

N. 2

20 de Outubro

Intercâmbio 1944

BOLETIM TÉCNICO

DO

INSTITUTO AGRONOMICO DO NORTE

**NEW OR NOTEWORTHY LEGUMINOSAE
OF THE BRAZILIAN AMAZON**

A. DUCKE

29 ESPÉCIES NOVAS

1 NOME NOVO

1 VARIEDADE NOVA



MINISTÉRIO DA AGRICULTURA
CENTRO NACIONAL DE ENSINO E PESQUISAS AGRONÔMICAS

Serviço Nacional de Pesquisas Agronômicas

INSTITUTO AGRONÔMICO DO NORTE

BELEM

ESTADO DO PARÁ

BRASIL

N. 2

20 de Outubro

1944

BOLETIM TÉCNICO

DO

INSTITUTO AGRONÔMICO DO NORTE

**NEW OR NOTEWORTHY LEGUMINOSAE
OF THE BRAZILIAN AMAZON**

A. DUCKE

29 ESPÉCIES NOVAS

1 NOME NOVO

1 VARIEDADE NOVA



MINISTÉRIO DA AGRICULTURA
CENTRO NACIONAL DE ENSINO E PESQUISAS AGRONÔMICAS

Serviço Nacional de Pesquisas Agronômicas

INSTITUTO AGRONÔMICO DO NORTE

BELEM

—

ESTADO DO PARÁ

—

BRASIL

1ª Reimpressão – **EMBRAPA** – CPATU – 1980

Edição "Fac-similada"

Impressão pelo **SISTEMA SICORA** de reprografia
Thesaurus Editora e Sistemas Audio Visuais Ltda.
Caixa Postal 04-0326 – 70000 – Brasília - DF.

P R E F Á C I O

O presente trabalho, sobre taxonomia de Leguminosas, contendo a descrição de 28 espécies novas, 1 nome científico novo, 1 variedade nova e notas relativas a algumas das mais interessantes Leguminosas da Amazônia, foi redigido para ser publicado em uma revista dos Estados Unidos.

Em uma outra publicação, que constituirá um complemento ao boletim "AS LEGUMINOSAS DA AMAZÔNIA BRASILEIRA", publicado pelo Serviço Florestal, Ministério da Agricultura, 1939, o autor descreverá diversos aspectos das mesmas espécies aqui descritas e de outras Leguminosas da Amazônia.

Considerando que as publicações de um mesmo autor, relativas ao estudo de uma mesma família de plantas, realizadas por diversas organizações e até em países distintos, constituem um embaraço para os cientistas e interessados na botânica, a Diretoria dêste Instituto combinou com o autor do presente trabalho que todas as suas publicações sôbre Leguminosas da Amazônia sejam feitas por intermédio dêste Instituto que, aliás, lhe tem fornecido um auxiliar de campo para cooperar no árduo trabalho de coleta de material botânico.

Felisberto C. de Camargo

NEW OR NOTEWORTHY LEGUMINOSAE OF THE
BRAZILIAN AMAZON

by

A. DUCKE

INGA JUCUNDA Ducke n. sp. — Ad sectionem *Leptinga*, at inflorescentiis saepe sub-racemosis ab aliis hujus sectionis aberrans; a specie *I. Herthae* Harms ut videtur affiniore recedit foliolis plurijugis, glabris, a speciebus *quaternata* et *Wittiana* floribus multo maioribus at brevius pedicellatis. Arbor parva partibus vegetativis plus minus glabratis, innovationibus canotomentellis. Ramuli crebre lenticellosi. Stipulae desunt. Folia petiolo et rhachi nudis, subteretibus, glandulis sat parvis depressis scutellatis saepe marginatis; foliola 3-vel-4 rarissime 5-juga, breviter petiolulata, 60-180 mm. longa et 30-80 mm. lata, plus minus ovato-vel obovato-elliptica vel oblonga, tenuius coriacea, jugorum superiorum vulgo multo maiora quam inferiorum. Pedunculi axillares et terminales, 20-40 mm. longi stricti canotomentelli. Inflorescentiae juniores usque ad anthesin incipientem plus minus umbellatae, demum vulgo accrescentes subracemosae oblanceolatae pilosulae, subpersistentes; pedicelli 3-4 mm. longi. Calix anthesi tubulosus 5-8 mm. longus plus minus striatus tenuiter albidopilosulus. Corolla calicem plus quam duplo superans, appresse albosericea. Stamina alba numerosa tubo vix exserto. Legumen ut sectionis *Gymnopodae*, e. g. *I. nobilis*.

Habitat infra Esperança (ad ostium fluminis Javary, in civitate Amazonas), non rara in "igapó" ad ripas fluvii Solimões et praesertim rivorum hujus affluentum, 9-II-1942, Ducke 1016, et 17-III-1944, Ducke 1520. Prope São Paulo de Olivença visa.

A pretty species with flowers of a pure white, remarkable for its inflorescences in form of umbels in the earlier stage, but afterwards more or less racemiform, by, lengthening of the rhachis.

INGA INFLATA Ducke n. sp. — Inter sectiones *Leptinga* et *Diadema* intermedia, sensu Bentham ad primam, sensu Pitier potius ad secundam spectat. Arbor parva partibus omni-

bus glaberrima, ramulis junioribus rufescentibus pallido-lenticellatis. Stipulae sat persistentes, lanceolatae vel ovato-lanceolatae, plus minus falcatae, costato-striatae et saepe reticulatae, apice acutae vel longe acuminatae, vulgo 3-5 mm. rarius ad 9 mm. longae. Folia petiolo rhachideque nudis, hoc sub jugo terminali parum dilatato, vix canaliculatis, petiolo infra jugum inferius vulgo brevi rarius ad 15 mm. longo, rhachide apice in setam longam et robustam exeunte. Glandulae sat magnae sessiles elevato-marginatae. Foliola 1-vel saepius 2-juga, jugi superius multum maiora quam jugi inferius, vulgo 100-150 mm. longa et 40-60 mm. lata, saepissime obovato-oblonga basi acuta in petiolulum crassum 3-5 mm. longum breviter abrupte acuminata, apice acumine medio-criter longo sat abrupto, adulta coriacea subelastica, utrinque nitida et vulgo concolora, costis et venulis supra et subtus aequaliter distincte prominentibus. Pedunculi floriferi laterales axillares solitarii 8-40 mm. longi robusti stricti; rhachis globosus minimus, post flores delapsos a bracteolis persistentibus absconditus; bracteolae 5-10 mm. longae ovato-lanceolatae acutae vel acuminatae, elevato-striatae et reticulatae. Flores in umbella pauci, pedicellis 1-4 mm. longis; calix 15-28 mm. longus, viridis, herbaceus, prominenter reticulato-striatus, in vivo inflatus ample campanulatus apice saepe angustior quam basi, in sicco 8-18 mm. latus, ab apice usque ad dimidium, tertium vel quartum in dentes triangulari-lanceolatos acutissimos divisus; corolla calicem circiter dimidio excedens, basi tenuis tubulosa, apicem versus fortiter dilatata lobis magnis triangularibus acutis. Stamina alba modice numerosa quam corolla fere triplo longiora (usque ad 80 mm.), tubo longissime exserto. Legumen ignotum.

Rio Tarumá-miry prope Manáos, in silva humiliore circa campinam, solo arenoso valde humoso, humido, 4-VII-1941 Ducke 816. Arbor unica visa.

This interesting species is related to *I. cordistipula* Mart. from Rio de Janeiro etc., but the leaflets are 1-or 2-jugate, the stipules smaller, the bractlets much larger, the flowers less numerous in the inflorescence and with much shorter pedicels, the calyx is more inflated at the base, the tube of the stamens much longer. Only one tree was found in the forest around a sandy savanna with shrubby vegetation and large lichens, situated near the Rio Tarumá-miry northwest of Manáos. This forest is chiefly composed of small and medium sized trees, with plenty of palms of *Mauritia carana* and some species of *Retiniphyllum* as in certain "catingas" of the upper Rio Negro basin. Like there, the soil is of sand and black humus, swampy in the wet season.

INGA ODORATISSIMA Ducke n. sp. — Ad sectionem Bour-

gonia, speciebus *fagifolia*, *marginata* et *cylindrica* spicis longis laxifloris breviter pedunculatis affinis, differt foliis et indumento. Arbor parva ramulis lenticellosis, junioribus dense canopuberulis. Stipulae non adsunt. Folia petiolo infra foliola 20-40 mm. longo, rhachi 100-200 mm. longa infra juga parum marginato-dilatata, glandulis inter juga magnis depresso-urceolatis; foliola vulgo 4-juga rarius 3-juga breviter crasse petiolutata, superiora 100-170 mm. longa et 45-80 mm. lata, inferiora saepe multo minora, magis minusve obovato-oblonga basi valde inaequilatera apice breviter acuminata, coriacea, utrinque nitida parum discolora, supra glabra subtus pilosula, costis mediana et lateralibus supra immersis subtus valide prominentibus, lateralibus maioribus paucis (6-10) sursum arcuatis ante marginem anastomosantibus, venulis subtus conspicue reticulatis. Spicae vulgo 4 ad axillam folii (saepe delapsi), 60-110 mm. longae pedunculo quam parte florifera breviores, ut rhachis dense canopuberulo, anthesi laxiflorae, bracteolis minutis, subulatis. Flores albi, odore forti et gratissimo, usque ad 1 mm. pedicellati rarissime subsessiles. Calyx parum ultra 1 mm. longus et infra 1 mm. latus, minime puberulus. Corolla circiter 4 mm. longa tenuis apice dilatata, glabra. Stamina numerosa brevia crispa, tubo non exserto. Legumen ut specierum affinium.

São Paulo de Olivença, in silva minore "catinga" appellata, in soli silicosi loco humido, 12-IV-1944, Ducke 1521.

Remarkable by the strong and very agreeable scent of the flowers, perceptible in the forest at great distance from the tree. Diverges from *I. cylindrica* chiefly by ample and coriaceous leaflets, pedicellate flowers, and rather well developed pubescence on various parts.

INGA SUAVEOLENS Ducke n. sp. — Ad seriem *Gymnopodae*, speciei per Amazoniam vulgarem *I. dumosa* inflorescentiarum florumque characteribus similis (solum floribus aliquanto minoribus), foliis autem valde diversa. Arbor parva ramulis lenticellosis, junioribus subrufo-pubescentibus. Stipulae parvae subulatae, caducae. Folia rhachide anguste canaliculata, glandulis ut in specie citata, petiolulis brevibus crassis; foliola 4-juga rarius 3-juga, lamina in superioribus usque ad 160 mm. longa et ad 50 mm. lata, lanceolato-obovata, basi valde inaequilatera, apice longe sensim acuminata acumine in setulam terminato, firme membranacea, utrinque valde nitida et concolor (in siccis viridis), costis mediana et lateralibus in utraque pagina prominentibus (his 6 ad 8, sursum arcuato-anastomosantibus), venulis utrinque tenuiter prominulis, supra praeter costam tomentellam glabra, subtus canopilosula.

Inflorescentiae ut in specie citata; flores aliquanto mino-

res (an semper?), calice 4-5 mm., corolla 8-9 mm. longis, suaveolentes. Fructus ignotus.

São Paulo de Olivença, loco Santa Maria, in terris altis silva secundaria, 19-IV-1944, Ducke 1522.

The very affin *I. dumosa* has bijugate leaflets with more numerous lateral ribs, broader and not so much obliquous, somewhat paler beneath; it grows on flooded shores in "varzea" land. *I. Thibaudiana* has more numerous leaflets and much longer corollas and stamens.

INGA CHRYSANTHA Ducke n. sp. — Ad sectionis *Pseudinga* seriem *Pilosiusculae* Bth., forsan ex affinitate *Ingae Salzmanniana* Bth. (Bahia, Pará) mihi solum e descriptione notae. Arbor parva, glabra innovationibus solis canopuberulis, ramulis cinnamomeis abundanter pallido-lenticellosis. Stipulae desunt. Foliorum petiolus et rhachis sat anguste alati glandulis mediocribus, sessilibus, scutellatis vel urceolatis. Foliola vulgo 4-juga, saepe 3-juga, rarius 2-vel 5-juga, saepe ad 150 mm. longa 20-50 mm. lata rarius longiora, basalibus vulgo non multo minoribus quam terminalibus, subsessilia, saepissime lanceolata basi oblique angustata apice sensim longe et acute acuminata, elastice subcoriacea, subconcolora, praesertim supra valde nitida. Pedunculi axillares et terminales, vulgo circiter 30 mm. longi stricti, subglabri; spicae pars florifera circiter 20 mm. longa, modice densiflora, bracteis parvis subulatis post anthesin deciduis. Flores sessiles; calix anthesi 5-8 mm. longus spathaceus oblique subtruncatus vel usque ad medium bipartitus lobis oblongis acutis vel denticulatis, evidenter striatus, subglaber solum apice plus minus pilosulus pilis appressis. Corolla anthesi 20-25 mm. longa, alba, dense sericeo-villosa. Stamina pallide aurea, tubo corollae aequante vel parum longiore. Legumen ignotum.

Habitat prope Manáos, in silva non inundabili circa Cataractas fluminis Tarumá, 8-I-1942, Ducke 1023.

This species is remarkable not only for its golden flowers (like those of *I. setifera* and *I. nitida*), but also for the uncommon form of the calyx.

Only one tree was hitherto observed.

PITHECOLOBIUM MONILIFORME Ducke n. sp. — Ad sectionem *Abaremotemon* Bth. Arbor sat elata partibus vegetativis glaberrimis, ramulis pallide cinnamomeis demum cinerascens, nodosis. Stipulae non adsunt. Folia petiolo 8-30 mm. longo, pinnis unijugis rhachidibus 30-60 mm. longis gracilibus, glandulis parvis vel obsoletis; foliola bijuga vel saepius trijuga petiolo 1-3 mm. longo, lamina usque ad 60 x 30 mm. metiente suboblongo-ovata vix vel parum falcata, basi vulgo obtusa rarius subrotunda vel subacuta, apice breviter

latuscule acuminata, subcoriacea, supra nitida, subtus nitidula et parum pallidior, utrinque tenuiter et dissite penninervi et reticulata. Pedunculi axillares, floriferi 15-25 mm. longi tenuiter brunneotomentelli; capitula globosa rhachide vix 3 mm. longa, pedicellis inter bracteolas parvas tomentellas insertis circiter 1 mm. longis. Calyx vix ad 1,5 mm. longus 1 mm. latus parum tomentellus, dentibus brevibus; corolla 4-4,5 mm. longa, subglabra; stamina parum numerosa, albida, filamentis tenuissimis fere usque ad 30 mm. longis, tubo corollae incluso. Legumen in pedunculo subsessile, glabrum, ad semina crasse rugosum, praesertim junius submoniliforme, adultum vulgo 100-150 mm. longum arcuatum inter semina profunde constrictum, seminibus saepe usque ad 10 rarius ad 12 saepissime solum in parte evolutis, valvis ad semina evoluta crassis dure lignosis, inter semina tenuibus, partibus incrassatis subarticuliformibus subgloboso-convexis saepe 15 mm. latis, suturis crasse lineiformi-prominentibus, inferiore subintegra vel leviter sinuosa, superiore profunde crenato-emarginata, maturum rubescens, valvis post dehiscentiam vulgo modice contortis; semina dimidio basali alba, apicali atroviridia, exarillata.

Manáos, in silva terris argillosis altis ultra Flores, 27-II-1943 fructiferum, 6-XI-1943 floriferum, Ducke 1428.

Species fructui forma notabilis speciebus *P. parauaquarae* Ducke (e collibus inter Prainha et Macapá civitatis Pará) et *P. cochleatum* (Willd.) Mart. (e partibus orientalibus civitatum Pará et Maranhão) affinis, foliis divergens.

This new species looks like some others of the same section, when in flowering stage; the pod, however, is very different.

ACACIA ALTISCANDENS Ducke. — Tonantins, upland rain forest, climber on a huge tree, Ducke 1517. Flowers white, odoriferous, sessile; calyx about 1 mm. long, tomentellous; corolla about 2 mm. long, very minutely tomentellous. The adult flower spikes, 30-60 mm. long.

This species was now for the first time collected in flowering stage. It is easy to recognize by its large leaves and leaflets and by the very small flowers. It had been observed only in the basins of the Tapajoz and the Rio Negro. Flowers in the rainy season.

MIMOSA LONGICAULIS Ducke n. sp. — E sectione I, *Eumimosa* serie 10, *Spiciflorae*, exaffinitate specierum *myriadena* Bth. et *punctulata* Spr. ex Bth, praesertim primae, differt pinnis in folio ultra 20 (saepius 25)-jugis, foliolis in pinna 20-ultra 30-jugis, his multo minoribus (usque ad 5 mm. longis, vix ultra 1 mm. latis), subfalcato-linearibus, tenuiter

herbaceis, nervis obsolete, lepidibus subtus solum ad marginem praesentibus et parum conspicuis. Legumen adultum 40-60 mm. longum, 10-15 mm. latum, oblongum parum obliquum, apiculatum, tenuiter papyraceum, planum, vulgo 10-12-seminatam, maturitate in articulos secedens marginibus solis persistentibus. Frutex caulibus longissimis alte scandens, aculeis, indumento, inflorescentiis ac florum structura et magnitudine ut in *myriadena*, floribus albis antheris in vivo obscuris.

São Paulo de Olivença (Rio Solimões, in civitate Amazonas) in "varzea" inundabili secus Igarapé São João, 25-XI-1940, Ducke 641. Esperança (ad ostium fluminis Javary), in silvulis secundariis solo argilloso fertili non inundabili, floriferum 31-I-1942, Ducke 889, fructibus maturis 15-III-1944, Ducke 1519.

Like other aculeate climbers of the genera *Mimosa* and *Acacia*, this species forms inextricable thickets in the periodically flooded forests of the Amazonian lowlands.

MIMOSA ASPERATA L. VAR. SCANDENS Ducke n. var. — A speciei forma typica divergit caulibus scandentibus, foliorum rhachidibus inter pinnas sat crebre aculeatis vix setiferis, floribus albis.

Habitat ad ripas et in "igapó" periodice inundabili; prope Tonantins (in civitate Amazonas) frequens, 28-I-1944 Ducke 1609; prope Obidos (in civitate Pará) Ducke Herb. Amaz. Mus. Pará 15730 et 15882.

The above cited differential characters seem to be constant, and the present variety could eventually be considered as a "good" species. The typical (and common) *M. asperata* diverges by not aculeated but setiferous leaf-rhachis and rosy flowers; it is a shrub with erect stems and long, sometimes decumbent, branches, but never a climber.

STRYPHODENDRON ROSEIFLORUM Ducke n. sp., = *Str. guianense* var. *roseiflorum* Ducke, Arq. Jard. Bot. Rio 6:15 (1933); Legum. Amazonia Brasileira p. 40 (Rio de Janeiro 1939). — A *Stryph. guianense* (Aubl.) Benth. et ejus varietatibus quarum una (var. *floribundum* (Bth.) Ducke) per totam Amazoniam est communis, differt inflorescentiis (praesertim sub praefloratione et anthesi incipiente) constanter sub folia recurvis (nec erectis), floribus laete roseis.

In silvulis secundariis siccoribus frequens circa Manáos (Ducke 86 et Herb. Jard. Bot. Rio 10406, Herb. Amaz. Mus. Pará 11221) et Tonantins, in civitate Amazonas.

The small tree is frequent in dry "capoeiras" around Manáos. It is pretty when flowering, with its rosy spikes recurved beneath the young, bright green foliage.

Spruce considered it as a rose-flowered form of the common *floribundum*, and I myself during a long time was of the same opinion, but finally I noted that there exists a constant diversity in the position of the inflorescences of these trees.

The aspect of the two species, in flowering stage, is very different in the live trees, but in the herbaria they can only be distinguished if the inflorescences are carefully prepared conserving their natural position.

PARKIA ALLIODORA Ducke n. sp. — Ad sectionem *Paryphosphaera* Bth. A specie *P. oppositifolia* valde affini differt statura maxima et cortice interiore allium putrefactum redolente. Folia in speciminibus nostris magis numerosa et magis coriacea venis transversalibus subtus validius prominentibus quam in specie citata. Arbores inter maximas, ut videtur 40-50 m. altae trunco cylindrico robustissimo basi radicibus tabularibus magnis fulto. Folia opposita; pinnae in speciminibus nostris saepius 7-8- (rarius 5 vel 6-) jugae; foliola 27-31-juga, magnitudine forma et paginae inferioris stratu ceroso albo detergibili ut in specie citata. Ramuli fertiles (elongati, semierecti vel horizontales), inflorescentiae, flores et legumina iis speciei citatae similia. Flores odore alliaceo; staminodia alba.

Habitat in silvis primariis solo argilloso non inundabili. Haud infrequens circa Esperança ad ostium fluminis Javary (5-II-1942, Ducke 1015); prope São Paulo de Olivença visa.

Herbarium material of the present tree would easily be attributed to the rather common *P. oppositifolia*, but from the view point of a plant physiologist it is a different species. The inner bark of *P. alliodora* was garlic-scented in all trees examined (a dozen, perhaps), like some other species of the same genus. In *P. oppositifolia*, however, the bark and the twigs have a strong smell of methyl salicylate which reminds us of certain anti-rheumatic remedies; this odor was constant in the numerous trees examined during my many years of travel throughout Amazonia.

Because of that odor, *P. oppositifolia* has a special vernacular name ("japacanin"), while all other *Parkiae* are designed with the popular names "visgueiro" (Pará) or "araracucupy" (Amazonas).

P. alliodora is one of the biggest trees of the virgin upland rain forests of the Upper Amazon.

P. oppositifolia, however, is more often of medium size, seldom reaching a height of 20 meters, and grows in primary and secondary forest.

DIMORPHANDRA URUBUENSIS Ducke n. sp. — E sectione *Pocillum* Tul., speciebus *congestiflora* Sprague et Sandw. et praesertim *coccinea* Ducke affinis (viz: Ducke. New species of the genus *Dimorphandra* Schott section *Pocillum* Tul., Journ. Wash. Ac. Sci. 25:193 (1935). Arbor mediocris vel sat magna (10-25 m. alta) trunco robusto cylindrico, coma lata. Ramuli juniores, foliorum petiolus et rhachides et inflorescentiarum pedunculus et rhachis dense rufomentosi. Folia petiolo sat longo modice robusto; pinnæ 8-16 (saepius 10-14) -jugae; foliola 22-38 -juga, sessilia, maiora usque ad 10 mm. longa (basalia et apicalia gradatim breviora), vix ultra 1 mm. lata, linearia, leviter falcata, basi auriculata, apicem versus vix minime angustata apice ipso obtuso, coriacea, supra rugulosa nitida, glabra, subtus opaca pallidiora longiuscule sericeo-pubescentia costa prominente subferrugineo-tomentosa, margine vulgo fortiter revoluta. Racemi sub-spiciformes saepius 2-5, vulgo 200-400 mm. longi anthesi plena 12-15 mm. lati, sat longe pedunculati rhachidibus crassis. Flores aurantiaci numerosissimi, 0,5-1 mm. pedicellati; calix vix ultra 1 mm. longus et parum latior, cupuliformis lobis brevibus, subglaber; petala circiter 3 mm. longa glabra; staminodia 5 libera glabra usque ad 4 mm. longa, lamina clavato-spatulata, longe stipitata, apice anthera rudimentari ante anthesin caduca coronata; stamina 5 libera glabra staminodiis parum breviora; ovarium subsessile longe et dense flavidovillosum. Legumina in arbore vidi vetusta, iis specierum affinium similia.

Frequens in silva mediocri vel humiliore secus ripas fluminis Urubú (civit. Amazonas) inter cataractas Lindoya et Iracema, solo valde acido arena alba et humo nigro composito, 26-IX-1941, Ducke 814.

D. coccinea Ducke (e Manáos) a specie praesente difert petiolis pedunculis et foliorum racemorumque rhachidibus tenuiter canotomentellis, foliolis aliquanto latioribus vix falcatis nec revolutis, subglabris, floribus in omni parte aliquanto maioribus pulchre coccineis. *D. confertiflora* Sprague et Sandw., e Guiana, pinnis minus numerosis et calicibus conspicue pubescentibus est diversa.

This new species seems to have a restricted geographical area, like all the species of this section.

It is a showy tree when flowering, with the widely spreading top crowned with erect candle-like inflorescences of orange color.

The trees are frequent along the banks of the Rio Urubú from the first rapid upwards, in forest of low size somewhat resembling the "Catingas" of the upper Rio Negro basin, on very poor and acid soil of white sand with black humus. Although seldom exceeding middle size, the trees rise above

the general level of that forest and constitute there the most typical element of the landscape.

D. urubuensis is the 11th. species of this section hitherto observed in Brazilian Amazonia. The others were described or mentioned in the above cited review.

CYNOMETRA LONGICUSPIS Ducke n. sp. — Arbor sat elata, glabra, foliorum magnitudine et consistentia speciei vulgari *C. Spruceana* similis, at foliolorum apice longe cuspidato-acuminato, pedicellis ut in *C. bauhiniaefolia* subfasciculatis e pedunculo communi brevissimo, legumine breviter obovato parum compresso pericarpio durissime lignoso sublaevi glabro.

Tonantis, in silva non inundabili loco humido ultra Villa Velha, fructibus maturis, 15-II-1944, Ducke 1593; prope São Paulo de Olivença visa.

This new species of "jutahy-rana" is characterized by its leaves and fruits. The poor fragments of old flowers I have found do not show differences from those of the widely distributed *C. bauhiniaefolia*. The pod is glabrous and differs from the pods of all other species I have seen by its hard ligneous (not more or less spongy) pericarp.

MACROLOBIUM PARVIFLORUM Ducke n. sp. — Arbor parva ramis paucis, vetustioribus fuscis, novellis pallidis, parum lenticellosis, minime canopuberulis. Stipulae e basi lata setaceae, parvae, subsistentes. Folia glabra praeter foliolorum costam medianam subtus pilosulam; petiolus 6-10 mm. longus, rhachis depressa et canaliculata, non alato-dilatata; foliola vulgo 11-13-juga saepius 12-juga rarissime 14-juga, subsessilia, ramorum fertilius usque ad 50 x 15 mm. mentientia basalibus parum minoribus, apicalibus parvis, subrectangulari-elongato-oblonga, basi inaequilatera truncata, apice subtruncata et in centro latiuscule emarginata, margine tenuiter recurva, subcoriacea, supra nitida subtus parum nitidula et pallidiora, supra crebre et distincte subtus obsolete penninervia et reticulata. Racemi saepe bini, simplices, vulgo 30-50 mm. longi, vetustiores solum in parte terminali floriferi floribus anthesi sublaxis; rhachis minute canopilosula; bracteae vix 2 mm. longae late ovatae acutae subsericeae anthesi caducae. Florum pedicelli ad 2 mm. longi; bracteolae anthesi circiter 4 mm. longae lanceolato-oblongae canosericeae, acuminatae; calyx minimus membranaceus; petalum album glabrum, ungue circiter 4 mm. longo basi minute pilosulo, lamina parva. Stamina purpurea circiter 8 mm. longa filamentis basi albopilosis; ovarium breviter stipitatum, pluriouulatum, secus suturas albopilosum, stylo staminibus subsaequilongo glabro. Legumen novellum solum visum,

e stipite inclinatum, obliquum, sutura superiore dilatata, maturum probabiliter elastice dehiscens.

Manáos, Cachoeira Grande, silva loco alto, 30-X-1943, Ducke 1418. Arbor unica visa. Affine speciei *M. furcatum* n. sp. qua divergit statura parva, indumento, foliolis subrectangularibus, racemis simplicibus, floribus pro genere minimis (legumen *M. furcati* autem ignotum).

In the system of the *Macrolobia* of the Amazon (viz: "Tropical Woods" 65:24, March 1941), the present and the following species (*M. furcatum*) might have their places after the small group formed by nos. 18, 19 and 20 (*M. caudiculatum*, *M. multijugum* and *M. flexuosum*).

MACROLOBIUM FURCATUM Ducke n. sp. — Arbor ultra 20 m. alta, partibus vegetativis omnibus glabris (exceptis pilis microscopicis in foliolis novellis). Ramuli rufobrunnei. Stipulae non visae. Foliorum petiolus vulgo 8-12 mm. longus, anguste canaliculatus, rhachis latius canaliculata, depressa sed non alato-dilatata; foliola (in foliis normalibus) 12-14-juga saepius 13-juga, subsessilia, usque ad 30 x 10 mm. mentientia basalibus et apicalibus quam reliqua non multo minoribus, sat anguste oblonga basi oblique acuta inaequilatera et subauriculata, apice obtusa vel retusa et minime mucronulata, margine non vel vix recurva, subcoriacea, concolora, supra magis quam subtus nitida, supra obsolete subtus distincte crebre prominenti-penninervia et reticulata. Racemi saepius 40-50 mm. rarius ad 60 mm. longi, parum super basin saepissime bifurcati ramum lateralem minorem emittentes, adulti solum in dimidio vel duobus tertiis superioribus floriferi floribus sublaxis, glabri vel (novissimi) subglabri. bracteis circiter 3 mm. longis ovato-lanceolatis breviter acuminatis glabris margine praesertim apicem versus dense albociliatis, ante anthesin caducis. Florum pedicellus vix ad 3 mm. longus, glaber; bracteolae fusco-rufae 6-7 mm. longae ovato-oblongae apice obtusae vel brevissime abrupte acuminatae, glabrae, persistentes; calyx brevis glaber laciniis 4 inaequalibus membranaceis; petalum ungue circiter 7 mm. longo lamina parva pallide rosea conduplicata glabra; stamina circiter 12 mm. longa glabra purpurea; pistillum praeter ovarii basin parce albopilosam glabrum, ovario modice stipitato ovulis 5 vel pluribus stylo usque ad 20 mm. longo. Legumen ignotum.

Habitat in silva paludosa rivuli inter campos altos prope Boa Vista, Rio Branco, in civitate Amazonas, 27-VIII-1943, Ducke 1394. Arbor unica visa. Speciebus *M. multijugum* (DC.) et praesertim *M. parviflorum* n. sp. affine videtur, statura elata et glabritie partium fere omnium commemorat primam speciem, habitu et foliis potius secundam. Racemi in

speciminibus nostris, ex una sola arbore oriundis, fere omnes bifurcati, quod, ut in arboribus pluribus observetur, characterem specificum bonum constituere potest.

This well defined new species was discovered on the Upper Rio Branco in the savannah country of which one half appertains to Brazil, the other to British Guiana.

With the three species here described and *M. Jenmani* (Gleason) Sandw. from the Upper Demerara river, British Guiana, the number of the *Macrolobium* species growing in the hylaea of the Amazon with the Guianas is now increased to 33.

MACROLOBIUM TENUE Ducke n. sp. — Speciei *M. brevense* Ducke affine, differt statura humili, foliis minus numerosis, membranaceis, opacis, discoloribus, racemis brevissimis, tenuius canosericeis, floribus minoribus, pedicellis brevissimis, bracteolis angustius oblongis acutis. Arbor parva ramulis canopuberulis. Stipulae parvae setaceae caducae. Folia subglabra; rhachis inter juga regulariter subalato-dilatata; foliola 15-18-juga forma ut in specie citata at in omni aetate tenuiter membranacea, utrinque opaca subtus pallida, nervis supra nullis subtus plus minus obsolete, magnitudine ut in specie citata at nonnunquam maiore (usque ad 24 x 8 mm.). Racemi axillares vulgo ad 15 rarius ad 20 mm. longi, tenues, undique tenuissime canosericei; bractee anthesi caducae; pedicelli brevissimi; bracteolae 4-6 mm. longae obovato-oblongae vulgo acutae, extus canotomentellae intus densius albidosericeae; calix minimus, segmentis membranaceis, glabris; petalum album longe unguiculatum lamina orbiculari; stamina purpurea filamentis elongatis basi ciliis longis conspersis; ovarium stipitatum suturis longe et dense albivillosis; stilus basi excepta glaber, elongatus. Legumen ignotum.

Habitat prope Esperança (ad ostium fluminis Javary in civitate Amazonas) in silva vix inundabili secus rivum, 23-IX-1942, Ducke 1025.

This new species shows close affinity to *M. brevense*, observed in the same locality as well as in the Pará estuary.

M. tenue has hitherto been found in only one place; *M. brevense*, contrarily, is one of the rather numerous species of trees which grow in the upper basin as well as at the mouth of the Amazon but which never have been observed in the middle Amazon country.

TACHIGALIA ALBA Ducke — I recently collected flowering specimens and ripe fruits from a tree of the rain forest near Manáos (Ducke 932). The fruits differ from those of the other Amazonian species (whose fruits are known), by the large size (120-130 x 40-47 mm.).

The fruits of the common *T. paniculata* Aubl. are much smaller, measuring ordinarily about 50 x 25 mm.

TACHIGALIA ARGYROPHYLLA Ducke n. sp. — Ex affinitate specierum *T. alba* Ducke et *T. paniculata* Aubl., ab ambabus differt ramorum floriferorum foliis argenteo-sericeis et foliolis in folio vulgo magis numerosis. Arbor circiter 30 metralis, trunco cylindrico valido cortice cinereo, coma ampla. Ramuli juniores canotomentelli. Stipulae parvae segmentis paucijugis lanceolato-subulatis, praecociter deciduae. Foliolorum petiolus et rhachis tenues, superne canaliculati, sericei; petiolus in parte media saepissime in bursam oblongam excavatam et a formicis habitatam dilatatus; foliola 5-9-juga, magnitudine et forma eorum *T. albae* at tenuiora, costis lateralibus paucioribus (utrinque e costa centrali 5 vel 6), venulis in utraque pagina distincte reticulatis (ut in *T. paniculata*), juniora (in ramis floriferis) tomento minuto sericeo, supra tenui vix nitidulo et cito evanescente, subtus denso et nitido, argentata. Inflorescentiae ut in *T. paniculata* folia vix aequantes, in omni parte dense albidosericeae, bracteis ut in *T. alba*, anguste lanceolatis ante anthesin caducis; flores iis *T. albae* exacte similes, odorati, calice pallide subviolascenti-viridi, petalis pallide flavis cum uno luteo, antheris rufis. Legumina non adsunt.

Habitat in silva riparia non inundabili ad Rio Negro inferioris canalem Paran  de Anavilhana inter ostia fluminum Cuieiras et Araras, in civitate Amazonas, 20-VI-1941, Ducke 936.

This species resembles *T. alba* in the size and the shape of the tree, as well as in dimensions and form of the leaflets, bracts and flowers.

It diverges, however, by the presence of ant purses on the petioles, by more numerous, reticulate-veined and densely silky leaflets, and by much shorter panicles.

From the common and variable *T. paniculata*, it differs chiefly by the large size of the tree, the thin petiole and rachis of the leaves, the very silky leaflets with much more oblique base. From both, by more numerous and silky leaflets.

I am describing this tree as a new species, although possibly it can be conspecific with one of the Guiana-species which I have not seen.

It is a rain forest tree of pretty aspect when flowering, with its bright silver-silky young foliage.

I note that the silk is perfectly equal on the leaves whose petiole is excavated and inhabited by ants, as it is on those leaves (more rarely found) which have no ants.

TACHIGALIA PLUMBEA Ducke n. sp. — Speciei *T. myrmecophila* Ducke in civitate Pará frequenti arcte affinis, at constantiter differt statura minore, trunci cortice minus obscuro, stipulis foliaceis magnis et magis persistentibus, 1-2-jugis jugo basali parvo, terminall amplo, hujus segmentis late ovatis vel rarius obovatis saepe usque ad 20 mm. rarius 25 mm. longis et ad 10 vel usque ad 15 mm. latis, foliis ramorum fertilium tomento sericeo minuto at denso plumbeis, in fertilibus ut in sterilibus 4-5-jugis. Arbor submagna trunco robusto stricto cylindrico obscure viridi-cinereo. Petioli a formicis cavati; foliola valde inaequilatera, elastice coriacea, in arbore sterili fugaciter sub-aureo-sericea dum novissima, cito glabrata et demum valde nitida, in floriferis cum ramulo toto et inflorescentiis plumbeo-sericea. Flores pallide flavi ut in speciebus vicinis.

Habitat in civitatis Amazonas silvis non inundatis, lecta circa Manáos (Ducke 817, sterilis; Ducke 818 et cum ligno 349 in Yale, et Herb. Jard. Bot. Rio 24289, florifera) et circa Porto Velho ad flumen Madeira (Ducke 288, H. J. B. R. 35419, florifera). Mense junio florebat. Nomen vulgare "tachy preto" (cum alteris).

I formerly confounded this species with *T. myrmecophila* Ducke, the "tachy preto" of the upland rain forest of Pará, frequent around the city of Belém and also found on the middle Tapajós.

T. myrmecophila, well known for yielding a bark used for tanning, is however a big tree, often of giant dimensions, with a much darker blackish brown trunk; it has leaves which seem to have never more than 5 leaflets, small and very caducous stipules, and a thinner gray indumentum on the flowering branchlets.

Both species differ from the common and nearly always also myrmecophilous *T. paniculata* Aubl. by the large size of the trees, by form and dimensions of the stipules, by strongly inequilateral and more coriaceous leaflets, and by the very different color of the leaves of the fertile branchlets.

T. RIGIDA Ducke, another myrmecophilous species which grows in "igapó" in the Upper Rio Negro basin, is a small tree with less inequilateral leaflets covered beneath with dense silky pubescence even in mature age.

T. CAVIPES (Spr. ex Bth.) Macbride = *T. paniculata* var. *cavipes* Spr. ex Bth., is certainly not a variety of the common *T. paniculata* from which it differs by strongly inequilateral leaflets densely covered with gray tomentum.

The specimens now available consist, however, only of

flowering branchlets with very young leaves and are not sufficient for comparison with the neighboring species.

Flowering specimens (Herb. Jard. Bot. Rio 10983 and 16924), distributed some years ago under the name *cavipes*, can belong to this or to another (perhaps to a new) species.

They came from trees of the upland forest of the Tapajós, remarkable for their smooth reddish bark.

BAUHINIA AMPLIFOLIA Ducke n. sp. — Frutex elatus, inermis, ramulis glabris, lenticellosis. Stipulae non visae. Folia glabra; petiolus 30-40 mm. rarius 50 mm. longus; lamina 100-190 mm. longa et 80-150 mm. lata, ad 1/3 (vel parum altius vel profundius) acute biloba lobis triangularibus inaequilateris breviter acutis vel saepius longe falcato-acuminatis, basi late subcordata, membranacea, concolor et nitidula, 9-vel saepius 11-nervis, his nervis subtus valde prominentibus, venulis transversis et reticulatis utrinque tenuiter prominulis. Pedicelli e pedunculo folio opposito gemini vix 3 mm. longi, pilosuli; bracteae et bracteolae parvae subulatae. Alabastra adulta usque ad 130 mm. longa apice attenuata appendiculis nullis vel rudimentaribus, ecostata vix obscure striata, canotomentella. Calicis tubus anthesi 40-50 mm. longus; laciniae 80-100 mm. longae, plus vel minus spathaceo-cohaerentes. Petala viridialba, glabra, 90-100 mm. longa, dimidio basali in unguem tenuissimum contracta, dimidio apicali in medio usque ad 9 mm. dilatata, apicem versus attenuata et in acumen setaceum terminata. Stamina 10, omnia antherifera at 5 filamentis et antheris brevioribus, alba, glabra, maiora petalis aequilonga. Pistillum glabrum, ovario longe stipitato, stilo longo, stigmatate valido. Legumen glaberrimum, adultum usque ad 200 mm. longum, supra ad 30 mm. latum, stipite ad 50 mm. longo.

Habitat prope Tabatinga (in civitate brasiliensi Amazonas), ad ripas Paraná de Aramassa in "varzea" rarius inundabili, 4-III-1944, Ducke 1594; prope Iquitos (in Peruvia amazonica), silvula secundaria, 1-VII-1906, Ducke Herb. Amaz. Musaei Paraensis 7552.

Foliis amplis membranaceis ad tertium bilobis speciei *bicuspidata* Bth. (et forsán speciei extra-amazonicae *longifolia* Steud.) similis, at florum (praecipue petalorum) structura versus speciem *B. acreana* Harms vergens.

The Central Brazilian *B. longifolia* differs, according to Bentham's description, by narrow linear petals (not dilated over the middle). I do not know if the plant of Amazonian Peru, attributed by some authors to that species, will really belong to the same or perhaps to the present new species. In herbarium specimens, the petals of the plants of this group are seldom well preserved.

BAUHINIA ALTISCANDENS Ducke n. sp. — Ex affinitate specierum *B. confertiflora* Bth. et *B. Sprucei* Bth., praesertim prioris qua differt foliis longe et abrupte acuminatis subtus tomento minuto subcupreo-micantibus vel ferruginescentibus, racemis longioribus, bracteis bracteolisque parvis angustis, alabastris oblongis vel ovoideo-oblongis apice denticulis 5 parvis munitis, calice sub anthesi vulgo angustius campanulato valide costato-striato apice truncato denticulis 5 minimis, petalis anguste spatulato-oblongis valde inaequalibus unguiculo calicem non superante. Frutex robustissimus in arbores altissimas scandens. Foliorum petiolus 25-45 mm. longus; lamina 40-110 x 35-110 mm. metiens, integra, suborbicularis basi cordata apice vulgo longe acuminata, infra acumen abrupte plicata, in exsiccatis saepe in medio longitudinaliter fissa, rigide coriacea, supra glabra nitida, subtus plus minus rufotomentella. Panicula vulgo ampla multiramosa tenuiter rufotomentosa, racemis numerosis accrescentibus in parte apicali dense floriferis, non raro incurvis subscorpioideis; calix adultus 4-6 mm. longus, in alabastro angustus, anthesi apice 5-6 mm. latus, rufotomentellus; petala alba, rufopilosa, 10-15 mm. longa; stamina brevia sat inaequalia, glabra; ovarium tenuiter sericeum. Folia siccitate interdum in medio longitudinaliter fissa simulant folia bipartita, in multis hujus generis speciebus occurrentia.

Sat frequens in silva primaria non inundabili circa Esperança (ad ostium fluminis Javary, in civitate Amazonas), 28-I-1942, Ducke 895.

The present new species is one of the largest lianas of the upland rain forest of the western part of the Brazilian State of Amazonas. Its sweet-scented flowers appear on the tops of the biggest trees. Although this species belongs to a very large genus it seems to be easily recognizable by the characters enumerated in the above diagnosis.

B. Tessmannii Harms and *B. Guentheri* Harms, both from subandine Eastern Peru, according to the descriptions seem to have affinity but differ in various characters of the leaves, the bracts and the calyx.

BAUHINIA PARVILOBA Ducke n. sp. — Ex affinitate speciei paraensis *B. platycalyx* Bth., divergit foliis magis latis quam longis, subtus rufotomentellis, pedicellis longioribus, alabastris apicem versus subattenuatis, petalorum pilis sericeis minus densis, albis, petalorum maiorum lamina minus lata, oblonga. Frutex alte scandens, ramulis et foliorum pagina inferiore rufotomentellis, vetustis glabratis; foliorum laminae vulgo 50-100 mm. longae et 55-120 mm. latae, ab apice usque ad 1/8 — 1/5 bilobae lobis breviter acuminatis, coriaceae,

utrinque nitidulae, 9-11 nerviae et tenuissime vel subobsolete reticulatae. Racemi modice longi et modice multiflori, rufotomentelli, bracteis bracteolisque parvis subulatis cito caducis, pedicellis sub anthesi ad 5 mm. longis. Alabastra ovoidea apicem versus leviter attenuata, apice minute 5-denticulata. Calix anthesi 5-6 mm. longus et latus, campanulatus, strii longitudinalibus vix elevatis, rufotomentellus; petala inaequalia, calicem fere triplo superantia, spatulato-oblonga unguiculo calicem non superante, alba, modice dense albosericea, centrali (minimo) luteo; stamina brevina, inaequalia, glabra; pistillum tenuiter sericeum. Flores odoratissimi. Legumen ignotum.

Habitat in silva non inundabili circa Esperança (ad ostium fluminis Javary), 10-X-1942. Ducke 1069.

The present new species has the aspect of *B. platycalyx* of the estuary and littoral of Pará.

The latter differs by not so broad and entirely glabrous leaves, shorter pedicels, a little broader flower buds, very dense and rusty colored silk of petals, and broader blade of the larger petals.

Genus SCHIZOLOBIUM Vog. — Botanists who study the Central American flora are still in doubt whether the two species described from those countries should be accepted as "good" or relegated to the range of mere varieties of the southern *Sch. excelsum* Vog. — *Sch. parahyba* (Vell.) Blake emend. (*). There is, however, no doubt that the hylaeatree *Sch. amazonicum* Huber ex Ducke is not co-specific with the South Brazilian species. The divergencies visible in herbarium specimens are certainly rather insignificant: in *Sch. amazonicum*, flowers and fruits are smaller than those of the other; the pedicels are evidently articulated at the superior tierce; the petals are glabrous and more oblong and more rigid. More important differential characters, inaccessible to herbarium botanists, are however observed on living plants. 1.^o The young stems of *Sch. excelsum* are deep green, not shining, marked with numerous scars of fallen leaves at regular distances, with fern-like aspect; the stems of *Sch. amazonicum* of the same age are bright green, shining because of the presence of a viscid resinous secretion, with rather inconspicuous scars of the fallen leaves (which are not as big as in the other species), and nothing of fern-like aspect. 2.^o

(*) — Not *parahybum*: because the species-name *parahyba* given by Velloso is not an adjective but a substantive, an aboriginal name applied in Southern and Central Brazil to some light-wood yielding trees, as for example, *Simaruba versicolor*.

Old trees of *Sch. excelsum* bear their rather pale yellow flowers simultaneously with the young foliage, and the flowering crowns are not very showy; on old *Sch. amazonicum* trees, on the contrary, the flowers which are bright yellow appear before the new foliage, and the blossoming crowns are of remarkable beauty. It is also to be noted that these differences are constant in plants of the two species, of the same age, and cultivated together in the same place. This was observed in the Jardim Botânico of Rio de Janeiro, and also in one place near Manaus where examples of *Sch. excelsum* of South Brazilian origin were cultivated.

SCLEROLOBIUM LEIOCALYX Ducke n. sp. — Arbor magna ramulis sulcatis striatis, junioribus canopuberulis. Stipulae et stipellae non adsunt. Folia petiolo et rhachi tenuibus, sat obsolete canaliculatis, canopuberulis; foliola 5-7-juga rarius 8-juga, petiolulis 4-8 mm. longis tenuibus vel modice robustis, vulgo 60-120 x 30-60 mm. metientia, lanceolato-ovato-oblonga, obliqua, basi vulgo valde inaequilatera magis minusve cordata vel rotundata apice longe acuminata et saepe falcata, marginibus subtus tenuiter revolutis, elastice coriacea, utrinque nitida fere concolora, undique glaberrima, costis supra immersis subtus modice prominentibus, lateralibus paucis et dissitis, rete venularum utrinque prominulo et denso. Panicula ampla floribunda foliis longior, pedunculo communi elongato sparsim puberulo, hujus ramis densius canopubescentibus. Bractee paucae setaceae subglabrae ante anthesin caducae; pedicelli 1-2 mm. longi tenuiter albidosericei. Flores albi staminibus luteis; odorati, in alabastro adulto globosi diametro vix 2,5 mm.; calicis tubus brevissimus subsericeus, lobi glabri solum basi et marginibus minime pilosulis; petala linearia lana alba detergibili longa et densa vestita. Staminum filamenta basi albolanata. Ovarium breviter stipitatum, albopilosum praesertim secus suturas. Legumen iis specierum reliquarum structura simile, obovato-oblongum, 50-60 mm. longum, 20-30 mm. latum, exocarpio maturitate fuscescente, soluto.

São Paulo de Olivença, frequens in silva "catanga"; ferebat 15-X-1942, Ducke 1028, fructibus maturis 1-IV-1944, Ducke 1498. Species calice subglabro a caeteris speciebus amazonicis divergens, exceptis *Sc. macropetalo* et *Sc. micropetalo* characteribus aliis insignibus.

This new species is one of the largest trees of the "catanga" forest which grows on sandy soil of the uplands near São Paulo de Olivença. It is easy to recognize by its small flowers with nearly glabrous calyx lobes, a character not observed in the present genus except in the two above species which diverge from all others by the broad petals.

SCLEROLOBIUM MICROPETALUM Ducke n. sp. — Arbor 40 m. alta vel altior, ramulis sulcatis et striatis, junioribus canotomentellis. Stipulae non adsunt. Folia usque ad 500 mm. longa, apice ramulorum congesta; foliola saepius 8-juga rarius 7 vel 9-juga, exstipellata, petiolulis crassis 2-4 mm. longis, vulgo 100-180 mm. longa et 35-60 mm. lata (jugorum inferiorum saepe multo minora), oblonga vel sublanceolata-oblonga vix obliqua, basi inaequilatera rotundata vel obtusa, apice longe acuminata, elastice subcoriacea, utrinque nitidula, supra glabra siccitate fuscescentia, subtus minute canotomentella, costis supra tenuibus subtus prominentibus, lateralibus utrinque e centrali 12-15, sat approximatis, rete venularum supra denso subruguloso, subtus laxiore: Panicula ampla floribunda foliis parum altior, e basi ramosa, foliis parvis foliola angusta saepe revoluta ferentibus hinc illinc fulta, pedunculis; rachidibus et pedicellis canopuberulis. Bractee setaceae parvae minime pilosulae cito caducae; pedicelli vix ultra 2 mm. longi. Flores odore forti, sepalis viridibus, petalis staminibusque luteis (in vivo), in alabastro adulto globosi diametro vix ad 1,5 mm. (in siccis); calicis tubus brevissimus minime pilosulus, lobi glabri. Petala minima, in vivo circiter 1 mm. longa, obovata, glabra. Staminum filamenta sparsim pilosa apice glabra. Ovarium in vivo viride, ad suturas et in apice longe setosum, stipite brevi. Fructus ignotus.

Manãos, in silva primaria terris argillosis ultra locum Flores, 13-IV-1943, Ducke 1219. Arborea duae visae. Species petalis brevissimis obovatis glabris notabilis.

This new species is easy to recognize because of the very small flowers with short, obovoid, glabrous petals.

I saw hitherto only two trees, both in the upland rain forest northeast of Manãos.

ALDINA OCCIDENTALIS Ducke. — A second individual was recently discovered (Ducke 1499) in the type locality. São Paulo de Olivença; a very large tree with adult flowers (the type of the species had only flower buds). The species is not akin to *A. heterophylla* (as it has been told in the diagnosis), but more like *A. latifolia*, from which it diverges by minutely tomentellous under surface of leaflets, somewhat smaller flowers (shortly obovate in the bud), and sessile ovary. The flowers of *A. heterophylla* are much smaller and have less numerous and shorter stamens. Like the other two species, *A. occidentalis* flowers in the rainy season. The fruit remains unknown.

SWARTZIA LAMELLATA Ducke — The arillus of the seed is small, white, and nearly tasteless.

SWARTZIA RETICULATA Ducke — The fruit of this small tree is one of the largest of the genus, as large as that of the common *Sw. acuminata* or even larger, but more round and somewhat thinner.

The seed is less convex and has a very large arillus of bright yellow color and bitter taste.

SWARTZIA URUBUENSIS Ducke n. sp. — Ad sectionem *Orthostylae* Bth., speciei *S. acuminata* Willd. affinis, divergit foliorum numero consistentia colore et nervatione, inflorescentiarum tomento denso et laete ferrugineo, staminibus maioribus minus numerosis. Arbor parva. Ramuli novelli ut folii rhachis petiolus et petioluli tomento minuto denso ferruginei; vetustiores glabrati. Stipulae et stipellae nullae. Folia usque ad 300 mm. longa, petiolo et rhachide tenuibus subteretibus; foliola 5-9, longe (10-15 mm.) et tenuiter petiolulata, rhachidis internodiis longis, vulgo 60-140 mm. longa et 30-65 mm. lata, plus minus lanceolato-oblonga, basi obtusa vel rotundata, apice oblique plicata et longe cuspidato-acuminata, adulta irime chartaceo-coriacea margine revoluta, utrinque glaberrima, supra nitidula, subtus opaca et parum palliiora nervis supra impressis costa excepta parum conspicuis, subtus subgranuloso-rugosa nervis lateralibus tenuiter prominulis utrinque 9-12 magis conspicuis inter se distantibus, cum nervis tenuissimis paucis intermixtis, marginem versus arcuatis et anastomosantibus. Racemi infra folia e ramulis vetustioribus, ad 150 mm. longi et nonnunquam longiores, ubique dense minute ferrugineo-tomentosi. Bractee parvae lanceolatae caducissimae. Pedicelli 6-11 mm. longi, sat validi; bracteolae lanceolatae parvae medio pedicelli insertae. Alabastra globosa, adulta diametro 6-8 mm. Calix sub anthesi in lobos 5-7 mm. longos intus glabros et granulosis fissus. Petalum ad 20 mm. longum, ad 25 mm. latum, album, utrinque glabrum, tenue unguiculo crassiore, nervis sat validis ex unguiculi apice irradiantibus apicem versus reticulato-anastomosantibus. Stamina glabra; maiora 3 (semper ?), filamentis longis antheris oblongis 0,5-1 mm. longis; minora numerosissima filamentis gracillimis inaequalibus antheris parvis compressis magis latis quam longis. Pistillum glaberrimum, ovario longe stipitato et in stilum subulatum elongatum rectum vel parum incurvatum exeunte. Fructus ignotus.

Rio Urubú (civ. Arnazonas), inter cataractas Lindoya et Iracema in silva riparia, 27-IX-1941, Ducke 1013.

This new species grows on the shores of the middle course of the Rio Urubú in forest of rather small size which resembles that of the "catanga" country of the Upper Rio Negro basin.

SWARTZIA LONGISTIPITATA Ducke n. sp. — Ex affinitate speciei *Sw. brachyrhachis* Harms. Arbuscula ramulis cinnamomeis pallido-lenticellosis, appresse canopilosulis. Stipulae parvae subulato-setaceae. Folia petiolo et rhachi tenuibus non alatis, breviter canopilosulis, petiolo 8-12 mm., rhachi 15-25 mm. longis; foliola in speciminibus nostris constanter 3, existipellata, petiolulis 2-4 mm. longis quam rhachis robustioribus et densius pilosis, foliolum terminale vulgo 60-80 mm. longum et 30-45 mm. latum, foliola basalia multo (duplo vel triplo) minora, foliola omnia ovata basi saepius obtusa apice longe et abrupte acuminata acumine ipso retusiusculo, sat firme et elastice membranacea tenuia, concolora, supra glabra valde nitida, subtus vix nitidula microscopicè papillosa et in costa centrali (prominente) pilosula, costis lateralibus (dissitis) et venulis reticulatis in utraque pagina tenuiter prominulis. Racemi in axillis superioribus, 40-80 mm. longi, pauciflori, rhachibus gracilibus appresse canopilosulis, bracteis parvis subulatis pilosis sat caducis, bracteolis non visis, pedicellis circiter 10-20 mm. longis strictis appresse pilosulis. Alabastra adulta globosa diametro 8-9 mm., microscopicè lepidotula et tenuiter canosericea. Calix anthesi in lobos 4 circiter 10-12 mm. longos reflexo-patentes intus granulosis glabros lateraliter fortiter involutos fissus. Petalum album, sicum circiter 20 mm. longum et 25 mm. latum, venosum, maxima ex parte glabrum sed venis supra in dimidio basali sparsim albociliatis. Stamina minora numerosa glabra filamentis brevibus inaequalibus contortis gracillimis, antheris 1 mm. parum longioribus et parum minus latis; stamina maiora 2 ad 4 filamentis validioribus 15-18 mm. longis glabris, antheris 2-4 mm. longis sat anguste oblongis tenuiter albolanatis. Pistillum glabrum, ovario falcato-oblongo glabro stipite 12-15 mm. longo, stylo uncinato incurvo 2-3 mm. longo. Fructus calice persistente fultus, e stipite vulgo 15-20 mm. longo, circiter 20 mm. longus, obovoideo-oblongus (in speciminibus nostris compressione deformatus), aurantiacus.

Habitat circa Manáos in silvis non inundatis, ut videtur rara; florifera lecta in terris altis ultra locum Flores, 24-XII-1942, Ducke 1131; fructifera inter Coloniam Campos Salles et flumen Tarumã, 25-IV-1932, Herb. Jard. Bot. Rio, Ducke 24217.

Like some others of this genus, the present new species is a treelet of the lowest layer of the virgin upland rain forest. It is evidently allied with *Sw. brachyrhachis* Harms, but several characters of leaves and flowers distinguish the two species.

ORMOSIA COUTINHOI Ducke — *Macroule Coutinhoi* (Ducke) Pierce, "Tropical Woods" 71:1 (1942). — Pierce created

from this species his new genus *Macroule*, on some characters of the flowers and the seeds. These characters are however not more important than those which usually define mere sections in a large number of genera of *Leguminosae*, and therefore they seem to be insufficient to accept that innovation.

The new genus *Macroule*, however, must be kept if its wood is really different from that of the common species of *Ormosia*.

Pierce (l. c.) did not mention the wood, but Record, in "Tropical Woods" 71:32 (1942) described a wood sample received from British Guiana as belonging to the same species.

The Guiana tree is said to grow to a height of 110 feet, and 3 feet in diameter, and to have a heartwood which bears some resemblance to *Bowdichia*.

In contrast, the "buiussú" of Pará, frequent in swamp forest around the city of Belém and well known to all people, is a tree not over 20 meters high and seems to never have any heartwood.

Its wood is considered useless; if it would show any resemblance to the wood of *Bowdichia*, it would be known as being useful and designated with the popular name of "sapupira" given to the various kinds of wood resembling *Bowdichia* wood.

I myself saw many felled "buiussú" trees and never found any heartwood.

Sandwith, who identified the herbarium material of British Guiana with that of the "buiussú" of Pará, is certainly the best connoisseur of the forest flora of the Guianas, but the wood may eventually not come from the same tree.

Or, perhaps, there are two species differing only in the size and in the wood?

ORMOSIA CHLOROCALYX Ducke n. sp. — Arbor parva partibus vegetativis omnibus glabris. Ramuli mediocriter validi, anguste fistulosi. Stipulae nullae. Folia ramorum fertiliūm 200-300 mm. longa, petiolo infra jugum infimum 70-90 mm. longo, sat tenui, vix canaliculato; foliola vulgo 7 rarius 5 vel 9, petiolulis 4-6 mm. longis conspicue canaliculatis, laminis oblongis usque ad 170 mm. longis et ad 55 mm. latis, foliolo supremo brevior et latior magis obovato, basalibus vulgo dimidio minoribus magis ovatis, omnia basi acuta vel obtusa, apice acuminata, subcoriacea, concolora at supra magis quam subtus nitida, costis mediana et lateralibus (his utrinque 4 ad 6) supra immersis subtus prominentibus, venulis in utraque pagina tenuissime prominulis. Panicula florifera terminalis ampla e racemis longe pedunculatis infra nonnunquam

ramulosis composita, rhachidibus et pedicellis cinereo-stri-goso-pilosulis demum glabratis, his 3-4 mm. longis tenuibus, bracteis non visis, bracteolis duabus setulosis ad pedicelli apicem, 1,5-2 mm. longis. Calyx in vivo laete viridis, 12-14 mm. longus et apice plus vel minus aequaliter latus, sat obliquus, membranaceus, vix ad 1/3 ab apice fissus lobis superioribus altius connatis, basi stipitatus, extus praesertim basi, intus apice loborum pilosulus. Petala nigro-violacea, vexillo macula alba signato, glabra, hoc 13-15 mm. longo, lamina sub-ovato-orbiculari basi et apice emarginata, basi juxta unguiculi apicem biappendiculata, unguiculo brevi, alis et carinis vexillo subaequilongis, alarum lamina late obovata, carinis quam alae dimidio angustioribus, lividis. Stamina glabra, 5 longiora 5 breviora. Ovarium e stipite brevi, pluriovulatum, densissime cano-sericeohirtum, stylo supra glabro. Legumen ignotum.

Esperança (ad ostium fluminis Javary), "Igarapé" ad os-tium rivi Santo Antonio, 17-III-1944, Ducke 1516. Arbor uni-ca visa.

The section of the genus where this species should have its place cannot be determined because of lack of fruits. At first view, there is some resemblance with *O. macrocalyx* Ducke of the subsection *Unicolores*, but the last species diverges by the peculiar shape of its vexillum. The blossoming tree is remarkable by its bright green calyx (not observed in other species) which contrasts sharply with the deep atrovioleaceous (nearly black) petals.

TARALEA NUDIPES (Tul.) Ducke — The locality of the type was the "Province of Pará".

This type, however, came from Lisbon and certainly was one of the plants collected by Alexandre Rodrigues Ferreira in the Rio Negro basin, present State of Amazonas. I recently observed some trees near Manáós, along the Igarapé do Crespo, in marshy and sometimes flooded forest with dense undergrowth of "jará" palms (*Leopoldinia pulchra* Mart.).

Fertile specimens were collected, evidently conspecific with the flowering specimen Ule 8360 which was also from Manáós but erroneously labeled as a "climbing shrub".

T. nudipes differs from the common and variable *T. oppositifolia* Aubl. by constantly alternate leaves with smaller and thicker leaflets having no distinct nerves.

The bivalvate pod is like that of *T. oppositifolia*, only a little smaller.

The trees, always of small size, have a rather different aspect with relation to *T. oppositifolia*.

MACHAERIUM COMPLANATUM Ducke 1935 = *M. parviflorum* Hoehne, Flora Brasiliica, *Machaerium* 42 t. 29 (1941), non *M. parviflorum* Benth. — Hoehne (l. c.) considers *complanatum* as a synonym of *parviflorum*, but this synonymy is not acceptable.

M. complanatum is a very large climber with a flat stem, growing in upland rain forest near Tabatinga where the pluviometer registers above three meters a year.

On the contrary, *M. parviflorum* is described as "Frutex 3-4-pedalis, divaricato-ramosus. In campis siccis prope Cuyabá".

Hoehne (l. c.) makes the following comment: "Riedel described the material of the Kew Herbarium from which we have seen a photograph, and gave the plant as a shrub 3 to 4 feet high, naturally because he collected it from a shoot from a stump, in a cleared place or from the border of a campo. Because of that, the leaflets were smaller than they really are".

Riedel, however, did not say anything of that, and Hoehne never saw Riedel's plant, nor the stump from which the shoot came, nor the clearing nor the border of the campo. He saw only a photograph of a branchlet dried more than a hundred years ago.

We must also remember that no woody plant of the rain forest of the hylaea was, till now, found on the dry "campos" or "cerrados" of Mato Grosso.

I note that the above reasons are confirmed by Macbride in his excellent "Flora of Perú". Leguminosae. He maintained *M. complanatum* as a species independent from *M. parviflorum*.

MACHAERIUM COMPRESSICAULE Ducke would be, according to Hoehne (l. c.), a synonym of *M. madeirense* Pittier and of *M. latifolium* Rusby which in that case would have priority.

The plant, a woody climber with flattened stem, is widely spread in Amazonia and is found frequently in many places.

It might have been gathered by more than one collector, and described under various names.

There remains, however, a doubt with relation to the above synonymy, a doubt originated by the following observation of Hoehne, (l. c. 65): "Ducke in his description of *Machaerium compressicaule* stated that the stems are very flattened, and that he had seen some 20 cm. wide. We therefore conclude that the observation made by the collector, J. D. Smith, who labeled his material (given to Pittier), as proceeding from a tree, must be erroneous".

According to Hoehne, the type specimens of *M. latifolium* Rusby and *M. madeirense* Pittier would proceed from a sin-

gle collection, and therefore the last name should be eliminated.

But, even in this case, *M. compressicaule* being a vine, can not be reunited with *M. latifolium* = *M. madeirense* which is, according to the collector, a tree.

We must accept the indications of the labels, until the study of more abundant herbarium material as well as new field observations prove that they are erroneous.

MACHAERIUM HOEHNEANUM Ducke n. sp. = *M. enneandrum* Hoehne, Flora Brasiliica, *Machaerium*, p. 55 (descriptio ex-parte), non t. 47. — Ad par. 4, *Reticulata* Bth. Frutex robustus, caule subcylindrico alte scandente. Ramuli cinerei vel pallide cinnamomei, glabri, rimosi, crebre lenticellosi, saepe inermes, nonnulli autem stipulis spinescentibus validis armati, uno vel altero subinvoluta-curvato et aphylo. Folia ramorum fertilium vulgo 150-200 mm. vel rarius ad 250 mm. longa, petiolo (longo) et rhachi parce canopuberulis. Foliola per folium vulgo 9-13 rarissime 15, opposita vel alterna petiolulo circiter 3-5 mm. longo, in foliolo terminali longiore; laminae saepius 40-90 mm. longae et 20-35 mm. latae, in nonnullis foliis aliquanto maiores vel minores, lanceolatae vel minus frequenter lanceolato-ovatae, rarius ovatae, basi obtusae vel acutae rarius rotundatae vel subcordatae, apice vulgo longe acuminatae rarius breviter acutae, omnes mucronulatae, margine recurvo, firme membranaceae, siccitate subolivaceo-fuscescentes, supra nitidae glabrae, subtus aliquanto pallidiores nitidulae et parce puberulae, tenuiter penninerviae et reticulatae, hac nervatione supra obsoleta subtus bene conspicua at solum in minoribus et vetustioribus distincte prominula. Paniculae in axillis foliorum paucae vel secus ramulos aphyllas numerosae, novellae rhachidibus tenuibus dense fuscotomentellis ramis brevibus, vetustiores rhachidibus validis sub-glabris ramis spiciformibus sat longis valde recurvatis et saepius secundifloris; bractae ovatolanceolatae parvae; bracteolae parvae calici appressae suborbiculares fuscosericeae, post florem delapsam persistentes. Flores sessiles; calix 3-4 mm. longus et latus, campanulatus, apice subtruncatus, extus fuscosericeus. Vexillum 7-8 mm. longum, basi sat longe et tenuiter unguiculatum, lamina 8-9 mm. lata subcordato-orbiculari, fuscum marginibus solis albidis, extus dense fuscosericeum intus glabrum. Alae et carinae 8-9 mm. longae angustae, unguiculo longo apicem versus ut laminae basis longe et dense sericeopiloso, caeterum glabrae. Stamina subglabra, 10 in floribus examinatis, stamine vexillari saepius usque ad basin soluto, rarius monadelphae. Ovarium mediocriter stipitatum dense flavidosericeum stylo glabro. Legumen stipite circiter 4 mm. longo, adultum 70-80 mm. longum, leviter falcatum, reticulatum, parte

seminifera circiter 15 mm. lata margine tuberculata, ala us-
lata, adultum glabrum.
tum glabrum.

Frequens circa Manáos in terris argillosis altis, silva pri-
maria et secundaria, praesertim in mensibus pluviosis florens.
Specimina lecta loco Estrada do Aleixo, Ducke 853.

The plant here described is the most frequent *Machaerium* of the neighborhood of Manáos.

It is a climber which occurs in upland rain forest of pri-
mary or secondary growth, always on higher places with soil
of compact clay loam.

Its inflorescences are strongly recurved in mature age, like
those of *M. inundatum* (Mart.) Ducke and *M. campylothyrs-
um* Hoehne, but with dark brown (not yellow) and less dense
silk hair covering the flowers.

The pod is of the common *Machaerium* shape, with a ter-
minal wing, and very different from the thick, reniform,
wingless fruits of the two cited species.

A herbarium specimen of *M. Hoehneanum*, with young
inflorescences (Herb. Jard. Bot. Rio 23383), was attributed by
Hoehne to his *M. enneandrum*.

In consequence, the description of the latter, by that au-
thor (l. c. page 55), is a *mixtum compositum* of both species.

The drawing (l. c. tab. 47), however, is of the true *M.
enneandrum*, as well as is the first diagnosis of the latter, in
Arq. Bot. Est. S. Paulo, nov. ser. 1:32 (1938), inclusive the
drawing t. 34. The true *M. enneandrum* is a small tree of the
xerophile "cerrado" of Central Mato Grosso, according to the
label of the collector (Kuhlmann).

I saw the material collected by Kuhlmann and I would
place it in the affinity of *M. acutifolium* Vog., a tree growing
in drier regions, found in Amazonia hitherto only on the high
"campos" of Monte Alegre.

MACHAERIUM CAMPYLOTHYRSUM Hoehne — The author
of this species did not know the fruit which resembles that of
M. inundatum. Both species have the adult inflorescences
strongly recurved, and their flowers are densely clothed with
yellow silk.

The only character I was able to find to distinguish the
two, were the more numerous (7 to 15), stiffer and more lus-
trous, leaflets of *M. campylothyrsum*.

M. campylothyrsum was hitherto found only in the Rio
Negro basin (Santa Isabel, type collection; Rio Jahú tribu-
tary of the lower Rio Negro, fructifying specimens Ducke 1217),
on deeply flooded shores. A variety was described from Ama-
zonian Perú.

Both may be perhaps geographical forms of *M. inundatum*, common on flooded land around Pará, and highly variable in the size and the form of the leaflets.

MACHAERIUM ARISTULATUM (Spr. ex Bth.) Ducke. — Pod like that of the common *M. ferox* but somewhat smaller and nearly smooth. Tonantins, "igapó" in the varzea of the Solimões, Ducke 1512. According to F. C. Hoehne's monograph of *Machaerium*, the fruit of this species was hitherto unknown.

MACHAERIUM CUSPIDATUM Kuhlman. et Hoehne — A noteworthy species, among the climbing *Machaeriums* of the Amazon.

It was first collected by my colleague Kuhlmann near Yurimaguas, Amazonian Perú, in fructifying stage with some old flowers.

I later gathered floriferous material (Ducke 1038) in flooded forest along the Igarapé Santo Antonio near Esperança, mouth of the Rio Javary.

It is a robust vine, entirely inermous, with cylindrical stems, easy to recognize by form and size of the leaflets, persistent bracts, large bractlets, conspicuously striate calyx, and very densely and long hirsute petals.

The latter are of dark brown color with some white parts.

VATAIREOPSIS IGLESIASII Ducke n. sp. — Arbor circiter 40 m. alta trunco cylindrico valido, ligno foetido, interiore luteo, bono. Ramuli crassi, fistulosi, foliorum delapsorum cicatricibus numerosis notati, parce puberuli. Stipulae non visae. Folia apice ramulorum congesta; foliola in foliis maioribus usque 40 ils speciei *V. speciosa* similia at tenuiora membranacea. Flores in arbore defoliata, pulchre bicolores calice rufo-fulvo petalis caeruleo-violaceis, odorati. Paniculae in ramulis terminales ample pyramidatae usque ad 300 mm. altae et ad 400 mm. latae, e racemulis numerosis compositae, floribus numerosissimis, ramulorum tomento in parte inferiore tenui et cano, in parte superiore (florigera) densiore et rufo. Bracteae in racemulorum parte novissima cum alabastris dense imbricatae, circiter 3 mm. longae, canosericeae, maiores late ovatae et cito deciduae, minores (angustiores, lanceolatae) diutius persistentes; bracteolae in pedicelli apice utrinque sub calicis basi insertae, 2 mm. longae, lanceolatae, usque ad anthesin persistentes. Pedicelli 2 ad 3 mm. longi rufotomentosi. Calix 6-7 mm. longus, tenuiter at dense tomentosus, in vivo pulchre fulvus in sicco rufus, basi sat breviter oblique turbinatus acutus vel subobtusus, apice sub-bilabiatus, dentibus 3 inferioribus inter se distantibus sat magnis late triangularibus acutis, dentibus 2 superioribus brevioribus, angustis, magis approxi-

mat. Petala laete caeruleo-vioacea vexillo fascia longitudinali flavida e basi usque ad medium ornato, tenuiter unguiculata, glabra; vexillum circiter 12 mm. longum lamina late obovata; alae vexillo subaequilongae, ut carinae anguste obovato-oblongae; carinae alis aliquanto breviores, liberae. Stamina 10, glabra, basi in alabastro vix ad quartam partem connata, post anthesin plenam fere e basi soluta. Ovarium breviter stipitatum, uni-ovulatum, dense flavido-hirtum stili apice glabro, in utraque facie laterali alae rudimento calliformi bene conspicuo. Fructus eo *V. speciosa* omnino similis.

Differt a *V. speciosa* Ducke indumento racemulorum et calicis rufo, bracteis in racemulis novellis cum alabastris dense imbricatis, pedicellis brevioribus apice bibracteolatis bracteolis sub anthesi persistentibus, floribus in partibus omnibus minoribus, calice brevioris et latioris rotas oblique, in vivo laete rufo-fulvo, hujus dentibus maioribus. Species meridionalis *V. araroba* (Aguiar) Ducke floribus magnis, staminibus in flore 9, etc., diversa.

Habitat in silva primaria terris argillosis altis circa Esperança (ad ostium fluminis Javary, ad civitatis Amazonas fines occidentales), 30-I-1942 flor., maio fructifera, settembre cum foliis adultis, Ducke 901.

"Faveira" appellatur, ut leguminosae amazonicae alterae diversae.

The single individual hitherto observed was a large tree growing in upland rain forest.

In flowering stage, bare of foliage, its crown formed a giant bouquet looking like those of certain species of the allied genus *Vatairea*.

The new species is named in honor of my old friend Dr. Francisco de Assis Iglesias, former director of the Forest Service of Brazil, and author of the "Album Floristico" published by the Ministério da Agricultura, Serviço Florestal, Rio de Janeiro 1940.

This album gives a true reproduction, in colors, of the magnificent South Brazilian tree *Vatairea heteroptera* (Allem.) Ducke, whose beauty is perhaps exceeded by our present new species.

The flowers of *Vataireopsis Iglesiasii* have a bright red brown or fulvous calyx, and blue violet petals; those of *Vatairea heteroptera*, blackish brown calyx and purplish mauve petals.

DERRIS MONILIFORMIS (L. f.) Ducke comb. nova. — I was delighted to find in Macbride's excellent "Flora of Peru" — *Leguminosae* (a very helpful work for my studies on the flora of the Brazilian Amazon, chiefly the Solimões country!), the unnatural genera *Derris* and *Lonchocarpus* reduced to an uni-

que, natural genus which includes the three most important rotenone-yielding ichthyotoxic and insecticide plants of the world. I think it necessary to add, to that genus, *Muelleria* which was considered as differing from certain species of the former genus *Lonchocarpus* section *Fasciculati* Bth. = subgenus *Phacelanthus* Pittier, only by the articulate rosary-like pod. There is, however, another species with transversally articulated pods, *Derris glabrescens* (Bth.) Macbr., whose uniseminated articles, when mature, drop separately in the water, like those of *moniliformis*. The sole difference between the two is that the articles of *moniliformis* are nearly globose, and those of *glabrescens*, rectangular and flattened.

ANDIRA MULTISTIPULA Ducke n. sp. — Species haec notabilis cum specie meridionali *A. stipulacea* stipulis longissimis comosis congruit, recedit autem floribus parvis variisque characteribus aliis. Arbor parva ramulis fistulosis angulosis densissime lenticellosis glaberrimis siccitate pallide testaceis parte novissima saepe fusciscente. Stipulae 20-50 mm. longae basi 3-8 mm. latae, subulatae, longe acuminatae, marginibus vulgo fortiter involutis, glabrae, siccitate pallide testaceae, dorso striatae, apice ramorum comosae. Folia apices ramulorum versus congesta, ramorum fertilium 300-500 mm. longa glabra, petiolis sat tenuibus anguste canaliculatis; foliola 13-17, petiolulis 2-4 mm. longis, lamina 50-120 mm. (saepius 70-100 mm.) longa et 15-30 mm. (saepius 20-25 mm.) lata, oblongo-lanceolata basi saepius obtusa quam acuta, apice longe acuminata, subtus tenuiter marginata, membranacea, utrinque viridi et parum nitidula, costis lateralibus et venulis reticulatis tenuibus magis minusve prominulis. Stipellae vulgo 2-6 mm. rarius ad 9 mm. longae, setaceae, patentes. Paniculae terminales floribundae folio breviores vel parum longiores, pedunculis angulosis et sulcatis, canotomentosis, ramulis apicem versus floriferis; bractee parvae subulatae tomentosae caducissimae. Flores subsessiles; calix in alabastro oblongus, anthesi incipiente turbinatus 3-4 mm. longus et parum minus latus, lobis variabiliter latis saepe obsoletis, glaber et nigricans solum in extremo margine apicali ad denticulos pallido-tomentosus; petala violacea circiter 8 mm. longa, glabra. Stamina glabra, alte connata excepto uno libero. Pistillum glabrum, ovario brevi et breviter stipitato. Fructus ignotus.

São Paulo de Olivença, in silvae secundariae non inundabilis loco humido, anthesi incipiente 2-XI-1942, Ducke 1035. Arbor unica visa.

The exceedingly long stipules do not allow confusion of the present new species with any other of the Amazon flora.

The shape of the inflorescences is rather like that of the widely distributed *A. inermis*, but the flowers are smaller.

ANDIRA MACROTHYRSA Ducke n. sp. — Arbor circiter 40 metralis, ramulis fistulosis, angulosis, striatis, lenticellosis, fuscis, subglabris. Stipulae desunt. Folia ramorum fertiliium vulgo 350-400 mm. longa, petiolo longo, hoc et rhachi anguste canaliculatis glabris vel minime pilosulis, rhachi apicem versus tenuissima. Stipellae parvae setaceae caducissimae. Foliola 9-13, petiolulis 7-11 mm. longis validis, laminis 50-100 mm. longis et 25-45 mm. latis, lanceolato-oblongis basi obtusa vel rarius subacuta, apice modice longe acuminate, subtus tenuiter marginatis, firme membranaceis vel subcoriaceis, subconcoloribus, utrinque parum nitidulis, supra glaberrimis, subtus brevissime pilosulis, costis lateralibus et venulis reticulatis subtus magis quam supra prominulis. Paniculae terminales vulgo 300-500 mm. altae floribundae pedunculis angulosis, sulcatis, canotomentellis, ramulis floriferis in dimidio apicali multifloris; bractee parvae subulatae tomentosae cito caducae. Flores suaveolentes, brevissime pedicellati; calix anthesi circiter 4 mm. longus et 3 mm. latus, subcampanulatus, in vivo obscure viridis, appresse canopilosulus apice distincte 5-dentatus; petala circiter 7 mm. longa (in exsiccatis), longe unguiculata, glabra, alba vexillo obscure rufopicto. Stamina alte connata uno libero, glabra. Ovarium breve, longe stipitatum, cano-ferrugineo-pilosum stilo subglabro albido. Druparum endocarpia vetusta sub arbore lecta iis speciei *A. retusa* forma similia, 40-60 x 30-40 mm. metientia.

Esperança, ad ostium fluminis Javary civitatis Amazonas in limine occidentali, silva non inundabili prope rivulum, 22-X-1942 florifera, Ducke 1036. Arborea tres visae.

This new species is remarkable for its long leaves and the very large inflorescences with white, red brown spotted petals like those of *A. micrantha* and affins.

COUMAROUNA CHARAPILLA Macbr. — This species was created on an incomplete specimen from Amazonian Peru, Complete botanical specimens (Ducke 902) were collected near Esperança at the mouth of the Javary (Amazonas, Brazil), where the tree is not rare on moist places of the upland forest and on not too deeply flooded banks of small rivers. This species resembles *C. rosea* by most of the botanical characters but diverges by the large size of the tree, glabrous branchlets, petioles and leaf rhachis, long protracted end of that rhachis, very fine and often evanescent indumentum of the flowering panicle, broad ovate or suborbicular-elliptic bractlets nearly as long as the flower buds but soon deciduous, calyx wings pale green on the exterior side, milk white on the inner side, white petals with some lilac on the summits of the *alae*

and *carinae*. Tree 30 to 40 m. high, with robust, cylindric bole; bark and soft wood with scent of unripe peas or beans. Leaflets like of *C. rosea* and *C. odorata* (impunctate), more often 6. Flowers fragrant, differing from those of all others by pale color; wings of the calyx up to 20-22 mm. long, with fine indumentum, grayish when dry. Drupa with size and shape of that of *C. odorata* and affins; mesocarp bitter as of the latter (not edible as of *trifoliolata*!); fibers of the endocarp longer than of *odorata* but shorter than of *trifoliolata*; seeds scented like the common tonka beans.

Herbarium specimens (Ducke 902) have been distributed under the unpublished name *C. pallidiflora*. They resemble *C. rosea* of the flooded shores of the Upper Rio Negro, but the living tree has a very different aspect. The bractlets are large like those of *C. punctata*, but they have a broader form and are much more deciduous, falling from the half adult flower buds.

COUMAROUNA TRIFOLIOLATA Ducke — I recently received ripe fruits of this species from my friend Antonio Augusto Martins, of Boa Vista, Rio Branco.

These fruits were from the "cumarú" trees of the foothills of the Serra Grande where I had collected flowering specimens in 1937.

They are distinguishable from those of all other species of this genus by their relatively abundant, very oily, sweet and fragrant, edible mesocarp.

The endocarp is on the outside densely clothed with fibers, like of the other *Coumarouna* species but much longer; these fibers penetrate the mesocarp like a mango.

C. trifoliolata was mentioned by Pittier (l. c.) as being one of the two species yielding commercial "sarrápia" in Venezuela; the other, more widely distributed, is *C. punctata* Blake.

COUMAROUNA MICRANTHA (Harms) Ducke — Botanical material of a *Coumarouna*, collected in the extreme West of the Brazilian Amazon, corresponds well to the description of this species, from a single tree of the varzea-forest near the mouth of the Rio Pastaza, Eastern Perú.

The only character not mentioned in that description is the presence of some pellucid points along the borders of the leaflets, like those of the Central Brazilian *C. alata*. The large trees, 30 to 40 meter high, are very showy when in flowering stage, with their widely spreading crowns bearing an enormous number of rosy flowers.

The present species is closely allied with *C. magnifica* Ducke of the eastern half of Amazonia, but differs by stiffer

leaflets and smaller flowers of a lighter rose; its "habitat" is the not too deeply inundable "varzea" where these trees are among the largest of the forest.

Floriferous specimens were collected near Esperança, at the mouth of the Rio Javary, February, 10, 1942, Ducke 903; other trees were seen along the Rio Solimões, down to Foz do Jutahy.

Ripe fruits were found in September. The seeds are not scented, oily, edible.



MINISTÉRIO DA AGRICULTURA

Ministro — Dr. Apolonio Jorge Faria Sales

C. E. N. E. P. A.

Diretor — Dr. Heitor Silveira Grillo

S. N. P. A.

Diretor — Alvaro Barcelos Fagundes M. C., Ph. D.

INSTITUTO AGRONÔMICO DO NORTE

Diretor — Felisberto Cardoso de Camargo, Agrônomo

Seções Técnicas

Melhoramento de Plantas

George O' Neill Addison, Eng. Agr. — Chefe

Carlos A. Veloso Galvão, Eng. Agr. — Assistente.

Coordenação do Trabalho Experimental

Luiz O. T. Mendes, Eng. Agr. — Chefe.

Milton Albuquerque, Eng. Agr. — Auxiliar.

Biologia

V a g o — Chefe.

Sebastião Alves, Eng. Agr. — Assistente.

Ana Nogueira Ferraz, Prof. — Desenhista.

Antonieta Santos Feio, Prof. — Desenhista.

Química

V a g o — Chefe.

Walter B. Mors, B. C. — Assistente.

Tecnologia da Borracha

Norman Bekkedahl, B. C., M. C., Ph. D. — Chefe.

Fred L. Downs, B. A. — Assistente.

Waldemar Saffioti, B. C. — Assistente.

Rosendo Miranda Tavares, Eng. Agr. — Assistente.

Economia

Felisberto C. de Camargo, Agrônomo — Chefe.

Biblioteca

Paulo Plinio Abreu, B. C. — Tradutor.

Estações Experimentais

Belém (Pará) — Sebastião Alves.

Porto Velho (Guaporé) — Edgar Cordeiro.

Rio Branco (Acre) — Colab. Pimentel Gomes.

Secretaria

Luiz Lopes de Assis — Chefe.

Colaboradores

Adolfo Ducke, Naturalista — Serviço Florestal.

Pimentel Gomes, Eng. Agr. — Dep. Prod. Ter. Acre.

Hans G. Sorensen, B. C., M. C. — U. S. Dept. Agric.

Michael Langford, B. C., M. C., Ph. D.—Idem, idem.

Andrew Archer, B. C., M. C. — Idem, idem.

