bracteæ 0·6 cm. long., 0·35 cm. lat., uninerviæ, firmæ, in sicco virentes. Bracteolæ 0·6 cm. long., acutæ, deorsum sensim coarctatæ. Calycis segmentum posticum reliquis minus, hæc 0·65 cm., illud 0·55 cm. long. Alabastrum aperiens 1·15 cm. long. Corollæ pubescentis tubus 0·5 cm. long., basi 0·17 cm. lat., sub fauce ad 0·3 cm. amplificatus; labium anticum vix 0·7 cm. long. et lat., late obovatum, ad 0·13 cm. alt., obtusissime trifidum; labium posticum antico breve, æquipede-triangulari, marginibus inflexis; palatus convexus, nervosus. Stamina ad 0·4 cm. a basi corollæ affixa; filamenta cava, sub antherâ angustata; connectivus expansus; anthera inferior (calcari incurvo incluso) 0·12 cm. long. Discus obsolete crenellatus, 0·04

cm. alt. Ovarium 0.33 cm. long., sursum in stylum puberulum duplo longiorem gradatim attenuatum. Capsula 0.6 cm. long., stipite 0.15 cm. lat. fulta. Semina plano-compressa, suborbicularia, 0.17 cm. diam., fusco-brunea, tuberculis minimis albidis inspersa.

Ex affinitate *Justiciæ pilosæ*, Benth. et Hook. f. (*Adhatodæ pilosæ*, Nees), cujus folia et spicæ longe dispares, etc. [Amazonia, Peruvia.]

**JUSTICIA** (§ AMPHISCOPIA) **CHAPADENSIS** (sp. nov.). Bipedalis, caule elato, folioso, subterete, ad nodos tumido, cito glabro; foliis brevipetiolatis, lanceolatis, acutis vel obtusis, basi gradatim coarctatis, glabris, membranaceo-coriaceis; foliis brevioribus, simplicibus, aggregatis, pubescentibus; spicis axillaribus vel terminalibus; bracteis, bracteolis, calycisque segmentis hirsutis, parce glandulosis, illis late ovatis acutiusculis, calycem paullo excedentibus; bracteolis lanceolatis, calycem subæquantibus; calycis segmentis anguste linearibus, inæqualibus (sc. seg. postico reliquis brevioribus); corollæ mediocris tubo calycem subæquante, sed limbo brevioribus, cylindræo, superne parum ampliato; disco anguste cupulari; ovario oblongo-ovoideo, pubescente; stigmate breviter bifido; capsulâ oblongâ acutâ, compressâ, minute pubescente; seminibus 4, retinaculis truncatis fultis.

*Hab.* Vigebat mens. Aug. in angustiis montium Serra da Chapada ad circa 300 met. alt. (N. 199.)

Caulis circa ad 0.25 cm. diam., nodis ad 0.4 cm. incrassatis, prasinus. Folia pleraque 7.0-12.0 cm. long. et 3.0-4.0 cm. lat., margine obscure undulata, firma, in sicco supra viridia, subtus lutescentia, costæ secundariæ utrinque circa 10, leviter arcuatæ, demum margini parallelæ; petioli circa 0.5 cm. long., canaliculati. Spicæ 0.4-0.7 cm. long., pedunculis 1.0-1.5 cm. long. sustentæ, superiores subsessiles. Bracteæ 0.8 cm. long., 0.4 cm. lat., uninerviæ, firmæ, in sicco virides; bracteolæ 0.7 cm. long., uninerviæ, deorsum sensim angustatæ. Calycis segmentum posticum 0.5 cm., seg. antica 0.6 cm. long. Alabastrum aperiens vix 1.3 cm. long. Corollæ albæ purpureo-maculatæ pubescentis tubus 0.53 cm. long., basi 0.2 cm. lat., sub fauce 0.4 cm.; labium anticum 0.7 cm. long., 0.8 cm. lat., ad 0.13 cm. obtusissime trifidum; labium posticum antico brevius, ovato-cuspidatum, marginibus planis; palatus convexulus, nervosus. Stamina ad 0.4 cm. a basi corollæ affixa; filamenta cava, superne leviter angustata; connectivus expansus; anthera superior (calcare curvato incluso) vix 0.2 cm. long. Ovarium circa 2.5 cm. long., sursum in stylum puberulum 4-plo longiorem subito attenuatum. Capsula 0.7 cm. long., rugosula, stipite 0.2 cm. lat. fulta. Semina suborbicularia, 0.15-0.17 cm. diam., fusco-brunea, tuberculis minutis albidis inspersa.

Stirpis hujus exstat varietas insequens:—

**Var. NUDICAULIS**, caule geniculato deorsum, nudo; foliis parvis nec ultra 7.0 cm. long. et 2.2 cm. lat.; bracteis ovato-lanceolatis vel lanceolatis, acuminatis.

*Hab.* Crescit ad Santa Cruz, ubi flores dilute purpureos fert mens. Sept. (N. 294.)

Species præcedenti arcte affinis, sed, præter signa levioris momenti, primo obtutu agnoscenda ob folia disparia et bracteas latiores. [Amazonia, Peruvia.]

*BELOPERONE NODICAULIS*, Nees in Mart. Fl. Bras. ix. p. 140.

*Hab.* Planta metralis; flores puniceos præbuit ad Santa Cruz mens. Sept. (N. 306.)  
[Bras. Or., Goyaz.]

*BELOPERONE RIPARIA* (sp. nov.). Siccitate nigricans, caule tenui, subtetragono, geniculato, parum noduloso, puberulo, mox glabro, et albido vel fusco-cinereo; foliis petiolatis, utrinque (præsertim apice) longe acuminatis, supra, præsertim in nervis, minute puberulis, subtus pubescentibus, deinde puberulis; spicis quam folia multoties brevioribus in axillis supremis solitariis (an unquam vere terminalibus?), pedunculis brevibus validis insidentibus; bracteis parvis, lineari-lanceolatis, longe acuminatis, calyce longioribus; bracteolis lineari-subulatis, calycem subæquantibus; calycis 5-partiti segmentis subæqualibus, anguste lineari-lanceolatis acutis; corollæ calycem multo excedentis tubo recto, limbum subæquante, sursum leviter ac gradatim amplificato; labio antico late oblongo ultra medium 3-lobo, labio postico erecto lanceolato integro; disco cupulari; ovario oblongo, apice subito in stylum 3-plo longiorem desinente; capsulâ . . . .

*Hab.* Juxta Corumbá legi florentem mens. Jan. (N. 1047.)

Caulis deorsum aphyllus, striatus, sparsim lenticellifer. Folia 5·0–11·0 cm. long., 2·5–4·5 cm. lat., tenuiter membranacea; petioli 1·0–1·5 cm. long., puberuli, sursum alati, anguste canaliculati; spicæ nec ultra 3·0 cm. long., puberulæ, pedunculis circa 0·5 cm. long. fultæ. Bracteæ 0·8 cm. long., basi nec ultra 0·1 cm. lat., firmæ. Bracteolæ inæquales circa 0·4 cm. long. Flores purpurei. Calycis segmenta minute puberula, 0·4 cm. long. Alabastrum aperiens 0·5 cm. long. Corollæ extus pubescentis tubus circa 1·0 cm. long., basi 0·1 cm., superne 0·2 cm. lat.; lobus medius lateralibus duplo latior, omnes erecti; labium posticum antico æquilongum. Stamina faucibus ipsis inserta; filamenta 0·15 cm. long.; connectivus filiformis, antheræ ellipticæ, 0·2 cm. long., locus inferior breviter calcaratus. Ovarium 0·16 cm. long., compressum, glabrum; stylus 0·8 cm. long., glaber.

Species distinctissima, nulli affinis mihi aut scrutatione aut descriptione cognitæ.

*DIANTHERA PECTORALIS*, F. G. Gmel. Syst. Veg. p. 36.

*Hab.* In sylvis primigeniis juxta Santa Cruz floret mens. Sept. (N. 348.)  
Flores dilute purpurei. [Amer. Trop.]

*DIANTHERA PALUDOSA* (sp. nov.). Sesquipithamea vel ultra, caule e basi repente ad nodos radicante, erecto, crasso tetragono, omnino herbaceo, albide villosulo-pubescente, deinde puberulo; foliis subsessilibus oblongis vel oblongo-lanceolatis, obtusis vel obtusissimis, basi obtusis vel leviter cordatis et parum amplexicaulibus, subtus, præsertim in costâ centrali, appresse pubescentibus, supra fere omnino glabris; floribus mediocribus, in spicas ex axillis superioribus ortas, pedunculatas, paucifloras unilateraliter digestis; bracteis bracteolisque pusillis, calyce multoties brevioribus; calycis alte 5-partiti lobis acuminatis, lobo postico reliquis paullo brevioribus; corollæ

calyci subæquolongæ tubo basi sensim dilatato, faucibus parum constrictis; labio postico verisimiliter integro, labio antico fere usque ad basin diviso; staminibus labio postico paullo brevioribus; antheris subæqualibus, alterâ sursum, alterâ lateraliter spectantibus, hâc (sc. antherâ inferiore) basi obscure mucronatâ; disco cyathiformi, ore lobulato vel subtruncato; capsulâ oblongo-ovoideâ, lateraliter compressâ, tetraspermâ.

*Hab.* In paludibus ad Corumbá floret mens. Jan. (N. 941.)

Radices fibrosæ, undulatæ, sparsim fibrillatæ, fuscæ. Caules circa 4.0-5.0 cm. diam., interdum parum geniculatæ, ad nodos obscure tumidæ. Folia 5.0-8.0 cm. long. (pleraque 6.5-7.5 cm., infima nonnunquam nec ultra 3.0 cm.), 1.5-3.0 cm. lat., plerumque vero 2.0-2.5 cm., tenuiter membranacea; costæ secundariæ utrinque circa 12, oblique ascendentes, levissime fornicatæ, inferiores approximatae; petioli modo 0.2-0.4 cm. long., pubescentes. Spicæ 2.0-4.0 cm. long., solemniter 4-8-floræ, pedunculis saltem basi villosulo-pubescentibus 1.5-5.5 cm. long. insidentes. Bracteæ et bracteolæ ovato-lanceolatæ, breviter acuminatæ, puberulæ, circa 0.1 cm. long. Flores purpurei. Calycis 0.75 cm. long., lobi lineari-lanceolati, carinulati, puberuli. Corollæ tubus 0.53 cm. long.; labii antici, 0.7 cm. long., lobi oblongi, obtusi, 0.6 cm. long., 0.2 cm. lat.; labium posticum ovato-oblongum, 0.45 cm. long.; palatus vix inflatus. Antheræ circa 0.1 cm. long. Discus 0.05 cm. alt. Ovarium oblongum, glabrum, vix 0.15 cm. long., 0.75 cm. lat.; stylus pilosiusculus, 0.8 cm. long.; stigmatis lobus alter abbreviatus, alter oblongus, 0.03 cm. long. Capsulæ 1.5-1.8 cm. long. pars seminifera 1.0 cm. long.; valvæ acutatae. Semina levia, margine fimbriolata, dilute brunea, 0.4 cm. diam., retinaculis obtusis suffulta.

*Diantheræ obtusifoliæ* (*Rhytiglossæ obtusifoliæ*, Nees) arcte affinis, sed ob habitum crassiorem, indumentum, et folia diversiformia vix ejus varietas. Itaque non dubito quin ad specimina Amazonica a cl. Spruce ad Santarem (n. 366) et a cl. Traill ad Montalegre (n. 652 in Hb. Kew.) lecta accedat, quâcum equidem vix conspecifica foliis latioribus et glabrioribus, spicis pauciusfloris et brevius pedunculatis, floribus minoribus, signisque aliis. [Bras. Or., Amazonia, Argentina, Guiana, Texas.]

DIANTHERA POLYGALOIDES (sp. nov.); caule humili, erecto, patenti-hirsuto, deinde pubescente vel puberulo; foliis integerrimis, subsessilibus, lineari-lanceolatis, utrinque acutatis, membranaceis, hirsutis, cito pilosis; floribus parvis, in spicas subdensi- et paucifloras, hirsutas pubescentesve, folia plerumque subæquantibus dispositis; bracteis bracteolisque lineari-lanceolatis, calyce brevioribus; calycis lobis subæqualibus, lobo postico deficiente; corollæ tubo quam calyx brevioris, faucibus paullulum ampliatis; labio postico attenuato, apice emarginato aut æquilongo; staminibus a labio postico bene superatis; antheris subæqualibus, loculo superiore transverso, inferiore basi obtuso vel mucronulato nec calcarato; disco cupulari, ore brevissime lobulato; stylo apice integro; capsulâ et seminibus haud visis.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 667.)

Rhizoma sat tenue, radices crebras parce fibrillosas, sæpe longe ac anguste tuberosas emittens; tubera usque ad 4.5 cm. long. et 0.3 cm. lat., pleraque vero breviores et



angustiores. Caules fere usque ad 20·0 cm. alt., modici vero circa 15·0 cm., subtetragoni; nodi inferiores approximati et folia hebetata perferentes. Folia 4·5–6·0 cm. long., 0·35–0·7 cm. lat., erecta, petiolis perbrevibus hirsutis insidentia; costæ secundariæ utrinque circa 5, erecto-ascendentes, parum conspicuæ. Spicæ usque ad 7·0 cm. long., sæpius vero circa 5·0 cm.; pedunculi plerique 1·5–3·0 cm. long., erecti. Bracteæ et bracteolæ hirsutulæ vel hirsuto-pubescentes; illæ 0·5 cm., hæ 0·4 cm. long. Flores purpurei, faucibus albo-striatis. Calyx 0·65 cm. long., hirsutulo-pubescentis; lobi acutati, margine ciliati. Corollæ extus pubescentis tubus 0·4 cm. long., 0·2 cm. lat.; labia 0·6 cm. long.; labii antici lobi 0·3 cm. long., lobi laterales oblongi, intermedius late ovatus, omnes obtusi, plus minus crenulati; labium posticum oblongum, sursum angustatum; palatus bene prominulus. Filamenta omnino filiformia; antherarum loculi 0·1 cm. long., connectivo late sejuncti. Discus 0·03 cm. alt. Ovarium oblongum, vix 0·2 cm. long., sursum attenuatum, glabrum, in stylum 4-plo longiorem desinens.

A *Diantherá angustifoliá* (*Rhytiglossá angustifoliá*, Nees) satis distat ob plurima signa, nempe humilitatem, caulem hirsutum, folia disparia, calycis lobos ciliatos, flores minores, etc. [Goyaz.]

#### VERBENACEÆ.

LANTANA CAMARA, Linn. Sp. Pl. ed. I. p. 627.

*Hab.* Reperi ad Cuyabá, itaque ad Serra da Chapada. (Nn. 22, 128.) [Amer. Trop.]

LANTANA SCABRIDA (sp. nov.). Erecta, diffusa, caule sat gracili, tetragono, striato, scabriuscule puberulo, parumper glabro; foliis ovatis obtusis, e basi rotundatâ in petiolum brevem subito attenuatis, argute crenato-serratis, facie superiore scabridis, inferiore pubescentibus; pedunculis rectis, elongatis, tenuibus, folia excedentibus; capitulis abbreviatis paucifloris, pedunculis strictis folia excedentibus insidentibus; bracteis imbricatis, ovato-lanceolatis acutis, scabridis, margine ciliatis; calycis ore sinuato; corollæ tubo basi attenuato, medio ampliato, faucibus levissime coarctatis; limbo sub-bilabiato 4-fido; stigmatibus anguste ovato, laterali; drupâ ignotâ.

*Hab.* Crescit in ripâ fl. Paraguay juxta montem Pão d'Assucar, inter Coimbra et fl. Apa, ubi floret mens. Feb. (Nn. 1084, 1085.)

Frutex parvus, incertâ altitudine. Caulis 0·2 cm. diam., dein cinereus et subpolitus, internodia pleraque 4·0–6·0 cm. long. Folia usque ad 4·0 cm. long. (modica circa 2·5 cm.) et 2·0 cm. lat., firme membranacea, parum bullata, petiolis pubescentibus 0·4–0·8 cm. long. fulta. Pedunculi vix usque 5·0 cm. long., pubescentes. Capitula vix 1·0 cm. diam. Bracteæ exteriores 0·6–0·7 cm. long., 0·3–0·5 cm. lat.; interiores circa 0·5 cm. long., 5-nerves, membranaceæ. Flores albi. Calyx minute pubescens, 0·1 cm. long. Corollæ tubus extus et intus superne pubescens, alibi glaber, vix 0·5 cm. long., basi 0·04 cm. lat., ad staminum insertionem 0·8 cm. lat.; limbus extus pubescens, vix 0·3 cm. diam. Stamina 0·22 cm. ultra basin corollæ fixa. Ovarium ovoideum, 0·05 cm. long., stylo duplo longiore coronatum; stigma 0·02 cm. long.

Mihi videtur ad *Lantanam canescentem*, H. B. K., proxime accedere, sed foliis argutius dentatis, capitulis minoribus, calyce ampliore, corollæ tubo saltem duplo latiore, necnon labiis disparibus ab illâ certo abhorret. [Amer. Trop.]

*LANTANA COIMBRENSIS* (sp. nov.); caule erecto, ramoso, tetragono, appresse strigoso-pubescente, dein fere glabro; foliis ovato-lanceolatis acutis, basi in petiolum brevem subito attenuatis, membranaceis, serrulatis, paginâ superiore minute pubescentibus, inferiore minute pubescenti-tomentosis; capitulis plurifloris, pedunculis ascendentibus quam folia brevioribus vel ea subæquantibus suffultis; bracteis ovato-lanceolatis, breviter acuminatis, corollæ tubo paullo brevioribus; calycis anguste tubulosi ore sinuato; corollæ tubo e basi attenuatâ gradatim amplificato, faucibus parum constrictis, limbo sub-bilabiato 4-fido, stigmatate ovato, laterali; capsulis non visis.

*Hab.* Inveni ad Coimbrá florentem mens. Feb. (N. 1076.)

Caulis 0·2-0·3 cm. diam., mox eminens et lenticellis punctiformibus crebris inspersus. Folia pleraque 2·0-5·0 cm. long., usque ad 2·0 cm. lat., margine inferne fere integro, interdum obscure serrulato. Pedunculi 1·5-4·5 cm. long., pubescentes. Capitula 0·8 cm. diam. Bracteæ usque ad 0·35 cm. long., 5-6-nerves, dense scabrido-pubescentes. Flores albi. Calyx 0·07 cm. long., pubescens. Corollæ tubus utrinque superne pubescens, inferne glaber, 0·4 cm. long., basi 0·02 cm. et ad staminum insertionem 0·06 cm. lat.; limbus 0·3 cm. diam., extus pubescens. Stamina 0·18 cm. supra basin corollæ fixa. Ovarium ovoideum, 0·5 cm. long.; stylus crassiusculus, vix 0·1 cm. long., stigmatate ter longior.

Præcedenti affinis, sed foliis mollioribus et minus argute serratis, capitulis majoribus plurifloris, bracteis minoribus, calyce minus ampliato, corollæ tubo angustiore et limbo ampliore facili negotio distinguenda. [Amer. Trop.]

*LIPPIA URTICOIDES*, Steud. Nomencl. ed. II. ii. p. 54.

*Hab.* Crescit ad Santa Cruz, mens. Nov. florens. [Bras. Or., Goyaz, Peruvia, Bolivia.]

*LIPPIA BETULÆFOLIA*, H. B. K. Nov. Gen. et Sp. ii. p. 264.

*Hab.* Floret ad Santa Cruz mens. Oct. (Nn. 480, 480 a.) [Amer. Austr. Trop., Paraguaria.]

*LIPPIA NODIFLORA*, Rich in Michx. Fl. Bor.-Amer. ii. p. 15.

*Hab.* In paludibus ad Corumbá abundat. (N. 947.) [Late diffusa.]

*LIPPIA VERNONIOIDES*, Cham. in Linnæa, vii. p. 232.

*Hab.* Crescit ad Jangada, mens. Sept. florens. [Bras. Or.]

*LIPPIA* (§ *ZAPANIA*) *JANGADENSIS* (sp. nov.). Erecta, elata, appresse pubescens; caule valido, parce ramoso, subtereti, demum scaberulo; foliis oppositis, subsessilibus, oblongis vel oblongo-ovatis, acutiusculis, margine triente inferiore integris, inde plus minus crenato-serrulatis, membranaceo-coriaceis; capitulis paniculatis vel solitariis et axillaribus, si solitariis, plerumque longius pedunculatis; pedunculis ascendentibus,

dense pubescentibus; bracteis ovatis vel obovatis, breviter acuminatis, a floribus bene superatis, breviter luteolo-lanatis; calyce tubuloso, 2-lobo, lanato; corollæ tubo incurvo, inferne attenuato, superne satis ampliato; limbi lobo postico-integro; staminibus inclusis; antheris late ellipticis; stylo quam ovarium duplo longiore, superne incrassato; stigmatate laterali; ovulis basalibus.

*Hab.* Incolit fruticeta ad Jangada, ubi mens. Sept. floret. (N. 280.)

Caulis deorsum 0·6 cm. diam., fistulosus, striatus; ramuli 0·2 cm. diam., tetragoni, haud fistulosi. Folia pleraque 3·0–5·0 cm. long., 1·0–2·0 cm. lat.; costæ secundariæ utrinque 4–5, basales margine parallelæ, reliquæ oblique ascendentes, levissime arcuatæ; petioli nec ultra 0·2 cm long., pubescentes. Pedunculi capitulorum solitariorum vix usque ad 4·0 cm. long., capitulorum paniculorum haud 2·0 cm. attingentes. Capitula 0·7 cm. diam. Bracteæ modicæ vix 3·0 cm. long., intus leves, margine lanato-ciliatæ. Flores albi. Calyx membranaceus, 0·1 cm. long., alte divisus, lobis ovatis, obtusissimis, 2-nervibus. Corollæ tubus 0·25 cm. long., superne breviter lanatus; faucibus 0·05 cm. diam.; limbi lobus anticus elongatus, rotundatus, 0·08 cm. long.; lobi omnes, antico exempto, extus breviter lanati, intus, una cum faucibus, pubescentes. Stamina 0·15 cm. supra basin corollæ fixa. Ovarium ellipsoideum, obsolete puberulum, apice pilis brevibus albis coronatum; stigma stylo duplo brevius. Fructus ignotus.

Cum *Lippia vernonioidi*, Cham., rite componenda, cujus folia reverâ majora, firmiora, argutius dentata, spicæ majores, bracteæ itaque multo majores, corollæ grandioris tubus longe diversus, etc. [Bras. Or.]

LIPPIA LASIOCALYCINA, Cham. in Linnæa, vii. p. 231.

*Hab.* Satis abundat passim in provinciâ, e. g. ad Cuyabá, Serra da Chapada et Santa Cruz, ubi *Esperanza* nuncupatur. (Nn. 19, 92, 300.) [Bras. Or., Goyaz, Bolivia.]

The popular name of this pretty plant is due to the fact of its flowering at the approach of the cool rainy season.

LIPPIA (§ RHODOLIPPIA) PRIMULINA, (sp. nov.); caule e rhizomate magnopere incrassato, erecto, gracili, paucifolio, hirsuto-villosulo, demum pubescente; foliis parvis, subsessilibus late ovatis, obtusissimis, crenato-serratis, utrinque villosito-tomentosis; pedunculis erectis, folia excedentibus vel subæquantibus, hirsuto-villosulis; bracteis more sectionis latissimis rotundato-ovatis, brevissime cuspidatis, piloso-pubescentibus; calyce tubuloso, alte bilobo, albo-villoso; corollæ tubo parum incurvo, ad staminum insertionem satis amplo, faucibus paullulum attenuato, inferne vero insigniter coarctato; limbi lobo postico integro, antico reliquis majore; staminibus inclusis; antheris latis; stylo quam ovarium fere 4-plo longiore, stricte filiformi; stigmatate laterali; ovulis basalibus.

*Hab.* Crescit in cacumine montium Serra da Chapada, mens. Aug. florens. (N. 189.) Rhizoma 1·0 cm. crass., in sicco bruneum. Planta in toto nec ultra 20·0 cm. et caulis ipse 17·0 cm. alt., subteres, longitrorsum costatus, 0·2 cm. diam. Folia usque ad 2·5 cm. long. et 2·0 cm. lat., subcoriacea, subtus infra margines pilis carentia,

margine ciliata, penninervia vel palmatim 7-nervia. Pedunculi 2·5-4·0 cm. long., caule circa duplo tenuiores. Capitula vix 1·5 cm. diam. Bracteae extimae 1·1 cm., interiores circa 0·6 cm. long. et lat., utrinque piloso-pubescentes, plurinerves, margine ciliatae. Flores punicei, faucibus luteis. Calycis, 0·15 cm. long., lobi quadrangulati-ovati, 2-nerves, intus leves. Corollae tubus superne extus utrinque pubescens, 0·9 cm. long., medio vix 0·1 cm. diam.; limbi 1·0 cm. diam.; lobus anticus circa 0·6 cm. lat. Stamina circa 0·3 cm. supra basin corollae inserta. Ovarium 0·06 cm. long., ovoideum, obsolete puberulum; stylus 0·22 cm. long., glaber; stigma ovario aequilongum.

*Lippia Gardneriana*, Schauer, proxima, et ab eâ distans staturâ humiliore, foliis villosito-tomentosis nec pubescenti-hirtis, bracteis minoribus pubescentibus, aliisque signis.

Hujus speciei varietatem legit beat. Gardner prope Duero in provinciâ Goyazensi, a typo discrepantem imprimis ob bracteas minores (0·65 cm. long. et lat.) et stylum crassiusculum, ovarium modo duplo excedentem. Var. *goyazensis*, nob. (N. 3406 in Herbb. Brit. Mus. et Kew.) [Goyaz.]

BAILLONIA AMABILIS, Bocq. in *Adansonia*, ii. p. 251 (ex icon. et descript.).

*Hab.* Reperi ad Coimbrá florentem mens. Feb. (N. 1067.)

Hitherto the late Dr. Weddell has been the only collector of this interesting plant in its wild state. Although Bocquillon unfortunately omits measurements, I presume that my specimens are referable to the same species as Weddell's, seeing that not only do they closely agree with Bocquillon's figure and description, but they were collected in the same neighbourhood.

In the 'Genera Plantarum' this genus has, unfortunately, been thoroughly misunderstood. A few years after the publication of Bocquillon's paper, the late Mr. Miers established a genus *Diostea* (Trans. Linn. Soc. xxvii. p. 102) to include, besides the South-American Verbenaceae considered by Hooker and Gillies as species of *Verbena* (*V. scoparia* and *V. juncea*, Hook. et Gill.), a few others from the same part of the world, the chief point of difference from *Verbena* lying in their possession of a fruit consisting of two 1-seeded, somewhat fleshy pyrenes, instead of a couple of dry pyrenes, each with two seeds. This genus *Diostea*, at least so far as concerns *D. juncea*—the other species being relegated to *Verbena*—is merged with *Baillonia* in the 'Genera Plantarum' (ii. p. 1143), which latter genus is considered to be "perhaps too near *Lippia*." Had specimens been available when the 'Genera Plantarum' was written, the most cursory inspection would have sufficed to show that *Baillonia* of Bocquillon is quite different both from *Diostea* on the one hand, and from *Lippia* on the other. Moreover the remark, concerning *B. amabilis*, Bocq., "ex icone et descr. quoad folia et inflorescentiam simillima est *Lippia citriodoræ*," would certainly never have been penned; for, beyond the fact that both plants belong to the same tribe of Verbenaceae, they have absolutely nothing in common.

To show how different *Baillonia* is from *Diostea*, I have constructed the following table, from my own observations with the exception of the fruit, details concerning which are taken from the figures and descriptions of Bocquillon and Miers:—

	<i>Baillonia.</i>	<i>Diostea.</i>
Branches .....	Spiny on falling off of leaves.	Not spiny after leaf-fall.
Leaves .....	Long, narrow, coriaceous, frequently subopposite or alternate, more rarely sub-verticillate.	Small and membranous, and strictly opposite.
Inflorescence .....	Racemose.	Spicate.
Calyx .....	Relatively short and campanulate, with undulate margin.	Comparatively long and tubular, with distinct lobes.
Corolla .....	With a straight, short, broad tube, and a large limb.	With a narrow, elongated, curved tube, and small limb.
Style and stigma .....	Short fleshy style, with a large capitate stigma.	Long slender style, with a linear recurved stigma.
Fruit .....	Comparatively large entire pyriform fruit, surrounded at base by remains of calyx; mesocarp fleshy, endocarp very long.	Small 2-lobed fruit completely enclosed in the persistent calyx; scarcely any mesocarp, thin endocarp.

Perhaps the most remarkable point about *Baillonia* is the curious nature of its spines. These seem to be branches which, instead of separating from their mother branch, remain attached to it, except for a small projecting flange at the top, upon which flange the leaf is borne. After fall of the leaf, the flange remains permanently as a strong, sharp, straight spine. Adhesions, possibly of branches to their parent branch, occur in some other Verbenaceæ, e. g. in *Diostea* itself, in *Symphorema*, in some species of *Avicennia*, in *Premna*, *Petræa*, and *Citharexylum*; while in *Volkameria*, and to some extent in *Citharexylum*, spines are left after leaf-fall, as occurs with *Baillonia*. Although placed in different tribes of Verbenaceæ, one cannot fail to be struck with the evident affinity of *Baillonia* to *Citharexylum*. The habit, the racemose inflorescence, and the flowers of both are very similar; in its 2-seeded fruit alone does *Baillonia* show any marked difference.

Bocquillon's description may be fitly supplemented with the following notes:—

Caulis in sicco albidus, teres, longitrorsum eximie striatus, circa 0·5 cm. diam., spinis ramalibus 0·2 cm. long. munitus. Folia usque ad 20·0 cm. long. et modo 1·0 cm. lat. (mediocria 15·0 cm. × 0·6 cm.). Racemi circa 15·0 cm. long.; pedicelli 0·2 cm. attingentes. Flores albi. Calyx 0·3 cm. long., 0·25 cm. lat. Corollæ tubus 0·6 cm. long., 0·25 cm. lat.; limbus 0·8 cm. diam.

Eandem plantam legit cl. Balansa in Paraguariâ. (N. 2089 in Herb. Kew.)

Balansa's specimens were obtained from gardens at Asuncion; there is, therefore, at present no evidence that the genus occurs wild out of the tropics. [Matto Grosso.]

STACHYTARPHETA DICHOTOMA, Vahl, Enum. i. p. 207.

*Hab.* Vulgatissima in montibus Serra da Chapada, ad Santa Cruz, et alibi in provinciâ. Nom. vernac. *Gerboa*. (N. 86.)

Medicamentum efficax contra epilepsiam, itaque in tussibus sanandis nequaquam spernendum, præbere dicitur. [Amer. Trop., Paraguaria.]

VERBENA (§ VERBENACA) ARISTIGERA (sp. nov.). Vix semimetralis, ramulis e caule procumbente assurgentibus erectis, tetragonis, appresse et strigose pubescentibus, dein puberulis; foliis oppositis petiolatis pinnatifido-trisectis, appresse et strigose pubescentibus, segmentis linearibus mucronatis rigidis; spicis densifloris, abbreviatis, deinde elongatis, strigose pubescentibus; calycis alte tubulosi dentibus elongatis aristiformibus, patentibus; corollæ tubo calycem bene superante leviter curvato, sursum paullulum amplificato; lobis obovato-oblongis retusis; antherarum omnium connectivo apice inappendiculato; ovario apice subintegro, stylo elongato ovarium magnopere excedente.

*Hab.* Crescit prope montem Pão d'Assucar dictum, inter Coimbrá et fl. Apa, ubi inveniens. Feb. florentem. (N. 1083.)

Planta circa 40.0 cm. alt. Caulis basi procumbens, usque ad 4.0 cm. diam., lignosus, late ac tenuiter rimosus, nodis parum tumidis; ramuli 0.2 cm. diam., obsolete striati; internodia pleraque 4.0-4.5 cm. long. Folia circa ad 3.5 cm. long. et 4.0 cm. lat., exstant vero minora, firma; petioli usque ad 1.0 cm. long. subalati; segmenta longitudine variâ, usque ad 1.0 cm. sæpe falciformi-curvata, lineari-subulata, nec ultra 0.1 cm. lat. Spicæ primo 1.5 cm. long. et lat., deinde usque 7.0 cm. elongatæ; pedunculus juvenilis circa 1.5 cm., deinde usque 6.0 cm. attingens. Bractæe rigidiusculæ, subulatæ, 0.4 cm. long., ascendentes, strigose pubescentes. Flores purpurei. Calycis fructiferi immutati tubus 0.6 cm. long., 0.07 cm. lat., dentibus angustissimis, 0.2-0.3 cm. long., coronatus. Corollæ tubus paullo ultra 1.0 cm. long., basi 0.1 cm., faucibus vix 0.2 cm. lat., intus ad staminum insertionem hirsutus, alibi puberulus; lobi 0.3-0.35 cm. long., circa 0.2 cm. lat. Stamina breviora 0.8 cm. supra basin corollæ inserta; filamenta antheris linearibus acutis paullo breviora. Ovarium glabrum, 0.5 cm. long; stylus 0.9 cm. long., minute puberulus, apice paullulum incurvus. Pyrena parum inæqualis, linearis; ochraceæ longitrorsum costulatæ, minute scrobiculatæ, quater longiores quam latæ, usque 0.2 cm. long.

A *V. crinoidi*, Lam., cui sat similis ob calycis dentes longe ac patule aristatos necnon antherarum connectivum eglandulosum, nullo negotio agnoscenda. [Bras. Or., Peruvia, Chili, Argentina.]

CASSELIA MANSOI, Schauer in Mart. Fl. Bras. ix. p. 175.

*Hab.* Crescit ad Santa Cruz. (N. 768 a.) [Matto Grosso.]

VITEX CYMOSA, Bertero, ex Spreng. Syst. Veg. ii. p. 757.

*Hab.* Ad Jangada simul flores ostendit et folia enascentia mens. Sept. (N. 278.)

Arbor copiose ac valide ramosa, circa 12-metralis; truncus circa 7-metralis diam., cortice griseo longitrorsum fisso obductus. Corolla parum suaveolens, cyanea, faucibus albis.

Florum decoctum stomachi cruditati mederi narrabant incolæ.

This tree yields the "Taruma" fruit, about the size of an olive, cultivated at Asuncion. [Bras. Or., Amazonia, Bolivia, Paraguaria.]

#### LABIATÆ.

OCIMUM CANUM, Sims, Bot. Mag. t. 2452.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 665.) [In tropicis utriusque orbis late diffusa.]

OCIMUM MICRANTHUM, Willd. Enum. p. 630.

*Hab.* Reperi ad Santa Cruz, mens. Nov. florentem. (N. 660.) [Amer. Trop.]

PELTODON PUSILLUS, Pohl, Pl. Bras. Ic. i. p. 67.

*Hab.* Crescit in cacumine montium Serra da Chapada, mens. Aug. florens. (N. 182.) [Bras. Or., Goyaz.]

HYPTIS RECURVATA, Poit. in Ann. Mus. Paris, vii. p. 467.

*Hab.* Crescit inter Cuyabá et Serra da Chapada, itaque ad Santa Cruz, mens. Aug.—Sept. florens. (Nn. 56, 303.) [Amer. Trop.]

HYPTIS MICROPHYLLA, Pohl, ex Benth. Lab. p. 82.

*Hab.* Ad Santa Cruz inveni mens. Dec. (N. 797.) [Bras. Or., Venezuela.]

HYPTIS BRUNNESCENS, Pohl, ex Benth. Lab. p. 82.

*Hab.* Crescit ad Cuyabá, mens. Aug. florens. (N. 35.) [Goyaz.]

Flores columbini.

HYPTIS CRENATA, Pohl, ex Benth. Lab. p. 93.

*Hab.* Frequens ad Cuyabá, et in montibus Serra da Chapada. (Nn. 18, 147.) [Bras. Or., Goyaz, Bolivia.]

Flores nunc albi, nunc columbini.

HYPTIS IMBRICATA, Pohl, ex Benth. Lab. p. 98.

*Hab.* Floret mens. Oct. ad Santa Cruz, ubi *Ortelan* nuncupatur, et in remediorum antirheumaticorum numero habetur. (N. 644.) [Bras. Or., Goyaz, Bolivia.]

HYPTIS BREVIPES, Poit. in Ann. Mus. Paris, vii. p. 465.

*Hab.* In paludibus prope Corumbá mens. Jan. floret. (N. 1003.) [In tropicis utriusque orbis late diffusa.]

HYPTIS SPICATA, Poit. in Ann. Mus. Paris, vii. p. 474.

*Hab.* Reperi juxta Corumbá mens. Jan. (N. 902.) [Amer. Trop.]

HYPTIS (§ PANICULATÆ) EFFUSA (sp. nov.); caule elato e rhizomate robusto assurgente, gracili, obsolete tetragono, dense fulvo-tomentoso, deinde glabro vel puberulo; foliis amplis vel parvis, petiolatis, oblongis obtusis acutisve, basi obliquis, aliquatenus rotundatis, margine impariter crenato-serratis, membranaceis supra scabridis, subtus molliter tomentosis, dein pubescentibus; paniculis maxime effusis, folia multoties excedentibus, ramulis patentissimis; floribus parvis, pedicellis capillaceis elongatis patulis; calycis campanulati, in medio parum constricti, dentibus triangulari-lanceolatis acutis, ore recto; corollæ tubo, calycem paullulum excedente, superne leviter ampliato, lobo antico integro; disco antice haud tumente, nuculis oblongis lævibus exalatis.

*Hab.* Crescit ad Serra da Chapada, ubi floret et fructificat mens. Aug. (N. 159.)

Frutex orgyialis vel etiam ultra, sursum solummodo foliatus. Rhizoma crassum, abundanter radiciferum. Caulis 0.25 cm. diam., cortice cervino crebro striato cinctus. Foliorum lamina usque ad 10.0 cm. long. et 4.0-5.0 cm. lat., minora vero (circa 2.0 × 1.0 cm.) satis abundant; costæ secundariæ utrinque circa 9, angulis latis raro opposite insertæ, leviter arcuatæ. Costæ et venulæ subtus eminentes, hæ laxè reticulatæ. Paniculæ interdum 30.0 cm. long. et diam., patentissimæ, ramulis gracillimis, glabris. Pedicelli plerique 0.5-1.5 cm. long. Bracteolæ sub floribus sitæ, exiguæ, subulatæ, 0.08 cm. long. Flores purpurei. Calyx floris aperientis vix 0.3 cm. long., ultra  $\frac{1}{3}$  divisus, arcte pubescens. Corolla tota 0.5 cm. long., extus pubescens; tubus 0.3 cm. long., vix 0.1 cm. lat.; limbus 0.35 cm. diam.; lobi oblongi, obtusi, circa 0.18 cm. long. Stamina breviter exserta, faucibus affixa; filamenta pilosa, circa 0.1 cm. long.; antheræ reniformes, 0.08 cm. lat. Nuculæ 0.3 cm. long., fusco-purpureæ, basi albidæ, calyce 0.55-0.8 cm. long., 0.25-0.3 cm. lat., eximie reticulato-nervoso, subnitido inclusæ.

Juxta *H. reticulatam*, Mart., intercalanda, abs quâ ob pedicellos capillaceos, calycem minorem, angustiozem, medio parum coarctatum, necnon flores minores, facili negotio secernere potes. [Bras. Or.]

HYPTIS GLAUCA, A. St.-Hil. ex Benth. Lab. p. 141.

*Hab.* Ad Cuyabá mens. Aug. flores præbet. (N. 23.) [Bras. Or., Goyaz.]

ERIOPE CRASSIPES, Benth. Lab. p. 144.

*Hab.* Crescit ad Serra da Chapada. (N. 196.) [Bras. Or., Goyaz.]

LEONOTIS NEPETÆFOLIA, R. Br. ex Benth. in DC. Prod. xii. p. 535.

*Hab.* Crescit ad Jangada, itaque prope Corumbá. (Nn. 285, 978.) [Late diffusa.]



## MONOCHLAMYDEÆ.

## NYCTAGINEÆ.

*NEEA HERMAPHRODITA* (sp. nov.) (Tab. XXVIII. figg. 1-4.) Fruticosa, caule terete, fulvo-tomentoso, mox pubescente, dein pæne glabro; foliis breviter petiolatis, oblanceolato-oblongis obtusis, interdum breviter vel brevissime cuspidatis, basi obliquis, supra, costâ medianâ plus minus fulvo-tomentosâ vel pubescente exemptâ, minute puberulis, indumento cito obsoleto, subtus, præsertim in nervis, rufo-tomentello-pubescentibus, cymis divaricato-ramosis, laxifloris, pedunculis quam folia brevioribus rufo-tomentosis; bracteolis mediocribus subulatis, floribus hermaphroditis, perigonio urceolato puberulo, stylo incluso.

*Hab.* Crescit ad Santa Cruz, ubi mens. Oct. flores præbet. (N. 481.)

Frutex altus, biorgyalis, habitu diffuso. Ramuli graciles, 0·2-0·4 cm. diam., puberuli et cortice leucophæo reticulato-striatulo, lenticellis prominentibus plus minus instructo, obducti. Folia obsolete undulata, plerumque 5·0-8·0 cm., raro 9·5 cm. attingentia, rarissime ad 2·0 cm. vel infra imminuta, juvenilia tenuiter membranacea, siccitate nigricantia, mox membranaceo-coriacea; costæ secundariæ angulo lato costæ mediæ insertæ, sub margine arcuatim connexæ, costulis in reticulum laxum conjunctis; petioli 0·3-0·5 cm. long., rufo-tomentelli. Pedunculi plerique 2·0-4·0 cm. long., erecti. Cymæ circa 4·0 cm. diam., rufo-tomentellæ. Bracteolæ circa 0·1 cm. long. Flores omnes a me scrutati hermaphroditis, virescentes. Perigonia 0·5-0·6 cm. long. 0·25 cm. lat., siccitate mox nigricantia; dentes 0·1 cm. long. triangulares, acuti. Alabastra acuta. Stamina 8; filamenta basi ampliata, longiora 0·3, breviora 0·1 cm. long.; antheræ 0·12 cm. long. Ovarium compressum, ambitu ovatum, 0·1 cm. long.; stylus inclusus, ovarium duplo superans, curvatus; stigma acutum. Fructus ignotus.

Species forsitan cum *N. pubescente*, Poepp. et Endl., componenda, cujus specimen authenticum non vidi, quæ ramorum apicibus glabris, foliis supra glaberrimis longius petiolatis, venulis subobsoletis, perigonio tubuloso rubro nec virescente gaudet. Affinior videtur plantæ a cl. Spruce lectæ (N. 1103), sed distat indumento dispari, cymis plurifloris, forsitan floribus hermaphroditis, etc. [Amazonia.]

## AMARANTHACEÆ.

*PFIAFFIA VANA* (sp. nov.); caule fistuloso, diffuso, ramoso, minute puberulo; foliis brevipetiolatis, lanceolatis, acuminatis, basi rotundato-attenuatis, membranaceis, præsertim facie superiore appresse pubescentibus; capitulis minimis, pedunculos solitarios, elongatos, pubescentes, foliis circa duplo breviores coronantibus; perianthii bracteis 4-plo longioris foliolis lineari-oblongis, sub apice subito coarctatis, obtusiusculis, firmis, viridibus; staminibus paullo supra medium connatis; filamentis late linearibus, abrupte truncatis, ciliatis; antheris breviter stipitatis; ovario subsphæroideo ab androcio superato.

*Hab.* Crescit ad Santa Cruz, ubi mens. Oct. floret. (N. 654.)

Caulis subteres, leviter undulatus, striatus, ad nodos tumidus et pilosulus; ramuli ad angulum rectum vel fere rectum ramo inserti, recti vel parum arcuati, nodis distantibus (internodia haud raro 8·0-10·0 cm. long.). Folia ad 7·0 cm. long., pleraque 1·3-2·0 cm. lat., basin versus amplificata, siccitate haud nigricantia; petioli 0·5-0·8 cm. long. Pedunculi arrecti, 2·5-3·0 cm. long. Capitula ovoidea, 0·5-0·8 cm. long., 0·4-0·5 cm. lat.; axes albido-pubescentes. Perianthii foliola, vix 0·2 cm. long., subcarinato-trinervia, basi albide pilosa, ceterum pilosula. Androecium 0·1 cm. long. Ovarium 0·06 cm. long. Stigma capitatum, sessile, obsolete lobulatum.

Affinis *Pfaffiae glaucae* (*Sertuerneræ glaucae*, Mart.), optime vero discernendade pedunculis solitariis, capitulis minoribus, floribus minoribus et comparative latioribus, sepalis conspicue viridi-nervosis, staminibus altius connatis, itaque ovarium *P. glaucae* ovoideum nec subsphæroideum. [Bras. Or., Goyaz, Guiana, Peruvia, Argentina.]

TELANTHERA (§ BRANDESIA) GENICULATA (sp. nov.). Diffusa, ramis patulis, geniculatis, teretibus, pubescentibus, cito puberulis; foliis petiolatis, ovato-lanceolatis, breviter acuminatis, basi obtusis, membranaceis, præsertim paginis inferioribus minute pubescentibus, dein glabris; capitulis parvis, subsphæroideis, paucifloris; pedunculis plerisque quam folia brevioribus, tenuibus, pubescentibus; perianthii subteretis foliolis, bracteam et bracteolas circa 3-plo excedentibus, oblongis, obtusis, concavis, trinerviis, membranaceis, interioribus quam exteriores paullo minoribus; tubo stamineo 10-fido, staminodiis quam filamentum  $\frac{1}{3}$ -plo longioribus, erosis; antheris oblongis; ovario globoso, apice truncato, in stylum brevem subito desinente.

*Hab.* Florebat prope Corumbá mens. Jan. (N. 1093.)

Caulis prasinus, haud fistulosus, ad nodos tumidus. Folia raro late ovata et tunc obtusissime vel brevissime biloba, modica 2·5-3·5 cm. long. et 1·5 cm. lat., membranacea, in sicco subnigricantia; petioli patuli, 0·5-1·0 cm. long., pubescentes. Capitula 0·6 cm. long., 0·7 cm. lat., pedunculis plerumque 0·5-2·5 cm. long.; capituli evoluti axis 0·5 cm. long., 0·3 cm. lat., post florum lapsum bracteis et bracteolis pubescentibus dilute bruneis dense instructus. Perianthii foliola 0·3 cm. long., exteriora 0·13 cm. lat., in sicco plus minus plane viridi-lutescentia, extus, præsertim inferne, pubescentia, firma. Tubus stamineus 0·1 cm. long.; staminodia tubo subæquilonga, linearia, 0·13 cm. long., marginibus integra, apice solummodo lacerato-erosa; filamenta subulata; antheræ 0·1 cm. long. Ovarium 0·03 cm. long. Stylus ovario æquilongus.

A proximâ *T. puberulâ*, Moq., abhorret, præter alia, foliis disparibus, multo minoribus, et perianthii foliolis majoribus et diversiformibus. [Bras. Or.]

ALTERNANTHERA PARONYCHOIDES, A. St.-Hil. Voy. Bras. ii. p. 439.

*Hab.* Frequens et gregaria in rivis cœnosis fl. Paraguay ad Corumbá. (N. 946.) Amer. Trop.]

*GOMPHRENA MARLÆ* (sp. nov.); caule abbreviato, appresse piloso-villosulo, dein piloso vel glabro; foliis basi latâ insidentibus oblongo-lanceolatis, acutis, præsertim paginis inferioribus plus minus appresse pilosis; capitulis terminalibus, longipedunculatis, raro subsessilibus, depresso subsphæroideis; perigonii bracteas laterales anguste cristatas subæquantis foliolis anguste lineari-lanceolatis acuminatis, tribus exterioribus deorsum, interioribus toto dorso albido-villosis; fructu ignoto.

*Hab.* Crescit ad Villa Maria, mens. Dec. flores proferens. (N. 846.)

Subspithamea, caule repente in nodis tumido, erecto. Folia 1·5–3·0 cm. long., 0·5–0·7 cm. lat., apice acute mucronulata, floralia ovata vel ovato-lanceolata, acuta vel acuminata, capitulis paullo breviora, obsolete pilosula. Pedunculi modici circa 2·5 cm. long. (sed 4·5 cm. attingere possunt), rarissime ad 0·2 cm. reducti. Capitula ad 1·0 cm. long. et 1·3 cm. diam., juvenilia ovoidea, rhachide villosâ. Bracteæ subflorales quam laterales multo breviores, triangulari-ovatae, acuminatae, inferne dorso villosae, 0·27 cm. long., concavae. Bracteæ laterales 0·7 cm. long., iis *G. hygrophilæ* similes nisi longius acuminatae et crista dorsali angustiore modo 0·075 cm. lat. instructae. Flores 0·6 cm. long., rosei. Perigonii foliola 0·5 cm. long. Tubus stamineus perigonii foliolis æquilongus, 0·05 cm. lat., deorsum paullo ampliatus. Staminodia minuta, subulata; antheræ anguste lineares, 0·5 cm. long.

*G. hygrophilæ*, Mart., arcte affinis, species propria videtur esse ob indumentum, perigonii bracteas laterales longius acuminatas et angustius cristatas, præsertim vero ob tubum stamineum perigonium haud excedens. [Matto Grosso.]

*GOMPHRENA GLAUCA*, Moq. in DC. Prod. xiii. 2, p. 384.

*Hab.* Inveni in ripâ fl. Cuyabá prope Melgaço. (N. 2.) [Bras. Or., Goyaz, Guiana, Peruvia, Argentina.]

#### PHYTOLACCACEÆ.

*PETIVERIA ALLIACEA*, Linn. Sp. Pl. (ed. I.) p. 342.

*Hab.* Crescit ad Corumbá, itaque juxta Coimbrá, mens. Jan. Feb. florens. (Nn. 976, 1090 a.) [Amer. Trop.]

#### POLYGONEÆ.

*POLYGONUM ACUMINATUM*, H. B. K. Nov. Gen. et Sp. ii. p. 178.

*Hab.* Ad ripam fl. Paraguay, juxta Santa Cruz, inveni mens. Nov. (N. 599.) [Amer. Trop.]

*POLYGONUM ACRE*, H. B. K. Nov. Gen. et Sp. ii. p. 179.

*Hab.* Santa Cruz; mens. Dec. floret. (N. 783.) [In Americâ late diffusa.]

*TRIPLARIS FORMICOSA* (sp. nov.). (Tab. XXVIII. figg. 5–6.) Arbuscula gracilis, ramis subteretibus, cortice obscure striato, bruneo, saltem in sicco longitrorsum rimoso; foliis amplis, ovatis, superne angustatis, basi rotundatis, petiolis manifestis; paniculis folia subæquantibus fulvo hirsuto-tomentosis, bracteis persistentibus; calycis

tubo oblongo-ovato, utrinque piloso-hirsuto, sinubus paullo intrusis, haud plicatis; lobis exterioribus oblanceolatis, uninervibus, laxe reticulato-nervosis, puberulis, interioribus hypogynis, anguste lineari-oblanceolatis, puberulis, nukulâ duplo brevioribus; nukulâ quam calycis tubus paullo brevior, breviter acuminatâ, faciebus ovatis lævibus nitidissimis.

*Hab.* Inveni passim crescentem in ripâ fl. Paraguay prope Santa Cruz. (N. 301.)

Rami sub inflorescentiâ 1.0-1.2 cm. diam., subnitidi, lenticellis paucis elevatis vel planis. Folia 25.0-29.0 cm. long., 13.5 cm. lat., firme membranaceo-coriacea, more generis longitrorsum striata, margine obsolete undulata, puberula; costæ laterales utrinque circa 20 fere rectæ, dein sub margine subito arcuatim junctæ; venulæ undulatæ, laxe reticulatæ; costæ et venulæ paginæ inferioris eminentes; petioli 0.2 cm. long., 0.6 cm. lat., anguste alati, facie superiore astricti. Inflorescentia circa 20.0 cm. long., patula. Bracteæ ovatæ, circa 0.5 cm. long., extus hirsuto-tomentosæ, intus castaneæ. Flores non suppetebant. Calyx fructifer 3.1-3.3 cm. long.; tubus 1.0 cm. long., medio 0.4 cm., sub lobis 0.25-0.3 cm. lat.; lobi exteriores erecti, medio 0.5 cm. long., lobi interiores 0.45 cm. long., 0.05 cm. lat., margine revoluti, apice recurvi. Nucula stylis diu persistentibus coronata, acuta, triquetra, 0.8 cm. long., ejus acumen vix 0.2 cm. long.

Ex affinitate *Triplaridis brasilianae*, Cham., cujus calyx fructifer modo 2.2 cm. long., tubus ovatus et lobi breviores ac latiores quam ii plantæ nostræ, quæ distat etiam signis aliis levioris momenti. Hujus arboris medullam formicæ semper excavant et caules incolunt. [Bras. Or.]

TRIPLARIS, sp. Arbor altitudine prætermisâ; ramulis glabris, cinereis; foliis ovato-oblongis obtusis, basi obliquis, plerisque 10.0-13.0 cm. long., 5.0-6.0 cm. lat., coriaceo-membranaceis, supra appresse pilosis, subtus, præsertim in nervis, pubescentibus; paniculæ ramis florumque masculorum calycibus villosito-tomentosis; floribus femineis et fructibus ignotis.

*Hab.* Inter Villa Maria et Corumbá in ripâ fl. Paraguay mens. Dec. flores masculos ostendebat. (N. 1020 a.)

Forsan ad *T. tomentosam*, Wedd., accedens, sed ob specimina manca non sine dubio cum illâ componenda.

COCCOLOBA POLYSTACHYA, Wedd. in Ann. Sc. Nat. Bot. 3<sup>me</sup> série, xiii. p. 261. Var. MOLLIS.

*Hab.* Ad Jangada et juxta Santa Cruz floret et fructificat menss. Sept.-Oct. (Nn. 254, 369.)

Arbor parva, circa 4-metralis; ad Jangada vero, ex schedulâ meâ, frutex altus 2½-metralis. Flores albi. [Bras. Or., Goyaz, Amazonia, Guiana.]

COCCOLOBA CUJABENSIS, Wedd. in Ann. Sc. Nat. Bot. 3<sup>me</sup> série, xiii. p. 259.

*Hab.* Ad Corumbá fructificat mens. Jan. (N. 999 a.) [Matto Grosso.]

*COCCOLOBA* (§ *EUCOCCOLOBA*) *LONGIPES* (sp. nov.); ramulis vix puberulis, ochreis amplis, novellis obscure puberulis; foliis oblongo-ovatis acutis vel breviter acuminate, basi cordatis; costis secundariis supra eminentibus; venulis utrinque eminentibus, arctissime reticulato-nervis, parumper omnino glabris; inflorescentiæ nodulis 1-2-floris; rhachide sub lente minutissime puberulâ, ochreolis minutis; pedicellis gracilibus ochreolam longe superantibus.

*Hab.* Legi ad Santa Cruz, ubi mens. Nov. flores et fructus præbet. (Nn. 565, 577.)

Rami et ramuli cinerei vel purpureo-fusco-cinerei, in longitudinem rimosi, subnitidi, glabri vel fere glabri. Ochreæ circa 0·5 cm. long., plerumque apice breviter laceratæ, firmæ, politæ, interdum nervosæ, persistentes. Petioli 0·5-2·5 cm. long., ad basin ochreæ inserti, crassiusculi, minutissime puberuli; folia usque ad 13·0 cm. long. et vix 7·0 cm. lat., minora vero exstant (e. g. 6·5 cm. long.), novella tenuia cito chartacea et paginâ inferiore nitidissima, demum coriacea et utrinque pallide nitentia, subtus pallidiora, margine cartilagineo interdum paullo revoluto, nervis lateralibus angulo circa 75° abeuntibus, aperte arcuatis. Inflorescentia terminalis, racemosa, 4·0 cm. long., sub fructu ad 8·0 cm. long., laxiflora, pedunculo circa 0·5 cm. long. insidens. Bracteæ lanceolatæ, circa 0·07 cm. long. Ochreolæ bracteas subæquant. Pedicelli circa 0·35 cm. long., sub fructus plerumque 0·6 cm. patentes. Flores dilute virides. Perianthii tubus brevissimus; lobi inæquales, 0·2 cm. long., ovati vel ovato-orbiculares, in anthesi erecti. Filamenta complanata, sursum paullo attenuata, 0·2 cm. long., erecta; antheræ exsertæ. Ovarium oblongum, sursum leviter coarctatum, trigonum, 0·1 cm. long., stylis 3 coronatum. Fructus ovoideus, apice lobis perianthii instructus, totus 0·6 cm. long., 0·4 cm. diam. Nux triquetra, polita.

Planta verisimiliter cum *C. laxiflorâ*, Lindau, conferenda, cujus spicæ laxifloræ etsi multo breviores, et ochreolæ minutæ et pedicelli elongati, folia vero omnino alia, et flores divergunt. Habitus itaque *C. laxifloræ* minus robustus, et ochreæ adpressæ nec amplæ et evanidæ. [Bras. Or.]

*COCCOLOBA PARAGUARIENSIS*, Lindau, in Engl. Jahrb. xiii. p. 218.

*Hab.* Crescit ad Puerto Pacheco, mens. Feb. florens. (N. 1049.) [Paraguaria.]

*COCCOLOBA* (§ *CAMPDERIA*) *SARMENTOSA* (sp. nov.); ramulis glabris, ochreis adpressis glabris; foliis parvis ovatis vel lanceolatis obtusis, basi paullo angustatis, brevissime cordatis; costis secundariis et venulis laxè reticulatis, utrinque eminentibus; inflorescentiæ nodulis 1-floris, rhachide dense ac minute pubescente; pedicellis florum ochreolam vix æquantibus; fructibus ovoideis obtusis, lobis perianthii ei arete adpressis.

*Hab.* Inveni ad Corumbá mens. Jan. (N. 1038.)

Frutex altus, altitudine prætermittens, copiose ramosus, ramulis purpureo-cinereis striatis, lenticellis magnis parce adpersis. Ochreæ circa 0·3-0·6 cm. long., mox evanidæ. Petioli 0·5-0·8 cm. long., juxta basin ochreæ inserti, tenues, erecti, rufo- vel pallide

fulvo-tomentosi; folia 3·0-8·0 cm. long., modica circa 2·0-3·0 cm. lat., supra, præsertim in nervis, minute pubescentia, subtus pubescentia et in nervo mediano tomentella, membranaceo-coriacea, in sicco virescentia, subtus pallidiora; costæ secundariæ sub margine subito arcuatæ. Inflorescentia terminalis, racemosa, solitaria, foliis longior, plerumque 5·0-7·0 cm. long., multiflora, nodulis 1-floris; pedunculo 0·1 cm. long. et rhachide pubescentibus. Bracteæ late ovatæ, acutæ, circa 0·12 cm. long., dorso puberulæ, fere omnino membranaceæ. Ochreolæ bilobæ, bracteas paullo excedentes, membranaceæ. Flores albi. Perianthii tubus brevissimus; lobi late ovati, obtusissimi, 0·2 cm. long. Filamenta brevissima, antheras inclusas longitudine non excedentia. Ovarium oblongo-ovoideum, subacute trigonum, 0·12 cm. long. Styli 3, ovario 5-plo breviores. Fructus, calyce haud exempto, 0·7 cm. long., vix 0·5 cm. diam., pericarpio crustaceo purpureo-fusco.

Videtur *Coccolobá paraguariensi*, Lindau, affinis, abhorrens vero foliis pubescentibus, rhachide pubescente, pedicellis ochreolas subæquantibus, bracteis ovatis, et pluribus signis aliis. [Paraguaria.]

#### PIPERACEÆ.

PIPER ORTHOSTACHYUM, C. DC. in DC. Prod. xvi. 1, p. 247.

*Hab.* Crescit ad Corumbá, ubi mens. Jan. amenta ostendit. (N. 960.) [Bras. Or., Ind. Occ.]

PIPER GENICULATUM, Sw. Prod. Fl. Ind. Occ. p. 15.

*Hab.* Inveni in nemorosis ad Santa Cruz mens. Sept. florentem. (N. 311.)  
Frutex diffusus, vix trimetralis. [Amer. Trop.]

PIPER ASPERIFOLIUM, Ruiz & Pav. Fl. Peruv. i. p. 37.

*Hab.* Reperi ad ripam rivuli in ascensu montium Serra da Chapada mens. Aug. (N. 123.)

Frutex circa trimetralis, caule basi circa 2·0 cm. diam., deorsum aphylo. [Bras. Or., Amazonia, Peruvia, Guiana, Ins. Trinitatis.]

PIPER TUBERCULATUM, Jacq. Ic. Pl. Rar. ii. p. 2.

*Hab.* Frutex bimetralis viget in ripâ fl. Jangada, mens. Sept. florens. (N. 266.)  
[Amer. Trop.]

PEPEROMIA NUMMULARIFOLIA, H. B. K. Nov. Gen. et Sp. i. p. 66.

*Hab.* Abundat ad Santa Cruz, in sylvâ primævâ inter Santa Cruz et Tapirapuan, et alibi. (N. 339.) [Amer. Trop.]

PEPEROMIA, sp. Planta circa 15 cm. long. in sicco nigricans, caule a lateribus compresso, superne foliigero ibique dimidio inferiore elato, sursum angustiore; foliis brevipetiolatis, ovato-lanceolatis, breviter acuminatis, vix usque ad 4·5 cm. long., amento

gracili superne coarctato 4.0 cm. long. pedicello tenui 0.5 cm. long. insidente. Amento unico sejuncto, utrum terminale fuisset, necne, nescio. Reliqua tacite prætermitto.

*Hab.* Crevit in arboris trunco ad Santa Cruz mens. Sept. (N. 346.)

### LAURACEÆ.

CINNAMOMUM ZEYLANICUM, Nees, in Wall. Pl. As. Rar. ii. p. 74.

*Hab.* Ad Villa Maria cultum sub nom. *Canella*. [Ind. Or.]

**AIIOUEA** (§ **EUAIIOUEA**) **PRUINOSA** (sp. nov.); ramulis fulvo sericeo-tomentosis, mox glabris; foliis rigidis, glabris vel in nervis minute puberulis, ovato-lanceolatis obtusis, obsolete cuspidatis, deorsum in petiolum brevem attenuatis, penninerviis, utrinque sed præsertim subtus eminenter reticulato-nervis, margine solemniter incrassatis; inflorescentiâ pluriflorâ, folia excedente, subtiliter pruinosa, floribus pruinosis 0.3 cm. long.; perianthii tubo lobos genitalia includentes subæquante; andrœcii seriebus 2 exter. fertilibus, 2 inter. ad staminodia reductis; antheris filamentis subæquilongis introrsis; connectivo breviter producto obtuso; staminodiis ser. IV. nec vel brevissime stipitatis; stylo ovario subæquilongo.

*Hab.* Crescit in cacumine montium Serra da Chapada inter Cuyabá et Santa Anna da Chapada, ubi flores et fructus simul ostendit mens. Aug. (N. 127.)

**Frutex ultrametralis.** Rami subteretes, cortice bruneo, nitido, tenuiter striato obducti. Folia alternantia, raro opposita vel subopposita, 7.0–9.5 cm. long., 3.0–4.0 cm. lat., pag. sup. nitida, pag. inf. decoloria; costæ secundariæ utrovis latere 6, pleræque distantes et variis angulis costæ mediæ insertæ, ipsa sub margine plus minus perspicue anastomosantes; petioli 1.0–1.3 cm. long., facie superiore canaliculati. Inflorescentiæ, ad 10.0 cm. long., effusæ. Perianthii tubus turbinatus, haud contractus, pedicello gracili floribus duplo vel triplo longiore fultus; lobi genitaliis vix longiores, leviter impares, late ovati, obtusi. Staminum filamenta tetragona, crassa, albide piloso-pubescentia; antheræ parvæ, triangulares, connectivo ultra locellos breviter ac incurve producto. Staminodia ser. III. staminibus æquilonga, basi glandulis binis magnis, ovato-rotundatis, integris aucta, liguliformia, albide piloso-pubescentia, sursum fere glabra. Staminodia ser. IV. pusilla, triangulari-ovata, apice cuspidulata, deorsum pubescentia. Ovarium subglobosum, obsolete pruinosum, 0.1 cm. diam. Stylus 0.12 cm. long., basi parum ampliatus. Stigma capitellatum. Bacca obovoidea, 1.0 cm. long., 0.7 cm. diam., apice primo apiculata, mox obtusa, basi cupellæ parvæ 0.4 cm. diam. et 0.3 cm. alt. insidens.

A proximâ *A. goyazensi*, Benth. et Hook. f., optime discrepat signis pluribus, nempe ramulis juvenilibus tomentosis, foliorum ambitu, inflorescentiâ laxiore, floribus majoribus (fl. spec. Gardneriani n. 3424 modo 0.25 cm. long., nec 0.3 cm. ut scripsit cl. Mez), perianthii lobis genitalia subæquantibus, antheris filamentis subæquilongis, staminodiis ser. IV. toto cœlo disparibus, itaque baccæ formâ. [Goyaz.]

*NECTANDRA BOMBYCINA* (sp. nov.); foliis brevipetiolatis, supra sericeo-tomentellis, dein, præsertim in nervis, minute pubescentibus, subtus subferrugineo-sericeis, ovato-lanceolatis, apice caudato-acuminatis, basi acutis, nequaquam acuminatis, supra obscure, subtus eminenter reticulato-nervis; inflorescentiis quam folia brevioribus vel folia summa subæquantibus, subanguste paniculatis, ferrugineo-tomentosis, floribus hermaphroditis, tomentellis, 1·0 cm. diam., antheris ser. I. sessilibus, serr. II. et III. filamentis brevibus, crassis, biglandulosis, omnibus apice obtusis; ovario glabro, stylo manifeste brevior.

*Hab.* Matto Grosso (*Leeson*, in Herb. Mus. Brit.).

Ramuli 3·0-7·0 cm. diam., subteretes, sursum compresso-angulati, ferrugineo-tomentosi.

Foliorum lamina usque ad 19·0 cm. long., modica vero 12·0-14·0 cm., foll. summorum usque ad 8·0-11·0 cm. imminuta, 3·0-4·5 cm. lat., acumine nec ultra 2·0 cm. long. prædita, basi acutâ et subsubito in petiolum ferrugineo-tomentosum, supra late canaliculatum, subtus striatum, plerumque circa 1·0 cm. long. desinens; costæ secundariæ utrinque 6-8, oblique insertæ, supra impressæ, subtus eminentes et in axillis inferioribus rufo-barbellatæ. Inflorescentiæ subpaucifloræ, inferiores longissimæ brevipedunculatæ, illæ reverâ usque ad 10·0 cm. long. et folia sæpe subæquantes, hæ nonnunquam usque ad 2·0-3·0 cm. abbreviatæ; pedunculi 1·0-6·0 cm. long., modici 5·0 cm., pedicelli circa 0·2 cm. long. Bracteæ ovatæ, acutæ, deciduæ, 0·25-0·3 cm. long. Perianthii tubus conspicuus, apice haud constrictus; segmenta subrotundata, obtusa, sæpe inæqualia, usque ad 0·3 cm. long. et 0·25 cm. lat. Antheræ ser. I. basi angustatæ, 0·12 cm. long. et lat., extus ferrugineo-papillosus, serr. II. et III. eas ser. I. superantes, ser. III. subextorsæ, locellis juxta basin antheræ positæ. Staminodia non vidi. Ovarium subglobosum, loculus 0·06 cm. long. Stylus ovarii loculum triplo excedens, basi ampliatus. Stigma obtusum. Fructus ignotus.

Juxta *N. urophyllam*, Meissn., et *N. ambiguam*, Meissn., interponenda, ab illâ discrepat, inter alia, tomento ferrugineo, foliis ovato-lanceolatis breviter nec longe acuminatis, basi acutis nec acuminatis, inflorescentiis longioribus, floribus minoribus, antheris obtusis, antheris ser. II. biglandulosis. *N. ambigua* indumentum et folia disparia, antheras ser. I. longe triangulari-acutas et ser. II. sessiles, ovarium stylo æquilongum, etc. ostendit. [Amazonia, Guiana]

In hunc ordinem trahenda sunt specimina duo nimis manca, quæ sunt:—

- (i) Frutex altus, ramosus, ramis teretibus, rufo-tomentosis, dein pubescentibus; foliis rigidis, supra glabris et nitidis, lanceolatis acuminatis, interdum cuspidatis, basi coarctatis, 8·5-15·0 cm. long., 3·0-4·8 cm. lat., paginâ superiore arcte reticulatis, margine revoluto paullo incrassatis, petiolo 1·0-1·5 cm. long. insidentibus; inflorescentiâ pauciflorâ, plerumque foliis brevior nec ultra 7·0 cm. non raro brevissimâ et modo 1-2-florâ; baccis ellipsoideis, 1·0 cm. long., 0·6 cm. diam., apice obtusis, basi cupellæ bene evolutæ, 0·6 cm. diam., deorsum in pedicellum brevem incrassatum desinente insidentibus.

*Hab.* Inveni ad Santa Cruz pedicellos rubros et baccas primo virides, deinde nigras mens. Nov. gerentem. (N. 518.)



- (ii) Arbuscula, caule gracili erecto, ramis patulis subteretibus; foliis rigidis, ovato-lanceolatis, breviter cuspidatis, obtusis, minute reticulato-nervosis, margine revoluta paullo incrassatis, plerisque 9·0–13·0 cm. long.; petiolis 0·5–1·0 cm. long.; inflorescentiâ pauciflorâ, plerumque foliis brevioribus; baccis ovoideis, 1·1 cm. long., 0·7 cm. lat., viridibus; basi cupellâ evolutâ 0·7 cm. lat. et 0·35 cm. alt., deorsum in pedicellum brevem quodammodo incrassatum subito coarctatâ suffultis.

*Hab.* Crescit ad Santa Cruz, fructus ostendens mens. Nov. (N. 695.)

#### MONIMIACEÆ.

SIPARUNA GUIANENSIS, Aubl. Pl. Guian. ii. p. 865.

*Hab.* Viget in sylvestribus ad Santa Cruz, mens. Sept. florens. (N. 309.) [Amer. Trop.]

#### LORANTHACEÆ.

PSITTACANTHUS CORDATUS, Blume, in Schult. Syst. Veg. vii. p. 1730.

*Hab.* Reperi crescentem super *Triplaris* speciem (N. 1020 a) inter Villa Maria et Corumbá, itaque juxta Corumbá super *Psidium Guayava*, Raddi, et *Myrtaceam* indeterminatam, floribus et fructibus orbam, necnon super *Bauhiniam microphyllam*, Vog., prope montem Pão d'Assucar. Floret mens. Dec.–Feb. (Nn. 978, 1011, 1020, 1089.) [Bras. Or., Amazonia, Guiana, Paraguaria.]

PHTHIRUSA (§ EUPHTHIRUSA) ABDITA (sp. nov.). Scandens, radicellis prehensilibus paucis, ramulis cinereis, juvenilibus dilute bruneis; foliis lanceolatis, rarius obovato-oblongis acutis, obtusis, vel cuspidato-acuminatis, basi sensim acutatis, tenuiter coriaceis, utrinque surdis, ternationibus pedicellatis, racemosis, rarius simpliciter paniculatis, ramis axillaribus solitariis; pedicellis 0·3–0·5 cm. long.; filamentis fl. femineorum obsolete glandulosis; antheris graciliter caudato-acuminatis.

*Hab.* Crescit ad Santa Cruz super *Helicterem guazumæfoliam*, H. B. K., itaque in eodem loco super *Malpighiaceam* ignotam floribus et fructibus carentem. Mens. Nov. flores et baccas profert. (Nn. 594, 594 a.)

Planta feminea solummodo nota. Radicelli prehensiles satis incrassati, brunei, lenticellis parvis copiose muniti. Rami elongati, graciles, teretes, in longitudinem striatuli, crebre lenticelliferi, nodis tumidis; ramuli nonnunquam basi plus minus tumentes; internodia pleraque 2·0–6·0 cm. long. Foliorum laminæ 4·0–8·0 cm. long., plerumque 1·5–2·5 cm. lat., in petiolos subteres plus minus teretes 0·7–1·3 cm. long. gradatim attenuatæ, siccæ fuscæ, vivæ dilute virides; costa media lata inferne duplicata; costæ secundariæ paucæ, una cum venulis utrinque, plus minus eminentibus, laxè reticulatæ. Inflorescentiæ erecto-ascendentes vel horizontales vel paullo decurvæ, folia subæquantibus vel iis longiores, usque ad 8·0 cm. long., fere rectæ, interdum basi simpliciter paniculatæ; rhachis angulata, vix 0·1 cm. diam., superne, intervallis plerumque 0·3–0·8 cm., ternationum paria plerumque 6–8 (vel inferne rhachidem ternationiferam secundi ordinis) emittens; ternationes validius-

cule pedicellatæ, nonnunquam rhachidi alternatim affixæ. Bracteæ triangulari-ovatae, bractea primaria secundariis acutis paullo major et obtusa, 0.12 cm. long. Flores lutescenti-virides. Calyx 0.05 cm. long., ore obscure undulato. Alabastra oblonga, obtusa, calyce et ovario incluso 0.45 cm. long. Petala 6, linearia, 0.3 cm. long. Staminodia juxta medium petalum inserta, majora vix 0.1 cm. long., filamentis sublyratis; antheræ parvæ, caudato-acuminatæ. Ovarium cylindricum, 0.1 cm. long.; stylus crassiusculus, superne amplificatus, ovarium duplo superans. Baccæ ambitu oblongæ, primâ ætate virides, dein rubræ, 0.8 cm. long., 0.5 cm. diam. Semen vix 0.6 cm. long. et 0.35 cm. lat., totum viscino cinctum. Endospermium grumosum. Radicula clavata, haud exserta. Plumula ultra cotyledones breviter exserta.

Species verisimiliter cum *Phthirusá theloneurá*, Eichl., conferenda; ab eâ vero differt, præter signa alia, foliis nodulis verruciformibus carentibus, inflorescentiâ interdum paniculatâ, antheris longius acuminatis, baccis majoribus. [Amazonia.]

**PHTHIRUSA** (§ **EUPHTHIRUSA**) **BAUHINLÆ** (sp. nov.). Scandens, radicellis prehensilibus paucis, ramulis bruneo-rufescentibus, demum cinereis; foliis brevipetiolatis, ovato-lanceolatis, mucronulatis, raro emarginatis, basi paullo coarctatis, tenuiter coriaceis, in sicco utrinque fuscis, vix nitentibus, ternationibus sessilibus vel breviter pedicellatis, paniculatis, interdum subracemosis; floribus interdum solitariis, paniculis lateralibus angustis subthyrsoideis; calycis membranacei margine obsolete undulato, filamentis fl. masculorum sursum glandulosis.

*Hab.* Crescit ad Santa Cruz, super *Bauhiniam cumanensem*, H. B. K., et plantam ignotam, verisimiliter *Vochysiaceam* quandam. Floret mens. Dec. (Nn. 749, 749 a.)

Planta feminea ignota. Radicelli prehensiles ut in *Phth. abditâ*. Rami elongati, teretes, longitrorsum striati, lenticellis parvis muniti, ad nodos parum tumidi; internodia pleraque 1.5-5.5 cm. long. Foliorum laminæ 3.5-5.5 cm. long., pleræque 1.5-2.5 cm. lat., petiolis 0.2-0.5 cm. long. canaliculatis; costa media ultra medium folii duplicata; costæ secundariæ paucæ utrinque eminentes. Paniculæ erectæ, laterales ad 6.0 cm. long.; rhachis complanata, subalata, 0.1-0.2 cm. lat. intervallis plerumque 0.8-1.0 cm. ternationes vel rhachillas ternationiferas emittens; rhachillæ uti rhachides subalatae, erecto-ascendentes, nunc abbreviatæ, nunc usque 2.5-3.0 cm. long. Ternationum pedicelli nec ultra 0.15 cm. long. Bractea primaria triangulari-lanceolata, acuta, plana, 0.7 cm. long.; bracteæ laterales paullo minores, naviculares. Flores virescentes. Alabastra ovoidea, obtusa. Calyx tubularis, 0.1 cm. long. Petala 6, lanceolata, 0.25 cm. long. Stamina juxta basin petalorum inserta, iis breviora; filamenta incrassata, longiora superne parum ampliata, lateribus excavatis, breviora integra. Antheræ staminum longiorum reniformes, filamentis fere æquilatæ, breviter caudato-acuminatæ, locellis posticis oblongis, anticis obsolete; eæ staminum breviorum longius acuminatæ, rotundatæ, acuminatæ, locellis anticis posticis minoribus. Ovarii rudimentum parum corrugatum. Discus obsoletus. Stylus cylindricus, prope apicem parum incrassatus et curvatus. Stigmatis rudimentum obtusum, haud capitatum.

*Phthirusæ Theobromæ*, Eichl., foliis disparibus, paniculis multo amplioribus, floribus semper ternatim dispositis, majoribus albis nec virescentibus, staminibus aliis, et stylo recto nec curvato et stigmatis rudimento capitato gaudet. [Bras. Or., Amazonia, Guiana, Venezuela, Peruvia, Amer. Centr., Jamaica.]

STRUTHANTHUS POLYANTHUS, Mart. in Flora, 1830, p. 105. Var. MATTOGROSSENSIS (var. nov.). Abhorret a typo internodiis brevioribus, foliis plerumque paullo latioribus, calyce et ovarii rudimento majoribus, antheris longioribus et longius acuminatis, filamentis brevioribus, stylo graciliore superne angustato.

*Hab.* Reperi ad Jangada super *Viticem cymosum*, Bertero, et alias plantas scandentem, et mens. Sept. flores virides ostendentem. (N. 279.) [Bras. Or., Goyaz.]

ORYCTANTHUS RUFICAULIS, Eichl. in Mart. Fl. Bras. v. 2, p. 90.

*Hab.* Viget ad Santa Cruz super *Bauhiniam obtusatam*, Vog., et plantam indeterminatam, forsan *Vochysiaceam*. (Nn. 307, 444 a, 560 a.) [Amazonia, Guiana, Venezuela.]

PHORADENDRON RUBRUM, Griseb. Fl. Brit. W. Ind. p. 314.

*Hab.* Crescit ad Corumbá, verisimiliter super *Acaciæ* speciem floribus et fructibus carentem. Ibi baccas aurantiacas ostendit mens. Jan. (N. 954.) [Amer. Trop. et Subtrop.]

PHORADENDRON CRASSIFOLIUM, Eichl. in Mart. Fl. Bras. v. 2, p. 125.

*Hab.* Legi ad Serra da Chapada super hospitem prætermisum, necnon ad Santa Cruz super *Curatellam americanam*, Linn., et *Bauhiniam obtusatam*, Vog., crescentem. (Nn. 165, 534, 534 a.) [Bras. Or., Amazonia, Guiana, Venezuela, Ind. Occ.]

PHORADENDRI sp. indeterminabilis, *P. coriaceo*, Mart., affinis, ramulis nunc tertiusculis, nunc ancipitibus, et ad extremitates complanatis; vaginâ cataphyllari, plerumque solitariâ, basilari, sæpe breviter 2-3-lobâ; foliis planis lanceolato-oblongis obtusissimis, basi in petiolum brevem alatum desinentibus; laminis plerisque 7·5-9·0 cm. long., circa 3·5 cm. lat., coriaceis, opacis, rugoso-undulatis, 7-palmatinervis; spicis binis axillaribus usque ad 3·7 cm. longis, vix 0·25 cm. diam., nondum adultis, 5-6-articulatis; prophyllis vaginis bractealibus ore 0·25 cm. diam. obsolete bidentatis articulis gracilibus  $2 \times (11-5)$  floris, flore impari apicali ♀.

*Hab.* Reperi super *Psittacanthum cordatum*, Blume, crescentem ad Uacurisal, inter Villa Maria et Corumbá. (N. 1019.) [Bras. Or.]

#### EUPHORBIACEÆ.

EUPHORBIA CÆCORUM, Mart. ex Boiss. in DC. Prod. xv. 2, p. 31.

*Hab.* Reperi ad Santa Cruz, necnon in angustiis ad Serra da Chapada. (Nn. 70, 758.) [Bras. Or., Goyaz, Bolivia.]

EUPHORBIA BRASILIENSIS, Lam. Encyc. ii. p. 423.

*Hab.* Crescit ad Jangada mens. Sept. fl. (N. 257.) [Amer. Austr. Trop., Ind. Occ., Ins. Madeira.]

EUPHORBIA PILULIFERA, Linn. Sp. Pl. ed. I. p. 454. Var. PROCUMBENS, Boiss.

*Hab.* Florebat ad Jangada mens. Sept. (N. 255.) [Late diffusa.]

PHYLLANTHUS SELLOWIANUS?, Muell. Arg. in Linnæa, xxxii. p. 37. (An sp. diversa?)

*Hab.* Juxta fl. Paraguay, inter Santa Cruz et Diamantino, mens. Oct. (N. 641.)

Frutex circa trimetralis, copiose ramosus. Flores virescenti-albidi. Flores feminei soli suppetebant.

PHYLLANTHUS SCHOMBURGKIANUS, Muell. Arg. in Linnæa, xxxii. p. 37. Var. GUYANENSIS.

*Hab.* Viget ad Santa Cruz, mens. Dec. florens. (N. 744.) [Bras. Or., Goyaz, Guiana, Amazonia.]

PHYLLANTHUS NOBILIS, Muell. Arg. in DC. Prod. xv. 2, p. 414.

*Hab.* Floret prope Corumbá mens. Dec.-Jan. (Nn. 901, 1025.) [Amer. Austr. Trop.]

JATROPHA CURCAS, Linn. Sp. Pl. ed. I. p. 1006.

*Hab.* Ad Santa Cruz mens. Nov. florescit. (N. 666.) In tropicis sæpe culta.]

This plant seems to be truly wild at Santa Cruz.

JATROPHA VITIFOLIA, Mill. Gard. Dict. ed. VIII. n. 5.

*Hab.* Circum Cuyabá abundat, itaque in cacumine montium Serra da Chapada, ubi florentem et fructificantem reperi mens. Aug. (necnon occurrit ad Corumbá). (N. 125.)

Planta erecta usque trimetralis, ramulorum apicibus foliatis, ceteroquin aphylla. Flores albi. [Bras. Or., Goyaz, Paraguaria.]

CROTON (§ EUCROTON, EUTROPIA) MIMETICUS (sp. nov.); petiolis laminâ multo brevioribus, laminis anguste obovato-oblongis obtusis vel emarginatis, trinerviis, subtus subdense, supra rarius lepidotis, basi biglandulosis; stipulis parvis, triangulari-subulatis; racemis folio subæquilongis florum fasciculis instructis; bracteis parvis lanceolatis; florum masculorum petalis oblongo-spathulatis, intus albido-barbatis, staminibus 17, filamentis breviter pilosis, antheris oblongis; florum femineorum calycis laciniis lineari-oblongis obtusis; ovario dense lepidoto; stylis fere ad medium dichotomis, laciniis bipartitis.

*Hab.* Crescit ad Villa Maria, ubi mens. Dec. inveni florentem. (N. 843.)

Frutex altus, biorgyalis, copiose ramosus. Ramuli satis incrassati, subteretes 0.6-0.7 cm. diam., lepidibus dilute bruneis, margine erosulis, medio piliferis densissime obtecti; ramuli ultimi angulati, subtus in sicco compressiusculi; internodia pleraque 1.0-3.0 cm. long. Petioli ascendentes vel patuli, 2.0-3.5 cm. long., canaliculati, sub limbo incrassati, dense lepidoti; glandulæ sellæformes, 0.75 cm. diam.; lamina 10.0-20.0 cm. long., 4.0-7.0 cm. lat., basi breviter cuneatim coarctata, coriaceo-

membranacea, margine repanda, paginâ inferiore decolor ibique lepidibus lutescenti-albidis piliferis haud tangentibus munita, paginâ superiore lepides parvas raro piliferas ferens; costa media crassa, supra impressa, subtus eminens; costæ secundariæ utroque latere 12–15, subrectæ, patulæ. Racemi crassi, circa 14.0 cm. long., intervallis brevibus florum fasciculos proferentes, 0.2–0.35 cm. diam. Bracteæ 0.15 cm. long., intus fuscae. Flores sessiles vel subsessiles. Florum masculorum sepala 0.2 cm. long., vix 0.1 cm. lat. Antheræ vix 0.1 cm. long. Florum femineorum calyx 0.5 cm. long. Ovarium 0.4 cm. long. Stylorum lacinia involutæ, in sicco atratæ. Capsula cylindrica, vix 1.0 cm. long. Semina 0.7 cm. long. dorso longitrorsum costulata, testâ purpureo-fusco-bruneâ obducta.

*Crotoni cuneato*, Klotzsch, arcte affinis, distans vero ob habitum robustiorem, folia nunquam acuminata, inflorescentiam crassiorem, et præsertim flores utriusque sexûs multo majores. Stamina stirpis nostræ etiam 17 et antheræ abbreviatæ. [Amazonia, Guiana.]

CROTON (§ EUCROTON, EUTROPIA) SARCOPEALOIDES (sp. nov.). Fruticulus erectus, ramosus, indumento stellato instructus, ramulis foliosis striatis, arcte tomentoso-pubescentibus, dein puberulis; petiolis laminâ plerumque 2–3-plo brevioribus; laminâ majusculâ, late ovatâ, cuspidato-acuminatâ, basi cordatâ vel rotundato-truncatâ, ibique glandulis duabus parvis munitâ, supra glabrâ, subtus pubescente, 3-nervi; racemis demum folia longe excedentibus, validis, plurifloris, intervallis brevibus inferne solummodo flores femineos vel florum masculorum et femineorum intermixtorum fasciculos proferentibus, superne masculis; bracteis parvis, subulatis, acutis, superioribus 1–3-floris; floris masculi sepalis oblongis acutis; petalis oblongis obtusis, imâ basi barbatulis; staminibus 16, filamentis basi glabris, receptaculo piloso; floris feminei calycis laciniis erectis, triangularibus, acutis, ovario depresso globoso, dense fulvo-tomentoso, brevioribus; glandulis petalinis ut in *C. sarcopetalo*, Muell. Arg.; stylis ascendentibus, alte bipartitis, cruribus simplicibus.

*Hab.* Crescit ad Corumbá, mens. Jan. florens. (N. 940.)

Fruticulus nec ultra-metralis. Ramuli crebri, petioli, 2.5–3.0 cm. diam., herbacei, longitrorsum striati. Laminæ maxime inæquales, pleræque 8.0–12.0 cm. long. (4.0–17.0 cm.), 5.5–10.5 cm. lat., nonnunquam margine denticulatæ, membranaceæ, supra saturate virides, subtus pallidæ; costæ secundariæ utroque latere 5–8, interjectis passim minoribus, angulis latis insertæ, juxta marginem arcuatæ, facie inferiore eminentiores; glandulæ in sicco bruneæ vel atratæ, patelliformes, 0.12 cm. diam.; petioli usque ad 7.0 cm. long., modici vero 3.5 cm., rarissime 14.0 cm. attingentes, validi, patuli, tomentoso-pubescentes, 0.1–0.3 cm. diam. Racemi tandem usque ad 33.0 cm. long., angulati, tomentosi, deinde puberuli, basi usque ad 0.25 cm. diam. Flores masculi 0.5 cm. diam., sepalis 0.3 cm. long. Petala totidem, ungue brevi barbato exempto obsolete ciliolata. Filamenta petalis æquilonga; antheræ 0.7 cm. long., oblongæ. Florum femineorum sepala 0.13 cm. long. Glandulæ petalinæ breviter pedicellatæ, exsertæ, sellæformes, 0.07 cm. diam. Ovarium floris aperientis circa 0.2 cm. long., dense fulvo-tomentosum, mox cinereum. Stylorum crura inferne tomentosa, superne glabra involuta fusca, 0.2 cm. long. Capsula depresso

subglobosa, 0.5 cm. long. et diam., pubescens. Semina oblonga, postice parum attenuata, 0.4 cm. long., 0.3 cm. lat., testâ bruneo-purpureâ utrinque bis transversim corrugatâ.

Certe *Crotoni sarcopetalò*, Muell. Arg., proxime affinis, speciei ab auctore laudato juxta *C. soratensem*, Muell. Arg., e subsectione *Cleodorâ* (cujus bracteæ inferiores haud bisexuales) intercalatæ. Stirpis nostræ racemi characteres nunc subsectionis *Cleodoræ*, nunc florum masculorum abortu subsectionis *Eutropiæ* præbent, bracteæ infimæ vero *C. sarcopetalò* semper unisexuales. Præter inflorescentiam *C. sarcopetaloides* rite secernendus videtur ob indumentum longe dispar, stamina nec ultra 16, et signa alia levioris momenti. [Argentina, Paraguaria.]

**CROTON** (§ **EUCROTON**, **EUTROPIA**) **SANCTÆ-CRUCIS** (sp. nov.); caule erecto, aphylo, sursum ramulos foliigeros appresse tomentosos, deinde fere glabros emittente; petiolo quam lamina circa 4-plo brevior; laminâ lanceolatâ acuminatâ, basi acutatâ, ibique glandulis duabus sessilibus conspicuis instructâ, subpenninervi, firme membranaceâ, supra glabratâ, subtus albide vel subfulve vel cinereo-tomentosâ; racemis primo folia subæquantibus, mox, floribus fere omnibus jam apertis, ea paullo excedentibus, erectis, gracillimis, angulatis, tomentosis, inferne flores femineos sessiles vel flores femineos masculis intermixtos, superne flores masculos pedicellatos proferentibus; bracteis minutis, superioribus 1-3-floris, floribus brevipedicellatis; petalis masc. anguste lineari-spathulatis, ungue dense barbatis, ceterum glabris; staminibus 12; filamentis inâ basi levissime pilosis; antheris ellipsoideis, receptaculo piloso; calycis fem. laciniis triangulari-oblongis, obtusis, basi pilosis, ibique squamulâ parvâ auctis; glandulis petalinis setaceis, calycis laciniis æquilongis; ovario trigono-subgloboso, minute tomentoso; stylis glabriusculis, a basi divergentibus, ultra medium semel dichotomis, cruribus longe involutis.

*Hab.* Crescit ad Santa Cruz, ubi mens. Nov. floret et fructificat. (N. 567.)

Fruticulus erectus, tenuis, usque bimetralis. Caulis aphyllus, ramulos foliigeros superne emittens, cinereus, glaber, longitrorsum striatulus et rimosus, usque ad 0.35 cm. diam. Ramuli erecti, ascendentes, obsolete angulati, 0.1-1.2 cm. diam., tomento cinereo vel subfulvo instructi. Foliorum lamina plerumque 5.0-9.0 cm. long., et 1.2-2.5 cm. lat., supra sordide viridis, subtus decolor; costæ secundariæ 8-10, oblique (raro angulis latis) insertæ, leviter arcuatæ, una cum costâ medianâ supra impressæ, subtus eminentes; glandulæ patelliformes, 0.1 cm. diam., in sicco bruneæ; petioli 0.5-2.0 cm. long., ascendentes vel patuli, tomentosi. Racemi solemniter mox 6.0-9.0 cm. long., nec ultra 0.1 cm. diam. Florum fasciculi inferiores plerumque distantes, superiores approximati. Bracteæ subulatæ, pedicellos subæquant; pedicelli tomentosi, 0.1 cm. long. Calycis masc. laciniæ oblongæ, obtusæ, 0.13 cm. long. Petala 0.22 cm. long., margine minutissime crenellata. Stamina petalis æquilonga; antheræ 0.05 cm. long. Calycis fem. laciniæ 0.12 cm. long. Ovarium 0.7 cm. long., 0.5 cm. lat., stylis in toto ipso paullo longioribus coronatum; stylorum crura 0.1 cm. long. Capsula trigono-ellipsoidea, 0.5 cm. long., 0.4 cm. lat., tomen-

tella. Semina ambitu elliptica, 0·45 cm. long., 0·35 lat., pallida, sub lente minutissime scrobiculata.

Forsan juxta *Crotonem brasiliensem*, Muell. Arg., difficiliter digerendus, sed plurimis signis ab illo discrepat. Habitu equidem ad species plures subsectionis *Cleodora* propius accedit; ob bracteas inferiores vero sæpe bisexuales ad subsectionem *Eutropiam* melius, me judice, referri debet. [Bras. Or.]

CROTON CAJUCARA, Benth. in Hook. Kew Journ. Bot. vi. (1854) p. 376.

*Hab.* Crescit in ripâ fl. Paraguay inter Santa Cruz et Diamantino, ubi floret et fructificat mens. Oct. (N. 613.) [Amazonia.]

CROTON (§ EUCROTON, CLEODORA) NIVIFER (sp. nov.); ramulis, foliis, et inflorescentiâ lepidibus minutis niveis, parvis, depresso-stellatis munitis; novellis dense tomentoso-lepidotis; foliis parvis, brevipetiolatis, lanceolatis vel lineari-lanceolatis, acutis vel breviter acuminatis, margine serrulatis, trinerviis, basi biglandulosis; racemis tenuibus, distantifloris, quam folia brevioribus, deorsum femineis; bracteis parvis triangulari-subulatis, masculis 1-3-floris; petalis masculis oblongo-spathulatis obtusis, ungue barbatis; glandulis hypogynis aurantiacis, liberis; staminibus 16, filamentis elongatis glabris; antheris ellipticis,  $\frac{1}{2}$ -plo longioribus quam latis; florum femineorum calycis laciniis triangularibus acutis, basi intus pilosulis; petalis glandulosis, albis; ovario quam calyx duplo longiore, lepidoto-tomentoso; stylis subbrevis, laciniis bipartitis.

*Hab.* Crescit ad Corumbá et mens. Jan. floret. (N. 1096.)

Fruticulus humilis, erectus, ramosus. Ramuli subteretes, deinde glabri, striati, virescentes, lineis bruneis notati. Folia demum glabra, usque ad 5·0 cm. long., 0·8-2·0 cm. lat., nonnunquam inferne undulata nec serrulata, membranacea; costæ secundariæ 6-9, pæne rectæ, angulis valde imparibus insertæ; glandulæ patelli-formes, 0·05 cm. diam., in sicco atratæ; petioli 0·5-0·8 cm. long., tomentosi. Racemi usque ad 10·0 cm. long., 0·05-0·075 cm. diam., curvati, subglabri. Bracteæ 0·075 cm. long. Flores breviter pedicellati; masculorum glabrorum calyx 0·3 cm. diam., laciniæ oblongo-ovatae, 0·1 cm. long. Glandulæ hypogynæ conspicue subgloboso-reniformes. Filamenta 0·2 cm. et antheræ 0·03 cm. long. Calyx fem. 0·16 cm. long. et diam.; laciniæ 0·1 cm. long., erectæ, margine ciliolatae, dorso carinulatae. Glandulæ petalinæ globulosæ, parvæ. Ovarium trigonum, 0·35 cm. long. Styli a basi divergentes, facie interiore canaliculati. Capsula haud visa.

Forsan juxta *C. leptobotryum*, Muell., Arg., intercalandus, multis signis vero ab illo recedens. [Bras. Or.]

CROTON (§ EUCROTON, CLEODORA) DOCTORIS (sp. nov.); ramulis juvenilibus et inflorescentiæ axibus dilute lutescenti-tomentosis, illis mox subglabris; petiolis laminâ saltem triplo brevioribus; laminâ e basi obtusâ, parum obliquâ, ovatâ acutâ vel acuminatâ, mucronulatâ, subtrinervi, basi glandulis duabus parvis breviter stipitatis instructâ; racemis quam folia multoties longioribus, erectis, angulatis, multifloris,

fere dimidio inferiore femineis; bracteis minutis, triangularibus, masculis 1-3-floris; petalis masculis spathulatis, ungue dense villosa-ciliato; staminibus 17, filamentis glabris, antheris  $\frac{1}{2}$ -plo longioribus quam latis; calycis feminei laciniis linearibus, obtusis, erectis, ovario depresso-globoso paullo longioribus; stylis fere usque ad basin bipartitis, cruribus brevibus.

*Hab.* Ad Corumbá satis abundat, et mens. Jan. floret. (N. 951.)

Fruticulus erectus, ramosus, usque metralis. Ramuli erecto-ascendentes, graciles, cito cortice glabro leucophæo leucicellis elevatis, plerumque secus lineolas longitudinales dispositis, instructo. Foliorum lamina usque ad 10.5 cm. long., modica vero circa 7.0 cm. long., 2.0-4.0 cm. lat., parum inæquilatera, membranacea, supra fere glabra et saturate viridis, subtus pallidior et pubescens, dein puberula; costæ secundariæ utrovis latere plerumque 8-12, nunc opposite, nunc subopposite, nunc alternatim insertæ, superiores approximatae, levissime arcuatae; glandulæ nec ultra 0.03 cm. diam., patelliformes, in sicco brunæ; petioli 0.7-2.5 cm. long. Racemi plerique 14.0-21.0 cm. long., 0.1-0.2 cm. diam. Flores subdistantes, feminei plures, sessiles, latâ basi inserti, masculi pedicellis tenuibus tomentosis 0.1-0.2 cm. long. insidentes. Fl. masc. 0.4 cm. diam. albi calycis laciniæ 0.12 cm. long., apice paullo incrassatae. Petala 0.2 cm. long., 0.1 cm. lat., obtusissima, basi longe barbato-ciliata, alibi obsolete ciliolata. Filamenta 0.2 cm. long., una cum antheris 0.5 cm. long., saltem in sicco rubescentia. Fl. fem. calycis laciniæ 0.12 cm. long., intus basi pilosæ. Glandulæ petalinæ depresso-globosæ, albæ. Ovarium hirtum, 0.2 cm. diam. Stylorum crura incurva, 0.2 cm. long., atro-purpurea. Capsulam non vidi.

Juxta *Crotonem tarapotensem*, Muell. Arg., et *C. sarcopetalum*, Muell. Arg., interponenda, ab illo abhorrens, præter alia, foliorum ambitu et magnitudine et indumento, et spicis longioribus distantifloris, ab hoc indumento foliorum omnino dispari, spicis elongatis distantifloris, fl. fem. glandulis petalinis exiguis, etc. *C. tucumanensis*, Griseb., foliis late ovatis et floribus multo majoribus gaudet. [Peruvia, Bolivia, Paraguaria, Argentina.]

CROTON (§ EUCROTON, CLEODORA) CORUMBENSIS (sp. nov.); ramulis teretibus, gracilibus, sursum foliatis, primâ ætate albido-tomentosis, mox glabris; petiolis laminâ multoties brevioribus, albido-tomentosis, laminis ovato-lanceolatis, rarius ovatis acutis vel acuminatis, mucronatis, subtrinerviis, basi glandulis duabus parvis auctis, membranaceis, supra glabratis, subtus incano-pubescentibus; racemis folia deinde excedentibus, plurifloris, inferne flores femineos plerumque 5-9 subsessiles, superne masculos pedicellis tomentosis usque ad 0.15 cm. long. insidentes proferentibus; bracteis subulatis acuminatis florum masculorum plerumque 2-3-floris minutis, fl. masc. calycis laciniis imparibus triangulari-ovatis acutis, petalis spathulatis, acutiusculis, ungue dense barbato-ciliato; staminibus 16, filamentis glabris; glandulis hypogynis, parvis, oblongis, albis; fl. fem. calycis laciniis ascendentibus, lineari-lanceolatis, obtuse acutis, basi intus hirtulis, glandulis petalinis parvis; ovario ovoideo, quam calyx paullo brevior; stylis ascendentibus, fere ad basin bipartitis, cruribus tenuibus elongatis.

*Hab.* Reperi ad Corumbá, ubi mens. Jan. floret. (N. 975.)



Fruticulus erectus, altitudine prætermisâ. Ramuli 0·2–0·25 cm. diam., cortice irregulariter striato, parce lenticellifero, bruneo cinereo obducti. Foliorum lamina usque ad 9·0 cm. long. (modica 6·0 cm.), 2·0–vix 4·0 cm. lat., supra saturate viridis, subtus incana, margine ciliolata; costæ secundariæ utrovis latere 5–12, ipsa sub margine arcuatæ, venulæ obscuræ; glandulæ stipitatae, crateriformes, 0·025 cm. diam., in sicco plerumque atratae; petioli 0·5–1·3 cm. long., tomentosi. Racemi tempore fructificandi usque ad 12·0 cm. elongati in ingressu temporis florendi modo 2·0–4·0 cm. long. Bractæ florum fem. infimorum nonnunquam foliis subsimiles, nisi multoties minores; superiorum et florum masc. circa 0·1 cm. long. Flores masc. albi, 0·35 cm. diam., sepala 0·2 cm. long., latiora vix 0·2 cm., angustiora modo 0·1 cm. lat. Petala 0·3 cm. long., ungue barbato exempto minute ciliolata; glandulæ hypogynæ parvæ, albæ, ambitu rectangulares. Filamenta 0·2 cm. long., antheras oblongas vix triplo excedentia. Florum fem. calycis laciniæ 0·2 cm. long. Ovarium 0·15 cm. diam., hirtum. Stylorum crura pilosa, 0·4 cm. long., in sicco brunea. Capsula cylindrica, 0·5 cm. long., hirtula. Semina (an matura?) oblonga, postice angustata, compressa, 0·4 cm. long.

*Crotoni Doctoris* proximus, sed ob folia minora, racemos breviores, petala acutiuscula, fl. masc. sepala inæqualia, ovarium diversiforme, et styli crura longiora verisimiliter ut species propria rite intuendus.

CROTON (§ EUCROTON, CLEODORA) TURNERÆFOLIUS (sp. nov.). Fruticulus parvus, erectus, ramulis teretibus, validis, dense fulvo-tomentosis; petiolis laminâ multo brevioribus, laminis oblongis vel oblongo-ob lanceolatis obtusis vel obtusissimis, supra mox puberulis, subtus arete tomentoso-pubescentibus, basi glandulis duabus minutis instructis, 3-nervibus, pergamenis; racemis, plerumque folia excedentibus, erectis, plurifloris, intervallis, præsertim superne, perbrevis florigeris, inferne flores femineos circa 10–12, superne flores solummodo masculos sustinentibus; bracteis lanceolatis, superioribus plerumque 2–3-floris, floribus utriusque sexûs breviter pedicellatis; petalis masculis oblongis obtusis, ungue brevissimo toto villosa; staminibus 13, filamentis basi villosis; sepalis femineis triangulari-oblongis obtusis, ovario hirtulo-tomentoso depresso trigono-globoso æquilongis; stylis a basi divergentibus ad medium semel dichotomis, cruribus apice involutis.

*Hab.* Crescit ad Santa Cruz, ubi mens. Nov. simul floret et fructificat. (N. 575.)

Caulis semimetralis, crebre foliatus, prorsus tomentosus, 0·3–0·4 cm. diam. Foliorum laminæ inæquales et reverâ majores et minores sæpe intermixtæ, juxta marginem cito pubescentes, alibi, costâ mediâ exemptâ, puberulæ, in sicco supra bruneæ, subtus subincanæ; costa media crassa, pag. inf. eminens; costæ secundariæ utrovis latere 5–10 oblique insertæ, prope marginem arcuatim anastomosantes, ceterum rectæ vel fere rectæ; venulæ obscuræ; petioli circa 1·0 cm. long., patuli, pingues, dense tomentosi. Racemi 7·0–12·0 cm. long., basi usque ad 0·3–0·4 cm. diam., plane angulatae et aliquanto complanatae. Bractæ, pleræque circa 0·2 cm. long., extus tomentosæ. Pedicelli 0·1–0·2 cm. long. Flores dilute viridi-lutescentes. Sepala mascula triangulari-oblonga, obtusa, 0·2 cm. long. Petala totidem, ungue excluso, glabra.

Filamenta 0·35 cm. long.; antheræ late ellipticæ. Sepala feminea 0·2 cm. long., intus pilosula. Glandulæ petalinæ parvæ, ovoideæ, dense pilosæ, albæ. Ovarium 0·2 cm. diam. Styli atrati, pilosi, 0·2 cm. long., cruribus gracilibus, 0·22 cm. long., glabris. Capsula oblongo-ellipsoidea, 0·6 cm. long., 0·5 cm. diam., arcte pubescens. Semina oblonga, 0·4 cm. long., pæne 0·3 cm. lat.; testa griseo-brunea, lævis.

Non dubito quin ad *Crotonem peraffinem*, Muell. Arg., spectet, sed indumento molliore, foliis obtusis longius petiolatis, floribus 13-andris, filamentis basi villosis, capsulâ oblongo-ellipsoideâ nec globoso-ellipsoideâ, necnon seminibus longioribus ac latioribus certe non conspecifica. [Bras. Or., Goyaz.]

CROTON ANTISYPHILITICUS, Mart. in Isis, 1824, p. 586.

Var. caulibus 23·0 cm. alt., simplicibus, superne piloso-hirsutis foliis lineari-lanceolatis vel lanceolatis, 3·0-4·5 cm. long., 0·7 cm. lat., superne dentato-serratis scabride stellato-pubescentibus, margine in sinibus glandulosis.

*Hab.* In cacumine montium Serra da Chapada flores virides præbet mens. Aug. (N. 180.) [Bras. Or.]

CROTON (§ EUCROTON, CLEODORA) PACHECENSIS (sp. nov.). Fruticulus parvus, ascendens, a basi vel tantummodo superne ramosus, indumento lepidoto-stellato-tomentoso albido arctissime obtectus; foliis brevipetiolatis, lanceolato-linearibus, mucronulato-acutatis, subtriplinerviis, basi subrotundatis, glandulosis; racemis abbreviatis, paucifloris, basi femineis, superne masculis, floribus omnibus (præsertim femineis) pedicellatis; bracteis exiguis, ovatis, obtusis, superioribus 1-2-floris; florum masc., albido-tomentosorum petalis linearibus, obtusis, prorsus (præsertim vero basi et apice) barbato-ciliatis; staminibus 11, filamentis glabris; sepalis femineis linearibus acutiusculis, ovarium breviter excedentibus, basi intus squamulâ parvâ auctis; ovario trigono-subgloboso, lepidoto-tomentoso; stylis a basi divergentibus ultra medium semel dichotomis, cruribus, una cum stylis pilosis, sursum arcuatim incurvis.

*Hab.* Ad Puerto Pacheco floret et fructificat mens. Feb. (Nn. 1050, 1062.)

Planta gracilis circa 35·0 cm. alt. Radix attenuatus, radicellos fibrosos subsimplices parum undulatos plagiotropicos emittens. Caulis deinde minute lepidotus, longitrorsum striatulus, purpureo-leucophæus, 0·2 cm. diam., imâ basi ad 0·35-0·4 cm. incrassatus. Rami 2-3-4-chotome divisi. Ramuli gracillimi, teretes. Petioli 0·3-0·8 cm. long. Laminæ pleræque 1·5-2·5 cm. long., solemniter 0·35-0·7 cm. lat., firme membranacæ, supra pallide virides, minute pubescentes, subtus albide lepidoto-tomentosæ, costæ secundariæ obscuræ. Racemi nec ultra 2·5 cm. long., plerique vero breviores, graciles, lepidoto-tomentosi. Bracteæ 0·04 cm. long. Pedicelli florum masc. vix 0·2 cm., florum fem. fere 0·2 cm. long., sub fructu usque ad 0·3 cm. long. Sepala mascula petalis æquilonga, ovata, obtusa. Petala 0·2 cm. long. Filamenta petalis paullo breviora; antheræ latitudine et longitudine æquali. Sepala feminea 0·15 cm. long., erecta; glandulæ petalinæ obsoletæ vel ad setam parvam reductæ. Ovarium 0·12 cm. diam. Styli 0·07 cm. long. cruribus 0·1 cm. long., pallidis. Capsula ovoidea, arctissime lepidoto-tomentosa, vix 0·5 cm. long.

Semina parva, oblonga, complanata, utrinque brevissime costulata, sub lente minute serobiculata, pallida, 0·3 cm. long.

*Crotoni angustifronti*, Muell. Arg., speciei mihi descriptione solummodo cognitæ, evidenter arcte affinis, ab eo abhorrens, præter alia, indumento albido nec ferrugineo, foliis longius petiolatis, minoribus, nunquam linearibus, bracteis masculis 1-2-floris, floribus 11-andris, sepalis haud acuminatis. [Bras. Or.]

CROTON (§ ASTRÆA) COMANTHUS (sp. nov.); caulibus erectis, gracilibus, mox puberulis; petiolis elongatis, tenuibus, folia excedentibus vel subæquantibus, vel quam ea paullo brevioribus; laminâ tripartitâ, segmentis lanceolatis vel ovato-lanceolatis acuminatis, lateralibus divergentibus, omnibus serrulatis, supra pilosis, subtus pubescentibus, tenuiter membranaceis; stipulis conspicuis, setaceis; racemis elongatis, gracilibus, folia excedentibus, pluri- et distantifloris; bracteis subulato-setaceis, quam pedicelli masculi tenuissimi circa 2-plo brevioribus; floribus omnibus pedicellatis; florum masc. glabrorum petalis spathulato-oblongis obtusis, dimidio inferiore margine barbato-ciliatis, ceterum glabris; staminibus circa 16, filamentis brevibus; antheris transverse ellipticis, sc. latioribus quam longis; sepalis femineis oblongis obtusis, ovarium paullo excedentibus; ovario cylindrico; stylis paullo ultra medium 6-fidis.

*Hab.* Reperi inter Santa Cruz et Villa et Maria mens. Dec. florentem et fructificantem. (N. 1022.)

Caulis 0·2-0·3 cm. diam., sursum ramosus. Ramuli erecto-ascendentes, in sicco brunei, primâ ætate tomentosi, cito puberuli, teretes, longitrorsum striati, lenticellis minutis instructi. Petioli usque ad 8·0 cm., modici circa 4·0 cm. long., mox piloso-puberuli. Laminæ 4·0-9·0 cm. long., basi late subcordatæ vel truncatæ, 3·0-5·0 cm. lat., supra in sicco rubescentes, subtus subincanæ, usque ad  $\frac{4}{3}$  vel altius trilobæ, segmentum medium quam lateralia longius et latius, usque 7·5 cm. long., modica circa 5·0 cm. lat.; costæ secundariæ utrinque circiter 6, sæpe subopposite insertæ, leviter arcuatæ. Glandulæ subobsoletæ. Stipulæ usque ad 0·6 cm. long., tenuissimæ, basi ampliores, erectæ, piloso-puberulæ. Racemi fere ad 30·0 cm. long. (modici circa 22·0 cm.), deorsum nudi, mox puberuli, angulati, nec ultra 0·1 cm. diam. Flores masculi pedicellis 0·2 cm. long. fulti. Flores feminei intervallis plerumque 1·0-1·5 cm. orti, rarius congesti; pedicelli validi, minute albido-tomentosi, circa 0·25 cm. long., bracteas pilosulas duplo excedentes. Sepala mascula ovata, obtusa, petalis æquilonga. Petala et filamenta 0·17 cm. long. Sepala feminea 0·23 cm. long., intus pilosula, margine hirtulo-ciliata. Glandulæ petalinæ ambitu rectangulares, in sicco nigricantes. Ovarium 0·15 cm. diam., hirtulo-tomentosum. Styli ascendenti-divergentes, pilosi, 0·2 cm. long., uterque cruribus 6 tenuibus, involutis, bruneo-purpureis, 0·35 cm. long. instructi. Capsula 0·6 cm. long., glabra, membranaceo-crustacea, pallida. Semina oblonga, tetragona, postice truncata, vix 0·5 cm. long., 0·3 cm. lat., utrinque leviter corrugata, pallida, purpureo-bruneo-maculata.

Species juxta *C. Gardneri*, Muell. Arg., intercalanda, abs quâ foliis parvis longi-

petiolatis, floribus masc. 16-andris, floribus fem. evolutis minoribus, sepalis fem. brevioribus, stylis nec profunde 6-fidis, ex meâ sententiâ rite secernenda. [Bras. Or.]

*CROTON CHAMÆDRIFOLIUS*, Griseb. Fl. Brit. W. Ind. p. 41.

*Hab.* Crescit in ripâ fl. Paraguay inter Santa Cruz et Villa Maria, ubi mens. Dec. floret et fructificat. (N. 826.) [Amazonia, Guiana, Venezuela, Nov. Granat., Ins. Trinitatis.]

*CROTON*, sp. incertæ sedis. Fruticulus circa 30·0 cm. alt., caule sat crasso, erecto, superne parce ramoso; ramulis albido-lepidoto-tomentosis; petiolis quam folia multoties brevioribus 0·5-0·8 cm. long., patulis vel decurvis, lepidoto-tomentosis; laminis ovato-lanceolatis acuminatis, vix usque ad 0·6 cm. long. (modicis 4·5 cm.), firme membranaceis, superne mox fere glabris, virescentibus, subtus minute lepidoto-tomentosis, basi glandulis duabus patelliformibus, atratis, 0·04 cm. diam. instructis; racemis quam folia brevioribus, paucifloris; floribus masculis, solummodo cognitis, subsessilibus; bracteis exiguis, setaceis, 1-2-floris; sepalis ovatis obtusis; petalis oblanceolatis, inferne barbatis, ceterum fere glabris; staminibus 11, filamentis glabris; antheris ellipticis, receptaculo piloso.

*Hab.* Ad Santa Cruz florescit mens. Nov. (N. 688 a.) *Curraleira* vicinorum.

True *Curraleira* is *Croton antisiphiliticus*, Mart. Like that plant, the present is held in repute as a remedy for venereal disease.

#### HETEROCROTON, Euphorbiacearum, e tribu Crotonearum, genus novum.

Calyx masc. 5-6-partitus, laciniis ovatis, æstivatione apice tantum imbricatis; lacinia impar postice, scilicet axin inflorescentiæ spectans. Petala 5-6, evoluta, æstivatione imbricata. Glandulæ disci, cum petalis alternantes, parvæ. Receptaculum glabrum. Stamina centralia 10-11, filamenta florum nondum apertorum inflexa. Antheræ subbasifixæ, biloculares, connectivus dorso incrassatus. Calycis fem. lacinia 6-8, unâ serie insertæ, æquales vel subæquales, nec 5 majores cum 5 minores alternantes, marginibus plus minus pectinata, rigidæ, incrassatæ, basi squamâ parvâ auctæ. Petalorum rudimenta cum calycis laciniis alternantia, oblonga vel linearia, setifera. Ovarii loculi 2?, uterque locus 1-ovulatus. Styli 3, dichotome divisi. Fructus et semina desiderantur.

Fruticulus parvus, hirsutus. Folia subquinquenervia, alterna, petiolata, plane stipulata; fol. superiorum lamina basi biglandulosa vel abortu uniglandulosa, inferiorum eglandulosa. Racemi terminales basi flores femineos paucos (circa 2) sursum, intervallo interjecto, flores masculos subsessiles dense confertos proferentes. Bractæ conspicuæ, persistentes. Calyx fem. et styli pilis hispidis flavidis onusti.

Genus juxta *Crotonem* inserendum, inter *Crotonem* et *Julocrotonem* quasi medium tenens, ab ambobus vero, præsertim calyce miro, optime abhorret.

#### HETEROCROTON MENTIENS (sp. nov.).

Planta circa 40·0 cm. alt. Caulis e rhizomate valido, brevi, usque ad 1·0 cm. diam., parce radicigero ascendens, una cum basi ramulorum nodis leviter tumidis

subpurpurascenti-cinereus, longitrorsum striatulus, lenticellis eminentibus copiose munitus. Ramuli sursum foliati ibique strigose fulvo-hirsuti, 0.1–0.25 cm. diam. Foliorum lamina ovato-oblonga, obtusa vel obtusiuscula, basin versus sensim angustata, nonnunquam leviter truncata, plus minus impariter lobulata vel serrato-crenata, utrinque hirsuta, firme membranacea; costæ secundariæ paucae, inconspicuæ, oblique insertæ, primo fere rectæ juxta marginem subito et magnopere arcuatæ; glandulæ patelliformes, breviter stipitatæ, 0.1 cm. diam., saltem in sicco brunæ; petioli valde inæquales et reverâ 0.3–1.7 cm. long., fol. inf. graciles, fol. sup. validi, fol. omnium ascendentes, fulvo-hirsuti. Stipulæ setacæ, circa 0.5 cm. long., hirsutæ. Racemi post anthesin ultra 4.0 cm. long., maturius (fl. fem. apertis, masc. nondum expansis) circa 2.5 cm. long. Racemi hirsuti. Flores feminei circa 2 (an unquam flos solitarius?), intervallo 1.0 cm. long. inter eos et flores masculos interposito. Bractæ lanceolatæ, acutæ, hirsutæ, arcuatæ, usque ad 0.3 cm. long. Florum masc. brevissime pedicellatorum sepala hirsuta, 0.18 cm. long., una cum petalis crebre glanduloso-punctata. Petala anguste obovato-oblonga, obtusissima, juxta basin longe barbata, alibi margine barbatula, saltem floris vix aperientis sepalis æquilonga. Filamenta glabra, floris nondum aperti petalis breviora; antheræ ellipticæ, 0.06 cm. long., 0.04 cm. lat. Pollinis grana patelliformia, ambitu spherica vel subspherica, tuberculata, lineâ triradiatâ aucta. Calycis fem. lacinia oblongæ, acutæ, intus atro-brunæ et sursum hirtellæ, deorsum glabræ, 0.25–0.3 cm. long., lacinulæ suæ dimidium partis rhachialis raro excedentes; squamæ subquadratæ, albæ, circa 0.03 cm. long. et lat. Petalorum rudimenta rigida, integra vel leviter lobulata, dorso setis elongatis munita, usque ad 0.12 cm. long. Ovarium 0.1 cm. diam., pilosum. Styli a basi distincti, divergenti-ascendentes, longe infra medium dichotomi, 0.2 cm. long.; crura involuta, fere ad medium dichotoma vel indivisa.

*Hab.* Schedulâ amissâ, planta incertæ habitationis, sed verisimiliter ad Santa Cruz crescit.

My specimen of this interesting plant is unfortunately unique, so that material for ascertaining facts of structure is not available. The most noteworthy point is doubtless the calyx of the female flower. The small section *Decalobium* of *Croton* contains two species, *C. sincorensis*, Muell. Arg., from Bahia, and *C. decalobium*, Muell. Arg., a Central American plant; these have an unequally 10-partite calyx with entire lacinia; the quinary symmetry is therefore not departed from. *Julocroton* has pectinate calyx-lacinia, like those of our plant, but the upper (posticous) lacinia are greatly reduced in size (rudimentary in fact), and the lower one is larger than its lateral fellows. *Heterocroton* unites the actinomorphic calyx of *Croton* with the pectinate lacinia of *Julocroton*, and differs from both in the absence of quinary symmetry.

The specimen has only one ovary, which, after being opened, has been carefully secured in a capsule, so as to be available for future examination. I feel very undecided about the placentation, as all I could with certainty make out was a couple of ovules lying immersed in a magma. Whether we have here something resembling the

placentation of *Crotonopsis*— and I should not be surprised if this were the case— can be determined only when more material comes to hand.

Through water getting into the 'Explorer' I lost about ten per cent. of my Santa Cruz plants, and I suspect that specimens of *Heterocroton* must have been among them.

I have omitted a diagram of the female flower, as the nature of the ovary is so uncertain. The specific name is an expression of the homoplasy between the plant and *Croton antisiphiliticus*, Mart., and, to judge from the figure, *C. Tamberlikii*, Muell. Arg.

**JULOCROTON ELÆAGNOIDES** (sp. nov.); ramulis subteretibus, arcte lepidotis; petiolis limbo brevioribus, raro æquilongis vel longioribus; laminis ovatis obtusis, basi truncato-rotundatis, nonnunquam levissime cordatis, margine undulatis, 5-nervibus, lepidotis, subtus incanis; stipulis elongatis, parvis, laceratis vel integris; bracteis setaceis, pedicellos excedentibus; petalis masc. laciniis calycis æquantibus, lineari-spathulatis, dorso-pubescentibus, præsertim basi et apice barbato-villosis, glandulis hypogynis 3 anticis oblongis, truncatis, 2 posticis quam anticæ paullo minoribus; staminibus 11, filamentis dimidio inferiore longe barbatis, ceteroquin pubescentibus; antheris ellipticis, dimidio longioribus quam latis; calycis fem. laciniis 3 anticis late lineari-oblongis obtusis, 2 posticis setaceis, brevibus; ovario trigono-subgloboso; stylis erectis, basi coalitis, brevibus, hirto-tomentosis, bis dichotomis, cruribus mediocribus involutis.

*Hab.* Juxta Corumbá florebat et fructificabat mens. Jan. (N. 911.)

Fruticulus diffusus, metralis. Ramuli erecto-ascendentes, striatuli, cinerei, lepidibus minutis stellato-piligeris arcte obtecti, aliquanto torti, 0.2-0.4 cm. diam. Foliorum lamina usque ad 11.5 cm., modica 5.0-6.0 cm. long., 2.0-8.0 cm. lat. (modica 2.5-3.0 cm.), pergamena, lepidibus parvis piligeris facie laminæ inferiore argenteis, sæpe in nervis primariis pag. sup. luteolis, dense obtecta; costæ secundariæ paucae, oppositæ vel alternatim insertæ, leviter arcuatæ, supra obscuræ, subtus eminentes; petioli plerique 0.5-2.0 cm. long., raro 7.0-7.5 cm. attingentes, ascendentes, rigidi, albide stellato-lepidoti; stipulæ circa 0.5 cm. long., setacæ, acuminatæ, nunc indivisæ, nunc semel vel bis lacerato-dentatæ. Spicæ post anthesin usque ad 2.5 cm. long., tempore florendi nec ultra 1.0 cm. long. Bracteæ circa 0.5 cm. long. Calycis masc. laciniæ anticæ argenteo-lepidotæ, oblongæ, obtusæ, 0.17 cm. long.; posticæ ovatæ, membranacæ. Petala sepalis æquilonga et filamenta (saltem floris vix aperientis) excedentia. Antheræ 0.1 cm. long. Calycis fem. laciniæ margine breviter denticulatæ, tomentosæ, intus basi castaneæ, 0.3 cm. long., 0.15 cm. lat.; laciniæ posticæ altius connatæ, intus fere glabræ. Disci lobi antichi ovati, acuminati, 0.07 cm. long., postici obsoleti. Stylorum rigidorum pars indivisa vix 0.1 cm. long., cruribus inclusis circa 0.2 cm. long. Capsula tomentosa, trigono-subglobosa, 0.4 cm. long. et lat. Semina 0.3 cm. long. et lat., subplumbea, nitida.

Non dubito quin ad *J. Gardneri*, Muell. Arg., accedat, indumento vero gaudet diverso, petiolis brevioribus, stipulis sæpe haud integris, fl. masc. glandulis hypogynis et calycis fem.

laciniis disparibus, etc. A *J. stipulari*, Muell. Arg., cujus stipulae haud indivisae, discernitur, inter alia, calycis fem. laciniis omnino disparibus. [Bras. Or.]

*JULOCROTON LEPIDUS*, (sp. nov.); ramulis gracilibus, ascendentibus, angulatis, arcte lepidoto-tomentellis, dein glabris; laminis ovato-oblongis vel ovato-lanceolatis, basi rotundatis, 5-nervibus, pergamenis, praesertim subtus arcte argenteo lepidoto-tomentosis, quam petioli longioribus; stipulis elongatis, setaceis, indivisis, rarius lacinulatis; bracteis setaceis, pedicellos breves excedentibus; petalis masc. spathulato-oblongis obtusis, praesertim basi barbato-ciliatis; glandulis hypogynis minutis; staminibus 11, 3-4 vero nonnunquam ad staminodia reductis; filamentis pilosis; antheris ellipticis, 2-plo longioribus quam latis; calycis fem. laciniis anticis tomentosissimis, ovatis vel ovato-rotundatis, obtusissimis, margine (apice excluso) breviter lacinulatis, lacinulis dimidium partis rhachialis nequaquam aequantibus, laciniis posticis minutis; ovario trigono-globo, tomentoso; stylis tomentosissimis, erectis, basi coalitis, bis dichotomis, cruribus brevibus involutis.

*Hab.* Reperi ad Puerto Pacheco, ubi floret et fructificat mens. Feb. (N. 1057.)

Ramuli ad 0.2 cm. diam., longitrorsum striatuli, primo cinerei, dein dilute brunei. Foliorum lamina usque ad 5.0 cm. long., vix 3.0 cm. lat., obtusa vel acuta, supra pallide virescens; costae secundariae paucae, leviter arcuatae, supra impressae, subtus eminentes; petioli 0.4-2.0 cm. long., ascendentes vel patuli, arcte albido-tomentosi. Stipulae 0.4 cm. long. Spicae abbreviatae usque ad 1.5 cm. long. Bractea usque ad 0.4 cm. long., pleraeque circa 0.2 cm. Calycis masc. laciniae anticae extus argenteolepidotae, triangulato-oblongae, obtusae, 0.12 cm. long.; laciniae posticae ovato-oblongae, membranaceae. Petala 0.12 cm. et antherae 0.075 cm. long. Calycis fem. laciniae anticae tomentosae, floris aperiens 0.3 cm. long., 0.25 cm. lat., dorso concavae, lacinulis dimidio partis rhachialis 4-plo brevioribus, nihilominus planis; laciniae posticae altius connatae, deltoideae, leviter lacinulatae. Disci lobi antichi ovati, obtusi, circa 0.1 cm. long.; postici obsoleti. Stylorum pars indivisa 0.1 cm. long., cruribus (ultimis brevibus) inclusis 0.2 cm. long. Capsula globosa, minute pubescens, 0.4 cm. long. Semina 0.3 cm. long., 0.22 cm. lat., brunea, levia, haud nitida.

Praeedenti affinis, distinctus vero praesertim characteribus floralibus, ex gratia floribus masculis minoribus, petalis suis disparibus et antheris brevioribus, calycis fem. laciniis anticis diversiformibus et semper plane lacinulatis, laciniis posticis deltoideis nec setaceis, glandulis hypogynis majoribus, styli tomentosi cruribus ultimis abbreviatis, necnon seminibus insigniter minoribus et bruneis, haud plumbeis. [Bras. Or.]

*JULOCROTON MONTEVIDENSIS*, Klotzsch, ex Baill. *Ét. Euphorb.* p. 376, var. *calycis fem. laciniis dentatis*.

*Hab.* Crescit in ripa fl. Paraguay inter Santa Cruz et Villa Maria, mens. Dec. florens. (N. 839.) [Bras. Or., Paraguaria, Uruguaria.]

Fruticulus metralis, erectus, sursum tantummodo foliatus.

After spending much time upon this plant I have decided to name it as above.

**JULOCROTON ABUTILOIDES** (sp. nov.); caulibus, ramulis, foliis, et floribus dense et breviter lanato-tomentosis; ramulis teretibus, ascendentibus vel patulis; petiolis quam folia brevioribus, raro ea subæquantibus, foliorum summorum fere obsoletis; laminis late ovatis, rarius ovato-lanceolatis, acutis vel obtusis, basi leviter cordatis, margine denticulatis, trinerviis; stipulis elongatis, setaceis; spicis quam folia brevioribus; inflorescentiâ ambitu ovatâ, densiflorâ; bracteis stipulis similibus; petalis masc. anguste linearibus, obtusis, barbato-ciliatis; staminibus 11, filamentis basi barbatis, ceteroquin pilosis; antheris oblongis, 3-plo longioribus quam latis; calycis fem. laciniis anticis late ovatis acutis, margine subbreviter lacinuligeris, laciniis posticis perbrevibus utrinque tomentosis; disci lobis anticis spathulatis, superne dense tomentosis, alibi pilosis; ovario trigono-subgloboso, tomentoso, stylis erectis, basi coalitis, tomentosis, bis dichotomis, cruribus ultimis subbrevibus apice breviter involutis.

*Hab.* Crescit ad Corumbá, ubi mens. Jan. flores et fructus profert. (N. 968.)

**Fruticulus**  $\frac{3}{4}$ -metralis, erectus, copiose ramosus. Caulis circa 0.3-0.5 cm. diam., obsolete angulatus. Folia plerumque 5.0-9.0 cm. long., 2.5-6.5 cm. lat., supra pallide viridia, subtus incana, sæpe basi parum obliqua; costæ secundariæ paucae, levissime arcuatæ, sæpissime oblique insertæ; raro angulo fere recto; petioli vix usque ad 5.5 cm. long., modici circa 2.5 cm., foliorum summorum non ultra 0.5 cm. long., validi, dense albo-tomentosi; stipulæ vix usque ad 1.0 cm. long., scariosæ. Spicæ 2.0-3.5 cm. long., subcompressæ. Calycis masc. laciniæ ovatæ, acutæ, 0.24 cm. long., posticæ anticis paullo latiores et membranacæ. Petala masc. 2.2 cm. long. Filamenta petalis æquilonga; antheræ 0.1 cm. long., 0.03 cm. lat. Calycis laciniæ fem. anticæ 0.4 cm. long. et lat., laterales margine libero, basi longiuscule lacinulatæ, alibi solummodo breviter denticulato-incisæ; laciniæ posticæ alte connatæ, setacæ. Disci lobi antici 0.2 cm. long., 0.075 cm. lat. Ovarium pæne 0.5 cm. long. et lat. Stylorum, in toto 0.45 cm. long., pars coalita 0.15 cm. et crura ultima 0.1 cm. long., hæc breviter pilosa, atrata. Capsula trigono-subglobosa, 0.55 cm. long. et lat., tomentosa. Semina 0.35 cm. long., 0.3 cm. lat., fusco-purpurea, nitida.

Species ab affinibus ita distinguenda:—

A *J. solanaceo*, Klotzsch, præter alia, foliis imparibus nec integris nec obsolete denticulatis, stipulis longioribus, spicis abbreviatis, filamentis inferne albo- nec aureo-lanatis, antheris brevioribus connectivis haud pubescentibus.

A *J. verbascifolio*, Klotzsch, indumento ramorum molli nec strigoso-rigido, foliis longius petiolatis, spicis haud fulvo-ferrugineo-tomentosis, bracteis setaceis, floribus masculis majoribus, antheris brevioribus, calycis fem. minoris laciniis anticis disparibus, itaque seminibus diversis.

A *J. humili*, Didr., staturâ elatiore, indumento dispari, foliis majoribus diversiformibus, calycis fem. laciniis neque profunde lineari-pinnatipartitis nec pinnatisectis, filamentis barbatis, antheris brevioribus, seminum funiculo parvo. [Bras. Or.]

**JULOCROTON HUMILIS**, Didr. in Kjøeb. Vidensk. Meddel. (1857) p. 132.

*Hab.* Ad Jangada mens. Sept. floret. (N. 284.) [Bras. Or.]



*ARGITHAMNIA* (§ *ATHORA*) *PURPURASCENS* (sp. nov.); foliis brevipetiolatis, trinerviis, fere usque ad basin minute serrulatis; floribus monoicis; calycis masc. laciniis lanceolatis, acuminatis; petalis masc. quam calycis laciniæ paullo brevioribus, breviter unguiculatis, ovato-lanceolatis, breviter acuminatis, dorso obsolete puberulis; calycis fem. laciniis lanceolatis, acuminatis; petalis femineis minutissimis, subulato-setaccis; glandulis ovato-rotundatis, quam calycis laminæ multoties brevioribus; ovario albide hirto-villosulo, capsulis appresse villosulis; seminibus pyriformi-globosis, reticulato-insculptis.

*Hab.* Viget ad Corumbá, mens. Jan. florens et fructificans. (N. 959.)

Fruticulus circa semimetralis. Caulis subteres, purpureo-cinereus, albo-punctatus, longitrorsum striatulus, 0·3–0·4 cm. diam. Ramuli graciles, patuli, subangulati, purpurei, cito appresse pilosi. Folia lanceolata, utrinque acutata, membranacea, utrâvis facie appresse pilosa, usque ad 7·5 cm. long. (modica 5·0 cm.), 1·5–2·0 cm. lat., pleraque viridi-purpurea; petioli circa 0·3 cm. long., hirtelli; costæ secundariæ perpaucae, erecto-ascendentes, fere rectæ. Stipulæ setacæ, 0·25–0·3 cm. long. Inflorescentiæ axis appresse hirtellus, 0·5–0·8 cm. long. Bracteæ lanceolatae, hirtellæ, usque ad 0·2 cm. long. Pedicelli calyce breviores, sub fructu 0·2 cm. long., appresse hirtelli. Flores virides. Calycis masc. hirtelli laciniæ vix 0·4 cm. long. Petala basi cum columnâ connata 0·15 cm. long. Glandulæ hypogynæ parvæ, ovatae, obtusæ, basi petalis atque columnæ stamineæ breviter adnatæ, 0·03 cm. long. Stamina complete biverticillata, sc. verticillus superior 5-antheriferus. Calycis fem. hirtelli laciniæ 0·6 cm. long.; ejus petala integerrima vix 0·1 cm. long.; glandulæ membraniformes, 0·5 cm. long., margine undulatae. Ovarium trigono-globosum, 0·15 cm. long. et lat. Stylus in toto 0·45 cm. long., appresse pilosus, purpurascens, plerumque bis dichotomus; crura ultima brevia, integra vel breviter bifida. Capsula subglobosa, 0·35 cm. diam. Semina vix 0·3 cm. long. et 0·2 cm. lat., dilute brunea, rhaphide atratâ notatâ.

Ab *A. montevidensi*, Muell. Arg., optime abhorret, ex gratiâ, foliis majoribus fere ad basin serrulatis, glandulis fl. masc. basi solummodo columnæ staminali adnatis, petalis fl. fem. setiformibus, et glandulis brevibus nec calycem fere æquantibus et filamenta simulantibus, itaque stylis longioribus. [Bras. Or., Paraguaria, Uruguaria.]

*MANIHOT TRIPARTITA*, Muell. Arg., in DC. Prod. xv. 2, p. 1068. Var. *VESTITA* (var. nov.); caule dilute lutescente, lanato-tomentello, foliolis ad 9·5 cm. long., florum partibus dense vestitis, bracteolis bracteas excedentes.

*Hab.* Incolit locos apertos in cacumine montium Serra da Chapada, mens. Aug. florens et fructificans. (N. 186.) [Bras. Or., Goyaz.]

*ACALYPHA SUBVILLOSA*, Muell. Arg., in Mart. Fl. Bras. xi. 2, p. 341.

*Hab.* Reperi ad Jangada, mens. Sept. florentem. (N. 272.)

Frutex scandens trimetralis et ultra. Ramuli tantum sursum foliigeri. [Bras. Or., Goyaz, Venezuela.]

*ACALYPHA BREVIPES*, Muell. Arg., in *Linnæa*, xxxiv. p. 24.

*Hab.* Crescit ad Jangada, mens. Sept. florens. (N. 275.)

Fruticulus  $\frac{2}{3}$ -metralis. Caulis erectus, gracilis, apice tantummodo foliatus. [Bras. Or.]

*ACALYPHA* (§ *EUACALYPHA*) *AMPHIGYNE* (sp. nov.); petiolis limbo brevioribus, ascendentibus vel patulis, limbo subquinenervi, membranaceo, supra mox, costis pubescentibus exemptis, puberulis, subtus pubescentibus; stipulis setaceis, acuminatis; spicis androgynis axillaribus, basi vel juxta basin bracteam unicam femineam sursum flores masculos dense confertos et apice solemniter florem fem. pedicellatum fructiferum vel abortu sterilem proferentibus; bracteis fem. 1-floris, rotundatis, 11-laciniatis, laciniis anguste lineari-lanceolatis vel linearibus obtusis, proximalibus 1-2 utrinque nonnunquam abbreviatis; floribus masc. hirtellis; calycis fem. laciniis 3 oblongo-ovatis; ovario hirtello; stylis latere ventrali a lacinulis circa 10 iis ipsis longioribus coronatis.

*Hab.* Crescit juxta Corumbá, ubi mens. Dec. floret. (N. 1024.)

Suffrutex  $\frac{2}{3}$ -metralis, erectus, ramosus. Ramuli graciles, subteretes, striatuli, breviter pubescenti-tomentosi, dein glabri. Foliorum laminae modicæ 4.0-10.0 cm. long., raro usque ad 2.0 cm. imminutæ, 2.5-5.5 cm. lat., ovato-lanceolatæ vel ovatæ, breviter acuminatæ, basi rotundatæ, solemniter levissime cordatæ, margine serratæ vel (interdum subgrosse) crenatæ; costæ secundariæ 7-9, levissime arcuatæ, utrinque eminentes et pubescenti-tomentellæ; petioli 0.5-2.5 cm. long., subpatuli, minute tomentoso-pubescentes. Stipulæ pleræque 0.3-0.4 cm. long., angustissimæ, dorso hirtellæ. Spicæ usque ad 6.0 cm. long., graciles, pars mascula non ultra 0.2-0.3 cm. diam., pubescenti-tomentellæ. Flores masc. aperientes 0.04 cm. diam. Bracteæ fem. hirtellæ, 0.4 cm. lat., 0.23 cm. long.; lacinulæ usque ad 0.13 cm. long., apice paullo incrassatæ. Capsula ignota.

Species singularis, et cum nullâ mihi notâ componenda nisi cum *A. apicali*, N. E. Br., abs quâ differt foliis latioribus breviter petiolatis, stipulis longioribus, bracteis femineis majoribus et 11-lacinulatis (nec 7-lacinulatis), floribus femineis solitariis nec in parte inferiore spicæ pluribus, itaque stylis disparibus [Paraguaria.]

*ACALYPHA COMMUNIS*, Muell. Arg., in *Linnæa*, xxxiv. p. 23. Var. *intermedia*, Muell.

Arg.

*Hab.* Mens. Dec. floret ad Santa Cruz. (N. 745.) [Bras. Or., Goyaz, Uruguaria, Paraguaria.]

*ALCHORNEA CASTANÆFOLIA*, Ad. Juss. Tent. Euph. p. 42.

*Hab.* Vulgatissima in margine fl. Paraguay, San Lorenzo, Cuyabá, etc. Nec flores nec fructus vidi. [Bras. Or., Goyaz, Amazonia, Venezuela.]

*DALECHAMPIA* (§ *EUDALECHAMPIA*) *SYLVESTRIS* (sp. nov.); petiolis foliola subæquantibus; stipulis subfalciformi-lanceolato-subulatis acuminatis; involucri foliolis majusculis, late quadrato-ovatis, trifidis, membranaceis; calycis fem. laciniis 6, sub

flore lanceolatis acutis, sub fructu leviter ampliatis, imâ basi utrinque 1-lacinulatis, lacinulis nunc 0·05 cm. long., barbellatis vel pæne effetis; ovario minute tomentoso, columnâ stylari ovarium multoties superante crassiusculâ, inferne breviter tomentellâ, dimidio superiore leviter incrassatâ et glabrâ, apice levissime ampliata; seminibus globosis, levibus.

*Hab.* Viget in sylvâ primævâ inter Santa Cruz et Tapirapuan, mens. Sept. flores et fructus simul proferens. (N. 376.)

Ramuli gracillimi, scandentes, breviter pubescentes vel piloso-pubescentes, leucophæi, non ultra 0·15 cm. diam., teretes. Stipulæ 0·5–0·8 cm. long., basi 0·1–0·18 cm. lat., rigidæ, patentés, pubescentes. Petioli usque ad 5·0 cm. long., modici 2·0–3·0 cm., patuli, graciles, pubescentes; foliola lanceolata, cuspidulato-acuminata, lateralia basi intus acuta, extus valde obliqua et leviter semicordata, raro usque ad 5·0 cm. long. (modica 3·0–3·5 cm.), circa 1·0–1·5 cm. lat., margine undulata, firme membranacea, supra sparsim strigoso-puberula, subtus pallidiora et brevissime pubescentia. Pedunculi petiolos sæpissime subæquantes, graciles, piloso-pubescentes, sub flore 1·0–2·5 cm. long., sub fructu usque ad 8·0 cm. Involuceri foliola alba, 3·5–4·0 cm. long., nervosa, margine undulata vel serrulata, puberula, 5–6-nervia, lobi triangulari-lanceolatis, acuminatis, serrulatis, stipellis lineari-lanceolatis, puberulis, et 0·8–1·5 cm. long. Calycis fem. tomentelli lacinia sub flore 0·22–0·25 cm. long., sub fructu duplo longiores et rigidiusculæ. Columna stylaris tempore florendi 0·8 cm. long. Capsula depressa, tridyma, brevissime tomentella, circa 0·8 cm. diam. Semina 0·4 cm. diam., brunea, atro-maculata.

Cum *Dalechampia subintegrâ*, Muell. Arg., multis signis arcte congruens, indumento vero, foliis minoribus longipetiolatis, involucri foliolis longioribus acuminatis, calycis laciniis tomentellis, columnâ stylari insuper breviora et dimidio inferiore tomentellâ, ex meâ sententiâ, species propria rite existimanda. [Bras. Or.]

*DALECHAMPIA* (§ *EUDALECHAMPIA*) *CYNANCHOIDES* (sp. nov.); foliis breviter petiolatis, simplicibus, lanceolatis vel ovato-lanceolatis, basi cordatis, firme membranaceis; stipulis brevibus lineari-subulatis; involucri foliolis parvis, indivisis, cordato-ovatis acuminatis; bracteis fem. late rotundatis, integris, obtusissimis; calycis fem. laciniis circa 10 lanceolatis, inæqualibus, margine lacinulatis, lacinulis latitudinem laciniarum circa æquantibus vel eâ brevioribus; ovario tomentello; columnâ stylari glabrâ, superne ampliata; calyce paullo longiore, apice subito incrassato et excavato, ore brevissime 6-lobulato; seminibus subdepresse globosis, levibus.

*Hab.* Ad Santa Cruz flores et fructus gerit mens. Oct. (Nn. 483, 653.)

Ramuli volubiles, teretes, pubescentes, graciles, vix unquam ultra 0·15 cm. diam. Stipulæ pleræque 0·2 cm. long., firmæ, decurvæ. Petioli 0·4–1·0 cm. long., pubescenti-tomentelli; foliorum lamina 3·5–7·0 cm. long., 1·0–4·0 cm. lat., apice plerumque acuta, margine undulata vel undulato-serrulata, basi 5-nervis, præsertim subtus puberula, pallide nitida, venulis utrinque eminentibus laxè reticulatis. Pedunculi 0·8–2·0 cm. long., graciles, pubescentes. Involuceri foliola viridia, usque ad 1·0 cm. long. et 0·8 cm. lat., basi lata, 4–5-nervia, margine leviter crenulata vel

crenulato-serrulata, puberula. Stamina circa 20; columna staminea 0·075 cm. alt. Calycis fem. hirtello-ciliati laciniæ circa 0·25 cm. long., sub fructu 0·3 cm., et ad capsulam arete applicatæ. Columna stylaris tempore florendi circa 0·32 cm. long. Capsula depressa, tridyma, minute pubescens, 0·4 cm. diam. Semina albescencia, 0·3 cm. diam., lineis paucis longitudinalibus notata.

Speciem juxta *Dalechampiam convolvuloidem*, Muell. Arg., et *D. Leandri*, Baill., sine dubio intercalandam primo obtutu cognoscere potes ob folia brevipetiolata multo longiora quam lata et involucri foliola parva. [Bras. Or.]

DALECHAMPIA SCANDENS, Linn. Sp. Pl. ed. I. p. 1054.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 600.) [Amer. et Afr. Trop., Ind. Or.]

DALECHAMPIA CUIABENSIS, Muell. Arg. in Linnæa, xxxiv. p. 222.

*Hab.* Crescit ad Santa Cruz, ubi mens. Oct.-Nov. floret. (Nn. 408, 571.) Involucri foliola dilute purpurascencia. [Goyaz, Bolivia.]

MABEA INDORUM (sp. nov.); inflorescentiis micranthis floribundis; bracteis, in ipso axe inflorescentiæ sitis, ovatis acutis, glandulis duabus comparative magnis alveolato-rugosis instructis; pedicellis masc. tenuibus; calycis laciniis fem. 6 parvis, inæqualibus, deltoideis, obtusis, eglandulosis; staminibus 4-9; ovario tomentello, inermi; columnâ stylari stylosum, partem liberum æquante, sursum leviter trisulcatâ; capsulis immaturis subglobosis, inermibus, rufo-tomentellis.

*Hab.* In ripâ fl. dos Bugres reperi mens Oct. florentem. (N. 436.)

Arbor altitudine prætermisâ. Ramuli ascendentes, patuli, graciles, teretes, laxè rufulo-tomentosi, mox pilosi, dein glabri, et cortice purpurascenti-cinereo in longitudinem rimis brevibus angustissime ellipticis notato obtekti. Foliorum lamina lanceolato-oblonga, breviter cuspidato-acuminata, superiorum minor 5·0-7·0 long., inferiorum 10·0-13·0 cm., pleraque 2·5-4·5 cm. lat., basi acutata, margine serrulata vel undulato-serrulata, coriacea, supra nitida, in sicco nequaquam atrata, eximie reticulato-nervosa, subtus albescens et primo tomento fulvo sparso, mox deciduo instructa, dein glabra; costæ secundariæ 10-15, minoribus sæpe interjectis, angulis latis insertæ, rectæ vel levissime undulatæ, dein dichotome fractæ et arcuatim junctæ; petioli circa 1·0 cm. long., torti, canaliculati, mox glabri. Racemi graciles, basi efforigeri ibique bracteas minutas perpaucas proferentes, 4·0-6·0 cm. long. (cujus pars florifera 3·0-5·0 cm.), fulvo-tomentelli; rhachis 0·07 cm. diam., pars mascula 0·4 cm. diam. Flores masculi ex axillis bractearum ternatim orti, summi vero sæpe solitarii. Bracteæ vix 0·1 cm. long.; glandulæ usque ad 0·07 cm. diam., subglobulares. Pedicelli masculi 0·4 cm. long., tenuissimi, basi levissime incrassati, tomentelli. Flores masc. evoluti 0·12 cm. diam. Stamina minute tomentella; antheræ 0·06 cm. lat. Flores fem. solitarii; pedicellus circa 0·7 cm. long., tomentellus; calycis tubus 0·15 cm. long., 0·22 cm. lat., tomentellus; laciniæ breves, circa 0·03 cm. long. Styli pars indivisa 0·5 cm. long., tomentella. Capsula immatura vix 1·0 cm. diam., rufo-tomentosa, viva quasi pruinosa. Semina nondum matura ambitu elliptica, 0·7 cm. long., 0·45 cm. lat.

A proximâ *Mabeâ paniculatâ*, Benth., abhorret imprimis foliis majoribus, diversiformibus, in sicco nequaquam striatis, floribus masc. plerumque oligandris, antheris majoribus, glandulis bractearum majoribus. *M. Pohliana*, Muell. Arg., calycis laciniis 3 et staminibus 3 vel 2 et glandulis levibus gaudet. [Amazonia.]

MABEA FISTULIFERA, Mart. Reisc, i. p. 479.

*Hab.* Crescit in cacumine montium Serra da Chapada, ubi mens. Aug. fructificat. (N. 308.)

Arbor circa 10-metralis. [Bras. Or., Amazonia.]

MABEA CRENULATA (sp. nov.); inflorescentiis micranthis, floribundis; bracteis, ipso in axi inflorescentiæ sitis, ovato-lanceolatis acutis, glandulis duabus parvis leviter alveolatis instructis; pedicellis masc. abbreviatis, calycis fem. laciniis 6, ovatis obtusis, eglandulosis; staminibus circa 12; ovario fulvo-tomentoso inermi, capsulâ ignotâ.

*Hab.* Inveni ad Santa Cruz mens. Oct. florentem. (N. 423.)

Arbor circa 5-metralis. Ramuli ascendentes, teretes, longitrorsum rimosi, cinerei, primo fulvo-tomentosi, mox glabri. Folia ut in præcedente, nisi paullo minora et angustiora, apice obtusa vel acuta nec cuspidata, basi parum rotundata et margine crenulata, in sicco paginâ inferiore subrubescencia, paginâ superiore albescentia. Inflorescentia speciminum meorum imperfecta, sed plane paniculiformis, sc. e racemis (2-3?) basi florem unicum (?) femineum gerentibus composita. Bracteæ 0.13 cm. long., extus tomentosæ; glandulæ vix 0.05 cm. diam., ovideæ. Pedicelli masculi florum vix apertorum modo 0.1 cm. long., tomentelli. Flores masc. parvi, vix 1.0 cm. diam. Stamina tomentella; antheræ parvæ, 0.04 cm. lat. Fl. fem. pedicellus 0.6 cm. long., tomentellus; calyx 0.2 cm. long., 0.25 cm. lat., laciniæ 0.1 cm. long. Reliqua sileo.

Distat a *M. paniculatâ*, Benth., foliis diversiformibus, fl. masc. pedicello abbreviato, et calyce fem. dispari. *M. Indorum*, nob., nullo negotio cognoscenda ob inflorescentiam paniculatam, flores masc. brevipedicellatos, antheras parvas, et calycem fl. fem. diversum. [Amazonia.]

MAPROUNIA GUIANENSIS, Aubl. Pl. Guian. ii. p. 895.

*Hab.* Inveni ad Serra da Chapada, alt. 600 met. super mare, mens. Aug. florentem. (N. 162.) [Amer. Austr. Trop.]

SEBASTIANA SERRULATA, Muell. Arg. in DC. Prod. xv. 2, p. 1167.

*Hab.* Ad Santa Cruz mens. Nov. floret. (N. 580.) [Bras. Or., Goyaz.]

#### EUPHORBIACEÆ INDETERMINABILES.

- i. *Sebastiana*? sp. Frutex vel fruticulus, ramulis gracilibus, ascendentibus, glabris; foliis brevipetiolatis, ovato-lanceolatis, cuspidatis, obtusis, undulatis vel crenulatis, basi acutatis, membranaceis, glabris, plerisque 5.5-8.0 cm. long. et 2.5-5.0 cm. lat.; floribus femineis breviter pedicellatis; bracteis ovatis, leviter incisis; calycis trilobi,

0·15 cm. long., lobis breviter incis; ovario subgloboso 0·2 cm. diam.; stylis brevibus; capsulâ subglobosâ, brevi, circa 1·2 cm. diam. Reliqua desunt.

*Hab.* Reperi in ripâ fl. Paraguay, prope Tres Barras, mens. Oct. (N. 622.)

ii. Euphorbiacea dubia, forsan *Alchornea* sp.?

Arbuscula  $3\frac{1}{2}$ -4-metralis, trunco erecto ramoso, ramulis subteretibus, cortice cinereo rimoso obductis; foliis petiolatis, ovatis vel oblongo-ovatis, obtusis vel obtusissimis, crenato-serratis basi aliquanto rotundatis, tenuiter coriaceis, subtus stellato-puberulis, et in axillis costarum secundariarum pilosis; capsulis, rhachidi ex ramis lignosis forsan anni præcedentis ortis, 9·5 cm. long., 0·15 cm. diam., tomentellis insertis, didymis vel tridymis, usque ad 1·0 cm. lat., 0·7 long., vivis viridibus, minute puberulis; seminibus ecarunculatis, transverse ellipticis, 0·5 cm. long., 0·6 cm. lat., pallidis, tuberculis parvis nigris secus lineas anticas-posticas dispositis instructis.

*Hab.* Ad Santa Cruz fructificat mens. Nov. (N. 557.)

#### CELTIDEÆ.

CELTIS GARDNERI, Planch. in Ann. Sc. Nat. Bot. 3<sup>me</sup> sér. x. p. 311.

*Hab.* In ripâ fl. Cuyabá haud procul ab urbe, itaque juxta Santa Cruz et viciniam. (Nn. 13, 630.) [Bras. Or.]

SPONIA MICRANTHA, Decne. ex Planch. in Ann. Sc. Nat. Bot. 3<sup>me</sup> sér. x. p. 333.

*Hab.* Ad Santa Cruz floret mens. Dec. (N. 770.) [Amer. Trop., Paraguaría.]

#### MORACEÆ.

DORSTENIA, sp. nov. ? ex affinitate *D. brasiliensis*, Mart. Planta pusilla, folio oblongo, obtusissimo, margine undulato, subtus, præsertim in nervis, minute pubescente, vix 4·0 cm. long. et 2·0 cm. lat., subtus conspicue penninervi, petiolo crassiusculo pubescente 2·5 cm. long.; pedunculis, quam petioli brevioribus, pubescentibus; receptaculo suborbiculari, 0·7 cm. diam., pubescente, horizontali, margine integro. Rhizoma non vidi, et folium unicum sejunctum mihi solummodo obvium.

*Hab.* Vigebat ad Corumbá, mens. Jan. flores præbens. (N. 963.) [Bras. Or.]

#### ARTOCARPEÆ.

FICUS SUBTRIPLINERVIA, Mart. in Flora, xxiv. (1841) II. Beibl. 67.

*Hab.* Reperi in ripâ fl. dos Bugres, ad Santa Cruz, mens. Nov. florentem. (N. 676.) Arbor ramosa, circa 10-metralis. (Determin. G. F. Scott Elliot.) [Bras. Or., Goyaz.]

FICUS sp. indeterminabilis, sine floribus et fructibus.

*Hab.* Fl. Paraguay, inter Santa Cruz et Diamantino. (N. 505 a.)

Mr. Scott Elliot notes of this that it seems near *F. Segoviæ*, Miq., but is probably a new species of § *Pharmacosyce*.

**FIGUS** (§ **UROSTIGMA**) **ELLIOTIANA** (sp. nov.); ramulis mox fere omnino glabris, foliis longiuscule petiolatis, ovato-cordatis, obtusissimis, coriaceis, glabratis, basi 6–9-nerviis, utrinque 9–12-costatis; stipulis firmis, conico-erectis, sericeo-tomentosis; receptaculis axillaribus vel extra-axillaribus, solitariis vel binis, sessilibus nascentibus, involuero firmo, calyptriformi, sericeo-tomentoso inclusis, subglobosis, minutissime tomentosus, basi involuero trilobo instructis, apice bracteis parvis oclusis.

*Hab.* Colitur ad Corumbá, ubi floret mens. Jan. (n. 1040 a); etiam in Paraguariá ad Asuncion detexit cl. Balansa (n. 1985).

Arbor foliosa, circa 10-metralis. Ramuli cortice laxo, rimoso cinereo, transversim direpto cincti. Foliorum lamina 11·0–14·0 cm. long., 8·5–12·0 cm. lat., margine passim plus minus undulato, pag. sup. punctis minutis albis inspersæ; costæ secundariæ pleræque fere rectæ, juxta marginem arcuato-connexæ; costa media crassa, subtus eminens, supra impressa, venulæ arcte reticulatæ; petioli 3·5–6·0 cm. long., crassiusculi. Stipulæ 0·8–1·0 cm. long., apice paullo incurvæ vel recurvæ. Receptacula 0·7 cm. long., vix totidem diam. Flores masculi superiores, pauci, breviter pedicellati; perianthium bipartitum, segmentis obovatis, obtusis; staminis unici connectivus crassiusculus, apice breviter apiculatus; antheræ late ellipticæ. Flores feminei nunc sessiles juxta apicem receptaculi, nunc pedicellati, bracteolis linearibus vel lineari-lanceolatis, acutis, pedicellum 0·1 cm. long. subæquantibus, intermixti; perianthium 3-partitum, segmentis oblongis vel ovatis, subæqualibus, 0·1 cm. long. Ovarium subglobosum; stylus lateralis, caudatus, ovarium vix superans.

Species sine dubio ad *F. calyptroceratem*, Miq., spectans, abhorrens vero, præter indumentum tomentellum foliorum ac ramulorum, signis multis momenti gravioris ac levioris.

I refer Balansa's plant here, although it differs from mine in its broader, somewhat more fleshy and stouter-petioled leaves. Paucity of material has caused me to refrain from dissecting the receptacle of Balansa's plant, which, naturally, is exactly like that of mine, except for its somewhat more tomentose indumentum.

I much regret that my specimen of this fine tree, a row of which, yielding most grateful shade, has been planted in front of the Custom-House at Corumbá, should be a single specimen, and that in no very satisfactory condition.

Mr. Scott Elliot examined this plant for me, and indicated its affinity. [Paraguaria.]

**BROSIMUM GAUDICHAUDII**, Tréc. in Ann. Sc. Nat. Bot. 3<sup>me</sup> sér. viii. p. 140.

*Hab.* Crescit in locis apertis ad Santa Cruz passim, ubi nuncupatur *Algodão do Campo*. (N. 656.)

The fruit when ripe is yellow and the size of a small gooseberry. It is eaten by the people at Santa Cruz, but is not very palatable. [Bras. Or.]

**BROSIMOPSIS**, *Artocarpearum*, e tribu *Euartocarpearum*, gen. nov. (Pl. XXXI.)

Flores dioici, omnes globoso-capitati, capitulis basi bracteis perpaucis parvis instructis.

Flores ♂: Perianthium subscariosum, tubulosum, 4-partitum, segmentis æstivatione imbricatis. Stamina 4, declinata, basi ipsi perianthii segmentorum inserta; filamentis dein longiuscule exsertis, æstivatione rectis; antheræ subcylindricæ. Ovarii rudimentum 0. Flores ♀: 2-4 circa æquatorum receptaculi dispositi, eorum perianthium receptaculo. Ovarium receptaculo inclusum basique ei adnatum, sursum in stylum e receptaculo exsertum desinens; stigmata 2, elongata, crassiuscula, a basi divergentia, apice acutata; ovulum ab apice loculi pendulum, anatropum; micropyle supra. Fructus globosus vel subgloboso-didymus, exocarpio (sc. receptaculo ampliato) carnosus, endocarpio tenuiter crustaceo exocarpio deorsum concretum. Semina solitaria vel bina (et tunc fructus subgloboso-didymus), a dorso compressa, ambitu late elliptica vel suborbicularia; funiculus latus; hilum conspicuum, circulare; testa membranacea; albumen 0; cotyledones carnosæ, una alterâ duplo major; radícula supra.—Arbor lactescens. Folia ampla, breviter petiolata, indivisa, penninervia, tenuiter coriacea; stipulæ laterales, firmæ, diu persistentes. Florum receptacula in axillis plerumque solitaria, erecta vel patula, breviter pedunculata. Bracteæ exiguæ, ovatæ, receptaculo multoties breviores. Bracteolæ parvæ, peltatæ, receptaculum femineum obtegentes et floribus masculis intermixtæ. Flores masculi receptaculo hemisphærico basi brevissime immersi.

Genus singulare ob naturam fructus *Brosimum* in mentem revocat, ab eo equidem longe abhorret de receptaculo unisexuali, et floribus masculis toto cœlo disparibus, et floribus femineis æquatorialibus, nec apicalibus vel subapicalibus. Ab omnibus generibus reliquis Brosimearum—scilicet *Lanessania*, Baill., *Bosquiea*, Thou., *Scyphosyce*, Baill.—differt, præter alia, receptaculis unisexualibus, et ab *Olmedieis* receptaculis haud basi bracteis amplis ∞-serialibus cinctis. Inter *Euartocarpeas*, *Helianthostyli*, Baill., e regione Amazonicâ, videtur proxima, cujus flores masculi attamen rudimento, feminei apice stylo elongato instructo gaudent, et flores feminei solitarii. *Cudrania*, Tréc., genus gerontogæum, floribus masculis aliquanto similibus, tamen flores femineos omnino dispares ostendit, qui etiam longe diversi in *Treculiâ*, Decne., ex Afr. Trop. Itaque flores masculi *Parartocarpi*, Baill., stirpis Borneensis, perianthio carent et flores feminei perianthium contra præbent. Receptacula feminea *Batocarpi*, Karst., hucusque sola cognita, floribus dense aggregatis, perianthio instructis, necnon bracteis intermixtis obtinentur. *Moreis* ab omnibus differt primo obtutu filamentis in alabastro rectis.

**BROSIMOPSIS LACTESCENS** (sp. nov.). Arbor elata (♀) vel arbuscula (♂) foliosa, ramulis subteretibus minute pubescentibus, dein glabris, cinereis irregulariter rimosis, crebro lenticelliferis, cicatriculis ellipticis eminentibus foliorum evanidorum abundanter instructis, vulgo 0.2-0.4 cm. diam. Stipulæ erectæ, circa 0.6 cm. long., lanceolatæ, acuminatæ, dorso puberulæ, membranacæ, longitrorsum nervosæ, decolores. Foliorum lamina oblonga vel oblongo-lanceolata, plerumque breviter cuspidata, basi leviter obliqua, obtusa, sæpe leviter rotundata, margine revoluta, obsolete undulata, minute pubescens, cito glabra, usque 17.0 cm. long. et 7.0 cm. lat.



(mediocria  $12.0 \times 5.0$  cm.); costæ secundariæ circa 20, interjectis aliis minoribus, angulis latis insertæ, rectæ vel fere rectæ, rarissime mox dichotomæ, sub margine arcuatim conjunctæ, utrinque (præcipue subtus) eminentes; venulæ eminentes, arcte reticulatæ; petioli  $\sigma$  1.0 cm. long., subteretes, minute pubescentes. Receptaculorum pedunculi 0.2 cm. long., minute pubescentes, sub fructu sæpe ad 0.5–0.6 cm. elongati. Capitula masculina 0.5–0.7 cm. diam., glabra, subcarnosa, basi bracteis circa 6 minutis, rotundatis, membranaceo-scariosis, 0.07 cm. long. instructa, viva viridia. Bracteolæ minutæ, vix 0.1 cm. long., subito peltatim dilatatæ, pars peltata 0.5 cm. diam. vel latior, minute pubescens, margine ciliolata. Perianthii segmenta late obovata, obtusissima, interdum emarginata, 0.13 cm. long., usque 0.03–0.04 cm. alt. coalita, extus minute pubescentia, margine ciliolata, intus minute pilosula. Filamenta deinde perianthium paullulum superantia; antheræ 0.07 cm. long. Receptaculum femineum basi bracteas masculinis similibus ostendens, tempore fructificandi circa 0.5 cm. diam., et nunc bracteolis exiguis, peltatis, minute pubescentibus, margine ciliolatis, magnitudine diversa, sed vix unquam 0.05 cm. diam. attingentes dense obtectum. Os pseudoperigoniale pubescens, sursum parum ampliatum. Ovarium subglobosum, apice paullo angustatum, 0.1 cm. long.; stylus vix 0.2 cm. long., vix ad 0.1 cm. receptaculo inclusus, a receptaculo omnino liber, minute pubescens; stigmata stylum subæquantia. Fructus 1.0–1.5 cm. diam., minute puberulus, bracteolis haud amplificatis præsertim juxta basin instructus. Semina 0.6–0.7 cm. long., 0.7–0.8 cm. lat., pallide brunnea vel brunneo-purpurea, plus minus transversim rugata; hilum 0.15 cm. diam., stramineum.

*Hab.* Ad Santa Cruz viget, et mens. Oct. floret, mens. insequente fructus ostendens. (Nn. 366 [ $\sigma$ ] et 677 [ $\varphi$ ].)

A general view of the stem in transverse section as seen under a low power is given in Plate XXXIX. fig. 6. The drawing represents a somewhat rare state of things, inasmuch as tracheæ and tracheïdes are very scarce, their place being taken by a large number of prosenchyme cells; but although along other radii there are usually more vascular elements, even there the proportion of prosenchyme is still high. The protoxylem often projects some distance into the pith. The phloëm is sufficiently voluminous, the hard bast being but slightly developed. There is a hard pericycle. Here and there the cortex is strengthened by sclerenchyme cells; its fourth cell-layer functions as a phellogen-layer. Material for studying the arrangement of the leaf-traces is not to hand.

The plentiful milky latex is contained in tubes, which, in the stem, are seldom, if at all, branched. These latex-tubes are frequent in the pith and the outer bast, and more rarely they are met with in the cortex. In the pith they may often be traced running for considerable distances and without septa, thus conforming with the rule relating to the latex-tubes of *Artocarpeæ*. In other cases, however, transverse partitions are clearly shown, and the tube may vary in appearance in different parts of its course. Accompanying the latex-tubes are usually short, thin-walled elements, overlying one another in longitudinal series, and filled with a substance turning red on boiling sections with caustic soda. These rows of cells may undergo much alteration in breadth within a short

distance, and may even pass over into ordinary pitted pith-cells; their contents would seem to be placed in continuity by means of fine threads passing through minute pores in the intervening septa. An extreme case of septation of a latex-tube is shown at fig. 7 of the cited plate; upon its right side are pith-cells, to the left is a row of cells with contents contracted and turned red by boiling in caustic soda, these cells passing below into ordinary pith-cells. Similar cells accompanying latex-tubes may also be seen at the outer part of the bast, and more rarely in the cortex. What may be the relation, if indeed there be any at all, between these rows of cells and the latex-tubes, I am not prepared to say.

The epiderm of the leaf's upper side (fig. 7) is either one or two cells deep; below it lies the well-marked palisade tissue and the spongy mesophyll, the latter having but few interspaces, and these very small. Only on its lower face can stomates be seen. Slender latex-tubes accompanied by cells similar to those above alluded to are found chiefly in the vascular bundles of the leaf (fig. 9 shows a tube with a septum across it); the contents of many of the leaf-cells, and their walls as well, are turned a fine brick-red after lying a little time in glycerine.

The latex-tubes can best be seen in the tissues of the embryo, and especially in the cotyledons (fig. 10). The cells of the latter organs are crammed with small starch-grains, and coursing among the cells are very numerous freely-branching non-septate latex-tubes. But one concludes at once that the latex is not confined to the tubes, since many of the cells are seen to contain latex in addition to starch. I imagine there must be some connection between these cells and the latex-tubes: indeed, the tubes can sometimes be seen to be terminated by a cell, or a group of cells; hitherto, however, I have not succeeded in satisfactorily demonstrating continuity. Other laticiferous cells may be seen in close relation with the tubes in their course (fig. 1 ♂, & fig. 10 ♀), though most of the cells lying in proximity to the tubes have no latex. Such a drawing as that shown in fig. 12 is very suggestive of connection between tube and cells, a short string of the latter clearly seeming to act as a continuation of the tube. The presence of latex in cells as well as in tubes, which latter may be simple or branched and septate or non-septate—that is, the exhaustion of all possibilities in one and the same species—is, I venture to think, a matter of some slight interest.

The latex consists for the greater part of fine granules, in which I failed to detect stratification. Seeing that dried material alone is available, it has been thought better not to attempt further study of this substance, though an opportunity of doing so may possibly occur in the future, as what few seeds could be spared have been sent to Dr. Trimen, of Peradenia Gardens, Ceylon, with a view to germination. The economic importance of a good rubber plant is a fact patent to all, and I think it not impossible that *Brosimopsis* may prove to be of some value in this relation.

The ripe seed is contained in a thin crustaceous membrane—the persistent ovarian wall. To this membrane the seed, after maturation, is found still attached close to its hilum, so that, in extracting the seed, portions of the envelope are very apt to be left behind, fixed to the edge of the prominent hilum. The testa is of a pale brown colour and is very thin.

*SOROCEA GRANDIFOLIA* (sp. nov.); ramulis petiolisque puberulis, illis cito glabris; foliis majusculis, breviter petiolatis, oblongis vel anguste oblongo-obovatis, abrupte cuspidato-acuminatis, grosse spinoso-dentatis, coriaceis, eximie nervosis; stipulis ovato-lanceolatis, petiolum subæquantibus; receptaculis utriusque sexûs axillaribus, solitariis vel geminis; floribus masc. brevissime pedicellatis, floribus fem. receptaculorum partitionibus erectis vel patulis, nunquam pendulis, superne incrassatis et ellipsoideis, minute hirtello-scabriusculo-pubescentibus insertis; perigonia ore angustissimo, integro, membranaceo, minute ciliolato; stigmatibus brevibus, lanceolatis obtusis, integris, recurvis; ovulo apicali.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 566.)

Fruticulus elatus, copiose ramosus. Ramuli teretes, cinerei, longitrorsum striati, in nodis parum tumidi. Foliorum lamina usque 26·0 cm. long., et 10·0 cm. lat., mediocria circa 14·0 cm. long. et 5·0 cm. lat., in cuspidem plerumque circa 2·0 cm. long. apice spinigeram subito desinens, basi rotundato-obtusa, margine prorsus spinoso-dentata, spinis rigidis tenuibus 0·4 cm. long., apice decoloribus; costæ secundariæ utrovis latere 12–15, interjectis aliis tertii ordinis, angulis latis insertæ, levisime arcuatæ, marginem versus dichotomæ, ramis angulo fere recto cum costâ antecedente et insequente conjunctis, inde in spinam procurrentes; venulæ arcte reticulatæ; petioli 0·5–1·5 cm. long., patuli, validi, facie superiore anguste canaliculati; stipulæ rigidæ, 0·7 cm. long., mox deciduæ. Receptacula mascula evoluta, plerumque 5·0–7·0 cm. long., hirtello-scabriusculo-pubescentia, a basi dens florifera. Flores masculi albi, dilutissime virides, 0·45 cm. diam., pedicelli sui incrassati, vix ad 0·1 cm. long. Receptacula feminea usque ad 7·0 cm. long., hirtello-scabriusculo-pubescentia, rhachis circa 0·1 cm. diam., erecto-ascendens; partitiones mox 0·7 cm. long., plerumque erecto-curvatae, deorsum usque 0·1 cm. diam., sursum ad 0·25 cm. subito incrassatae, pars incrassata 0·3 cm. long. Perigonii triens superior a receptaculo liber, os ejus breviter tubulosum, 0·06 cm. diam., et 0·5 cm. alt. Ovarium  $\frac{1}{2}$ -superum; stylus sursum gradatim attenuatus; stigmata 0·07 cm. long.; ovarii locus mox 0·2 cm. long. Ovulum stricte apicale. Fructus desiderantur.

Species eximia et de signis insequentibus facili negotio recognita, nempe foliis maximis e basi longe spinoso-dentatis, indumento receptaculorum, floribus masculis brevissime pedicellatis, receptaculis fem. erectis, perigonii forma, ovario  $\frac{1}{2}$ -supero, necnon ovulo vere apicali. Forsan juxta *S. Klotzschianam*, Baill., intercalanda sit, sed plurimis punctis ab illâ abhorret. [Amazonia.]

## MONOCOTYLEDONES.

### ORCHIDEÆ.

*CATTLEYA SUPERBA*, Schomb. ex Lindl. List Orch. sub t. 22.

*Hab.* Crescit passim prope Santa Cruz; reperi itaque ad ripas fl. Brasinho mens. Oct. florentem. (Nn. 568, 690.)

I am indebted to Mr. R. A. Rolfe for this identification, which considerably extends the range of this beautiful plant. [Amazonia, Guiana, Venezuela, Columbia Or.]

EPIDENDRUM IMATOPHYLLUM, Lindl. Gen. et Sp. Orch. p. 106.

*Hab.* Inveni fl. Paraguay impendentem juxta Tres Barras mens. Oct. (N. 657.)

Mr. im Thurn notes that in Guiana *E. imatophyllum* is always associated with ants, and it is a curious coincidence that, in securing this, the only specimen which we saw, Dr. Evans was severely stung by a swarm of small yellow ants. Ants frequently take up their quarters in decaying orchid pseudobulbs, which they apparently excavate for the purpose; but inasmuch as the present species belongs to a section without pseudobulbs, the insects probably inhabit the spaces between the stem and the closely-appressed leaf-sheaths. Anyway, a few undoubted ant-holes are to be seen in the leaf-sheaths of my specimen, which, moreover, has a solid stem. [Amazonia, Guiana.]

EPIDENDRUM VARIEGATUM, Hook. Bot. Mag. t. 3151.

*Hab.* Sat frequens, mens. Oct. florescens, in ripâ fl. dos Bugres. (Nn. 543, 544.) [Brazil Or., Amazonia, Guiana, N. Grenada, Peruvia.]

Ad hoc genus forsân relegandum exstat insequens:

EPIDENDRUM (§ AMPHIGLOTTIUM ?), sp. ? *E.* caule folioso, stricto; foliis distichis, lanceolatis obtusis vel obtusiusculis, 8·0-18·0 cm. long., 1·7-3·3 cm. lat., coriaceis; inflorescentiæ terminalis axe elongato, *post fructificationem radices et caules foliosos novellos juxta apicem gignente.* Neque flores nec fructus suppetebant.

*Hab.* Crescit prope fl. Brasinho mens. Nov. (N. 568 a.)

These specimens were dried solely on account of their curious morphology. It occasionally happens in a few genera of Orchids that the axis of the spike will bud after flowering, instead of dying down; in the present case this seems to be the rule, and not exceptional.

BLETIA CATENULATA, Ruiz & Pav. Fl. Peruv. Syst. p. 229.

*Hab.* In graminosis udis ad campos de Tapirapuan floret mens. Sept. (N. 388.)

The flowers are somewhat smaller and the leaves narrower than is the case with typical *catenulata*, but I agree with Mr. Rolfe in considering these insufficient grounds for making a new species. [Guiana, Peruvia.]

RODRIGUEZIA SECUNDA, H. B. K. Nov. Gen. et Sp. i. p. 367.

*Hab.* Viget in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan, ubi mens. Sept. florescit. (N. 349.) [Amazonia, Guiana, N. Grenada, Amer. Centr., Ind. Occ.]

NOTYLIA LYRATA (sp. nov.) (Tab. XXXII. figg. 4-10); pseudobulbis parvis, oblongo-linearibus, a vaginis supremis superatis; foliis coriaceis, nunc linearibus nunc linear-oblongis obtusiusculis; pedunculis gracilibus folia subæquantibus, vaginis 2-3 distantibus instructis; sepalis lateralibus ad  $\frac{2}{3}$  connatis, apice fere rectis; labelli breviter unguiculati laminâ lyratâ, margine planâ, cristam laminatam editam dimidio proximali proferente; columnâ apice recurvâ.

*Hab.* Inveni prope fl. dos Bugres mens. Oct. florescentem. (N. 438.)

Pseudobulbi vix ultra 1.0 cm. long., sicci 0.3 cm. lat., compressi, vaginis ad 1.5 cm. long. oclusi. Folia imparia, maxima 9.0, minima 4.5–5.5 cm. long., 0.7–1.3 cm. lat., basi ad 0.3 cm. coarctata, in sicco corrugata. Racemi nutantes, pluriflori, deorsum vaginati. vaginis ovatis, acuminatis, laxe amplexicaulibus, 7.0 cm. long. Bracteæ modicæ. Pedicelli 0.3 cm. long., patuli vel decurvi. Flores circa 0.5 cm. diam., dilute crocei. Sepala linearia, acutiuscula, 0.45 cm. long., posticum quam lateralia paullo brevius. Petala lineari-lanceolata, acuta, sep. lateralibus parum breviora. Labelli sep. lateralia æquantis unguis 0.1 cm. long.; lamina 3.0 cm. long., e basi levissime cordata, sensim angustata, sursum subito ampliata, apice obtusa. Columna a petalis fere duplo superata, antice sulcata, basi ipsâ incrassata, sursum subito recurvata. Antheræ vix 0.2 cm. long., appendicula membranacea rostellum amplectens.

Juxta *Notyliam Barkeri*, Lindl., intercalanda, abs quâ abhorret, præter alia, floribus minoribus, sepalis lateralibus apice fere rectis, labellique laminâ dispari. [Mexico.]

NOTYLIA BISEPALA (sp. nov.); pseudobulbis oblongis, superne angustatis, vaginis plerumque quam ipsi brevioribus cinctis; foliis lineari-oblongis vel ovato-oblongis, obtusis, pseudobulbos excedentibus, subcarnosis; pedunculis folia excedentibus vel subæquantibus, deorsum vaginis 3–4 laxis distantibus instructis; sepalis lateralibus apice ipso solummodo liberis; labelli, quam sepala distincte brevioris, longe unguiculati, laminâ e basi truncatâ, pubescente, triangulari-acuminatâ, obscure callosâ vel omnino ecallosâ, margine recurvâ; columnâ fere rectâ.

*Hab.* Juxta Santa Cruz lecta, itaque in sylva primæva inter Santa Cruz et Campos de Tapirapuan; floret menss. Sept. et Oct. (Nn. 387, 511.)

Pseudobulbi ad 2.0 cm. long., compressiusculi, in sicco longitudinaliter alti striati. Folia maxime inæqualia, majora ad 14.0 cm. long., minima nec ultra 5.0 cm., pleraque 1.5–2.3 cm. lat., in sicco punctis albidis leviter elevatis conspersa. Racemi nutantes vel ascendentes, pluriflori, puberuli; eorum vaginæ ovatæ, acuminatæ, 0.6–0.7 cm. long. Bracteæ modicæ. Pedicelli 0.6 cm. long., erecti vel curvati, minute puberuli. Flores lutei, circa 0.7 cm. diam. Sepalorum lateralium lamina sep. posticum lanceolatum acutiusculum excedens, ovato-cuspidata, apice brevissime bifida, 0.65 cm. long. Petala sep. lateralium laminam æquantia, lineari lanceolata, acuminata. Labellum totum 0.45 cm. long.; unguis ejus superne sensim laxatus, 0.15 cm. long., obscure callosus vel ecallosus, lamina basi 2.0 cm. lat. Columna quam unguis labelli vix dimidio longior, antice excavata, ima basi dilatata. Antheræ appendicula rostellum amplectens.

Non dubito quin spectet ad *N. Huegelii*, Reichb. f., quæ, fide beat. auctoris, eadem est ac *N. tridachne*, Lindl. Planta Mexicana vero floribus majoribus et petalis falcatis, neque rectis nec acuminatis, et labelli angustioris laminâ manifestius callosâ gaudet. [Mexico.]

LOCKHARTIÆ sp. indet. (forsan *L. goyazensis*, Reichb. f., vel *L. elegans*, Hook.). Flores jam dilapsi.

*Hab.* Santa Cruz, Nov. (N. 692.)

*DICHLÆA CORNUTA* (sp. nov.) (Tab. XXXII. figg. 1-3); caulibus erectis; foliis medio-cribus, linearibus, obtusis, pedunculis folia subæquantibus; sepalis et petalis lanceo-latis, acutis, his quam illa paullulum brevioribus; labelli longe unguiculati laminâ rotundatâ, brevissime cuspidulatâ, basi longiuscule incurvo-cornutâ; columnæ pede brevissimo; clinandrio breviter lobulato; capsulâ oblongâ, lævi.

*Hab.* Incolit ripam fl. Brasinho, ubi flores præbet mens. Oct. (N. 459.)

Caulis ad 22·0 cm. long., modice foliosus. Foliorum vaginæ  $\pm$ 1·0 cm. long., cauli satis arcte applicatæ; laminæ circa 2·0 cm. long. et 0·4 cm. lat. basi parum coarctatâ. Pedunculi modici, ipso sub flore paullulum incrassati. Flores circa 1·0 cm. diam., albidii, purpureo-maculati. Sepala 0·85 cm. long., vix ad 0·3 cm. lat. Labellum 0·6 cm. long., unguis ejus late linearis, basi levissime angustatus, 0·35 cm. long.; lamina margine undulata, incurva, 0·45 cm. lat., ejus cornua pro genere sat elongata, falcato-semicirculata, 0·2 cm. long. Capsula 1·0 cm. long., 0·5 cm. lat., subanceps, omnino glaber. Columna vix 0·2 cm. alt. Pollinia non vidi.

Species habitu et capsulis glabris cum *D. graminoidi*, Lindl., satis congruens, floribus vero disparibus gaudet. [Guiana, Ind. Occ.]

*VANILLA ENSIFOLIA* ?, Rolfe, in Kew Bull. 1892, p. 141. (Tab. XXXIII. fig. 6.) Speciebus ab omnibus hucusque notis, *V. ensifoliâ* exemptâ, discrepat de foliis linearibus. Nec flores nec fructus vidi.

*Hab.* Inveni in ripâ fl. Paraguay, haud procul a Tres Barras, mens. Oct. (N. 657 a.)

This is a very interesting and remarkable species, quite different from the general run of Vanillas, and strikingly similar in foliage to the species recently described by Rolfe. [N. Grenada.]

[*V.* sp., forsan *V. planifoliæ*, Andr., legi mens. Aug. juxta urbem Cuyabá specimina floribus et fructibus carentia.]

*STENORHYNCHUS AUSTRALIS*, Lindl. Gen. et Sp. Orch. p. 477.

*Hab.* Crescit prope urbem Cuyabá, ubi florentem reperi mens. Aug. (N. 66.)

*SPIRANTHES GRANDIFLORA*, Lindl. Bot. Reg. t. 1043.

*Hab.* In angustiis montium Serra da Chapada, necnon in cacumine eorundem, mens. Aug. flores profert. (Nn. 190, 191.) [Bras. Or.]

*PHYSURUS OREADUM* (sp. nov.); caule ascendente, folioso, deorsum vaginis foliorum evanidorum instructo; foliis lanceolatis vel ovato-lanceolatis, acuminatis, basi gradatim coarctatis, siccitate rubescentibus, brevipetiolatis, petiolo subito vaginato-dilatato; spicâ densiflorâ, anguste lineari, foliis duplo excedente; bracteis lanceolatis, acuminatis, pedicellis duplo longioribus; floribus mediocribus; sepalis suberectis, lanceo-latis, obtusis, sepalo antico quam lateralia paullulum longiore; petalis sepala subæquantibus, lineari-oblanco-latis, obtusis, cum sepalo postico in galeam conniventibus; labelli longe clavellato-calcarati limbo lyrato, laminâ terminali rotundatâ, vix lunatâ.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan, ubi florentem reperi mens. Sept. (N. 373.)

Tota planta circa 40·0 cm. alt. Caulis crassiusculus, siccitate nigricans, et nunc ad 0·35 cm. lat. compressus, puberulus, e nodis infimis radices sat validas, fere simplices dense piliferas emittens; internodia pleraque 2·0–3·0 cm. long. Foliorum vaginæ 1·2–1·5 cm. long., circa 1·0 cm. lat., ad 0·6–0·7 cm. circum caulem continuæ, tenuiter membranaceæ, obsolete puberulæ, vix decolores. Foliorum lamina supra vaginam ad 1·5 cm. petiolata, petioli 0·2–0·3 cm. lat., juveniles albido-ciliati, mox glabri. Lamina ipsa circa 11·0 cm. long. et 2·5–3·5 cm. lat., membranacea, fere a basi 3–(5)-nervis, puberula, dein glabra. Spica 18·0 cm. long., 2·0 cm. lat., deorsum vaginis paucis laxè amplectentibus obtecta, pubescens. Bracteæ fere 1·0 cm. long., uninerves. Pedicelli recti, vix 0·5 cm. long., ovario duplo breviores. Sepala 0·5 cm. long., 0·13 cm. lat., ad 0·3 cm. decurrentia. Labelli, ad 0·15 cm. in columnâ adnati, limbus 0·35 cm. long., infra medium 0·2 cm. lat., hinc fere ad 0·1 cm. attenuatus; lamina terminalis 0·25 cm. lat., minute ciliolata; calcaris pars libera 0·8 cm. long., leviter clavata, apice brevissime acutata. Pollen sectile. Capsula oblonga, 0·8 cm. long.

Arcte affinis *P. densifloro*, Lindl., mihi cognito modo icone in herb. Lindl., quæ speciem adumbrat nostrâ a stirpe abhorrentem de habitu humiliore, spicâ abbreviatâ, floribus longius pedicellatis, labelli laminâ terminali sagittata, petalis latioribus, calcare ovario longiore in eo longius adnato. Habitus et folia plantam a cl. Glaziou lectam (N. 12204) in mentem revocant, sed spica major necnon sepala et labellum disparia. [Bras.]

#### ZINGIBERACEÆ.

*COSTUS ACAULIS*, sp. nov. (Tab. XXXIII. figg. 1–5); caule brevissimo; foliis infimis ad vaginas late ovatas, laxè amplexicaules, piloso-pubescentes imminutis; foliis superioribus paucis (4–5) rosulatis, elongatis, oblongo-obovatis, obtusis vel acutis, tenuiter membranaceis, mox supra pilosis vel fere omnino glabris, subtus, præsertim in nervo mediano, pilosis, margine ciliatis; foliis supremis paucissimis quam majora saltem duplo brevioribus; inflorescentiâ confertâ, haud strobiliformi, floribus paucis in apice caulis foliis parvis bracteas simulantibus cinctis; pedicellis bracteolâ lanceolato obovatâ, breviter bifidâ, membranaceâ instructis; calyce tubuloso, bracteolam superante, ultra medium bifisso, laciniis ovato-lanceolatis, breviter acuminatis, laciniâ tertiâ duabus alte connatis paullo minore; labello majusculo amplò, fere suborbiculato, margine undulato, tenuissimo et pellucidissimo, deorsum puberulo; stamine petaloideo, integro, anguste oblongo-oblancoolato, breviter acuminato; antherâ basin versus connectivi affixâ; ovario juxta apicem pilis albidis dense obsito, 3-loculari; ovulis pluribus 3–4 (–2?)–serialibus dissepimento insidentibus; stylo filiformi, glabro; stigmatè expanso-infundibuliformi.

*Hab.* Crescit in fruticetis arenaceis prope Santa Cruz, ubi floret mens. Nov. (N. 679.) Folia infima (vaginæ) usque ad 3·5 cm. long., tenuia, folia majora ad 18·0 cm. long.,

pellucida, in sicco viridia, supra medium 6·0-7·5 cm. lat., facie superiore lepidibus minutis albis inspersa, lepide nervosa. Folia floralia, bracteolæ, et sepala deorsum subtiliter maculata, illa circa 3·5 cm. long., oblongo-spathulata, piloso-pubescentia. Bracteola vix 2·0 cm. long., fere usque ad 0·3 cm. bifida. Calyx 2·2 cm. long., ad 1·3 cm. bifissus, segmento majore ad 0·3 cm. bifido. Petala 5·0 cm. long., lanceolata. Labellum 7·0 cm. long., circa 4·0 cm. diam., superne gradatim laxatum, luteum. Stamen 2·7 cm. long., tenuissimum, nervosum. Antheræ lineares, circa 0·5 cm. long.; loculi basi divergentes, superne attenuati ibique in cristam elevatam abeuntes.

Ab affini *Costo pumilo*, Petersen, abhorret, præter alia, foliis pellucidis, majoribus, diversiformibus, fere glabris nec hirsutis, in sicco viridibus nec subrubescentibus, labelloque minore gradatim nec subito in tubum attenuato. [Bras. Or. vel Goyaz.]

*C. pumilus* was described by Petersen from specimens without flowers. There are flowers at Kew, carefully preserved by Burchell, hitherto the only collector of the plant, but the material is scarcely enough to warrant dissection. Nevertheless I feel satisfied from careful examination of the dried flowers that Burchell's plant, although undoubtedly closely allied to mine, has somewhat different flowers, to say nothing of the leaves. Unless I am mistaken, there is but one other acaulescent *Costus* in our herbaria, and that is an African one at Kew.

Burchell's specimens were gathered between the river Paranahiba and Goyaz. The former being in the province of Minas Geraes and thus in the South Brazilian botanical province, while the latter is in the North-Brazil—Guiana province, it is impossible to say of which province *C. pumilus* is a native.

In the analysis of this Plate I have diligently sought to represent the flower correctly, the stamen alone costing several hours' labour to dissect out. The task of making out with precision the delicate parts of such a flower is, however, such a difficult one that the analysis may perhaps be defective, especially as regards the petal.

**COSTUS PUBESCENS** (sp. nov.); caule leviter spirali, crasso, vaginis pubescentibus in ochream productis omnino obtecto; foliorum modicorum spiralium vaginatorum subsessilium laminâ plerumque oblanceolato-oblongâ, apice acuminatâ, dimidio inferiore gradatim attenuatâ (nonnunquam minore, late ovatâ obtusâ), pubescente, cito puberulâ vel glabrâ; inflorescentiâ in caule folioso terminali brevi nec ultra 5·0 cm. longâ; bracteis laxis, subrectis, late ovatis obtusis, puberulis, inferioribus laminâ frondosâ magnâ hinc gradatim imminente coronatis; floribus inclusis (forsan vero subexsertis), ample bracteolatis; calyce tubuloso, breviter ac pariter trifido; stamine oblongo, haud petaloideo.

*Hab.* Juxta ripam fl. Paraguay, inter Santa Cruz et Villa Maria, flores præbuit mens.

*Dec.* (N. 813.) *Grana de Macaco* incolarum.

*Orgyalis*, sursum sæpe ramosus. Caulis erectus circa 0·5 cm. diam. Vaginæ pleræque 2·0-4·0 cm. long., arcte applicatæ; ochreæ nunc brevissimæ vel obsoletæ, nunc ad 0·3-0·4 cm. long., margine lanato-ciliatæ. Foliorum lamina usque ad 16·0 cm. long., minimæ vero nec ultra 5·0-6·0 cm. non absunt, plerumque 3·0-5·0 cm. lat., membranaceæ, in sicco plus minus rubescentes. Bracteæ (laminâ frondosa exemptâ)



circa 2·5 cm. long. et 2·0 cm. lat., lamina frondosa usque ad 8·0 cm. long., plerumque vero minor. Bracteola vix 2·0 cm. long., 0·6 cm. lat., navicularis. Calyx 0·8–1·0 cm. long., 0·6 cm. lat., ad 0·2 cm. trifidus; lobi triangulari-rotundati, obtusi. Labellum (an maturum?) 1·5 cm. long., album, fauce purpureum, juvenile ovatum, acuminatum.

Species forsan cum *Costo discolor*, Rosc., componenda, distans vero vaginis pubescentibus, bracteis latioribus, floribus paucis, etc. [Amazonia.]

Apud incolas caulis exsuccus pro remedio efficace contra gonorrhœam habetur.

**RENEALMIA FOLIOSA** (sp. nov.); caule valido ascendente altitudinis prætermisæ, terete, glabro; foliis magnis, longe vaginatis, vaginis laminam haud attingentibus, laminâ oblongo-oblancheolatâ, basi inæquilaterâ, sensim rotundato-angustatâ, margine spinuloso-denticulatâ, glabrâ; costâ mediâ supra excavatâ, subtus maxime eminente; scapo, e rhizomate arcuatim ascendente, foliis pluries brevioribus, pubescente, deorsum vaginis aphyllis laxis imbricatis in longitudinem eminenter nervosis glabris instructo; floribus sparsiusculis, bracteis elongatis oblongis acutis membranaceis puberulis, floribus racemosis pedicellatis; pedicello circa duplo brevioribus, pubescentibus; paracalyce bifisso, extus pubescente; calyce tubuloso, pubescente, trilobo, lobis triangulari-ovatis acutis; corollæ tubo calyci vix æquilongo, laciniis ovato-oblongis, obtusis, erectis, laciniâ intermediâ lateralibus paulo latiore; labello corollam æquante longe ac late unguiculato; limbo rotundato, inæqualiter 3-lobis, lobis lateralibus mediano majoribus; staminodiis linearibus, erectis, basi labelli insidentibus; antherâ liberâ, rectangulari, pubescente; stylo basi a nectario brevi incrassato cincto, superne, inter loculos antheræ abscondito, gracili; stigmatibus reniformi, oblique excavato; ovario velutino-tomentoso.

*Hab.* Crescit in angustiis ad Serra da Chapada, ubi flores præbuit mens. Aug. (N. 204.) Caulis basi 3·0 cm. diam., et folia circa octo proferens. Folia magna, metralia, 15·0 cm. lat., firme membranacea, petiolis circa 3·0 cm. long. validis fulta. Scapus coccineus, 30·0 cm. long., basi 0·6 cm. diam.; vaginæ infimæ modo 1·5–2·5 cm. long., superiores 6·0 cm. attingentes, obtusæ, extus juxta apicem puberulæ, in sicco papyraceæ, vivæ purpureæ. Bracteæ mediocres, circa 4·0 cm. long., subtiliter nervosæ, rectæ vel subpatulæ. Pedunculi plerique 1·0–1·5 cm. long., ascendentes. Paracalyx 2·0–3·0 cm. long., 1·0 cm. diam. Calyx 2·0 cm. long., ad 0·6 cm. trifidus. Corolla vix 3·0 cm. attingens, extus puberula, labello ochraceo exempto coccinea; lacinia intermedia 0·75 cm. long., 0·6 cm. lat., laciniæ laterales altius connatæ, interdum ad 0·55 cm. inter se liberæ. Labellum 1·0 cm. long.; lamina vix 0·3 cm. long. et 0·6 cm. lat.; unguis 0·7 cm. long., 0·35 cm. lat., pulvinato-incrassatus. Staminodia 0·3–0·35 cm. long., uninervia. Anthera 0·75 cm. long., 0·4 cm. lat. Stigma 0·3 cm. lat. Nectarium vix 0·15 cm. alt., 0·3 cm. diam.

Ex affinitate *R. exaltatæ*, Linn. f., et *R. bracteosæ*, Griseb., ab ambâbus vero facili obtutu dignoscenda foliis laterioribus basi subtrotundatis, spicâ abbreviatâ vaginas minores sustinente, labello diversiformi, ovario velutino-tomentoso nec glaberrimo, nectario modo 0·15 cm. alto, necnon florum colore. [Bras. Or., Amazonia, Guiana, Ind. Occ.]

*RENEALMIA HOLDENI* (sp. nov.); rhizomate obscure noduloso, squamulis laxis instructo; foliis distichis, longe vaginantibus, vaginis truncatis laminam attingentibus vel fere attingentibus, laciniis lineari-lanceolatis apice longe acuminatis, deorsum sensim coarctatis, fere omnino glabris; scapo radicali leviter scabriusculo vaginis aphyllis subremotis instructo; inflorescentiâ pluriflorâ, subracemosâ, elongatâ, angustâ, bracteas lanceolatas vel ovatas proferente; pedunculis quam bracteæ suffulcientes duplo vel triplo brevioribus, erectis, scabriusculis, 1-2-floris; floribus parvis, a bracteis amplis secundi ordinis fultis; pedicellis ovarium subæquantibus, superne leviter incrassatis; calyce ut in *R. occidentali*, Griseb.; corollæ tubo quam calyx brevior, laciniis oblongo-obovatis obtusis, margine ciliatis, laciniâ intermediâ quam laterales paullo minore; labello lacinias corollæ subæquante, obovato obtuso, breviter trilobo, undulato, late unguiculato, stamen  $\frac{1}{2}$ -amplectente; ovario anguste ellipsoideo, pubescente, quam calyx  $\frac{1}{3}$ -plo brevior; stylo filiformi basi a nectario parvo cylindrico 3-lobo cincto; stigmatate late reniformi.

*Hab.* Crescit ad Santa Cruz, necnon in sylvis vicinis, flores præbens menss. Nov.-Dec. (N. 680 a.)

Foliorum lamina ad 28.0 cm. long. (plerumque vero circa 20.0 cm.) et vix 3.0-4.5 cm. lat.; costa media supra impressa, subtus eminens. Scapus circa 25.0 cm. alt., 0.25 cm. diam., vaginæ 3.5-6.0 cm. long., apice truncatæ. Bracteæ inferiores ad 2.5 cm. long., superiores 1.0 cm., subscariosæ. Bracteæ secundi ordinis circa 0.5 cm. long., margine ciliatæ vel calvæ. Calyx 0.6 cm. long. Corolla 1.2 cm. long. Labelli lamina vix 0.4 cm. ungue 0.15 cm. long., basi breviter pulvinata. Anthera 0.4 cm. long. Stigma ad 0.1 cm. lat. dilatatum.

A *R. occidentali*, Griseb., cui affinior, abhorret, foliis minoribus, inflorescentiâ subracemosâ, rhachide scabriusculâ nec pubescente, labello trilobo longius et minus late unguiculato, breviter pulvinato, nectario parvo, etc. Arctius accedit ad *R. occidentalem*, var. *Paco-secora*, cujus pedunculi uniflori vel infimi biflori inflorescentiam fere racemosam constituunt. [Amazonia, Guiana, Amer. Centr., Ind. Occ.]

Named in honour of Mr. N. Lofft Holden, who conducted our boat up to Santa Cruz, and first brought this plant to me.

#### MARANTACEÆ.

*ISCHNOSIPHON NEMOROSUS* (sp. nov.); inflorescentiâ folio magno fultâ, vaginâ brevi, angustâ, intus glabrâ, articulum haud attingente; petiolo valido, ubi in articulum abit annulo pilifero instructo; laminâ e basi rotundatâ, inæquilaterâ, elongatâ, lanceolato-oblongâ, ubi in articulum abit supra late (haud profunde) canaliculatâ, superne sensim attenuatâ, acutâ, inæquilaterâ, apice maxime obliquâ, glabrâ, spicis numerosis, angustis, confertis, plurifloris; inflorescentiâ quam lamina folii suffulcients plerumque plus quam 2-plo brevior; bracteis oblongis vel oblongo-ob lanceolatis, acutis vel mucronato-obtusis, concavis, laxè imbricatis, pubescentibus, pergamaceis; corollæ tubo, sepalis  $\frac{1}{2}$ -plo longiore, sursum puberulo; petalis oblongo-ob lanceolatis, obtusis, glabris; staminodio calloso amplo; staminodii cucullati auricula

curvata; stamine fertili appendice parva petaloidea superne angustata, basin antheræ attingente instructo.

*Hab.* Crescit in sylvâ primævâ juxta Santa Cruz. (N. 350.)

Planta formosa,  $1\frac{1}{2}$ -metralis. Folia basalia ignota. Exemplariorum meorum scapus usque ad basin vaginæ folii inflorescentiam suffulcientis 14·0 cm. long., 0·6 cm. lat. Vagina 12·0–16·0 cm. long., circa 1·5 cm. lat. (petiolo incluso), passim piloso-pubescentis, imâ basi et superne, ibique præsertim in margine, villosulo-pubescentis. Petiolus e vaginâ usque ad articulum 16·0–20·0 cm. long., stramineus. Articulus 4·0–5·0 cm. long., minutissime puberulus, ubi in laminam transit margine pubescens. Lamina ultra 40·0 cm. long., basi 14·0–15·0 cm. lat., ipso sub apice ad 4·0–5·0 cm. attenuata, in sicco pallide glaucescentia, crebre nervosa, margine paullulum cartilaginea, juxta apicem ciliata; nervus medius supra excavatus, subtus valde prominens. Inflorescentia fere ad 20·0 cm. long., pluri- ac maxime confertiramea. Bracteæ pleræque 1·5–2·8 cm. long., bruneæ. Bracteolæ circa 1·2 cm. long. Flores exserti. Sepala linearia, obtusa, 1·0 cm. long. Corollæ tubus 1·6 cm. long., medio manifeste dilatatus. Flores albi. Petala 0·55 cm. long., 0·35 cm. lat., margine crispula. Staminodium callosum obovatum, 0·6 cm. long., callo laminato triangulari 0·1 cm. alt. unilateraliter auctum. Staminodium cucullatum vix 0·4 cm. long., appendice 0·1 cm. long. Staminis fertilis appendix petaloidea 0·2 cm. long., basi 0·1 cm. lat., sub antherâ fere evanida. Anthera oblonga, obtusa, 0·2 cm. long. Ovarium apice pilis sericeis flavicantibus instructum. Capsulam non vidi.

Ab *Ischnosiphone plurispicato*, Koern., divergit foliorum laminis majoribus latioribus basi ubi in articulum abeunt, supra late (nec profunde) carinatis ibique glabris, petiolo supra vaginam elongato, bracteis paullo longioribus pubescentibus, floribus longius exsertis, sepalis angustioribus haud maculis bruneis conspersis, corollæ majoris tubo longiore (corollæ tubus speciminis Riedeliani vix 1·2 cm. attingit). *I. laxus*, Koern., præter alia, spicis laxis gaudet, quæ etiam in *I. guianensi*, Koern., pauciores esse enarrant. [Bras. Or.]

ISCHNOSIPHON CONCINNUS (sp. nov.); folii inflorescentiam suffulcientis vaginâ sat lata, articulum nequaquam attingente, villosulo-pubescente, superne intus appresse villosulâ, petiolo vaginæ subæquali vel quam ea brevior, minutissime pubescente vel puberulâ; articulo longo a petiolo annulo nullo separato; laminâ lanceolatâ vel oblongo-lanceolatâ acuminatâ, sursum sensim attenuatâ, inæquilatera, apice fere rectâ, basi rotundato-acutatâ; inflorescentiâ, e spicis parvis pluribus, dense confertis, diversæ altitudinis, insertis composita, in ambitu obovatâ, quam lamina 3–4-plo brevior, spicis ramosis; bracteis lanceolatis acuminatis, pubescentibus (præcipue sub margine) vel subglabris, concavis, pergamaceis; corollæ tubo sepalis 2-plo longiore sursum valde torto, glabro, petalis oblongis obtusis, glabris; staminodio calloso anguste obovato; staminodio cucullato, staminodium callosum excedente, prope apicem incurvo-auriculato; stamine fertili anguste petaloideo.

*Hab.* Crescit in cacumine montium Serra da Chapada, prope Santa Anna da Chapada, alt. circa 700 met. supra mare. Floret mens. Aug. (N. 90.)

Caulis teres, lævis. Folia basalia (ex schedis meis) petiolis circa  $\frac{2}{3}$ -metralibus fulta. Scapus erectus,  $1\frac{1}{3}$  metralis, 0.3 cm. diam. Vaginæ foliorum inflorescentiam suffulcientium 6.0-8.0 cm. long., 1.5 cm. lat., petiolus inter vaginam et articulum 3.0-6.5 cm. long. (raro modo 1.5 cm.), articulus 2.0-3.0 cm. long., 0.25 cm. diam. Lamina ad 32.0 cm. long., in medio 7.0-8.5 cm. lat., valde inæquilatera, in sicco pallide glaucescens, subtus decolor; costa media supra excavata, subtus eminens. Inflorescentia 6.0-10.0 cm. long. (raro 10.0 cm. attingit), superne 4.0-6.0 cm. lat. pubescens. Bracteæ 2.0-2.5 cm. long. Bracteolæ 1.0 cm. long., naviculares, uno latere puberulæ. Flores punicei. Sepala 0.45 cm. long., oblongo-lanceolata, acuta vel obtusiuscula. Corollæ tubus 1.0 cm. long., superne gradatim et leviter attenuatus. Petala 0.3 cm. long. Staminodium callosum 0.3 cm. long., callo parvo instructum. Staminodium cucullatum longe unguiculatum, 0.45 cm. long., auriculâ 0.1 cm. long. Ovarium apice pubescens.

Certe juxta *Ischnosiphonem densiflorum*, Koern., speciem Mattogrossensem, interponenda, ejus flores adhuc ignoti, sed caulis ex cl. Petersen breviter hirtus ac verrucoso-asperulus, vaginæ articulum attingunt, lamina folii inflorescentiam suffulcientis longior et latior, et bracteæ modo 1.6-1.8 cm. long. [Matto Grosso.]

ISCHNOSIPHON ARGENTEUS (sp. nov.); caule e rhizomate crasso, elato, a vaginis strictis elongatis ensiformibus cincto; foliorum basaliū vaginâ sat latâ, quam petiolus brevior, obsolete pruinosa; petiolo gracili, obscure farinoso; articulo elongato, a petiolo nullo annulo separato, farinoso; laminâ inæquilaterâ, e basi latâ, rotundatâ ovato-lanceolatâ, acuminatâ, apice subrectâ, subtus albo-farinosâ, supra obsolete pruinosa, superne puberulâ; folio inflorescentiam fulciete parvo ample vaginato, vaginâ articulum brevem attingente; inflorescentiâ e spicâ gracili, solitariâ, brevi, basi subnudâ, pauciflorâ, obsolete puberulâ constante; bracteis subdistantibus, oblongo-ob lanceolatis, convolutis, subtiliter nervosis, obsolete pruinosis; floribus exsertis; corollæ-tubo elongato, gracillimo, sepala duplo excedente; petalis elongatis, lineari-lanceolatis, obtusis; staminodio calloso oblongo-ovato, elongato, callo parvo aucto; staminodio cucullato quam staminodium callosum duplo brevior, subclavato-auriculato; stamine fertili petaloideo, ob lanceolato, antherâ brevi aucto; stylo curvato; ovario apice pilis sericeis spissis instructo.

*Hab.* Crescit in sylvestribus juxta Santa Cruz, mens. Sept. florens. (N. 344.)

Rhizoma ultra 1.0 cm. diam., radices simplices 0.1 cm. diam. emittens. Vaginæ aphyllæ, caulem occludentes, inferiores 3.0-13.0 cm. long., superiores 27.0-45.0 cm. long., caulem arcte amplectentes, apice truncato-emarginatæ. Folia basalis vagina a vaginâ aphyllâ superiore superata, vix 1.0 cm. lat., in apice ipso albido-villosa, ceterum glabra, superne intus lateritio-nervosa; petiolus supra vaginam 15.0 cm. long., 0.3 cm. diam.; articulus 3.0 cm. long., 0.3 cm. lat., in sicco sordide puniceo-bruneco-pruinosis; lamina circa 30.0 cm. long., medio 13.0 cm. lat.; costa media basi ipsâ hirsuta. Vagina explanata folii inflorescentiam suffulcientis 4.5 cm. long., 0.8 cm. lat., superne angustatæ, articulus 0.6 cm. long., 0.15 cm. lat.; lamina 12.0 cm. long. et lat. dimidio minor, basi inæquilatera. Spica 11.0 cm. long., ejus pedunculus

4.0 cm. attingit. Bracteæ 2.0–2.5 cm. long., puberulæ. Flores albidæ. Sepala anguste linearia, acuminata, 1.5 cm. long., 0.05 cm. lat. Petala 1.2 cm. long. Corollæ tubus vix 3.0 cm. long., dimidio inferiore modo 0.05 cm. long., superne leviter et sensim amplificatus, sub limbo 0.12 cm. lat. Staminodium callosum vix 1.0 cm. long. Staminodium cucullatum 0.5 cm. long., auriculâ 0.25 cm. long. Stamen fertile staminodium cucullatum subæquans; anthera (an tota?) 0.05 cm. long. Stylus 0.05 cm. crassus. Stigma subcuneiforme, vix 0.1 cm. long.

Speciem cum *Ischnosiphone leucophæo*, Koern., *I. surinamensi*, Koern., et *I. ovato*, Koern., componendam, tamen ab omnibus spicâ tenui, pauciflorâ, solitariâ, basi fere nudâ, nec vaginas plures aphyllas sustinente, inter multa alia, nullo negotio cognoscere potes. [Bras. Or., Amazonia.]

MARANTA POHLIANA, Koern., in Bull. Soc. Nat. Mosc. 1862, p. 44 (nec *M. divaricata*, Rosc. Scit. tab. 27.)

*Hab.* Floret in ripâ fl. Paraguay, inter Santa Cruz et Diamantino, mens. Oct. (N. 510.)

*M. Pohliana* a *M. divaricatâ*, quacum cl. Petersen eam conjungebat, distare videtur ob folia minora et sepala multo minora et tubum corollæ excedentia, necnon ob corollæ tubum brevioris et florem totum minorem itaque ovario viridi albo-sericeo nec villosotomentoso gaudet. Equidem cl. Petersen ipse dicit *M. Pohlianam* inter *M. divaricatam* et *M. foliosam* medium tenere videtur.

Nescio cur cl. Petersen stirpem a cl. Glaziov lectam (n. 12214) ad *M. divaricatam* refert, cujus sepala enarrat "13 mm." attingere, quum ea speciminis Glazioviani vix ad 5.5 mm. pertineant. An hæc planta potius ad *M. Pohlianam* referenda?

Eadem speciem ante oculos habui a cl. Gardner in Brasilia Or. lectam (n. 1854), et a cl. Burchell (Nn. 6857, 6714). [Bras. Or.]

MARANTA LONGISCAPA (sp. nov.); caule recto, humili, simplici vel e basi tuberosâ ramoso; foliis homotropis in vaginâ sessilibus vel brevissime petiolatis, vaginis amplis apice sæpe breviter auriculatis, dorso pubescentibus vel pubescenti-hirsutis, intus fere glabris; articulo brevissimo, facie ad axin spectante villosulo; laminâ lanceolatâ vel ovato-lanceolatâ, breviter acuminatâ, inæquilaterâ, apice subrectâ; costâ mediâ, facie inferiore pubescente exemptâ, fere glabrâ; inflorescentiæ rhachide gracili, erectâ, folia pluries excedente, puberulâ vel breviter pilosâ; bracteis internodia excedentibus vel æquantibus vel quam ea paullo brevioribus, oblongo-ovatis, plerisque apice late truncatis, nonnunquam emarginatis, rhachidem laxè amplectentibus, membranaceis, minute pubescentibus puberulisve; sepalis oblongo-lanceolatis, acutiusculis, apice decoloribus; corollæ tubo sepala subæquante, sursum ampliato; staminodiis externis obovato-oblongis, obtusis, fere æquilongis; staminodio calloso quam staminodium cucullatum paullo longiore, auriculâ obtriangulâ; ovario albide sericeotomentoso.

*Hab.* Reperi in ripâ fl. Paraguay prope Santa Cruz mens. Oct. florentem. (Nn. 439, 631.)

Sepala lanceolata, 2.5-3.0 cm. long., 5-nervia, apice 1-nervia. Corollæ tubus 0.25 cm. long., sub limbo 0.1 cm. lat. (basi vix 0.05 cm.). Tuber, ex schedis meis anguste ovoideum, siccum potius videtur oblongum, tunicis ovatis, acuminatis, imbricatis, fragilibus, vivis pallide bruneis obtectum, radices plagiotropicas, radicillos perbreves ferentes, vel fere omnino simplices emittens. Caules usque ad 10.0 cm. alt., sæpe vero humiliores. Vaginæ caulem occludentes sursum gradatim elongatæ, usque ad 8.0 cm. long., apice integræ vel brevissime bifidæ, nonnunquam mucronulatæ. Foliorum vaginæ explanatæ 0.8-vix 1.0 cm. lat., in margine plus minus villosulo-ciliatæ; articulus 0.1 cm. long. (folii unici vero 0.3 cm.); petiolus plerumque 0.1 cm. long. (folii unici 1.0 cm. long.); lamina ad 9.5 cm. long., mediocres circa 7.0 cm., medio ad 3.0 cm. diam. (plerumque vero angustior); costa media basi inordinate incrassata, cito attenuata. Inflorescentiæ rhachidis usque ad 25.0 cm. long., 0.75-1.0 cm. lat. Bracteæ 1.2-2.6 cm. long., superiores gradatim imminutæ, imâ basi pubescentes vel hirsutulæ, rarius puberulæ vel glabræ. Pedicelli pæne omnino glabri. Flores albi; staminodia purpureo- et luteo-maculata. Sepala 2.5-3.0 cm. long., 5-nervia, apice 1-nervia. Corollæ tubus 0.25 cm. long., sub limbo 0.1 cm. lat. (basi vix 0.05 cm.). Staminodia externa 0.5 cm. long., 0.25 cm. lat. Staminodium callosum 0.35 cm. long., ecallosum, trilobum, lobo medio majore, lobis lateralibus æqualibus. Staminodium cucullatum lineari-lanceolatum, auriculâ 0.2 cm. long. appendiculatum. Antheræ oblongæ, brevissime mucronulatæ, 0.1 cm. long. Ovarium triquetrum vel subanceps, 0.2 cm. long. Stylus incrassatus. Stigma securiforme.

*Maranta bicolor*, Ker, quam planta nostra de habitu necnon signis aliis levioris momenti aliquanto simulat, foliorum articulos multo majores, spicas breves paucifloras, bracteas longiores acutas nec amplas et apice truncatas, pedicellos pubescentes, corollæ majoris tubum triplo latiore ostendit. [Bras. Or., Amazonia, Guiana.]

THALIA GENICULATA, Linn. Sp. Pl. ed. I. p. 1193.

*Hab.* In paludosis prope Corumbá mens. Jan. floret. (N. 909.) [Amer. Trop. et Subtrop., Ind. Occ.]

CALATHEA (§ DISTICHÆ) SUBTILIS (sp. nov.); caule brevissimo, vaginis aphyllis paucis ensiformibus obtecto; foliorum basaliū vaginis laminam haud attingentibus sat latis, apice nonnunquam breviter auriculatis, margine hyalinis, glabris; petiolis gracilibus, glabris; articulo perbrevis, latere ad axin spectante villosulo; laminâ lanceolato-oblongâ, basi rotundatâ, apice breviter acuminatâ, tenuiter membranaceâ, glabrâ; scapo elongato, tenui, sub apice obscure pilosulo; inflorescentiâ folio cujus lamina foliorum basaliū laminam sat simulat suffultâ, brevi; pedunculo gracili pilosulo incluso quam folium suffulciens 2½-plo brevior; spicis abbreviatis ovatis; bracteis stricte distichis, late rotundato-ovatis, obtusissimis, sæpe cuspidulatis, deli-

catulis; sepalis late linear-oblongis, obtusissimis, corollam fere duplo excedentibus; corollæ tubo brevi ac comparative lato, antherâ inappendiculatâ; ovario turbinato, glabro.

*Hab.* Crescit in sylvestribus ad ripas fl. Paraguay inter Santa Cruz et Villa Maria, ubi mens. Dec. floret. (N. 814.)

Rhizoma tenue, in sicco tortum, radices sat crassas emittens. Vaginæ caulem circa 1·0 cm. alt. ocludentes, usque ad 9·0 cm. long., inferiores vero multo minores, obtusæ, obsolete puberulæ margine hyalinæ. Foliorum basaliūm vaginæ usque ad 16·0 cm. long., explanatæ 0·8 cm. lat., sursum coarctatæ, subtiliter nervosæ, tenuiter membranaceæ; petiolus supra vaginam 1·0–5·5 cm. long., facie superiore canaliculatus; articulus 0·1–0·2 cm. long., nec ultra 0·2 cm. diam.; lamina ad 15·0 cm. long., medio vix 3·5 cm. lat., imâ basi breviter villosula, costa media subtus eminente. Folii inflorescentiam suffulcientis petiolus 25·0 cm. long., 0·2 cm. diam., ejus vagina brevis, 2·5 cm. long., medio 0·6 cm. lat., utrinque angustata; petiolus vix 0·3 cm. long., articulo ter longior; lamina 14·0 cm. long., 4·0 cm. lat. Inflorescentia tota 5·4 cm. long., spica ipsa modo 2·0 cm., nutans. Flores et bracteæ albidæ, dilutissime virescentes. Bracteæ circa 1·1 cm. long. et lat.; sepala totidem longitudine. Corolla 0·6–0·7 cm. long.; tubus vix 0·2 cm. long. et 0·12 cm. lat. Petala lanceolata, obtusa, apice indurata, 0·5 cm. long. Anthera 0·2 cm. long.; connectivus apice incrassatus. Staminodium externum obovatum, emarginatum, erosum, 0·1 cm. long. Ovarium 0·15 cm. long.

Speciebus ab omnibus hujus sectionis hucusque cognitis abhorret, præter signa alia, spicis abbreviatis nec ultra 2·0 cm. longis. [Amazonia, Guiana, Columbia, Amer. Centr.]

*CALATHEA* (§ *NUDISCAPÆ*) *PRÆCOX* (sp. nov.); foliorum laminâ oblongo-oblanceolatâ, inæquilatâ, basi sensim angustatâ, apice acuminatâ, supra fere omnino glabrâ, subtus minute puberulâ, usque vel pæne ad articulum vaginatâ; articulo brevi, facie superiore pubescente; scapo paullo præcoce, foliis multoties brevior, basi vaginis aphyllis ensiformibus plus minus elongatis cincto, sat valido, pubescente; spicâ oblongâ vel ovato-oblongâ, nonnunquam fere sessili, paucibracteatâ; bracteis lanceolatis vel ovato-lanceolatis acuminatis, extus et dimidio superiore intus pubescenti-pilosulis; floribus longe exsertis; sepalis linearibus, obtusis; corollæ tubo sepalis plus quam 3-plo longiore; staminodio externo apice acutato, margine undulato; staminodio calloso late oblongo, obtusissimo, deorsum uno latere auriculato, obscure calloso; staminodio cucullato obtuso, auriculâ anguste oblongâ aucto; stamine fertili appendice petaloideâ aucto; antherâ anguste linear-acutâ; stylo maxime incrassato, stigmate aratriformi.

*Hab.* In ripâ fl. Paraguay juxta Santa Cruz reperi mens. Oct. florentem. (N. 495.)

Tubera nunc subsphæroidea, nunc oblonga, viva pallide brunea, 1·0 cm. long. vel ultra, radices pluries parce ramosas emittentia. Foliorum vaginæ nunc elongatæ (usque ad 12·0 cm. long.), nunc perbreves (nec 3·0 cm.), explanatæ 0·3–1·0 cm. lat., in sicco bruneæ; articulus 0·2–0·4 cm. long., aliquando fere obsoletus, tenuis. Laminæ modicæ circa 12·0 cm. long., raro usque ad 20·0 cm.; costa media supra

impressa, subtus eminens. Vaginæ scapum cingentes superiores majores usque ad 7·0-10·0 cm. long. pertinentes, dorso sæpe villosulæ vel pubescentes. Scapus ad 5·5 cm. long., 0·15-0·2 cm. diam., ipsâ sub spicâ parum incrassatus. Spica absque floribus 3·0-4·0 cm. long., 2·0-3·0 cm. lat. Bracteæ modicæ 3·0 cm. long., et 1·2 cm. lat., vivæ dilute puniceæ. Flores albi. Sepala 1·13 cm. long. Corollæ tubus fere 4·0 cm. long., circa 0·1 cm. lat., apice paullulum ampliatus. Petala lanceolata, breviter acuminata, circa 1·5 cm. long. Staminodium externum 2·0 cm. long., vix 0·8 cm. lat. Staminodium callosum 1·7 cm. long. Staminodium cucullatum 0·5 cm. long., auriculâ 0·13 cm. long. Anthera 0·3 cm. long. Stigma 0·25 cm. long.

A *Calathæâ Mansonis*, Koern., differt, præter alia, spicis præcocibus, vaginis aphyllis, foliis multoties minoribus brevius ac inconspicue articulatis, bracteis angustioribus pubescenti-pilosulis, tubo corollæ longiore. [Amazonia, Guiana, Bolivia.]

**CALATHEA** (§ **SCAPIFOLIÆ**) **HUMILIS** (sp. nov.); breviter caulescens, foliis caulinis basi a vaginis parvis aphyllis ensiformibus cinctis; petiolo gracili, anguste vaginato; articulo brevi, glabro; laminâ e basi rotundatâ levissime cordatâ, ovato-lanceolatâ, acuminatâ, fere omnino glabrâ; folii inflorescentiam suffulcientis vaginâ brevi satis latâ, ad articulum haud pertinente, puberulâ; petiolo ultra vaginam perbrevis; articulo puberulo; lamina ei folii caulini subsimili nisi minore; inflorescentiâ pedunculatâ, obovatâ; pedunculo erecto, tenui, puberulo; floribus breviter exsertis; bracteis nunc ovatis, nunc ovato- vel lanceolato- vel late lineari-oblongis, breviter acuminatis, puberulis; corollæ tubo sepalis nunc duplo, nunc paullo longiore; staminodio externo margine eroso quam cucullatum 3-plo longiore; ovario glabro.

*Hab.* Florescit ad Santa Cruz mens. Dec. (N. 796.)

Caulis rectus, 6·0 cm. long., 0·5 cm. diam., obsolete pruinosis; internodia pleraque 0·4-0·5 cm. long., passim radicefera, radicibus simplicibus orthotropicis vel plagiotropicis. Vaginæ aphyllæ vix ad 8·0 cm. long. et 0·5 cm. lat., obtusæ vel breviter acuminatæ, puberulæ. Foliis caulinis petiolus totus 8·5 cm. long., vaginâ 4·0 cm. long., tortâ; articulus 0·4 cm. long., lateraliter compressus; lamina 13·0 cm. long., juxta medium 4·0 cm. lat., tenuiter membranacea; costa media supra deorsum paullulum canaliculata, mox subplana, subtus eminens, basique ipsâ incrassata. Foliis inflorescentiam suffulcientis vagina 0·23 cm. long., sursum gradatim coarctata, explanata vix 0·5 cm. lat.; petiolus ultra vaginam 0·25 cm. procurrat; articulus 0·3 cm. long.; lamina 9·0 cm. long. Pedunculus 2·0 cm. long., superne leviter amplificatus. Spica semel ramosa, 3·5 cm. long., 2·0 cm. lat. Bracteæ 2·0-vix 2·5 cm. long., 0·35-0·8 cm. lat., crebre nervosæ, membranaceæ, margine hyalinæ. Flores cyanei vel cærulei (meâ in schedulâ "flowers blue" scribebam). Sepala anguste linearia, longe acuminata, 0·8 cm. long. Corollæ tubus angustus 1·0-vix 1·5 cm. long., 0·1 cm. lat. Petala lanceolata, truncata, 0·5 cm. long. Staminodium externum 0·5 cm. long. Staminodium cucullatum 0·15 cm. long., breviter auriculatum. Anthera 0·2 cm. long., ejus connectivus ultra loculos breviter acuminatus. Stylus paullo incrassatus. Stigma 0·2 cm. long., clavatum.‡



Mihi videtur species cum *Calatheâ Eichleri*, Petersen, conferenda, primo obtutu vero ab eâ discernenda habitu humili, foliis multo minoribus, petiolis longe evaginatedis, necnon spicis et floribus multo minoribus. [Bras. Or.]

### BROMELIACEÆ.

**BROMELIA SYLVICOLA** (sp. nov.); foliis super vaginam petiolum haud formantibus; inflorescentiâ abbreviatâ, anguste paniculatâ; bracteis primariis elongatis, bracteis II. ordinis sepalis subsimilibus, oblongis, obtusis, integris vel oblique erosis, obsolete albo-tomentellis, nonnunquam fere glabris; sepalis liberis, erectis, dorso carinatis, late lineari-oblongis, obtusis vel obtusissimis vel truncato-emarginatis, 0·6–1·2 cm. long.; petalis breviter connatis, obsolete puberulis; ovario dense albide floccoso-tomentoso.

*Hab.* Crescit in sylvâ ad ripas fl. Paraguay inter Santa Cruz et Diamantino, ubi mens. Oct. floret. (N. 489.)

*Acaulescens.* Folia basalia rosulata, ascendenti-patula, trimetralia, anguste linearia, superne valde ac longissime attenuata, deorsum vix 2·5 cm. lat., apicem versus ad 0·3 cm. angustata, margine aculeis parvis subdebilibus nec ultra 0·3 cm. long., antrorsum leviter curvatis, apice ipso deficientibus instructa, supra viridibus, subtus pallidis ibique passim minute albido-lepidotis. Folia interiora exterioribus sat similia nisi minora (mediocria circa 40·0 cm. long. et 0·7 cm. lat.), viva rubra, albido-lepidota, vaginis obovato-oblongis, sursum aculeigeris, extus albido-lepidotis, 3·0 cm. lat. fulta. Inflorescentiæ axis primarius albo-floccosus, circa 15·0 cm. long. et 0·8 cm. diam., foliis folia interiora simulantibus nisi iis minoribus deorsum laxiuscule instructus, superne ramulos breves floriferos albo- vel lutescenti-brunefloccosos gerens. Bracteæ primariæ ample vaginatæ, inferiores longilaminiferæ, superiores laminâ brevi coronatæ, summæ perbreveviter laminiferæ neque usquam ad vaginas meras, ut in *B. reversacantha*, Mez, reductæ, præsertim summæ albo-floccosæ, debiliter aculeoligeræ. Bracteæ II. ordinis sepalis subsimiles, diversæ magnitudinis, nunc ovarium facile excedentes, nunc eo manifeste breviores, mediocres 1·0 cm. long., circa 0·35 cm. lat., papyraceæ, albæ. Flores brevissime pedicellati, pro genere parvi, ovario incluso vix 3·0 cm. attingentes. Sepala alba, papyracea, basi manifeste, sursum lævius albo-floccosa, deorsum paullulum imbricata, ceterum aperta, latâ basi inserta, inde vix angustata, parum curvata, circa 1·0 cm. long. Petala purpurea, oblongo-oblancheolata, obtusa, submembranacea, apice carnosula, 1·5–2·0 cm. long., 0·5 cm. lat., eligulata. Stamina petalis paullo breviora, filamenta deorsum in tubum 0·3 cm. alt. cum petalis connata. Antheræ 0·7 cm. long., anguste lineares, apice acutatæ, dorsifixæ. Ovarium anguste oblongum, trigonum, dense albo vel dilutissime brunefloccosum. Stylus medium antherarum attingens, triqueter, 0·1 cm. lat. Stigmatis lobi 0·23 cm. long., apice obtusi.

*Bromeliæ reversacanthæ*, Mez, arcte affinis, cujus flores, ut ex descriptione optimâ

patet, sat similes, stirps nostra equidem certe distincta, præsertim foliis nec reverse aculeatis interioribus in scapo positis, maxime elongatis nec parvis, bractearum primariarum formâ dispari, sepalorum et petalorum ambitu, antheris et stigmatis lobis longioribus. [Distrib. ?]

*ANANAS SATIVUS*, Schult. fil. in Roem. et Schult. Syst. Veg. vii. p. 1283. Var. *MICROSTACHYS*, Mez.

*Hab.* Frequens in sylvis juxta Santa Cruz et alibi in provinciâ; floret mens. Oct.-Nov. (N. 412.)

Folia maxima biorgyalia, primâ ætate rubra, dein viridia. Scapi ultrametralis. Flores dilute purpurei. [Bras. Or., Goyaz ?]

*ÆCHMEA BROMELLÆFOLIA*, Baker, ex Benth. et Hook. f. Gen. Pl. iii. p. 664.

*Hab.* Legi in sylvâ primævâ ad Santa Cruz mens. Sept. (N. 347.)

Folia maxima  $\frac{2}{3}$ -metralia, supra saturate viridia, subtus glauca. [Amer. Austr. Trop., Ins. Trinitatis.]

*TILLANDSIA STREPTOCARPA*, Baker, in Journ. of Bot. 1887, p. 175.

*Hab.* Juxta Corumbá florebat mens. Jan. (N. 944.) [Bras. Or., Paraguaria.]

*TILLANDSIA* (§ *DIAPHORANTHEMA*) *ATRICHOIDES* (sp. nov.); caulibus cæspitosis, brevibus; foliis parvis, lineari-subulatis, basi breviter vaginantibus, nunc obtusiusculis, nunc acutis vel acuminatis, dense argenteo-lepidotis; pedunculis tenuibus, quam caules  $2\frac{1}{2}$ -plo longioribus; vaginis 4-5, parvis, argenteo-lepidotis, totâ longitudine oclusis; spicis 2-4-floris; floribus in rhachide brevi paullo undulatâ congestis; bracteis ovatis acutis, argenteo-lepidotis; sepalis late oblongis, acutis vel obtusis, bracteas paullo excedentibus; capsulâ cylindricâ, bracteas 3-plo superante.

*Hab.* Inveni super arborem ignotam vigentem inter Corumbá et Ladario, mens. Jan. (N. 1046.)

Caules circa 1.5 cm. long., foliis pluribus imbricantibus obtecti. Folia ad 2.5 cm. long., basi 0.13 cm. (vel ultra) lat., superne ad 0.03 cm. attenuata, triente inferiore (vel minus) concava, sursum subteretia, lepidibus parvis subfurfuraceis recurvis dense obsita. Vaginæ oblongo-lanceolatæ, obtusiusculæ, amplæ, quam folia minus lepidotæ. Pedunculi ad 4.0 cm. long., leviter undulati. Bracteæ 0.5 cm. long., in longitudinem nervosæ. Sepala bracteas circa 0.15-0.2 cm. superantia, polita, levissime lepidota, crebre nervosa. Petala ignota. Capsula vix 2.0 cm. long., valvis breviter mucronatis politis minutissime lepidotis.

*T. loliacea*, Mart. (*T. undulata*, Baker), cui maxime affinis, foliis majoribus (longioribus ac latioribus), spicis comparative laxifloris et plurifloris, bracteis rigidioribus, necnon capsulis longioribus et comparative angustioribus gaudet. [Bras. Or., Paraguaria.]

*VRIESEA SANCTÆ-CRUCIS* (sp. nov.); foliis exterioribus circa 30 rosulatis, mediocribus, basi ovato-lanceolatis, sursum lineari-setaceis, acuminatis, arcte et minute lepidotis,

coriaceis; pedunculo foliis brevior, deorsum folia interiora elongata foliis exterioribus subconformia etsi basi angustiora, sursum in vaginas parvas amplas transeuntia, ferente; spicis pauci- vel plurifloris quam folia brevioribus, simplicibus vel subsimplicibus; bracteis lanceolato-ovatis, acuminatis; sepalis bracteam paullo superantibus; petalis calycem  $\frac{2}{3}$ -plo excedentibus, lingulatis; capsulâ bracteam  $2\frac{1}{2}$ -plo excedente.

*Hab.* Crescit super arborem ignotam juxta Santa Cruz, ubi flores et fructus simul tulit mens. Sept. (N. 361.)

Radices tenues, fibratæ, undulatæ, cinereæ, politæ, dense aggregatæ. Caules circa 3·0–4·0 cm. long. Foliorum exteriorum basis expansa circa 4·5 cm. long. et 2·0 cm. lat.; lamina circa 9·0–12·0 cm. long., fol. inferiorum 1·0–2·0 cm. long., fol. infimorum paucorum evanida vel fere evanida, sursum ad 0·1 vel 0·2 cm. angustata ibique curvata, folia omnia lepidibus brevibus argenteis densissime oblecta. Folia interiora inferiora usque ad 28·0 cm. long., 2·5–3·0 cm. lat., sursum ad 0·1–0·2 cm. coarctata, coriacea, basi ipsâ polita et quodammodo decoloria; vaginæ circa 2·0 cm. long., pergameæ, una cum foliis interioribus laxè imbricatæ. Pedunculi exempl. florigeri circa 12·0 cm. long., exempl. fructificantis 18·0 cm., punicei. Spica exempl. florigeri 4-flora, 4·5 cm. long., exempl. fructificantis pluriflora et 12·0 cm. long., leviter flexuosa, angulata, punicea. Flores subconferti. Bracteæ puniceæ, circa 3·0 cm. long., firmæ, nervosæ, minute lepidotæ. Sepala 2·0–2·5 cm. long., acuta, lepidota. Flores evanescentes cyanei vel purpureo-cyanei fuisse videbantur. Capsulæ 6·0–7·0 cm. long., valvis mucronato-acutatis firmis nervosis leviter curvatis. Semina 5·0 cm. long., apice capillis albis vix æquilongis instructa.

Speciem certe ad *Vrieseam corcovadensem*, Mez, spectantem et reverâ juxta illam intercalandam primo obtutu agnoscere potes, præter alia, foliis minoribus, conspicuius lepidotis, sursum majus attenuatis, et bracteis paullo minoribus, lepidotis nec politis. [Bras. Or.]

Hujus ordinis, sed quoad genus dubium, etsi forsitan *Quesnelia* vel *Billbergia* species, exstat insequens:—*Bromeliacea arboricola*: foliis magnivaginatibus, apice in petiolum non attenuatis, laminâ anguste lineari vel ensiformi, subito vel sensim acuminatâ, margine crebre ac breviter aculeolatâ, minute albido-lepidotâ, vaginâ haud exemptâ usque ad 50·0 cm. long. (foliorum exteriorum vero lamina multo minor); pedunculo gracili folia excedente, vaginis sparsis laxis ad 11·0 cm. long. (plerumque vero brevioribus) instructo; spicâ 5·0 cm. long.; bracteis infimis vaginis subsimilibus lineari-lanceolatis, bracteis superioribus multo minoribus; sepalis oblongis, obtusis, 1·0 cm. long., pubescentibus; ovario cylindrico, circa 1·0 cm. long., albo-pruinoso. Reliqua desunt.

*Hab.* Inveni juxta Santa Cruz, mens. Sept. floribus jam dilapsis. (N. 347 a.)

This is another myrmecophilous plant, and I was well stung while securing it. The ants live in the spaces between the wide loosely-imbricated leaf-sheaths, which latter they occasionally pierce.

## IRIDEÆ.

*SPHENOSTIGMA GRAMINEUM* (sp. nov.); bulbo globoso tunicis tenuibus in sicco fusco-purpureo-nigris dense obtecto, vaginis paucis brevibus scariosis coronato; foliis radicalibus elongatis equitantibus anguste-linearibus, apice acuminatis; caule infra inflorescentiam 9·0-23·0 cm. long. erecto gracili, folio spatham suffulciente foliis radicalibus simili nisi plerumque latiore; inflorescentiâ abbreviatâ, angustâ, paucifurcatâ, basi sæpe folio parvo (interdum foliis duobus), spathæ pari, instructâ; spathæ valvulis mediocribus, lanceolatis, breviter acuminatis, 1-floris; antheris lineariblongis quam filamenta a basi libera  $\frac{1}{3}$ -plo brevioribus; styli ramis obsphenoideis, emarginatis.

*Hab.* Viget juxta Santa Cruz, ubi reperi mens. Dec. (N. 732.)

Bulbus 1·0-1·3 cm. lat., vix totidem long., radices ex eo nascentes debiles, nec ultra 2·0 cm. long. Folia radicalia 16·0-35·0 cm. long., 0·2 cm. lat., anguste vaginata, vaginis tenuiter membranaceis, margine hyalinis, subtiliter purpureo-maculatis, explanatis 0·4 cm. lat., sursum angustatis. Folium inflorescentiam suffulciens non ultra 28·0 cm. long. (solemniter brevius), 0·4-0·5 cm. lat., basi margine hyalinum. Inflorescentia ad 3·0 cm. long. Valvulæ spathæ 2·0-3·0 cm. long., medio 0·7 cm. lat., margine hyalinæ. Pedicelli 0·7 cm. long., superne paullo ampliati. Flores circa 2·0 cm. diam., cyanei. Perianthii segmenta basi brevissime connata, externa oblonga, 1·4 cm. long., 0·45 cm. lat., duplo breviora, late linearia, basi (ex schedis meis) leviter luteo-cristata. Filamenta 0·2 cm., antheræ 0·3 cm. long. Stylus 0·75 cm. long., complanatus, rami 0·05 cm. long. Capsula nondum matura lineariblonga, basi coarctata, 0·6 cm. long., 0·13 cm. lat.

Forsitan accedens ad *S. geniculatum*, Klatt, plantam mihi non obviam, cujus folia longiora, caulis apice geniculatus, inflorescentia tribus foliis parvis suffulta, spatha 3-flora, pedicelli multo longiores, perianthium violaceum, necnon styli rami bifidi. [Matto Grosso.]

*ZYGELLA*, Iridearum, e tribu Moræarum gen. nov. (Tab. XXXIV. figg. 1-13.)

*Gen. char.*:—Flores actinomorphi. Perianthii segmenta in tubum brevissimâ basi connata, unguiculata, segmenta interiora minora integra. Stamina segmentis exterioribus antiposita et juxta basin perianthii iisdem inserta; filamenta filiformia, libera, basi ipsâ dilatata; antheræ oblongæ, basi sagittatæ, connectivus excurrens laminis duabus coronatus. Ovarium 3-loculare, obtusum, scilicet haud in rostrum productum; ovula in loculis numerosa; stylus filamentis brevior, filiformis, haud procul a basi semel trichotomus vel bis dichotomus, rami 3, erecti, filiformes, staminibus antipositi; stigmata supra antheras lamelliformia, alte biloba. Capsula parva, elongato-ovoidea, apice truncata, breviter loculicide 3-valvis. Semina minuta, alâ sat magnâ instructa. Habitus *Calydoreæ*, Herb. Bulbus tunicatus. Folia radicalia pauca, angusta, equitantia, floralia 1-2 minora. Spathæ paucæ; valvulæ angustæ, inferior quam superior brevior, sessiles vel

pedunculatæ. Flores parvi, intra spatham solitarii vel bini, pedicellati. Capsula e spathâ exserta.

Genus memoratu dignum, habitu ad *Calydoream* accedens, ab eâ vero abhorret, præter alia, styli ramis longe disparibus (itaque generibus ab omnibus e tribu *Sisyrinchiearum* stylis staminibus antipositis). Ob antherarum appendices singulares plane diversa videtur ab omnibus *Moræarum*, quarum habitus insuper plus minus alienus.

*ZYGELLA GRAMINEA* (sp. nov.); bulbo subgloboso, parvo, tunicis bruneis in collum supra bulbum longiuscule productum dense obtecto; foliis radicalibus anguste linearibus, acuminatis, satis ample vaginatis, nunc elongatis, nunc brevibus, nonnunquam ad vaginam meram fere vel omnino reductis; caule breviusculo vel sat elato, gracili; foliis floralibus majoribus solemniter florem infimum suffulcientibus foliis radicalibus subsimilibus; pedunculis gracilibus; spatharum valvulis lanceolatis, valvulâ inferiore acutâ, superiore pedicello arcte circumvoluto truncatâ; perianthii segmentis spathulari-obovatis obtusis, antheris filamentis æquilongis; stylo filamentis fere 2-plo brevioribus, ramis sursum ampliatis.

*Hab.* Crescit ad Santa Cruz, ubi mens. Nov. florescit. (N. 733.)

Bulbus circa 1.0 cm. long. et lat., basi parce radicefera, radices debiles, simplices, rarius breviter ramosæ; collum 1.0–1.5 cm. long. Folia radicalia majora 8.0–12.0 cm. long., 0.1–0.15 cm. lat., vaginæ ad 0.3 cm. lat., sursum angustatæ, scariosæ. Caulis infra folia floralia ad 24.0 cm. alt., modicus circa 16.0 cm., erectus, ad 0.1 cm. diam., apice leviter geniculatus. Folia floralia 5.0–9.0 cm. long., ad 0.2 cm. lat., basi sat ample vaginata. Pedunculi usque ad 9.0 cm. long. (plerique vero breviores), erecti. Spathæ valvula inferior circa 1.5 cm., superior circa 2.5 cm. long. Pedicelli ad 3.0 cm. long. Perianthii segmenta nunc cyanea, nunc cærulea, basi dilute lutescenti-viridia, ibidem purpureo-maculata, ad 0.1 cm. connata; segmenta exteriora 1.5 cm., interiora 1.2 cm. long. Filamenta 0.25 cm. long. Anthera tota 0.4 cm. long. Pollinis grana globosa, tuberculata. Stylus vix 0.2 cm. long., imâ basi leviter incrassatus, rami quam ipse 2–2½-plo longiores; lamellæ 0.15 cm. long. Capsula ad 0.5 cm., extra spatham exserta, 0.5 cm. long., vix 0.3 cm. lat., ejus valvæ obtusæ, modo 0.1 cm. long. Semina tota 0.075 cm. long. ovoidea, brunea, alâ quam corpus ipsum seminis 2½-plo longiore appendiculata.

This is a curious genus, apparently not very closely allied to any other. In habit and floral structure it is unlike most genera of *Morææ*, coming closest probably, in these respects, to *Alophia*. The habit is that of the subtribe *Cipureæ* of *Sisyrinchieæ*, the distinctively American portion of the order, so much so, indeed, that the plant might easily be mistaken for a species of one of that subtribe's genera until dissection should reveal the difference. From all these genera *Zygella* is at once distinguished by its curious stamens, and, among them, *Nemastylis* alone has divided style-arms, but style-arms which are subulate and quite unlike the lamelliform organs of *Zygella*. There can, I think, be no reason to doubt our plant's claim as being an example of a new genus, which seems to connect in some measure the two tribes *Morææ* and *Sisyrinchieæ*, since it unites in itself the anti-staminal style-arms of the former and the habit of the latter tribe—hence its proposed name, from *ζυγώω*, to join together.

In the figures of Tab. XXXIV. the anthers are shown as quite free from the style-arms, and I believe this to be the case with fresh flowers, as I distinctly remember collecting some Irideous flowers with curious free staminal appendages. In the dried flower, however, the anthers are each of them attached to its respective style by means of its two appendages, which get squeezed against the two laminæ—one against each lamella—so that it is only by very careful dissection that the appendages can be isolated: fig. 4 shows well the relation between anther and style-arm in a dried flower.

*Zygella* is somewhat peculiar in the structure of its leaf, inasmuch as, contrary to the rule in Iridaceæ, the vascular bundles are not accompanied by sclerenchyme. Sclerenchyme is found only at the four edges of the leaf (Tab. XXXIV. fig. 13), and there is an interval between each of the masses of sclerenchyme and the nearest vascular bundle, an interval occupied by resin-sacs. The epidermal cells are large and very thick-walled, the inner wall also being greatly strengthened.

#### HYPOXIDEÆ.

CURCULIGO ENSIFOLIA, Baker, in Journ. Linn. Soc., Bot. xvii. p. 124.

*Hab.* Santa Cruz, Nov. (N. 735.) [Amer. Austr. Trop., Ind. Occ.]

#### AMARYLLIDEÆ.

ZEPHYRANTHES (§ EUZEPHYRANTHES) LACTEA (sp. nov.); bulbo ovoideo, tunicis fusco-brunecis dense obtecto, tunicis ad 2·0 cm. long. ultra bulbum in collum eminentibus; foliis radicalibus elongatis, anguste linearibus, obtusis, tempore florendi prolatis; scapo gracili, raro deorsum ampliato; spathâ oblongâ 2·0-3·0 cm. long., more generis apice bifidâ; pedunculo spatham nunc æquante, nunc quam ea longiore vel brevior, gracili; floribus mediocribus; perianthii tubo brevissimo, lobis ovato-lanceolatis, breviter acuminatis, inter se arcte applicatis, et ita tubum superne leviter ac gradatim ad 0·5 cm. ampliatus mentientibus; staminibus juxta basin tubi insertis, filamentis complanatis tribus; perianthii segmentis interioribus antipositis; longioribus æquilongis, tribus brevioribus æquilongis; stigmatibus inæqualiter trifido.

*Hab.* Crescit in locis apertis ad Jangada, mens. Sept. florens. (N. 283.)

Bulbus 1·5 cm. diam., 1·0 cm. long., collum solemniter 1·0-2·0 cm. long. et 0·7-0·9 cm. diam. Folia radicalia 8·0-14·0 cm. long., nonnunquam basi attenuata, 0·2-0·3 cm. lat. Scapus usque ad spatham 6·0-16·0 cm. long., sub spathâ levissime ampliatus ibique floribus dilapsis incrassatus. Spatha usque ad 3·0 cm. long., sublaxa, circa ad 0·5 cm. bifida. Pedunculus 2·0-5·0 cm. long., tenuis vel satis incrassatus. Flores albi. Flos totus 4·5 cm. long., vix 3·0 cm. diam. Perianthii tubus 0·4 cm. long., annulo squamarum parvarum laceratarum auctus. Antheræ anguste lineares, 1·2 cm. long. Filamenta breviora 0·5 cm. long., longiora 2·0 cm. Stylus 1·8-2·1 cm. long., rami 0·15 cm. long.

A *Z. cearensi*, Baker, abhorret floribus majoribus albis, perianthii tubo squamato, staminibus multo majoribus inæqualitatis, etc. [Bras. Or., Goyaz.]

HIPPEASTRUM SOLANDRIFLORUM, Herb. App. p. 31.

*Hab.* Reperi ad Santa Cruz mens. Nov. (N. 658.) [Amer. Austr. Trop.]

#### DIOSCOREÆ.

DIOSCOREA, sp. Volubilis, glabra, caule subtetragono, 0·15 cm. diam.; foliis petiolatis, petiolis 6·5–7·5 cm. long. fultis, profunde cordatis, breviter cuspidato-acuminatis, 7·0–10·0 cm. long., basi 7·0–10·0 cm. lat., tenuiter membranaceis, supra viridibus, subtus vivis lepide purpureis, 7-nervibus, nervis externis aperte arcuatis, nervo posteriore mox bifurco, nervis internis oblique-ascendentibus in acumen 0·5–0·7 cm. long. excurrentibus. Reliqua desunt.

*Hab.* Crescit juxta Corumbá. (N. 982 a.)

DIOSCOREÆ (§ HELMLÆ) species indeterminabilis: caule volubili, subtetragono, glabro; foliis petiolis 4-angularibus, utrinque leviter incrassatis ibique subobsolete pruinosis, 4·0–5·0 cm. long. insidentibus; laminis cordatis, lateribus approximatis, acutis, leviter undulatis, 7·5–9·0 cm. long., basi 7·5 cm. lat., coriaceo-membranaceis, utrinque viridibus, 7-nervibus, nervo postico mox trifurcato, nervibus lateralibus anticis erecto-ascendentibus, posticis late arcuatis; capsulis oblongis, oculis complanatis, coriaceo-membranaceis, in rhachide pendente debili 10·0–15·0 cm. long. dispositis, 1·6–1·9 cm. long., 1·0 cm. lat., glabris, in sicco lutescenti-vel bruneo-nitidis, nonnunquam leucophæis. Reliqua desunt.

*Hab.* Crescit ad Corumbá, mens. Jan. fructificans. (N. 1088.)

#### SMILACEÆ.

SMILAX SYRINGOIDES, Griseb. in Mart. Fl. Bras. iii. pars i. p. 11.

*Hab.* Santa Cruz, ubi fructificat mens. Oct. (N. 362.)

Baccæ subglobosæ, circa 0·7 cm. diam., vivæ luteæ, siccæ purpureo-nigricantes. [Bras. Or.]

SMILAX BENTHAMIANA, A. DC. Monog. Phan. i. p. 114.

*Hab.* Reperi ad Jangada mens. Sept. florentem. (N. 277.) [Amazonia.]

SMILAX (§ EUSMILAX) MEDICINALIS (sp. nov.); ramis gracilibus, brevibus, nitidis, parce spinosis; foliis brevipetiolatis, ovato-lanceolatis, raro lanceolatis, basi plus minus rotundatis, apice breviter mucronulatis; petiolis fere vel usque ad  $\frac{1}{2}$  vaginatis; pedunculis masc. petiolos superantibus erectis; umbellis plurifloris; receptaculo globoso; floribus parvis, petalis quam sepala angustioribus, antheris elongatis, oblongis, acutis; fl. fem. ignotis.

*Hab.* Crescit in sepibus ad Santa Cruz, ubi mens. Sept. floret (N. 305.)

Rami parum undulati, divergentes, obtuse polygoni, juveniles fere quadrangulares, striatuli, spinis fere rectis 0·3–0·5 cm. long. lateraliter compressis obsiti. Petioli

0.5-1.0 cm. long., nunc valide, nunc debiliter cirrhiferi, nunc cirrhis nascentibus aculeatis vel lenibus instructi, raro calvi, apicem versus paullo incrassati, infra apicem rumpentes. Laminæ juniores 5.0-6.0 cm. et vetustiores 7.0-9.5 cm. long., 2.0-4.5 cm. lat., margine cartilagineo plus minus undulato, breviter ac parce spinuloso vel espinoso, coriaceæ, a basi 7-nerviæ; nervis in petiolum decurrentibus, nervo medio dorso nonnunquam spinâ brevi aucto, nervulis maxime eminentibus. Pedunculi masc. omnes petiolos superantes, 1.0-2.0 cm. long., tenues. Umbellæ pleræque circa 25-40-floræ. Receptaculum 0.4 cm. lat., bracteolis ovatis acuminatis instructum. Pedicelli circa 1.0 cm. long., gracillimi. Alabastra parva, ovoidea, vix ultra 0.1 cm. long. Flores virescentes. Sepala oblonga, obtusiuscula, 0.12 cm. long., cum petalis oblongis paullo angustioribus patentia. Stamina sepalis  $\frac{1}{3}$  breviora. Antheræ oblongæ, acutatae, filamentis fere 3-plo longiores.

Species certe cum *Smilace polyanthâ*, Griseb., comparanda, cujus folia mimetica, sed longius mucronulata nec unquam margine vel inferne spinosa. Rami vero plantæ nostræ spinosi, pedunculi graciles nec complanati, florum minorum sepala et petala disparia, et antheræ oblongæ acutæ (nec ellipticæ). [Amazonia.]

Vicani plantam hanc in usu habebant ut sanguinem puriorem reddat.

#### LILIACEÆ.

HERRERIA SALSAPARILHA, Mart. Reise Bras. ii. p. 545.

*Hab.* Legi ad Santa Cruz et alibi in viciniâ mens. Oct.-Dec. floribus et fructibus orbam. (N. 465.) [Bras. Or.]

Stirps apud incolas ad usum vice *Smilacis* speciebus variis.

#### PONTEDERIACEÆ.

EICHHORNEA AZUREA, Kunth, Enum. iv. p. 129.

*Hab.* Frequens et gregaria in fl. Paraguay, San Lorenzo?, Cuyabá, et dos Bugres. Nom. vernac. *Camalote*. (N. 842.) [Amer. Trop., Paraguaria.]

#### MAYACEÆ.

MAYACA SELLOWIANA, Kunth, Enum. iv. p. 32.

*Hab.* Incolit paludes in cacumine montium Serra da Chapada juxta Santa Anna da Chapada, ubi mens. Aug. floret. (N. 113.) [Bras. Or., Amazonia, Paraguaria.]

#### ALISMACEÆ.

ECHINODORUS PANICULATUS, Micheli, in DC. Monog. Phan. iii. p. 51.

*Hab.* Reperi prope Corumbá mens. Jan. florentem. (N. 969.) [Amer. Trop. Merid., Paraguaria.]



## COMMELYNACEÆ.

(Determ. cl. C. B. CLARKE.)

COMMELINA NUDIFLORA, Linn. Sp. Pl. ed. I. p. 4.

*Hab.* Floret ad Santa Cruz mens. Nov. (N. 545.) [Reg. calid. totius orbis.]

COMMELINA SCHOMBURGKIANA, Klotzsch, in Schomb. Faun. et Fl. Guiana, p. 1064.

*Hab.* Santa Cruz; mens. Oct. floret. (N. 542.) [Guiana.]

COMMELINA VIRGINICA, Linn. Sp. Pl. ed. II. p. 61.

*Hab.* Prope Corumbá et ad Jangada. (Nn. 282, 854 a.) [Amer. Trop. et Subtrop.]

ANEILEMA SEMIFOLIATUM, C. B. Clarke; fere glabra, tuberibus anguste oblongis, caule stricto erecto, nodis distantibus; foliis omnibus abbreviatis, sub-bracteiformibus; pedicellis 1-3-nis ex utrâquâque bracteâ unifloris, ceteroquin ut *A. Schomburgkianum*, Kunth.

*Hab.* Crescit ad Santa Cruz, ubi mens. Oct. floret. (N. 541.)

Tubera 0·4 cm. diam., circa ad 2·0 cm. long., parce radicefera. Culmi 30·0-40·0 cm. long., lineâ puberulâ instructi, deorsum vix ad 0·4 cm. diam. Internodia inferiora ad 10·0 cm. long., modica circa 7·0 cm. Folia inferiora usque ad 3·5 cm. long., 1·5 cm. lat., obtusa, marginibus basi fere connatis; superiora vaginantia (sæpissime pedicellos amplectentia), apice spathaceo-fissa, in altero latere breviter lanceolata aut fere ad vaginas abbreviata. Pedicelli vaginam duplo excedentes vel breviter exserti, rarius subinclusi. Sepala 0·6 cm. long., oblongo-lanceolata, viridia. Petala vix sepalis æquilonga, purpurea. Stamina 3 fertilia, 3 sterilia, filamentis omnibus dense barbatis. Capsula 0·65 cm. long., 0·3 cm. lat., apice acuminata. Semina uniseriata. [Amazonia, Guiana.]

## PALMÆ.

DESMONCUS, sp. nov.; folii segmentis pluribus per acervos 1-3 approximatis vel subdistantibus, basi subplanis, oblanceolatis, acutis vel obtusiusculis, nervo medio eminente et utrinque spinis longiusculis debilibus 1-4 passim armato; flagello valido, deorsum aculeis elongatis, iis rhachidi insidentibus similibus, instructo, spinarum juga 6 e basi incrassata triquetro-complanata ferente. Reliqua desunt.

*Hab.* Ad Santa Cruz satis abundat. (N. 504 a.) *Urubamba* vicinorum.

Caudex scandens, aculeis rectis longis validis atratis instructus. Folia saltem 60·0 cm. long., incluso flagello circa 35·0 cm. attingente. Rhachis crassitie pennæ cervinæ, in sicco leviter trigona, aculeis rectis tenuibus acuminatis ad 3·5 cm. long. obsita. Segmenta admodum inæqualia, 7·5-13·0 cm. long., nunc opposita vel subopposita, nunc distantia, segmenta terminalia reliquis majora, aculei segmentorum plerique 0·9-1·4 cm. long., debiles, acuminati, atrati. Flagellum subtriquetrum, 0·13 cm.

diam., spinarum jugum proximum fere 0·3 cm. lat., vix 3·5 cm. long., juga reliqua vix 2·2 cm. attingentia, jugum summum 1·0 cm. long.

Forsitan juxta *Desmoncum rudentum*, Mart., intercalandus, multis signis vero ab eo abhorret.

**ASTROCARYUM ? sp.** Acaulescens, foliorum rhachide longe ac debiliter spinescenti, spinis ad 6·0 cm. long., atratis; foliis apice integris ibique ad 14·0 cm. bilobis et in nervis paginæ superioris appresse spinuliferis, segmentis pluribus per acervos 1-2 subdistantes anguste linearibus, breviter acuminatis, nervo medio sat eminente, subtus minute albido-lepidotis, paginâ superiore raro spiniferis, margine revoluta, spinis vix unquam ultra 1·0 cm. long. atratis instructis.

*Hab.* Frequens ad Santa Cruz. (N. 504 b.)

**Cocos, sp.** Caudice gracili, humili, paullo ultrametrali; foliis basi rectis, dein patulis, metralibus, segmentis anguste linearibus, acuminatis, pæne usque ad 30·0 cm. long., 0·45-0·7 cm. lat., per acervos solemniter 3-4 approximatis; petiolo ancipite, facie superiore plano, dorso elevato, in medio 1·0 cm. lat.; costâ superne leviter ac gradatim angustatâ, præsertim sursum sordide albo-lepidotâ, spadice pedunculatâ fructiferâ 20·0 cm. long.; rhachide dorsiventrali petiolum subæquante, ramos secundos densifruktiferos, rigidos, anfractos sustinente; drupâ oblongâ, 4·0 cm. long., 1·7 cm. lat., apice obtusâ. Reliqua desunt.

*Hab.* Reperi ad ripas fl. dos Bugres mens. Oct. (N. 427.)

**DIPLOTHEMIUM JANGADENSE (sp. nov.)** (Tab. XXXVI.); foliis patulis, paucis, segmentis per acervos 1-3 distantes rhachidi late canaliculatæ subopposite vel distanter insertis, linearibus, longe ac gradatim acuminatis, glaucescentibus; spathâ ovato-lanceolatâ, sursum obtuse angustatâ; spadice longissime pedunculatâ, parte florigerâ quam spatha saltem  $\frac{1}{3}$ -plo brevior, anguste fusiformi, deorsum latiore, et androgynâ sursum tenuiore et masculâ parte androgynâ quam pars mascula  $\frac{1}{2}$ - fere 2-plo brevior; floribus evolutis utriusque sexûs æquilongis, saltem iis e parte androgynâ ortis, florum fem. seplis late linearibus vel lineari-spathulatis, in margine breviter albido-papulosus; staminibus 11 liberis, germinodio subnullo; drupâ ignotâ.

*Hab.* In sylvestribus ad Jangada, ubi spadices profert mens. Sept. (N. 269.)

**Caudex 0.** Folia ultra sesquimetralia petiolis validis 70·0 cm. long., 0·8 cm. lat., supra late canaliculatis, dorso rotundatis, glaucescentibus fulta; segmenta, saltem inferiora, 35·0 cm. long., 0·4-0·7 cm. lat., nonnunquam vero minora et angustiora (22·0 cm. long., modo 0·2 cm. lat.), apice quam maxime attenuata, margine cartilaginea, subtiliter nervosa, subtus pallidiora ibique pruinoso-glaucescentia. Spadix usque ad 40·0 cm. alt., 0·4 cm. diam.; pedunculus obtuse anceps, sursum ad 0·65 cm. diam. incrassatus, pars florigera ad 0·8 cm. long., basi circa 0·7 cm. diam., superne gradatim acuminata. Spatha crassa, rigida, crebre nervosa, extus pallide virescens, intus castanea. Flores evoluti 0·5 cm. long., florum fem. sepala et petala 0·45-0·5 cm. long., sursum inflexa, hæc late linearia, obtusa, valde incrassata, eximie nervosa. Antheræ ad 0·3 cm. long., oblongæ, rectæ vel incurvæ; florum omnium a me scrutatorum 11, filamenta

0·13 cm. long., basi incrassata, omnino libera. Florum fem. sepala et petala 0·5 cm. long., late ovata, hæc leviter triloba. Sepala florum utrisuque sexûs margine papulis albis, more *Diplothemii leucocalycis*, Drude, aliquatenus munita.

Sine dubio ad *D. leucocalycem*, Drude, spectat, plantam tantummodo icone et descriptione optimâ auctoris laudati mihi cognitam; stirps nostra vero gaudet foliorum segmentis multo longioribus, longe acuminatis, et comparative angustioribus, florum masc. 11-androrum sepalis late linearibus vel lineari-spathulatis (nec rotundato-acutis), ad marginem brevius papulosis, eorundem florum germinodio subnullo, etc. [Bras. Or.]

Fruits of the following Palms were also obtained and brought down:—

- I. The *Boriti* or *Buruty* Palm, in all probability *Mauritia vinifera*, Mart. A useful Palm for building purposes. The nut yields a good oil.
- II. The *Guacory* Palm, *Attalea* sp., near *A. Princeps*, Mart., but differing somewhat in shape and size of its drupes, which are nearly 8 cm. long. by 4 broad. The fruit differs from all described by Drude, and belongs in all probability to a new species. The nut is edible and contains a good oil. The species placed next to *A. Princeps* by Drude, viz. *A. phalerata*, Mart., is said by Weddell to have a wide distribution in Matto Grosso, and one of its names, according to the same authority, is *Acuri*, evidently the same word as *Guacory*; but the fruits of *A. phalerata* are different from those of the present plant.
- III. The *Bocaúba*, *Bocaúva*, or *Mocaúva* Palm. Probably *Acrocomia sclerocarpa*, Mart., but with some very slight differences in the fruit. Edible sarcocarp and nut, the latter tasting like a Brazil nut and with much oil. One of the native names for *A. sclerocarpa* is Macaúba, evidently the same word as the above.
- IV. The *Tocúm* Palm. Probably *Astrocaryum Tucuma*, Mart., but with slightly different drupe. Drupes edible and pleasant when quite ripe, though the flesh is stringy. All the above fruit in November and December.
- V. *Euterpe precatória*, Mart. (N. 427 a.)

#### AROIDEÆ.

CALADIUM (§ nova, CALAMANDRA) HETEROTYPICUM (sp. nov.) (Tab. XXXV. fig. 13); foliorum petiolo folia subæquante, elongato, incrassato; laminâ e basi truncatâ vel truncato-rotundatâ, lanceolatâ vel lineari-lanceolatâ, longe ac sensim acuminatâ; costis secundariis utrinque 4–6, erecto-ascendentibus, juxta marginem aperte arcuatis et intra marginem arcte approximatis; nervis collectivis 2–3 e basi nascentibus; pedunculo petiolum subæquante; spathæ dilute viridis tubo amplo sursum attenuato, laminâ oblongâ, obtusiusculâ; spadice spathæ æquilongâ vel subæquilongâ, breviter stipitatâ, inferne dorso spathæ adnatâ, prorsus lacteâ, ad  $\frac{1}{5}$  totius longitudinis florum fem. gerente parte masculâ parti sterili subæquilongâ; ovario biloculari, ovulis quovis in loculo 3, fere e medio dissepimento ortis, omnibus arrectis.

*Hab.* Reperi ad Santa Cruz mens. Nov. florescentem. (N. 691.)

Tuber parvum, circa 2·0 cm. diam. Petioli 16·0–45·0 cm. long., basi longe vaginantes, lamina usque ad 36·0 cm. long., 3·5–10·0 cm. lat. (modica 6·0–7·0 cm.). Pedunculus

30.0-40.0 cm. long. Spatha ad 12.0 cm. long., basi 1.5-2.0 cm. diam., lamina expansa 2.0 cm. lat. Inflorescentia feminea 2.5 cm. long., 1.0 cm. diam., dimidium inferius dorso spathæ adnatum; mascula sterilis 4.0 cm. long., attenuata; mascula fertilis 4.0 cm. long., 0.5 cm. diam. Synandria 4-andria, 0.1 cm. diam.

The only peculiarity about this plant is in its placentation; instead of several ovules attached in series all the way up the dissepiment, the arrangement characteristic of *Caladium*, we here find only three ovules springing almost from the same point near the middle of the dissepiment. I cannot help thinking that, as Aroideous genera now go, this would by some be considered sufficient warrant for describing our plant as a new genus; but I refrain from so doing in deference to the opinioa of Mr. N. E. Brown, who kindly looked at the specimens, and who on matters concerning this group is, it need scarcely be said, our best authority.

APHYLLARUM, Aroidearum (Colocasierum sensu Benth. et Hook. f.) gen. nov.

(Tab. XXXV. figg. 1-12.)

Spadices inappendiculatæ, deorsum flores fem., sursum flores masc. proferentes, pars intermedia floribus masculis imperfectis elongatis instructa. Perianthium 0. Fl. masc. synandrium incrassatum 3-4-andrum, ambitu pentagonum vel hexagonum; antherarum loculi contigui, paralleli, inæquilongi, rimis apicalibus dehiscentes. Fl. fem. ovarium oblongum, obtusum, bilateraliter compressum, 2-loculare, stigmate sessili late truncato incrassato obscure lobato coronatum; ovulum quovis in loculo unicum, pæne e basi dissepimenti ortum, erectum, funiculo brevi insidens anatropum raphe dorsali et micropyle infera. Pedunculi elati, præcoces, solitarii, e latere tuberis fere nudi. Spathæ tubus amplus, convolutus, fauce parum coarctatus; lamina erecta, subcucullata. Spadix a spathâ superata, breviter stipitata, dorso usque ad medium partis femineæ spathæ adnata, clavata, pars mascula parti femineæ pæne æquicrassa. Synandria dense aggregata. Ovaria omnino libera.

Genus cum *Caladio*, Vent., et *Scapispathâ*, Brongn., componenda, ab illo distans habitu et ovarii loculis monovulatis, ab hâc imperfecte cognitâ saltem ovario biloculari, loculis monovulatis, et stigmate lato truncato nec parvo et capitato.

APHYLLARUM TUBEROSUM (sp. nov.); bulbo 3.0 cm. long., 2.0 cm. diam., basi parce radicefero; pedunculo incrassato, ac reverâ in sicco fere ad 0.5 cm. compresso, imâ basi squamis parvis fragilibus bruneis instructo, ceterum nudo, circa 40.0 cm. alt.; foliis ignotis; spathâ 6.0-7.0 cm. long.; tubo 1.7 cm. diam., virescente; laminâ vix usque ad 4.0 cm. long., apice acutiusculâ, lacteâ, explanatâ vix 3.0 cm. lat.; spadiceis lactei stipite 0.3 cm. long.; parte femineâ 1.0 cm., parte synandrodigerâ 1.8 cm., parte synandrigerâ 2.0 cm. long., 0.5 cm. diam.; synandrodiis aggregatis, 0.15 cm. long., 0.15-0.2 cm. diam.; pollinis granis granulis cassis intermixtis; ovario ancipite, 0.1 cm. long., 0.075 cm. lat.; stigmate 0.1 cm. diam., quam ovarium plus quam duplo brevius.

*Hab.* Crescit juxta Santa Cruz, mens. Nov. spadices ostendens. (N. 678.)

The scape, of which a diagrammatic section is shown at fig. 6 of the above Plate, consists of fundamental tissue traversed by vascular bundles, which are accompanied, as

usual in Aroideæ, by latex-tubes. At intervals round the stem are seen masses of sclerenchyme, each mass upon the outer side of a peripheral vascular bundle, and near them run other latex-tubes. The epidermal cells contain resin.

A circle of vascular bundles immersed in delicate parenchyme is found at the centre of the synandrium (fig. 6); outside this a considerable part of the tissue consists of resin-sacs, with scattered sclerenchyme elements. The latter are spindle-shaped and contain each a bundle of raphides, and inasmuch as they appear to be in small cavities of the surrounding tissue, they are probably of the nature of intercellular hairs. I find it impossible, however, to speak decidedly on this point, as the supposed cavities may really be the effect of drying. Latex-tubes accompany the vascular bundles. All the largest synandria have eight anther-cells, which are of normal structure. Many of the pollen-grains soon become effete, and in this state may sometimes be seen closely applied to a fertile grain (fig. 7); the fact that the effete grains are at length completely emptied of their fovilla leads one to suspect that they are made use of by their successful fellows, but in order to decide this point properly preserved material is necessary.

*PHILODENDRON*, sp. Foliorum lamina latissime reniformi-cordata, margine repanda, vix lobata Reliqua desunt.

*Hab.* Corumbá. (N. 977.)

Remarkable for the extremely wide cordation of the leaf. I have seen nothing like this in our herbaria, and it is probably a new species.

*TACCARUM WEDDELLIANUM* ? Brongn. ex Schott, Prod. Aroid. p. 336.

*Hab.* Corumbá. (N. 977 a.)

Folia tantummodo suppetebant. [Matto Grosso.]

*MONSTERA BROWNII* (sp. nov.); petiolorum vaginis latis, fere geniculum attingentibus; laminâ a basi rotundatâ sursum angustatâ, ovata acutâ vel breviter acuminatâ, nunc foraminibus carente, nunc juxta costam mediam pauciforaminatâ foraminibus inter costas secundarias solitariis; costis secundariis utrinque 9-12 costæ mediæ arcuatim insertis; pedunculo quam spatha longiore; spathâ crassâ, brevi, late ovatâ obtusâ; spadice cylindricâ, satis incrassatâ, spathæ æquilongâ; ovario stylo truncato concavo coronato; baccis compresso-ovoideis, monospermis, albis.

*Hab.* Crescit in sylvâ primævâ juxta Santa Cruz, mens. Sept. florens. (N. 351.)

Caulis scandens, 2·0 cm. diam., radices bruneas copiose emittens. Foliorum petioli ultra 30·0 cm. long. Vaginæ explanatæ 2·0 cm. lat.; petiolus inter vaginam et geniculum 1·0-4·0 cm. long.; geniculus 1·0 cm. lat. Lamina ad 37·0 cm. long., 19·0 cm. lat.; foramina anguste elliptica, ad 3·5 cm. long. Pedunculus ad 16·0 cm. long., vix 0·1 cm. diam. Spatha 7·0-8·0 cm. long., explanata 5·5 cm. lat. Spadix ad 8·0 cm. long., 2·5 cm. crass., prorsus alba. Staminum filamenta spathulata, 0·35-0·45 cm. long., 0·1 cm. lat. Ovarium lateraliter compressum 0·3 cm. long. Stylus 0·25 cm. diam. Baccæ 0·65 cm. long., 0·55 cm. lat., stylo persistente 0·3 cm. long. instructæ. Semina oblique subreniformia, lateraliter compressa, marginibus obtusis, 0·5 cm. long., 0·75 cm. lat.

Juxta *Monsteram Adansoni*, Schott (quæ eadem ac *M. pertusa*, De Vriese), intercalanda, abhorret vero, præter signa alia, costis secundariis magis obliquis, spathâ latâ spadice subæquante, filamentis longioribus spathulatis nec linearibus. [Amer. Austr. Trop. et Centr.; Ind. Occ.]

Named in honour of Mr. N. E. Brown, of the Kew Herbarium, whose services to Botany, in the shape of numerous drawings, notes, and carefully prepared garden specimens of Aroideæ, were they only better known, would be more highly appreciated.

ANTHURIUM GRACILE, Lindl. Bot. Reg. sub t. 1635.

*Hab.* Incolit sylvam primævam inter Santa Cruz et Tapirapuan, ubi florescit mens. Sept. (N. 393.) [Amazonia, Guiana, Nov. Granat., Amer. Centr., Ins. Trinitatis.]

ANTHURIUM (§ DACTYLOPHYLLIUM) SYLVESTRE (sp. nov.); petiolo elongato, subterete, leviter sulcato, geniculo subbrevis, laminâ subcoriaceâ 7-sectâ, segmentis tribus exterioribus in phalangem connatis, intimo solummodo libero, oblanceolatis, acuminatis, segmento postico postice auriculato, ceterum, præter marginem plus minus repandum, integris; pedunculo petiolo  $\frac{1}{3}$ -plo brevior; spathâ lanceolato-lineolari-obtusâ; spadice spathâ haud duplo longiore, gracili, superne gradatim attenuatâ.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Tapirapuan, mens. Sept. spadices ostendens. (N. 392.)

Petiolus 42.0 cm. long., 0.3 cm. diam., vaginâ brevi nec ultra 3.0 cm. long. instructus, basi incrassatus; laminæ segmenta 16.0 cm. long., 3.5-4.5 cm. lat.; costæ secundariæ utrinque circa 5, erecto-arcuatæ, dein margini parallele-cursantes, costæ pag. sup. vix eminentes, pag. inf. arcte reticulatæ. Pedunculus 28.0 cm. long., deorsum 0.4 cm. diam., sursum ad 0.2 cm. attenuatus. Spatha 8.0 cm. long., medio 2.0 cm. lat., purpurea. Spadix 13.5 cm. long., basi 0.6 cm. crass., viridis. Flores 0.3 cm. long.

*A. Martini*, Schott, proxima, cujus laminæ segmenta duo (nec tria) exteriora in phalangem connata et majora et diversiformia, spatha triplo longior et duplo angustior, necnon spadix duplo longior. [Guiana.]

#### GRAMINEÆ.

PASPALUM SIMPLEX, Morong, in Ann. New York Acad. Sc. vii. (1893) p. 258.

*Hab.* Ad Puerto Pacheco floret mens. Feb. (N. 1051.) [Paraguaria.]

PASPALUM CONJUGATUM, Bergius, in Acad. Helv. vii. p. 129.

*Hab.* Crescit in cacumine montium Serra da Chapada, itaque ad Santa Cruz. (Nn. 130, 728.) [America, a Brasiliâ usque ad Mexico.]

PASPALUM PANICULATUM, Linn. Syst. ed. X. p. 855. Var. MINOR, nob.

Planta non ultra 25.0 cm. alt. Folia parva, linearia, circa 5.0 cm. long. Spicæ paucae (5), patulæ, breves, 2.0-3.0 cm. long.

*Hab.* Inveni ad Serra da Chapada, prope Santa Anna da Chapada, mens. Aug. (N. 134.)

Although dissimilar in habit from typical *Paspalum paniculatum*, this plant agrees so closely with it in the spikelets that I am unwilling to describe it as a new species. It is probably merely an upland state of *P. paniculatum*. [Bras. Or., Goyaz, Amazonia, Ind. Occ.]

PASPALUM INÆQUIVALVE, Raddi, Agrost. Bras. p. 28.

*Hab.* Santa Cruz, Dec. (N. 772.) [Bras. Or., Paraguaria.]

PASPALUM TROPICUM, Doell, in Mart. Fl. Bras. ii. pars 2, p. 83.

*Hab.* Viget inter Cuyabá et Serra da Chapada, mens. Aug. florens. (N. 47.) [Bras. Or.]

PASPALUM CORYPHÆUM, Trin. Diss. ii. p. 114.

*Hab.* Crescit in paludibus prope Corumbá, ubi florescit mens. Jan. (N. 1013.)

A form with auriculate leaves, and agreeing well with Riedel's no. 43, except that the spikes are more pilose. [Bras. Or.]

PASPALUM CAPILLARE, Lam. Illustr. i. p. 176.

*Hab.* Incolit locos apertos prope Santa Anna da Chapada, ad alt. 700 met., mens. Aug., itaque Santa Cruz, mens. Dec. (Nn. 115, 747.)

There seem to be two forms of this plant: in one the spikelets are arranged upon very slender axes, and the glumes are smaller than are those of the other form, which, moreover, has broader axes. To this second form, which, I am inclined to think, may turn out to be a new species, belong my specimens and Gardner's no. 2348; but I do not feel justified, without further study of this difficult genus, in disarranging, even to a slight extent, the careful work of Doell. [Bras. Or., Goyaz, Amazonia, Guiana, Peruvia.]

PASPALUM TRISTACHYUM, Lam. Illustr. p. 176.

*Hab.* Inveni passim juxta Santa Cruz. (Nn. 327, 762, 771.) [Amer. Austr. Trop. et Subtrop.]

ERIOCHLOA PUNCTATA, Ham. Prod. p. 5.

*Hab.* Reperi ad Puerto Pacheco florentem mens. Feb. (N. 1055.) [America, e Paraguariâ usque Mexico, itaque in Australiâ lecta.]

PANICUM HORIZONTALE, G. F. W. Mey. Prim. Fl. Esseq. p. 54. (*P. sanguinale*, Linn., var. *distans*.)

*Hab.* In cacumine montium Serra da Chapada, 700 met. alt., mens. Aug. (Nn. 117, 133.) [In Americâ calidiore et Ind. Occ. late diffusa.]

PANICUM LEUCOPHÆUM, H. B. K. Nov. Gen. et Sp. i. p. 97.

*Hab.* Santa Cruz, Dec. (N. 773.) [Bras. Or., Goyaz, Amazonia, Guiana, Uruguaria.]

PANICUM ANSATUM, Trin. Spec. Gram. sub tab. 279.

*Hab.* Inter Cuyabá et Serra da Chapada mens. Aug. florescit. (N. 55.)

Hujus reperi varietatem insequentem :—

Var. LINEARIFOLIA, nob.; foliis anguste linearibus, usque 10·0 cm. long., modo 0·1 cm. lat.

*Hab.* Inter Santa Cruz et Villa Maria florebat mens. Dec. (N. 851 a.) [Matto Grosso.]

PANICUM (§BRACHIARIA) FURCELLATUM (sp. nov.) (Tab. XXXIV. figg. 14-22); culmo erecto, gracili, striato, deorsum geniculato; foliorum vaginis amplis, crebre nervosis, plus minusve (præsertim superne) pilosis vel piloso-villosulis, ceteroquin puberulis, nonnunquam prorsus pilis strigosis appressis subdense munitis; ligulâ brevissimâ, truncatâ, membranaceâ, apice albido-ciliatâ; laminâ anguste lineari acuminatâ, margine (imprimis inferne) plus minus albido-ciliatâ, nonnunquam fere glabrâ; paniculâ a basi bifurcâ; spicis subæqualibus, spicâ inferiore sessili vel subsessili, superiore pedunculatâ, rarius subsessili; axe subtriquetro, puberulo; spicæ axibus ancipitibus, marginibus sæpe breviter ciliolatis, anfractis, basi appresse hirsuto-pilosis; spiculis sessilibus vel breviter pedunculatis, distichis, secundis laxiuscule imbricatis, alternis ovatis obtusis, obsolete puberulis; glumâ I. anticâ, spiculam  $\frac{3}{4}$  æquante, oblongâ obtusâ, 3-nervi, concavâ, subplanâ; glumâ II. quam I. longiore, ovato-oblongâ acutâ, 5-nervi, concavâ; glumâ III. glumam II. æquante eique subconformi, 5-nervi, cassâ; valvulis ovato-oblongis acutis, glumâ III. paullo brevioribus, inferiore semiterete, 3-nervi, superiore dorso excavatâ 2-nervi.

*Hab.* Crescit ad Santa Cruz, ubi spicas profert mens. Dec. (N. 763.)

Culmus ad 50·0 cm. alt., usque ad 0·1 cm. diam., dilute virens, nodis pubescentibus.

Vaginæ compressæ, apice truncatæ, intus puberulæ, explanatæ 0·4 cm. lat. Ligula brunea, pilis albis 0·3 cm. long. instructa. Foliorum lamina ad 26·0 cm. long., 0·1 cm. lat., lateraliter compressa, in sicco dilute virescens. Spicæ 4·0-5·5 cm. long., 0·25 cm. lat., suberectæ, a basi divergentes, pedunculo spicæ superioris vix usque 2·0 cm. long. Spiculæ 0·4-0·45 cm. long., albidæ; pedunculus complanatus, vix ad 0·2 cm. long., axi appressus, puberulus, ipsâ sub spiculâ leviter incrassatus. Gluma I. 0·3 cm. long., gluma II. 0·4 cm. long. Valvulæ scabræ, inferior 0·4 cm. long., 0·15 cm. lat., ambæ firmæ. Squamulæ 0·04 cm. et antheræ 0·25 cm. long. Ovarium anceps, ambitu oblongum. Stigma bruneo-violaceum, circa 0·1 cm. long.

Species singularis, habitum *Paspali* simulans, forsân prope *P. plantagineum*, Linn., inserenda, sed facile distinguenda, imprimis foliis toto cœlo disparibus, spicis bifurcis, glumâ inferiore (anticâ nec posticâ) spiculam fere æquante. [Bras. Or., Goyaz.]

This grass is treacherously like *Paspalum tropicum*, Doell, and *P. Neesii*, Kth., so much so that dissection is necessary in order to distinguish it.

PANICUM CHLOROTICUM, Nees, in Trin. Diss. ii. p. 236. Var. AGRESTE.

*Hab.* Crescit in ripâ fl. Paraguay juxta Santa Cruz, mens. Oct. florens. (N. 504.) [Bras. Or., Amazonia, Guiana.]

PANICUM POLYGAMUM, Sw. Prod. Fl. Ind. Occ. p. 24. (*P. maximum*, Jacq.)

*Hab.* Coimbrâ, mens. Feb. florens. (N. 1070.) [Amer. Austr. Trop. et Subtrop.; Ind. Occ.]



PANICUM MEGISTON, Schult. Mant. ii. p. 248.

*Hab.* Viget ad ripas fl. Paraguay inter Santa Cruz et Villa Maria, itaque juxta Corumbá, mens. Dec.–Jan. florens. (Nn. 828, 1014.) [Bras. Or., Amazonia, Guiana, Uruguaria, Paraguaria.]

PANICUM STOLONIFERUM, Poir. Encyc. Suppl. iv. 1, p. 274.

*Hab.* Inter Santa Cruz et Villa Maria, ubi mens. Dec. spicas profert. (N. 825.) [Bras. Or., Amazonia, Guiana, Ind. Occ., Venezuela, Uruguaria.]

PANICUM PILOSUM, Sw. Prod. Fl. Ind. Occ. p. 22.

*Hab.* Inter Santa Cruz et Villa Maria, mens. Dec. (N. 817.) [Bras. Or., Amazonia, Guiana, Venezuela, Paraguaria, Uruguaria.]

PANICUM LAXUM, Sw. Prod. Fl. Ind. Occ. p. 23.

*Hab.* Santa Cruz, Dec. (N. 748.) [Amer. Sept. et Austr., Ind. Occ.]

PANICUM PROCURRENS, Nees, Agrost. Bras. p. 130.

*Hab.* Santa Cruz, Dec. (N. 757.) [Bras. Or.]

ICHNANTHUS PALLENS, Munro, in Benth. Fl. Hongkong. p. 414.

*Hab.* In angustiis ad Serra da Chapada, mens. Aug. (N. 175.) [In tropicis utriusque orbis late disseminatus.]

ICHNANTHUS BREVISCROBS, Doell, in Mart. Fl. Bras. ii. pars 2, p. 294.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan, mens. Sept. florens. (N. 405.)

Forma a typo divergens spicis paullulum minoribus et glumis angustioribus.

Hujus speciei specimina ante oculos nuper habui a cl. Jenman ex Guianâ missa. (Nn. 2088, 2461 in Hb. Kew.) [Amazonia, Guiana.]

OPLISMENUS SYLVATICUS, Roem. & Schult. Syst. Veg. ii. p. 481.

*Hab.* Inter Santa Cruz et Villa Maria, mens. Dec. (N. 815.) [Per utrumque orbem late diffusus.]

SETARIA GRACILIS, H. B. K. Nov. Gen. et Sp. i. p. 109. (*S. glauca*, var. *elongata*, Pers. Syn. i. p. 81.)

*Hab.* Santa Cruz, Nov. (N. 549.) [Amer. Austr., Ind. Occ.]

SETARIA MACROSTACHYA, H. B. K. Nov. Gen. et Sp. i. p. 110.

*Hab.* Coimbrá, Feb. (N. 1081.) [Bras. Or., Goyaz, Amazonia, Guiana.]

SETARIA PENICILLATA, Presl, Rel. Haenk. i. p. 314.

*Hab.* Ad Santa Cruz, inter Santa Cruz et Villa Maria, ad Coimbrá, et ad Puerto Pacheco. (Nn. 756, 829, 1081 *a*, 1092 *a*.) [Amer. Trop. et Subtrop.]

OLYRÆ sp. nimis imperfecta, ex affinitate *O. latifolia*, Linn. Erecta, elata, foliis brevissime petiolatis, ovato-lanceolatis, caudato-acuminatis, basi impariter rotundatis, brevissime cordatis, 4·0-5·0 cm. lat., usque ad 17·0 cm. long.; vaginis arcte applicatis, crebre striatis, glabris; ligulâ ut in *O. latifolia*; paniculis terminalibus abbreviatis, pubescentibus, ramis inferne masculis, superne femineis; spiculorum masc. valvulis ignotis, spiculorum fem. glumis brevibus, ovatis, acuminatis, rarius breviter aristato-caudatis nec ultra 1·0 cm. long., glumâ superiore 5-nervi. valvulis —.

*Hab.* Reperi jam valvulis orbam in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan mens. Sept. (N. 403.)

Ab *O. latifolia*, cujus fortasse mera varietas, distat præsertim foliis longioribus latioribus et glumis brevioribus. [Bras. Or., Goyaz, Amazonia, Guiana, Ind. Occ.]

PARIANA, sp. nov.; culmorum fertiliium vaginis subinflatis, spicis erectis, flosculorum masculorum pedicellis involucrantibus, puberulis, inferne albido-pilosis; glumis late triangulari-lanceolatis, breviter acuminatis, pedicellis paullo longioribus a valvulis oblongis acutiusculis tertiâ vel quartâ parte superatis; reliquis ignotis.

*Hab.* Floret ad Santa Cruz mens. Dec. (N. 540 a.)

Ab affini *P. zingiberinâ*, cujus specimina ante oculos habui in Herb. Kew. asserv. (*Appun* n. 710, *Poiteau* sine no.) abhorret præsertim glumis latioribus, breviter acuminatis, et valvulis minoribus.

The species of *Pariana* with simply scapose inflorescences do not occur in Eastern Brazil, where the genus is represented by only two species belonging to the group with foliate inflorescence. [Amazonia, Guiana.]

LUZIOLA PUSILLA (sp. nov.) (Tab. XXXVII. figg. 1-8); culmo pro genere brevi, erecto, vix ultra 10·0 cm. alt., a foliis superato, subterete, gracillimo, obsolete puberulo; vaginis pubescentibus, striatis; ligulâ membranaceâ, exsertâ, subulatâ, acuminatâ; foliis anguste linearibus, acuminatis, obsolete scabriusculis; paniculâ masculâ ignotâ; paniculis omnibus mihi obviis femineis, contractis vel rarius subpatulis, axe gracillimo, glabro, ad axillas breviter piloso, spiculis parvis linearibus, acutis, axibus tenuibus flosculo æquilongis vel longioribus fultis, rectis vel parum curvatis; valvulis membranaceis, oblongis, valvulâ inferiore superiore obtusâ 8-nervi paullo brevior et truncatâ et 11-nervi; caryopside ovoideo-subglobosâ, obtusâ, in longitudinem costulato-striatâ, glabrâ.

*Hab.* Crescit ad Santa Cruz, ubi mens. Dec. flores masculos inveni. (N. 760.) Itaque vidi in Hb. Kew. specimina ejusdem speciei in Guianâ Britannicâ a Parker lecta.

Rhizoma abbreviatum, sat tenue, radices graciles paucas sustinente. Culmi herbacei, sæpe foliis duplo breviores, virescentes. Vaginæ foliis sæpius 1½-2-plo breviores, explanatæ circa 0·2 cm. lat., infimæ culmum vix amplectentes; ligula erecta, 0·1-0·2 cm. long.; lamina erecta, plerumque 5·0-10·0 cm. long., vix usque ad 0·3 cm. lat. (modica 0·22 cm.), margine plus minus undulata, viridis. Paniculæ rami modici 1·5-2·0 cm. long. Spiculæ graciliter pedunculatæ, 0·4-0·45 cm. long. Stigmata alba, 0·13 cm. long. Squamulæ obovatæ, obtusissimæ, 0·02 cm. long. Caryopsis brunea, 0·17 cm. long., styli reliquiis coronata.

Ex affinitate *Luziola longivalvulae*, Doell, sed nullo negotio cognoscenda ob habitum humilem rigidiusculum, folia minora et angustiora, valvulam fl. fem. inferiorem 11-nervem et superiorem 8-nervem, caryopsidem ovoideo-subglobosam nec ellipsoideam costulato-striatam. [Guiana.]

MELINIS MINUTIFLORA, Beauv. Essai, p. 54.

*Hab.* Inter Cuyabá et Serra da Chapada, itaque in cacumine hujus, Aug. (Nn. 68, 152.)

Forma pusilla, 20·0 cm. alt. Foliorum lamina vix ultra 2·0 cm. long.

This is the celebrated *Capim Gordura* of the Brazilians; its distribution is remarkable. [Bras. Or., Goyaz, Ascension, Afr., Austr., Madagascar.]

ARTHOPOGON VILLOSUS, Nees, Agrost. Bras. p. 319. Var. GLABRESCENS, nob.

A typo distat vestitu foliorum obsoleto.

*Hab.* Inter Cuyabá et Serra da Chapada, mens. Aug. (Nn. 5763.) [Bras. Or.]

IMPERATA BRASILIENSIS, Trin. in Mém. Acad. Pétersb. sér. vi. 2, p. 331.

*Hab.* Coimbrá, Feb. (N. 1069.) [Amer. Trop. et Subtrop.]

ANDROPOGON CONDENSATUS, H. B. K. Nov. Gen. et Sp. i. p. 188. Subsp. CORYMBOSUS and GENUINUS.

*Hab.* Inter Cuyabá et Serra da Chapada, mens. Aug. (N. 52.)

ANDROPOGON CONDENSATUS, H. B. K., var. PANICULATUS.

*Hab.* Coimbrá, mens. Feb. florens. (N. 1077.)

At Coimbrá this fine grass grows to the height of a man, which greatly exceeds the maximum height mentioned by Doell. [Amer. Trop. et Subtrop.]

ANDROPOGON TERNATUS, Nees, Agrost. Bras. p. 326.

*Hab.* Inter Cuyabá et Serra da Chapada, Aug. (N. 58.) [Bras. Or., Uruguaria, Paraguaria, Argentina.]

ANDROPOGON VIRGINICUS, Linn. Sp. Pl. ed. I. p. 1046.

*Hab.* Inveni inter Cuyabá et Serra da Chapada, itaque juxta Santa Anna da Chapada, mens. Aug. (Nn. 46, 107.) [America, a Massachusetts usque Repp. Argent. et Parag.]

CHLORIS POLYDACTYLA, Sw. Prod. Fl. Ind. Occ. p. 26.

*Hab.* Florebat ad Puerto Pacheco mens. Feb. (N. 1054.) [Amer. Trop. et Subtrop., Ind. Occ.]

ELEUSINE INDICA, Gaertn. Fruct. i. p. 8.

*Hab.* Santa Cruz, Dec. (N. 775.) [In tropicis et subtropicis late disseminata.]

LEPTOCHLOA DOMINGENSIS, Trin. Fund. Agrost. p. 133.

*Hab.* Santa Cruz, mens. Dec. florens. (N. 774.) [Bras. Or., Goyaz, Amazonia, Peru, Ind. Occ.]

*POGOCHLOA*, Graminearum, e tribu Chloridcarum, gen. nov. (Tab. XXXVII. figg. 9-23.)

Spiculæ 5-floræ, a latere compressæ, secus rhachidis elongatæ facies inferiori-laterales continuas concavas distiche insertæ; rhachillæ breves vel subnullæ, rhachidi appressæ. Flosculi, flosculo supremo (rarius flosculis duobus superioribus) tabescente exempto, hermaphroditi. Glumæ duæ, membranacæ, leviter carinatæ, acuminatæ, haud aristatæ, valvulis breviores, gluma superior plurinervis quam inferior paucinervis major. Valvulæ duæ, membranacæ; valvula inferior elongata, navicularis, 3-nervis, raro subobsolete 5-nervis, apice breviter bidentula, rarius subintegra, carinata, carina in aristam longam terminalem excurrens, nervi laterales haud excurrentes; valvula superior bicarinata, acuminata, flosculi supremi fere ad meram aristam imminuta. Stamina 3; filamenta brevía; antheræ minutæ, inclusæ. Pollinis grana minutissima, ambitu subsphærica. Ovarium stipitatum, glabrum. Squamulæ duæ, apice denticulatæ. Styli a basi liberi. Stigmata elongata, plumosa. Caryopsis ambitu anguste linearis, paleâ inclusa sed ei nequaquam connata, antice acutata, postice sulcata; hilum minimum. Scutellum oblongum, obtusissimum, caryopside circa 4-plo brevius. Folia plana, juvenilia convoluta. Ligula brevissima, membranacea, apice ciliato-barbata. Rhachides simplices, elongatæ, a basi ipsâ spiculigeræ, axi communi plerumque singillatim vel subopposite insertæ.

*POGOCHLOA BRASILIENSIS* (sp. nov.); culmo erecto terete, subtiliter striato, una cum nodis glabro, in sicco viridi-lutescente; foliorum vaginis circum culmum arcte convolutis, striatis, glabris, dilute lutescenti-viridibus, foliis linearibus longe ac sensim acuminatis, glabris, deorsum levibus, sursum scabriusculis, nervosis, glaucescentibus, 32.0 cm. long., 0.65 cm. lat.; rhachidum axe communi erecto, leviter torto, gracili, quadrangulari, scabro, ultra 30.0 cm. alt.; rhachidibus erecto-ascendentibus vel subpatulis, tenuibus, fere rectis, scabriusculis, plerisque 7.0-14.0 cm. long., supremis imminutis; rhachillis rhachidi applicatis, subteretibus, scabriusculis, plerisque 0.1 cm. (vel paullo ultra) long.; spiculis, aristis haud exemptis, modicis, 2.0 cm. long., 0.1 cm. lat., dilutissime viridibus; glumâ inferiore lanceolatâ, acuminatâ, 2-5-nervi, nervis lateralibus interdum subobsoletis circa 0.5 cm. long.; glumâ superiore 0.6 cm. long., breviter acuminatâ, 6-9-nervi; valvulâ inferiore lanceolatâ, scabridâ, inferne dorso barbatulâ, 0.8 cm. long., aristâ tenui rectâ vel inferne geniculatâ usque ad 1.0 cm. long. instructâ, paleâ lineari-lanceolatâ, 0.4-0.45 cm. long., apice bidentatâ, squamulis subquadratis apice denticulatis; antheris minutis, ambitu ellipticis; ovarii stipite ovario ipsi æquilongis; stigmatibus 0.14 cm. long.; bruneis, caryopside 0.4 cm. long., vix 0.1 cm. lat., in sicco griseo-fuscâ, stigmatibus et deinde solummodo stylis persistentibus coronatâ.

*Hab.* Reperi ad Coimbrá mens. Feb. florentem. (N. 1080.)

After several unsuccessful attempts to place the grass here described, I have resolved to make a new genus for its reception. The affinity is undoubtedly with *Leptochloa* and with *Diplachne*, the latter a genus referred by the authors of the 'Genera Plantarum' to Festucaceæ, although, since its spiculigerous axes are undoubtedly dorsiventral, that

view, according to which *Diplachne* and *Leptochloa* should be closely associated, seems to me to be the correct one.

The simply spicate inflorescence of *Diplachne*, with its bilobed lower valvule (flowering glume), not to mention other points, at once distinguishes it from *Pogochloa*, while *Leptochloa*, along with much the same type of inflorescence, has much smaller spikelets, 1-nerved glumes, and the lower valvule at most aristulate, and never ending, as does that of *Pogochloa*, in an awn longer than itself. *Urulepis* scarcely differs from *Leptochloa*, except that the lateral veins of its lower valvule run each into a mucro or small tooth.

Some years ago Grisebach (Pl. Lorentz. p. 211) described an Argentine grass under the name of *Tricuspis latifolia*, making for it a new section of *Tricuspis* (§ *Neuroblepharum*), but this, although with many points of resemblance to *Leptochloa* in respect of the structure of its spikelets, differs from it in possessing a truly Festuceous inflorescence.

The peculiar points about *Pogochloa* are :—

- i. The spikelets much larger than those of *Diplachne* and *Leptochloa*.
- ii. The several-nerved glumes, the lower glume having up to five, the upper often as many as nine strong nerves.
- iii. The long awns of the flowering glumes.

In the structure of its leaf (Tab. XXXIX. fig. 14) *Pogochloa* conforms to that type which is known by the presence of chlorophyll in all, or at least almost all, of its parenchymecells. As seen in transverse section, the structure varies considerably, but all the larger bundles of sections examined by me agree in this,—that a row of sclerenchyme is interposed between the xylem and the phloëm, while the smaller bundles are without this. The vessels have not the V-shaped arrangement. Immediately surrounding the sclerenchyme is a bundle-sheath consisting of a few large chlorophyll-cells, outside which lies a mass of small chlorophyll parenchyme elements. Midway between the vascular bundles on the upper side of the leaf is a shallow depression, beneath which is a group of large cells without chlorophyll. The arrangement of these cells varies according to the section; frequently three cells are to be seen, one central, with another on each flank; more rarely the arrangement is as shown in the figure. The shaded cells in this figure, it should be added, represent the chlorophyll parenchyme.

Along the broader side of the caryopsis there is a narrow chamber, not seen, however, until removal of the outer portion of the testa by which it is overlain (fig. 15 *a.*). The wall of the fruit is made up of five layers of small cells, beneath which is a single layer of large cells containing a red fluid; these large cells form the bounding-walls of the above-named chamber (fig. 15 *b.*). The gluten-layer (*gl.*) is of a single row of very small cells, and beneath it lies the starch parenchyme.

ERAGROSTIS ARTICULATA, Nees, Agrost. Bras. p. 502.

*Hab.* Reperi ad Santa Cruz mens. Dec. (N. 759.) [Bras. Or., Goyaz.]

ERAGROSTIS REPTANS, Nees, Agrost. Bras. p. 514.

*Hab.* Crescit ad Santa Cruz, ubi mens. Nov. floret. (N. 602.) [Per Americam late diffusa.]

ERAGROSTIS (§ PTEROESSA) MULTIPES (sp. nov.); culmis erectis, gracilibus, humilibus, subcongestis, glabris, striatulis; foliorum vaginis glabris, striatis, fauce nudis; ligulâ brevissimâ, calvâ vel pilis albidis instructâ; laminâ anguste lineari acuminatâ, utrinque levi nervosâ; paniculis subconfertis, ramis plerumque 1-3-spiculatis, interstitia subæquantibus vel quam ea longioribus; spiculis elongatis, linearibus, erectis, modicis, 20-40-floris, plerisque subsessilibus; glumis lanceolatis, acuminatis, 1-nervibus, glumâ inferiore quam flos proximus paullo brevior, superiore quam flos proximus paullo longior; flosculis arcte imbricatis; valvulâ inferiore ovatâ, acuminatâ, 3-nervi, superiore oblanceolatâ, 2-nervi, plane longior.

*Hab.* In cacumine montium Serra da Chapada prope Santa Anna da Chapada reperi mens. Aug. (N. 131.)

Culmus 4.0-12.0 cm. alt., nodis glabris, decoloribus. Foliorum vaginæ explanatæ 0.1 cm. lat. Laminæ pleræque circa 2.5 cm. long. et 0.1 cm. lat., erectæ. Paniculæ 3-12-spiculatæ, obsolete scabriusculæ, spiculæ ætate distantes, usque ad 1.3 cm. long., 0.12 cm. lat. Valvulæ superiores in carinis minute ciliolatæ.

*E. panamensi*, Presl (*E. aciculari*, Trin., *E. maypurensi*, Doell), arcte affinis, differt vero imprimis ob vaginas glabras fauce nudas, laminam latiore glabram, et spiculas plurifloras, graciliores, valvulas minus acuminatas ostendentes. [Bras. Or., Amazonia, Mexico.]

ERAGROSTIS VAHLII, Nees, Agrost. Bras. p. 499.

*Hab.* Crescit in cacumine montium Serra da Chapada, mens. Aug. florens. (Nn. 116, 135, 136.) [Bras. Or., Goyaz, Amazonia, Guiana, Columbia.]

ERAGROSTIS CILIARIS, Link, Hort. Berol. i. p. 192.

*Hab.* Santa Cruz, Nov. (N. 584.) [In tropicis et subtropicis late diffusa.]

ERAGROSTIS ELEGANS, Nees, Agrost. Bras. p. 510.

*Hab.* In ripâ fl. Paraguay inter Santa Cruz et Diamantino. (N. 633.) [In tropicis et subtropicis frequens.]

## CYPERACEÆ.

(Determ. cl. C. B. CLARKE.)

CYPERUS ADENOPHORUS, Schrad. ex Nees in Mart. Fl. Bras. ii. pars i. p. 28.

*Hab.* Ad Santa Cruz mens. Nov. floret. (N. 595.)

CYPERUS ADENOPHORUS, Schrad., var.  $\beta$ . APHYLLA, Boeck.

*Hab.* E Santa Cruz habui sine numero. [Amer. Trop. et Subtrop.]

CYPERUS LUZULÆ, Retz. Obs. iv. p. 11.

*Hab.* Ad ripas fl. Brasinho floret mens. Oct. (N. 426.)

Huc forsân releganda specimina nimis juvenilia juxta fl. Paraguay inter Santa Cruz et Villa Maria lecta mens. Dec. (N. 642.) [Amer. Trop., Ind. Occ.]

CYPERUS SIMPLEX, H. B. K. Nov. Gen. et Sp. i. p. 207.

*Hab.* Crescit ad Santa Cruz et in viciniâ. (Nn. 326, 790.) [Amer. Trop., Ind. Occ.]

MARISCUS SETIGLUMIS, C. B. Clarke; spicularum glumâ imâ vacuâ setacco-caudatâ, ceteroquin ut *Cyperus strigosus*, Link.

*Hab.* Floret ad Santa Cruz mens. Dec. (N. 746.) [Bras. Or., Argentina.]

MARISCUS JACQUINII, H. B. K. Nov. Gen. et Sp. i. p. 216.

*Hab.* Vigebat juxta fl. Paraguay inter Santa Cruz et Villa Maria. (N. 831.) [Bolivia, Columbia, Venezuela, Amer. Centr., Mexico, Ind. Occ.]

KYLLINGA PUNGENS, Link, Hort. Berol. i. p. 326.

*Hab.* Ad Santa Cruz floret mens. Nov. (N. 673.) [Amer. Trop. et Subtrop., Afr. Trop., Java.]

KYLLINGA PUMILA, Michx. Fl. Bor.-Amer. i. p. 28.

*Hab.* Crescit ad Santa Cruz, ubi mens. Nov. floret. (N. 671.) [In tropicis et subtropicis late diffusa.]

ELEOCHARIS PUNCTATA, Boeck. in Kjoeb. Vidensk. Meddel. 1869, p. 132 (non Steud.).

*Hab.* Legi in paludibus ad Santa Cruz mens. Nov. (N. 530.) [Bras. Or., Amazonia, Guiana, Ind. Occ.]

ELEOCHARIS SULCATA, Nees, in Linnæa, ix. p. 294; forma emarginata (*E. emarginata*, Klotzsch).

*Hab.* Ad Serra da Chapada inveni mens. Aug. florentem. (N. 112.) [Amer. Trop. et Subtrop., Ind. Occ.]

ELEOCHARIS OCHREATA, Nees, in Linnæa, ix. p. 294.

*Hab.* In cacumine montium Serra da Chapada mens. Aug. floret. (N. 108.) [Amer. Trop. et Subtrop. (et var. *humilis*, Boeck., gerontogæa).]

DICHROMENA CILIATA, Vahl, Enum. ii. p. 240.

*Hab.* Crescit ad Serra da Chapada. (N. 67.) [Amer. Trop. et Subtrop.]

FIMBRISTYLIS DIPHYLLA, Vahl, Enum. ii. p. 289.

*Hab.* Florebat ad Santa Cruz mens. Dec. (N. 743.) [In utroque orbi vulgatissima.]

BULBOSTYLIS JUNCIFORMIS, C. B. Clarke. (*Isolepis junciformis*, Kunth, Enum. ii. p. 211.)

*Hab.* Viget ad Serra da Chapada mens. Aug. (N. 179.)

Exemplum parvulum nimis juvenile. [Amer. Austr. Trop.]

LIPOCARPHA SELLOWIANA, Kunth, Enum. ii. p. 267.

*Hab.* Prope Santa Cruz legi mens. Nov. (N. 596.) [Bras. Or.]

HYPOLYTRUM LONGIFOLIUM, Nees, in Linnæa, ix. p. 288.

*Hab.* Crescit in sylvâ primævâ inter Santa Cruz et Campos de Tapirapuan. (N. 404.) [Amazonia, Guiana, Ins. Trinitatis.]

*HYPOLYTRUM IRRIGUUM*, Nees in Mart. Fl. Bras. ii. 1, p. 68.

*Hab.* Inveni in ripâ fl. Paraguay inter Santa Cruz et Diamantino, necnon inter Santa Cruz et Villa Maria. (Nn. 635, 816.) [Amazonia.]

*RYNCHOSPORA MINARUM*, Steud. Cyp. p. 143.

*Hab.* Crescit inter Cuyabá et Serra da Chapada, mens. Aug. florens. (N. 61.) [Bras. Or.]

*RYNCHOSPORA EXALTATA*, Kunth, Enum. ii. p. 291.

*Hab.* Reperi ad ripas fl. Paraguay inter Santa Cruz et Diamantino. (N. 641.) [Amer. Austr. Trop., Ind. Occ.]

*RYNCHOSPORA CEPHALOTES*, Vahl, Enum. ii. p. 237.

*Hab.* Crescit in ripâ fl. dos Bugres, mens. Oct. florens. (N. 425.)

*RYNCHOSPORA CEPHALOTES*, Vahl, var.  $\delta$ . *INTERRUPTA*.

*Hab.* Inveni ad Serra da Chapada mens. Aug., itaque prope Santa Cruz mens. Sept. (Nn. 80, 323.) [Amer. Centr. et Austr. Trop., Ind. Occ., Chili.]

*RYNCHOSPORA GLAUCA*, Vahl, Enum. ii. p. 233.

*Hab.* Legi ad Serra da Chapada mens. Aug. (N. 149.) [Regg. calid. utriusque orbis.]

*SCLERIA MICROCARPA*, Nees in Linnæa, ix. p. 302.

*Hab.* Viget in ripâ fl. Paraguay inter Santa Cruz et Villa Maria mens. Dec. (N. 836.) [Bras. Or., Amazonia, Guiana, Ind. Occ.]

*SCLERIA FLAGELLUM*, Sw. Prod. Fl. Ind. Occ. p. 18.

*Hab.* Floret ad Santa Cruz mens. Oct. (N. 485.) [A Bras. Or. usque ad Ind. Occ.]

#### CYCADEÆ.

*ZAMIA BRONGNIARTII*, Wedd. in Ann. Sc. Nat. sér. 3<sup>me</sup> xiii. p. 249.

*Hab.* Frequens juxta Santa Cruz et ad Campos de Tapirapuan, ubi menss. Sept. et Oct. floret.

The female cones are always solitary, but of the male cones three or even four may arise from the same rootstock. Weddell found this plant in the neighbourhood of Villa Maria and on the journey from that town to Matto Grosso (Villa Bella). Santa Cruz is the most easterly point at which it has been seen, and also, so far as known, marks the limit of eastward extension of Cycads in South America. [Bolivia Or.]



## EXPLANATION OF THE PLATES.

(Unless otherwise indicated in brackets beside the figures, the drawings represent the objects natural size.)

## PLATE XXI.

Fig. 1. *Ephedranthus parviflorus*: branch. 2. A bud. 3. A male flower seen from above, and 4. in section. 5. A stamen seen in a front (*a*) and (*b*) hind view. 6. Pollen. 7. Diagram of male flower.

## PLATE XXII.

Fig. 1. *Stormia brasiliensis*. 2. A bud from below, showing the enlarged receptacle. 3. A sepal from within. 4. Petals. 5. Ditto, showing the cohesion. 6. Petal of outer whorl detached. 7. Ditto of inner whorl. 8. Flower in section. 9. A stamen (*a*) from the axial and (*b*) from the abaxial side. 10. Group of pollen-grains. 11. Torus with carpels. 12. A single carpel showing the large stigma. 13. Carpel opened longitudinally from the abaxial side. 14. Floral diagram.

## PLATE XXIII.

Fig. 1. *Helicteres orthotheca*. 2. Petal from a bud. 3. Gynandrocium. 4. Ditto in longitudinal section. 5. Ovary in transverse section. 6. Fruit. 7. Ripe fruit of *Peixotoa hirta*, Mart. 8. A samara detached from the same.

## PLATE XXIV.

Fig. 1. *Zizyphus oblongifolius*. 2. A flower detached. 3. Detached petal. 4. Flower in section.

## PLATE XXV.

Fig. 1. *Anguria gloriosa* (male plant). 2. A flower-bud opened. 3. Two views of a stamen.

## PLATE XXVI.

Fig. 1. *Psychotria homoplastica*. 2. Portion of inflorescence detached. 3. A flower. 4. Corolla opened longitudinally. 5. Section of ovary, showing also the disk, style, and stigmas. 6. Ripening fruit of *Alibertia verrucosa*.

## PLATE XXVII.

Fig. 1. *Ipomæa crinicalyx*.—2-9. *Desdemona pulchella*. 3. A bud just before expansion of the corolla. 4. Corolla opened by a longitudinal incision. 5. Pollen. 6. Pistil. 7. Ovary opened from the side, showing a single pendulous ovule. 8. Longitudinal section of an ovary hardened in alcohol, showing the pendulous ovules with ventral raphe. 9. The floral diagram.

## PLATE XXVIII.

Fig. 1. *Neea hermaphrodita*. 2. A flower detached. 3. Flower from which one side has been cut away so as to show the stamens and pistil. 4. Ovary opened to show placentation. 5-6. Fruit of *Triplaris formicosa*.

## PLATE XXIX.

Fig. 1. *Heterocroton mentiens*. 2. A male flower opened. 3. A detached sepal; 4. A petal; 5. A stamen; and 6. Pollen-grains. 7. Calyx of female flower. 8. Part of same showing the glands, etc. 9. Pistil. 10. Supposed placentation, but, owing to want of material, there is some doubt about this. 11. Floral diagram of male flower.

## PLATE XXX.

Fig. 1. *Mabea Indorum*. 2. Part of male inflorescence detached. 3. Calyx and ovary of female flower. 4. Ditto in longitudinal section. 5. A seed.—6-12. *Brosimopsis lactescens* (male plant). 7. Inflorescence in longitudinal section. 8. A male flower expanding. 9. Ditto expanded. 10. Flower from which the petals have been removed. 11. Pollen. 12. Floral diagram.

## PLATE XXXI.

Fig. 1. *Brosimopsis lactescens* (female plant). 2. Inflorescence in longitudinal section. 3. A seed. 4. The same, the testa removed to show the radicle (*r*), plumule (*pl*), and cotyledons (*c*).

## PLATE XXXII.

Fig. 1. *Dichæa cornuta*. 2. A detached flower seen from above. 3. Labellum and column in side view.—4-10. *Notylia lyrata*. 5. Side view of a flower from which the near-side petal has been removed. 6. The lateral sepals detached. 7. Labellum and column in side view. 8. Labellum detached. 9. Upper part of column in side view. 10. Pollinia.

## PLATE XXXIII.

Fig. 1. *Costus acaulis*. 2. A flower detached. 3. A stamen. 4. Part of same showing anther-cells and distribution of vascular bundles. 5. Stigma.—6. *Vanilla ensifolia*?, Rolfe.

## PLATE XXXIV.

Fig. 1. *Zygella graminea*. 2. A flower detached. 3. Base of perianth showing attachment of stamens. 4. A stamen and its subtending style-arm. 5. A stamen detached. 6. Top of an anther and style-arm, showing the condition as observed after moistening dried flowers, the delicate staminal appendages being closely attached to the base of the style-arm, from which they cannot be removed without careful dissection. 7. Pollen; *b*, a grain with its pollen-tube. 8. Pistil detached. 9. Ovary in transverse section. 10. A capsule. 11. Seeds. 12. Enlarged view of a seed. 13. Floral diagram.—14-22. *Panicum furcellatum*. 15. Glume I. 16. Glume II. 17. Glume III. 18. Lower valvule. 19. Upper valvule. 20. Lodicule. 21. A stamen. 22. Pistil.

## PLATE XXXV.

Fig. 1. *Aphyllarum tuberosum*. 2. A detached spathe and spadix. 3. Spathe opened and for the most part removed, to show attachment of spadix. 4. Group of synandria seen from above. 5. Side view of a synandrium. 6. Ditto in transverse section: *l.c.* latex-canals entirely or partially surrounding the vascular bundles; *rs.* resin-sacs; *sc.* sclerenchyme. 7. Mature and effete pollen-grains. 8. Group of female flowers from above. 9. Ovary opened from the side, and 10. from the back. 11. A single ovule, showing its anatropy. 12. Diagram showing relation between the vascular bundles and sclerenchyme masses in the scape. 13. The three ovules from an ovary of *Caladium heterotypicum*.

## PLATE XXXVI.

Fig. 1. *Diplothemium jangadense*. 2. Small portion of a leaf. 3. Rhachis of leaf in transverse section. 4. Inflorescence and spathe. 5. Side view of a male flower. 6. A sepal, and 7. A petal from the same. 8. Andræcium from which all but one anther have been removed. 9. Idioblasts containing raphides arranged along the margin of a sepal. 10. Sepal, and 11. Petal from a female flower. 12. Pistil from which the third stigma has been cut away.

## PLATE XXXVII.

Fig. 1. *Luziola pusilla*. 2. Female inflorescence. 3. Lower valvule. 4. Upper valvule. 5. Pistil. 6. Lodicule. 7. Inflorescence bearing a caryopsis. 8. Ripe caryopsis magnified.—9-23. *Pogochloa brasiliensis*. 10. Diagrammatic scheme of floral arrangement. 11. A spikelet. 12. Glume I. 13. Glume II. 14. Lower valvule. 15 and 16. Upper valvule. 17. A stamen. 18. Pollen-grains. 19. A lodicule. 20. Pistil. 21. View of the upper part of a spikelet, showing the rudimentary floscule. 22 and 23. Views of the ripe caryopsis.

## PLATE XXXVIII.

Figs. 1-4. *Ephedranthus parviflorus*. 1. Stem in transverse section; *sc.* sclerenchyme; *ph.* phellogen; *end.* endoderm; *per.* pericycle; *prx.* protoxylem. 2. View of a small piece of leaf from above, showing the crystal-containing epidermal cells which form the outer covering of the ribs. 3. Transverse section of leaf, showing sclerenchyme running up to the epiderm. 4. Small piece of epiderm detached: *s.* subsidiary cells of stomate.—5-12. *Stormia brasiliensis*. 5. Transverse section of stem (lettering as before). 6. Epiderm from lower side of a leaf: *s.* the subsidiary cells. 7. Section of leaf: *gl.* an immersed gland. 8. Diagram showing arrangement of the leaf-traces. 9. Diagrammatic view of an anther-cell, showing the row of superposed pollen-chambers. 10. An anther in transverse section; *ax.* axial and *ab.* its ab-axial side; *sc.* sclerenchyme elements; *vb.* the delicate vascular bundle; *me.* the septal membrane (the cells here are too sharply outlined and are not quite correctly shown, see fig. 12). 11. A pollen-chamber in longitudinal section (lettering as before). 12. View of a portion of an anther in transverse section, showing part of a septal membrane.

## PLATE XXXIX.

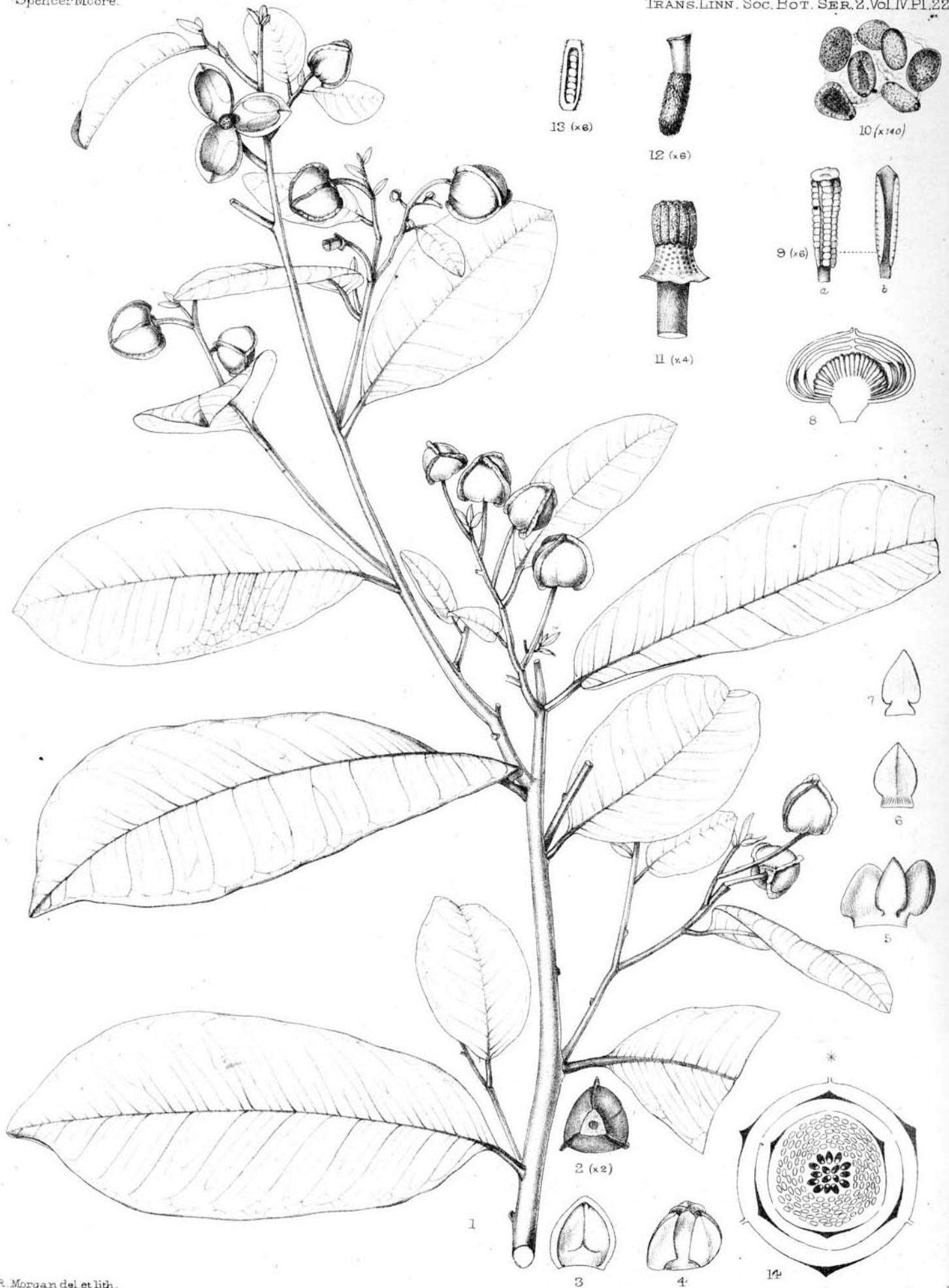
Figs. 1-5. *Desdemona pulchella*. 1. Stem in transverse section: *sc.* sclerenchyme masses at corners of stem; *scp.* sclerotic parenchyme cell; *bf.* scattered groups of bast-fibres. 2. Section through midrib of leaf. 3. View of a gland upon the upper face of a leaf. 4. The same seen from above. 5. Epiderm from above, showing the puckered walls.—6-12. *Brosimopsis lactescens*. 6. Section of stem (lettering as in last Plate). 7. Leaf in transverse section. 8-9. Latex-tubes and cells from the pith. 10-12. Ditto from a cotyledon. 13. Diagrammatic view of magnified leaf of *Zygella graminea* in transverse section, showing relation between the vascular bundles and the masses of sclerenchyme. 14. Leaf of *Pogochloa brasiliensis* in transverse section; the cells containing chlorophyll are shaded. 15. Ripe grain of the same in section. 16. Part of the grain more highly magnified: *gl.* the gluten (aleurone) layer.



F. Morgan del. et lith.  
S. Moore anal.

West, Newman imp.

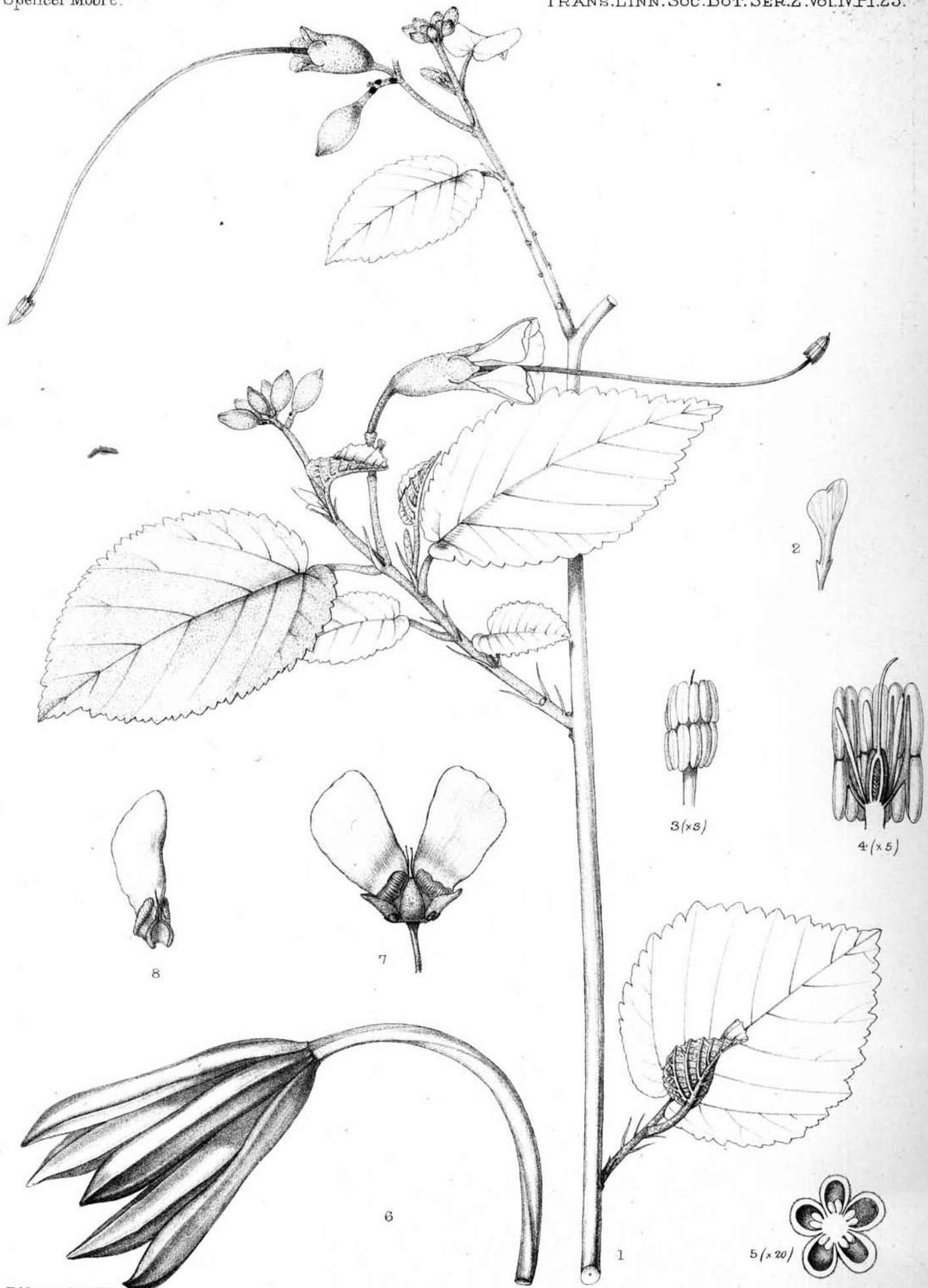
EPHEDRANTHUS PARVIFLORUS.



R. Morgan del. et lith.  
S. Moore anal.

West, Newman imp.

STORMIA BRASILIENSIS.

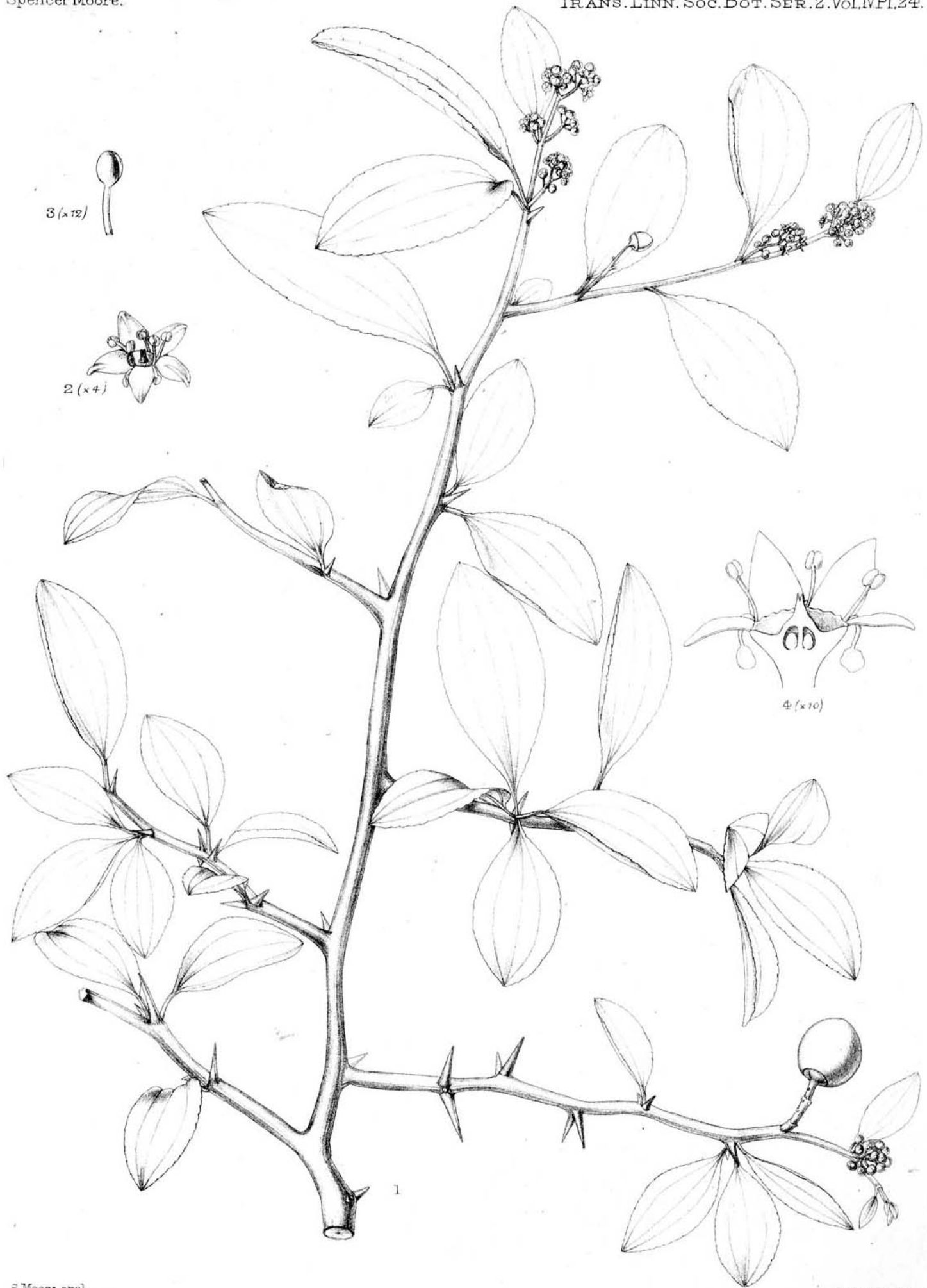


R. Morgan del. et litn.  
S. Moore anal.

West, Newman imp.

1-6. HELICTERES ORTHOTHECA.

7-8. PEIXOTOA HIRTA.



S Moore anal.  
R Morgan del. et lith.

West, Newman imp.

ZIZYPHUS OBLONGIFOLIA.



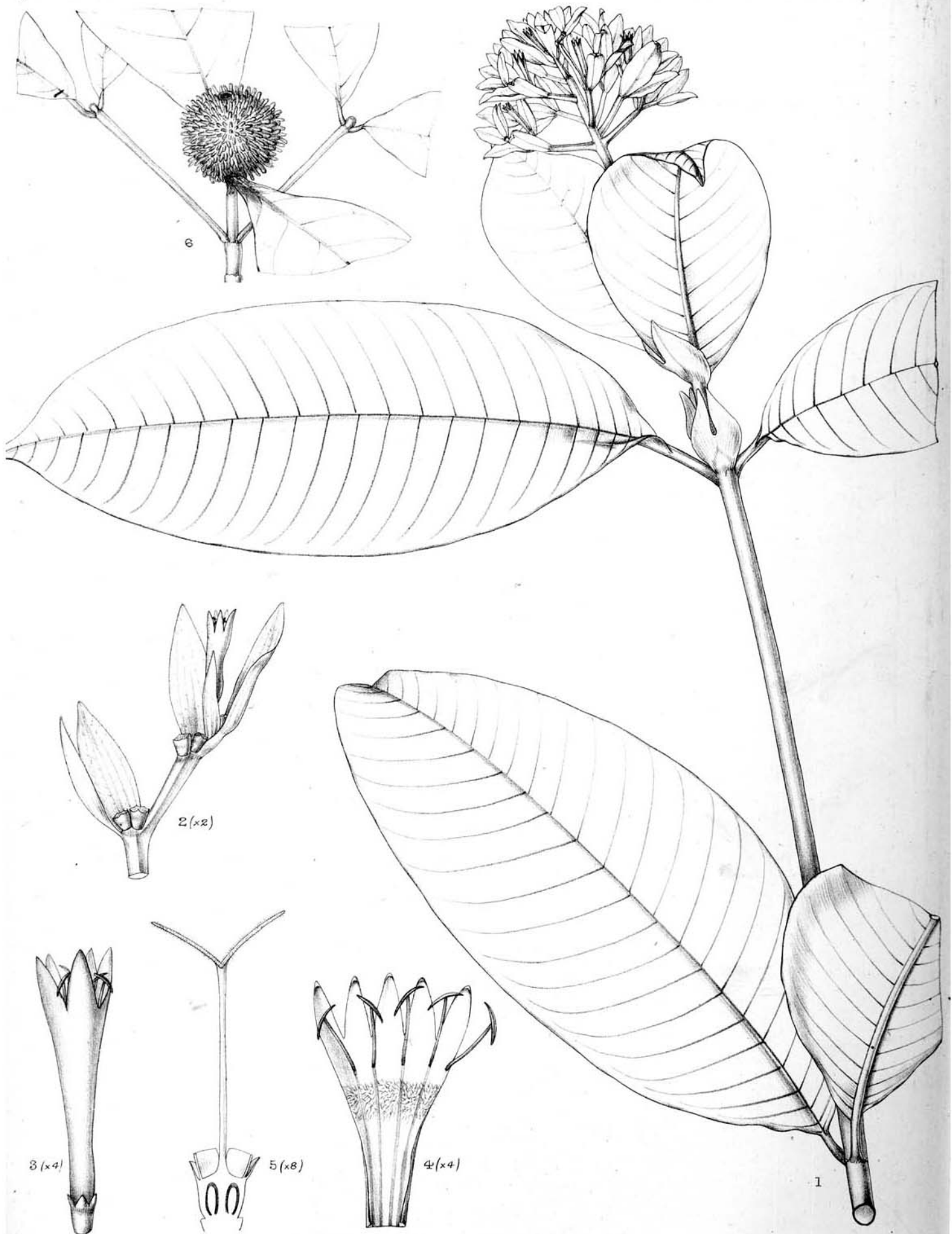


F. Morgan del. et lith.  
S. Moore anal.

ANGURIA GLORIOSA, ♂.

West, Newman imp.

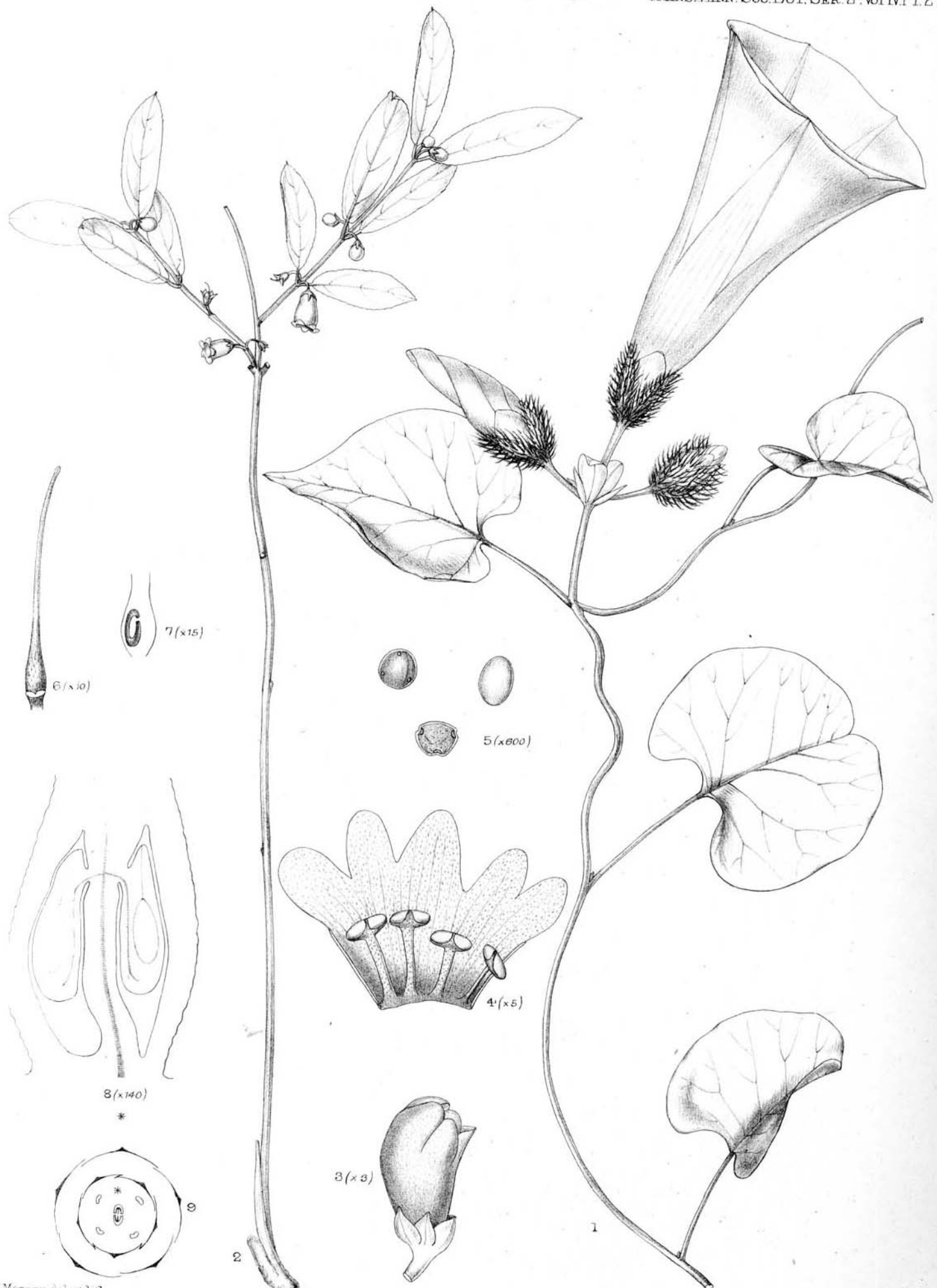




R. Morgan del. et lith.  
S. Moore anal.

1-5. PSYCHOTRIA HOMOPLASTICA. 6. GALIBERTIA VERRUCOSA.

West, Newman imp.



H. Morgan del. et lith.  
Spencer Moore anal.

1. IPOMŒA CRINICALYX. 2-9. DESDEMONA PULCHELLA.

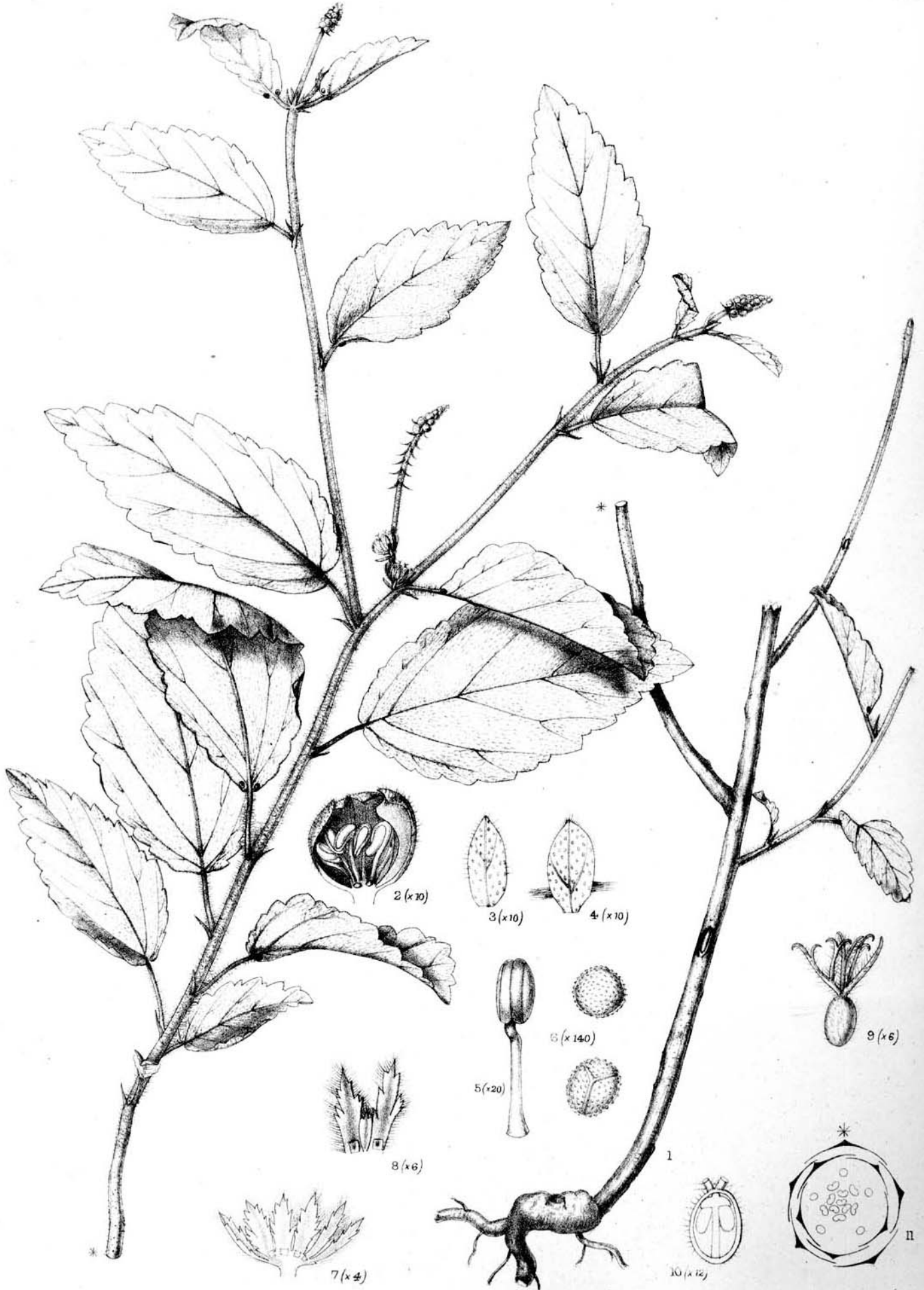
West, Newman imp.



F. Morgan del et lith.  
S. Moore anal.

1-4 NEEA HERMAPHRODITA. 5-6 TRIPLARIS FORMICOSA.

West, Newman imp



R. Morgan del et lith.  
S. Moore anal.

HETEROCROTON MENTIENS.

West Newman imp.

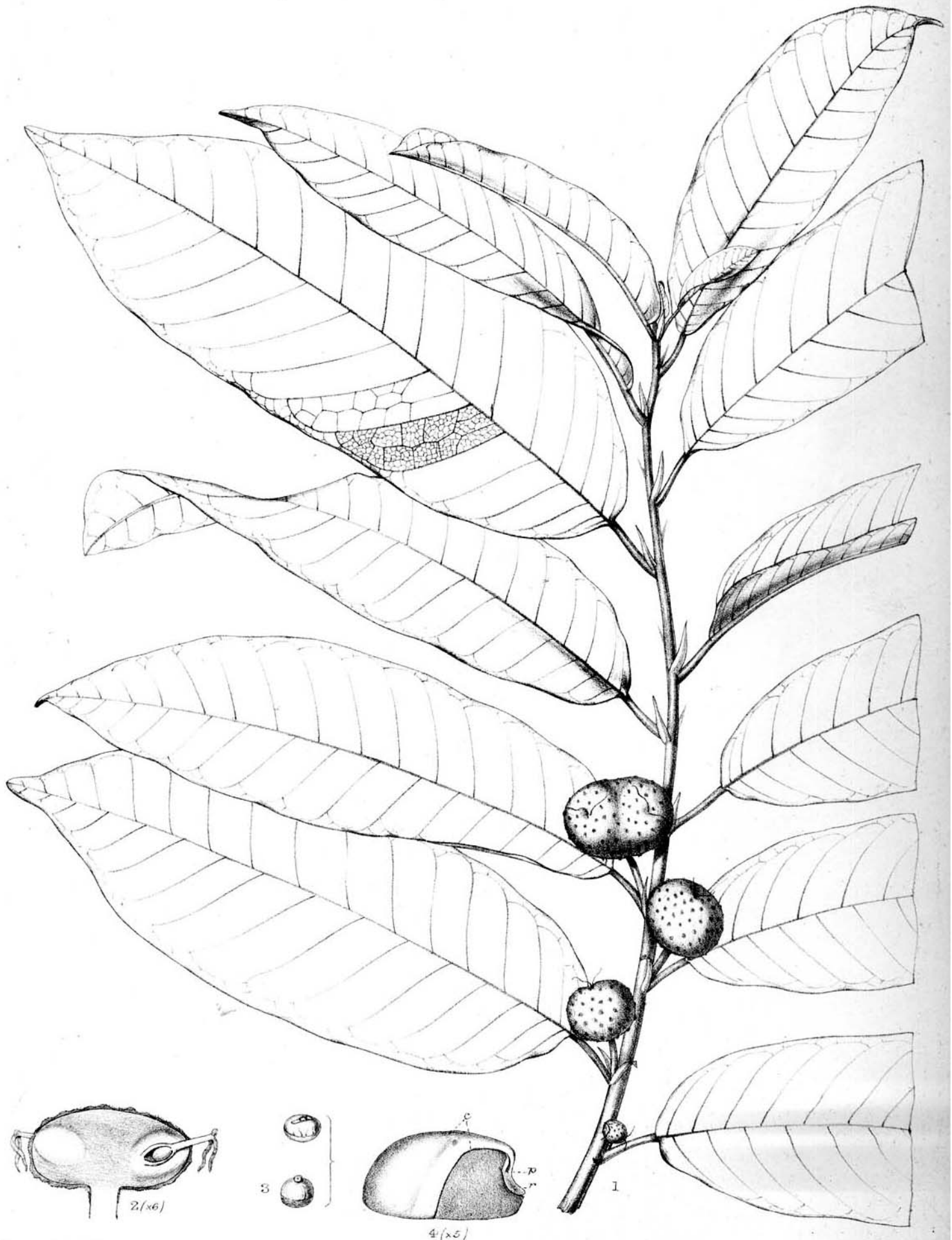


R Morgan del et lith.  
S Moore anal.

1-5 MABEA INDORUM. 6-12 BROSIMOPSIS LACTESCENS ♂.

West Newman imp.

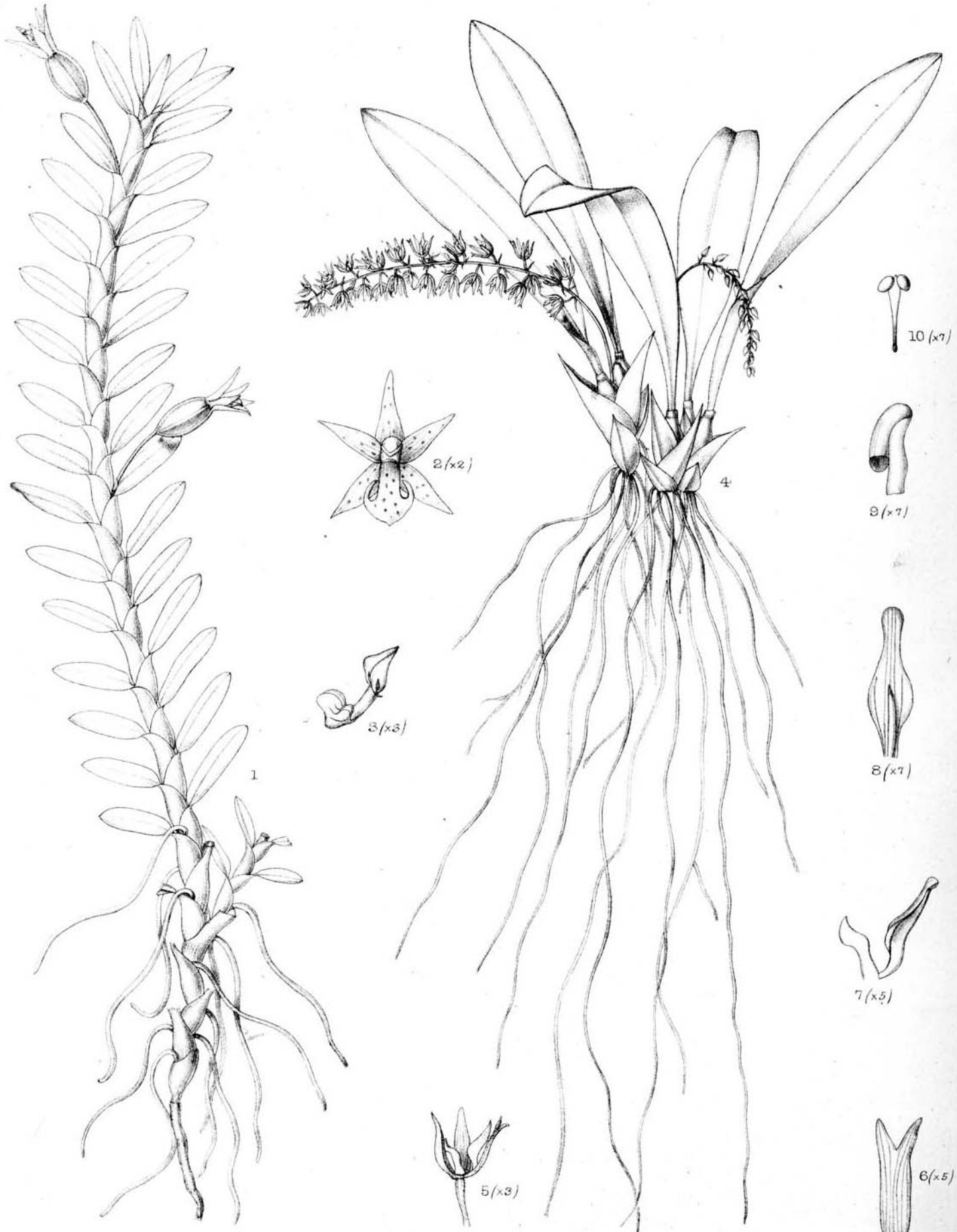




F. Morgan del. et lith.  
S. Moore anal.

BROSIMOPSIS LACTESCENS ♀

West Newman imp.



R. Morgan del. lith.  
S. Moore anal.

West, Newman imp.

Figs. 1-3, *DICHÆA CORNUTA*. Figs. 4-10, *NOTYLIA LYRATA*.



R Morgan del. et lith  
S. Moore anal.

1-5. COSTUS ACAULIS. 6. VANILLA? ENSIFOLIA.

West Newman imp.

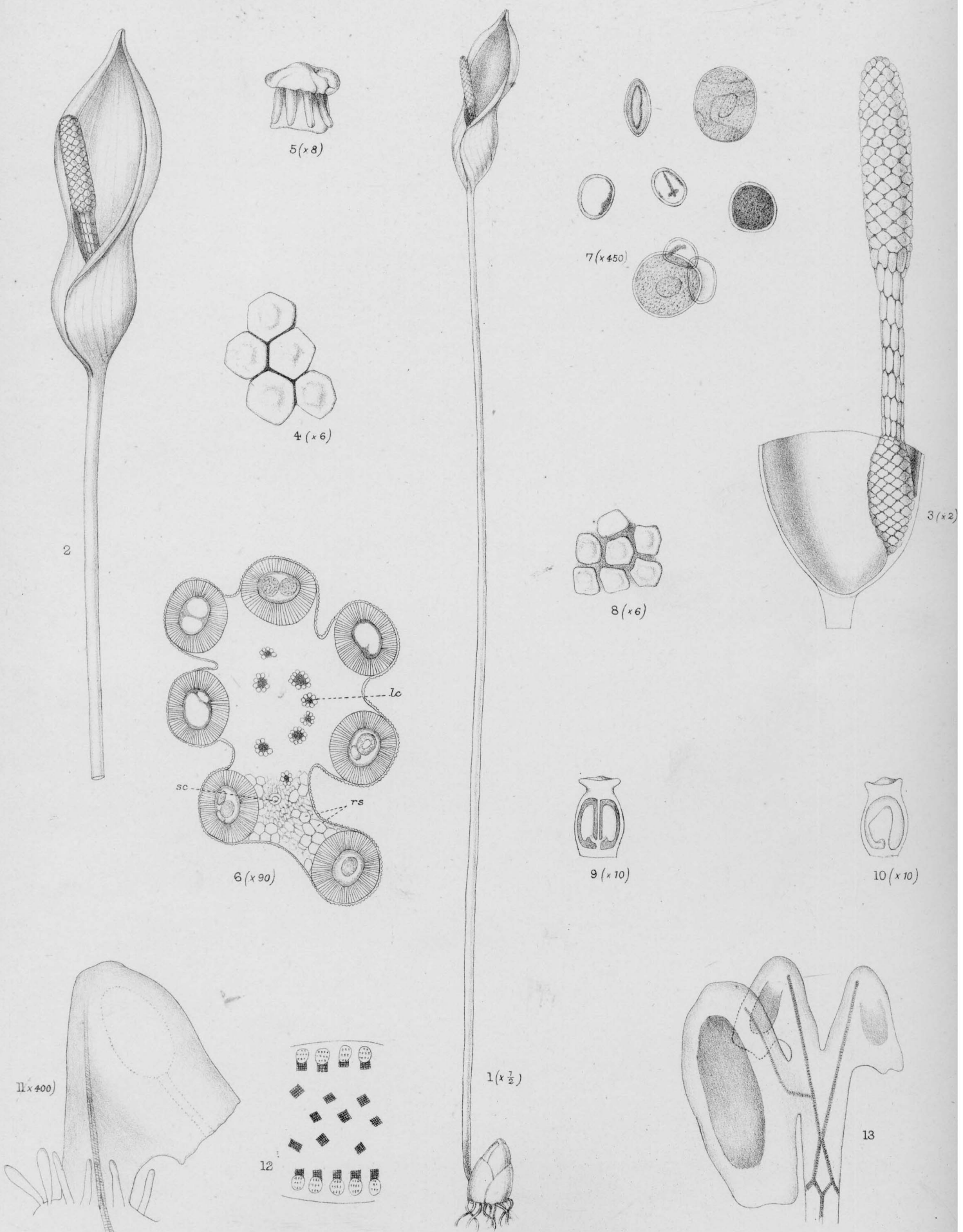




R. Morgan del. et lith.  
S. Moore anal.

1-13. ZYGELLA GRAMINEA. 14-22. PANICUM FURCELLATUM.

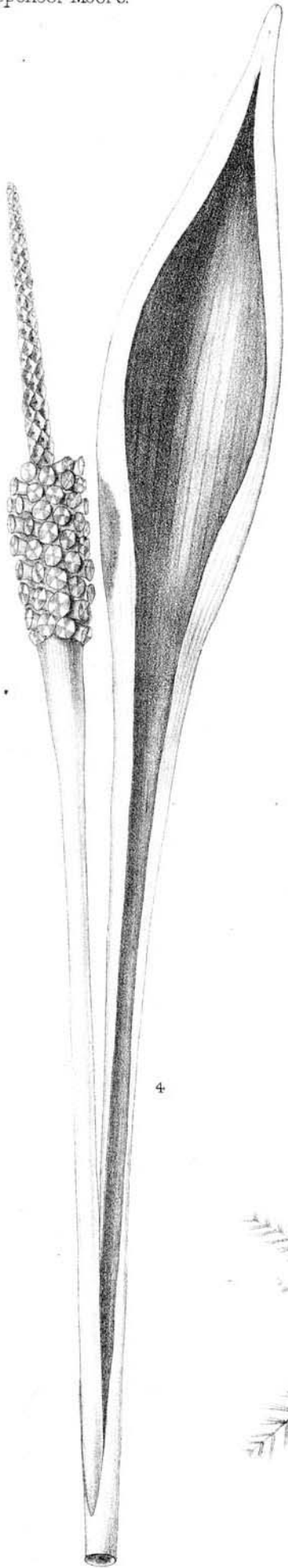
West Newman imp.



R. Morgan del. et lith.  
S. Moore anal.

1-12. APHYLLARUM TUBEROSUM. 13. CALADIUM HETEROTYPICUM.

West Newman imp.



4



10(x3)



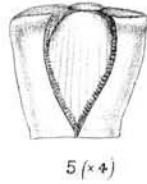
8(x4)



11(x3)



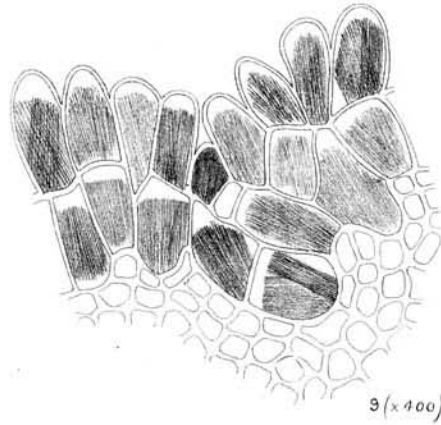
7(x4)



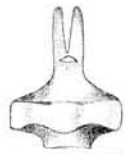
5(x4)



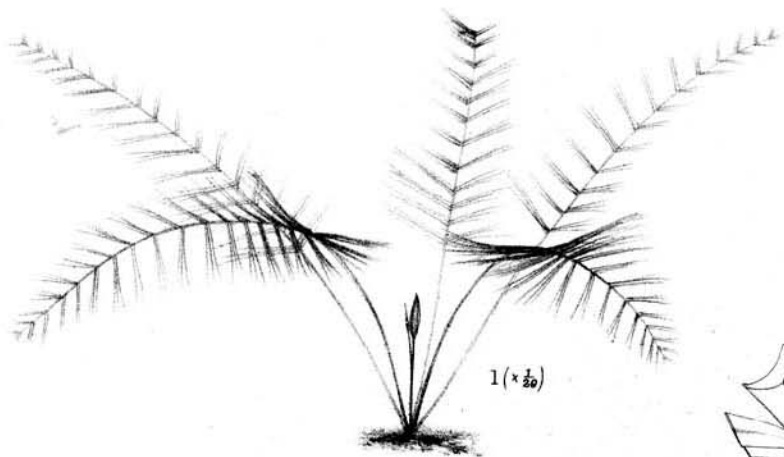
6(x4)



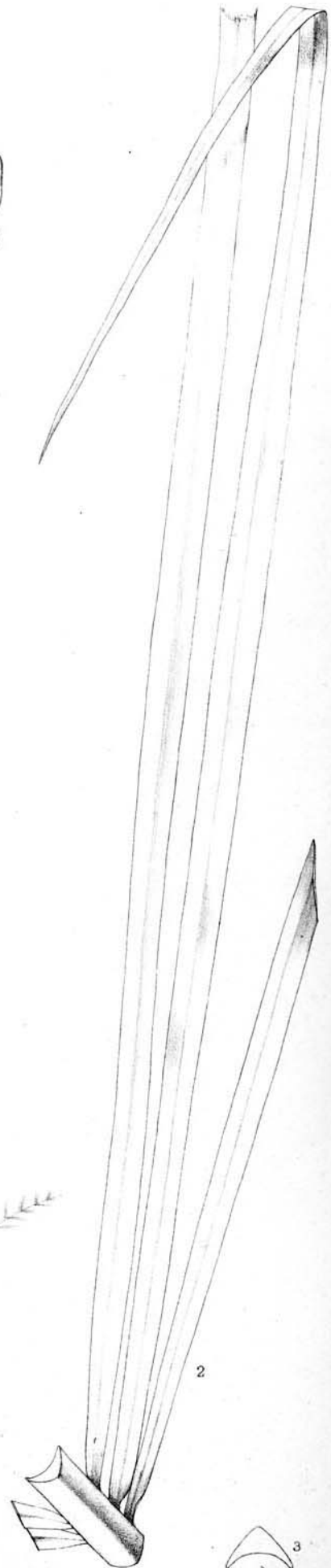
9(x400)



12(x4)



1(x20)



2



3

West Newman imp.

R. Morgan del et lith.  
S. Moore anal.

DIPLOTHEMIUM JANGADENSE.

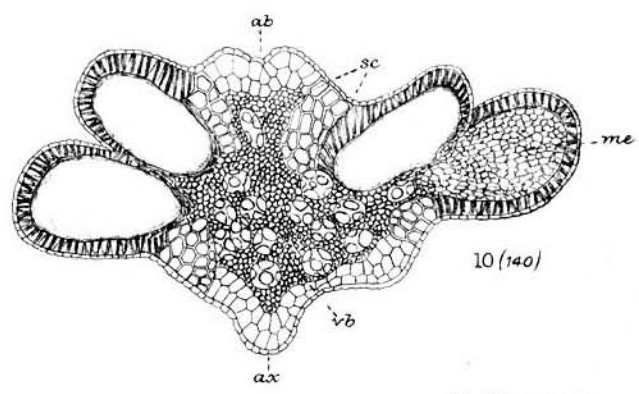
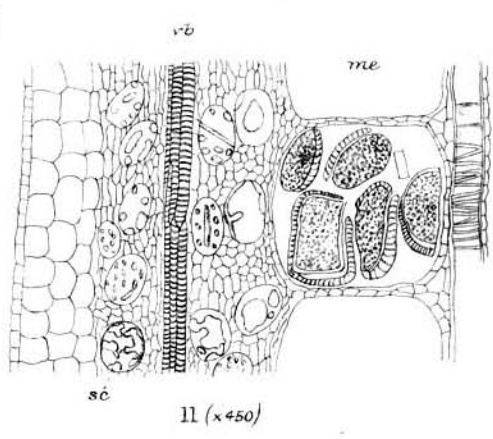
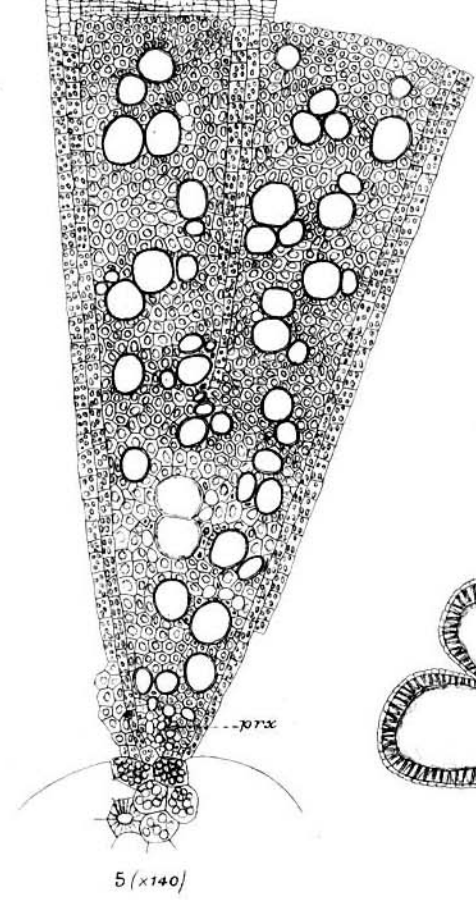
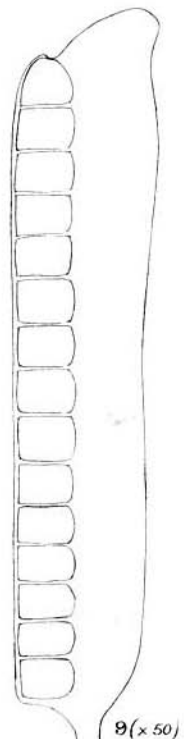
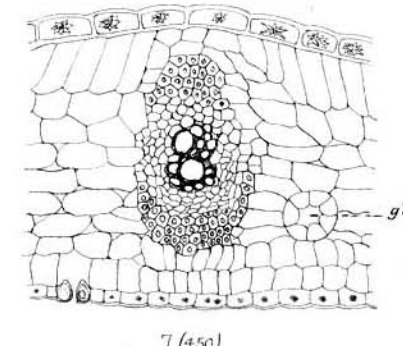
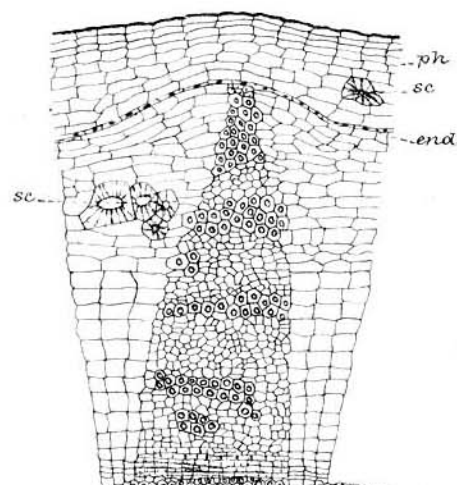
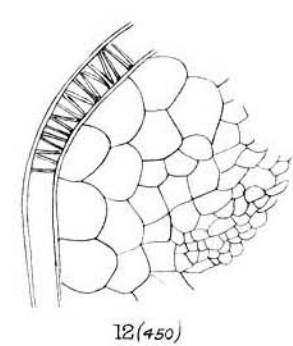
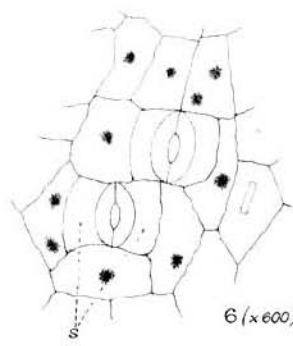
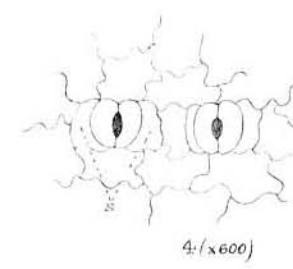
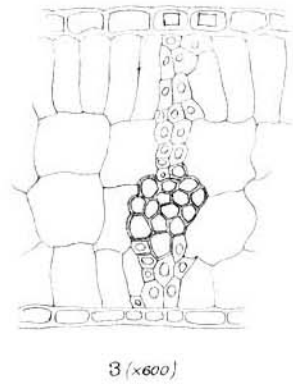
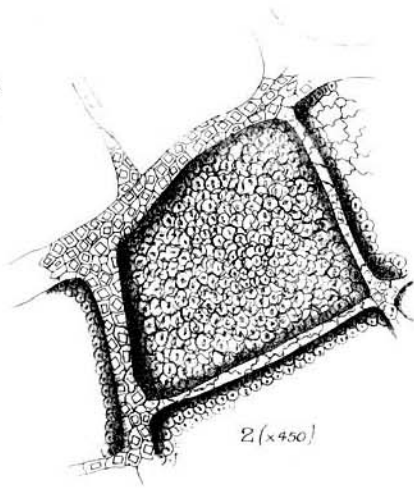
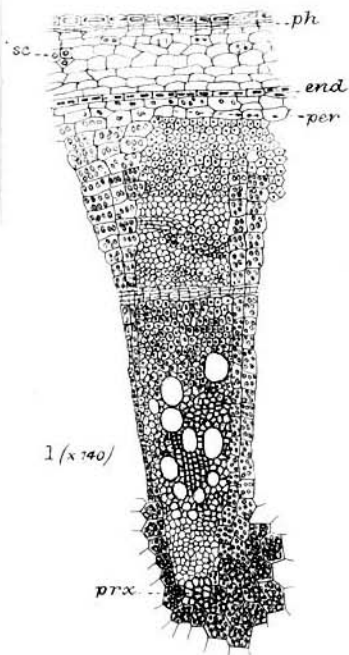


R. Morgan del. et lith.  
S. Moore anal.

1-8. LUZIOLA PUSILLA. 9-23. POGOCHLOA BRASILIENSIS.

West Newman imp.

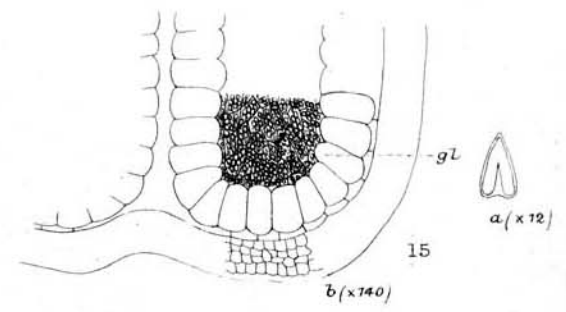
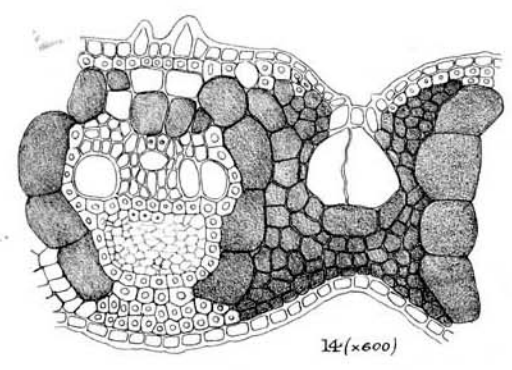
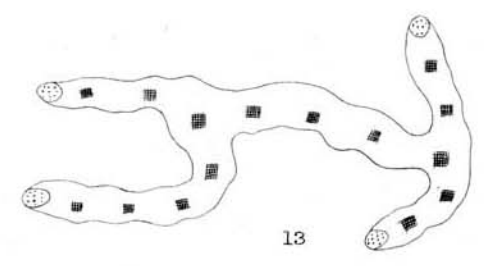
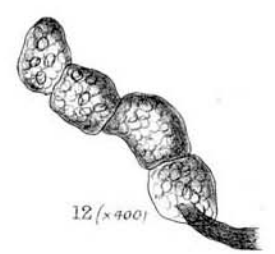
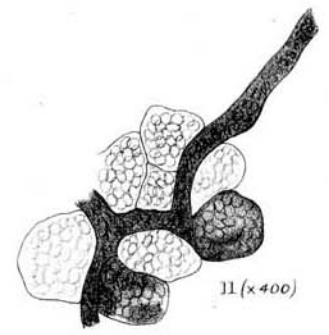
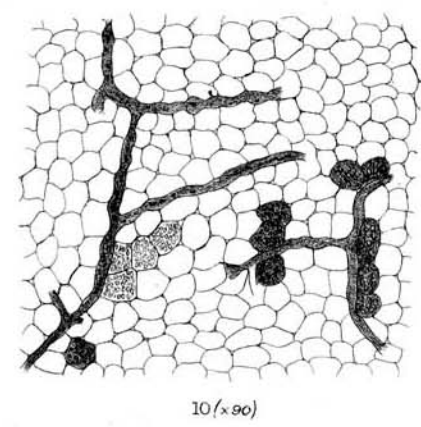
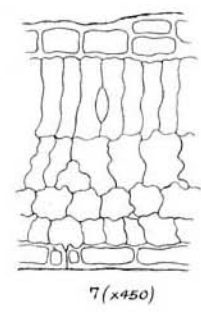
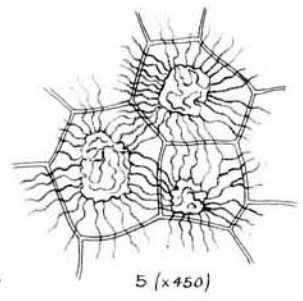
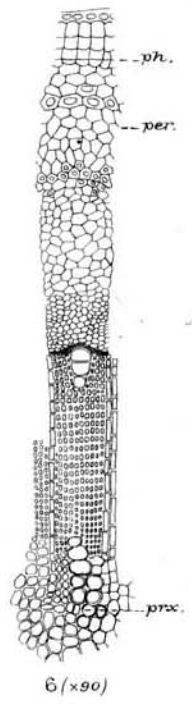
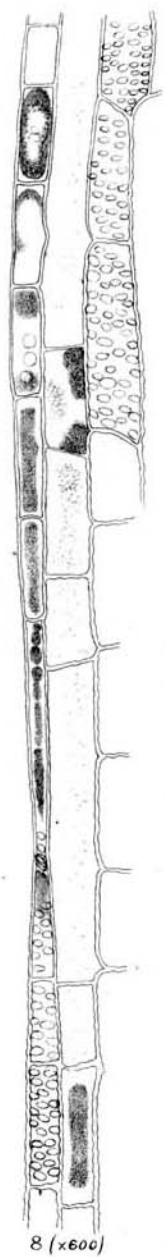
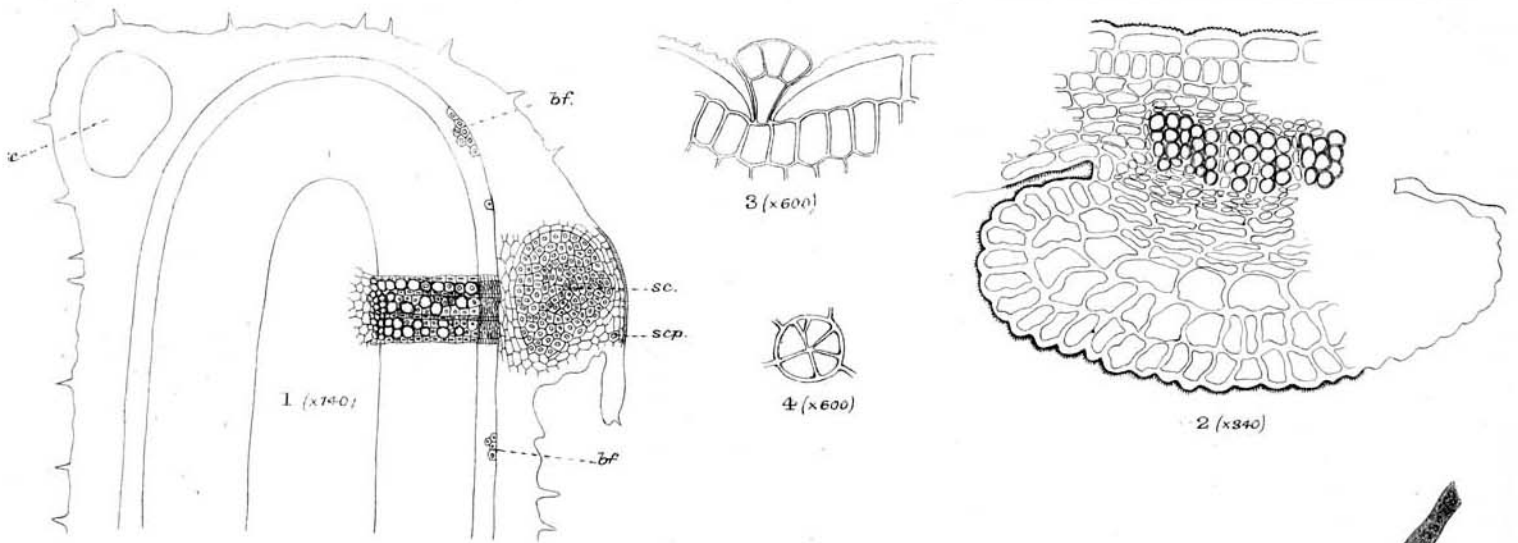




S. Moore del.  
R. Morgan lith.

1-4, EPHEDRANTHUS PARVIFLORUS.  
5-12, STORMIA BRASILIENSIS.

West Newman imp.



S. Moore del.  
R. Morgan lith.

West, Newman imp.

1-5, DESDEMONA. 6-12, BROSIMOPSIS.  
13, ZYGELLA. 14-15, POGOCHLOA.