NEW SPECIES AND A NEW COMBINATION FOR PLANTS FROM TRANS-ANDEAN SOUTH AMERICA[1]

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ABSTRACT

Eight new species from the trans-Andean parts of Colombia, Ecuador, and Peru are described, each in a different family. The new species are: Bonamia leonii *(Convolvulaceae)*, Prockia pentamera *(Flacourtiaceae)*, Marila parviflora *(Guttiferae)*, Lozania glabrata *(Lacistemataceae)*, Rouchera monsalveae *(Linaceae)*, Carapa megistocarpa *(Meliaceae)*, Desmoncus cirrhifera *(Palmae)*, *and* Allophylus dodsonii *(Sapindaceae)*. *In addition, a new combination for* Albizia paucipinnata—Pithecellobium paucipinnatum—*is proposed.*

In the course of preparing local florulas in western Colombia (*A Checklist of Plants of Chocó Department, Colombia* (Forero & Gentry, in press), *Flora de Bajo Calima* (Gentry & Monsalve, in prep.), and Ecuador (*Flora of Capeira* (Dodson & Gentry, in press), *Flora of the Río Palenque Science Center*, Revised edition (Dodson & Gentry, in prep.)) we have encountered the following eight novelties, each in a different family. In addition, a new combination is needed for one of the species included in the Capeira florula.

CONVOLVULACEAE

Bonamia leonii A. Gentry & Austin, sp. nov. TYPE. Colombia. Chocó: Municipio de Riosucio, Parque Natural Nacional "Los Katyos," Camino Tilupo Alto via Sautatá, desviando por el camino a Tilupo Salto parte baja, 250–100 m, bejuco, flor lila, 25 Feb. 1976, *H. León 525* (holotype, COL; isotype, MO).

Frutex scandens, ramulis tomentosis. Folia ovata, acuminata, dense tomentosa. Cyma densa, axillaris, pedunculo 1–3 cm longo. Sepala 6–7 mm longa, extima elliptica, obtusa, puberula; corolla infundibuliformis, ca. 1.5 cm longa, extra pilosa. Fructus ignotus.

Liana, the stems densely tannish-tomentose, becoming partially glabrescent. Leaves ovate, sharply acuminate, rounded at base, 8–15 cm long, 3–6.5 cm wide; densely tomentose with golden tannish trichomes, these forming a slightly thickened base, erect with curving tips, appearing macroscopically ± sericeous; petiole 0.3–2 cm long, tomentose. Inflorescence a compound axillary cyme, rather dense, ca. 3 cm across, the peduncle 1–3 cm long; bracts and bracteoles narrowly oblanceolate, tannish tomentose, to ca. 8 mm long. Flowers with the sepals 6–7 mm long, subequal (outermost somewhat longer), the outermost elliptic with obtuse tips, the inner sepals ovate with ± acute tips, appressed puberulous; corolla (only 1 seen) infundibuliform, lilac, ca. 1.5 cm long, pilose outside, slightly lobed, the lobes ca. 2 mm long; stamens 5, the anthers 2–2.5 mm long, on slender glabrous 3–4 mm long filaments; styles 2, free to near base, glabrous, the stigmas biglobose. Fruit not seen.

Known only from Parque Natural Nacional "Los Katyos" in northern Chocó Department of Colombia.

This plant was originally identified tentatively as *Tetralocularia pennellii* O'Donell; however, it does

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not closely resemble that monotypic genus and clearly belongs to *Bonamia*. In Myint & Ward's key to *Bonamia* (Phytologia 17: 121–239. 1968) this new species will key out with three species that they recognize from Southeastern Brazil—*B. agrostopolis* (Vell.) Hall. f., *B. burchellii* (Choisy) Hall. f., and *B. tomentosa* Hassler. All of these have the upper leaf surface densely pubescent and belong to sect. *Trichantha*. Recently, Austin & Staples (unpubl.) examined the types of these Brazilian names and concluded that they represent a single variable species that should be known as *B. agrostopolis*. This Brazilian species differs from *B. leonii* in having slightly smaller leaves; scalelike, linear, caducous bracts only 2–3 mm long rather than oblanceolate, persistent bracts ca. 8 mm long; corolla 2–3 cm long vs. 1.5 cm long; villous lower filaments; and a reniform to sub-bilobed rather than biglobose stigma.

Bonamia leonii appears to be most closely related to *B. trichantha* H. Hallier of northwestern South America and Mesoamerica and to *B. apurensis* Austin of Amazonian Venezuela. Although *B. trichantha* and *B. leonii* overlap geographically, they appear to be ecologically separated, with *B. trichantha* usually found in drier, more seasonal habitats. *Bonamia trichantha* differs further in having white flowers, more glabrescent leaves with glabrous or very sparsely puberulous upper surfaces, and densely glandular pubescent rather than glabrous filament bases.

Allopatric *B. apurensis* is the only *Bonamia* described (*Flora de Venezuela* 8(3): 40. 1982) since Myint & Ward's monograph. That species differs from *B. leonii* in the more broadly ovate leaf shape, cordate base, obtuse apex, more glabrescent upper leaf surface, simple capitate stigma, and especially the larger, more openly corymbose inflorescence with elongate peduncles (12–14 cm long in the MO isotype vs. 1–3 cm long in *B. leonii*).

It is a pleasure to dedicate this distinctive species to its collector, Henry Léon, who made extensive collections in the Katíos Park area of northern Chocó Department, where it is apparently endemic.

FLACOURTIACEAE

Prockia pentamera A. Gentry, sp. nov. TYPE. Peru. Tumbes: Prov. Contralmirante Villar, Huasimo, Quebrada Ucumares, 550 m, 12 Feb. 1976, *T. Plowman 5443* (holotype, USM; isotype, GH, photocopy MO).

Arbor parva. Folia late ovata, acuta vel breviter acuminata, ad basim truncata vel cordata. Flores 2–2.8 cm diametro, sepalis 5, ovatis, ca. 10 mm longis, petalis 5, dense tomentosis, stigmate 5-lobato.

Small tree 5–6 m tall, the bark rough, dark brown, the branchlets appressed puberulous when very young, soon glabrescent except at nodes, lenticellate, the stipules tiny and apparently (only one seen) very early caducous, linear, less than 1 mm long, with a pair of thick yellow glands in lower half. Leaves ovate to broadly ovate, acute to short-acuminate, the base truncate to broadly and shallowly cordate, with 2–4 basal glands at petiole insertion above, membranaceous, glabrous above except for small appressed trichomes on midvein, below rather sparsely hirtellous to glabrous over surface, persistently pubescent at least in and above axils of lateral nerves, serrate, 2.5–15 cm long, 1.3–12 cm wide, 5-nerved from base; petiole 0.5–3.5 cm long, pubescent with appressed or erect trichomes. Inflorescence of 2–3 flowers at end of lateral branches, the slender peduncle ca. 5 cm long, the pedicels 0.5–1 cm long, puberulous with mostly subappressed trichomes. Flowers green when fresh, the sepals five, densely grayish tomentose, ca. 10 mm long, 3–8 mm wide; the petals 5, narrowly oblong, acute, rather densely tomentose, about as long as sepals; stamens inserted on receptacle, the filaments glabrous; ovary subglobose, glabrous, the style ca. 4 mm long, the stigma distinctly 5-lobed. Fruit not seen.

Endemic to the now mostly destroyed dry forest of southwestern Ecuador and extreme northwestern Peru.

Additional specimens examined. ECUADOR: GUAYAS: Capeira, km 21, Guayaquil to Daule, 20–200 m, tropical dry forest, 17 Feb. 1982 (st), *Dodson & Gentry 12588* (GUA, MO, SEL). PERU. TUMBES: Cerros de Amotape 15–25 km SE of Cherrelique, 600–800m, premontane moist forest along Quebrada Los Conejos, 4°9′S, 80°37′W, 9 June 1987 (st), *Gentry & Díaz 58225* (MO, USM); Cerros de Amotape, Quebrada Los Conejos ca. 25 km SE of Cherrelique, 820 m, premontane moist forest, 4°9′S, 80°37′W, 9 June 1987 (st), *Gentry & Díaz 58245* (MO, USM).

Prockia pentamera, only the third species of *Prockia*, is very distinct from its closest relative, *P. crucis* L. *Prockia crucis* (fide Sleumer, 1980) is extremely polymorphic but always has smaller flowers (8–14 mm in diameter, with sepals and petals 4–7 mm long) with 3 (rarely 4) sepals, 3 petals (sometimes none by abortion), and a 3-lobed stigma, whereas all these parts are in 5s in *P. pentamera*. *Prockia pentamera* is the only pen-

tamerous species of *Prockia*, necessitating changes in Sleumer's (1980) generic circumscription. Further, the leaves of *P. pentamera* are generally larger than in *P. crucis*, although only the largest exceed the largest extremes (to 10(–15) × 5(–10) cm) of the latter species. In *P. crucis*, the stipule is rather foliaceous, 5–8(–17) mm long, and persistent, unlike the minute (less than 1 mm long), early caducous stipule of *P. pentamera*.

This species was first collected as a sterile transect voucher at Capeira, near Guayaquil. During fieldwork for the *Florula of Capeira* (Dodson & Gentry, in press), we were unable to discover it in fertile condition despite repeated visits to the single tree. I tried comparing this sterile material in several herbaria with *Prockia* and related genera of Flacourtiaceae (as well as with *Morus* to which it has a superficial resemblance), but was unable to match it and decided that it must be undescribed.

When first found, there were numerous seedlings under the single capeira tree, but in 1985 both tree and seedlings were burned in one of the fires that devastate the remnants of dry forest in coastal Ecuador during the dry season. It seemed possible that an undescribed species had gone extinct. However, in the Universidad de San Marcos herbarium (USM) in Lima, I came across the fertile Plowman collection, which is here designated the type of *P. pentamera*.

Subsequent fieldwork in Tumbes, Peru, shows that *P. pentamera* can be locally very common in dry forest remnants. Indeed, it turns out to be the tenth-commonest species in a study site in the Cerros de Amotape, where there were eight individual plants of this species at least 2.5 cm dbh in a 0.1-ha sample; the largest tree measured 17 cm dbh (Díaz & Gentry, in prep.).

GUTTIFERAE

Marila parviflora A. Gentry, sp. nov. TYPE. Colombia. Valle: Bajo Calima, ca. 10 km N of Buenaventura, Cartón de Colombia concession, transition between tropical wet and pluvial forest, ca. 50 m, 3°56′N, 77°08′W, *H. Mazuero 47* (holotype, CUVC; isotype, MO, fragment and photocopy, IBE). Figure 1.

Arbor. Folia oblongo-ovata, acuta vel breviter acuminata. Inflorescentia spicato-racemosa, 9–13 cm longa, pedicellis 1–2(–3) mm longis. Flores 2 mm longi, petalis 2 mm longis, caducis, staminibus numerosis, ovario glabro.

Tree. Leaves simple, opposite, rigid-coriaceous, oblong-ovate, acute to short-acuminate at apex, obtuse at base, 14–19 cm long, 6–10 cm wide, drying dark gray-brown above, tan below, densely appressed-puberulous below on main veins, sparsely and ± glabrescently so over surface, the secondary nerves almost at right angle to midvein, 23–25 on a side, 4–8 mm apart, anastomosing with a strong submarginal collection vein; petiole 1.5–2.5 cm long. Inflorescences spicate-racemose, usually 3 per axil, the slender rachis 9–13 cm long, ca. 1 mm diam., puberulous with suberect trichomes, the pedicels 1–2(–3) mm long. Flowers tiny for the genus, 2 mm long, the sepals subappressed puberulous, 2 mm long; petals caducous, thinly membranaceous, strap-shaped, 2 mm long; stamens many, free, about as long as sepals, the minute anthers subglobose with the connective thick and patelliform-glandular; pistil ca. 2.5 cm long, the ovary ovoid, glabrous, the style linear, the stigma truncate, subcapitate.

Known only from the type locality, which appears to be in an area of high species richness for the genus. Cuatrecasas (1949) described five new species and a new variety of *Marila* from the central Pacific coastal region of Colombia. Two of these, *M. micrantha* and *M. geminata*, are closely related to *M. parviflora* by their very small flowers; indeed, *M. parviflora* and *M. micrantha* have the smallest flowers in the genus. Unique among described species of *Marila* is the almost spicate inflorescence of *M. parviflora*. *Marila parviflora* differs from *M. micrantha*, presumably its closest relative, by having shorter pedicels (1–2 mm vs. 3–6 mm long) and consequently spiciform inflorescence, inflorescences several per node (rather than solitary), larger, obtuse-based leaves with over twice as many straight (rather than arcuate-ascending) lateral veins, and subcapitate stigma. The other close relative of *M. parviflora* is *M. geminata*, which has similar multiple inflorescences at each node but distinctly larger flowers (sepals 3.5–4 mm long) and longer pedicels (4–7 mm long). The leaves of *M. geminata* differ in being larger and having acute bases and longer petioles and especially in the lateral nerves averaging almost twice as far (8–10 mm) apart.

An undescribed species of *Marila* from Amazonian Peru has a similarly spicate inflorescence but is amply distinct from *M. parviflora* (McDaniel, pers. comm.).

LACISTEMATACEAE

Lozania glabrata A. Gentry, sp. nov. TYPE. Colombia. Chocó: north ridge of Alto de Buey above Dos Bocas del Río Mutatá, tributary of

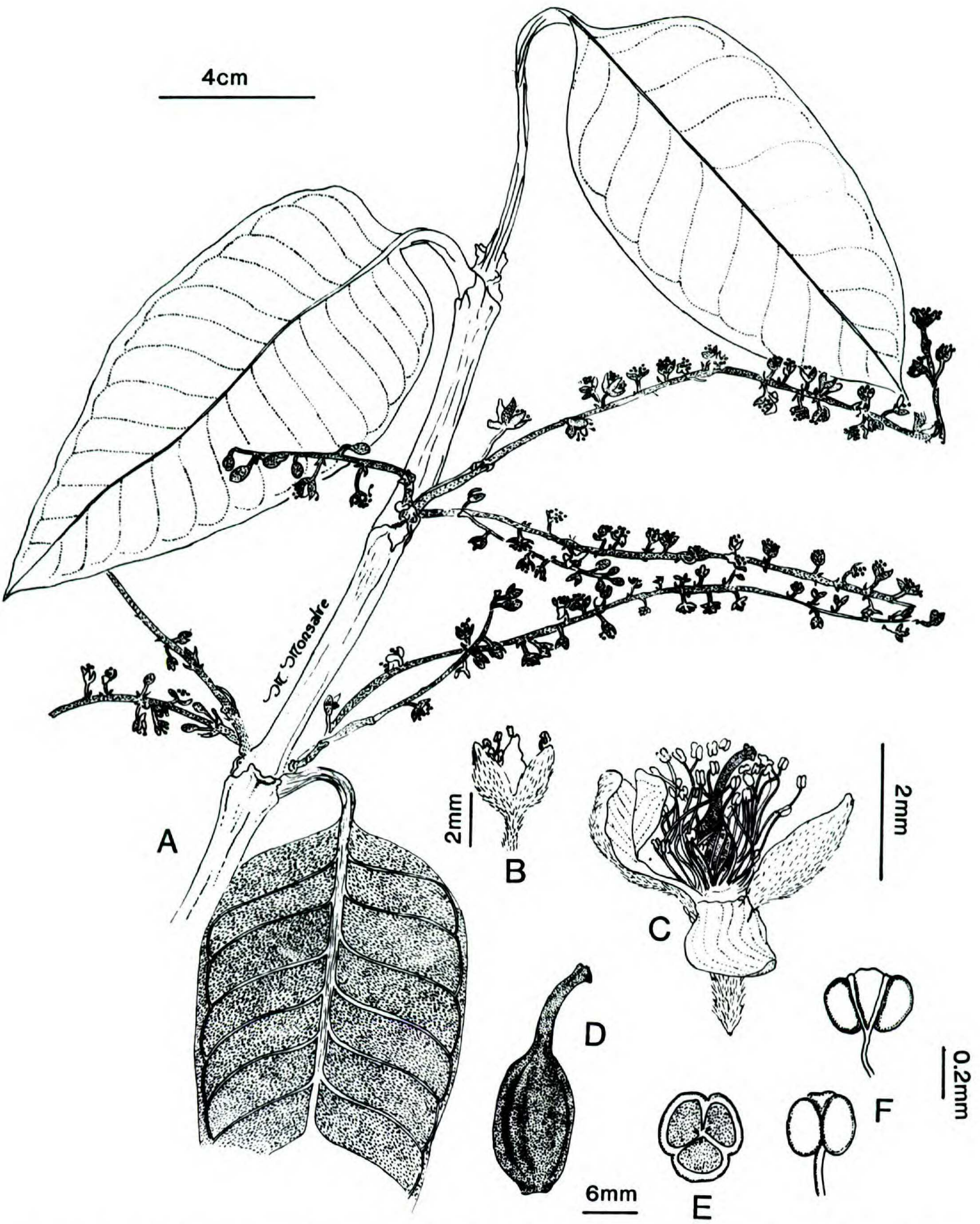


FIGURE 1. Marila parviflora *(*Mazuero 47*)*.—*A. Habit.—B. Post-anthesis flower with petals fallen.—C. Open flower.—D. Pistil.—E. Ovary, cross section.—F. Anthers.*

Río El Valle, ESE of El Valle, 200–500 m, tropical and premontane wet forest, 8 Aug. 1976, *Gentry & Fallen 17425* (holotype, COL; isotype, F, MO, NY, U, UTD).

Arbor, ramuli glabri. Folia oblongo-elliptica, acuminata, glabra, subintegra. Inflorescentia axillaris, peranguste racemosa, 6–10 cm longa. Flores marronini, sepalis 4, ovatis, filo singulari furcato. Fructus ellipsoideo-trigonus, dehiscens, semine singulari.

Tree 6 m tall. Branchlets glabrous. Leaves oblong-elliptic, acuminate, cuneate at base, membranaceous, completely glabrous above and below,

subentire to very inconspicuously serrulate, 9–16 cm long, 3.5–5 cm wide, the tertiary veins perpendicular to the midvein and ± parallel (but not as strikingly so as in other *Lozania* species); petiole 0.7–1.2 cm long, grooved above, glabrous or very inconspicuously puberulous with a few minute scattered trichomes. Inflorescence a long, slender, subspicate, axillary raceme, mostly in fascicles of several per node, 6–10 cm long, sparsely puberulous, the adjacent flowers separated by ca. 5 mm, the pedicels glabrous, ca. 1 mm long, subtended by a bilobed cupule formed by two 0.3-mm-long, sessile, basal bracteoles. Flowers with the sepals 4, ovate, spreading, ca. 1 mm long, maroon when fresh, drying dark brown with a brown-flecked cartilaginous apex and margin; petals absent; stamen 1, the short thick filament ca. 0.3 mm long, deeply forked apically, each side with a subglobose anther ca. 0.3 mm long, the ovary broadly ovoid, ca. 0.5 mm long, glabrous, the blunt apex with 3 slender, reflexed style branches ca. 0.2 mm long; ovary and stamen surrounded by a thick extra-staminal ± 4-lobed disk 1 mm across. Fruit irregularly ellipsoid-trigonous, 6–7 mm long and 4–6 mm wide, splitting incompletely at apex into 3 valves, with a single round orangish 5-mm-long and 4–5-mm-wide seed.

This is easily the most distinctive species of *Lozania*, a small genus traditionally assigned to Lacistemataceae but placed by Sleumer (1980) in Flacourtiaceae. It is closest to *L. mutisiana* J. A. Schultes on account of its very short filament and glabrous pedicels and sepals, although the relatively large fruit is closer to that of Amazonian *L. klugii* (Mansfeld) Mansfeld. *Lozania glabrata* is the only species of *Lozania* with glabrous leaves; the subentire leaf margin is also unusual, being approached only by occasional variants of *L. klugii*. The longest inflorescences are the longest in the genus, although shorter inflorescences are equalled by those of the type specimen of *L. bipinnata* L. B. Smith (a species merged into *L. mutisiana* by Sleumer but perhaps better maintained as distinct). *Lozania glabrata* is unique in the genus in the deeply split filament apex, which gives the illusion of two stamens.

LINACEAE

Rouchera monsalveae A. Gentry, sp. nov. TYPE: Colombia. Valle: Bajo Calima, Pulpapel concession, 100 m, bosque pluvial tropical, 3°55′N, 77°W, 14 Dec. 1984, *M. Monsalve 631* (holotype, CUVC; isotypes, MO, and to be distributed).

Arbor. Folia obovata, obtuse cuspidata vel acuminata, ad basim cuneata, margine subtiliter crenulata. Inflorescentia axillaris, fasciculata vel perbreviter racemosa. Flores lutei, petalis glabris, filis 10, ad basim connatis. Fructus ignotus.

Tree 6(–30?) m tall, mostly glabrous, inconspicuously puberulous on young branches, elenticellate, the stipules tiny, 1 mm long, caducous. Leaves alternate, obovate, oblanceolate when young, 2–8 cm long (–15 cm in juvenile state), 1–3.5 cm wide, obtusely cuspidate to acuminate at apex, the base cuneate, the margin finely and conspicuously crenulate, chartaceous to subcoriaceous, drying dark gray or olive gray above, tannish olive below, the secondary and intersecondary veins indistinguishable, close together, finely parallel, with an inconspicuous collecting vein ca. 0.5 mm from the margin, minutely glandular-punctate below, also with somewhat larger scattered disk-shaped glands, subsessile, the poorly defined petiole 1–3 mm long. Inflorescence a sessile or subsessile axillary fascicle of few flowers, sometimes extended as a contracted raceme or spike to 10 mm long with 2–3(–5)-mm-long peduncle, the flowers subtended by bracteoles 1–2 mm long, these glabrous except the ± ciliate margin. Flowers yellow; sepals 5, oblong, 2–3 mm long, glabrous except for the ± ciliate margin; petals narrowly obovate, contracted at base, to 5 mm long, completely glabrous; stamens 10, the filaments ca. 3 mm long, fused into a ca. 0.5-mm-long basal tube, the anthers flattened-globose, ca. 0.6 mm long; pistil glabrous, the ovary ovoid, ca. 1 mm long, the 3 styles separate, each with a discoid stigma. Fruits unknown.

Known only from Bajo Calima.

Additional specimen examined. COLOMBIA. VALLE: Bajo Calima, ca. 10 km N of Buenaventura, ca. 50 m, 3°56′N, 77°08′W, 13 Dec. 1981, *Gentry 35624* (CUVC, MO).

Common name. Juana se va.

The genus *Rouchera* has been used in a broad sense to include Asian and African lianas with hooked processes for climbing and in a narrow sense to exclude *Hebepetalum*, which differs in having hairy petals with a clawed base. *Rouchera* sensu stricto and *Hebepetalum* (now mostly included in *Rouchera*) are South American. This new species is most closely related to *R. calophylla* Planch., the type of the genus, and to *R. parviflora* (Ducke) Ducke. These are the only other species with reduced inflorescences and sessile or subsessile axillary flowers. *Rouchera calophylla*, which occurs in central and eastern Amazonia, differs in having more membranaceous narrower, narrowly

oblong-elliptic leaves with less conspicuously crenate margins, better-defined petioles, and much longer (to 1 cm) petals. *Rouchera parviflora*, which occurs near Manaus in central Amazonian Brazil, has leaves similar to *R. calophylla* but smaller. According to the original description, it differs from *R. monsalveae* by its suborbicular, distinctly gland-margined sepals, completely glabrous young branches, and apparently larger flowers ("floribus dimidio brevioribus" compared with *R. calophyllum*). Although I have seen no material of *R. parvifolia* and the description is incomplete, its habitat (wet forest on sand) and distribution strongly argue against conspecificity with the coastal Colombian plant.

Only two other species of *Rouchera* are known from coastal Colombia. One is the very different *R. humiriifolia* (sometimes segregated as *Hebepetalum*), which has terminal paniculate inflorescences and white flowers with hairy petals. In view of the controversy over generic limits, it is interesting that at Bajo Calima *R. humiriifolia* bears the same common name as *R. monsalveae*. The second coastal Colombian species, *R. colombiana* Hall., differs according to the original description by its chartaceous leaves, petioles 6–8 mm long, collecting vein 2 mm from the leaf margin, flowers in a lax short-pedunculate axillary cyme, and especially by the conspicuous persistent stipule 5 mm long.

MELIACEAE

Carapa megistocarpa A. Gentry & Dodson, sp. nov. TYPE. Ecuador. Pichincha: Centinela, km 12 carretera Patricia Pilar–24 de Mayo, cima de las Montañas de Ila, 650 m, 26 July 1984 (fl, fr), *Dodson, Gentry, Palacios & Zaruma 14492* (holotype, MO; isotypes, MO, QCNE). Figure 2.

Arbor 15–20 m. Folia foliolis 7–multi-jugatis, oblongis, apiculatis vel acuminatis, ad basim rotundatis. Inflorescentia cauliflora, 27–50 cm longa, anguste paniculata. Flores calyce 4-lobato, staminorum tubo cylindrico. Fructus permagnus, ellipsoideus, apiculatus, 17–29 cm longus.

Slender unbranched or few-branched tree 15–20 m tall, to 20 cm diam., the branch apices conspicuously bracteate. Leaves with 7 or more leaflet pairs, the petiole and rachis woody, glabrous, finely longitudinally ridged, the leaflets oblong, apiculate to abruptly acuminate at apex, rounded at base, 17–55 cm long, 8–16 cm wide, coriaceous, completely glabrous. Inflorescence cauliflorous, borne usually several together from short shoots on main trunk, 27–50 cm long, irregularly scaly, otherwise glabrous, very narrowly paniculate, the longest (basal) side branches occasionally to 8 cm long. Flowers slender-pedicellate, white with greenish petals and yellowish nectary, functionally unisexual, the calyx 4-lobed to base, the lobes less than 1 mm long, the petals 4, broadly ovate, 4–5 mm long, glabrous, not ciliate, the staminal tube broadly cylindric, not urceolate, 4–5 mm long, apically split into 8 narrowly triangular acute or acutish lobes, the sessile anthers (or antherodes) alternating with lobes of staminal column, the pistil (or pistillode in male flowers) with a conspicuously discoid style-head, the nectary annular-pulvinate, yellowish when fresh. Fruit very large, ellipsoid, not at all tetragonal nor angled and lacking verrucose ridges, 17–29(–30?) cm long without the 1–3 cm-long apiculus, 13–16 cm diam., the surface uniformly brownish, even when young, covered with dense scalelike papillae.

Additional specimens examined. ECUADOR: LOS RIOS: km 12 road from Patricia Pilar to 24 de Mayo, 540 m, 7 Oct. 1976 (fl), *Dodson & Gentry 6593* (MO, SEL). PICHINCHA: type locality, 30 Jul 1984 (fl), *Dodson, Gentry, Palacios, Zaruma 14676* (MO, QCNE).

Only two species were recognized in *Carapa* in the recent *Flora Neotropica Monograph* of Meliaceae (Pennington & Styles, 1981). One of these, *C. procera* DC., occurs in the Guianas and Central Amazonia, and in Africa; the other, very heterogeneous *C. guianensis* Aubl., is widespread in the Neotropics. One collection of the new species (*Dodson & Gentry 6593*) was cited under *C. guianensis*, although the description of *C. guianensis* disagrees with the plant described above in numerous characters.

Typical *C. guianensis* and *C. megistocarpa* grow sympatrically in our study area in western Ecuador, and we are convinced that they cannot possibly be conspecific. At least in our study area, *Carapa guianensis* is large, freely branching, ramiflorous (never cauliflorous), and lacks conspicuous bracts at the branch apices. Its flowers (Fig. 2) have a subtle but characteristically different, distinctively more urceolate shape, with the apices of the otherwise fused filaments bent inward and more truncate and more closely appressed than in *C. megistocarpa*. The staminal tube of our population of *C. guianensis* has orange suture lines and the nectary is orange, whereas in *C. megistocarpa* the staminal tube is uniformly white and the nectary is yellowish. Moreover, the fruits of the two species are consistently and dramatically different, as indicated in Table 1. This whole suite of consistent differentiating characters (Table 1, Fig. 2) in two

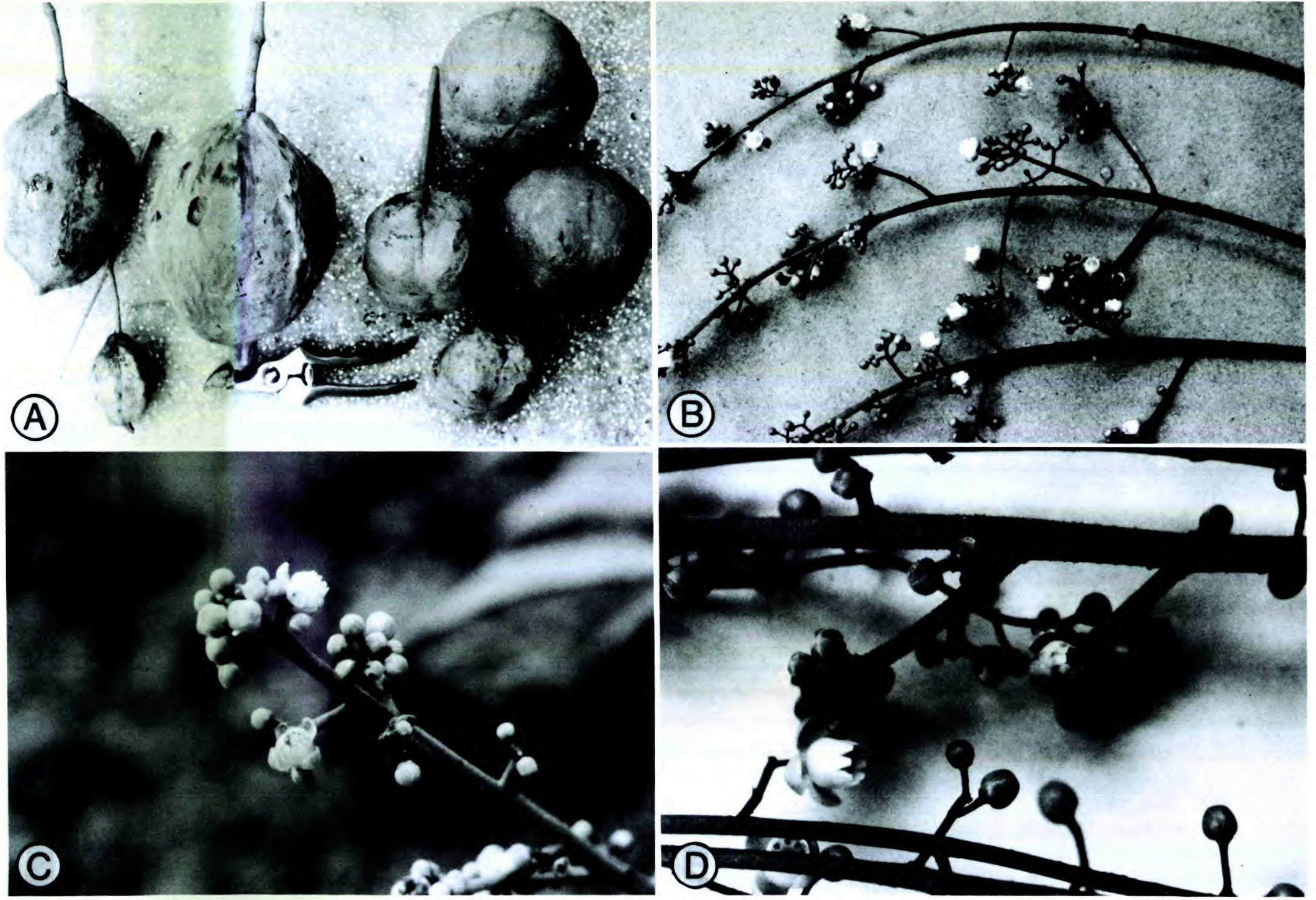


FIGURE 2. Carapa megistocarpa *(*Dodson et al. 14492*) and* C. guianensis *(*Dodson et al. 14675*).—A. Fruits (*C. megistocarpa *on left,* C. guianensis *on right; the shears are 20 cm long).—B. Flowering inflorescences of* C. megistocarpa.—*C. Flowering inflorescence of* C. guianensis.—*D. Closeup comparison of flowers of* C. guianensis *(top) and* C. megistophylla *(bottom).*

TABLE 1. *Features differentiating* Carapa megistocarpa *from* C. guianensis *at the Centinela study site.*

	C. guianensis	*C. megistocarpa*
Height	mostly 20–40 m	15–20 m
Habit	freely branching	unbranched or few-branched
Bracts at branch apices	lacking or inconspicuous	conspicuous
Inflorescence	ramiflorous on small branchlets	cauliflorous
Corolla	strongly urceolate	urceolate-tubular
Filament apices	truncate, bent strongly inward and closely appressed to adjacent apices	narrow, bent slightly inward and barely or not at all touching
Staminal tube	orange suture lines	uniformly white
Nectary	orange	yellowish
Fruit shape	subglobose to depressed-globose and slightly tetragonal	ellipsoid, not at all tetragonal
Fruit surface	greenish with numerous brown lenticels when young, each valve usually with a verrucose medial ridge	uniformly brownish, even when young, the valves unridged
Fruit size	11–14 cm long and wide[1]	17–30 cm long, 13–16 cm diameter
Fruit apex	truncate or depressed	apiculate (apicule 1–3 cm long)

[1] 5–10(–12) × 6–8(–10) cm fide Styles (in Pennington & Styles, 1981).

sympatric populations clearly mandates specific recognition. Although B. Styles (pers. comm.) maintains that the characters noted above and in Table 1 are variable elsewhere in the range of *Carapa*, they are quite constant in western Ecuador, where *C. megistocarpa* and *C. guianensis* clearly pass the test of sympatry.

In some characteristics *C. megistocarpa* is closer to *C. procera* than to *C. guianensis*, e.g., consistently slender-pedicellate flowers and ellipsoid fruit with valves lacking medial excrescences, but the 4- rather than 5-parted symmetry of its flowers and fruits seemed to relate *C. megistocarpa* definitively to *C. guianensis*. The fruit is the largest in the genus, the minimum length and width both always exceeding the maximum dimensions given for either species in the *Flora Neotropica* monograph, hence the epithet "megistocarpa."

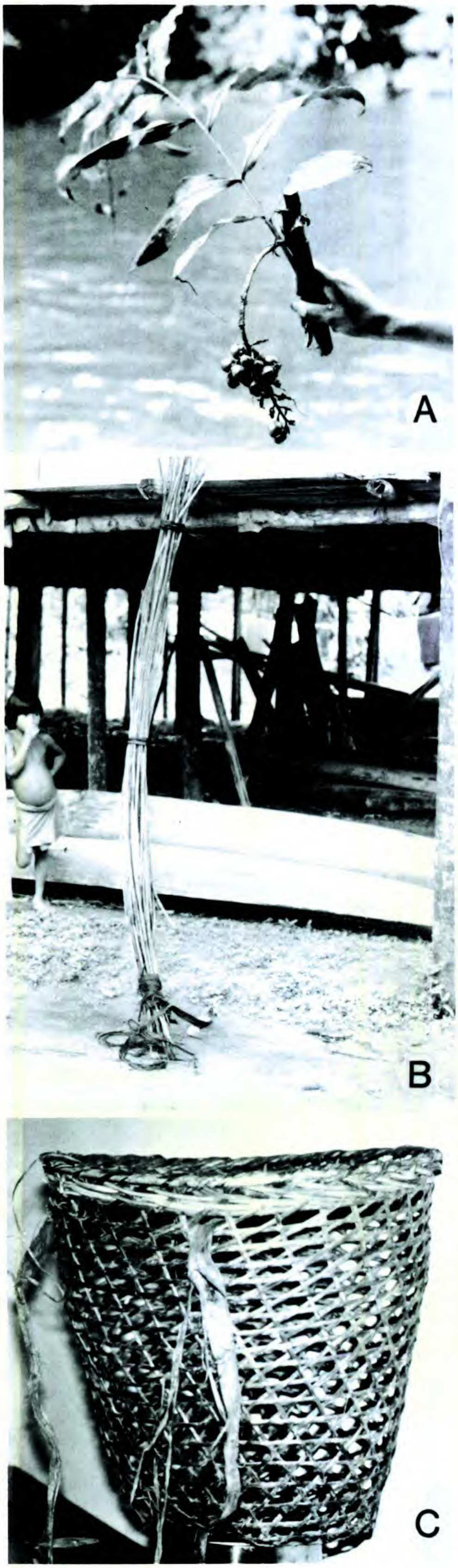
Carapa megistocarpa was the fourth-commonest species in the Centinela forest, with 18 plants at least 2.5 cm dbh in a 1,000-m² sample area. Its amazing football-like cauliflorous fruits were one of the most characteristic features of this forest, famous for its high local endemism (Gentry, 1986; Dodson & Gentry, in prep.). Sadly, it may now be extinct, since the last remnants of the Centinela ridgetop have been converted to banana plantations.

PALMAE

Desmoncus cirrhifera Gentry & Zardini, sp. nov. TYPE. Colombia. Valle: Bahía Malaga, steep banks at edge of Mora swamp overlooking tidal stream, 0 m, 4°2′N, 76°15′W, 16 Dec. 1985, *A. Gentry, M. Monsalve, C. Restrepo and J. Gamboa 53392* (holotype, CUVC; isotypes, MO(2), COL, K). Figure 3.

Frutex scandens, sparse spinosus, spinis brevibus curvatis. Folia 25–60 cm longa, foliolis 5–9-jugatis, lanceolato-ellipticis, longicaudatis. Inflorescentia semel ramosa, 15–19 rachillis 1–3 cm longis. Fructus ellipsoideus vel subglobosus, 1.5–2 cm longus, 1–1.5 cm latus.

Spiny climbing palm (± erect when young) with stems (including the enclosing leaf sheath) 1–2 cm thick, the leaf sheath with occasional short thick-based spines < 4 mm long, these mostly ± recurved, glabrous except for small, appressed, irregularly branched reddish scales, extended above the node into an ocrea ca. 5 cm long, this unarmed or with an occasional small spine. Leaves 25–60 or more cm long, with 5–9 pairs of lanceolate-elliptic to narrowly elliptic, subopposite to definitely alternate, caudate-acuminate pinnae, these 6–21 cm long (not counting the acumen), 2–7 cm wide, the tendril-like linear acumen 4–11 cm long, pendent and often somewhat twisted when fresh, the surface glabrous except for minute scattered ± peltate scales, these mostly sessile and reddish, sometimes in part stalked, also with minute whitish scales or scalelike enations, the larger leaflets with somewhat larger, irregularly branching, appressed, reddish trichomes near margin below, the midvein prominent above and below, the other longitudinal veins relatively inconspicuous, the transverse veinlets slightly prominulous above in older leaflets; rachis with irregularly scattered thick-based straight



or recurved spines 2–5 mm long; leaf apex linear and unarmed in juvenile state, in mature plants armed with small, strongly recurved spines 2.5–4 mm long, sometimes a few of these thicker and terminated with a reduced, very narrow, vestigial leaflet 4–6 cm long, this always thin and membranaceous; thick, elongate grappling hooks completely lacking at leaf apex. Inflorescence axillary, the peduncular inflorescence bract (spathe) caducous in fruit, the persistent basal part of the prophyll ca. 6–8 cm long, thin, unarmed, fibrous, fragmenting into the individual fibers; peduncle 11–14 cm long, the rachis once-branched with 15–19 rachillae, each 1–3 cm long, the lowermost progressively larger, the flowers not seen, loosely clustered along upper half to two-thirds of rachilla, this flattened and somewhat zigzag or twisted between adjacent flowers. Fruit 1-seeded, red, ellipsoid to subglobose, 1.5–2 cm long, 1–1.5 cm wide, subtended by a sessile 3-lobed cupule formed from the 3 persistent basally fused tepals, this ca. 5 mm across.

Endemic to the wet part of lowland coastal Colombia in Valle, Chocó, and (fide Galeano & Bernal, 1985) extreme northwestern Antioquia departments.

Additional specimens examined. COLOMBIA. VALLE: Bahía Malaga, Quebrada Alegria, trail along proposed route of new road to military base, 50 m, 4°2′N, 77°22′W, 15 Dec. 1985, *Gentry, Monsalve, Restrepo & Gamboa 53319* (CUVC, MO). CHOCÓ: Taparalito, Quebrada Taparal, N of Palestina, primary wet forest, 30 m, 4°15′N, 77°12′W, 30 Mar. 1985, *Gentry, Zardini, Monsalve & Caicedo 53795* (CUVC, MO); Quibdó–Tutunendó road ca. 3 km W of Tutunendó, pluvial forest, 80 m, 5°46′N, 76°35′W, 8 Jan. 1981, *Gentry, Mulampy, Hikes, Libenson, Olson & Cogollo 30363* (COL, MO).

Common name. Matamba.

The outstanding feature of the plant is its exceedingly long tendril-like leaflet apices. It belongs to Burret's (1934) section *Campylacanthium*, as indicated by its short curved spines, and it is the first record of that section in the trans-Andean Neotropics. John Dransfield, who examined a duplicate of one of the sterile collections cited above, identified it as a new species. Subsequently, this species was also recognized as undescribed by Gal-

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FIGURE 3. Desmoncus cirrhifera.—*A. Leaf and infructescence (*Gentry et al. 53392*).—B. Cut stems waiting to be made into baskets, Taparalito, Chocó, Colombia (*Gentry et al. 53795*).—C. Basket made from* D. cirrhifera, *Docordó, Colombia.*

eano & Bernal (1985) in their treatment of the palms of Antioquia Department. Again, sterile material prevented its description. Discovery of fruiting material finally makes possible its description.

Desmoncus cirrhifera is one of the most utilized palm species of the Pacific coast region of Colombia. It is used to make nets and shrimp traps (catangas) in the Bahía Malaga and Río San Juan delta areas (sub *Gentry et al. 53392*) and is prized by the Chocó Indians at Taparalito and Docordó who make their strongest baskets from it (Fig. 3C).

SAPINDACEAE

Allophylus dodsonii A. Gentry, sp. nov. TYPE. Ecuador. Los Ríos: Río Palenque Field Station, halfway between Quevedo and Santo Domingo de los Colorados, wet forest, 200 m, 21 Feb. 1974. *Gentry 10098* (holotype, MO; isotype, QCA; additional duplicates distributed as *A.* cf. *amazonicus*).

Arbor. Folia unifoliolata, elliptica vel obovato-elliptica, ad apicem obtusa vel subacuta, ad basim cuneata, margine subintegro. Inflorescentia axillaris, paniculata, ramis floriferis anguste racemosis, ascendentibus. Flores minuti, petalis intra pubescentibus. Fructus ellipsoideus, ca. 1 cm longus.

Tree 15–20 m tall, the branchlets ± glabrescently puberulous with mostly appressed trichomes. Leaves unifoliolate, elliptic or obovate-elliptic, the apex obtuse to acutish, the base cuneate, 6–28 cm long, 3–12 cm wide, membranaceous, the margin entire or inconspicuously crenulate-serrate near apex, almost glabrous, very sparsely and inconspicuously puberulous along midvein above and below, sometimes with few trichomes in axils of lateral nerves, with 10–14 secondary veins on a side, these curved and ascending; petiole 1–2 cm long to petiolule insertion, ± appressed puberulous, at least adaxially, apically jointed with flexed petiolular leaflet base. Inflorescence axillary, paniculate, the usually 3 elongate branches ascending and narrowly racemose, puberulous. Flowers (seen only in female condition) small, ca. 1 mm long and 2 mm across at full anthesis, white, on pedicels 1–2 mm long, the very broadly ovate sepals appressed-puberulous, the petals strongly pubescent inside, slightly pubescent outside, usually also ciliate-margined; stamens ca. 1 mm long, the tiny anthers presumably nonfunctional; pistil almost 2 mm long, the style apically forked to form 2 exserted stigmas almost 0.5 mm long. Fruits broadly ellipsoid, ca. 1 cm long, essentially glabrous.

Known only from the remnant patch of coastal Ecuadorian lowland wet forest at the Río Palenque Field Station.

Additional specimens examined. ECUADOR. LOS RÍOS: Río Palenque Field Station, 16 Feb. 1974 (st), *Gentry 9957* (MO), 7 Oct. 1976 (st), *Dodson & Gentry 6587* (MO, SEL), without date (fl), *Dodson 7343* (MO, SEL), 4 Apr. 1980 (fr), *Dodson & Gentry 10176* (MO, SEL).

This species was treated as *Allophylus* cf. *amazonicus* (Mart.) Radlk. in the *Flora of Río Palenque* (Dodson & Gentry, 1978). However, it differs conspicuously from that Amazonian species in the larger fruits, sparsely appressed puberulous branchlets, entire or subentire leaves, and especially the 3-branched rather than simply racemose inflorescence.

This was one of very few species in the Río Palenque flora interpreted as having a trans-Andean range disjunction, i.e., occurring on both sides of the Andes but not reaching Central America. Thus it is perhaps not surprising that the additional collections now available from both sides of the Andes prove the coastal plant specifically distinct.

LEGUMINOSAE

Pithecellobium paucipinnatum (Schery) Gentry & Dodson, comb. nov. *Albizia paucipinnata* Schery, Ann. Missouri Bot. Gard. 37: 400. 1950. TYPE. Ecuador. El Oro: Portovelo, *Steyermark 54035* (MO) . . . . as "*Albizzia.*"

This is a common tree species of the dry forests of the Guayaquil area of southwest Ecuador, especially in juvenile condition. At Capeira, 20 km N of Guayaquil (Dodson & Gentry, in press), there are about 10 trees at least 2.5 cm dbh per ha in the remnant patch of now highly disturbed dry forest. Although previously unreported from that country, it also occurs in adjacent northwestern Peru. At Capeira its common name is "compoño"; in Peru it is called "angolo."

This species was described as an *Albizia* by Schery, in the absence of fruiting material, and related by him to *Pithecellobium multiflorum* (HBK.) Benth. and *P. coripatense* Rusby of what is now generally known as *Pithecellobium* section *Arthrosamanea* (sometimes segregated as the genus *Cathormion*). These species grow mostly in swampy or riverine habitats and are characterized by a flattened segmented fruit that breaks apart transversely into numerous lomentlike segments, presumably adapted for water dispersal.

Generic delimitation in Mimosoideae is notoriously difficult, and Schery considered section *Arthrosamanea* as related to mostly wind-dispersed *Albizia* rather than mostly animal-dispersed *Pithecellobium*. Sometimes these taxa are accorded generic rank as *Arthrosamanea* (Britton & Rose, 1936) or *Cathormion* (Burkart, 1964). Others

(Brenan & Brummitt, 1965) suggested merging these taxa with *Enterolobium* instead. However, in nearly all neotropical floristic treatments, the indehiscent-fruited species of this alliance are nowadays included in *Pithecellobium* sensu lato (Macbride, 1943; Woodson & Schery, 1950), following Bentham (1875). Although a more recent summary (Nielsen, 1981) returns these plants to *Albizia* (along with some other segregates of *Pithecellobium*), we prefer to retain the indehiscent-fruited non-wind dispersed relatives in *Pithecellobium* following Barbosa (1984 and pers. comm.) and the long-standing tradition.

Vegetatively the taxa of *Pithecellobium* section *Arthrosamanea* are characterized by oblong, sessile, asymmetric leaflets with strongly ascending, almost palmate venation. *Pithecellobium* section *Arthrosamanea* is represented in the Guayaquil area by *P. daulense* Spruce ex Benth., which is vegetatively strikingly similar to *P. paucipinnatum* but has more-elliptic leaflets that are glabrous rather than puberulous as in *P. paucipinnatum*. That species, like other bona fide members of section *Arthrosamanea*, occurs in swampy, poorly drained areas along the Río Daule at Capeira, while *P. paucipinnatum* occurs in the upland dry forest.

We were at first inclined to treat the upland plant at Capeira as a variant of *P. daulense*; however, a collection of its fruits (*Dodson & Gentry 12652*; MO, GUA, SEL) proves that it is only distantly related to *P. multiflorum* and its allies. Indeed, the indehiscent fruits are quite unlike those of any *Pithecellobium* known to us, although probably most closely related to the very different but similarly indehiscent fruits of *Pithecellobium saman*. Superficially, there is a surprising resemblance to the fruits of *Hymenaea*, especially in the texture, color, and composition of their resinous-secreting surface.

The fruits of *P. paucipinnatum* are 12–14 cm long, 1.7–2 cm wide, straight, somewhat compressed, subwoody, reddish brown, glabrous, and pitted on the surface with minute resinous glands. Although obviously indehiscent, these fruits are interesting in that they break transversely rather easily, potentially indicating a shared ancestor with section *Arthrosamanea*. Since the fruits of this species are completely unlike the thin wind-dispersed fruits of *Albizia*, transfer to *Pithecellobium* seems appropriate.

Additional specimens examined. ECUADOR. GUAYAS: Capeira, 22 km N of Guayaquil 2°S, 79°58′W, 20–150 m, *Gentry & Dodson 54812* (MO); same locality, *Dodson & Gentry 12652* (MO). MANABI: base of Montecristi, 180 m, *Dodson & Thien 1716* (MO). EL ORO: Río Amarillo upstream from Portovelo, *Steyermark 54035* (MO). PERU. TUMBES: Zarumilla, Dtto. Matapalo, 550 m, Camino Caucho–Campo Verde km 79, *I. Canales P. 15* (MO, MOL).

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