

STUDIES OF SOUTH AMERICAN PLANTS, X
NOTEWORTHY MYRISTICACEAE AND VACCINIACEAE

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THROUGH the kindness of the authorities of the U. S. National Herbarium and the Instituto Botanico of Bogotá, a series of Colombian specimens representing the Myristicaceae and Vacciniaceae has been made available to me for study. Most of these specimens were collected in the Comisaria of Putumayo by J. Cuatrecasas and in the Department of Antioquia by R. D. Metcalf and J. Cuatrecasas. One new species is based upon a collection from Antioquia by Brother Daniel, while an Ecuadorean plant collected by A. Rimbach is also described as new. Eleven new species are here described; of interest is the discovery in Colombia for the first time of the genera *Semiramisia* and *Ceratostema* (sensu vero). In the following pages the place of deposit of specimens is indicated by parenthetical letters as follows: (A), Arnold Arboretum; (Col), Instituto Botanico, Universidad de Colombia, Bogotá; (US), U. S. National Herbarium.

MYRISTICACEAE

Dialyanthera parvifolia Markgraf in Notizbl. Bot. Gart. Berlin **9**: 964. 1926; A. C. Sm. in Brittonia **2**: 417. 1938, **3**: 339. 1939.

COLOMBIA: Putumayo: Selva higrófila del río San Miguel, en el afluente izquierda Quebrada de la Hormiga, alt. 290 m., *Cuatrecasas 11139* (Col, US); Mocoa, bosque higrófilo en la Quebrada del río Mulato, alt. 570–600 m., *Cuatrecasas 11314* (A, Col, US). BOLIVIA: La Paz: Prov. Larecaja, Tuirí, near Mapiri, alt. 490–750 m., *Krukoff 10734* (A, etc.).

In my monograph of 1938 I listed this species only from Peru and adjacent Brazil; the above-cited collections from the Amazonian portions of Colombia and Bolivia demonstrate that the species has a fairly wide range. In 1939 I reported the plant from Venezuela, and another collection from that country (*Williams 10210* [A], from National Park, alt. 850–1100 m.) is now available. *Dialyanthera parvifolia* is therefore now known to have a fairly extensive distribution along the western edge of the Amazon basin from Bolivia to Colombia and continuing northward to Aragua in Venezuela.

Virola peruviana (A. DC.) Warb. in Nova Acta Acad. Leop.-Carol. **68**: 188. 1897; A. C. Sm. in Brittonia **2**: 472. 1938.

COLOMBIA: Putumayo: Selva higrófila del río Putumayo; Puerto Porvenir, arriba de Puerto Ospina, hacia la Loma, alt. 230–250 m., *Cuatrecasas 10746* (Col, US).

The cited collection extends to Colombia the range of *V. peruviana*, previously recorded from Amazonian Peru and Brazil, but only from the southern tributaries of the Amazon. The Cuatrecasas specimen has leaf-blades up to 40 by 12.5 cm. (larger than those previously known), and its tomentum is perhaps somewhat more persistent throughout; nevertheless it agrees with earlier collections of the species in all essential details.

Virola calophylla Warb. in Nova Acta Acad. Leop.-Carol. **68**: 231. 1897; A. C. Sm. in Brittonia **2**: 474. 1938.

COLOMBIA: Putumayo: Selva higrófila del río Putumayo; Puerto Porvenir, arriba de Puerto Ospina, hacia la Loma, alt. 230–250 m., *Cuatrecasas 10653* (Col, US).

The cited specimen is of especial interest as being the first Colombian collection which can be referred to *V. calophylla* without doubt. Otherwise the species has a range in Amazonian Brazil, Venezuela, and Peru. In 1938 I referred to *V. calophylla* the type of *V. incolor* Warb., a sterile juvenile specimen from Villavicencio, and thus the species has already been reported from Colombia, but only inadequately so. The Cuatrecasas collection, being in fruit, permits a correction of my earlier description. The pubescence of the fruit is much coarser than previously indicated, the individual hairs being somewhat more than 1 mm. in length, copiously jointed, and with numerous minute lateral branches, somewhat like the pubescence illustrated for *V. lorentensis* A. C. Sm. (Brittonia **2**: f. 7, g. 1938). Apparently these hairs are at length deciduous, leaving the fruit closely tomentellous.

VACCINIACEAE

Semiramisia pulcherrima sp. nov.

Frutex ad 50 cm. altus ubique filamentis exceptis glaber, ramulis teretibus gracilibus ut videtur elongatis; petiolis subteretibus rugulosis 3–4 mm. longis; laminis subcoriaceis ovatis, 4.5–6 cm. longis, 2.5–3 cm. latis, basi rotundatis vel late obtusis, apice gradatim acuminatis, margine leviter recurvatis, 3-plicis-nerviis, nervis secundariis prope basim orientibus apicem folii versus costa conjunctis, costa et nervis secundariis supra leviter impressis subtus elevatis, nervis marginalibus indistinctis et rete venularum immersis vel subtus paullo prominulis; inflorescentiis apicem ramulorum versus axillaribus racemosis 5–8-floris, basi bracteis paucis ovatis acutis circiter 1.5 mm. longis subtentis, rhachi subtereti 1–1.5 mm. diametro 1–2 cm. longa; floribus alternatis basi bracteatis, bracteis papyraceis elongato-deltoideis 1.5–2 mm. longis acutis parce glanduloso-marginatis; pedicellis teretibus 8–15 mm. longis apicem versus bibracteolatis (bracteolis ut bracteis sed minoribus), basi gracilibus, distaliter in calycem gradatim incrassatis; calyce obconico limbo incluso 10–15 mm. longo et apice ad 15 mm. diametro, limbo papyraceo erecto-patente lobis inclusis 5–6 mm. longo inconspicue nervato, lobis inconspicuis in cuspidem 0.5–0.8 mm. longam apiculatis margine biglandulosis, glandulis linearibus 0.5–2 mm. longis; corolla carnea campanulato-cylindrica sub anthesi 40–50 mm. longa, basim versus 10–15 mm. ut videtur apice ad 20 mm. diametro, lobis deltoideis acutis 6–10 mm. longis et latis; staminibus corollam fere subaequantibus; filamentis liberis 6–8 mm. longis, 1–1.5 mm. latis, ubique praeter basim pilis circiter 0.2 mm. longis puberulis; thecis crassis circiter 8 mm. longis basi leviter incurvatis; tubulis gracillimis (basi circiter 0.4 mm. apicem versus circiter 0.25 mm. diametro) 25–30 mm. longis, poris terminalibus vel leviter obliquis dehiscentibus; stylo corollam subaequante gracili truncato.

COLOMBIA: Putumayo: Alta cuenca del río Putumayo, filo de la Cordillera entre El Encano y Sibundoy; páramo de San Antonio del Bordoncillo, alt. 3250 m., 4 Enero 1941, *Cuatrecasas 11771* (Col, US no. 1798516, TYPE), frútex de 0.50 m.; corola crasa rosado-anaranjada.

In its distinct and pilose filaments, *S. pulcherrima* resembles *S. Kar-*

steniana Kl., from which it differs in its smaller and fewer-nerved leaf-blades, shorter pedicels, and much larger flowers, especially the larger calyx and broader corolla. From the remaining species of *Semiramisia*, the new species differs in its separate and pilose filaments, as well as in details of foliage, its more complex inflorescence, and the proportions of its calyx and corolla, etc. *Semiramisia pulcherrima* is the first recorded specimen of the genus from Colombia, it having previously been known from the Andes of Venezuela, Ecuador, and Peru.

***Ceratostema amplexicaule* sp. nov.**

Frutex, ramulis gracilibus teretibus molliter et breviter albo-pilosis; foliis sessilibus vel minutissime petiolatis, laminis subcoriaceis ovato-oblongis, 5–7.5 cm. longis, 3–4.5 cm. latis, basi profunde cordatis et amplexicaulibus, apice obtusis, margine leviter recurvatis, utrinque molliter pilosis vel puberulis ut videtur demum glabrescentibus, nervis secundariis utrinsecus circiter 4 basim versus orientibus cum costa supra subimmersis vel prominulis subtus prominentibus, infimis paullo reflexis, summis arcuatis et apicem laminae versus costa obscure conjunctis, rete venularum subimmerso; inflorescentiis racemosis subterminalibus ubique (i.e. rhachi, bracteis bracteolisque, pedicellis, calyce et corolla extus) pilis 0.5–0.8 mm. longis molliter albo-pilosis; rhachi leviter angulata 2.5–4.5 cm. longa 7–13-flora; bracteis sub pedicellis papyraceis deltoideis 2–3 mm. longis et latis acutis intus glabris; pedicellis subteretibus 10–17 mm. longis, cum calyce obscure articulatis, paullo infra medium vel basim versus bibracteolatis, bracteolis suboppositis ut bracteis sed minoribus et obscure pauciglanduloso-marginatis; calycis tubo cupuliformi obscure 10-costato sub anthesi circiter 3 mm. longo et 5 mm. diametro, limbo subpatente lobis inclusis circiter 3 mm. longo intus glabro, lobis 5 deltoideis acutis, circiter 2 mm. longis et 4 mm. latis, secus margines praeter apicem versus glandulis linearibus praeditis, sinibus acutis; corolla crasse carnea urceolato-cylindrica vel juventute leviter angulata, sub anthesi 25–30 mm. longa et basim versus 6–7 mm. diametro, distaliter gradatim angustata, intus glabra, demum profunde 5-lobata, lobis subulatis ad 15 mm. longis et basi 3 mm. latis, apice subacutis; staminibus corollam subaequantibus vel leviter exsertis, filamentis membranaceis glabris mox liberis ligulatis 6–8 mm. longis, thecis valde granulosis 9–10 mm. longis 1–1.5 mm. crassis, tubulis gracillimis circiter 0.2 mm. diametro 13–14 mm. longis basim versus saepe tuberculato-granulosis, poris ovalibus oblique terminalibus circiter 0.7 mm. longis dehiscentibus; stylo corollam subaequante gracili (circiter 0.5 mm. diametro) truncato.

COLOMBIA: Putumayo: Vertiente oriental de la Cordillera, bosques higrófilos entre Mocoa y Sachamates, alt. 600–700 m., 29 Diciembre 1940, Cuatrecasas 11407 (Col, US no. 1798507, TYPE), frútex; corola rojo-anaranjada.

In its subsessile leaf-blades, which are deeply cordate and amplexicaul at base, the new species resembles only *C. peruvianum* Gmel., the remaining species of the genus having leaf-blades cuneate to attenuate at base. In their pubescence, *C. amplexicaule* and *C. peruvianum* are essentially similar. However, the new species differs sharply from *C. peruvianum* in its very small calyx-lobes, those of Gmelin's species being 10–15 mm. long and 6–9 mm. broad. In other respects, also, the flowers of *C. peruvianum* are

substantially larger than those of the new species, the corolla and stamens being about 40 mm. long. Furthermore, the leaf-blades of the new species are more nearly sessile and more obtuse at apex than those of *C. peruvianum*.

The genus *Ceratostema* Juss. (sensu Sleumer in Notizbl. Bot. Gart. Berlin **12**: 278–282. 1935, et A. C. Sm. in Bull. Torrey Bot. Cl. **63**: 307–308. 1936; non sensu falso A. C. Sm. in Contr. U. S. Nat. Herb. **28**: 335–348. 1932) has previously been known only from Ecuador (this being probably true even for *C. peruvianum*, the genotype). It should be noted that the present species falls into the genus *Englerodoxa* Hoer. as treated by me in 1932 (op. cit. 350–352), a synonym of *Ceratostema* Juss., which is now known to contain six species. The numerous other species which have been referred to *Ceratostema* belong to *Pellegrinia*, *Demosthenesia*, *Plutarchia*, etc. (see Sleumer, loc. cit. 1935, and A. C. Sm., loc. cit. 1936).

***Psammisia flaviflora* sp. nov.**

Frutex scandens forsan epiphyticus ubique praeter filamenta glaber, ramulis subteretibus gracilibus (apicem versus 2–3 mm. diametro); petiolis crassis (2–3 mm. diametro) semiteretibus 6–12 mm. longis; laminis chartaceis oblongo-ellipticis, 13–20 cm. longis, 4.5–8 cm. latis, basi acutis et in petiolum decurrentibus, apice abrupte caudato-acuminatis (acumine gracili 1–1.5 cm. longo acuto), margine leviter recurvatis, 5- vel 7-pli-nerviis, nervis infimis e basi orientibus summis costa 1–2 cm. concurrentibus, costa nervisque supra paullo elevatis et saepe insculptis subtus prominentibus, rete venularum copioso utrinque prominulo; inflorescentiis ut videtur apicem ramulorum versus axillaribus subfasciculatis vel obscure breviracemosis, rhachi ad 4 mm. longa plerumque brevior; floribus paucis bracteis papyraceis deltoideis circiter 1.5×1.5 mm. subacutis pauciglanduloso-marginatis subtentis; pedicellis rugulosis crassis (1–2 mm. diametro) subcurvatis 15–20 mm. longis paullo supra basim bibracteolatis, bracteolis oppositis bracteis similibus; calyce coriaceo sub anthesi 8–10 mm. longo, tubo cupuliformi 4–6 mm. longo et circiter 7 mm. diametro, limbo erecto-patente lobis inclusis 3–4 mm. longo, lobis deltoideis acutis 2–3 mm. longis et 3–4 mm. latis, sinibus acutis; corolla carnosa subgloboso-urceolata, sub anthesi 7–8 mm. longa et circiter 6 mm. diametro, basim et apicem versus contracta, lobis 5 deltoideis circiter 1.5×1.5 mm. subacutis; staminibus 10, filamentis liberis submembranaceis ligulatis circiter 3.5 mm. longis margine superne ciliolato-puberulis antheras apice thecarum affixis, connectivis brevibus omnibus bicalcaratis (calcaribus subacutis conspicuis saepe antrorsis), antheris circiter 4 mm. longis, thecis valde granulosis circiter 3 mm. longis et 1.3–1.5 mm. crassis, tubulis distinctis gracillimis brevibus (circiter 1 mm. longis) acutis per rimas ovales dehiscentibus; stylo crasso corollam subaequante truncato.

ECUADOR: Guayas (?): Western Cordillera, valley of Río Chimbo, alt. 800 m., *Rimbach* 67 (A, TYPE), shrub, climbing high among forest trees; peduncle and calyx-tube bright red, the calyx-lobes greenish, the corolla and lobes yellow.

The closest relative of this very distinct new species is the recently described *P. occidentalis* A. C. Sm. (in Am. Jour. Bot. **27**: 542. 1940), from western Colombia. However, *P. flaviflora* has leaf-blades with the secondary nerves oriented nearer the base and more prominent on the upper

surface, while its inflorescence has fewer flowers and a shorter rachis. The flowers of the new species have longer pedicels and are substantially larger throughout, the calyx-lobes being entirely different in shape. Other small-flowered species of *Psammisia* with subfasciculate inflorescences — *P. Pennellii* A. C. Sm. and *P. caudatula* Sleumer — have quite distinct foliage as well as minor differences in floral proportions.

Psammisia ferruginea A. C. Sm. in Contr. U. S. Nat. Herb. **28**: 391. *pl.* 10. 1932.

COLOMBIA: Putumayo: Vertiente oriental de la Cordillera, entre Sachamates y San Francisco de Sibundoy, Quebrada de Susunga, alt. 1600–1800 m., *Cuatrecasas* 11447 (Col, US), arbusto de ramas scandens; pedúnculos y cáliz rosado-cárdenos; corola rosada.

This very distinct species has previously been known only from the Departments of El Cauca and Nariño, and therefore the new record is of unusual interest; the type is a Lobb specimen of uncertain origin, but probably from the Pacific slope of Colombia.

Psammisia columbiensis Hoer. in Bot. Jahrb. **42**: 303. 1909; A. C. Sm. in Contr. U. S. Nat. Herb. **28**: 398. 1932.

COLOMBIA: Putumayo: Vertiente oriental de la Cordillera, entre Sachamates y San Francisco de Sibundoy, Quebrada de Susunga, alt. 1600–1800 m., *Cuatrecasas* 11446 (A, Col), arbustito de ramas péndulas; pedúnculos, cálices y corolas rojos, ápice blanco.

This species has previously been recorded only from the type, collected by Lehmann in the "Central Andes of Popayán," Dept. El Cauca, alt. 2500–2800 m. The present collection agrees with the type in all essential characters, including the connate filaments, but has its leaf-blades slightly broader, 2.5–4.8 cm. broad.

Psammisia Cuatrecasasii sp. nov.

Frutex ramosus ubique praeter filamenta bracteas bracteolasque glaber, ramulis crassis (apicem versus circiter 8 mm. diametro) subteretibus; petiolis crassis (4–5 mm. diametro) circiter 2 cm. longis; laminis coriaceis siccitate olivaceis late ovato-oblongis, 22–27 cm. longis, 12–14 cm. latis, basi rotundatis vel obtusis et in petiolum paullo decurrentibus, apice ut videtur obtuse cuspidatis, margine anguste recurvatis, 7–9-plex-nerviis, nervis infimis e basi orientibus summis costa ad 5 cm. concurrentibus, costa nervisque supra subplanis subtus valde prominentibus, rete venularum subimmerso subtus leviter prominulo; inflorescentiis axillaribus racemosis 6–9-floris, rhachi crassa subtereti circiter 4 cm. longa, pedicellis sub anthesi 25–30 mm. longis, bracteis subcoriaceis oblongis circiter 6 mm. longis et 3 mm. latis apice rotundatis margine obscure ciliolato-puberulis subtentis, paullo supra medium bibracteolatis, bracteolis suboppositis papyraceis deltoideo-oblongis circiter 3×2 mm. acutis margine ciliolato-puberulis et pauciglandulosis; calyce coriaceo late cupuliformi, tubo circiter 2 mm. longo et 5 mm. diametro, limbo patente lobis inclusis 3–4 mm. longo, lobis 5 late ovatis, 2–3 mm. longis, 5–6 mm. latis, apice apiculatis, margine praeter apicem versus glanduloso-incrassatis; corolla carnosa cylindrico-urceolata sub anthesi 21–27 mm. longa, basim versus circiter 7 mm. diametro, supra ad 4 mm. angustata, lobis 5 incrassatis deltoideis subacutis circiter 3×3 mm.; staminibus 10, filamentis liberis subcarnosis ligulatis 6–7 mm. longis margine superne puberulis, connectivis superne alternatim

conspicue bicalcaratis (calcaribus 0.7–1 mm. longis acutis antrorsis), thecis valde granulosis 8–9 mm. longis basi inconspicue tuberculatis, tubulis leviter cohaerentibus circiter 4 mm. longis per rimas ovales 2–3 mm. longas dehiscentibus; stylo filiformi sub anthesi conspicue exserto 25–30 mm. longo truncato.

COLOMBIA: Putumayo: Alta cuenca del río Putumayo en el Valle de Sibundoy extremo E., junto a San Francisco, alt. 2200 m., 1 Enero 1941, *Cuatrecasas 11562* (Col, TYPE), arbusto ramoso; pedúnculo, cáliz y corola carmín, extremo blanco.

Psammisia Cuatrecasasii is at once distinguished by its large and proportionately broad 7–9-ply-nerved leaf-blades. In foliage it most suggests *P. Ulbrichiana* Hoer., but it has even broader leaves, larger bracts, and larger and much more conspicuously spurred stamens. Perhaps a closer relative of the new species is *P. falcata* (H. B. K.) Kl., a species with leaf-blades only 3.5–7 cm. broad and 5–7-ply-nerved, usually longer inflorescences, and smaller bracts.

***Psammisia aestuans* sp. nov.**

Frutex (?) ubique praeter filamenta glaber, ramulis gracilibus (apicem versus 1 mm. vel minus diametro) subteretibus; petiolis gracilibus leviter canaliculatis 2–5 mm. longis; laminis subcoriaceis in sicco olivaceis vel saepe metallicis ovatis, 3–5 cm. longis, 1.2–2.2 cm. latis, basi rotundatis vel late obtusis, apice acumine gracili attenuato 1–2 cm. longo conspicue praeditis, margine anguste recurvatis, 3- vel 5-ply-nerviis (nervis exterioribus inconspicuis), nervis interioribus e costa ad 5 mm. supra basim orientibus, costa supra leviter impressa subtus cum nervis elevatis, nervis supra saepe prominulis, venulis immersis; inflorescentiis axillaribus breviter racemosis paucifloris (sub anthesi saepe unifloris), rhachi gracili 2–7 mm. longa basim versus minute bracteata, floribus bracteis papyraceis deltoideis acutis circiter 1 mm. longis et latis subtentis; pedicellis subteretibus rugulosis crassis (1.5–2 mm. diametro) circiter 12 mm. longis basim versus minute bibracteolatis, bracteolis suboppositis bracteis similibus; calyce minute ruguloso 7–8 mm. longo et summo diametro, tubo cupuliformi 4–5 mm. longo et diametro, limbo papyraceo erecto-patente lobis minute apiculatis inclusis 3–4 mm. longo, sinibus complanatis; corolla carnea cylindrico-urceolata sub anthesi 15–17 mm. longa, basim versus 5–7 mm. diametro distaliter gradatim angustata, lobis 5 elongato-deltoideis acutis circiter 2×1.5 mm.; staminibus 10 corollam fere aequantibus, filamentis submembranaceis liberis ligulatis circiter 2 mm. longis et 1–1.5 mm. latis margine superne minute ciliolatis, connectivis angustis omnibus superne bicalcaratis (calcaribus acutis vel subacutis alternatim conspicuioribus), antheris circiter 13 mm. longis, thecis valde granulosis 5.5–6 mm. longis crassis (circiter 1.5 mm. diametro) basi incurvatis, tubulis liberis gracilibus 7–7.5 mm. longis per rimas ovales 0.7–1 mm. longas dehiscentibus; stylo filiformi corollam subaequante truncato; fructibus immaturis coriaceis subglobosis 7–8 mm. diametro, calycis limbo persistente coronatis.

COLOMBIA: Antioquia: La Ceja, Diciembre 1939, *Hermano Daniel 2178* (US no. 1778630, TYPE), corola en el base roja, en el ápice verde.

Psammisia aestuans is so distinct from the other species of *Psammisia* that one places it here with hesitation; yet, on the basis of floral characters, there can be no doubt of its place in the genus. The small, long-acuminate,

few-nerved leaves suggest those of no other species of *Psammisia*, but the flowers are typical for the genus, although the inconspicuous calyx-lobes and the long anther-tubules are unusual.

***Plutarchia angulata* sp. nov.**

Frutex, ramulis subteretibus apicem versus pilis 0.4–0.7 mm. longis dense cinereo-pilosis demum glabrescentibus; petiolis 1–3 mm. longis in-crassatis (1.5–2 mm. diametro) ut ramulis pilosis; laminis subcoriaceis in sicco fusco-olivaceis late ovatis, 2.3–3.5 cm. longis, 2.2–4 cm. latis, basi leviter cordatis, apice obtusis vel subrotundatis, margine anguste recurvatis, supra minute puberulis mox glabris, subtus praecipue costa ut petiolis hispidulo-pilosis demum glabrescentibus, 7- vel 9-pli-nerviis, costa supra leviter impressa subtus elevata, nervis secundariis basim versus orientibus curvatis supra subimmersis subtus prominulis, venulis obscuris vel subtus paullo prominulis; inflorescentiis apicem ramulorum versus axillaribus vel subterminalibus 2–5-floris breviter racemosis, basi bracteis paucis papyraceis ovatis acutis pilosis 2–3 mm. longis circumdatis, rhachi subtereti rugulosa 5–25 mm. longa ut ramulis dense pilosa vel puberula; floribus bracteis papyraceis anguste oblongis acuminatis 3–4 mm. longis extus puberulis subtentis; pedicellis subteretibus dense pilosis 8–20 mm. longis basim versus bibracteolatis, bracteolis suboppositis bracteis similibus sed minoribus mox caducis; calyce cum pedicello articulado 12–15 mm. longo extus pilis albidis mollibus circiter 0.3 mm. longis dense piloso demum subglabrescente, tubo 4–6 mm. longo basi rotundato alis 4 conspicuis 2–3 mm. latis sinibus oppositis ornato, limbo 8–9 mm. longo erecto intus glabro fere ad basim 4-lobato, lobis subcoriaceis elongato-deltoides basi 5–8 mm. latis forsan accrescentibus ad apicem acutum gradatim angustatis, sinibus acutis; corolla tenuiter carnosae tubulosa 4-angulata, sub anthesi 17–21 mm. longa et 5–6 mm. diametro, extus pilis 0.5–1 mm. longis densissime villosovelutina, intus glabra, lobis 4 oblongo-deltoides subacutis circiter 2×2 mm.; staminibus 8 similibus quam corolla paullo brevioribus, filamentis liberis carnosis glabris ligulatis 2–3 mm. longis, antheris 12–17 mm. longis, thecis minute granulosis 4–7 mm. longis et circiter 1 mm. diametro, tubulis latis flexilibus plerumque quam thecis circiter duplo longioribus per rimas elongatas dehiscentibus; disco inconspicuo glabro; stylo filiformi corollam subaequante, stigmate truncato vel minute subpeltato.

COLOMBIA: Putumayo: Alta cuenca del río Putumayo, filo de la Cordillera entre El Encano y Sibundoy; páramo de San Antonio del Bordoncillo, alt. 3250 m., 4 Enero 1941, Cuatrecasas 11733 (Col, US no. 1798515, TYPE), frútex; cáliz y corola rosados.

Although *P. angulata* does not bear a close superficial resemblance to the other species of *Plutarchia*, its staminal characters indicate that it can belong to no other genus. It differs from the other species of the genus in its 4-merous flowers, its winged calyx-tube, and its angled densely pubescent corolla, while its proportionately broad cordate subsessile leaf-blades, which are soft-pilose beneath, are also characteristic. *Plutarchia pubiflora* (Wedd.) A. C. Sm. is perhaps the closest ally of *P. angulata*, but there are numerous obvious differences between the two species.

***Cavendishia Cuatrecasasii* A. C. Sm.** in Rev. Acad. Colomb. Ci. Ex. Fis.-Quím. Nat. 5: 38. 1942.

Since the publication of this well-marked species, two additional collections have come to my attention:

COLOMBIA: Putumayo: Vertiente oriental de la Cordillera, entre Sachamates y San Francisco de Sibundoy, alt. 1600–1750 m., *Cuatrecasas* 11464 (A, Col, US), arbusto de ramas divaricadas; brácteas y flores rosado cárdenas; Huila-Caqueta: Cordillera Oriental sobre el filo divisorio, en Gabinete, alt. 2300–2450 m., *Cuatrecasas* 8479 (Col, US), gran frútex; brácteas rosadas; cáliz muy largo, rosado; corola, base y ápice blanco rosado, tercio superior roja.

These specimens make desirable a slight amplification of the original description, as follows: petioles up to 15 mm. long; leaf-blades up to 18 cm. long and 9 cm. broad; corolla often only 22 mm. long, the stamens proportionately shorter than those originally described. These slight variations are no more than individual.

***Cavendishia speciosa* sp. nov.**

Frutex ad 5 m. altus ubique praeter filamenta glaber, ramulis teretibus gracilibus (apicem versus 2–3 mm. diametro); petiolis subteretibus rugosis incrassatis (2–3 mm. diametro) 5–8 mm. longis; laminis coriaceis in sicco fuscis anguste oblongis, 8–14 cm. longis, 2–3.6 cm. latis, basi obtusis, apice caudato-acuminatis (acumine gracili 10–15 mm. longo), margine anguste et basim versus conspicue revolutis, 3-plici-nerviis, nervis paullo supra basim orientibus adscendentibus costa apicem versus inconspicue conjunctis, costa nervisque supra impressis subtus valde elevatis, nervis marginalibus interdum visis sed immersis, rete venularum immerso; inflorescentia axillari vel subterminali multiflora, rhachi crassa (4–6 mm. diametro) basi florum 30–40 incrassata; bracteis sub floribus membranaceis copiose reticulato-venosis obovato-oblongis, 30–40 mm. longis, 18–30 mm. latis, apice rotundatis vel conspicue bilobatis, dorso glandulas minutas subglobosas sessiles saepe copiose gerentibus; pedicellis teretibus crassis 6–7 mm. longis ut videtur ebracteolatis (bracteolis non visis forsan mox caducis); calyce 11–12 mm. longo, tubo breviter cylindrico 3–4 mm. longo et circiter 4.5 mm. diametro, limbo submembranaceo erecto lobis inclusis 7–8 mm. longo, lobis deltoideis acutis circiter 2 mm. longis et 3.5 mm. latis glandulas plures albas sessiles margine gerentibus, sinibus rotundatis; corolla tenuiter carnosa cylindrica, sub anthesi circiter 30 mm. longa et basim versus 5–6 mm. diametro, distaliter angustata, lobis 5 oblongis subacutis circiter 2×1.5 mm.; staminibus quam corolla multo brevioribus, filamentis ligulatis alternatim circiter 4 mm. et 7–8 mm. longis superne angustatis intus et margine distaliter pilosis, antheris alternatim circiter 11 mm. et 10 mm. longis, thecis 4–5 mm. longis, tubulis quam thecis paullo longioribus per rimas elongatas ovas dehiscentibus; stylo filiformi corollam subaequante, stigmate minute peltato.

COLOMBIA: Antioquia: Between Valdivia and Yarumal, alt. 2000 m., moist canyon, Feb. 20, 1942, *Metcalf & Cuatrecasas* 30101 (A, TYPE, US), shrub 4–5 m. high; bracts vivid red, with brown glands; calyx white; corolla white and rose.

This beautiful and spectacular species is one of the most distinct in *Cavendishia*, being characterized by its thick 3-nerved leaf-blades, its membranaceous reticulate-veined bracts, its elongate glandular-margined calyx-limb, and its large showy corollas. Its closest relative is doubtless *C. Kalbreyeri* Mansf., also from Antioquia, from which it differs in its more elongate inflorescence with more numerous flowers, its larger and

thinner bracts, its calyx with glandular rather than thick-margined lobes, its larger corollas, and its shorter and differently proportioned anthers, those of *C. Kalbreyeri* having tubules much longer than the thecae.

***Cavendishia rosea* sp. nov.**

Frutex ad 5 m. altus ubique praeter filamenta glaber, ramulis subteretibus apicem versus 3–4 mm. diametro; petiolis inconspicuis incrassatis 2–5 mm. longis; laminis subcoriaceis siccitate olivaceis ovato-oblongis, 6–9 cm. longis, 2.5–4.3 cm. latis, basi conspicue cordatis, apice obtuse cuspidatis, margine leviter recurvatis, 5–7-plex-nerviis, nervis infimis patentibus debilibus, nervis superioribus costa ad 2 cm. concurrentibus vel e basi orientibus, costa nervisque supra prominulis vel subplanis subtus prominentibus, rete venularum utrinque paullo prominulo, venulis brevibus e costa saepe patentibus; inflorescentia apicem ramulorum versus axillari racemosa 20–30-flora, rhachi angulata 1.5–2.5 mm. diametro 8–9 cm. longa basi pedicellorum incrassata; floribus bracteis papyraceis oblongis 25–32 mm. longis et 8–12 mm. latis acutis conspicue punctatis subtentis; pedicellis teretibus 10–14 mm. longis basim versus decidue bibracteolatis, bracteolis papyraceis elliptico-oblongis, 4–6.5 mm. longis, 2–3 mm. latis, apice rotundatis et minute apiculatis; calyce breviter cylindrico leviter 5-angulato sub anthesi circiter 5 mm. longo, tubo 4–5 mm. diametro, limbo erecto papyraceo lobis inclusis 2–3 mm. longo, lobis saepe incurvatis late deltoideis subacutis circiter 1 mm. longis et 2.5 mm. latis, sinibus rotundatis; corolla subcarnosa cylindrica, sub anthesi 16–17 mm. longa et 4–5 mm. diametro, apice paullo angustata, lobis deltoideis subacutis circiter 0.7×1.5 mm.; staminibus corollam fere aequantibus alternatim leviter inaequalibus, filamentis submembranaceis ligulatis intus parce puberulis alternatim 2–2.5 mm. et 5–6 mm. longis, antheris alternatim 11–12 mm. et 10–11 mm. longis, thecis 3–4 mm. longis, tubulis quam thecis plus minusve duplo longioribus per rimas elongatas dehiscentibus; stylo filiformi corollam subaequante, stigmate minute subpeltato.

COLOMBIA: Antioquia: Between Valdivia and Yarumal, alt. 2200 m., shaded hillside, Feb. 20, 1942, *Metcalf & Cuatrecasas 30123* (A, TYPE, US), shrub 4–5 m. high; stems red-streaked; leaves green with red margins and reddish tinge above; bracts red; corolla rose-red; maturing calyx greenish yellow.

The new species is related only to *C. subamplexicaulis* A. C. Sm., also from northwestern Colombia, with which it has in common an elongate inflorescence and cordate-based leaf-blades. However, *C. rosea* differs from its ally in its proportionately narrower leaf-blades, which are less obviously clasping at base, have fewer and more prominent secondary nerves, and are cuspidate rather than obtuse at apex. The rachis of the new species is more slender, and the bracts and corollas are slightly larger; the anther-proportions are different from those of *C. subamplexicaulis*, in which the thecae and tubules are nearly equal in length. These two closely related species appear to have no other immediate allies.

***Cavendishia Dugandiana* sp. nov.**

Frutex ad 6 m. altus, ramulis fusco-cinereis apicem versus gracilibus et cinereo-puberulis; petiolis subteretibus puberulis 2–4 mm. longis; laminis parvis coriaceis in sicco olivaceis anguste oblongis, 2–4 cm. longis, 0.8–1.4 cm. latis, basi rotundatis vel obscure subcordatis, apice obtusis et saepe

minute mucronulatis, margine subplanis, supra inconspicue scabridis et parce brunneo-glandulosis, subtus pilos minulos brunneos dispersos gerentibus et interdum secus nervos basim versus puberulis, 3- vel obscure 5-plinerviis, nervis secundariis prope basim orientibus et costa supra leviter impressis subtus elevatis, rete venularum immerso; inflorescentia apicem ramulorum versus axillari breviter racemosa 2-4-flora, basi bracteis pluribus imbricatis submembranaceis extus glanduloso-pilosis (pilis brunneis vel albis circiter 0.2 mm. longis) glabrescentibus instructa, bracteis interioribus maximis oblongis ad 2 cm. longis et 0.8 cm. latis apice rotundatis vel leviter emarginatis; rhachi glabra leviter angulata sub anthesi ad 8 mm. longa, floribus bracteis eis basi rhachis similibus subtentis; pedicellis puberulis et parce albo-glandulosis, 2-3.5 mm. longis, basim versus uni-vel bibracteolatis, bracteolis linearibus circiter 3 mm. longis et 0.4 mm. latis conspicue albo-glanduloso-marginatis; floribus extus albo-puberulis; calyce 5-6 mm. longo, tubo cupuliformi sub anthesi circiter 3×3 mm., limbo suberecto intus glabro lobis inclusis 2-3 mm. longo, lobis 5 deltoideis acutis, 1-1.5 mm. longis, circiter 2 mm. latis, margine glandulas albas lineares patenter gerentibus, sinibus rotundatis; corolla tenuiter carnosa intus glabra cylindrica, sub anthesi 10-12 mm. longa et 4-5 mm. lata, apice paullo contracta, lobis deltoideis acutis circiter 1×1.5 mm.; staminibus 10 quam corolla paullo brevioribus, filamentis membranaceis alternatim circiter 1.5 mm. et 4 mm. longis margine puberulo-ciliolatis apice angustatis, antheris alternatim circiter 9 mm. et 8 mm. longis, tubulis quam thecis paullo longioribus per rimas elongatas dehiscentibus; stylo filiformi corollam subaequante subtruncato.

COLOMBIA: Antioquia: Between Yarumal and Medellín, alt. 2700 m., near stream-bed on páramo, Feb. 20, 1942, *Metcalf & Cuatrecasas 30159* (A, TYPE, US), shrub 4-6 m. high; bracts light rose-colored; calyx green, with silvery hairs; corolla red, green-tipped.

Cavendishia Dugandiana is characterized by its small leaves, pilose flowers, and linear glandular-margined bracteoles. Its closest relatives appear to be *C. Killipii* A. C. Sm. and *C. scabriuscula* (H. B. K.) Hoer., from both of which it is distinguished by its smaller and fewer-nerved leaf-blades, fewer-flowered inflorescences, shorter pedicels, smaller flowers, calyx-lobes with linear glands, etc.

It is a pleasure to dedicate this species to Dr. Armando Dugand G., Director of the Instituto Botanico, Universidad Nacional de Colombia, in recognition of his valuable work on the flora of Colombia.

***Satyria arborea* sp. nov.**

Arbor ad 12 m. alta ubique praeter inflorescentiam glabra, ramulis crassis subteretibus cinereis; petiolis rugosis valde incrassatis (2.5-3 mm. diametro) 3-5 mm. longis; laminis coriaceis elliptico-oblongis, 11-12 cm. longis, 3.3-4 cm. latis, basi gradatim acutis, apice obtusis, margine valde recurvatis, 5-plinerviis, nervis interioribus e costa 2.5-4 cm. supra basim orientibus, nervis omnibus adscendentibus cum costa supra valde impressis (costa basim versus elevata) subtus prominentibus, rete venularum immerso; inflorescentiis cum floribus ubique molliter albo-pilosis vel puberulis (pilis 0.1-0.25 mm. longis), copiosis, in axillis foliorum mox delapsorum dispositis, racemosis, 10-25-floris; rhachi leviter angulata gracili 5-20 mm. longa basim versus interdum ramosa, basi bracteis pluribus imbricatis

papyraceis ovatis acutis pauciglanduloso-marginatis 1–2 mm. longis et latis ornata; floribus bracteis oblongis acuminatis circiter 1.5×0.7 mm. subtentis; pedicellis gracilibus sub anthesi 13–18 mm. longis basim versus bibracteolatis; calycis tubo cupuliformi 1.5–2 mm. longo et circiter 3 mm. diametro, limbo papyraceo intus glabro subpatente lobis inclusis 1–1.5 mm. longo, lobis 5 inconspicuis apiculatis, sinibus complanatis; corolla tenuiter carnosia intus glabra cylindrico-urceolata, sub anthesi 8–11 mm. longa et basim versus 2–3 mm. diametro, lobis 5 deltoideis subacutis circiter 0.5×1 mm.; staminibus quam corolla multo brevioribus, filamentis glabris in tubo membranaceo 2.5–3 mm. longo connatis, antheris alternatim circiter 3 mm. et 3.5–4 mm. longis, tubulis thecas subaequantibus per rimas latas ovales dehiscentibus; stylo filiformi corollam subaequante, stigmatibus minute peltato.

COLOMBIA: Antioquia: Between Valdivia and Yarumal, alt. 2200 m., along roadside in partial shade, Feb. 20, 1942, Metcalf & Cuatrecasas 30131 (A, TYPE, US), tree 10–12 m. high; calyx and corolla rose-colored, finely white-pilose, the corolla white distally.

Satyria arborea is apparently most closely allied to the recently described *S. Allenii* A. C. Sm. from Panama (in Ann. Mo. Bot. Gard. **28**: 451. 1941), from which it differs in its arborescent rather than epiphytic habit, shorter petioles, slightly larger leaf-blades with more highly connate secondary nerves, longer and more copiously flowered inflorescences, longer pedicels, and longer anthers (these being about twice as long in *S. arborea* than in *S. Allenii*). Another relative of the new species is *S. breviflora* Hoer., but the two plants differ in many details of foliage and inflorescence; the flowers of *S. breviflora* are larger throughout and are glabrous, at least at anthesis, while those of *S. arborea* are persistently puberulent.

***Themistoclesia epiphytica* sp. nov.**

Frutex epiphyticus scandens vel dependens, ramulis gracilibus subteretibus juventute copiose brunneo-hispidis demum glabrescentibus; petioli subteretibus 1–3 mm. longis ut ramulis hispidis glabrescentibus; laminis primo papyraceis demum coriaceis ovatis, 17–28 mm. longis, 8–14 mm. latis, basi obtusis vel subrotundatis, apice acumine gracili subulato 3–7 mm. longo terminatis, margine anguste recurvatis vel subrevolutis, juventute utrinque parce hispidulis mox glabrescentibus, inconspicue 3- vel 5-plinerviis, costa supra impressa subtus valde elevata, nervis secundariis basim versus orientibus obscuris subtus leviter prominulis vel immersis, rete venularum immerso; inflorescentia axillari vel e ramulis defoliatis oriente breviter racemosa 4–7-flora (floribus raro ad 1 reductis), rhachi pedicellisque plus minusve hispidulis; rhachi gracili plerumque 3–5 mm. longa, basi bracteis pluribus papyraceis oblongis acutis circiter 2 mm. longis circumdata; floribus bracteis anguste oblongis circiter 1.5 mm. longis apice hispidulis subtentis; pedicellis gracilibus 6–13 mm. longis medium versus bibracteolatis, bracteolis ut bracteis sed minoribus margine hispidulis; calyce 5–6 mm. longo extus pilis 0.15–1 mm. longis plus minusve dense hispidulo etiam interdum sparse brunneo-glanduloso, tubo obconico leviter 5-angulato 3.5–4.5 mm. longo 2.5–3 mm. diametro, limbo papyraceo erecto-patente lobis inclusis circiter 1.5 mm. longo, lobis 5 apiculatis 0.3–0.7 mm. longis, sinibus complanatis; disco pulvinato minute vel conspicue hispido (pilis ad 0.5 mm. longis); corolla tenuiter carnosia praeter lobos parce

hispidulos glabra, 9–10 mm. longa, 4–5 mm. diametro, lobis 5 deltoideis subacutis circiter 1×1.5 mm.; staminibus quam corolla paullo brevioribus, filamentis glabris membranaceis filiformi-ligulatis alternatim circiter 3 mm. et 4 mm. longis, antheris 5–5.5 mm. longis, thecis 1.5–2 mm. longis, tubulis quam thecis fere duplo longioribus per rimas ovales 0.7–1 mm. longas dehiscentibus; stylo filiformi corollam subaequante truncato.

COLOMBIA: Nariño: Páramo del Tábano, alto de la Cordillera, entre Pasto y El Encano, vertiente occidental, alt. 3200 m., 11 Enero 1941, *Cuatrecasas 11899* (A, TYPE, Col), frútex epífito, ramoso péndulo; corola vermellón; Putumayo: Alta cuenca del río Putumayo, filo de la Cordillera entre El Encano y Sibundoy; páramo de San Antonio del Bordoncillo, alt. 3250 m., *Cuatrecasas 11725* (Col, US), frútex epífito scandens; corola vermellón.

The genus *Themistoclesia*, which in 1932 (in Contr. U. S. Nat. Herb. **28**: 439–444) I supposed to consist of only six species, has since been greatly expanded; in the most recent treatment (Sleumer in Bot. Jahrb. **71**: 389–393. 1941) 17 species are recognized. *Themistoclesia epiphytica* is characterized by its epiphytic habit, proportionately long calyx-tube, and long filaments. It is probably most closely related to *T. Pennellii* (A. C. Sm.) Sleumer, from which it differs in its larger and acuminate leaf-blades, longer pedicels, slightly larger calyx and corolla, unequal filaments, and somewhat smaller and differently proportioned anthers. *Themistoclesia peruviana* A. C. Sm., another ally of the new species, differs in its more persistently hispid habit, short pedicels, short filaments, differently proportioned anthers, etc.

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