

PLANTAE KRUKOVIANAE - IV

A. C. Smith

The plants described below were collected in Brazil by Mr. B. A. Krukoff. Types of new species are deposited in the herbarium of the New York Botanical Garden and are duplicated in several other American and European herbaria.

LORANTHACEAE

PSITTACANTHUS LEPTANTHUS A. C. Smith, sp. nov. Frutex parasiticus scandens glaber; ramis ramulisque teretibus fuscis, ad nodos continuis; petiolis rugosis 3-6 mm. longis, superne anguste alatis; laminis coriaceis supra viridis subtus fuscis oblongo-ovatis, 10-13 cm. longis, 4-8 cm. latis, basi apiceque acutis, margine integris et leviter revolutis, subtus dense stomatiferis, pinnatinerviis, costa utrinque prominente, nervis secundariis 3 vel 4 in quoque latere utrinque subplanis; inflorescentiis ut videtur solitariis in axillis foliorum, plerumque 4-floris, floribus binis; pedunculis pedicellisque nigrescentibus gracilibus, bracteis minutis; pedicellis 8-10 mm. longis; cupula patelliformi margine integra; calyculo sub anthesi 3-4 mm. longo et 1.5 mm. diametro; perigonio tenuiter carnosio coccineo, maturitate 7-8 cm. longo, ad medium 3-4 mm. diametro, 6-lobato, lobis linearibus (ad 3 cm. longis) sub anthesi recurvatis, 1-1.5 mm. latis, apice acutis, margine integris, ligula nulla; filamentis gracilibus circiter 10 mm. longis, supra medium perigonii adfixis; antheris dorsifixis oblongis 3-4 mm. longis, apice obtusis; stylo perigonium aequante, stigmate ellipsoideo papilloso.

Type, Krukoff 4709, collected June 10, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. It is allied to the group of species with united perigonium lobes, lacking basal ligules. From P. siphon Eichl., its nearest ally, the new species is distinguished by its broader leaves and simpler inflorescences, which are branched only twice. The pedicels of P. leptanthus are long and slender; the perigonium is flaring from a very slender base.

MYRISTICACEAE

DIALYANTHERA OLACOIDES A. C. Smith, sp. nov. Frutex; ramis glabris, ramulis teretibus, partibus juvenilibus sericeis mox glabris; petiolis subsericeis gracilibus canaliculatis 5-8 mm. longis; laminis subcoriaceis elliptico-oblongis, 9-14 cm. longis, 3.5-5 cm. latis, basi acutis, apice obtuse acuminatis, margine integris, utrinque glabris demum

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rugulosis, costa subtus prominente, nervis secundariis 9-11-jugis patulis prope marginem arcuatis conjunctis, supra planis vel impressis subtus elevatis, venulis inconspicuis; inflorescentiis ♂ axillaribus vulgo binis ad 8 mm. longis, ubique ferrugineo-sericeis; floribus 2-4 in fasciculis, bracteis minutis subteretibus; pedicellis 1-3 mm. longis; perigonio infundibuliformi 3 mm. longo, basi bracteola parva suffulto, intus glabro, lobis 3 ovatis acutis, 1.2 mm. longis, 1.5 mm. latis; filamentis in columnam glabram carnosam cylindricam 1.8 mm. longam connatis; antheris 3 oblongis liberis, 0.8-1 mm. longis, basi affixis, loculis 2 connectivo carnosio sustentis.

Type, Krukoff 4740, collected June 10, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. Another collection from the same locality is Krukoff 4972. The extremely short inflorescences differentiate this species from all others of the genus. D. acuminata Standl., of Panama, approaches the new species in this respect, but is otherwise very different. The enlarged anther connective of D. olacoides is also noteworthy.

MONIMIACEAE

MOLLINEDIA KRUKOVII A. C. Smith, sp. nov. Frutex circiter 4 m. altus; ramis ramulisque teretibus striatis, juventute cinereo-pilosulosis mox glabris; petiolis oppositis subteretibus canaliculatis 1.5-3.5 cm. longis, velut ramulis novellis pilosulosis; laminis chartaceis ovatis, 20-33 cm. longis, 11-17 cm. latis, basi acutis, apice acuminatis (acumine 1 cm. longo), margine integris et leviter revolutis, supra glabris, subtus sericeis (pilis viridibus basi 2-3-fidis circiter 0.2 mm. longis) demum glabrescentibus, copiose sed inconspicue pellucido-punctatis, costa supra elevata subtus prominentissima, nervis secundariis 7-9-jugis arcuato-adscendentibus utrinque elevatis, venulis copiose reticulatis subtus prominulis; inflorescentiis ♂ incompletis; pedicellis nigrescentibus 8-10 mm. longis, cinereo-pilosulosis; floribus ♂ flavis extra velut pedicellis; receptaculis carnosis intus glabris; tepalis carnosis intus glabris, 2 exterioribus late ovatis, 8-9 mm. longis, 9-10 mm. latis, margine integris et submembranaceis, 2 interioribus oblongo-orbicularibus, circiter 8 mm. longis et latis, margine membranaceis et irregulariter laciniatis; staminibus circiter 50, filamentis glabris carnosis circiter 1.5 mm. longis, antheris oblongis, 3 mm. longis, 1-1.5 mm. latis.

Type, Krukoff 4819, collected June 14, 1933, on "terra firma" near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. It falls into the Section Appendiculatae Perk., being related to M. Selloi

(Spreng.) A. DC., M. latifolia (P. & E.) Tul., and M. Rusbyana Perk. From these species it is readily distinguished by its large entire leaves, much larger flowers, and more numerous stamens.

LAURACEAE

Mr. Krukoff's present collection is particularly rich in large forest trees of this family, of which about 45 species are represented. Of these, eleven are apparently new species.

AIOUEA RUBRA A. C. Smith, sp. nov. Arbor ad 10 metralis, trunco 8 cm. diametro; ramulis striatis glabris rubellis; petiolis crassis profunde canaliculatis 8-15 mm. longis; laminis coriaceis glabris oblongis, 18-25 cm. longis, 4-6 cm. latis, basi attenuatis, apice acuminatis (apice ipso obtuso), margine integris et leviter revolutis, costa rubella utrinque prominente, nervis secundariis utroque 5-7 ascendentibus supra prominulis subtus prominentibus, venulis reticulatis supra immersis subtus prominulis; paniculis rubris glabris gracilibus multifloris 10-20 cm. longis, 2-4 in axillis foliorum; floribus fulvis sub anthesi 2-3 mm. longis; pedicellis gracilibus 6-8 mm. longis; perianthii lobis 6 aequalibus ovatis membranaceis, minute luteo-glandulosis, 0.8 mm. longis et latis; staminibus 6 fertilibus glabris, 1 mm. longis, antheris bilocellatis truncatis filamentas aequantibus; seriei tertiae staminodiis filiformibus 0.6 mm. longis, basi glandulis 2 sessilibus 0.5 mm. diametro auctis; seriei quartae staminodiis carnosius ovatis cordatis sessilibus 0.5 mm. diametro; ovario glabro sub anthesi 1 mm. longo, quam stylo paullo brevior, stigmate truncato.

Type, Krukoff 4606, collected June 1, 1933, at Foz do Tarauaca, basin of Rio Jurua, State of Amazonas. It is related to A. scandens Ducke, but that species is a liana with long-petioled broad leaves. By its filiform staminodes (of the third series) and glabrous filaments, the flowers of the new species differ from those of the liana. From A. guyanensis Aubl., the new species differs by the texture of its leaves and its larger flowers, as well as by the shape of its staminodes.

ANIBA ELLIPTICA A. C. Smith, sp. nov. Arbor ad 12 metralis, trunco 6 cm. diametro; ramis ramulisque subteretibus glabris; petiolis nigrescentibus canaliculatis 13-20 mm. longis; laminis subcoriaceis glabris ellipticis, 13-20 cm. longis, 7-10 cm. latis, basi cuneatis, apice obtusis, margine integris, costa utrinque prominente, nervis secundariis utroque 6-8 patulis prope margines anastomosantibus supra saepe planis subtus prominentibus, venulis copiose reticulatis supra immersis subtus prominulis; inflorescentiis ut vi-

detur solitariis e ramulis 5 mm. supra axillis foliorum orientis, 8-12 cm. longis, ramulis et floribus cinereo-tomentellis; pedicellis 2-2.5 mm. longis; floribus 3 mm. longis, 2-2.5 mm. diametro; perianthii lobis 6 inaequalibus late ovatis subacutis intus glabris, exterioribus 1 mm. longis et 1.5 mm. latis, interioribus 1.5 mm. longis et 1.8 mm. latis; staminibus 9 fertilibus 1.5 mm. longis, filamentis carnosius pilosis quam antheris duplo longioribus, antheris apice obtusis, seriei tertiae filamentis basi glandulis binis sessilibus 0.3 mm. diametro auctis; gynaecio glabro 3 mm. longo, stylo ovarium aequante, stigmate truncato.

Type, Krukoff 5601, collected Aug. 22, 1933, on "terra firma" near mouth of Rio Macauhan (tributary of Rio Yaco), basin of Rio Purus, Territory of Acre. In having unequal perianth segments, the new species resembles A. Brittonii Mez, from which it differs by its longer petioles and differently shaped larger leaves.

ANIBA JURUENSIS A. C. Smith, sp. nov. Arbor ad 25 metralis, trunco circiter 18 cm. diametro; ramis ramulisque nigrescentibus striatis, juventute cinereo-puberulis demum glabris; petiolis gracilibus 8-12 mm. longis puberulis; laminis chartaceis oblongis, 14-20 cm. longis, 4-7 cm. latis, basi cuneatis, apice longe acuminatis (acumine 1.5-2 cm. longo), margine integris et leviter revolutis, supra glabris nitidis, subtus fuscis arcte cinereo-puberulis, costa supra saepe impressa subtus prominentissima, nervis secundariis utroque 3-5 adscendentibus supra prominulis subtus prominentibus, venulis reticulatis utrinque prominulis; inflorescentiis ad apices ramulorum in axillis foliorum parvorum congestis, 4-10 cm. longis, 20-50-floris, ramulis et floribus cinereo-puberulis; floribus in cymulis parvis bracteolis 2 mm. longis mox deciduis subtentis; pedicellis ad 3 mm. longis; perianthii tubo 1.5 mm. longo, lobis 6 aequalibus oblongis, 1.2 mm. longis, 0.7 mm. latis, apice rotundatis, utrinque minute puberulis, margine leviter incrassatis; staminibus 9 fertilibus, serierum exteriorum 0.4 mm. longis et latis, antheris subsessilibus, apice emarginatis, seriei tertiae filamentis brevissimis, glandulis binis sessilibus auctis, antheris minutis; ovario glabro sub anthesi 1.5 mm. longo, stylo subnullo, stigmate discoideo, 0.5 mm. diametro; bacca juvenili in cupula nigrescente obovoidea immersa.

Type, Krukoff 4775, collected in June, 1933, near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. Krukoff 4932, from the same locality, also represents the species; it is from a juvenile plant noted as a shrub 5 meters high, with slightly broader leaves, which are silvery-sericeous beneath, and shorter in-

florescences than the type. The species is related to A. Muelleriana Mez, from which it differs by the shape and puberulence of its leaves, its minute subsessile anthers, and its discoid stigma.

ANIBA KRUKOVII A. C. Smith, sp. nov. Frutex 5 m. altus; ramulis fuscis glabris striatis; petiolis rugosis semiteretibus glabris 10-16 mm. longis; laminis chartaceis glabris elliptico-oblongis, 13-20 cm. longis, 5-7 cm. latis, basi acutis, apice caudato-acuminatis, margine integris, nervis secundariis utroque 2 vel 3 adscendentibus, cum costa supra elevatis subtus prominentibus, venulis reticulatis utrinque prominulis; inflorescentiis 1-3 in axillis foliorum, 2-3 cm. longis, 15-25-floris, ramulis et floribus cinereo-sericeis; floribus 3 mm. longis in cymulis parvis subsessilibus; perianthii lobis 6 aequalibus oblongis, 1.8 mm. longis, 1.4 mm. latis, apice rotundatis, utrinque dense luteo-glandulosi; staminibus 9 fertilibus 1 mm. longis, serierum exteriorum antherarum connectivis subacutis, filamentis pilosis quam antheris paullo brevioribus, seriei tertiae filamentis dilatatis sericeis, glandulis binis sessilibus 0.3 mm. diametro auctis; ovario glabro sub anthesi 1.3 mm. longo, stylo brevior, stigmate membranaceo irregulariter discoideo.

Type, Krukoff 5023, collected June 26, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. It is related to A. Muelleriana Mez and the above described new species, from both of which its few ascending lateral nerves distinguish it. The pale sericeous pubescence of the short inflorescence and the glandular perianth segments also characterize the new species.

ANIBA FLEXUOSA A. C. Smith, sp. nov. Frutex glaber; ramisque teretibus olivaceis; petiolis angulatis 15-25 mm. longis; laminis chartaceis viridis elliptico-oblongis, 20-30 cm. longis, 10-15 cm. latis, basi cuneatis vel subrotundatis, apice caudato-acuminatis (apice ipso 1-2 cm. longo obtuso), margine integris, costa utrinque prominente, nervis secundariis utroque 8-11 patulis prope margines adscendentibus anastomosantibus utrinque elevatis, venulis copiose reticulatis utrinque prominulis; inflorescentiis ut videtur solitariis axillaribus ad 15 cm. longis, 15-20-floris, rachide flexuosa, ramulis secundariis rectis 12-20 mm. longis, pedunculis 5-7 mm. longis, pedicellis brevissimis; floribus 3 mm. longis, tubo obconico quam lobis longioribus; perianthii lobis aequalibus oblongis subacutis, 1.3 mm. longis, 1 mm. latis; staminibus 9 fertilibus; serierum exteriorum oblongis 0.5 mm. longis et latis, basi parce pilosis, antheris subsessilibus, connectivis productis obtusis; seriei tertiae

deltoides, 0.8 mm. longis et latis, antheris minutis, connectivis productis obtusis, filamentis dilatatis sericeis quam antheris duplo longioribus, basi glandulis binis sessilibus 0.3 mm. diametro auctis; ovario glabro sub anthesi 1.5 mm. longo, stylo subnullo, stigmate discoideo 0.8 mm. diametro.

Type, Krukoff 5030, collected June 21, 1933, on "terra firma" near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. From A. citrifolia (Nees) Mez, probably its closest relative, the new species differs by its much larger leaves, its lax few-flowered glabrous inflorescence, and its small subsessile outer anthers.

ENDLICHERIA FORMOSA A. C. Smith, sp. nov. Arbor ad 10 metralis, trunco 8 cm. diametro; ramulis teretibus lenticellatis glabris vel juventute parce pilosis; petiolis rugosis 15-25 mm. longis; laminis chartaceis utrinque minute puberulis mox glabris obovato-ellipticis, 15-22 cm. longis, 5-9 cm. latis, apice breviter acuminatis, margine integris, nervis secundariis utroque 9-11 cum costa supra elevatis subtus prominentibus, venulis copiose reticulatis utrinque peracute prominulis; inflorescentiis axillaribus solitariis multifloris 7-10 cm. longis, ramulis minute tomentellis, pedicellis 2 mm. longis basin versus minute bibracteolatis; floribus ♂ albis subglobosis 1.5 mm. diametro, tubo quam lobis minutis majore; perianthii lobis late deltoides, 0.5 mm. longis, 0.8 mm. latis, obscure pellucido-punctatis; staminibus 9 fertilibus ovatis, 0.6 mm. longis et latis, antheris per poros sublaterales dehiscentibus, connectivis productis subacutis, filamentis contractis quam antheris brevioribus, seriei tertiae basi biglandulosus; gynaecio nullo vel minuto.

Type, Krukoff 5156, collected July 4, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. In foliage, the new species closely resembles E. glaberrima Mez, but has many-flowered inflorescences with differently-shaped smaller flowers. The perianth of the new species is sharply truncate at base, with minute lobes.

PERSEA INAEQUALIS A. C. Smith, sp. nov. Arbor 30 m. alta, trunco 30 cm. diametro; ramis ramulisque subteretibus fuscis juventute cinereo-puberulis; petiolis suboppositis mox glabris canaliculatis 10-15 mm. longis; laminis coriaceis oblongis, 12-16 cm. longis, 5-7 cm. latis, basi cuneatis, apice obtusis vel rotundatis, margine integris, supra fuscis glabris, subtus glaucescentibus minutissime pulverulentis mox glabris, costa supra leviter impressa subtus prominentissima, nervis secundariis utroque 8-11 rectis adscendentibus supra planis subtus prominentibus, venulis reticulatis

utrinque planis vel prominulis; inflorescentiis 1-4 axillaribus 2-4 cm. longis et 10-20-floris, ramulis minutissime puberulis; pedicellis circiter 1.5 mm. longis 2- vel 3-fasciculatis, bracteolis ad 0.8 mm. longis subtentis; perianthii tubo subnullo, lobis albis 6 inaequalibus minutissime ferrugineo-tomentellis, 3 exterioribus deltoideis, 0.5 mm. longis et latis, 3 interioribus oblongis obtusis, 2.5 mm. longis, 1.8 mm. latis; staminibus 9 fertilibus; serierum exteriorum antheris bilocellatis suborbicularibus, 0.6 mm. diametro, apice obtuse apiculatis, introrso-lateraliter dehiscentibus, filamentis gracilibus quam antheris brevioribus; seriei tertiae antheris similibus sed extrorso-lateraliter dehiscentibus, filamentis basi biglandulosis antheras aequantibus; staminodiis 3 lineare-spathulatis acutis 0.8 mm. longis; ovario parce piloso sub anthesi 0.8 mm. diametro, stylo breve, stigmate truncato.

Type, Krukoff 4770, collected June 12, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. It is a species of the subgenus Hemipersea Mez, having bilocellate anthers in common with P. cuneata Meisn. and P. durifolia Mez. On this character the three species would appear to belong to the genus Hufelandia, but on other characters, notably the unequal perianth lobes, they are best placed in Persea. The new species differs from P. durifolia, its nearest ally, by its larger leaves with more numerous secondary nerves, its short-pedunculate inflorescences, its shorter filaments and its differently shaped anthers. A few flowers on the type specimen have 8 perianth lobes and a correspondingly increased number of stamens.

OCOTEA TENELLA A. C. Smith, sp. nov. Arbor 13 m. alta, truncus 7-10 cm. diametro; ramulis teretibus dense et arcte cinereo-tomentellis demum glabrescentibus; petiolis gracilibus tomentellis 4-7 mm. longis; laminis chartaceis elliptico-oblongis, 6-9 cm. longis, 3-5 cm. latis, basi acutis, apice breviter obtuse acuminatis, margine integris, supra glabris et impresso-punctatis, subtus molliter et arcte cinereo-tomentellis, nervis secundariis utroque 3 vel 4 arcuato-adscendentibus, cum costa supra subplanis subtus elevatis, venulis reticulatis subtus prominulis; inflorescentiis solitariis axillaribus gracilibus 2-4 cm. longis et 10-20-floris, rhachide parce tomentella, ramulis glabris 1-2 mm. longis flores 2 vel 3 ad apicem gerentibus; pedicellis ad 1 mm. longis; floribus glabris nigrescentibus maturitate 1.5-2 mm. longis, perianthii tubo breviter obconico, lobis oblongis obtusis, 0.8 mm. longis, 0.5 mm. latis; staminibus 9 fertilibus; serierum exteriorum antheris sessilibus oblongo-orbicularibus, circiter 0.4 mm. longis et latis, apice ob-

tusis vel minute apiculatis; seriei tertiae similibus sed cum filamentis brevissimis biglandulosis; gynaecio glabro, ovario sub anthesi 0.8 mm. longo, stylo brevissimo, stigmate minute discoideo.

Type, Krukoff 5406, collected Aug. 11, 1933, on "terra firma" near mouth of Rio Macauhan (tributary of Rio Yaco), basin of Rio Purus, Territory of Acre. It is a species of the Section Mespilodaphne, without close relatives, perhaps closest to O. lanata (Nees) Mez, from which it differs by its minute flowers, slender inflorescences, leaf shape, type of pubescence, etc.

NECTANDRA SUPERBA A. C. Smith, sp. nov. Arbor 37 m. alta, trunco 7 dm. diametro; ramulis subteretibus vel leviter angulatis juventute dense et arcte fusco-tomentosis; petiolis rugosis tomentosis 15-25 mm. longis; laminis coriaceis siccitate olivaceis elliptico-oblongis, 15-20 cm. longis, 5-8 cm. latis, utrinque acutis, margine integris, supra praeter costam glabris nitidis, subtus dense et arcte adpresso-pilosis, nervis secundariis utroque 5-7 adscendentibus cum costa supra plus minusve planis subtus prominentibus, venulis copiosissime reticulatis utrinque prominulis; inflorescentiis ad apices ramulorum axillaribus, 5-12 cm. longis, ad 30-floris, ubique arcte tomentosis, ramulis lateralibus 4-10 mm. longis; floribus subsessilibus (pedicellis ad 1 mm. longis) 2-4 in fasciculis, bracteolis minutis deciduis subtentis; perianthii tubo obconico 1.5-2 mm. longo, lobis 6 ovatis acutis, 1.5-2 mm. longis, 1-1.5 mm. latis; staminibus 9 fertilibus; serierum exteriorum antheris subsessilibus suborbicularibus apice obtusis, 0.6-0.7 mm. diametro, dorsaliter glandulas 2-4 minutas nigras gerentibus, loculis in serie unica recta juxtapositis; seriei tertiae staminibus oblongis 0.8 mm. longis, antheris rotundatis glandulosis, filamentis carnosissimis antheras aequantibus glandulis binis sessilibus auctis; gynaecio glabro; ovario 1 mm. diametro, stylo 0.5 mm. longo, stigmate truncato.

Type, Krukoff 5757, collected Sept. 3, 1933, on "terra firma" near mouth of Rio Macauhan (tributary of Rio Yaco), basin of Rio Purus, Territory of Acre. It is probably most closely allied to N. lineatifolia (R. & P.) Mez, from which it differs by the prominently reticulate veinlets and the subsessile flowers with blunt anthers.

PLEUROTHYRIUM NOBILE A. C. Smith, sp. nov. Arbor 25 m. alta, trunco 20 cm. diametro; ramulis teretibus crassis rugosis glabris; petiolis crassis fuscis canaliculatis 2-4 cm. longis; laminis coriaceis glabris oblongis, 20-30 cm. longis, 9-13 cm. latis, basi obtusis vel rotundatis, apice cuspidatis vel breviter acuminatis, margine integris, costa

utrinque prominente, nervis secundariis utroque 9-12 arcuato-adscendentibus supra planis vel leviter elevatis subtus prominentibus, venulis reticulatis supra planis subtus prominulis; inflorescentiis solitariis axillaribus quam foliis paullo brevioribus multifloris, ramulis angulatis glabris vel minute ferrugineo-tomentellis, ramulis secundariis 6-9 rectis 3-4 cm. longis; pedicellis 6-10 mm. longis cum floribus velut inflorescentiae ramulis tomentellis; perianthii tubo obconico 3 mm. longo et diametro, lobis 6 carnosis oblongis subacutis, 5-6 mm. longis, 4-5 mm. latis; staminibus 9 fertilibus oblongis truncatis ferrugineo-tomentellis 1.4 mm. longis, locellis 2 introrsis 2 extrorsis vel omnibus lateralibus, filamentis antheras aequantibus contractis, omnibus manifestissime glandulis binis maximis confluentibus cinctis; ovario glabro vel minutissime tomentello globoso sub anthesi 2 mm. diametro, stylo 0.5 mm. longo, stigmate discoideo 0.4 mm. diametro; fructibus juvenilibus globosis apice perianthii lobos gerentibus.

Type, Krukoff 5121, collected July 1, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. Another specimen from the same locality is Krukoff 4800, which is more or less juvenile and bears shorter inflorescences. It is a species related to P. bifidum Nees, from which it differs by its lack of inflorescence tomentum and its large long-pedicelled flowers. From P. Poeppigii Nees it differs by its glabrous leaves and less robust, more spreading inflorescences. P. parviflorum Ducke, another related species, has very much smaller flowers than P. nobile.

PLEUROTHYRIUM KRUKOVII A. C. Smith, sp. nov. Arbor ad 28 m. alta; ramulis teretibus fistulosis juventute cinereo-tomentellis mox glabris; petiolis rugosis nigrescentibus canaliculatis 15-30 mm. longis; laminis coriaceis glabris oblongis, 25-45 cm. longis, 7-12 cm. latis, basi acutis, apice acutis vel breviter acuminatis, margine integris, costa supra elevata subtus prominentissima, nervis secundariis utroque 14-16 rectis supra planis subtus prominentibus, venulis reticulatis supra obscuris subtus prominulis; inflorescentiis solitariis axillaribus quam foliis multo brevioribus (7-12 cm. longis) multifloris, ramulis (et bracteolis floribusque) minute cinereo-tomentellis, ramulis secundariis 10-16 gracilibus complanatis 4-10 mm. longis; floribus 3-6 in fasciculis, bracteolis 2 vel 3 spathulatis acutis 3-4 mm. longis mox deciduis subtentis; pedicellis maturitate 3-4 mm. longis; perianthii tubo obconico 1 mm. longo, lobis 6 oblongis obtusis, 2.5 mm. longis, 1.5 mm. latis; staminibus 9 fertilibus 1 mm. longis, antheris oblongis apice emarginatis, locellis plus minusve laterali-

bus, filamentis gracilibus antheras aequantibus, omnibus glandulis binis non confluentibus cinctis; ovario glabro globoso sub anthesi 1 mm. diametro, stylo arcte tomentello ovarium aequante, stigmate truncato.

Type, Krukoff 5563, collected Aug. 17, 1933, on "terra firma" near mouth of Rio Macauhan (tributary of Rio Yaco), basin of Rio Purus, Territory of Acre. Other collections from the same locality are Krukoff 5255 and 5722. It is related to P. parviflorum Ducke, from which it differs by the much larger leaves, the narrower inflorescences (of which P. parviflorum has secondary branches 12-15 mm. long), and the more numerous flowers.

ELAEOCARPAEAE

Sloanea reticulata A. C. Smith - Territory of Acre: upper Rio Jurapary, basin of Rio Jurua, Krukoff 5230. This specimen agrees with the Maranhão plant described as S. reticulata in all details except size of inflorescence. The peduncles of the Acre plant are 4-6 cm. long, the pedicels 2-3 cm. long. Other floral and leaf characters mentioned in the description of S. reticulata distinguish the species from S. Garckeana Schum.

GUTTIFERAE

TOVOMITA KRUKOVII A. C. Smith, sp. nov. Frutex glaber 8 m. altus; ramulis teretibus cinereis; petiolis gracilibus canaliculatis 7-20 mm. longis; laminis subcoriaceis oblongis, 7-10 cm. longis, 2.5-4 cm. latis, basi attenuatis, apice acutis vel breviter acuminatis, margine integris et leviter recurvatis, costa utrinque prominente, nervis secundariis utroque 7-10 (nervis tertiariis interspersis) patulis cum venulis utrinque prominulis; inflorescentiis axillaribus pauciramosis compactis 1-1.5 cm. longis, ramulis gracilibus brevissimis bracteis 1-2 mm. longis subtentis; pedicellis 3-5 mm. longis, alabastris ♂ 3-4 mm. diametro; sepalis 4 tenuiter coriaceis ovato-oblongis, 4 mm. longis, 3 mm. latis, 2 interioribus angustioribus; petalis 4 oblongis obtusis papyraceis, 4 mm. longis, 1.5 mm. latis; staminibus circiter 30, 3-4 mm. longis, filamentis carnosiss, antheris globosis obtusis 0.3 mm. longis.

Type, Krukoff 4887, collected in June, 1933, on "terra firma" near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. From its ally, T. Riedeliana Engl., the new species differs by its compact rather than ample terminal inflorescence, and by its smaller flowers. T. acuminata Engl., another related species, has broader conspicuously acuminate leaves and a more ample inflorescence than T. Krukovii.

TOVOMITA MICRANTHA A. C. Smith, sp. nov. Frutex glaber 5 m. altus; ramulis teretibus fuscis; petiolis crassis leviter canaliculatis 8-16 mm. longis; laminis coriaceis oblongo-ellipticis, 12-20 cm. longis, 6-12 cm. latis, basi acutis, apice acutis vel breviter acuminatis, margine integris, costa utrinque prominente, nervis secundariis utroque 10-15 patulis curvatis supra leviter impressis subtus elevatis, venulis reticulatis subtus saepe prominulis; inflorescentiis axillaribus pauciramosis 2-3 cm. longis, ramulis crassis, bracteis parvis caducis; pedicellis 4-5 mm. longis, alabastris ♂ albis subglobosis 3-4 mm. diametro; sepalis 4 coriaceis ovato-oblongis subacutis, 3-4 mm. longis, 2-3 mm. latis; petalis 4 (semper?) velut sepalis sed papyraceis mox deciduis; staminibus 25-30 circiter 3.5 mm. longis, filamentis carnis, antheris acutis 0.5 mm. longis.

Type, Krukoff 5071, collected June 28, 1933, on "terra firma" near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. It is a species of the alliance of T. rubella Spruce and T. Spruceana Pl. & Tr., having broader leaves than either. In floral characters it more nearly resembles the former, which, however, has fewer lateral nerves. The new species resembles T. macrophylla (P. & E.) Walp. in foliage, but has a far less robust inflorescence and fewer petals.

LECYTHIDACEAE

LECYTHIS HIANSA A. C. Smith, sp. nov. Arbor glabra ad 30 m. alta; ramulis teretibus fuscis dense lenticellatis; petiolis gracilibus nigrescentibus 3-6 cm. longis anguste alatis; laminis chartaceis fuscescentibus oblongis, 7-10 cm. longis, 3-4 cm. latis, basi acutis vel obtusis, apice breviter acuminatis, margine serrulatis, costa utrinque conspicua, nervis secundariis utroque 9-12 rectis prope margines anastomosantibus, cum venulis reticulatis utrinque prominulis; paniculis axillaribus et terminalibus pauciramosis 5-12 cm. longis; rhachidibus rugosis conspicue lenticellatis, geniculis incrassatis; pedicellis subnullis vel ad 2 mm. longis; sepalis subaequalibus carnis deltoideo-ovatis, 3 mm. longis, 4 mm. latis, apice rotundatis, margine membranaceis; petalis rotundato-oblongis, 15-17 mm. longis, 12-14 mm. latis; androphoro carnoso explanato 25-35 mm. longo, ligula prope basin 15-23 mm. lata distaliter contracta, galea 15-25 mm. diametro subtus dense echinata, appendiculis anantheris linearibus 6 mm. longis (prope margines plerumque staminiferis) obiecta, staminibus circa annulum numerosissimis, filamentis carnis 0.8 mm. longis distaliter incrassatis, antheris subglobosis 0.4 mm. diametro; ovario subinfero, vertice plano, stylo carnoso 1 mm. longo, loculis 4, ovulis in quoque loculo 10-15 funiculis sustentis; pyx-

idio vestuto subgloboso rugoso, 14 cm. longo (sine operculo), 16 cm. lato, supra medium zona calycari rugosa cincto; vitta interzonalis suberecta 3-4 cm. longa; zona superiore integra, ore 11-13 cm. diametro; pericarpio tenui, 6-8 mm. crasso.

Type, Krukoff 4811, collected June 14, 1933, on "terra firma" near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. Another specimen, collected on "varzea" land in the same vicinity, is Krukoff 4630. Both specimens bear flowers, which are said to be "white and violet," and 4811 is accompanied by an old fruit, lacking operculum and seeds. It is apparently most closely related to L. usitata Miers, like which it is called "Sapucaya." The new species has uniformly smaller leaves and flowers; its fruit has a much thinner pericarp (in thickness 6-8 mm. instead of 11-18 mm. as in L. usitata) and is only slightly contracted at the mouth (diameter of mouth 11-13 cm. rather than 6-10 cm. as in L. usitata). L. paraensis Huber, a species not properly published, is not known to me.

ESCHWEILERA APICULATA (Miers) A. C. Smith, comb. nov.

Chytroma apiculata Miers, Trans. Linn. Soc. 30: 245. 1874. Maranhão: Maracassumé River region, Froes 1868. Our specimen is similar to type material; a local name is "Atiriba."

ESCHWEILERA RORIDA (Miers) A. C. Smith, comb. nov. Chy-

troma rorida Miers, Trans. Linn. Soc. 30: 243. 1874.

ESCHWEILERA (Eueschweilera) KRUKOVII A. C. Smith, sp. nov. Arbor glabra 25-35 m. alta, trunco circiter 1.5 m. diametro; ramis ramulisque cinereis teretibus lenticellatis; petiolis rugosis nigrescentibus 6-11 mm. longis; laminis coriaceis oblongis, 8-16 cm. longis, 2.5-6 cm. latis, basi acutis vel subtruncatis, apice breviter et obtuse acumina-tis, margine integris vel obsolete serrulatis, costa crassa utrinque subprominente, nervis secundariis utroque 6-8 prope margines adscendentibus utrinque prominulis vel supra immer-sis, venulis copiose reticulatis subtus prominulis; panicu-lis axillaribus pauciramosis 2-8 cm. longis; rhachidibus ju-ventute fusco-puberulis mox glabris; pedicellis rugosis 5-10 mm. longis; sepalis 6 subaequalibus ovatis obtusis, 2 mm. longis, 2-3 mm. latis, margine membranaceis; petalis tenui-ter carnosus oblongo-ovatis, 16-18 mm. longis, 12-14 mm. la-tis, apice rotundatis; androphoro explanato 30 mm. longo, ligula tenuiter coriacea 8-10 mm. lata, galea 12-14 mm. di-ametro subtus dense echinata appendiculis anantheris linear-ibus 4-5 mm. longis obtecta; staminibus circiter 150 circa annulum et ligulae basi, filamentis carnosus 1-1.5 mm. long-is, antheris subglobosis 0.5 mm. diametro; ovario subinfero,

vertice plano, stylo carnosso subconico 2 mm. longo prope basin 1 mm. diametro, stigmatе truncato, loculis 2, ovulis in quoque loculo 4 vel 5 e basi sessilibus.

Type, Krukoff 4847, collected June 15, 1933, on "varzea" land near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, State of Amazonas. Another collection from the same locality is Krukoff 4739. It is a species resembling E. rorida (Miers) A. C. Smith, from which it differs by its 2- rather than 4-celled ovary, its pedicelled rather than subsessile flowers, and its narrower leaves. The number of cells in the ovary (the distinguishing feature of the Sections Eueschweilera and Chytroma) is considered of secondary importance by Eyma (a), since by this means closely related species have been too far separated.

ESCHWEILERA OBTECTA (Miers) A. C. Smith, comb. nov.

Jugastrum obtectum Miers, Trans. Linn. Soc. 30: 276. 1874. Krukoff 1293 (Madeira River region, State of Amazonas) has a fruit resembling that portrayed by Miers, although I have not compared the foliage with type material.

Gouratari macrosperma A. C. Smith, formerly known from the upper Machado River region, State of Matto Grosso, is also represented by Krukoff 5638 and 5687, both collected near the mouth of the Rio Macauhan (tributary of Rio Yaco), Territory of Acre. Both specimens are taken from trees nearly 60 meters high. 5638 bears fruits similar to those of the type, but with seeds slightly different in proportion (about 10 by 3 cm.). 5687 bears inflorescences, which are here described:

Racemis axillaribus et terminalibus, 10-20 cm. longis, ut videtur simplicibus; rhachide crassa arcte fusco-stellato-pubescente 15-20-flora; pedicellis crassis dense pubescentibus, 5-8 mm. longis, infra medium articulatis et minute 3-bracteolatis; sepalis 6 imbricatis oblongo-rotundatis obtusis, ad 8 mm. longis et latis, extra pubescentibus, margine breviter ciliatis; petalis 6 albis obovatis extra puberulis, circiter 20 mm. longis et latis; androphoro explanato 30 mm. longo, ligula 10 mm. lata, galea 15-20 mm. diametro subtus densissime echinata; staminibus circa annulum numerosis, filamentis gracilibus 1 mm. longis, antheris oblongis 1 mm. longis; ovario turbinato pubescente subinfero, vertice plano, stylo crasso subtruncato.

Couratari pulchra Sandwith - Amazonas: near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, Krukoff 5086. Our specimen agrees precisely in vegetative characters with the type collection of the Guiana species, and I note this extension of range with some confidence. The

fruits of 5086 agree with those described from Surinam by Eyma (b).

Cariniana domestica (Mart.) Miers appears to be represented by Krukoff 5597, collected near mouth of Rio Macaúhan (tributary of Rio Yaco), basin of Rio Purus, Territory of Acre. Our plant, in foliage and fruit, resembles the descriptions and plates. Mr. Krukoff notes it as a buttressed tree nearly 60 meters high.

Cariniana micrantha Ducke - Amazonas: near mouth of Rio Embira (tributary of Rio Tarauaca), basin of Rio Jurua, Krukoff 5095. A strongly buttressed tree nearly 60 meters high, equalled in the Jurua region only by a species of Swietenia. The wood of the two species is occasionally sold in mixture.

(a) Meded. Bot. Mus. en Herb. Rijks Univ. Utrecht 4: 59. 1932.

(b) l. c. 57.

STUDIES OF SOUTH AMERICAN PLANTS - IV

New Monimiaceae, Trigonaceae, and Vacciniaceae

A. C. Smith

In the accompanying paper specimens from several herbaria are cited. These institutions are indicated by the following abbreviations: Arnold Arboretum (A); British Museum (BM); Gray Herbarium (G); Royal Botanic Gardens, Kew (K); Jardin Botánico, Madrid (M); U. S. National Museum (N); New York Botanical Garden (Y).

MONIMIACEAE

SIPARUNA HEMISPHERICA A. C. Smith, sp. nov. Frutex dioecus (vel arbor parva?); ramulis elongatis subteretibus fuscis glabris; petiolis oppositis vel suboppositis semi-teretibus rugosis nigrescentibus glabris 7-20 mm. longis; laminis fuscescentibus oblongis, 13-19 cm. longis, 4-5.5 cm. latis, basi acutis, apice subacuminatis, margine subintegris et anguste revolutis, utrinque glabris, pinnatinerviis, costa supra plana subtus prominente, nervis lateralibus 8-11 in quoque latere arcuato-adscendentibus prope margines anastomosantibus, utrinque leviter elevatis, venulis reticulatis leviter elevatis; inflorescentiis ♂ axillaribus plerumque



Smith, Albert C. 1935. "Plantae Krukovianae. IV." *Phytologia* 1(3), 113–126.

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