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"JOSE CELESTINO MUTIS"

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JARDIN BOTANICO DE BOGOTA

"JOSE CELESTINO MUTIS"

PEREZ - ARBELAEZIA

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COMITE EDITORIAL

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Publicación del Jardín Botánico de Bogotá dedicada a la memoria de su fundador, el doctor Enrique Pérez-Arbeláez, quien consagró su vida a institucionalizar la tradición científica de Colombia y fomentar la investigación, divulgación y defensa de nuestros recursos naturales.

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NOTAS DE LA DIRECCION

El profesor José Cuatrecasas vinculado con este Jardín Botánico desde su fundación, por hondos nexos de simpatía y admiración hacia el fundador, cumplió recientemente 86 años. Por eso es muy grato que me haya correspondido el honor de rendirle un homenaje a su larga trayectoria científica en este órgano de divulgación PEREZ-ARBELAEZIA. Más placentero aún que a este homenaje concurren amigos eminentes, conocedores y estudiosos de la obra del Dr. Cuatrecasas, como Richard Evans Schultes, Thomas van der Hammen, Antoine M. Cleef, Orlando Rangel, Víctor Manuel Patiño, Santiago Díaz y Sonia Salamanca; y que haya permitido la reedición de su trabajo "Aspectos de la vegetación natural de Colombia", ya agotado, y de la publicación por primera vez de su lista de localidades y fechas de recolección durante su estadía en Colombia.

En estos dos años jubilares de la larga carrera de este cultor de la "ciencia amable", ha recibido el Dr. Cuatrecasas toda suerte de distinciones nacionales e internacionales y no podía faltar, de ninguna manera, un número especial de nuestra revista para quien fue el Dr. Pérez-Arbeláez, su insuperable compañero de excursiones, amigo entrañable y admirador del trabajo científico del botánico español y quien seguramente, si viviera, estaría encabezando este jubileo, como reconocimiento a uno de los pioneros de la investigación botánica en Colombia, en el presente siglo.

Los lectores de esta entrega de la revista, echarán de menos que no me refiera a la abrumadora hoja de vida científica y de aportes a la ciencia del Dr. Cuatrecasas, porque ya ha sido aliviada su labor por plumas muy calificadas. Mis palabras están referidas al amigo gallardo que como colombiano de adopción se ha empeñado en dilucidar el misterio de nuestra flora, reconociendo nuestro territorio desde el nivel del mar hasta las más altas cumbres de los Andes, en donde fijó su mayor atención, en nuestros páramos, con vegetación tan fascinante y especial; al extraordinario compañero de viaje que añoro con nostalgia navegando en los caños del Amazonas, o trasegando en la impenetrable selva o disfrutando del poderoso río a bordo del cañonero ARC Riohacha.

Por todos estos recuerdos tan personales me siento hondamente complacida que pueda el Jardín reeditar su trabajo "Aspectos de la vegetación natural de Colombia", que constituye una inicial síntesis

de nuestra flora, lección permanente para nuestros compatriotas, así como la publicación de su diario de lugares de recolección, de utilidad para los colectores de plantas en nuestro país, siendo por lo tanto verdadera joya bibliográfica.

TERESA ARANGO BUENO
Directora



Dr. JOSE CUATRECASAS

DE PLANTIS TOXICARIIS E MUNDO NOVO TROPICALE
COMMENTATIONES XXXIX
ETHNOBOTANICAL AND PHYTOCHEMICAL NOTES
ON PLANTS OF THE COLOMBIAN AMAZONIA

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Biology and Director, Botanical Museum,
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bridge, Massachusetts, U. S. A.

It is an exceptional honour for me to dedicate these brief notes to Dr. José Cuatrecasas, in recognition of his long and brilliant career which has indeed elevated him to the highest rank in that international group of scholars dedicated to the plant sciences. His research in ecological, floristic and taxonomic aspects of the Colombian flora have established him unquestionably as the leading modern botanist in furtherance of the aims of the Real Expedición Botánica. As a friend and colleague, I applaud his life-long contributions to the study of the richest flora in South America.

The Amazon basin, with an estimated 80.000 species of higher plants, is one of the richest floras of the world. The northwestern part of this great area supports undoubtedly more species than any other section of this vast hylea. Very little collecting and investigation of the cryptogamic flora of the region has been carried out; it must be richer in species even than the phanerogams.

Phytochemical analyses of very few of the species have been done. It has been estimated that the chemical composition of fewer than 95% of the flora is known. With such a rich and varied vegetation, it is obvious that the Amazon flora is a virgin field for the discovery of hundreds, if not thousands, of secondary organic compounds new to science. This fact is substantiated by the results of the limited number of species that have been studied.

How many of these new compounds and the innumerable semi-synthetic analogues that can be prepared from them may be pharmaceutically valuable in modern medicine or in industry?

Knowledge of the bioactivity of the plants of this extraordinary flora is possessed by the aboriginal societies, accumulated by experimentation over the centuries. This precious knowledge is in danger

of extinction with the inexorable and rapid spread of western civilizations; for, when western medicinal preparations arrive, this knowledge disappears, often even in one generation. In many localities road-building, the establishment of air strips, commercial ventures, increased missionary activity, and tourism are disrupting native ways of living. In recent decades systematic devastation of huge areas tropical forests, especially in the Brazilian sector of the hylea and often unfortunately with governmental encouragement, has reached unbelievable intensity in some parts of the Amazonia and is the major threat to the preservation of the Indians' knowledge of the properties of the plants of their ambient vegetation. It is true that this valuable and irreplaceable knowledge is often becoming extinct faster than the trees themselves.

Recently, the science of environmental conservation has come to recognize that we must take every possible step to increase activity in what is now called "ethnobotanical conservation" the salvaging of as much of the aboriginal knowledge of the uses and properties of plants which is still available. For if chemists must collect material of 80,000 species of plants in such remote areas and submit them one by one to analysis, the task will probably never be completed. One logical method would seem to be to concentrate on those species that are known to the natives to be bioactive. Perhaps few of the so-called "medicinal" plants really bring about cures, but if any plant has physiological effects on the human body, it indicates that their tissues have at least one active chemical constituent. We may never use these principles in our western pharmacopoeas; we may use them for other purposes; or, in a few cases, we may possibly use them for the same or similar medicinal purposes. An excellent example is offered by the Amazonian *curare* prepared from *Chondrodendron*: the Indian employs curare in his blow guns to kill animals, but modern medicine now finds compounds extracted from curare to be invaluable muscle relaxants in surgery.

What can we do to save what is left of this knowledge? More ethnobotanically trained young scientists must be produced and supported by governmental ministries, international organizations, conservation institutions, granting foundations and other financial sources. It is not enough to train ethnobotanists; they must be able and encouraged to engage as much as possible in field work.

A number of countries are notable in their extensive programmes of ethnobotanical research or in studies of their traditional medicines. India, China and Mexico are extremely active in ethnobotanical research. France has a Société de Ethnobotanique with a large number of dedicated members. In the United States, an active Society of Ethnobiology recently established, publishes a highly successful journal; the *Journal of Ethnobiology*; and the Society of Economic Botany, in its international quarterly *Economic Botany*, publishes many papers in ethnobotany. Numerous journals in Europe

(eg., *Planta Medica*) stress ethnopharmacology. The flourishing *Journal of Ethnopharmacology*, now in its 26th volume has been a strong influence in encouraging ethnobotanical research. In 1990, there will be in Strassbourg, France, the first Congress of Ethnopharmacology; and it is expected that, in conjunction with the Congress, an international Society of Ethnopharmacology will be formed. And in sundry other countries there are anthropological and botanical journals willing to publish research papers in ethnobotany.

While an occasional venture into ethnobotanical fields is not uncommon in South American botanical and ethnological journals, Colombia, I believe, stands at the head of ethnobotanical efforts at the present time. Colombia has had a long history in botanical research dating from the Expedición Botánica of the last part of the 18th Century; but the prodigious production of this Expedición was confined to taxonomy. Recently, however, Colombia has begun to train very qualified ethnobotanists. It is hoped that, in a country with so many aboriginal groups not yet acculturated that many young trained ethnobotanists will find financial help to further research in a República that has always prided itself on its dedication to the natural sciences. In June 1989, the Second Ethnobotanical Congress of Colombia was held in Popayán. This Congress epitomizes the growing interest in ethnobotany of Colombia and it is time to preserve some of this valuable knowledge still present in the Andes, the Chocó, the Amazonia, the Llanos and other localities such as the Sierra de Santa Marta, before it is forever lost.

As a botanist and ethnobotanist who has concentrated his field work in the northwest Amazon, particularly in Colombia, for the past 48 years, I am so exhilarated with the upsurge of interest in ethnobotany in Colombia that I wish I were 30 years younger!

In January of 1990, there will be published a book on the bioactive plants employed by the Indians of the Colombian and Ecuadorian Amazonia*. It is, in great part, the results of my work, and that of my students and Colombian botanists in the Colombian Amazonia from 1941 to the present. It presents some 1,600 species of plants, most of which have never been chemically analyzed. The native uses, botany, ethnobotany, Indian names and, when available, chemical analyses of the plants constitute the contents. Prof. R. F. Raffauf, has been with me on several occasions, making chemical spot tests of some of the plants in the field. We believe that we have preserved a wealth of native information that is unfortunately destined to disappear as this region undergoes "westernization".

* R. E. Schultes and R. F. Raffauf. *The Healing Forest: Medicinal and Toxic Plants of the Indians of Northwestern Amazonia*. Dioscorides Press, Portland, Oregon (1989).

Since our preparation of this large volumen, identification of many of my collections have been made and have been mailed to me from specialists in herbaria around the world. Our book is now in production, and since it is not possible to include these additional notes, I take the opportunity of publishing them in this journal dedicated to one of Colombia's strongest supporters of ethnobotany, my friend the late Dr. Enrique Pérez-Arbeláez.

My botanical collecting and research in the northwest Amazon, primarily in Colombia, has been dedicated especially to studies on the rubber-yielding genus *Hevea* and to medicinal, narcotic and toxic plants used by the numerous Indian tribes of this still almost pristine region.

The families are arranged according to the Engler-Prantl phylogenetic system; the genera and species will be enumerated in alphabetic order.

Voucher specimens cited are represented in the Herbario Nacional de Colombia and in the Economic Herbarium of Oakes Ames and/or the Gray Herbarium, both in Harvard University. Duplicate material of some of the specimen are deposited at the Royal Botanic Gardens, Kew, the Missouri Botanical Garden, the United States National Herbarium and the Rijksherbarium in Stockholm, Sweden.

In my field notes, I have striven not to diagnose diseases or ailments but have (except when the problem was obvious, malaria, intestinal parasites, etc.) preferred to give the natives' diagnosis: eg., "chest pains", "headaches", etc.

Since many identifications of voucher specimens have come in after our book was in press, we shall publish several ethnopharmacological papers, the notes of which we could not include in our book but which must be available in order to have published and preserved as much of the native medicinal plant lore as possible.

CYATHEACEAE

Sphaeropteris Bradei (Baker) Windisch, Bradea 1 (37) (1973) 372.
COLOMBIA: Comisaría del Vaupés, Río Piraparaná, Caño Teemeena.

"Height 8-10 feet". September 10, 1952. Schultes et Cabrera 17458. The Barasana Indians report that a gummy resin found at the base of the leaves and applied for several days on wounds hastens their healing. It is also applied to caries that are causing pain.

Sphaeropteris macrosora (Baker) Windisch var. *reginae* Windisch, Bradea 1 (37) (1973) tl. 11 (pp.).

COLOMBIA: Comisaría del Vaupés, Río Piraparaná. August 24, 1952. **Schultes et Cabrera 17054** t. 1, 11 (pp.).

The gum exuded at the base of the leaf axis of this variety of *Sphaeropteris macrosora* is employed by the Makuna and Barasana Indians for the same purpose as the gum produced by *S. Bradei*: to hasten the curing of wounds and to lessen the pain of rotting molars.

GNETACEAE

Gnetum nodiflorum **Brongniart** in Duperrey, Voy. Bot. 1 (1828) 12.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cachivera de Tatú. "Vine". October 10, 1966. **Schultes, Raffauf et Soejarto 24367**.

This vine, which is abundant on the riverside vegetation in the Vaupés, tests alkaloid-negative or doubtful for alkaloids.

TRIURIDACEAE

Sciaphila albescens **Bentham**, Hooker Kew Journ. 7 (1855) 11.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cerro de Mitú. "Saprophyte; all white". September 7, 1951. **Schultes et Cabrera 13921**.

The Kubeos state that this is a "magic plant".

Sciaphila purpurea **Bentham**, Hooker Kew Journ. 7 (1855) 11.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Saprophyte, purplish-pink". September 15, 1951. **Schultes et Cabrera 14089**. Río Papurí, Teresita. May 27, 1953. **Schultes et Cabrera 19480**.

This purplish-pink saprophyte is considered "bad magic" by a Tukano medicine man.

PALMAE

Astrocaryum Javari **Martius**, Hist. Nat. Palm. 2 (1824) 76, t. 52 et 65, fig. 1.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Height 70 feet. Leaves 6 ft. long. Trunk densely spinose. Male flowers purplish". December 7, 1951. **Schultes et Cabrera 14867**.

The Kabuyarí name of this palm is too-peé. In the Puinave language, it is called *keé-pa*. The fruit is burned, and the acrid smoke is inhaled for treating heavy colds.

Euterpe precatoria **Martius**, Palmet. Orb. 10 (1847) t. 18a, f. 2.



FIGURA 1. The Savannah of Yapobodá at the headwaters of the Río Kuduyarí, Vaupés, a locality of many endemic species.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Height 60 feet. Leaves more or less 6 feet long". July 12, 1951. Schultes et Cabrera 14865.

The common name of this useful palm is assai. The Puinaves call it yawt; the Kabuyari Indians know it as *man-né-ka* and use the juice of the crushed ripe fruits to treat sore gums.

Geonoma paniculigera Martius, Hist. Nat. Palm. 2, (1823) 11, t. 10.

COLOMBIA: Comisaría del Vaupés, Soratama. "Six to 8 feet tall.

Fruit ripens black. Inflorescence axes reddish. Trunk 1/2 in. diameter". June 20, 1951. Schultes et Cabrera 12733, 12781.

Indians of the middle Río Apaporis grind the dried fruit and leech boiling water through the pulverized material to prepare a drink taken warm for intense and long-standing pains of the stomach.

Geonoma Trailii Burret, Engler, Bot. Jahrb. 63 (1903) 183.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, near mouth of Río Pacoa. July 17, 1951. Schultes et Cabrera 13005. Soratama, August 20, 1951. Schultes et Cabrera 13665. Río Kuduyari, Yapobodá. April 1953. Schultes et Cabrera 20076.

The fruit of this eight-foot palm is dried, crushed and leached with hot water to make a tea for treating stomach pains. The Kubeo name of the plant is *ma-né-pee-way*.

Iriartella setigera (Mart.) H. Wendland, Bonplandia 8 (1860) 104.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Raudal Jirijirimo.

June 5, 1952. Schultes et Cabrera 16630. Río Piraparaná, Caño Teemeena. Fruit orange, Height 5 feet. September 6, 1952. Schultes et Cabrera 17336, 17342.

In the Río Negro of the Colombian-Brazilian frontier, this graceful palm is known as *yupatí*. The Barasana Indians know it as *boo-hoó-no*.

CYCLANTHACEAE

Carludovica sp.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. Fruit light green. Climbing. December 4, 1951. Schultes et Cabrera 14845.

The woody stem of this extensively scandent species is often burned and the ashes used as an admixture for the hallucinogenic snuff prepared from *Virola*.

ARACEAE

Anthurium Bonplandii **Bunting**, Acta Bot. Venez. 10 (1-4) (1975) 267.
COLOMBIA: Comisaría del Vaupés, Río Kuduyarí, Yapobodá. August 16, 1960. **Schultes** 22677.

The Kubeo Indians dry and crush the inflorescence and put the powder into infected sores.

Monstera obliqua **Miquel**, Linnaea 18 (1844) 79.

COLOMBIA: Comisaría del Vaupés, Río Pacoa. "Spadix yellow. The long roots are used as binders". February 8, 1952. **Schultes et Cabrera** 15284.

In the Río Apaporis, hot poultices of the large leaves of this species are applied to boils to hasten their opening. The Kubeos add the astringent leaves to **chicha**.

Philodendron cuneatum **Engler**, Bot. Jahrb. 6 (1885) 281.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, base of Cerro Isibukuri. "Epiphyte. Spathe green; spadix white". December 4, 1951. **Schultes et Cabrera** 14761.

The liquid obtained from crushing the leaves is applied to the ears "when they are painful", probably from fungal infection. This is a common medicinal use amongst the Taiwanos and Makunas. The Taiwanos also mix the crushed leaves with fat to apply to skin diseases.

Philodendron haematinum **R. E. Schultes**, Rhodora 66 (1964) 120.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, summit of Cerro Isibukuri. August 6, 1951. **R. E. Schultes et I. Cabrera** 13440.

According to Taiwano informants, the red "flower" (= spathe) is considered an effective medicine for "the blood" when taken in the form of a tea over a period of several weeks. Their name for this epiphyte is **ma-ve-té-ka**. They powder the leaves for use as a styptic for infected wounds.

The Kubeo, living on the Río Kuduyarí, ascribe magical significance to the red colouring matter of this aroid (Schultes: loc. cit. 124).

Philodendron Linnaei **Kunth**, Enum. Pl. 3 (1841) 47.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. Epiphyte. Spathe purple-red at base, speckled yellow and red above; white within. August 16, 1951. **Schultes et Cabrera** 13577.

The Taiwano name of this epiphyte is **won-see-teé-be-haw**. The leaves are fermented and thrown into the water as a fish poison.

Philodendron Paxianum **K. Krause** in Engler, Pflanzenr. Arac. Philodendrinae (1913) 127.

COLOMBIA: Comisaría del Putumayo, Río Putumayo, Puerto Ospina. March 25-26, 1953. **Schultes et Cabrera 18932.**

The inhabitants of the Mocoa region crush the leaves and use the material to massage swollen and painful joints.

Philodendron Steyemarii **Bunting**, Act. Bot. Venez. 10 (1975) 312 (313).

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Raudal La Playa (Yayacopi). Epiphyte. Spathe yellow-green, red within. On humus of rocks. February 16, 1952. **Schultes et Cabrera 15430.**

The Makunas state that the aerial roots of this epiphyte, when dried and crushed, are added to *chicha* (fermented drink) prepared from the peach palm (*Guilielma speciosa*).

Spathiphyllum cf. *neblinae* **Bunting**, Mem. N. Y. Bot. Gard. 10, No. 3 (1960) 25.

COLOMBIA: Comisaría del Amazonas, Río Miritiparaná, Caño Guacayá. "Spathe green". March 5, 1952. **Schultes et Cabrera 15824.**

The Tanimukas, who call this epiphyte *dee-a-fá-che-moo*, apply the crushed leaves to painful molars.

VELLOZIACEAE

Vellozia lithophila **R. E. Schultes**, Rev. Acad. Col. Cienc. 8, No. 32 (1952) 459.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú, Cerro Kañenda. November 10, 1952. **Schultes et Cabrera 18317.**

The Kubeo call this plant, wich they use as a fish poison, *dá-pee-dee*.

MORACEAE

Coussapoa sp.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cachivera de Tatú.

"Fruit yellow. Small tree, 30 feet, hanging over cataract". October 10, 1966. **Schultes, Raffauf et Soejarto 24379.**

This species (which appears to be a new species) is alkaloid-positive for the leaves, alkaloid-negative for the bark.

The natives of the Río Vaupés burn the wood and inhale the smoke when they suffer from "gripa".

Ficus malacocarpa **Standley**, Field Mus. Publ. Bot. 17 (1937) 172.

COLOMBIA: Comisaría del Vaupés, Río Kananarí. "Along banks. Latex white". June 8, 1951. **Schultes et Cabrera 13414.**

The Puinaves call this wild fig *kón-ka* and employ the latex as a vermifuge.

Ficus obtusifolia **Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 2 (1817) 49.**

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Raudal de Jirijirimo. November 25, 1951. **Schultes et Cabrera 14565.**

Amongst the Taiwanos, the latex is considered to have vermifugal properties.

Ficus trigona **Linnaeus fil. Suppl. (1782) 441.**

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Raudal de Jirijirimo. "Leaves with pinkish veins". July 8, 1951. **Schultes et Cabrera 12992.**

The latex of *Ficus trigona* is valued by the Taiwanos as a strong purgative.

POLYGONACEAE

Coccoloba nutans **Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 2 (1817) 176.**

COLOMBIA: Comisaría del Amazonas, Leticia. "Arbusto ramoso. Flores blancas". August 17, 1964. **Fernández-Pérez 6859.**

Coccoloba nutans has not previously been recorded from Colombia (R. A. Howard; personal note).

ANNONACEAE

Guatteria dura **R. E. Fries, Act. Hort. Berg. 12 (1939) 499.**

COLOMBIA: Comisaría del Vaupés, Río Kuduyarí. "Tree 18 feet tall. Flowers yellow-green; cauliflorous". October 10, 1966. **Schultes, Raffauf et Soejarto 24391.**

A strong tea made of the bark of this tree is, according to the Ku-beos, an efficient vermifuge.

Pseudoxandra sp.

COLOMBIA: Comisaría del Amazonas, Río Loretoyacu. "Small tree. In flooded bank of river. Fruit black at maturity (but first green, then yellow, finally red when nearly mature)". October, 1944. **Schultes 2386.**

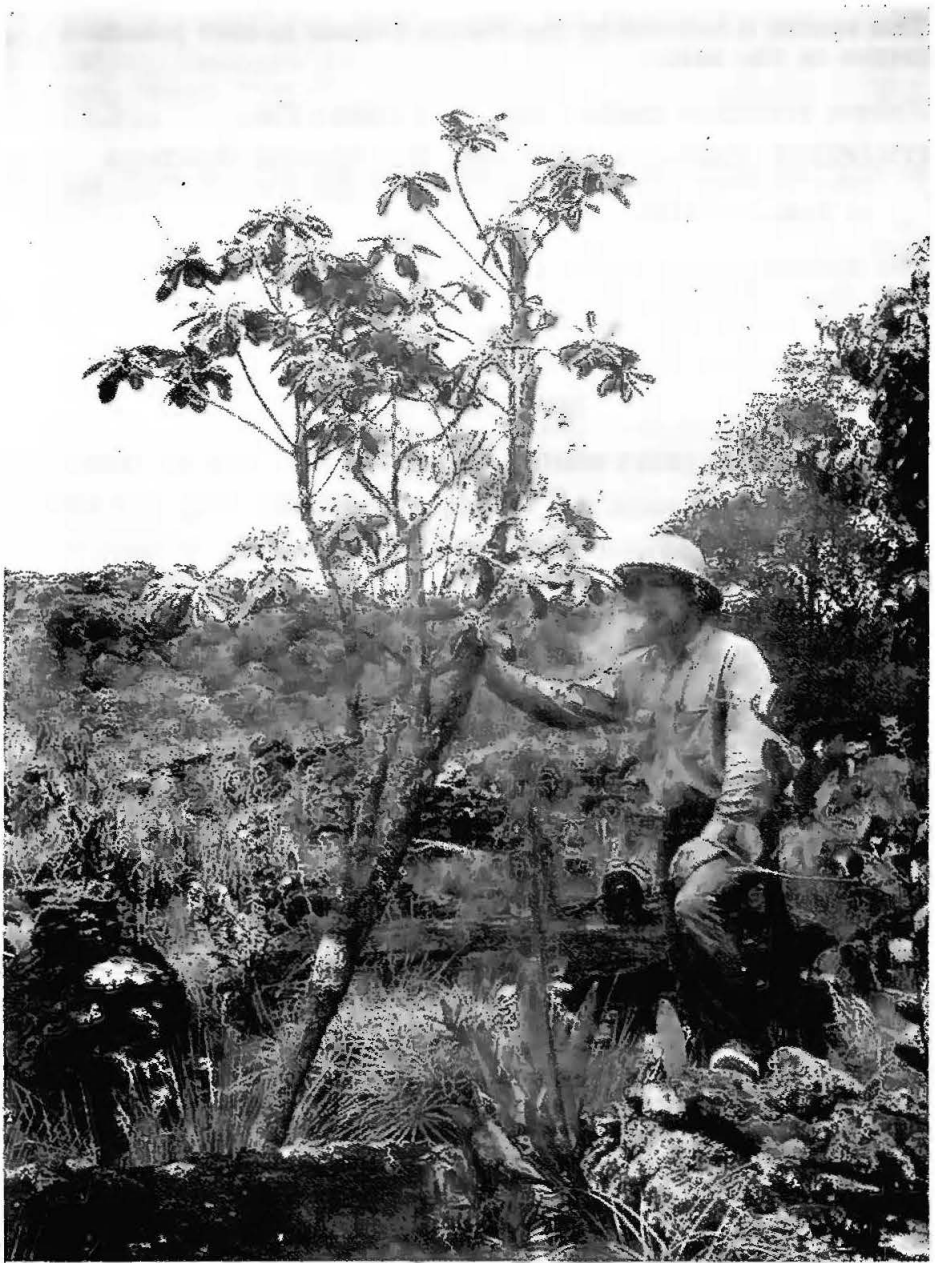


FIGURA 2. The type specimen of *Conomorpha lithophyta* in the Savannah of Yapobodá, Río Kuduyarí, Vaupés, Colombia.

This species is believed by the Tikuna Indians to have poisonous properties in the bark.

Xylopia aromatica Baillon, Hist. Pl. 1 (1868) 278.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Large tree. Flowers white. On highlands". September 28, 1951. **Schultes et Cabrera 14146.**

The Kubeos use the fruits in decoction as a remedy from the "common cold". A strong tea of the leaves and stem is taken to induce sleep.

MYRISTICACEAE

Virola cuspidata (Bth.) Warburg, Nov. Act. Nat. Cur. 68 (1897) 208.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Mitú and vicinity.

"Large tree. 50 feet tall. Leaves white beneath. Flowers brown. 'Resin' of bark red". September 27 - October 20, 1966. **Schultes, Raffauf et Soejarto 24253.**

Virola flexuosa A. C. Smith, Brittonia 2 (1936) 151.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama, "Enormous tree". September 28, 1951. **Schultes et Cabrera 14166.**

The local Indians gather the "resinous" bark exudate to treat painful caries in the molars. The Taiwanos use the powdered leaves as an insect repellent.

Virola multinervia Ducke, Journ. Wash. Acad. Sci. 26 (1936) 261.

BRAZIL: Estado do Amazonas, Reserva Ducke, Manaus. "Small tree, 15 feet tall, diameter 8-10 inches. Abundant reddish 'resin' in bark. Leaves beneath and fruit golden-hairy". July 8 - August 12, 1967. **Schultes 24614.**

The leaves of this tree are alkaloid-negative with a Dragendorff spot-test; the twigs and fruits are positive with an Ehrlich spot-test.

Virola peruviana (A. DC.) Warburg, Nov. Act. Nat. Cur. 68 (1897) 188.

COLOMBIA: Comisaría del Amazonas, Leticia. "Ucu-úba. Arbol de 10 m. La resina es usada contra dolor de muelas". October 9, 1961. **Idrobo 4699.**

This species is alkaloid-very positive with a Dragendorff spot-test. The "resinous" exudate of the bark is employed by the local population to calm pain from decayed molars.

Ocotea glauca (Meissn.) Mez, Jahrb. Bot. Gart. Berl. 5 (1889) 362.

COLOMBIA: Comisaría del Amazonas, Río Miritiparaná, Caño Guacayá. "Small tree. Fruit green with red collar". March 5, 1952. Schultes et Cabrera 15803.

The Tanimukas know tree as koo-moo-roó-ka; the Yukuna name is koo-moo-loó-da.

Nectandra acutifolia (R. et P.) Mez, Jahrb. Bot. Gard. Berl. 5 (1889) 409.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cachivera de Tatú. "Flowers yellow. Tree 40 feet". October 10, 1966. Schultes, Raffauf et Soejarto 24373.

The Kubeo employ a tea of the bark to relieve excessive fatigue. The collection is alkaloid-positive with a Dragendorff spot-test.

MONIMIACEAE

Siparuna ternata Perkins, Bot. Jahrb. 28 (1901) 691.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cachivera de Tatú. "Small tree". October 10, 1966. Schultes, Raffauf et Soejarto 24375.

The Kubeos poultice the leaves of this small tree in their treatment of snake-bite. A tea of the fruits is taken to treat colds.

A Dragendorff test for alkaloids indicates a negative result.

PODOSTEMONACEAE

Weddellina sp. or *Rhyncholacis* sp.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, rapids of Yarupán, October 24-26, 1952. H. García-Barriga 14961.

This very abundant plant growing on the rocks of the rapids is called *moó-ma* by the Kubeos. It is the same name that these natives apply to table salt; and the leaves of this plant are burned, and the ashes are used in food as is our sodium chloride.

The collection is sterile, the reason for our inability to assign it definitely to a genus.

LEGUMINOSAE

Cassia emarginata Linnaeus, Sp. Pl. (1753) 376.

COLOMBIA: Comisaría del Amazonas, Río Miritiparaná, Caño Guacayá. March 5, 1952. "Scandent bush. Flowers bright yellow". Schultes et Cabrera 15817.

The Tanimukas, who call this bush **wy-bá-see**, employ the dried leaves as an insect repellent.

Chamaesenna reticulata (Willd.) Pittier, Trab. Mus. Com. Venez. (Bol. Min. Rel. Ext., Nos. 1, 2 et 3) (1928) 160.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Mitú. "Bush. Flowers yellow. Cultivated". September 8, 1951. **Schultes et Cabrera 13971**. Same locality. March. 8, 1944. **Gutiérrez et Schultes 950**.

Comisaría del Amazonas, Río Karaparaná, near El Encanto. May 22-28, 1942. **Schultes 3807**.

This bush is cultivated by the Tukanos and the Witotos; both tribes pulverize the leaves and use the powder as an insect repellent in hammocks. The Tikuna name is **o-reé**.

Mucuna rostrata Benth, Martius, Fl. Bras. 15, pt. 1 (1859) 171.

COLOMBIA: Comisaría del Amazonas, Puerto Nariño. "Extensive vine. Flowers bright scarlet". September 13-15, 1966. **Schultes, R. fauf et Soejarto 24160**.

Amongst the Tikuna Indians, the seeds are ground and put into food as an antihelmintic.

Tachigalia cavipes (Spr. ex Benth.) Macbride, Field Mus. Publ. Bot. 13, pt. 3 (1943) 127.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Raudal Jirijirimo.

July 5, 1951. **Schultes et Cabrera 12981**. Río Kananarí, Cerro Isibukuri. "At base of mountain. Flowers yellow". November 29, 1951. **Schultes et Cabrera 14690**.

The Makú Indians of the Río Piraparaná employ this plant (apparently a tea of the leaves) as an antifertility agent; they call it **we-wit'-kat-ku** ("no children medicine"). The Kubeos burn the leaves and mix the ashes with the ashes of an undetermined species of *Combretum* as an insect repellent in their hammocks, an interesting use, in as much as the plant is infested normally with ferocious "fire-ants"; they also powder the leaves to mix with **fariña** for bloody stools. The Puinaves call this tree **mun-wan'-shee-pi-no**.

MELIACEAE

Trichilia cf. *singularis* C. De Candolle, Martius, Fl. Bras. 11, pt. 1 (1878) 217.

COLOMBIA: Comisaría del Vaupés, Río Macú Paraná. "Scrapings from the stem and roots rubber with water and drunk. This

potion causes the taker to vomit out any poison he has been given to eat or drink". June 1-8, 1970. **Silverwood-Cope 16.**

The Makú Indians on the Río Piraparaná consider this species to be an efficient vermifuge.

MALPIGHIACEAE

Burdachia prismatocarpa **Martius ex A. Jussieu**, Ann. Sci. Nat., ser. 2, 13 (1840) 330.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Bush. Flowers greenish yellow". December 14, 1951. **Schultes et Cabrera 14892.**

The Indians living in the middle course of the Río Apaporis report that the bark is "medicinal for fevers and chills" (malária?).

VOCHYSIACEAE

Vochysia García-Barrigae **Marcano-Berti**, Pittieria, No. 1 (1967) 2.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. "Large tree, 90 feet tall. Leaves reclinate. Large. Yellow flowers". September 29, 1951. **Schultes et Cabrera 14696.** Same locality. "Flowers yellow, large. Height 65 feet. Columnar trunk. At base of mountain". September 29, 1951. **Schultes et Cabrera 14675.**

The Puinave name for this conspicuous and abundant tree is **kaw'-gle-shoo.**

Vochysia laxiflora **Stafleu**, Act. Bio. Neerl. 3 (1954) 407.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. "Flowers yellow. Leaves erect. Tree 80 feet tall. Large crown. Bark grey-brown". September 29, 1951. **Schultes et Cabrera 14170a.** Río Apaporis, Soratama. Flowers yellow. Height 90 feet. February 4, 1952. **Schultes et Cabrera 15146.**

The Puinave Indians call this tree **po'-ho-glo** and prepare from the bark a reputedly antiseptic decoction utilized to heal sores of the legs and thighs. It is of interest that the Kubeos have a similar use for *Vochysia ferruginea*.

Vochysia lomatophylla **Standley**, Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (1940) 150.

COLOMBIA: Comisaría del Vaupés, Río Pacoa. "Gigantic tree. Flowers yellow". February 7-12, 1952. **Schultes et Cabrera 15234.**

The Barasana Indians call this tree **ka-hwee'-gaw-ya.** The bark and leaves were formerly given in decoction to women as an abortifacient.

In adjacent Perú, the tree is called *sacha-alfaro* and, according to the collector (Woytkowski 6021), the bark is perhaps employed as a contraceptive by the Kampa Indians.

EUPHORBIACEAE

Alchornea glandulosa Poeppig et Endlicher, Nov. Gen. et Sp. 3 (1841) 18, t. 221.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Mitú. "Large tree 60 feet tall". September 27 - October 20, 1966. Schultes, Raffauf et Soejarto 24197.

The leaves of this tree are negative with a Dragendorff alkaloid test. *Croton trinitatis* Millspaugh, Field Col. Mus. Bot., ser. 2 (1900) 57.

COLOMBIA: Comisaría del Amazonas, Río Amazonas, Leticia. September 1946. Schultes 8220.

The Tikunas apply the crushed leaves to bleeding gums. *Hevea Benthamiana* Mueller-Argoviensis, Linnaea 34 (1865) 204.

COLOMBIA: Comisaría del Amazonas, Río Caquetá, La Pedrera. October 13, 1952. Schultes et Cabrera 17823.

The Mirañas of La Pedrera refer to this species as *yay'-ga* or *yay'-ate-ga*. *Hevea guianensis* Aublet, Hist. Pl. Guian. Franc. 2 (1775) 871.

COLOMBIA: Comisaría del Amazonas, Río Kananari, El Encanto. May 22-28, 1942. Schultes 3840.

The Witoto Indians know this abundant rubber tree as *hee-so'-re*. It provides a rubber of second quality.

Hevea guianensis Aublet var. *lutea* (Spr. ex Bth.) Ducke et R. E. Schultes in *Caldasia* 3 (1945) 249.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Rapids of Jirijirimo. "Columnar tree, 65 feet tall. Leaflets erect. Flowers yellow. Latex cream-coloured, thick". September 16, 1951. Schultes et Cabrera 14099.

Comisaría del Vaupés, Río Apaporis, Raudal de Jirijirimo. "Columnar tree 65 feet. Flowers yellow. Latex cream-coloured, thick. Leaflets erect". September 16, 1951. Schultes et I. Cabrera 14099. Comisaría del Amazonas, Río Miritiparaná, Caño Guacayá. "Bark very thick, abundant, whitish". March 2-8, 1952. Schultes et Cabrera 15746. Same locality. Tree 50 feet, columnar, diameter 1 foot. Bark brown outside, relatively smooth, very thin and brittle. Latex sordid-yellow. Flowers yellow. Leaflets (new) reclinate, becoming erect (?). March 2-8, 1952. Schultes et Cabrera 15785.



FIGURA 3. *Tachigalia caucipes*, Mitú, Vaupés.

The Kubeos call this tree *ye'-ka*; it is known in the Río Miritiparaná as *seringa de garza* ("rubber tree of the heron"), *seringa chivecera* ("rubber tree of the goat") *seringa sabanera* ("rubber tree of the savannah"). It provides a useful rubber of second quality.

Hevea microphylla Ule, Engler, Bot. Jahrb. 35 (1905) 669.

COLOMBIA: Comisaría del Vaupés, Río Guainía, Caño del Caribe.

November 2, 1952. Schultes, Baker et Cabrera 18250, 18267.

The Kuripako name of this species of *Hevea* is *wa'-me-to* or *go-pe-ee'-dje-ka*.

Hevea nitida Martius ex Mueller-Argoviensis in Martius, Fl. Bras. 11, pt. 2 (1874) 301.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Rapids of Jirijirimo.

"Columnar tree. Leaflets reclinate. Flowers yellow. Latex abundant, thin, white". September 16 (1951). Schultes et Cabrera 14100. Same locality. "Leaves reclinate. Latex very white". January 30, 1957. Schultes et Cabrera 15008.

Comisaría del Amazonas, Río Miritiparaná, Cerro de la Gente Chiquita, May 18-19, 1952. Schultes et Cabrera 16511.

The Kubeos call this tree *a-een'-ye-ka* or *an-dje'-ka* ("edible rubber tree").

The seeds of this tree are eaten by numerous Indians of the Colombian Amazonia, but the cyanogenic glycosides, a virulent poison, must be leached out in the same ways as it is extracted from *Manihot esculenta*. The latex of *Hevea nitida* has a high content of resins and does not coagulate easily; in fact, if mixed with the latex of any other species of *Hevea*, it prevents coagulation or, in the words of the Indians, it "poisons other latexes".

The Tanimuka call this tree *wa-hwoo'-noo*; amongst the Yukuna it is known as *koo-noo'-pa-pa-na*.

Hevea nitida Martius ex Mueller-Argoviensis var. *toxicodendroides* (R. E. Schultes et Vinton) R. E. Schultes in Bot. Mus. Leaflet, Harvard Univ. 13 (1947) 11.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Yuruparí Falls. December 4, 1953. Schultes et Cabrera 19012. Río Apaporis, Jinogoge. June 30, 1952. Schultes et I. Cabrera 15008. Río Apaporis, Raudal de Jirijirimo. September 16, 1951. Schultes et Cabrera 14100.

This diminutive species of *Hevea* is recognized by the Taiwano as *kai-ya'-reek*, by the Barasanas as *wa-hong'-he* and by the Kubeo as *an-dje'-ka* or *a-een'-ye-ka*.

Hevea pauciflora (Spr. ex Bth.) Mueller-Argoviensis var. *coriacea* (Ducke) Ducke in Arch. Inst. Biol. Veg. Río Jan. 2 (1935) 239.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná, lower course. "Leaflets horizontal. Flowers purpling with age". March 9, 1952. Schultes et Cabrera 15903.

Comisaría del Amazonas, Río Miritiparaná, Cerro de la Gente Chiquita. "Latex yellow. Leaflets horizontal. Diameter 8-10 inches". May 18-19, 1952. Schultes et Cabrera 16517.

The Makuna name of this abundant rubber tree is hawan-son. The Tanimukas know it as hwa-hoo'-ma-ka-ne-ka.

Micrandra Spruceana (Baill.) R. E. Schultes, Bot. Mus. Leaflet, Harvard Univ. 15 (1952) 217.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. June. Schultes et Cabrera 12862. Jinogoje, June 5, 1952. Schultes et Cabrera 16698.

The Kubeo make an edible mash of the seeds of this relative of the rubber tree after removing the toxic cyanoglycoside. It is known to the Kubeo as ya'-ka, to the general population of the Vaupés as cunuré. The Makunas call the tree wa'-ho; the Makú name is pen.

Hieronyma colombiana Cuatrecasas, Rev. Acad. Col. 8 (1951) 298.

COLOMBIA: Comisaría del Putumayo, Páramo de San Antonio. "Small tree. Fruit edible; also source of a wine. Bark and leaves in infusion cure 'chandra', a skin eruption". February 16, 1942. Schultes 3253.

The Kamsá Indians know this plant as ssna hoo'-sha. The Spanish speaking population calls it motilón.

AQUIFOLIACEAE

Ilex inundata Poeppig ex Reissekin in Martius, Fl. Bras. 11, pt. 1 (1861) 43.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná. March 9, 1952. Schultes et Cabrera 15917.

The Barasana prepare a tea of the leaves of this white-flowered bush when they return extremely tired from a long paddling trip.

Ilex laureola Triana et Planchón, Ann. Sci. Nat., ser. 5, 16 (1872) 377.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú, Savannah Kañenda. "Bush. Flowers white". November 10, 1952. Schultes et Cabrera 18378.

The Kubeos, who call this bush **ma-ne-pee'-ya**, use a decoction of the leaves to allay indigestion.

CELASTRACEAE

Maytenus laevis Reissek in Martius, Fl. Bras. 11, pt. 1 (1861) 27.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná, Raudal Na-hoo'-gaw-he. "Large bush. Fruit red. Common along rapids". August 30, 1952. Schultes et Cabrera 17102. Same locality. September 1, 1952. Schultes et Cabrera 17134.

The Makunas know this bush as **kwee'-go**. Amongst the Barasanas, who use a tea of the leaves as a stimulant on long paddling trips, it is called **dee-ka'-go**.

Maytenus sp.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Large tree 18-20 feet tall, diameter 1 foot. Fruit red, fleshy. July 31, 1951. Schultes et Cabrera 13210.

The Taiwanos make a tea of the leaves to drink "when one is tired".

SAPINDACEAE

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

COLOMBIA: Comisaría del Vaupés, Río Piraparaná, Caño Teemeena. "Vine used as source of bracelet beads. Flowers white, beads or seeds dark blue". September, 1952. Schultes et Cabrera 17282. Raudal Gua-ko-no-ta'. September 4, 1952. Schultes et Cabrera 17170.

The Puinaves call this vine **ne'-yot**. They report that a warm tea of the leaves is taken by the elderly "who feel tired all the time". The Makunas, who know the plant as **bo'ra**, wear a few branchlets on the arm as a safeguard against snake bite.

Talisia guianensis Aublet, Hist. Pl. Guian. Franç. 1 (1775) 349, t. 136.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Small tree. Fruit green". June 21, 1951. Schultes et Cabrera 12767.

The Taiwanos report that a tea of the fruits is "good for aches and pains in the legs".

Toulicia bullata Radlhofer, Sitz. Math. Phys. Acad. Muench. 8 (1878) 372.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Miraflores. "Tree 20 m. Flowers white". February 17, 1944. Gutiérrez et Schultes 826.

The Karijonas of Miraflores point out this tree as a stimulant used in former times "to strengthen the body after malaria".

VITACEAE

Cissus sicyoides **Linnaeus**, Sept., Ed. 10 (1758) 897.

COLOMBIA: Comisaría del Putumayo, Mocoa, December 3-7, 1942. **Schultes et Smith 3007.**

The Ingano Indians of Mocoa, who call this vine *nawihuasca* ("eye vine"), employ the copious flow of watery liquid from the cut stem in the treatment of conjunctivitis. The Spanish name of the plant is *bejuco de agua* ("water vine").

STERCULIACEAE

Theobroma bicolor **Humboldt et Bonpland**, Pl. Aequin. 1 (1806) 104, t. 30.

COLOMBIA: Comisaría del Amazonas, Río Igaraparaná, La Chorrera. "Cultivated. Small tree". June 4-10, 1942. **Schultes 3922.**

ECUADOR: Oriente, Río Sucumbios, between confluence with Río Putumayo and Quebrada Teteye. March 29, 1942, **Schultes 3471.**

The Kofán Indians call this tree by its Spanish name *cacao*. In the Putumayo of Colombia, it is known as *marraca*. The Witotos, who call it *e-er'-to-ne*, cultivate it to use the pods for keeping *ambíl*, the syrup made from tobacco which is applied to the gums when they are using coca powder; the natives say that the sweetness of the rind of the pod is slightly absorbed by the strong tobacco syrup.

Theobroma obovatum **Klotzsch ex Bernoulli**, Uebers. Art. *Theobroma* (1869) 14, t. 7, fig. 3.

COLOMBIA: Comisaría del Amazonas, Río Caquetá, La Pedrera. October 5, 1952. **Schultes et Cabrera 17775.**

The Puinave Indians know this species as *win-cheek'*, and the Kabuyaris call it *ma-oo-hee'-ree*.

Theobroma subincanum **Martius**, Buchner Rep. 35 (1830) 23.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Jinogajé. "Tree 15 m. with large coriaceous leaves; fruits brown". August 25-26, 1952. **García-Barriga 14224.** Río Piraparaná. August 21, 1952. **Schultes et Cabrera 17005.** Near mouth of Río Kananari. "Tree 45 feet tall in forest. Fruit rust-coloured". March 1951. **Schultes**

12104. Soratama. "Weak tree. Leaves rusty beneath. Flowers red. September 26, 1951. **Schultes et Cabrera 14140.**

Comisaría del Amazonas, Río Miritiparaná, near varadero to Río Apaporis. September 15, 1952. **Baker et Cope 13.**

The Makuna Indians call this tree a-be'-ka-ra. The Puinave name for the tree is win-cheek'. The Yukunas know it as ma-we-see'. Amongst the Makú Indians of the Río Piraparaná, it is called bawk; the Barasanas refer to it as poo'-hoo, the Tanimukas of the Río Popeyaka as no-tor'-ree-ka; the Kubeos of the Río Kuduyarí as wa'ko; the Taiwanos of the Río Kananarí as ma-oo'-hee-ree.

MYRSINACEAE

Conomorpha lithophyta R. E. Schultes, Bot. Mus. Leaflet, Harvard Univ. 18 (1958) 166.

COLOMBIA: Comisaría del Vaupés, Río Kuduyarí, Savannah Yapobodá. September 4, 1956. **Barclay et Schultes 543, 560, 565.**

The Kubeos of the headwaters of the Río Kuduyarí, who call this treelet da-pee'-ka-hee, employ the crushed leaves as a minor fish poison. Their name for the plant means "fish poison of the savannah".

CARYOCARACEAE

Anthodiscus obovatus **Bentham ex Wittmack**, Martius, Fl. Bras. 12, pt. 1 (1886) 358.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Raudal Yayacopi. Bush. "Flowers yellow". August 18, 1952. **Schultes et Cabrera 16924.** Raudal Jirijirimo. "Small tree. Flowers yellow". November 27, 1951. **Schultes et Schultes 14660.**

The natives of the middle course of the Río Apaporis value this small tree as the source (the leaves) of a minor fish poison. The Kubeos employ a tea of the bitter bark as a strong febrifuge.

Anthodiscus peruanus **Baillon**. Adansonia 10 (1872) 241.

COLOMBIA: Comisaría del Vaupés, Río Negro, Caño Ducuruapo. "In caatinga. Tall tree, 35-40 feet, diameter 18 in. Wood hard, white. Bark shaggy, dark brown. Flowers bright yellow. Leaves very glossy, light green". December 13-17, 1947. **Schultes et López 9387.**

The Makunas call this tree ko-men-tan'-go; the name amongst the Tanimukas is tee-fe-roo'-ka; and the Makú Indians know it as chee'-aw. Several tribes use the leaves and young branches, mixed with mud, as a minor fish poison.



FIGURA 4. *Graffenrieda caryophyllacea* growing on ledge, Cerro de Mitú, Vaupés.

Anthodiscus pilosus Ducke, Trop. Woods, No. 90 (1947) 23.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Jinogojé. "On high knoll. Enormous tree, 90 feet tall. Flowers yellow. Bark white". June 8, 1962. Schultes et Cabrera 16623, 16668. Soratama. August 16, 1951. Schultes et Cabrera 13561.

The Makuna name of this majestic tree is *ko-men-tan'-go*. The Makús of the Río Piraparaná know it as *chee'-aw*. Amongst the Tanimukas of the Río Popeyaká, it is called *tee-fe-roo'-ka*.

Caryocar glabrum (Aubl.) Persoon, Syn 2 (1806) 84.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Large tree, 75 feet. Stamens red; petals yellow. August 20, 1951. Schultes et Cabrera 13600. Same locality. September 26, 1951. Schultes et Cabrera 14139. Same locality. January 28, 1952. Schultes et Cabrera 14199.

The Kubeo Indians call this hardwood tree *kon* and *kon'-shoo*, and employ the rind of the fruit as a minor fish poison. The seeds are cooked and used as a food. Amongst the Barasanas the tree is known as *e'-ho*.

Caryocar gracile Wittmack in Martius, Fl. Bras. 7, pt. 1 (1886) 350.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. "Tree 90 feet tall. Bark light brown. Flowers very fragrant, spicy, pink. Crown large". September 26, 1951. Schultes et Cabrera 14688. The Puinave name of this tree is *ho-pok'-shoo*.

Caryocar microcarpum Ducke, Arch. Jard. Bot. Río Jan. 4 (1925) 133.

COLOMBIA: Comisaría del Vaupés, Río Papurí, Montfort. "Tree 15 m. Flowers rose pink. Fruit spiny, used as *barbasco* for catching fish". August 28, 1943. Allen 3112. Río Kuduyarí, headwaters. "Tree 25-30 m. Stamens pink. Spiny fruit used as fish poison". November 26, 1943. Allen 3183. Río Kuduyarí, lower reaches. March 22, 1970. Soejarto et Lockwood 2354.

Allen reports the Kubeo name of this species as *kun'-kuj*; Soejarto and Lockwood as *ku*. According to the latter collectors "the fruits are used as fish poison; after 3-4 days, the fleshy rind is mixed with mud and thrown into water".

THEACEAE

Bonnetia Martiana Maguire, Mem. N. Y. Bot. Gard. 23 (1972) 153.

COLOMBIA: Comisaría del Vaupés, Río Kubiýú, Savannah Kañendá. "Flowers white-pink. Height 4-5 feet". September 27 - October 20, 1966. Schultes, Raffauf et Soejarto 24288; Schultes et Cabrera 18401.

The Kubeos, who call this beautiful shrub *ma-ne-po-te'-ka*, prepare a tea of the flowers to treat dropsy of the legs.

GUTTIFERAE

Symphonia globulifera Linnaeus fil., Suppl. (1781) 302.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. December 7, 1951. **Schultes et Cabrera 14904.**

The Taiwanos report that the ashes of the bark are applied to recalcitrant sores and wounds.

Moronobea coccinea Aublet, Hist. Pl. Guian. Franç. (1775) 788.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Jinogojé. "Tree 25 m. Columnar. Bark grey-brown, rough. Flowers salmon-pink. Latex cream-coloured. Crown not extensive. August 1952. **Schultes et Cabrera 17062.** Comisaría del Amazonas, Río Caquetá, La Pedrera. October 5, 1952. **Schultes et Cabrera 17728.**

The Tanimukas call this tree oo-ka-o-ree'-ka or ree-ka-wa-see'-ka; in the Yukuna language, it is known as he'-pe-la or koo'-pee. The latex is said to "cure" skin infections.

Vismia angusta Miquel, Linnaea 18 (1844) 27.

COLOMBIA: Comisaría del Amazonas, Río Loretoyacu. **Glenboski 37, 205.**

The Tikunas, who call this bush de-tu'-cu-ni, apply the resin to treat itching and mange. The name of the plant amongst the Colombians of the región are lacre and pichirima.

Vismia sp.

COLOMBIA: Comisaría del Amazonas, Río Loretoyacu. **Smith 5060.** The Tikunas use the leaves of this bush "to close wounds". It is locally known as cuchara-caspi.

FLACOURTIACEAE

Ryania pyrifera (L. C. Rich) Uitten et Sleumer, Pulle, Fl. Surinam 3 Meded. K. Ver. Kol. Inst. Amst. 30 (1935) 286.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Raudal de Tatú. "Small tree. Flowers white". October 10, 1966. **Schultes, Raffauf et Soejarto 24387.**

The Kubeos report that the seeds of this small tree are toxic to fish.

Tetrathylacium macrophyllum Poeppig et Endlicher, Nov. Gen. et Sp. 3 (1845) 34, t. 240.

COLOMBIA: Comisaría del Putumayo, path between Puerto Ospina and Concepción. "Bush. Eight feet". April 20-23, 1942. **Schultes 3673.**

According to the Kofáns, the root of the bark of this bush is an ingredient (with *Chondrodendron* sp.) of a strong curare.

PASSIFLORACEAE

Passiflora Killipiana Cuatrecasas, Contrib. U. S. Nat. Herb. 25 (1960) 17.

COLOMBIA: Comisaría del Amazonas, Río Amazonas, Leticia. "Vine. Fruit grey-green, ovoid". August 29-31, 1966. **Schultes, Raffauf, Forero et Soejarto 24087.**

Fresh material of this vine tested alkaloid-negative with Dragendorff reagent. According to the Tikunas, a tea of the leaves is taken "to increase urine" (diuretic?).

Passiflora nitida Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 2 (1816) 130.

COLOMBIA: Comisaría del Vaupés, Caño Peritomé. "Flowers white, staminodes basically cross-hatched white and red, but tips purple. Cultivated. February 20, 1952. **Schultes et Cabrera 15589.**

Amongst the Makunas, the fruit of this vine is believed to be "good for the elderly who have failing vision". They know the vine as ee'-dja.

MYRTACEAE

Myrcia bracteata (Rich.) De Candolle, Prodr. 3 (1828) 245.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Mitú. "Small bush. Flowers white. Forest above flood level". October 7, 1966. **Schultes, Raffauf et Soejarto 24312.**

A Dragendorff spot-test for alkaloids proves to be negative on this collection.

MELASTOMATACEAE

Graffenrieda caryophyllacea Triana, Trans. Linn. Soc. 28 (1871) 69.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cerro de Mitú. "Large bush, 15-18 feet. Flowers white". October 9, 1966. **Schultes, Raffauf et Soejarto 24341.**

This species is alkaloid-negative with a Dragendorff test.

Macairea Schultesii Wurdack, Bot. Mus. Leaflet, Harvard Univ. 18 (1958) 164.

COLOMBIA: Comisaría del Vaupés, Río Kuduyari. October 4-5, 1951. **Schultes et Cabrera 14350.**

The Kubeos believe that the root of this low bush, crushed and left for a day in oil of *Jessenia Bataua*, will preserve the hair.

Miconia sp.

COLOMBIA: Comisaría del Amazonas, Río Miritiparaná. Caño Guacayá. "Bush. Flowers white". March 1, 1952. **Schultes et Cabrera 15702.**

The Yukunas and Tanimukas call this bush **poo'-poo-ya.**

Mouriri nigra (D. C.) **Morley**, *Phytologia* 22 (1972) 428.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Puerto de la Hoz. September 16, 1951. **Schultes et Cabrera 14126.**

The Barasana name of this small tree is **hwan'-hwan-ko**; the Piratapuya Indians know it as **a-ro-yo-roo'-ko**; amongst the Taiwanos, it is referred to as **too'-go**; in the Puinave language, it is called **yoo'-kon-shoo**; the Kubeos know it as **moo-ha'-he-te**, and the Kuripakos call it **yoo-koo-roo'-be.**

A warm decoction of the leaves provides a product considered to be useful for fungal infections of the skin. Its use for this purpose is known to a number of tribes of the region.

Pachyloma coriaceum De Candolle, Prodr. 3 (1828) 123.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Rapids of Yuruparí. Flowers purplish; stamens purple; filaments white. April 13, 1953. **Schultes et Cabrera 19127.**

Amongst the Kubeos, the crushed flowers are rubbed on the crotch to treat fungal infection.

LECYTHIDACEAE

Eschweilera coriacea (A. P. De C.) Martius ex Berg, Martius Fl. Bras. 14, pt. 1 (1858) 491.

COLOMBIA: Comisaría del Vaupés, middle course of Río Kuduyarí. October 16, 1952. **Schultes et Cabrera 17874.**

Amongst the Kubeos of the Río Kuduyarí, who know this tree as **ka'-ma-ko** and as **doo'-ko**, the bark is shredded and left in water for several days after which the water is employed to wash red areas of the

LOGANIACEAE

skin to treat what appears to be fungal infections.

Potalia Amara Aublet, Hist. Pl. Guian. Franç. (1775) 394, t. 151.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. "Flowers yellowish green. Leaves paler green beneath, dark green above. Growing in flood forest. August 27, 1951. **Schultes et Cabrera**

13726. Río Vaupés, Mitú. September 8, 1951. **Schultes et Cabrera 13972.**

GENTIANACEAE

Tachia guianensis Aublet, Hist. Pl. Guian. Franç., 1 (1775) 75, t. 29.

COLOMBIA: Comisaría del Amazonas, Río Karaparaná, path between,

El Encanto and La Chorrera. May 31, 1942. **Schultes 3876.**

Amongst the Witotos, the powdered leaves of this shrub are mixed with coca powder "to make it taste better".

SOLANACEAE

Juanulloa ochracea Cuatrecasas, Brittonia 10 (1958) 148.

COLOMBIA: Comisaría del Putumayo, Río Putumayo, Puerto Ospina. "Bush 15 feet. Flowers yellowish, bracts orange. Leaves crassulent". March 23, 1953. **Schultes et Cabrera 18960.**

One Siona informant stated that a warm tea of the flowers and leaves "acts like aspirin".

Markea coccinea Richard, Act. Soc. Hist. Nat. Paris 1 (1792) 107.

COLOMBIA: Comisaría del Vaupés, Río Pacoa. Flowers white. Epiphyte. Feb. 8, 1952. **Schultes et Cabrera 15250.**

This epiphyte is gathered assiduously by medicine men of the Taiwano tribe. Beyond being reported as "strong medicine", the specific purpose could not be ascertained.

Solanum crinitum Lamarck, Illustr. 2 (1793) 20.

COLOMBIA: Comisaría del Amazonas, Río Amazonas, Leticia. "Small shrub. Flowers white, externally violet. Leaves purplish beneath. Fruit small, globose, red". August 29 - September 12, 1966. **Schultes, Raffauf et Soejarto 24026.**

The fruit of this species is edible. A Dragendorff spot test indicates that the leaves are alkaloid-positive.

BIGNONIACEAE

Arrabidaea bracteolata (D. C.) Sandwith, Rec. Trav. Bot. Néerl. 34 (1937) 215.

COLOMBIA: Comisaría del Amazonas, Río Loretoyacu. Extensive vine. October 1946. **Black et Schultes 46-283, 46-285.**

Tikuna medicine men state that the bark of this vine is "poisonous".

Arrabidea nigrescens Sandwith, Lloydia 2 (1939) 209.

BRAZIL: Estado do Amazonas, Río Vaupés, Ipanoré. "Vine. Flowers purple. In caatinga". November 14-15, 1947. Schultes 9114.

The Tukano Indians report that "in the old days, the root was used to poison food", probably enemies or unwanted guests.

Digomphia densicoma Pilger, Koch-Grünberg, Zwei Jahre unter den Indianern 2 (1910) 371.

COLOMBIA: Comisaría del Amazonas, Río Caquetá, Cerro de La Pedrera. "Low bush. Flowers mottled". May 2, 1952. Schultes et Cabrera 16298.

Comisaría del Vaupés, Río Apaporis, Jinogojé. "Bush. Flowers pale pink or white." September 25, 1952. Schultes et Cabrera 17666.

Indians of the Río Apaporis and those in the vicinity of La Pedrera consider a decoction of the leaves to be an excellent treatment for "sore eyes" (conjunctivitis?).

Distictella magnoliifolia (HBK.) Sandwith, Kew Bull. (1932) 90.

COLOMBIA: Comisaría del Amazonas, Río Loretoyacu. March 1946. Schultes 7128.

The Tikunas make a powder from the bark to dry up infected ulcers and wounds. Their name of this vine is *ma'-te-la*.

Distictella racemosa (Bur. ex Mart.) Urban, Fedde, Rep. 14 (1916) 310.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. January 19, 1952. Schultes et Cabrera 14990.

The Barasana Indians report that they formerly prepared a type of curare from the bark of this woody vine together with the leaves of *Spongiospermum macrophyllum* and the bark of *Martinella obovata*. They call *D. racemosa* *mee-tsee-boo-koo'-na*.

Lundia erionema De Candolle, Prodr. 9 (1845) 180.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukuri. "Vine hanging on cliff. Flowers white, yellow outside, basally cream-coloured". August 4, 1951. Schultes et Cabrera 13319.

The Taiwanos chew the flowers as a styptic for bleeding gums. The bark is said to be febrifugal.

Mussatia Priurei Bureau, Bull. Soc. Bot. France (1866) Rev. Biblioth. 59.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Soratama. Vine. Flowers yellow. Fruit warty, sandy brown, 6 inches long. September 28, 1951. Schultes et Cabrera 14163. Río Kuduyarí. vicinity

of Yapobodá. Vine. Flowers white, in age becoming yellow with dark red stripes. October 4-5, 1951. **Schultes et Cabrera 14398.** The Kubeos use a tea of the flowers for treating mouth sores.

ACANTHACEAE

Mendoncia aspera (R. et P.) Nees, DeCandolle, Prodr. 11 (1847) 52.

COLOMBIA: Comisaría del Vaupés, Río Kananari, Cerro Isibukuri. "Vine. Flowers scarlet". August 3, 1951. **Schultes et Cabrera 13259.**

The Taiwanos report that the stems of this plant are crushed and serve as a minor fish poison.

RUBIACEAE

Bathysa obovata (Ruiz) K. Schumann ex Standley, Publ. Field Mus. Nat. Hist. Bot. Ser. 7 (1931) 280.

COLOMBIA: Comisaría del Vaupés, Río Vaupés. "Bracts yellow-green. Shrub 10 feet. Flowers white. October, 1966. **Schultes, Raffauf et Soejarto 24351.**

A Dragendorff test indicates that this plant is doubtfully alkaloidal. *Palicourea guianensis* Aublet, Hist. Pl. Guian. 1 (1775) 173, t. 66.

COLOMBIA: Comisaría del Vaupés, headwaters Caño Teemeena, Río Paraparaná. "Flowers yellow, peduncle red". September 10, 1952. **Schultes et Cabrera 17365.**

The root of this abundant and widespread shrub is pulverized and is widely esteemed as a styptic by the Barasanas and Makunas.

Palicourea obscurata (Muell. Arg.) Standley, Field Mus. Nat. Hist. Publ. Bot. 7 (1930) 143.

COLOMBIA: Comisaría del Vaupés, Río Negro, San Felipe. "Bush. Flowers red". November 6, 1952. **Schultes et Cabrera 18301.**

The pulverized root of this treelet is valued by the Kuripako Indians as a rodenticide.

Retiniphyllum sp.

COLOMBIA: Comisaría del Vaupés, Río Vaupés, Cerro de Mitú. "Fruit red. Shrub 6-8 feet tall. October 9, 1966. **Schultes, Raffauf et Soejarto 24345.**

This collection is alkaloid negative with a Dragendorff spot test.