

CERTAMEN MELASTOMATACEIS XIV.

John J. Wurdack

U. S. National Herbarium, Smithsonian Institution

TIBOUCHINA KINGII Wurdack, sp. nov.

Sect. Diotanthera. T. ciliari (Vent.) Cogn. affinis, inflorescentiarum hypanthiorumque pilis eglandulosis longioribus differt.

Suffrutex 0.5-1 m altus; ramuli rotundo-quadrangulati sicut inflorescentia modice setosi, pilis laevibus gracilibus 1.5-2 (-3) mm longis eglandulosis. Petioli 0.5-2 cm longi; lamina 4-7 X 2-3.5 cm oblongo-lanceata, apice acuto vel paullulo gradatimque acuminato basi obtusa, membranacea et obscure serrulata, supra modice appresso-setosa pilis gracilibus apicibus liberis ca. 1.5 mm longis, subtus sparsiuscule vel modice appresso-setulosa pilis ca. 1-1.5 mm longis, 5-nervata, nervis primariis exterioribus basaliter ca. 1-2 mm coalitis. Panicula submultiflora 6-9 X 5-8 cm, bracteis plerumque 2-3 X 1.5-2 mm, bracteolis 1-2 X 1-1.5 mm persistentibus, pedicellis 2-4 mm longis; flores 5-meri. Hypanthium (ad torum) 5 mm longum extus sparsiuscule vel modice appresso-setosum, pilis gracilibus (0.5-)1-1.5 mm longis; calycis tubus 0.2-0.3 mm longus, lobis 2.5-2.7 X 1.7-1.9 mm oblongo-ovatis modice ciliolatis extus sparse appresso-setulosis intus glabris. Petala (10.5-)12-17 X (7.5-)9-14 mm obovata, apice rotundato-truncato, densiuscule ciliolata pilis eglandulosis alioqui glabra. Stamina paulo dimorphica glabra; filamenta 5.6-6 vel 4.3-5 mm longa; antherarum thecae subulatae 6-6.2 vel 4.8-5 X 0.7-0.8 mm, connectivo 1-1.5 vel 0.4-0.5 mm prolongato in staminibus maioribus interdum dorsaliter minute tuberculato, lobis ventralibus plerumque inflatis 0.7-0.8 X 0.6-0.8 mm vel 0.5-0.6 X 0.4 mm. Stigma punctiforme; stylus 10 X 0.5 mm glaber; ovarii apex modice strigosus, pilis gracilibus laevibus 0.3-1 (-1.5) mm longis.

Type Collection: R. M. King, A. E. Guevara, & Enrique Forero 5999 (holotype US 2559560; isotype COL), collected about 18 km west-southwest of Fresno, Cordillera Central, Depto. Tolima, Colombia, elev. 2150 m, 16-17 July 1965. "Abundant small shrubs up to 1 m tall; flowers light lavender."

Paratypes (all Colombia, elev. 1600-2500 m): Antioquia: Vicinity of Medellín, F. Hernandez s. n.; Santa Elena, Scolnik, Peláez, & Araque 528 (corolla pink); Capiro, Bro. Daniel 496; Amagá, Bro. Daniel 4266 (corolla white); Río Negro, Archer 274 (corolla pink), 275 (corolla white); La Ceja, Uribe 4176 (corolla white); La Unión, Uribe 4187 (corolla white); road to Santo Domingo, Barkley & Barkley 38C514 (corolla pink). Tolima: 18 km west-southwest of Fresno, King, Guevara, & Forero 6003 (corolla white). Cundinamarca: 2 km northwest of Choachi, King, Guevara, & Forero 5913 (corolla white).

Tibouchina ciliaris has gland-tipped inflorescence and hypanthial hairs ca. 1-1.2 mm long, leaf blades rounded to cordulate at the base without a triangular protraction, and somewhat smaller flowers, but similar calyx and stamens. In Cogniaux' monograph, T. kingii would probably key to T. scabriuscula (Schlecht.) Cogn., T. monticola (Naud.) Cogn., and T. ferrariana Cogn., all of which have narrow calyx lobes. Another possibility in Cogniaux' system is T. geitneriana (Schlecht.) Cogn. [including T. moritziana (Triana) Cogn.], which has lance-subulate calyx lobes and shorter appressed cauline (ca. 1 mm long) and lower leaf surface (ca. 0.8 mm long) hairs, but similar stamen connectives. No type material of T. schumannii Cogn. has been seen, but from the Macbride photograph (16794) and description, the appressed short cauline pubescence, shorter foliar hairs, and narrower (ca. 1 mm wide) calyx lobes differentiate the Colonia Tovar material; actually T. schumanniana is probably a synonym of T. geitneriana, Cogniaux not having examined the Geitner collection at Wien. The older collections of T. kingii had been variously identified as T. ciliaris, T. longifolia (Vahl) Baill., and T. gracilis (Bonpl.) Cogn. While T. gracilis is a polymorphic species, the northern South American collections all have narrowly oblong inflorescences, much larger dichasial bracts, densely sericeous-ciliolate calyx lobes 6-8 mm long, and almost isomorphic stamens with ventral connective lobes not appreciably inflated; individual characters above-cited do not apply to the austral populations of T. gracilis, but the general correlation of features will differentiate T. kingii. King collected viable seed from the Tolima plants; plants since grown and flowered in Beltsville have furnished meiotic chromosome numbers to be reported elsewhere. The two forms with pink and white corollas each came true from King's seed; seedlings from the Beltsville plants have been produced abundantly indoors. The species has considerable horticultural merit, of easy culture and flowering several times annually.

ADELOBOTRYS STENOPHYLLA Wurdack, sp. nov.

A. duidae (Gleason) Wurdack affinis, foliis trinervatis angustioribus supra non persistenter robusti-strigosis differt.

Ramuli sicut foliorum venae primariae subtus inflorescentia hypanthiaque dense pilis gracillimis rufescentibus appressis 1-2 (-3) mm longis induti tarde glabrati. Petioli 0.3-0.6 cm longi; lamina 2.5-5 X 0.5-1 cm anguste oblongo-elliptica utroque acuta, rigidiuscula et densiuscule pilis rigidiusculis 2-2.5 mm longis appresso-ciliatis, utrinque in superficie primum pilis gracillimis ca. 1-1.5 mm longis appressis induta mox glabrata, trinervata nervis secundariis supra invisibilibus subtus planis ca. 1.5 mm inter se distantibus nervulis non evolutis. Inflorescentia terminalis ca. 1.5 cm pedunculata, floribus 3-5 subumbellatim aggregatis (alabastris fructibus dehiscentibus solum cognitis), pedicellis in alabastris ca. 4 mm longis. Hypanthium (ad torum) ca. 4 mm longum in pedicellum sensim attenuatum; calycis tubus 0.6 mm altus, lobis interioribus 2.3 X 2.7 mm suborbicularibus

paulo imbricatis, dentibus exterioribus lobos interiores aequantibus ob pilos occultis. Petala oblongo-elliptica glabra. Stamina dimorphica glabra; thecae subulatae 4.8 vel 2.9 mm longae, connectivi dente basali 0.3 vel 0.15 mm longo appendice dorsali ascendente 1.4 vel 1.5 mm longa ad apicem paulo (0.1-0.2 mm) bilobulato lobis hebetibus. Ovarium triloculare glabrum, apice paulo (0.3 mm) umbilicato; fructus pedicellus ca. 1 cm longus, corpo ca. 0.6 cm longo; semina ignota.

Type Collection: M. Farinas, J. Velasquez, & E. Medina 435 (holotype US 2559561; isotype VEN), collected on the lower (southeast?) slopes of Cerro Duida, Terr. Amazonas, Venezuela elev. 1000 m, Jan.-Feb. 1969. "Arbustico de flores rosadas".

The suggested relative has the same hypanthial and calyx features, but 5-nerved leaves persistently stout-strigose above. The other erect species with 3-celled ovaries, A. barbata Triana, A. fruticosa Wurdack, and A. saxosa Wurdack, all have much broader 5-nerved leaves and less distinct fruiting pedicels. Three other species of Adelobotrys with narrow leaves, A. subsessilis Gleason, A. rachidotricha Brade, and A. linearifolia Uribe, have been described; all differ from A. stenophylla in the malpighian foliar indument, auriculate or cordulate leaf bases, and 5-celled ovaries. The floral dimensions given for A. stenophylla are from fairly mature buds, no open flowers being available. The new Adelobotrys is another example of the stenophylly so striking in the Duida melastomes, other examples being Macairea linearis Gleason, Graffenrieda lanceolata Gleason, and Clidemia linearis (Gleason) Wurdack; perhaps this feature is a reflection of riparian habitat, with the frequently surging and receding water as the evolutionary factor.

TOCOCA ROTUNDIFOLIA (Triana) Wurdack, comb. nov.

Microphysca rotundifolia Triana, Trans. Linn. Soc. Bot. 28: 141. 1871.

This upper Rio Negro species was left dangling generically by Macbride after the generotype (M. quadrialata Naud.) was transferred to Tococa. While distinctive specifically, T. rotundifolia in vegetative and floral characters is readily accommodated in Tococa, where its closest floral relatives are perhaps several Venezuelan tepui species which are generally without formicaria (T. obovata Gleason, T. bolivarensis Gleason) but with non-expanded stigmas. The few-flowered cymes of T. rotundifolia are morphologically terminal but almost immediately pseudolateral from rapidly overtopping branchlet growth.

CLIDEMIA OCTONA (Bonpl.) L. Wms. subsp. GUAYANENSIS Wurdack, subsp. nov.

Ramulorum pili erecti laeves 1-2(-3) mm longi sparsiusculi.

Type Collection: J. A. Steyermark 87068 (holotype US 2338565; isotype VEN), collected in forest 3-4 km SE of "Los Patos", N of Río Hacha and N of Río Supamo, 30 km S of El Manteco, Edo. Bolívar, Venezuela, elev. 360-380 m, 9 Aug. 1960. "Shrub 2 m; leaves membranous, rich green above, pale green

below; petals white; calyx pale green."

Paratypes: British Guiana: "60 miles Potaro Road," D. B. Fanshawe F3510 (For. Dept. Br. Gu. 7106) (NY); Wabuwak Mt., Kanuku Mts., Wilson-Browne WB172 (For. Dept. Br. Gu. 5665) (NY); Hariwa Quarry 32 miles south of Mackenzie, Cowan 39276 (NY, US). Suriname: Jacob kondre, Saramacca River, Maguire 23755 (NY, US).

The Wilson-Browne collection was distributed as C. strigillosa (Sw.) DC., the Fanshawe specimen as Leandra sp., and the Maguire number as C. tiliaefolia DC. The collections are predominantly 7-merous in calyx, petals, and stamens, but two ovaries dissected (from the Fanshawe and Steyermark collections) were 10-celled. Typical C. octona has smooth eglandular hairs 5-10 mm long overtopping the sparse and short gland-tipped ones; the closest geographic approaches of subsp. octona to subsp. guayanensis are in northern Venezuela (Aragua) and northern Brazil (Serra dos Surucucus, Terr. Roraima). No authentic material has been seen of Cogniaux' Brazilian variety of Heterotrichum octonum (suggested by Louis Williams to really be C. hirta); recent Goias and Mato Grosso collections of the species do not deviate from the typical subspecies. One other anomalous variant of C. octona has been collected in Peru (Belshaw 3566 from San Antonio, Lamas, San Martín), with shorter than typical (ca. 4 mm long) cauline hairs, slightly asymmetric leaf bases, and constantly 6-merous flowers; the collection resembles a blending of C. octona and C. dentata D. Don, but will not be further categorized now.

After much independent fumbling, I agree with Naudin (Ann. Sci. Nat. ser. 3, 17: 306-307. 1852) and Louis Williams (Fieldiana Bot. 29: 558-559. 1963) that the toral scales in C. octona indicate placement near C. hirta (L.) D. Don, such scales not being seen in any other species presently placed in Heterotrichum. The flowers in typical C. octona are predominantly 7-8-merous, with isomerous or occasionally anisomerous (8-10-celled) ovaries; thus the 10-celled ovaries of subsp. guayanensis are not distinctive within the species. [Incidentally, as a gratuitous byproduct of type photograph examination, C. reflexa Gleason, and not C. spectabilis Gleason nor Maieta setosissima Suessenguth, seems to be a synonym of C. globulifera (Cogn.) L. Wms. If this be verified from type specimens, the correct name for the long-setose myrmecophilous species from Costa Rica again becomes C. spectabilis.]

CLIDEMIA STELLIPILIS (Gleason) Wurdack, comb. nov.

Leandra stellipilis Gleason, Fieldiana Bot. 28: 434. 1952.

Buds on the holotype and flowers on a more recent collection (Steyermark, Dunsterville, & Dunsterville 92755 from Cerro Venamo, Bolívar, Venezuela) show narrowly oblong apically rounded petals. The stellulate pubescence is lacking in the originally suggested relatives in Leandra. The 5-merous flowers with long external calyx teeth indicate placement within Clidemia in Sect. Staphidium.

CLIDEMIA BUNTINGII Wurdack, sp. nov.

C. involucratae DC. et C. morichensi Wurdack affinis, calycis dentibus exterioribus non eminentibus toro modice glanduloso-setuloso differt.

Frutex scandens; ramuli teretes densiuscule setulosi, pilis laevibus gracilibus erectis vel paulo reflexis ca. 1 mm longis. Petioli 0.5-1.5 cm longi; lamina 2.5-4.5(-5.5) X 1.5-2.5 cm ovata vel oblongo-ovata apice anguste acuto basi plerumque paulo (ca. 2 mm) cordata, supra modice strigulosa pilis gracilibus laevibus ca. 1 mm longis appressis vel erecto-incurvis, subtus in venis venulisque modice vel sparse appresso-setulosa, 5-nervata, venulis subtus subplanis modice irregulariterque reticulatis areolis ca. 0.5 mm latis. Inflorescentiae e foliorum superiorum axillis singulae plerumque triflorae raro 5-florae vel uniflorae, pedunculo gracili 1-3.5 cm longo sicut bracteis bracteolisque densiuscule setuloso pilis glanduliferis 0.7-1.2 mm longis sparse intermixtis; flores 5-meri subsessiles (pedicellis ca. 0.3 mm longis indistinctis), bracteolis 4.5-5 X 1-1.5 mm oblanceatis persistentibus. Hypanthium (ad torum) 4 mm longum densiuscule pilis gracilibus subappressis 1-1.5 mm longis eglandulosis armatum; calycis tubus 0.2 mm altus, lobis interioribus 1 mm longis ovato-oblongis ciliatis, dentibus exterioribus setuliferis inframarginalibus non eminentibus; torus modice pilis glanduliferis 0.1-0.2 mm longis ornatus. Petala 3.1-3.4 X 1.7 mm obovato-oblonga interdum setula glandulifera subapicali ornata alioqui glabra. Stamina isomorphica glabra; filamenta 2.2 mm longa; antherarum thecae 3 X 0.5-0.6 mm paulo subulatae, poro terminali 0.2 mm diam., connectivo nec prolongato nec appendiculato. Stigma non vel paullulo expansum 0.3 mm diam.; stylus 8 X 0.25 mm glaber; ovarium 3-loculare $3/4$ inferum, collo ca. 0.6 mm alto modice glanduloso-setuloso.

Type Collection: G. S. Bunting 2874 (holotype US 2547533; isotype Herb. Maracay), collected in moist forest near the military camp, Km 131-134 of the El Dorado-Gran Sabana highway, Edo. Bolívar, Venezuela, elev. ca. 1200 m, 16 Feb. 1968.

"Climber on tree trunks to 4 m or more; branches pendent. Flower heads light violet; stamens white."

Paratypes (all from vicinity of Km 125, road south of El Dorado, Edo. Bolívar, elev. 1000-1200 m): Steiermark & Nilsson 43 and 179, Steiermark & Aristeguieta 85, all in young bud or fruiting.

Both suggested relatives are terrestrial shrubs with the external calyx teeth projecting beyond the internal lobes, a glabrous torus, and ovaries only $1/4$ - $1/3$ inferior. Clidemia involucrata also has leaves in each pair rather dimorphic in size and usually broadly acute to obtuse at the base, as well as shorter peduncles and hypanthia; C. morichensis has thicker glandular-ciliolate leaf blades. The habit of C. buntingii is somewhat suggestive of the species-group around C. blepharodes DC.; all these southeast Brazilian species have long-projecting external calyx teeth, a glabrous torus, and ovaries about $1/3$ inferior. There is no close affinity of C. buntingii with the

climbing or creeping species, C. epibaterium DC. or (ex char.) C. repens Triana.

CLIDEMIA BERNARDII Wurdack, sp. nov.

C. piperifoliae Gleason affinis, foliis tenuioribus subtus in venis secundariis tertiariisque sparse pilis 0.1-0.3 mm longis setulosis calycis dentibus exterioribus brevioribus differt.

Ramuli teretes sicut foliorum costae subtus petiolique modice pilis 0.5-0.7(-1) mm longis incurvo-appressis laevibus basim versus robustiusculis induti; petioli 1.5-3 cm longi; lamina 12-21 X 5-8.5 cm elliptica utroque acuta basi interdum paulo asymmetrica, membranacea et obscure ciliolato-serrulata, supra primum bullata bullis unisquisque setula robusta 0.1-0.3 mm longa terminatis et in venis primariis modice gracili-strigulosa demum plana et glabrata, subtus in venis primariis sparsiuscule appresso-setulosa pilis robustiusculis 0.3-0.5 mm longis in venis secundariis tertiariisque sparse setulosa pilis 0.1-0.2 mm longis in venulis superficieque glabra, subalternatim 5(-7)-plinervata pari interiore 2-4 cm supra laminae basim divergente venis secundariis 3-5 mm inter se distantibus venulis subtus planis densiuscule reticulatis areolis 0.2-0.3 mm latis. Flores 4-meri sessiles in foliorum superiorum axillis pauciglomerati (alabastris submaturis solum cognitis), bracteolis persistentibus ca. 1 mm longis late ovatis vel oblatis. Hypanthium (ad torum) ca. 1.5 mm longum modice strigulosum, pilis laevibus 0.5-0.7 mm longis; calycis tubus 0.2 mm longus, lobis interioribus ovatis rotundatis 0.4 mm longis, dentibus exterioribus crassis setuliferis 0.2-0.3 mm eminentibus. Petala extus mucrone subapicali brevi ornata alioqui glabra, apice rotundato. Stamina isomorphica glabra; antherarum thecae ca. 1-1.1 X 0.2 X 0.3 mm anguste oblongae, poro minuto 0.1 mm diam.; connectivum nec prolongatum nec appendiculatum. Stigma in alabastris paullulo expansum; stylus glaber; ovarium 4-loculare 2/3 inferum, apice sparse setuloso pilis ca. 0.15 mm longis.

Type Collection: A. L. Bernardi 820 (holotype NY), collected in rainforest on the lower slopes of Aprada-tepuí, Mun. Urimán, Edo. Bolívar, Venezuela, elev. 1000-1200 m, 19 Aug. 1953 (in bud).

Paratype: Bassett Maguire, J. A. Steyermark, & C. K. Maguire 60312 (NY, US), from Camp No. 2, Rio Tucano, Amazonas, Brazil, elev. 260 m, 2 Dec. 1965 (fruiting). "Shrub 2.5 m. Hypanthium green; fruit fleshy, gray-blue." (Third Serra da Neblina Expedition. Rio Negro, Rio Cauaburi).

Clidemia piperifolia has thicker leaf blades which are densely long-setulose (the fine hairs ca. 1 mm long) on the veins beneath, denser and longer cauline and hypanthial pubescence, external calyx teeth projecting 0.5-0.7 mm beyond the internal lobes, and ovarial setulae 0.4-0.5 mm long. Only one flower bud of C. bernardii was dissected; thus the difference in ovary-cell number from C. piperifolia may not be diagnostic. All the specific differences are quantitative, but the accumulation gives

C. bernardii a different aspect; the young leaves are bullate above, but mature ones (dried) have plane (or nearly so) surfaces. The other described species in this alliance, C. heteroneura (DC.) Cogn., has no simple hairs, merely a pulverulence on most parts, as well as subulate bracteoles. Two other taxa in this species-group remain undescribed; one is represented by Tate 818 (NY, US), from Cerro Duida, resembling C. piperifolia in the permanently bullate leaves and C. bernardii in the attenuated pubescence, but differing from both in the much smaller (5-7 X 1.5-2 cm) leaf blades; the other was sampled in Schultes 16908 (NY, US), from the Río Apaporis, Colombia, with foliar features intermediate between C. piperifolia and C. bernardii but finer cauline pubescence and glabrous (in young fruit) ovary apices. More material is required for both taxa before descriptions can be written.

CLIDEMIA TEPUIENSIS Wurdack, nom. nov.

Clidemia coriacea (Naud.) Cogn., Mart. Fl. Bras. 14(4): 510. 1888, non C. coriacea Naud., Ann. Sci. Nat. ser. 3 Bot. 17: 368. 1852.

Staphidiastrum coriaceum Naud., Ann. Sci. Nat. ser. 3 Bot. 17: 329. 1852.

Sagraea coriacea (Naud.) Triana, Trans. Linn. Soc. Bot. 28: 138. 1871.

CLIDEMIA LINEARIS (Gleason) Wurdack, comb. nov.

Leandra linearis Gleason, Bull. Torrey Club 58: 425. 1931.

Nowhere in either Clidemia or Miconia can I find the exact floral character combination exhibited by the two above-cited species and C. duidae Gleason. The bracteoles, hypanthium, and calyx are approximated in M. condylata Wurdack and M. ferreyrae Wurdack, but both these Peruvian species lack the glandular inflorescence hairs, the setulose torus (within), and the 3-celled ovaries found in the three tepui species of Clidemia. With no better clues at present as to the best generic disposition, the impending Flora de Venezuela treatment of the family has impelled the current choice of two rather than three new combinations. For an earlier allusion to the problem, see Mem. N. Y. Bot. Gard. 10(5): 185. 1964.



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