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PLANTAE COLOMBIANAE XIII

DE PLANTIS PRINCIPALITER COLOMBIAE AMAZONICAE NOTAE
DIVERSAE SIGNIFICANTES

BY

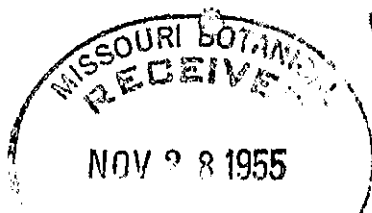
RICHARD EVANS SCHULTES

As more and more collections of plants from northwestern South America are studied, our knowledge of the distribution of many of the poorly understood genera and species increases apace. Occasionally, undescribed concepts are found. In addition, ethnobotanical information of considerable interest often is made available through the field studies connected with the collections under study. This paper is a continuation of a series devoted to the publication of such miscellaneous data.

It is a pleasure to acknowledge the collaboration of Dr. Lyman B. Smith of the Smithsonian Institution, who is responsible for the work on the *Bromeliaceae*; of Mr. Noel Y. Sandwith of the Royal Botanic Gardens, Kew, who has described a new concept in the *Bignoniaceae*; of Dr. Harold N. Moldenke of the Trailside Museum, New Jersey, who has identified the *Eriocaulaceae*; of Dr. Alicia Lourteig of the Musée d'Histoire Naturelle, Paris, who determined *Cuphea*; and of Dr. Julian A. Steyermark of the Chicago Museum of Natural History and Dr. José Cuatrecasas of the National Science Foundation, who have contributed studies in several genera.

The families are arranged in conformity with the system proposed by Engler and Gilg.

[65]



ERIOCAULACEAE

Paepalanthus polytrichoides *Kunth* var. *glaber*
Moldenke var. *nov.*

Haec varietas a *Paepalantho polytrichoides* principaliter foliis brevioribus atque pedunculis glabris differt.

COLOMBIA: Comisaría del Vaupés, Río Karurú (tributary of Río Vaupés), Mesa de Yambí, Savannah Goo-ran-hoo-da. General location: Lat. 1°20' N, Long. 71°20' W. April 15-16, 1953, *Richard Evans Schultes & Isidoro Cabrera 19180* (TYPE in N.Y. Bot. Gard.).

Paepalanthus saxicola *Körnicker* in *Martius Fl. Bras. 3, pt. 1* (1863) 455.

The type of *Paepalanthus saxicola* was collected in Goyáz in Brazil. The collection cited below very greatly extends the known range of this species.

COLOMBIA: Comisaría del Amazonas, Río Caquetá, Araracuara. December 21, 1952, *Hernando García-Barriga & Richard Evans Schultes 14138*.

Paepalanthus Williamsii *Moldenke* in *Phytol. 2* (1947) 367.

Known hitherto from the upper Orinoco basin of Venezuela and from the Estado do Amazonas in Brazil, this species is now recorded from Colombia through the collection cited below.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú (tributary of Río Vaupés), Cerro Kafiendá, savannahs about 15 miles upstream from mouth. November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18388*.

Syngonanthus longipes *Gleason* in *Bull. Torr. Bot. Club 56* (1929) 15.

Syngonanthus longipes, a characteristic though never abundant element of the savannah floras of the Vaupés, is known also from the Amazonas and Bolívar of Venezuela, from British Guiana and from the Guaporé of Brazil.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú (tributary of Río Vaupés), Cerro Kafiendá, savannahs about 15 miles upstream from

mouth. Alt. 800-900 feet. November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18360*.

THURNIACEAE

Thurnia sphaerocephala (*Rudge*) *Hooker fil.* in *Hooker Icon. Pl.* (1883) t. 1407.

These collections of *Thurnia sphaerocephala*, in addition to those already reported (*Schultes in Bot. Mus. Leaf. Harvard Univ.* 16 (1954) 189), indicate that the species is not an uncommon element of the flora of the Colombian Vaupés.

COLOMBIA: Comisaría del Vaupés, Río Kananarf, Cachivera Palito. Alt. ca. 250 m. July 25, 1951, *Richard Evans Schultes & Isidoro Cabrera 18194*.—Comisaría del Vaupés, Río Piraparaná, Raudal Guá-kō-nō-ta. September 4, 1952, *Schultes & Cabrera 17166*.—Comisaría del Vaupés, Río Piraparaná (tributary of Río Apaporis) Caño Teemeefia. General location: between Lat. 0°15' S, Long. 70°30' W and Lat. 0°25' N, Long. 70°20' W. "In flowing water." September 6, 1952, *Schultes & Cabrera 17259*.

BROMELIACEAE

(Contributed by Lyman B. Smith)

Pitcairnia corallina *Linden & André* var. *viridis*
L. B. Smith var. *nov.*

A var. *corallina* laminis foliorum angustioribus inflorescentia flavo-viridi differt.

Leaf-blades only 8 cm. wide; inflorescence yellow-green.

COLOMBIA: Comisaría del Vaupés, Río Vaupés: Circasia. Sandy savannah, quartzite base. Alt. ca. 240 m. Lat. 0°45' N, Long. 70°30' W. April 20, 1958, *Richard Evans Schultes & Isidoro Cabrera 19206* (TYPE in U. S. Nat. Herb. Nos. 2087662 and 2087663).

Pitcairnia patentiflora *L. B. Smith* in *Contrib. Gray Herb.* 127 (1939) 18, t. 1, fig. 4.

The Colombian material of this species shows such diversity that it seems advisable to divide it into varieties as follows:

var. **patentiflora**

Plant 0.5–1 m. high; leaf-blades scarcely or not at all narrowed toward the base, 3–15 mm. wide, serrate for most of their length with spines 2 mm. long; sepals 15–20 mm. long.

The type of the species is from Venezuela. Other material from Venezuela and Amazonian Brazil shows little variation from it.

COLOMBIA: Comisaría del Vaupés, near Cerro Monachí, Río Naquieni, Río Guainía basin, June 1948, *Richard Evans Schultes & Francisco López 10082*.

var. **subintegra** *L. B. Smith var. nov.*

Laminis foliorum ad basin distincte angustatis, ad 20 mm. latis, basi excepta integris, sepalis 13–18 mm. longis differt.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. October 29, 1951, *Richard Evans Schultes & Isidoro Cabrera 14532* (TYPE in U.S. Nat. Herb. No. 2087660).—Comisaría del Vaupés, Río Macaya, Cerro Chiribiquete, January 17, 1944, *G. Gutiérrez 672*.—Comisaría del Vaupés, Cerro Yapobodá, Río Kuduyarí. On quartzite rocks, savannah. Alt. 450 m. October 5, 1951, *Schultes & Cabrera 14214*.—Comisaría del Vaupés, near headwaters of Río Kuduyarí (tributary of Río Vaupés). Quartzite savannah. Alt. 270–300 m. Lat. 1°20' N, Long. 70°30' W. April 1953, *Schultes & Cabrera 20009*.

var. **macrantha** *L. B. Smith var. nov.*

Planta ad 2 m. alta, laminis foliorum ad basin distincte angustatis, ad 25 mm. latis, basi excepta integris, sepalis 25 mm. longis differt.

COLOMBIA: Comisaría del Vaupés, Río Macaya, Cerro Chiribiquete. Sandstone ledges. Alt. 630 m. July 24, 1943, *Richard Evans Schultes 5613* (TYPE in U.S. Nat. Herb. Nos. 1902474 and 1989361).

Pitcairnia turbinella *L. B. Smith* in *Caldasia* 1, no. 4 (1942) 18, t. 5.

Described from Circasia, on the Río Vaupés, and from San José, on the Río Guaviare, *Pitcairnia turbinella* is

apparently an element peculiar to the sandstone mountains of the Venezuela-Guiana land-mass. It is especially abundant on the sun-baked summit of Cerro Ee-ree-ee-kö-mee-ö-kee, where the habit photograph published herewith was taken.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná, Raudal Mō-kō, Cerro Ee-ree-ee-kö-mee-ö-kee. "Flowers deep red, covered with grey pulverulence. Fruit dark green. Inflorescence up to 10 feet tall. On bare rock. Leaves yellow inside at base, rest green." September 18, 1952, *Richard Evans Schultes & Isidoro Cabrera 17532*.

***Brocchinia acuminata* L. B. Smith** in *Brittonia* 3 (1939) 160, f. 3 a-d.

This species was described originally from Mount Auyan-tepuí in southeastern Venezuela. Steyermark extended its known range in Venezuela eastward to Ptarí-tepuí, and Maguire westward to Cerro Guaiquinima, while the collections noted below record its appearance in Colombia making a total range of over 700 miles.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. October 29, 1951, *Richard Evans Schultes & Isidoro Cabrera 14534*.— Same locality. On sand and rock, covering summit, quartzite base. Lat. 0°15' N, Long. 70°35' W. January 23-25, 1952, *Schultes & Cabrera 15051*.

***Brocchinia hechtioides* Mez** in *Fedde Repert. Sp.* Nov. 12 (1913) 414.

One of the dominant species on the sandstone top of Cerro Isibukuri, *Brocchinia hechtioides* is characteristic of the quartzitic mountains of the Venezuela-Guiana land-mass. Because of its characteristic place in the ecology of these mountain-tops, it seems advisable to publish the accompanying habit photograph.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. Summit. November 1951, *Richard Evans Schultes & Isidoro Cabrera 14516*.

EXPLANATION OF THE ILLUSTRATION

PLATE XIX. (*Left*). PITCAIRNIA TURBINELLA *L. B. Smith*. Habit photograph taken on summit of Cerro Ec-ree-ee-kö-mee-ö-kee, Comisaría del Vaupés, Colombia.

(*Right*) AECHMEA HUEBNERI *Harms*. Habit photograph taken on the lightly wooded slopes of Cerro Ec-ree-ee-kö-mee-ö-kee, Comisaría del Vaupés, Colombia.

Photographs by RICHARD EVANS SCHULTES

PLATE XIX



EXPLANATION OF THE ILLUSTRATION

PLATE XX. *BROCCHINIA HECHTIoidES* Mez. Habit photograph showing the dominance of this species on the flat top of Cerro Isibukuri, Comisaria del Vaupés, Colombia.

Photograph by RICHARD EVANS SCHULTES

PLATE XX



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Brocchinia serrata L. B. Smith in *Caldasia* [1], no. 4 (1942) 14, f. 2.

For over one hundred years, *Brocchinia* and *Navia* have been separable by a number of supposedly strong characters and, as recently as 1930, Harms (*Pflanzenreich* 15a: 99, 102) placed them in different subfamilies. With the discovery of *Brocchinia serrata*, however, most of these characters broke down, for, although this species has an appendaged seed and lax inflorescence like those of typical *Brocchinia*, it has also serrate leaves and a largely superior ovary as in *Navia*. There remained an apparent correlation between inflorescence and seed characters, until Maguire brought back some gigantic species of *Navia* (still unpublished) from southern Venezuela.

At the time the distinction of the inflorescence was lost, a better character for separation seemed to be gained in recognizing the cochlear imbrication of the sepals in *Navia*, setting the genus apart from all the *Pitcairnioideae*. However, the discovery of the new and much younger material of *Brocchinia serrata* noted below now demonstrates the same character in *Brocchinia*. This is corroborated in the type species of the genus, *Brocchinia paniculata* Schult.f., by H. García-Barriga 13731 from the Comisaría Amazonas-Vaupés, Río Apaporis, Jirijirimo. *Brocchinia* and *Navia* thus appear to be more closely related to each other than to any other genera in the *Pitcairnioideae* and, in the final analysis, differ only in the presence or absence of a seed appendage.

COLOMBIA: Comisaría del Vaupés, Río Kuduyari, Cerro Yapobodá. Alt. 450 m. October 5, 1951, Richard Evans Schultes & Isidoro Cabrera 14210.—Same locality. Alt. 270–300 m. Lat. 1°20' N, Long. 70°30' W. April 1953, Schultes & Cabrera 20051.—Río Kubiyú, Cerro de Kafiendá. Alt. 380–680 m. November 2–4, 1952, H. García-Barriga 15096.

Vriesia chrysostachys E. Morren var. *stenophylla* L. B. Smith var. *nov.*

A var. *chrysochloide* laminis foliorum valde angustioribus acuminatis, petalis albis differt.

Leaf-blades only about 1 cm. wide, acuminate; petals white.

COLOMBIA: Comisarias del Amazonas-Vaupés, Río Apaporis, Cachivera de Jirijirimo y alrededores. Alt. ca. 250 m. "Flowers white, bracts and axis waxy, yellow. On rock ledge in shade of light forest." September 16, 1951, *Richard Evans Schultes & Isidoro Cabrera 14097* (TYPE in U.S. Nat. Herb. No. 2087659).—Río Apaporis, Raudal de Jirijirimo (below mouth of Río Kananari). Quartzite base. Alt. ca. 270 m. Lat. 0°5' N, Long. 70°40' W. November 11, 1951, *Schultes & Cabrera 14596*.—Same locality. "On cliff," January 21, 1952, *Schultes & Cabrera 14986*.

Vriesia Splitgerberi (Mez) L. B. Smith & Pittendrigh in Journ. Washington Acad. Sci. 43 (1953) 403.

Guzmania Splitgerberi Mez in DC. Monogr. 9 (1896) 930.

Thecophyllum Splitgerberi (Mez) Pittendrigh in Evolut. 2 (1948) 60.

The specimens cited below constitute the first record for Colombia of a species already known from Surinam, British Guiana, Trinidad, Venezuela, and Costa Rica. For nearly fifty years this species was considered a *Guzmania* confined to the Guianas. Then Pittendrigh discovered flowering material in Trinidad and found that the appendaged petals required its transfer to *Vriesia*. Since then further discoveries have greatly extended its known range.

COLOMBIA: Comisarias del Amazonas-Vaupés, Río Apaporis: entre el Río Pacoa y el Río Kananari. Soratama. Alt. ca. 250 m. Epiphyte. Bracts greenish at tips, whitish near base. Flowers white. Inflorescence 1 m. long. Leaves tan at base inside and out. June 21, 1951, *Richard Evans Schultes & Isidoro Cabrera 12757*.—Same locality. August 31, 1951, *Schultes & Cabrera 13804*.

Vriesia vexillata L. B. Smith sp. nov.

A *Vriesia unilateralis* (Baker) Mez, foliis acutioribus,

scapo elongato gracillimo, scapi bracteis fulgide purpureis, bracteis florigeris secundis tenuioribus differt.

Known only from fragments, but almost certainly stemless, 85 cm. high; leaves to 53 cm. long, obscurely punctulate-lepidote, sheaths broadly elliptic, 7 cm. long, pale, blades ligulate, acuminate, 25 mm. wide, flat, purple toward the base; scape straight, very slender; scape-bracts strict, closely enfolding the scape, lanceolate, chartaceous, glabrous, purple when dry; inflorescence simple, the single incomplete specimen laxly 4-flowered but probably not much larger, glabrous; floral bracts secund with the flowers broadly elliptic, apiculate, to 35 mm. long, less than twice as long as the internodes, thin, nerved, ecarinate; pedicels slender, 5 mm. long; sepals elliptic, obtuse, 25 mm. long, exserted, thin, nerved, castaneous; petals slightly exceeding the sepals, pale yellow when dry; stamens included; capsule slenderly ellipsoid, slightly exceeding the sepals, long-beaked.

COLOMBIA: Comisaría del Vaupés, Río Papurí, Teresita. "Epiphytic. Caatinga forest." May 27, 1953, *Richard Evans Schultes & Isidoro Cabrera 19448* (Type in U.S. Nat. Herb. No. 2087661).

***Araeococcus flagellifolius* Harms** in Notizbl. 10 (1929) 784.

The collection noted below constitutes the first record of the genus *Araeococcus* for Colombia. The species was described originally from the state of Amazonas, Brazil, and has been found since in Venezuela.

COLOMBIA: Comisaría del Vaupés, Río Kubyú (tributary of Río Vaupés), Cerro Kañendá. Savannahs about 15 miles upstream from mouth. Quartzite base. Alt. 240-270 m. Lat. 1°0' N, Long. 70°15' W. November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18848*.

***Streptocalyx subnuda* L. B. Smith** sp. nov.

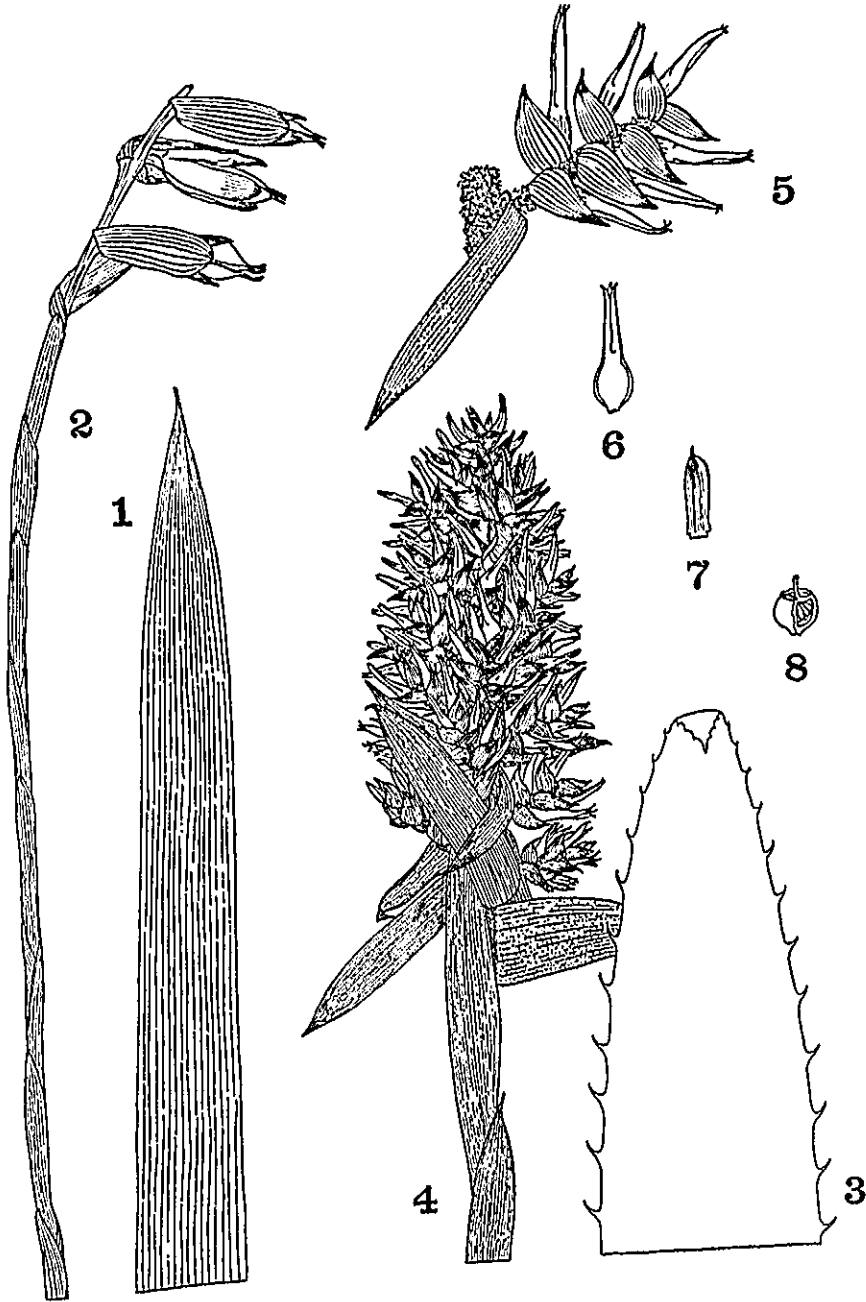
A. S. Poeppigii Beer, cui affinis, bracteis primariis superioribus valde reductis quam eis florigeris vix majoribus differt.

EXPLANATION OF THE ILLUSTRATION

PLATE XXI. *VRIESIA VEXILLATA* *L. B. Smith.* 1, leaf-blade, one half natural size. 2, upper scape and inflorescence, one half natural size.

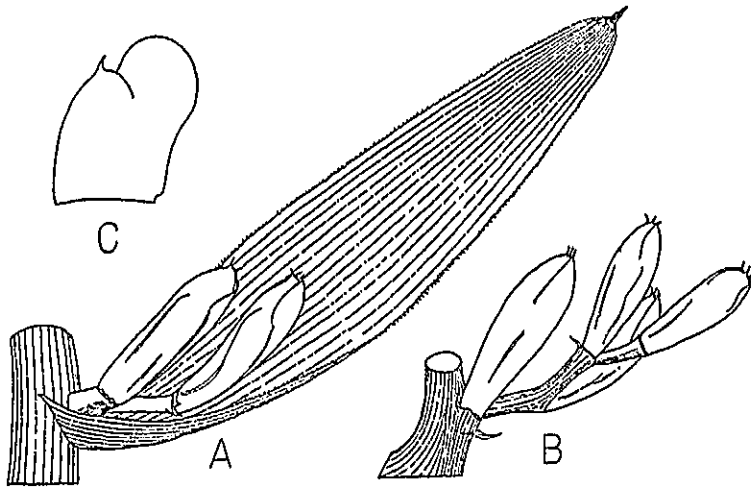
AECHMEA STENOSEPALA *L. B. Smith.* 3, leaf blade, one half natural size. 4, upper scape and inflorescence, one half natural size. 5, spike, natural size. 6, flower, natural size. 7, sepal, natural size. 8, section of ovary, twice natural size.

PLATE XXI





Known from fragments only but obviously 1 m. or more high, coarse; leaves about 1 m. long, the blades ligulate, acuminate, thickened at apex, 7 cm. wide, covered with white appressed scales, laxly serrulate; scape stout, densely farinose-lepidote; scape-bracts elliptic, 15 cm. long, the upper densely imbricate, serrulate, sub-chartaceous, rose, subulate-indurate at apex; inflorescence bipinnate, cylindric, 26 cm. long, farinose-lepidote,



A, basal primary bract and branch, natural size. B, apical primary bract and branch, natural size. C, sepal, twice natural size.

the lowest primary bracts like the scape-bracts, exceeding the branches, the others abruptly reduced and little if at all larger than the floral bracts; branches spreading, 6 mm. long, geniculate, laxly few-flowered; floral bracts vestigial, narrowly reniform with an acicular apex; flowers divergent; sepals asymmetric with a large wing, mucronate, 11 mm. long; petals and stamens unknown; ovary slenderly obovoid or ellipsoid, becoming 15 mm. long in fruit, epigynous tube broadly funnel-form, 2 mm. high, placentae apical.

COLOMBIA: Comisaría de Putumayo, Río Caucaya, entre Puerto Jaramillo y el Río Putumayo, alt. 225 m. "Epiphytic." May 16, 1942, *Richard Evans Schultes 3719* (Type in Herb. Gray).

***Aechmea Huebneri* Harms** in Notizbl. 10 (1929)
581.

Described from Manáos in Amazonian Brazil, *Aechmea Huebneri* has hitherto not been reported from Colombia. Here, it is a large plant of the lightly shaded slopes, as shown by the accompanying habit photograph, but it apparently does not occur on the sun-flooded tops of these sandstone mountains.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná, Raudal Mõ-kö, Cerro Ee-ree-ee-kö-mee-ö-kee. "Terrestrial. Inflorescence axis and bracts scarlet. Flowers purple. Leaves inside deep purple-brown at base, full of fierce ants. Small leaves purple within nearly whole length." September 18, 1952, *Richard Evans Schultes & Isidoro Cabrera 17494.*

***Aechmea stenosepala* L. B. Smith sp. nov.**

A *Aechmea pubescenti* Baker, cui affinis, inflorescentia dense bipinnata, sepalis magnis, anguste oblongis differt.

Over 6 dm. high; leaves presumably rosulate and forming an ellipsoid tank, to 52 cm. long, covered with closely appressed scales, sheaths broadly elliptic, castaneous, those of the outer leaves 17 cm. long, those of the inner 25 cm. long, blades of the outer leaves ligulate, broadly acute and recurved near the apex, 8 cm. wide, cinereous-lepidote, laxly serrate with dark ascending flat teeth 6 mm. long, blades of the inner leaves vestigial; scape erect, 5 mm. in diameter, white-lanate; scape-bracts lanceolate, acute, about equaling the internodes, membranaceous, rose-purple, densely pale-lepidote, laxly and obscurely serrulate; inflorescence bipinnate, densely ellipsoid, 12 cm. long; lowest primary bracts like the scape-bracts, the others greatly reduced; spikes divergent, densely few-flowered; rhachis angled but not alate or excavated, densely pale-lanate; floral bracts distichous, much more than twice as long as the internodes but spreading and not imbricate, broadly ovate, acuminate,

mucronate, 7 mm. long, nerved; sepals asymmetric, narrowly oblong, subtruncate, mucronate, 10 mm. long, connate for 1 mm.; petals imperfectly known; ovary globose, placentae apical.

COLOMBIA: Comisaría del Vaupés, Mesa La Lindosa. Small range 15-20 km. south of San José del Guaviare. Alt. 400-600 m. December 13-15, 1950, *Jesús M. Idrobo & Richard Evans Schultes 645* (Type in U.S. Nat. Herb. No. 2025998).

Navia heliophila *L. B. Smith ex Schultes* in Bot. Mus. Leaflet. Harvard Univ. 16 (1954) 194, t. 26, figs. 5-8, t. 27.

These additional collections of *Navia heliophila* indicate that it is a rather frequent species on the cliffs of the middle course of the Río Apaporis.

COLOMBIA: Comisaría del Amazonas-Vaupés, Río Apaporis, Raudal de Jirijirimo y alrededores. Alt. ca. 250 m. "On rocks on face of ledge. Flowers white; anthers yellow." June 13, 1951, *Richard Evans Schultes & Isidoro Cabrera 12457*.—Same locality. "On rocky ledge in sun. Flowers white; anthers yellow. Leaves glossy." September 16, 1951, *Schultes & Cabrera 14050*.—Comisarias del Amazonas-Vaupés, Río Apaporis, Raudal Yayacopi (La Playa) and vicinity. Quartzite base. Alt. about 800 feet. General location: Lat. $0^{\circ}5'$ S, Long. $70^{\circ}30'$ W. "On cliffs. Flowers white; anthers yellow." February 15, 1952, *Schultes & Cabrera 15380*.

PONTEDERIACEAE

Pontederia cordata *Linnaeus* Sp. Pl. (1753) 288.

Pontederia cordata, rare in the headwaters of small rills and creeks which flow into the main rivers of the Comisaría del Vaupés, seems never to have been reported from Amazonian Colombia.

COLOMBIA: Comisaría del Vaupés, Río Paca (tributary of Río Papuri). Alt. about 650 feet. General location: Lat. $0^{\circ}30'$ N, Long. $70^{\circ}10'$ W. "In headwaters of Río Paca. Flowers white. In water." June 1-3, 1953, *Richard Evans Schultes & Isidoro Cabrera 19526*.

VELLOZIACEAE

Vellozia Dumitiana *R. E. Schultes* in *Mutisia* 12 (1952) 2, t. 6, 7.

EXPLANATION OF THE ILLUSTRATION

PLATE XXII. (*Upper*) PONTEDERIA CORDATA L.
Habit photograph of *Pontederia cordata* in the
headwaters of the Río Pacoa, Comisaría del
Vaupés, Colombia.

(*Lower*) LEITGEBIA COLOMBIANA R. E. Schultes.
Habit photograph of *Leitgebia colombiana* (the
shrub with the fine leaves) at Yapobodá, Río Ku-
duyarí, Comisaría del Vaupés, Colombia.

Photographs by RICHARD EVANS SCHULTES

PLATE XXII



SECRET



This topotypical material of *Vellozia Dumitiana* represents the fifth collection of this curious shrub, all from Cerro Isibukuri, where the species appears to be a very restricted endemic.

COLOMBIA: Comisaría del Vaupés, Río Kananari, Cerro Isibukuri. General location: Lat. $0^{\circ}15' N$, Long. $70^{\circ}35' W$. Quartzite base. At summit of mountain. January 23-25, 1952, *Richard Evans Schultes & Isidoro Cabrera 15050A*.

Vellozia lithophila *R. E. Schultes* in *Rev. Acad. Col. Ciénc. Exact., Físico-Quím. Nat.* 8, no. 32 (1952) 459.

Reported hitherto from savannahs at San José del Guaviare and Yapobodá, *Vellozia lithophila*, through the first two collections cited below, is now known to be more widely distributed in the Colombian Vaupés.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú (tributary of Río Vaupés), Cerro Kafiendá. Savannahs about 15 miles upstream from mouth. Quartzite base. Alt. about 800-900 feet. "Very common on savannah. Height up to 6 feet." November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18317*.—Comisaría del Vaupés, Río Paraná Pichuna (tributary of Río Vaupés). Alt. about 700 feet. General location: Lat. $1^{\circ}10' N$, Long. $70^{\circ}30' W$. June 1953, *Schultes & Cabrera 19945*.—Comisaría del Vaupés, Río Kuduyari (tributary of Río Vaupés), Yapobodá. Quartzite savannah near headwaters. Alt. about 900-1000 feet. General location: Lat. $1^{\circ}20' N$, Long. $70^{\circ}30' W$. "Gnarled shrub 6 feet tall, branched." April 1953, *Schultes & Cabrera 20019*.

MYRISTICACEAE

Virola calophylla *Warburg* in *Nova Acta Acad. Leop.-Carol.* 68 (1897) 231.

This species is known from Amazonian Brazil and adjacent parts of Colombia, Perú and Venezuela. Prior to the collection of the material cited below, the species was recorded from Colombia only from the region of Villavicencio in the Orinoco drainage-area. It is, however, quite common in the Colombian Amazonia.

COLOMBIA: Comisaría del Amazonas, Río Apaporis, Soratama, entre el Río Pacoa y el Río Kananari. Alt. about 250 m. June 26, 1951,

Richard Evans Schultes & Isidoro Cabrera 12855.—Same locality, August 16, 1951, *Schultes & Cabrera 13587*.—Same locality, December 1952, *Hernando García-Barriga 13359*.—Same locality and date, *García-Barriga 14059*.

***Virola calophylloidea* Markgraf** in *Repert. Sp. Nov.* 19 (1923) 24.

Virola calophylloidea, the type of which was collected in Manáos by Ule (*Ule 8846*) half a century ago, is rare in Amazonian Brazil in the Rio Negro and Rio Madeira valleys. Hitherto, it has not been known from Colombia, where it appears to be much rarer than *Virola calophylla* in the Amazonian forests.

COLOMBIA: Comisaría del Amazonas, Río Apaporis, Soratama, entre el Río Pacoa y el Río Kananarí. Alt. about 250 m. July 3, 1951, *Richard Evans Schultes & Isidoro Cabrera 12872*.—Same locality. December 1952, *Hernando García-Barriga 13964*.—Same locality and date, *García-Barriga 13986*.

LEGUMINOSAE

***Hymenaea oblongifolia* Huber** in *Bol. Mus. Para.* 5 (1909) 386.

The collection cited below increases our knowledge of the distribution of *Hymenaea oblongifolia* in the Colombian Amazon, the westernmost extent of its range. It has hitherto been collected in La Pedrera on the Río Caquetá, in the upper Apaporis basin and in the Cordillera La Macarena (*Schultes in Bot. Mus. Leaflet Harvard Univ.* 16 (1953) 68).

COLOMBIA: Comisaría del Amazonas, Río Miritiparaná, Caño Guacayá. Alt. about 700 feet. General location: Lat. 0°30' S, Long. 70°40' W. "Tall tree, 70 feet. Fruit reddish brown. Leaves glossy, Common name=*jutal*." April 24, 1952, *Richard Evans Schultes & Isidoro Cabrera 16257*.

EUPHORBIACEAE

***Conceveibastrum Martianum* (Baill.) Pax & Hoffman** in *Pflanzenr.* 4, Heft 147, 7 (1914) 217.

Known from the Rios Solimões and Japurá in Brazil, *Conceveibastrum Martianum* appears to be new for the flora of Colombia.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri, near summit. General location: Lat. $0^{\circ}15'$ N, Long. $70^{\circ}35'$ W. January 23-25, 1952, *Richard Evans Schultes & Isidoro Cabrera 15036*.

ICACINACEAE

Poraqueiba sericea *Tulasne* in Ann. Sci. Nat., sér. 3, 11 (1849) 172.

This curious cultivated fruit-tree of the western Amazonas is in need of further field investigation. There are several distinct "varieties" which differ primarily in the color of the ripened fruit. In the Colombian Vaupés, where the tree and its fruit are known as *umarí*, there are four: *umarí amarillo*, *umarí blanco*, *umarí colorado* and *umarí verde*. *Schultes & Cabrera 17319* represents *umarí amarillo*, the most abundant of these varieties.

We may report the following Indian names for *Poraqueiba sericea* in Amazonian Colombia: *Puinave*=*how*; *Barasana*=*wa-mö'*.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná (tributary of Río Apaporis), Caño Teemeña. General location: between Lat. $0^{\circ}15'$ S, Long. $70^{\circ}30'$ W and Lat. $0^{\circ}25'$ N, Long. $70^{\circ}30'$ W. "Small tree. Cultivated. Flowers yellow." September 9, 1952, *Richard Evans Schultes & Isidoro Cabrera 17319*.

SAPINDACEAE

Cardiospermum Halicacabum *Linnaeus* Sp. Pl. (1753) 366.

Without exception, the adult males amongst the Indians of the Makuna, Barasana, Taiwano and other tribes of the Piraparaná and middle and lower Apaporis basins wear, above the biceps, curious arm bands made from the small seeds of *Cardiospermum Halicacabum*. This plant is cultivated around the edges of the plots of *Manihot* to

assure a supply of these seeds solely for making arm bands. It has apparently never been reported as a cultivated plant.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná (tributary of Río Apaporis), Raudal Guá-kö-nö-ta. General location: between Lat. $0^{\circ}15'$ S, Long. $70^{\circ}30'$ W and Lat. $0^{\circ}25'$ N, Long. $70^{\circ}30'$ W. "Small vine on ground. Cultivated. Black seeds used for arm bracelets. Flowers white. Living seed dark bluish. Puinave = *né-yot*; Makuna = *bö-rá*." September 4, 1952, *Richard Evans Schultes & Isidoro Cabrera 17170*.

BOMBACACEAE

***Bombax coriaceum* Martius & Zuccarini** Nov. Gen. & Sp. 1 (1824) 93 in obs.; K. Schumann in Martius Fl. Bras. 12, pt. 3 (1886) 219.

The collections cited below provide additional evidence that *Bombax coriaceum*, though never abundant, is one of the widespread endemics on the Cretaceous quartzitic remnant hills of eastern Colombia.

COLOMBIA: Comisaría del Vaupés, Río Kubiyú (tributary of Río Vaupés), Cerro Kañendá. Savannas about 15 miles upstream from mouth. Quartzite base. Alt. about 800-900 feet. General location: Lat. $1^{\circ}0'$ N, Long. $70^{\circ}15'$ W. "Height 5 feet. Low bush. Petals externally reddish brown, internally white, anthers white." November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18316*.—Comisaría del Vaupés, Río Paraná Pichuna (tributary of Río Vaupés). Altitude about 700 feet. General location: Lat. $1^{\circ}10'$ N, Long. $70^{\circ}30'$ W. June 1953, *Schultes & Cabrera 19928*.—Comisaría del Vaupés, Río Kuduyari (tributary of Río Vaupés); Yapobodá. Quartzite savanna near headwaters. Alt. about 900-1000 feet. General location: Lat. $1^{\circ}20'$ N, Long. $70^{\circ}30'$ W. "Low bush." April 1953, *Schultes & Cabrera 20034*.

***Matisia apaporiensis* Cuatrecasas** *sp. nov.*

Frutex, ramis cortice molli pallide ochraceo, hornotinis stellato-tomentellis deinde glabris. Folia simplicia alterna chartacea. Petiolus subtenuis, 1.5-3 cm. longus, ochraceo-tomentellus pilis gracilibus stellatis praeditus, teres, superiore parte incrassatus. Lamina obovato-oblonga vel elliptico-oblonga basi obtuse cuneata, apice subito attenuata cuspidataque, margine integra vel sursum leviter

sinuata, 12-26 cm. longa, 4-8 cm. lata, utrinque in sicco pallide viridis subglabraque, sparsissime pilis stellatis vel simplicibus praecipue supra costam munita; supra laevis, costa subfiliformi eminenti nervis lateralibus parum prominulis reticulo nervorum leviter notata; subtus costa crassiuscula prominenti nervis secundariis 6-8 utroque latere angustis sed prominentibus, basilaribus subrectis ascendentibus ceteribus ascendenti-arcuatis ad marginem decurrenti-anastomosantibus, nervis tertiis transversis tenuibus prominulisque, cum minoribus reticulatis. Flores solitarii vel pares extraaxillares in ramulis hornotinis, pedunculo rigido crassiusculo 1.5-2.5 cm. longo, parte media duobus apice una bracteolis linearibus minutis (1.5-3 mm. longis) deciduis. Calyx crassus, subcoriaceus, tubulosus vel tubuloso-conicus, 2-2.2 cm. longus basi cuneatus, margine 4 lobis inaequalibus circa 5-6 mm. longis rotundatis vel obtusis, intus dense villososericeus, extus item pedunculus ochraceo-subvelutinus, superficie sublaevi basim versus leviter granulosa pilis minutis gracilibus fasciculatis patentibus densissime tectus. Petala 5 alba, crassiuscule membranacea, ovato- vel obovato-oblonga, apice rotundata, basi longe in unguem angustata, circa 3 cm. longa, 1 cm. lata, supra villosa, subtus pilis crassis sparsis munita et pilis stellatis gracilibus densissimis vestita. Staminorum columna crassiuscula, albido-tomentosa pilis sparsis crassis simplicibus et pilis stellato-fasciculatis densis tecta, circa 5.5 cm. longa, parte extrema in quinque laciniis antheriferas lineares crassas, circa 1 cm. longas, extus tomentellas, intus glabras producta; laciniis sex antherarum loculis elliptico-oblongis 3-4 mm. longis instructis, sed loculis inferioribus parte superiore ampliata tubi concrenentibus. Stylus erectus, exsertus, minute tomentoso-hirtellus. Stigma breviter capitatum, glabrum, minute papillosum, 5-lobatum. Ovarium 5-loculare, loculis biovulatis.

Matisia apaporiensis is closely related to *M. putumayensis* Cuatr., but differs from it in its thinner, more cuneate leaves, in its tomentose petioles, in its few stellate hairs scattered on the leaf-blades, in its broader, thinner calyx, in its larger petals and androecium, and in the softer indument of its calyx. In *Matisia putumayensis*, the calyx is ferruginous, minutely granulate and covered with a shorter and denser velutinous tomentum. Similar characters differentiate the new species from the related *Matisia lasiocalyx*, in which the petioles are more or less pubescent, and the calyx is not granulate on its main surface.

COLOMBIA: Comisaría del Amazonas, Río Ricapuyá (tributary of the Río Apaporis below mouth of Río Piraparaná). Alt. about 700 feet. General location: Lat. $0^{\circ}25'$ S, Long. $70^{\circ}30'$ W. "Bush. Flowers yellow. Makú = *bo-o-tag*; Makuna = *mee-chet-ge-hai*; Painave = *dó-kön*." September 1952, *Richard Evans Schultes & Isidoro Cabrera 17641* (Type in Herb. Gray).

Matisia Idroboi Cuatrecasas in *Phytol.* 4 (1954) 476.

It has been thought advisable to publish the accompanying plate of the type plant of this remarkable species of *Matisia*.

COLOMBIA: Intendencia del Meta, Cordillera La Macarena (extremo nordeste), Macizo Renjifo, cumbre y alrededores. Alt. 1360-1900 m. January 1951, *Jesús M. Idrobo & Richard Evans Schultes 1001*.

STERCULIACEAE

Herrania umbratica *R. E. Schultes* in *Caldasia* 2 (1943) 261, t. p. 263.


In 1943, I described *Herrania umbratica* from a fruiting collection made by Señor Jorge Ortíz Méndez in the Municipio de Girón in the Departamento de Santander, Colombia. Flowers were not available, and, for this reason, the exact relationship of this concept has been doubtful. The gross morphology of the capsule suggested a

relationship with *Herrania nycterodendron* from the Amazon basin of Colombia and Perú, but the leaves of the two species are quite distinct. More recently, I had come to believe that *Herrania umbratica* perhaps might be allied to *H. albiflora*, notwithstanding the significant differences in the structure of the capsule. Inasmuch as *Herrania albiflora* is one of those species of *Herrania* with a patelliform calyx (with sepals that are connate for only half their length and which, therefore, do not fully open in anthesis) and *H. nycterodendron* has, like most of the species, a subcymbiform calyx (with sepals separated to their base and which, therefore, open widely), the assignment of *H. umbratica* to its proper relationship was greatly to be desired.

In January 1953, Mr. Douglas Taylor, entomologist on the Anglo-Colombian Cacao Collecting Expedition, made a collection of the only species of *Herrania* found under cultivation in the Granja Experimental at Palmira, Colombia. Mr. Taylor submitted the collection to me for examination. It consisted of leaves, one flower and one under-ripe fruit from one of the seven trees at Palmira. A week later, I visited Palmira and was able to examine the trees in greater detail and to make another flowering collection. All seven individuals represent the same species. There are no records at Palmira stating who introduced the material and from what region.

A detailed examination of the fruit of Taylor's collection and a study of the living plants (growing in an unshaded field) leave no doubt that the species is *Herrania umbratica*. There is no other known species with which the fruit could be confounded, and the leaves, albeit somewhat smaller than those of the shade-growing type of *Herrania umbratica*, are identical in shape, texture and indumentum.

The capsule of Taylor's collection was elongate-



ellipsoidal, very irregular and with a blunt, rounded apex which is not strongly constricted as in *Herrania albiflora* and as, indeed, in most species of the genus. Basally, it is obtusely rounded and not indented, and is attached by a strong, woody peduncle 15 mm. long and 4 mm. in diameter. The ribs are subequal and are thickly carnosae and bluntly rounded; both the primary and secondary ribs are armed along the sides with strong stinging hairs. Between the ribs, the fleshy-coriaceous pericarp is somewhat striate-fibrose. The capsule measured (in the fresh state) 12 cm. in length and 4 cm. in diameter at its widest part. It had twenty-two seeds, whereas the fruit of the type had forty-two.

The fortunate chance that Taylor was able to find one mature flower on the same tree from which the fruit was taken makes it possible to complete the description of *Herrania umbratica* and to establish its relationship with those species possessing a patelliform calyx, and more especially with *H. albiflora*.

Herraniae umbraticae inflorescentiae fasciculatae, multiflorae. Flores caulinares ex trunco inferiore in racemis contractis prorumpentes, breviter pedicellati; reserati globosi, 18-22 mm. in diametro. Pedicelli usque ad 5 mm. longi, dense fulvo-tomentosi, articulati basi brevi cum bractea lineari minuta subtenti. Alabaster globosus plerumque 10-12 mm. in diametro. Calyx patelliformis, in partes duo obscure divisus. Sepala crassissima, duo, pro longitudine maxima connata, subaequalia, rotundato-ovata, integra, apice rotundata, plusminusve 22 mm. longa, 22 mm. lata, intus glabra, subpurpurea, extus fulva, densissime minutissime stellato-pilosa atque sparse grossiuscule stellato-pilosa. Petala quinque, sessilia, crassa, sanguinea, concava, obovata, plerumque 9 mm. longa, 8 mm. lata, apice valde cucullata, intus quinque cum nervis crasso-callosis purpureis muricato-

papillosis, inter nervos glaberrima sed propter marginem crassam dense muricato-papillosa; ligulae lineares, 19 mm. longae, parte inferiore 2 mm. latae, basi valde et abrupte contractae, in alabastro spiraliter intortae sed in anthesi erectae, ochrorubrae, minute granulosae. Tubus stamineus quinque-divisus, staminibus invicem duo- et quattuor-antheriferis, filamentis valde complanatis, brevibus liberisque, antheris bilocularibus, loculis 1.5 mm. longis, 0.6 mm. latis, flavis. Staminodia crassa, conspicue petaloidea, sublutea, valde deflexa, petala antherasque celantia, oblanceolato-elliptica, integra, apice subacuta, 20 mm. longa, 10 mm. lata, utrinque dense papilloso-granulosa. Ovarium sessile, elongato-ovoideum, distincte decemcostatum atque quinqueloculare, rufo-aureum, densissime stellato-pilosum, 3 mm. in diametro. Stylus crasso-teres, simplex, flavus, in stigmata apice conspicue quinque-divisus, 1 mm. longus.

The stipules of *Herrania umbratica* have not been known, for the type collection was devoid of these structures. The collector, however, made an annotation of their size. In the original description, I wrote: "Stipulae non visae, sed (ex collectore) membranaceae, 3-6 cm. longae describuntur." A study of the stipules on the plants growing at Palmira indicates that these structures are indeed enormous. We might describe them as follows: Stipulae chartaceae, fuscae, densissime tomentellae, lineares, 30-60 (plerumque 55-60) mm. longae, 2.5-4 mm. latae.

In February 1953, whilst on a visit to the Imperial College of Tropical Agriculture in Trinidad, I found one tree referable to *Herrania umbratica* in cultivation in the experimental gardens. There is apparently no record of the place of origin of this tree. It was identified as *Herrania umbratica* through several very young capsules which, despite their immaturity, showed all the charac-

teristics of the fruit of this species. Subsequently, the late Professor Richard E. D. Baker of this institution informed me by letter (March 12, 1953) that the tree was in flower, stating: "The buds are spherical, the pedicels very short, 2-3 mm. only; the calyx splits into three and does not open much; the staminodes are thick and fleshy, and the ligules are very short, only about 1 cm. long; the staminodes are dark, and the ligules pale crimson." All of these curious characters agree perfectly with those of the collection which has been chosen as the type of the description of the flowers of *Herrania umbratica*. A flowering specimen from this tree (*R. E. D. Baker sine num.*) does indeed show these characters so peculiar to *Herrania umbratica*.

On February 2, 1953, Dr. Francis W. Cope of the Anglo-Colombian Cacao Collecting Expedition visited Capitancitos and examined the original tree from which the type material of *Herrania umbratica* had been taken. I take the liberty of transcribing here Dr. Cope's very full notes made on the living plant:

Small tree, about 6 metres high, branched into two equal branches at about 3 metres from the ground. About 10 cm. at base in diameter. Leaves large, predominantly 5-foliolate, with very long petiole, averaging 48 cm. (39-54 cm. range). Petiole approximately cylindrical with numerous faint grooves, 8 mm. at base, tapering to 6 mm. at apex. Base of petiole swollen. Covered with dense, rusty-coloured stellate hairs. Stipules 3.5 cm. long, membranaceous, tapering, darkly stellate-pilose. Leaflets unequal in size, sessile, papery in texture, long-ovate, somewhat unequal, with entire margins, tapering into acuminate tip about 8 cm. in length. Upper surface dark shining green, with dark rusty hairs on midrib and first order veins; smaller nerves with very distant stellate hairs. Lower surface a paler green, with very prominent midrib and first order veins, which are densely covered with pale stellate hairs. Lamina with numerous single stellate hairs inserted on veinlets. Central leaflet up to 70 cm. long by 27 cm. broad.

Flower: Sepals 3, joined to middle (also apparent on young fruits) covered with soft stellate hairs, with larger scattered stellate hairs. Other parts not examined, but ligule apparently short.

Fruit: Elongate elliptic, dark shining green when immature, bright

yellow at maturity, 13.5 cm. long \times 4.5 cm. in diameter, with 10 very blunt and rounded ribs, five rather more prominent than the others, with which they alternate. Larger ribs project about 10 mm. and have a width of 8 mm. at base. Small lateral or transverse ribs. All ribs carry large, scattered stellate hairs of white, shining colour. Pericarp has a thin, woody layer, elsewhere rather soft. Peduncle short (up to 10 mm. in length \times 4 mm. in diameter, articulated at middle).

It was my very good fortune to be able to see the Palmira trees in July 1953, when they were in extraordinarily profuse flower. One tree had more than 660 flowers and buds in about thirty many-flowered inflorescences scattered along the lower four feet of the trunk but concentrated near the base. The cacao agronomists at the Experiment Station inform me that the trees fruit heavily.

COLOMBIA: Departamento de El Valle, Palmira, Granja Experimental. Cultivated. January 1953, *Douglas Taylor sine num.*—Departamento del Norte de Santander, Río Tibú, above Betrania. "In forest. Flowers not seen." September 8, 1953, *Anglo-Colombian Cacao Collecting Expedition (B. G. Bartley & P. Holliday) 179.*—Departamento del Norte de Santander, Río Oru. "On river bank in forest, commonly inundated up to 18 inches. Fruits 7.6–8 \times 4.1–4.5 cm. Flowers not seen." September 8, 1953, *Anglo-Colombian Cacao Collecting Expedition (B. G. Bartley & P. Holliday) 180.*—Departamento del Norte de Santander, Río Nuevo. "Tree 6–7 m. on river bank in forest. Fruit 8–9.2 \times 4–4.5 cm. Flowers not seen." September 9, 1953, *Anglo-Colombian Cacao Collecting Expedition (B. G. Bartley & P. Holliday) 182.*

TRINIDAD: Imperial College of Tropical Agriculture. Cultivated. "Flowers only partially opening. Ligules pale crimson, short, 1 cm. Pedicel short, 2–3 mm. Pods covered with white stellate hairs." March 10, 1953, *R. E. D. Baker sine num.*

OCHNACEAE

Leitgebia colombiana R. E. Schultes in Bot. Mus. Leaf. Harvard Univ. 16 (1953) 85.

Recently described from Mount Chiribiquete in Amazonian Colombia, *Leitgebia colombiana* represents the third known species of this genus, which is apparently

EXPLANATION OF THE ILLUSTRATION

PLATE XXIII. (*Upper*) *MATISIA IDROBOI* Cuatrecasas.
A branch from the type of *Matisia Idroboi*.

(*Lower*) *BOMBAX CORIACEUM* Martius & Zucc. Flowering branch of the shrub from which *Schultes & Cabrera 18816* was taken.

Photographs by RICHARD EVANS SCHULTES

N. B. The upper and lower captions, as printed, should be reversed.

PLATE XXIII



EXPLANATION OF THE ILLUSTRATION

PLATE XXIV. (*Left*) HERRANIA UMBRATICA R. E. Schultes. Base of flowering tree cultivated at the Granja Experimental in Palmira, Colombia.

(*Right*) Fruit from the collection *Taylor sine num.*, Palmira, Colombia.

Photographs by RICHARD EVANS SCHULTES

PLATE XXIV





endemic to the ancient Venezuela-Guiana land-mass to which the isolated quartzitic hills of eastern Colombia belong. The discovery of this species in three additional localities in the Comisaría del Vaupés, always in association with the curious flora characteristic of these hills, indicates that it is indeed distributed over a wide area. In each of the localities for which it is now known, it is an extremely abundant element of the savannah vegetation.

COLOMBIA: Comisaría del Vaupés, Río Kubiyú (tributary of Río Vaupés), Cerro Kafendá. Savannahs about 15 miles upstream from mouth. Quartzite base. Alt. about 800-900 feet. General location: Lat. $1^{\circ}0' N$, Long. $70^{\circ}15' W$. November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 13375*.—Comisaría del Vaupés, Río Paraná Pichuna (tributary of Río Vaupés). Alt. about 700 feet. General location: Lat. $1^{\circ}10' N$, Long. $70^{\circ}30' W$. June 1953, *Schultes & Cabrera 19952*.—Comisaría del Vaupés, Río Kuduyarí (tributary of Río Vaupés). Yapobodá. Quartzite savannah near headwaters. Alt. about 900-1000 feet. General location: Lat. $1^{\circ}20' N$, Long. $70^{\circ}30' W$. "Bush 3 feet tall." April 1953, *Schultes & Cabrera 19984*.

FLACOURTIACEAE

Euceraea nitida *Martius* Nov. Gen. & Sp. 3 (1829)
90, t. 238.

Euceraea nitida was described from the Río Japurá of Brazil, but the type may have been collected in the territory now included in Colombia, probably in the region of the Cerro de La Pedrera. Its occurrence is widespread though very disrupted. A rare species in our herbaria, it appears to be associated with the remnant floras of the Venezuela-Guiana land-mass, ranging from an easternmost station in Dutch Guiana (Tafelberg: *Maguire 24396a*) to its westernmost one on Cerro Isibukuri in Colombia.

COLOMBIA: Comisaría del Vaupés, Río Kananarí (affluent of Río Apaporis), Cerro Isibukuri, near summit. January 23-25, 1952, *Richard Evans Schultes & Isidoro Cabrera 15035*.—Same locality and date. *Schultes & Cabrera 15039*.

LYTHRACEAE

Cuphea kubeorum *Lourteig ex Schultes* in Bot. Mus. Leaf. Harvard Univ. 16 (1954) 221, t. 35.

Schultes & Cabrera 18359 is a topotypical collection and 19177 is from the same general area as the type. The concept appears to be a rather restricted endemic.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú (tributary of Río Vaupés), Cerro Kafiendá, savannahs about 15 miles upstream from mouth. Quartzite base. Alt. about 800-900 feet. General location: Lat. 1°0' N, Long. 70°15' W. "Flowers pink." November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18359*.—Same locality and date. "Flowers pale mauve." *Schultes & Cabrera 18396*.—Comisaría del Vaupés, Río Karurú (tributary of Río Vaupés), Mesa de Yambí, savannah Goo-ran-hoo-da. Quartzite base. Alt. about 950-1000 feet. General location: Lat. 1°20' N, Long. 71°20' W. "Flowers purple." April 15-16, 1953, *Schultes & Cabrera 19177*.

MELASTOMACEAE

Graffenrieda fantastica *R. E. Schultes & L. B. Smith* in Bot. Mus. Leaf. Harvard Univ. 13 (1949) 306, t. 35.

This is the second collection of *Graffenrieda fantastica* from Colombia. The type locality is Cerro Chiribiquete, more than 120 miles to the northwest of Cerro Isibukuri.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. August 4, 1951, *Richard Evans Schultes & Isidoro Cabrera 18353*.

STYRACACEAE

Styrax rigidifolius *Idrobo & R. E. Schultes* forma **yapobodensis** *Idrobo & R. E. Schultes* in Bot. Mus. Leaf. Harvard Univ. 13 (1949) 332, t. 38, figs. g, h.

Styrax yapobodensis (Idrobo & Schultes) Steyermark in Fieldiana 28 (1953) 492.

The collection *Schultes & Cabrera 18311* amplifies the known distribution of this unusual treelet, whereas *Schultes & Cabrera 20012* represents topotypical material. A study of both collections indicates that the characters

upon which the *forma* is based are stable, albeit of a minor nature.

COLOMBIA: Comisaría del Vaupés, Río Kubiyú (tributary of Río Vaupés), Cerro Kafendá. Savannahs about 15 miles upstream from mouth. Quartzite base. Alt. about 800-900 ft. General location: Lat. $1^{\circ}0' N$, Long. $70^{\circ}15' W$. November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18311*.—Comisaría del Vaupés, Río Kuduyari (tributary of Río Vaupés), Yapobodá. Quartzite savannah near headwaters. Alt. about 900-1000 feet. General location: Lat. $1^{\circ}20' N$, Long. $70^{\circ}30' W$. "Small treelet, up to 8 feet tall." April 1953, *Schultes & Cabrera 20012*.

SAPOTACEAE

Pouteria Ucuqui Pires & R. E. Schultes in Bot. Mus. Leaf. Harvard Univ. 14 (1950) 87, tt. 20, 21, 22, 23.

This gigantic forest tree, the fruits of which are eagerly sought for food by the natives (Pires & Schultes *loc. cit.*), has hitherto not been reported from such westerly localities in the Amazon basin. It is not uncommon in the middle and lower courses of the Río Apaporis of Colombia.

The following Indian names may now be recorded for *Pouteria Ucuqui*: Tukano=*poo-pee-á*; Kuripako=*hee-ne-ree*; Puinave=*bee*; Kubeo=*pá-ko-ra*; Maku (of Río Piraparaná)=*foó-hee-ya*. The Brazilian name *ucuquí* is known and used by many Indians and white settlers on the Colombian side of the boundary between Brazil and Colombia. Colombians in settlements where Brazilian is not understood or spoken use the term *yucu* for the tree.

COLOMBIA: Comisarias del Amazonas-Vaupés, Río Apaporis, Soratama (above mouth of Río Kananari) and vicinity. Alt. about 900 feet. General location: Lat. $0^{\circ}5' N$, Long. $70^{\circ}40' W$. February 6, 1952, *Richard Evans Schultes & Isidoro Cabrera 15177*.—Comisarias del Amazonas-Vaupés, Río Apaporis, Jinogojé (at mouth of Río Piraparaná) and vicinity. Alt. about 700 feet. General location: Lat. $0^{\circ}15' S$, Long. $70^{\circ}30' W$. "Large tree." July 1952, *Schultes & Cabrera 19784*.

LOGANIACEAE

Pagamea coriacea Spruce ex Bentham in Journ. Linn. Soc. 1 (1857) 110.

The type of this rare bush was collected by Spruce on the Rio Negro in Brazil. The known range of the species is appreciably widened to the west by the Colombian material cited below. The genus *Pagamea* has not hitherto been reported from Colombia.

COLOMBIA: Comisarias del Amazonas-Vaupés, Río Apaporis, Raudal de Jirijirimo (below mouth of Río Kananari). Alt. about 900 feet. General location: Lat. $0^{\circ}5'$ N, Long. $70^{\circ}40'$ W. "Bush, 10 feet tall. Axes red. Flowers white." January 21, 1952, *Richard Evans Schultes & Isidoro Cabrera 14933*.—Same locality and date. "Bush. Flowers rare, white. Common on savannahs. Full, up to 12 feet tall." *Schultes & Cabrera 14953*.—Same locality. "Large bush. Fruit green. Axes red." March 15, 1952, *Schultes & Cabrera 15981*.—Comisaria del Vaupés, Río Karurú (tributary of Río Vaupés), Mesa de Yambí, savannah Goo-ran-hoo-da. Alt. about 950-1000 feet. General location: Lat. $1^{\circ}20'$ N, Long. $71^{\circ}20'$ W. April 15-16, 1953, *Schultes & Cabrera 19169*.—Comisaria del Vaupés, Río Paraná Pichuna (tributary of Río Vaupés). Alt. about 700 feet. General location: Lat. $1^{\circ}10'$ N, Long. $70^{\circ}30'$ W. "Bush. Fruit dark blue-black." June 1953, *Schultes & Cabrera 19921*.

Pagamea macrophylla Spruce ex Bentham in Journ. Linn. Soc. 1 (1857) 110.

Pagamea macrophylla, the type of which was collected at Ipanoré on the Rio Uaupés of Brazil, near the Colombian frontier, is a much rarer plant than *P. coriacea*. I have never seen these two caatinga-plants growing together. The former inhabits apparently only the light, shaded forest which rims the open, sandy savannahs, whereas the latter is at home exclusively in the sunniest parts of the savannahs or caatingas, where the vegetation is at most shrubby.

COLOMBIA: Comisaria del Vaupés, Río Piraparaná (tributary of Río Apaporis), Caño Paca. General location: between Lat. $0^{\circ}15'$ S, Long. $70^{\circ}30'$ W and Lat. $0^{\circ}25'$ N, Long. $70^{\circ}30'$ W. "Small treelet." September 19, 1952, *Richard Evans Schultes & Isidoro Cabrera 17581*.

GENTIANACEAE

Halenia Weddelliana Gilg in Engler Bot. Jahrb. 25 (1898) 724.

In trying to identify a number of plants from Cauca (cf. Agric. Trop. 11 (1955) 471) which the late Colombian poet, Dr. Guillermo Valencia, mentioned in a letter by their vernacular names, we were unable to determine "yerba de venado." A letter to Dr. Alvaro Fernández of the Instituto de Ciencias Naturales of Bogotá, a student of the flora of Cauca, led to his discovery that the natives of the Hacienda de Paletará refer to *Halenia Weddelliana* as *cacho de venado* ("deer horn") and that they value the plant for treating venereal diseases. This interesting use must be of long standing and widespread in Cauca, for a synonym of *Halenia Weddelliana* is *H. antigonorrhoeica* Gilg.

Halenia Weddelliana is not uncommon in southern Colombia (Cauca and Nariño), Ecuador and Perú.

COLOMBIA: Departamento del Cauca, Hacienda de Paletará. Alt. about 3000 m. "Hierba en potreros. Flores verde-amarillento. Usada por los nativos para tratar enfermedades venéreas. *Cacho de venado*." January 3, 1954, A. Fernández 2653.

SOLANACEAE

Solanum apaporanum R. E. Schultes in Bot. Mus. Leaf. Harvard Univ. 13 (1949) 292.

The type of this unusual species was collected in the upper course of the Río Apaporis. The second and third collections, Schultes & Cabrera 12717 and 19828, establish its occurrence likewise in the lower course of the same river, some 1,000 kilometers downstream.

COLOMBIA: Comisaría del Amazonas, Río Apaporis, entre el Río Paoa y el Río Kananari, Soratama. Alt. ca. 250 m. "Vine. Flowers white; anthers yellow. Flood-bank." June 21, 1951, Richard Evans Schultes & Isidoro Cabrera 12717. —Comisaría del Amazonas-Vaupés, Río Apaporis, Jingoje (at mouth of Río Piraparaná) and vicinity. Alt. about 700 feet. General location: Lat. 0°15' S, Long. 70°30' W. March 1952, Schultes & Cabrera 19828.

BIGNONIACEAE
(Contributed by N. Y. Sandwith)

***Tabebuia subtilis* Sprague & Sandwith var. *Schultesiana* Sandwith var. nov.**

A *T. subtilis* pilis lateris interni corollae tubi atque zonae infra insertionem staminum ad papillas breves obtusas redactis differt.

This material has the main characteristics of *Tabebuia subtilis*, which is a similar small tree growing in the same type of habitat — on rocks by rapids — in the Potaro River Valley in British Guiana. It differs in the pubescence of the interior of the corolla tube, which is reduced to very short and blunt papillae, whereas, in typical *Tabebuia subtilis*, this pubescence is composed of long papilla-like hairs. No fruit is present in the Colombian material which, I am convinced, is most prudently treated, on the evidence, as a variety of *Tabebuia subtilis*.

COLOMBIA: Comisarias del Amazonas-Vaupés, Río Apaporis, Raudal Yayacopi (La Playa) and vicinity. Quartzite base; alt. about 800 ft. "A small scraggly tree. Flowers yellow." April 15, 1952, Richard Evans Schultes & Isidoro Cabrera 16195 (TYPE in Herb. Kew).

RUBIACEAE

***Platycarpum Schultesii* Steyermark sp. nov.**

Frutex, ramis lignosis pubescentibus, vetustioribus scabrido-hirtellis, juvenilibus hirtello-hispidulis; foliis plerumque ternatis, rarius oppositis, coriaceis, petiolatis, petiolis 3-7 mm. longis, dense hirtellis; laminis elliptico-oblongis vel elliptico-oblongatis, obtusis vel subobtusis, basi acutiusculis, 8-14 cm. longis, 2-5 cm. latis, supra aspero-scabridulis, costa media dense hirtella, subtus dense velutino-hirtellis, pallidioribus, nervis lateralibus utroque latere 11-13 subtus prominentibus; thyrsis terminalibus, multifloris, pyramidalibus, trichotomis, 5-8 cm. longis; pedunculis 4-5 cm. longis, hirtello-hispidulis; bracteis subulatis, acutis, 5-6 mm. longis, 1 mm. crassis,

hispidulis; calyce 9-10 mm. longo, extus roseo-purpureo, cano-tomentello strigillosoque, intus tomentello, tubo 4-5 mm. longo, lobis 5 paullo inaequalibus, oblongo-oblanceolatis, subacutis, 7-8 mm. longis, 3-3.75 mm. latis; corollis infundibuliformibus, 10 mm. longis, extus albo-sericeis, intus lobis purpureo-maculatis, glabris, tubo intus papillato, fauce dense barbato-hirsuto; antheris anguste oblongis, apiculatis, 3.5 mm. longis; filamentis glabris, 3 mm. longis; nectariis prominentibus, 10, cano-tomentellis; ovario subinferiore, apice cano-hirsuto, stigmatate 2-fido, stylo 4.5 mm. longo, glabro; capsula juventute dense fulvo-tomentosa, compressa, rotundato-obreniformi, 2.5 cm. alta, 2.5-2.7 cm. lata.

This is the first record of the genus *Platycarpum* from Colombia. The new species is related to *Platycarpum orinocense* HBK. and to *P. Duckei* Steyermark, but, unlike these species, it has mostly ternate instead of opposite leaves. The flowers are considerably smaller than in either of those species, and the pubescence is of a much shorter type than that found in either *Platycarpum orinocense* or *P. Duckei*. The scabridulous upper leaf-surface of *Platycarpum Schultesii* resembles most closely the type of pubescence found in *P. Duckei*, but the former species differs from the latter, among other particulars, in the short pubescence of the lower leaf-surface and of the petioles and rachis. The only other species of *Platycarpum* with ternate leaves is *P. rhododactylum* Woodson & Steyermark of Venezuela.

COLOMBIA: Comisaría del Vaupés, Río Paraná Pichuna (tributary of Río Vaupés). Alt. about 200 meters. General location: Lat. 1° 10' N, Long. 70° 30' W. June 1953, Richard Evans Schultes & Isidoro Cabrera 19929 (TYPE in Herb. Chicago Mus. Nat. Hist.).

COMPOSITAE

Gongylolepis Martiana (Baker) Steyermark & Cuatrecasas in Fieldiana 28 (1953) 640.

Gongylolepis maroana Badillo in Bot. Soc. Venez. Ciénc. Nat. 8 (1943) 237.

Collections of *Gongylolepis Martiana* from Colombia have recently been reported as *G. maroana* Badillo (Schultes in Bot. Mus. Leaflet Harvard Univ. 13 (1949) 310; *ibid.* 14 (1949) 47; *ibid.* 16 (1953) 95). In pointing out the synonymy of *Gongylolepis maroana* and *Stiffia Martiana* Baker, Steyermark and Cuatrecasas (Steyermark *loc. cit.*) state that Maroa (a Venezuelan town on the Río Guainía), the type locality of *Gongylolepis maroana*, "is near the type locality (Prov. Alto Amazonas, in . . . montis Araracuara, 500 pedes supra fluvius Japurá) in Brazil, where Martius collected *Stiffia Martiana*." There are several errors in this statement that require rectification. Although in the days of Martius' collecting, one hundred and thirty years ago, Brazil laid claim to the Amazon as far west as Araracuara, this now-famous locality has been under undisputed Colombian sovereignty for much more than half a century and lies some 350 kilometers from the Colombian-Brazilian frontier. The continued citing of specimens from Araracuara as Brazilian creates serious problems in our studies of Amazonian phytogeography. The statement that Maroa is near Araracuara is misleading, for the straight distance is some 650 kilometers, and they lie in different river valleys. Furthermore, Maroa lies on the granitic Brazilian shield of Pre-Cambrian age, whereas the mountains of Araracuara, where *Gongylolepis Martiana* is known to grow, are metamorphic quartzites of Cretaceous age. The presence of the same species on both of these formations is unusual, though not unique.

The collections cited previously and those cited below from Colombia show that the concept is widely dispersed on the remnant Cretaceous hills in the Amazonian basin of that country: *Allen 3167* (Yuruparí Falls, Río

Vaupés); *Schultes 5740a* and *5742* (Cerro Chiribiquete); *Schultes 5568* (Cerro de La Campana); *Schultes 5816* (Caño Paca, Río Vaupés).

COLOMBIA: Comisaría del Vaupés, Río Kananari, Cerro Isibukuri. Near summit. "Ten feet tall." January 23-25, 1952, *Richard Evans Schultes & Isidoro Cabrera 15033*.—Comisaría del Vaupés, Río Kubiyú (tributary of Río Vaupés), Cerro Kafiendá. Savannahs 15 miles upstream from mouth. Quartzite base. Alt. about 800-900 feet. General location: Lat. $1^{\circ}0' N$, Long. $70^{\circ}15' W$. November 10, 1952, *Schultes & Cabrera 18326*.—Comisaría del Vaupés, Río Karurú (tributary of Río Vaupés), Mesa de Yambi. Savannah Goo-ran-hoo-da. Quartzite base. Alt. about 950-1000 feet. General location: Lat. $1^{\circ}20' N$, Long. $71^{\circ}20' W$. "Bush." April 15-16, 1953, *Schultes & Cabrera 19137*.—Comisaría del Vaupés, Río Vaupés, Raudal de Yurupari. Quartzite base. General location: Lat. $0^{\circ}40' N$, Long. $70^{\circ}30' W$. November 1951, *Schultes & Cabrera 19719*.

Stenopadus colombianus Cuatrecasas & Steyer-
marck sp. nov.

Arbor 4 m. alta, ramis terminalibus subteretibus, in sicco cortice plusminusve plicato, ochraceo-brunneis, adpressissime squamoso-strigosis, squamis subulatis. Folia alterna, petiolata, petiolo 3-4 cm. longo, 3-4.5 mm. crasso, in sicco rugoso-striato, adpressissime squamoso-strigoso, basi longe decurrenti. Lamina magna, firme coriacea, elliptico-oblonga vel obovato-oblonga, margine integra leviter revoluta, apice subito breviterque apiculata vel obtusa vel subrotundata, 13-32 cm. longa, 6-14 cm. lata; utrinque aspectu glaberrima sed pilis minutis squamosis malpighiaceis atro-fuscis sparsissimis, ad costam copiosioribus, praedita; supra pallido-viridis, costa laxo reticulo nervorum valde prominenti notata; infra costa crasse elevata, nervis secundariis 9-15 utroque latere elevatis, reticulo nervorum prominulo laxoque. Capitula solitaria, terminalia, sessilia, praecipue 35 floribus. Involucrum circa 4 cm. altum, cylindrico-campanulatum, basi rotundatum, phyllaribus 6-7 seriatis, subcoriaceis, rigidis, exterioribus rotundato-ovatis vel ovatis, 15-18 mm. longis,

10-11 mm. latis, basi valde incrassatis, basilaribus brevioribus, squamoso-tomentellis, intermediis gradatim imbricatis, ovato-oblongis vel oblongis, rotundatis vel obtusis, 18-25 mm. longis, 7-10 mm. latis, intimis linearibus, apice acutis vel acutiusculis, 32-35 mm. longis, 4-5 mm. latis, omnibus margine breviter ciliatis, dorso glabris, in sicco olivaceis. Paleae receptaculi numerosae, subulatae, apicem versus puberulae, margine ciliolatae, reliquae glabrae, 35 mm. longae, 0.5-1.5 mm. latae. Corolla actinomorpha, purpurea, glabra, tubo circa 22 mm. longo, apicem versus infundibuliformi, laciniis anguste linearibus, valde revolutis, 14-16 mm. longis, 1 mm. latis. Antherae 12 mm. longae, caudiculis linearibus, subacutis, 2.5 mm. longis. Ovarium nigrum, glabrum, 3-4 angulatum. Pappus circa 24 mm. longus, pallido-brunneus, tenuiter breviterque barbellatus.

This is the first record of the genus *Stenopadus* from Colombia. In Maguire's treatment (Mem. N.Y. Bot. Gard. 8 (1953) 153), *Stenopadus colombianus* would come nearest to *S. talaumifolius* Blake and *S. cardonae* Mag. & Lasser (= *S. talaumifolius* var. *magnifolius* Steyermark). From both of these species it differs in its much larger leaf-blades, more numerous flowers in a head, nearly glabrous involucre, the squamo-strigosity of the branches and petioles, and the sparsely dispersed malpighiaceae hairs on the leaves.

COLOMBIA: Comisaría del Vaupés, Río Kananari, Cerro Isibukuri, near summit. January 23-25, 1952, Richard Evans Schultes & Isidoro Cabrera 15031 (TYPE in Herb. Chicago Mus. Nat. Hist.).