VITEX Tourn.


Sirait and his associates (1962) assert that plants of this genus possess hormone-like properties.

VITEX AGNUS-CASTUS L.


In the Dominican Republic this plant is known as "pimiento de Guinea". Lord (1978) calls it the "lilac chaste-tree", describing it as 6-10 feet tall, with lilac-colored corollas, and comments that it is "An uncommon shrub in this country [Australia], but valued abroad for its late summer flowers and aromatic fragrance which pervades the whole plant. The greyish compound leaves consist of 5-7 leaflets, the terminal one being much longer. The dense lilac flowers are in large upright sprays, and are improved by hard pruning in early spring. In Melbourne [it] blooms [from] January to March and is very lovely."


VITEX AGNUS-CASTUS f. CAERULEA (Rehd.) Mold.


Sargent reports that this plant in Puerto Rico is "said to have medicinal properties."

VITEX CLEMENTIS Britton & P. Wils.

Additional citations: CUBA: Orientie: Clemente 6520 (W--2288934).

VITEX COCHINCHINENSIS Dop


Leaflet blades tomentose beneath, the terminal one 7--9 cm.
long and 3--4 cm. wide, on a petiolule 4--5 mm. long, the lateral
ones smaller, subsessile; secondaries 12--14, at first straight,
later recurving; veinlet reticulation inconspicuous; panicles
formed of continuous spikes, sometimes interrupted, fulvous-
pubescent, the cymes many-flowered, glomerulose, tomentose, on pe-
duncles 1--3 mm. long; bracts numerous, linear, firm, 1 cm. long,
tomentose; bractlets numerous, firm, equaling the flowers; flowers
subsessile, 5--6 mm. long; calyx campanulate, 3 mm. long, exter-
nally white-tomentose, the limb 5-lobed, the lobes deltoid, apic-
ally acute, equaling the tube, one smaller or absent; corolla in-
fundibular, externally yellow-pubescent and conspicuously glandu-
lose, internally glabrous except for the stamen insertion, the
tube 2.5 mm. long, the limb 2-lipped, the upper lip 2-lobed, the
lobes deltoid and apically acute, the lower lip 3-lobed, the mid-
dle lobe larger and apically rounded; stamens slightly exerted;
filaments basally white-villous; style equaling the stamens; stigma 2-fid;
druses globular, 6--7 mm. in diameter, basally included
by the fruiting-calyx and bractlets.

The species is based on an unnumbered Baudouin collection from
somewhere in Cochinchina, on Lefevre 233 from Plaine des Tombeaux,
Thorel 1114 from Saigon, and Lecomte & Finet 1867 & 1962 and
Pierre 5228 from Thu Duc, Cochinchina, with no specific type des-
ignated. Dop (1928) comments that "Cette espèce se distingue
nettement de tous les autres Vitex indochinois par ses inflores-
cences en épis souvent continus, de cymes, contractées, gloméru-
leuses. Par beaucoup de points elle se rapproche de la diagnose
du V. spicata Loureiro (Flora Cochinchinensis, p. 390). Mais il y
a entre la diagnose de Loureiro et mon espèce des différences qui
ne permettent pas d'affirmer d'une façon absolue que la plante
de Cochinchine est le V. spicata de Loureiro. En effet, la plante
de Loureiro est décrite comme ayant généralement les feuilles 5-
foliolées, alors que dans les nombreux échantillons de V. cochin-
chinensis que j'ai vus, je n'ai compté constamment que 3-foliolées.
En outre, ces folioles sont dans mon espèce ovales et entières, a-
 lors que Loureiro les décrit lancéolées et généralement crénélées.
L'inflorescence correspond assez dans les deux descriptions, si l'
on traduit le mot involucelli de Loureiro par bractées et bractéo-
les. Il n'y a donc aucune certitude à rapporter V. cochinchinensis
au V. spicata Loureiro." Incidentally, Loureiro's binomial is now
regarded as a synonym of Vitex negundo L.

VITEX COFASSUS Reinw.

Additional & emended bibliography: Fern.-Villar in Blanco, Fl.
Filip., ed. 3, Nov. App. 160. 1880; Pulle in Lorentz, Nova

The corollas are said to have been "nauve" on Millar NGF.38477.

Bakhuizen (1935) cites Kajewski 1533 & 1843 from Bougainville, Kajewski 2381 from Malaita, Kajewski 2387, 2489, & 2605 from Guadalcanal, Brass 2821 from San Cristoval, and Brass 3154 & 3272 from Yasbel island, growing from sea level to 1200 m. altitude, and records the vernacular names, "father", "hada", "moi-kewie", "vada", "varha", "vasa", "vatha", and "wara".

Pulle (1914) cites Gjellerup 35 & 406 from West Irian, giving the overall distribution of the species as New Guinea and the Molucca Islands. He notes that Gjellerup 35 "zeigt nur sehr selten die typische Artikulation des Blattstielles".


VITEX COMPRESSA Turcz.


Recent collectors describe this species as a tree, 8--18 m. tall, the trunk to 10 cm. in diameter at breast height, the flower buds whitish, the corolla hairs white, the filaments light-violet, the anthers blackish, the pollen white, and the immature fruit green. They have found it growing in deciduous forests, at 5--250 m. altitude, in flower in April, May, June, and August, and in fruit in April and September. They record the vernacular name, "cenciero". The fruit is shiny when ripe and 12 mm. in diameter.

Bunting refers to the corollas as opening light-violet, deeper violet in the throat, 1.3 cm. long, the upper lobes pale-violet, the lower (larger) lobe more deep-violet, with a yellow spot at the base and cream-colored hairs, 7 mm. wide, the median lobe 4 mm. wide. On Aristeguieta 5315 the corollas are said to have been "blue", while on Arnoldo 2274 they were "pale-blue" and on Haught 4159 "pale-blue with a yellow spot". Arnoldo comments that his no. 2274 is "possibly another species than 2275" -- a true statement, since 2275 is V. cymosa Bert.

The Bunting 7652, distributed as V. compressa, actually is V. staheli Mold.

VITEX COMPRESSA f. ANGUSTIFOLIA Mold.


Recent collectors describe this plant as a tree, 10 m. tall, the leaflet-blades firmly membranous, dull-green above, pale dull-green beneath, and record the vernacular name, "aceiruno macho". They have encountered it at 50 m. altitude, in fruit in May.

Additional citations: VENEZUELA: Zulia: Steyermark, Davidse, & Stoddart 122576 (Ld).

VITEX CYMOSA Bert.


Recent collectors describe this plant as a leafy tree, 6—12 m. tall, the trunk 10—60 cm. in diameter at breast height, the flowers aromatic, and the [immature] fruit green. They have found it growing in clay soil of riverine forests, in anthesis in March and July and in fruit in September and December. The corollas are said to have been "blue" on Cid & al. 1384 and "rose" on Cid & al. 2146 & 2396.

Bunting describes the plant as a "gran árbol de copa redonda y densa; corteza oscura, fuertemente fisurada longitudinalmente y fácil de sacar pedazos; copa 12 m. o más de ancho (!); hojas jóvenes con pelos de color beige en envés y en pecíolos, hoja madura algo gruesos y quebradiza, lustrosa y verde intenso en la haz; pedúnculos morados; folíolos algo gruesos, la haz de color verde intenso ≠ lustrosa con nervios y retículo impresos, punta de color crema, el envés más claro con nervios de color crema y todos elevados y sensibles al tacto; cáliz morado-pardo con pelos grisos, con lóbulos extendidos como cuello, verde oscuro-violeta; corola toda violeta, em yema abierta en base del tubo, grísáceo arriba, abierta lavanda-violeta con lobo inferior de violeta un poco más intenso, con una zona amarillenta centica hacia su base con pelos blancos, 1.7—2 x 1.4 cm. de ancho, tubo 1 cm. de largo, lobo inferior 1 cm. de ancho con zona blanca amarillenta y vellosa en parte unguiculada, lóbulo céntrico inferior 9 mm. de ancho; estambres y estilo de violeta claro; filamentos matizados con violeta pálida; anteras negruzcas o pardo-negruzcas, con polen blanco; estigma de villeta oscuro; fruto ≠ ovoide o ellipsóide, verde-crema y lustroso, matizado volviéndose rojopardo o morado, luego negro, globoso, 2.2 cm. de diámetro, volviéndose blando."

Additional citations: VENEZUELA: Trujillo: Bunting & Chacón 5049 (Ld). Zulia: Bunting 5112 (Ld, Ld), 5628 (Ld), 6219 (Ld); Bunting & Alfonza G. 7074 (Ld); Bunting & Bowles 5251 (Ld); Steyermark, Davidse, & Stoddart 123027 (Ld), 123391 (Ld). BRAZIL: Amazonas: Rodrigues & Coelho 2728 (N). Pará: Cid, Ramos, & Mota 1384 [Herb. Inst. Nac. Pesq. Amaz. 94830] (Ld, N); Cid, Ramos,

**VITEX DIVERGICATA** Sw.


Bunting and his associates describe this species as a treelike, 4 m. tall, or tree, 12 m. tall, the trunk to 25 cm. in diameter at breast height, the leaves more or less shiny above, pale and more or less grayish beneath, "tallos de la inflorescencia matizados pardo-azos", the calyx green, the corolla violet, the upper lobes lighter, the lower deeper in color, or "corola lavanda o blanca matizada con violeta muy clara, lóbulo grande violeta clara", with an agreeable odor, and the [immature] fruit green, very shiny, more or less obvoid. They have encountered the plant at 250 m. altitude, in flower in April and November, and in fruit in April.


**VITEX DIVERGICATA** var. **CUBENSIS** Urb.


In regard to this var. *haitiensis* Urban (1929) says: "Magis ad var. *cubensis* Urb., quam ad typum accedit. Illa foltolis plerumque 3, non v. minus abrupte acuminatis non dematiatis diversa est."

Recent collectors describe var. *cubensis* as a small tree, 6 m. tall, or shrub, 3--4 m. tall, and have found it growing in woods and among limestone rocks, flowering in March and June. The corollas are said to have been "blue" on Alain 2905 and Ekman 11448.

The Clemente, Chrysogone, & Alain 3906, distributed as *V. divergicata* var. *cubensis*, actually is *heptaphylla* A. L. Juss.

Additional citations: CUBA: Las Villas: C. F. Baker 3409 (W--523715--cotype). Oriente: Ekman 6274 (W--2113450); Lopés F. 1323 (W--2227038). Pinar del Río: Alain 2905 (W--2288211), 4278 (W--2284599), 6046 (W--2284449); Ekman 11448 (W--2113451); M. Fernández HAC.29153 (W--2909374).

**VITEX DIVERSIFOLIA** Kurz


**VITEX DJUMAENSIS** DeWild.

VITEX DONIANA Sweet
The Phillips 2924, distributed as typical V. doniana, actually is its var. parvifolia (Engl.) Mold.
Additional citations: NIGERIA: Bernardi 8727 (W--2896837).

VITEX DONIANA var. PARVIFOLIA (Engl.) Mold.
Phillips describes this plant as a tree, 50 feet tall, the crown 30 feet wide, the corollas "white and deep-purple", and encountered it in lakeshore sand, at 1500 feet altitude, in flower in October.
Additional citations: MALAWI: Phillips 2924 (Ba--377862).

VITEX DRYADUM S. Moore

VITEX DUBOISII Mold.

VITEX DUCKEI Huber
Recent collectors refer to this species as a tree, 6 m. tall, and have found it in anthesis in September. The corollas are said to have been "rose" colored on Cid & al. 2488.

VITEX DUCLOUXII Dop

VITEX EBERHARDTII Dop
Dop (1928) comments that this "Espèce facile à reconnaître à ses inflorescences et son calice glabre et à ses fleurs dont la corolle
est plus grande que celle des autres Vitex de ce groupe."

**VITEX ELAKELAKENSIS** Mold.

**VITEX ELMERI** Mold.

**VITEX EPIDICTYODES** Mildbr.

**VITEX ERIOCLONA** H. J. Lam

**VITEX EXCELSA** Mold.

**VITEX EXCELSA** var. **PETIOLATA** Mold.

**VITEX FARAFANGANENSIS** Mold.

**VITEX FERRUGINEA** Schum. & Thonn.

**VITEX FISCHERI** Gürke

**VITEX FLAVA** Ridl.

**VITEX FLAVENS** H.B.K.
VITEX FLORIBUNDA Legris

VITEX FLORIDULA Duchass. & Walp.

VITEX FROESII Mold.

VITEX GABUNENSIS Gürke

VITEX GAMOSEPALA W. Griff.

Ridley (1910) says that this species grows in both woods and open country. Corber (1952) calls it the "Glabrous Yellow Vitex", lists the vernacular names, "leban pachat" and "leban pelamok", and describes it as "A shrub or small tree to 40 ft. high: twigs, leaves and inflorescences glabrous or nearly so: twigs and leaf-stalks light fawn brown: young leaves reddish pink. Leaves with 3 stalked leaflets: middle leaflet 3--8 x 1 1/2 -- 3 1/2", elliptic, rather long-tipped, with 4--7 pairs of side-veins: leaf-stalk 1--4" long. Flowers 1/2" long, 1/4" wide, clear yellow, in small stalked clusters up to 2" long, in the leaf-axils: calyx with 3 small teeth. Fruit 1/4" wide, round, black." He gives its distribution as "Malay Peninsula, Sumatra, Borneo: common in open country and in the forest, especially by streams and on hillsides up to an altitude of 4,000 ft."

VITEX GAMOSEPALA var. KUNSTLERI King & Gamble

VITEX GAMOSEPALA var. SCORTECHINII King & Gamble

VITEX GARDNERIANA Schau.
Additional bibliography: Mold., Phytologia 45: 483. 1980; Mold.,
VITEX GAUMERI Greemm.

Barrera encountered this plant in "selva mediana subpereni-folia", at 20 m. altitude, in Mexico. Other collectors refer to it as a tree, 5--12 m. tall, the trunk 12 inches in diameter at breast height, and have found it in open forests on semi-arid highlands, xerophytic areas, quebradas, and matorrales, at 300--1100 m. altitude, in flower in May and June. The corollas are described as having been "blue" on Molina R. 7031, "deep-blue and pleasantly fragrant" on Yuncker & al. 8165, and "purple" on Molina R. 6584 & 6990.


VITEX GIGANTEA H.B.K.

VITEX GIORGII DeWild.

VITEX GLABRATA R. Br.

Merrill (1923) cites the following collections from Balabac, Culion, Luzon, Mindanao, Negros, Mindor, and Palawan in the Philip-
VITEX GOLUNGENSIS J. G. Baker


VITEX HARVEYANA H. H. W. Pearson


VITEX HARVEYANA f. GEMINATA (H. H. W. Pearson) Mold.


VITEX HAUSKNECHTII Bornm.


VITEX HEMSLEYI Briq.


Recent collectors describe this species as a tree, 8—10 m. tall, and have found it growing at sealevel, in anthesis in June and July. The corollas are said to have been "violet" on Neill 4581 and "blue" on Forment 887. The latter collector records the vernacular name, "azulillo."

Material of this species has been misidentified and distributed in some herbaria as V. mollis H.B.K.


VITEX HENRYI Mold.


VITEX HEPTAPHYLLA A. L. Juss.


Recent collectors describe this species as a tree, 5—6 m. tall, the leaves 5—7-foliolate, and the fruit yellow or orange. They have found it growing in woods, thickets, and open pinelands, on wooded hillsides, and "common" on riverbanks, at 300—1000 m. altitude, in both flower and fruit in May and December. The corollas are said to have been "violet" in color on Jimenez 3690, "deep-violet" on Valeur 630, and "deep-purple" on Holdridge 1839. Valeur records the vernacular name, "mata becerro", while Le<^n & Alain (1974) call it "penda."

Itoterial of this species has been misidentified and distributed.
VITEX GOLUNGENSIS J. G. Baker

VITEX HARVEYANA H. H. W. Pearson

VITEX HARVEYANA f. GEMINATA (H. H. W. Pearson) Mold.

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VITEX HENRYI Mold.

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Material of this species has been misidentified and distributed...
Recent collectors refer to this species as a tree or treelet, 4 m. tall, the leaves bicolored, whitish beneath, and the fruit at first green, later dark, finally almost black, and have found it in fruit in May.

Additional citations: CUBA: Oriente: Alain, Acuña, & López Figueiras 5830 (W--2284402); Alain & Clemente 1046 (W--2288050); Clemente 5004 (W--2284410); Clemente, Chrysogone, & Alain 3906 (W--1883106); León 11801 (W--2289309). HISPANIOLA: Dominican Republic: Ekman H.12643 (W--1711562); J. Jimenez 3690 (W--2229700, W--2229701); Valeur 630 (W--1478796), 936 (W--1557071), 972 (W--1557102). Haiti: Holdridge 1839 (W--1880782).

VITEX HIRSUTISSIMA J. G. Baker

VITEX HOCKII DeWild.

VITEX HOLOADENON Dop

Dop (1928) comments that "Cette espèce est remarquable par ses feuilles 1-foliolées, son revêtement glandulaire dense aussi bien sur les fleurs que sur l'appareil végétatif et sa drupe obconique. Le grand développement de l'appareil glandulaire la rapproche des V. luteoglandulosa Lam. et V. glandulosa Lam. Elle s'en distingue particulièrement par ses feuilles 1-foliolées et sa drupe obconique." Other species of this genus with 1-foliolate leaves are V. gardneriana Schau. of Brazil, V. cofassus Reinw. of Indonesia, and various species of Madagascar.

VITEX HOLOCALYX J. G. Baker

VITEX HORNII Hemsl.

VITEX HUMBERTI Mold.

VITEX HUMBERTI var. ANGUSTATA Mold.

VITEX HYPOLEUCA Schau.
Recent collectors refer to this species as a tree or treelet, 4 m. tall, the leaves bicolored, whitish beneath, and the fruit at first green, later dark, finally almost black, and have found it in fruit in May.

Additional citations: BRAZIL: Bahia: Carvalho, Hori, Boom, & Silva Guedes 723 (Ld, Ld, N).

VITEX IBARENSIS J. G. Baker

VITEX IMPRESSINERVIA Mildbr.

VITEX INTEGRIFOLIA Urb.
Additional citations: HISPANIOLA: Dominican Republic: Ekman H. 14882 (W--1479915).

VITEX ISOJENSIS Gibbe

VITEX KLUGII Mold.
Recent collectors have encountered this species in seasonally inundated tahuampa, at 120 m. altitude.
Additional citations: PERU: Loreto: Gentry, Vasquez, Jaramillo, & Stern 29191 (Ld).

VITEX KUYLENII Standl.
Material of this species has been misidentified and distributed in some herbaria as V. mollis H.B.K.
Additional citations: MEXICO: Guerrero: Forment 768 (Me--293089).

VITEX KWANGSIENSIS P'ei

VITEX LAMIANA Pieper

VITEX LANIGERA Schau.
VITEX LASIANTHA H. Hallier


VITEX LASTELLEI Mold.


VITEX LEUCOXYLON L. f.


Additional illustrations: J. Burm., Thes. Zeyl. pl. 109. 1737. Sharma and his associates (1981) cite Rathakrishnan 37983 and Vivekananthan 40742 from Tamil Nadu, India, and describe the species as a "Tree with white fls., common" there.
Burman's V. triflora odorata, sylvestris, previously regarded by me as applying to V. trifolia L., appears to me now actually to be synonymous with L. leucoxylon instead.


VITEX LEUCOXYLON f. SALIGNA (Roxb.) Mold.


VITEX LEUCOXYLON f. ZEYLANICA (Mold.) Mold.


Additional citations: SRI LANKA: Fosberg & Jayasinghe 57012 (N).

VITEX LIMONIFOLIA Wall.


Craig (1911) cites Kerr 2011 and Vanpruk 184 from Thailand. Dop (1928) cites Chatillon s.n., Harmand s.n., Pierre 5216, and Thorel 2007 from Cambodia and Pierre 5612 from Thailand. Collett & Hemsley (1890) record the species from Meiktila and note that it was "also collected by Mr. Aplin at Koloubouk camp", listing it likewise from "Ava and Tenasserim to Siam".

VITEX LOBATA Mold.

VITEX LOKUNDJENISIS Pieper

VITEX LUKUNDJENISIS var. KRUCKEI Pieper

VITEX LONGIPETIOLATA Gürke

VITEX LONGISEPALA King & Gamble
Corner (1952) calls this species the "Perak Yellow Vitex" and describes it as "A tree with the young leaves fawn-colour, like V. vestita but:-- Leaflets often broader, up to 4 1/2" wide: leaf-stalk up to 5" long. Flowers 2/3" long, 1/3" wide, considerably wider than in V. gamosepala: flower-clusters up to 3 1/2" long, few-flowered: calyx with 5 long, pale green sepals 1/4 -- 1/3" long: corolla with rich yellow throat. Fruit surrounded by the long sepal. Malay: Penang to Malacca, common in Perak with V. gamosepala."

VITEX LONGISEPALA var. LONGIPES Mold.

VITEX LUCENS T. Kirk

Orchard found this tree in fruit in October. Lord (1978) describes it as growing to 30 feet tall, "a handsome tree with glossy deep green leaves, the 3 to 5 rounded leaflets wavy-edged, and sprays of bright red 2-lipped flowers resembling Mint-bush but larger, over most of the year. Has been called New Zealand Oak, its figured and durable timber being a highly valued hardwood in the Dominion."
Additional citations: NEW ZEALAND: North: MacDaniels P. 563 (It); Orchard 3540 (Ba--370074). MOUNTED ILLUSTRATIONS: Hook., Icon. Pl. "pl. 1519/1520" (Ba--380420).

**VITEX LUNDENSIS** Gürke


**VITEX LUTEA** Exell


**VITEX LUTEOLANDULOSA** H. J. Lam


  Dop (1928) asserts that the "appareil glandulaire" of this species and of V. holoadenon Dop and V. glandulosa H. J. Lam [now regarded as a synonym of V. parviflora A. L. Juss.] is very similar.

**VITEX LUZONICA** H. J. Lam


  Merrill (1923) cites only Ahern 706 "(not 760)" and comments that "This number seems to be missing in the herbarium of the [Philippine] Bureau of Science. The species is apparently related to Vitex glabrata R. Br. Endemic."

**VITEX MACROFOLIOLATA** Mold.


**VITEX MADAGASCARIENSIS** Mold.


**VITEX MADIENSIS** Oliv.


  The E. Phillips 2880, distributed as typical V. madiensis, actually represents its var. gossweileri.

**VITEX MADIENSIS** var. **ANGUSTIFOLIA** Pieper


**VITEX MADIENSIS** var. **AROMATIC A** Pieper

Additional bibliography: Mold., Phytologia 46: 30. 1980; Mold.,
VITEX MADIENSIS var. GOSSWEILERI Pieper
Phillips refers to this plant as a tree, 4 feet tall, and found it growing in grassland at 5500 feet altitude. He erroneously distributed it as typical V. madiensis Oliv.
Additional citations: MALAWI: E. Phillips 2880 (Ba--377611).

VITEX MADIENSIS var. MILANJENSIS (Britten) Pieper

VITEX MADIENSIS var. SCHWEINFURTHII (Gürke) Pieper

VITEX MASONIANA Pittier
Recent collectors refer to this species as a tree, 75 feet tall, with gray-green [immature] fruit in July, and have found it growing in woods.
Additional citations: PANAMA: Darién: Tyson, Dwyer, Blum, & Duke 4847 (N).

VITEX MEDUSAECALYX H. J. Lam

VITEX MEGAPOTAMICA (Spr.) Mold.
Duarte describes this species as a tree, 6--8 m. tall, "planta que vai desde arbusto prostado na areia fixando dunas até árvore". Rimpler & Schulz (1967) have isolated an insect-moulting hormone, 20-hydroxyecdysone, from this species.
Material of this taxon has been misidentified and distributed in some herbaria as V. schaueriana Mold.

VITEX MEGAPOTAMICA f. ALBIFLORA Mold.
Moldenke, Notes on Vitex

1982


**VITEX MEGAFOTAMICA var. MULTINERVIS** (Cham.) Mold.


Recent collectors refer to this plant as a tree, 8 m. tall, with wine-colored mature fruit (in March), and have found it growing in gallery forests. Kummrow refers to the fruit as black.

Additional citations: Bryptalis: Paraná: Hatschbach 39782 (Ba--375469); Kummrow 419 (Ba).

**VITEX MENABEENSIS** Capuron


**VITEX MEXIAE** Mold.


Mimuri describes this plant as a shrub, 1.7 m. tall, the fruit spheroid-prolate, 1.1--1.7 cm. long and 0.9--1.6 cm. wide, "preto brilhante glaucescente", in January.


**VITEX MIRANTRA** Gürke


**VITEX MICROPHYLLA** Mold.


**VITEX MILNEI** Pieper


**VITEX MOLLIS** H.B.K.


Recent collectors refer to this species as a tree, 6 m. tall, with fissured bark, and edible fruit -- "las hojas como thé para aliviar la tos y como estimulante; su sabor y olor esparcido al de el thé negro". They have encountered it in rocky, sunny or calcareous soil, in oak woods, and in low deciduous woods with Juniperus at 300--1650 m. altitude, in flower in March and December, and in fruit in April. They record the vernacular names, "atuto" and "nanche de perro". The corollas are said to have been "purple" on Sousa S. 3908 and "pale-purple" on Sota Nuñez &
lobed (nearly pinnately lobed): leaf stalk longer, 1—2 1/2". Flowers smaller, 1/4—1/3" long and wide: inflorescence as large branched terminal panicles 4—15" long and nearly as wide, the flowers closely set on short branches 1/2—2" long: corolla pale to rather deep blue, often speckled, generally with a yellow horse-shoe like mark on the lower lip. Fruit .15" long, smaller, barely longer than the calyx. Trop. Africa to the Pacific: occurring like V. trifolia in Malaya, but commoner in gardens and certainly introduced.

Heyne (1927) lists the vernacular names, "ai toeban" and "lagoendi laoet laki laki", and gives the following statement about economic uses and chemistry: "Een afkooksel van den wortel geneest gezwollen en zuchtige lichamen en verdrijft de wormen. De bladeren, gekawd, genezen ulceration; gewreven, met peper gemengd en tot pillen gedraaid en twee of drie daarven ingenomen bij opkomende koorts, verdrijven zij de koude. . . .Greshoff . . . vond in den bast en de bladeren een chromogeen glucosied en Boorsma . . . een spoor alcaloSd."

Dop (1928) cites Poilane 1439, 1474, 6076, 7059, 8130, & 9585 from Annam, Godefroy 806 & s.n., Lefevre 276, Pierre 389 & s.n., and Thorel 120 from Cochinchina, Thorel s.n. from Laos, Balansa 938, Bon 1086, 1636, & 1723, and Mouret s.n. from Tonkin, and Zimnermann s.n. from Thailand.

Biegel describes V. negundo as a shrub of open texture, 8 m. tall, with mauve-blue corollas, and found it growing at 1480 m. altitude, in anthesis in January.

Bennett (1976) cites Bennett 361 from West Bengal, while Biswas & Maheswari (1980) cite Biswas 116. Hsiao (1978) cites Henry 905, Nakazawa s.n., Tanaka 97, and Wilson 10972 from Taiwan. Guillaumin (1932) cites a no. 801 from Aneityum island in the New Hebrides, where, he avers, it is a common shrub to 3 m. tall on the seashore at sealevel, with leaves silvery beneath, and blue "flowers" and "fruit yellow when ripe". This is most certainly a misidentification for V. trifolia L. or one of its varieties, but the color given for the ripe fruit seems most questionable.

Banerji and his associates (1969) have isolated 5-hydroxy-3', 6', 7', 3', 4'-pentamethoflavone from the leaves of what they have identified as Vitex negundo. The Chun 3855, distributed as typical V. negundo, actually represents its var. cannabifolia (Sieb. & Zucc.) Hand.-llazz. while Sinclair 5950 is var. intermedia (P'ei) Mold.


VITEX NEGUNDO L.


Merrill (1923) states that this species is found "Throughout the Philippines at low and medium altitudes, in waste places, thickets, etc., often common", giving its overall distribution as "Tropical East Africa, Madagascar, India to Japan, southward through Malaya to western Polynesia".

Corner (1952) calls this the "Horse-shoe Vitex", listing the vernacular names, "lagundi", "lemuning", and "lenggundi". He describes the plant as "Like V. trifolia but:—Leaves with 3—5 leaflets, the middle leaflet distinctly stalked: leaflets with a long tip, the edge entire, notched, toothed or even deeply
lobed (nearly pinnately lobed): leaf-stalk longer, 1--2 1/2".
Flowers smaller, 1/4 -- 1/3" long and wide: inflorescence as large
branched terminal panicles 4--15" long and nearly as wide, the
flowers closely set on short branches 1/2 -- 2" long: corolla pâle
to rather deep blue, often speckled, generally with a yellow
horse-shoe like mark on the lower lip. Fruit .15" long, smaller,
barely longer than the calyx. Trop. Africa to the Pacific: occurring like V. trifolia in Malaya, but commoner in gardens and cer-
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"lagoendi laet laik laki"lak", and gives the following statement a-
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geneest gezwollen en zuchtige lichamen en verdrijft de wormen. De
bladeren, gekamd, genezen ulceratiën; gewreven, met peper gemengd
en tot pillen gedraaid en twee of drie daarvan ingenomen bij opto-
mende kluide koorts, verdrijven zij de koude....Greshoff...vond
in den bast en de bladeren een chromogeen glucosied en Boorsma...een
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from Annam, Godefroy 806 & s.n., Lefèvre 276, Pierre 389 & s.n.,
and Thorel 120 from Cochinchina, Thorel s.n. from Laos, Balansa 938,
Bon 1086, 1636, & 1723, and Mouret s.n. from Tonkin, and Zimmermann
s.n. from Thailand.

Biegel describes V. negundo as a shrub of open texture, 8 m.
tall, with mauve-blue corollas, and found it growing at 1480 m.
altitude, in anthesis in January.

Bennett (1976) cites Bennett 361 from West Bengal, while Biswas
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The Chun 3855, distributed as typical V. negundo, actually rep-
resents its var. cannabifolia (Sieb. & Zucc.) Hand.-Mazz., while
Sinclair 5950 is var. intermedia (P'ei) Mold.

Additional citations: PHILIPPINE ISLANDS: Luzon: Ahern's col-
lector 102 (It). CULTIVATED: Zimbabwe: Biegel 5802 (Ba--387164).
MOUNTED ILLUSTRATIONS: Hsiao, Fl. Taiwan 4: 433, pl. 1060. 1978
(Ld).

VITEX NEGUNDO var. CANNABIFOLIA (Sieb. & Zucc.) Hand.-Mazz.

Additional synonymy: Vitex cannabina Beal, in herb.

Additional bibliography: Mold., Phytologia 49: 167--172, 175,

Jativa describes this plant as a shrub, to 13 feet tall, 12 ft.
wide, the branches ascending-spread ing, and the corollas "light-blue" (in June). The seed from which his plant was grown came from the Kirghistan Botanical Garden in Russia.


**VITEX NEGUNDO var. HETEROPHYLLA** (Franch.) Rehd.


Dop (1928) cites Pierre 4550 from Cochinchina. Meyer found the plant growing "on city walls" in Chili, China.

The type specimen (holotype) of the synonymous *V. chinensis* Mill., from the Chelsea Physic Garden, was photographed by Dr. L. H. Bailey as his type photograph number 5055.

The *Jativa* 2940, distributed as *V. negundo* var. *heterophylla*, actually represents var. *cannabinifolia* (Sieb. & Zucc.) Hand.-Mazz., while *Barker* s.n. [July 22, 1923] is var. *heterophylla* f. *multifida* (Carr.) Rehd. and Jack 8172 is var. *intermedia* (P'eil) Mold.


**VITEX NEGUNDO var. HETEROPHYLLA f. ALBA** (Carr.) Mold.


**VITEX NEGUNDO var. HETEROPHYLLA f. MULTIFIDA** (Carr.) Rehd.


Additional citations: CULTIVATED: Massachusetts: *Barker* s.n. [July 22, 1923] (It).

**VITEX NEGUNDO var. INTERMEDIA** (P'eil) Mold.


Sinclair refers to this plant as "a rare shrub in moderate flower and moderate unripe fruit" in August in Singapore, the corollas "lilac" in color. Jack refers to it as a 6-foot shrub. Material has been misidentified and distributed in some herbaria as *V. negundo incisa* Clarke.


**Illustrations:** Junell, Symb. Bot. Upsal. 4: 95, fig. 143 & 144. 1934.

A shrub, 2 m. tall, or small, medium, or large tree, to 35 m. tall, pubescent with short, yellow-gray, slightly silky, glossy hairs; trunk (bole) to 20 m. high, to 1.5 m. in diameter at breast height, regular, smooth, yellow-brown, often buttressed for 2—2.5 m. or "spur-rooted to 30 inches, running into a broadly fluted stem"; crown medium-size, "light-yellow in general appearance", lightly leafy; outer bark gray-brown (or yellow-brown where peeling has taken place), about 1 cm. thick, with fine longitudinal fissures, small flakes peeling to 2 cm., corky in texture; under bark pale-green and "crumbly" or "light watery-brown"; inner bark about 9 mm. thick, yellow-brown, white when freshly cut (slash), later turning pale-green, brittle; wood straw-color or dark-straw, the sapwood not defined from the heartwood, soft and light, east to cut, hard to split, with a slightly woolly cut on circular sawing, the pores moderately numerous to numerous, small, barely visible to the naked eye, arranged in short radial rows, the rays visible to the naked eye, not quite as wide as the pores,
the soft tissue diffuse, not conspicuous; young branchlets cinerea-
ous-pubescent or brown-tomentose; leaves decussate-opposite, 3--
5-foliolate, yellow-green when young, darker green when older;
petioles stout, 5--20 cm. long, cinerous-pubescent or brown-
tomentose; petiolules brown-tomentose, 2--4.5 cm. long on the
largest (central) leaflet, 8--10 mm. long on the smaller ones;
leaflet-blades rigidly chartaceous, all petiolulate, oval or
ovate-lanceolate to oblong or oblong-ovate, dull-green or dark-
green and semi-glossy above, lighter green or mid-green beneath,
usually widest above the middle, apically subobtusely acuminate,
marginally entire, basally inequilaterally subobtuse or subacute,
glabrous above, paler beneath and there marked with very small
glands, drying brownish-gray above and olive-green beneath, the
central one 12.2--22 cm. long and 6--7.5 cm. wide, the others
steadily diminishing to 10 cm. long and 4 cm. wide; midrib and
secondaries pubescent; secondaries 8--11 per side, only moderate-
ly arcuate; inflorescence terminal, paniculate, usually peduncu-
late, densely composite, robust, 14--18 cm. long, about 6 cm.
wide, subequaling or longer than the subtending leaves, several
times dichotomous from 3--4 cm. above the base, the branches op-
posite; peduncles to 20 cm. long; flower-buds small, inconspicu-
ous, dull-green; flowers short-pedicellate, about 9 mm. long,
fragrant; corolla bilabiate, internally tomentose, the throat
villous, white [Streimann NGF.26189] to greenish-cream with a
lilac lower lobe [Floyd 6646] or creamy with purple markings on
the lower lip [Mair 1852]; fruiting-calyx persistent, large, ac-
crescent, cupuliform, externally puberulent and glandulose, often
2-lobed or else the rim scarcely denticulate; fruit drupaceous,
globose, 8--9 mm. long and wide, fleshy, externally glabrous,
green when immature; seeds externally costate.

The species is based on material gathered in ravines of "Ratu
auf den Gezellenhalbinsel" of New Britain. Warburg (1891) says
that "Die Art steht der V. acuminata R. Br....sehr nahe, unter-
scheidet sich aber schon durch die Blattform und Grösse, durch
die stets gestielten Blättchen; durch die Kleinheit der Frucht,
die Behaarung des Fruchtkelches etc." The specific name is some-
times written with uppercase initial letters for both parts of
the specific epithet (as by Junell, 1934). Foreman (1972) places
Vitex guinata (Lour.) F. N. Will. in its synonymy, but the two
taxa are quite separate, although obviously closely related. He
comments that the wood of V. novae-pommeraniae is "much like that
of V. cofassus" Reinw. "but has much better form."

The Bailey's (1976) list V. novae-pommeraniae as occurring in
cultivation, native to New Guinea, New Britain, and New Ireland,
describing it as a "Shrub or large tree", the leaflets 3--5 in
number, ovate or obovate-oblong, to 3 1/4 inches long, apically
acuminate, marginally entire, the flowers borne in panicles to 7
inches long, the corollas yellow. Junell (1934) discusses and
illustrates the gynoecium morphology.

Schumann & Lauterbach (1900) cite Hellwig 390 & 463 from north-
eastern New Guinea and Dahl s.n. and Warburg s.n. from New Brit-
are said to have been "light-blue, with white nectar-guides, exterior of tube lavender, anthers dark-blue" on Lowrie & al. and simply "blue" on Aristeguieta & Agostini.


VITEX PACHYPHYLLA J. G. Baker


VITEX PANSHINIANA Mold.


VITEX PARVIFLORA A. L. Juss.


VITEX OBOVATA E. Mey.


Gentry & Puig-Rosa refer to this plant as a tree, 4 m. tall, and have found it growing on inundated savannas.


VITEX ORINOCENSIS var. MULTIFLORA (Miq.) Huber

Additional synonymy: Vitex orinocensis var. multifolia (Miq.) Huber, in herb.


Recent collectors refer to this plant as a tree, 5—15 m. tall, the trunk 18—25 cm. in diameter at breast height, the leaflets blades shiny above, the peduncles reddish, and the fruit at first green, later turning black, ellipsoid, 1.5 cm. long, 1.1 cm. wide, juicy, edible when ripe, and have encountered it in disturbed woods and "in Panicum maximum pastures with only shade trees remaining of the original forest cover", at 80—200 m. altitude, in flower in May and October, and in fruit in June and December. The corollas
are said to have been "light-blue", with white nectar-guides, exterior of tube lavender, anthers dark-blue" on Lowrie & al. 575 and simply "blue" on Aristeguieta & Agostini 4574.


VITEX PACHYPHYLLA J. G. Baker
A wood section accompanies the illustration cited below.

VITEX PANSHINIANA Mold.

VITEX PARVIFLORA A. L. Juss.

Merrill (1923) comments that this species is found "Throughout the Philippines in all or most islands and provinces. Common in both secondary and open primary forests at low altitudes. This valuable timber tree, commercially known as molave, is common in many parts of the Philippines. It is represented by more than 225 individual collections [in the Manila herbarium, now destroyed]. The species is not closely allied to V. cofassus Rehlm. and presents no intergrades with that species, of which Hallier considered it to be a variety. I have a photograph of Jussieu's type; it is identical with V. liititorisalis Decne. The inflorescences are often abnormal." He gives the extra-limital distribution as "Saleyer, Timor, Java, Celebes, Ambonui".

Schauer (1847) cites Cuming 1365 and 1830 from the Philippines and a Herb. Mus. Paris s.n. from Timor.

Biegel describes the corollas on his no. 5236 as "blue, the lip darkest and with a yellow patch near its base".
Gonde describes this species as a shrub, 6—8 feet tall, and encountered it on dark basaltic soil in mixed woodlands.

VITEX PIERRE AN A Dop (1928) comments that "Cette espece est voisine du V. Eberhardtii. Elle s'en distingue par l'inflorescence, le calice purpurne, les fleurs plus petites."

VITEX PINNATA L.


Corner (1940) reports the vernacular name, "Malayan teak", for this species. Ridley (1910, 1911) describes the tree as "Common in open country", citing Ridley 14938 & 14939 from Perils, giving its overall distribution as India, Burma, and Malaya.

Corner (1952) describes this species as "An evergreen tree up to 80 ft. high, flowering at 15 ft.: bark pale yellowish grey or ashen, somewhat fissured and flaky in long thin pieces, the inner bark light yellow, turning green on exposure to the air: crown shabby green, rounded but rather uneven, with the limbs arching out and with many small branches standing stiffly up from them: twigs, leaf-stalks, inflorescences and undersides of the leaves hairy.

Leaves with 3—5 large, sessile leaflets, the outer two often small; middle leaflets 3—11 x 1 1/4—4", elliptic, long-tipped, rather dull shabby green, with 13—20 pairs of side-veins: leaf-stalk 1—4" long. Flowers 2/3" long and wide, in large, conical or flatten ed, terminal panicles 3—10" long and wide, the greenish brown bracts conspicuous: corolla violet blue, the upper lobes bluish white. Fruit 1/3" wide, green, then dull purple and finally black, surrounded by the calyx 1/3" wide. S.E. Asia, Malaysia: common in villages, open country and by rivers and seashores throughout Malaysia." He lists the additional vernacular names, "leban", "halban", and "haleban", and continues: "The Leban is one of the commonest trees of secondary jungle, its berries being sought after and distributed by birds. It is not a beautiful tree for the dull green leaves, which are often disfigured by galls or perforated by insects, and the untidy inflorescences with their dingy bracts give the crown a shabby, if unmistakable, look. It flowers and fruits..."
Moldenke describes this species as a shrub, 6–8 feet tall, and encountered it on dark basaltic soil in mixed woodlands.

Additional citations: ZIMBABWE: Gonde 51/74 (W--2922191).

**VITEX PIERREANA** Dop


**VITEX PINNATA** L.


Additional illustrations: Corner, Wayside Trees, ed. 1, pl. 216 (1940) and ed. 2, pl. 216. 1952.

Corner (1940) reports the vernacular name, "Malayan teak", for this species. Ridley (1910, 1911) describes the tree as "Common in open country", citing Ridley 14938 & 14939 from Perlis, giving its overall distribution as India, Burma, and Malaya.

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He lists the additional vernacular names, "leban", "halban", and "haleban", and continues: "The Lebanon is one of the commonest trees of secondary jungle, its berries being sought after and distributed by birds. It is not a beautiful tree for the dull green leaves, which are often disfigured by galls or perforated by insects, and the untidy inflorescences with their dingy bracts give the crown a shabby, if unmistakable, look. It flowers and fruits
The corollas are said to have been "blue" on Mason & Mason 3346. Another vernacular name recorded for the species in Mexico is "tescalama". Additional citations: MEXICO: Jalisco: Herb. Coll. Idaho s.n. [7/25/61] (Me—287041). Nayarit: Herb. Coll. Idaho s.n. [7/2/55] (Me—286931); Mason & Mason 3346 (Mi).

**VITEX QUINATA** (Lour.) F. N. Will.


Corner (1952) describes this species as "A tree with light grey, shallowly ridged and fissured bark and bright orange inner bark: like v. coriacea [Teijsmanniodendron coriaceum] but: —Leaflets 3—5, with 8—10 pairs of side-veins, scarcely leathery. Panicles 6—14" long, larger, with stout branches. Fruit pear-shaped with a small point, dark green (? yellow when ripe). India, W. Malaysia to the Philippines: not infrequent in the middle of Malaya."

Dop (1928) notes that "La r'fegle de priorite veut, comme I'a fait Williams, que le binome V. quinata soit substitue au binome V. heterophylla adopte par la presque totality des botanistes. Je n'ai pas rencontre' cette esp^ce dans l'Herbier du Museum. D'ailleurs Loureiro la signale en Chine et non en Indochine." Actually, most of the non-Chinese specimens cited by authors, including myself in earlier installments of this work, prove to be Vitex turczaninowii Merr. rather than V. quinata. Chan describes the corollas as "cream-yellow, lower limb tinged purple" and found the tree in full flower in July.

**VITEX PINNATA** f. PTILOTA (Dop) Mold.


**VITEX POLYGAMA** Cham.


**VITEX PSEUDOLEA** Rusby

Additional bibliography: Mold., Phytologia 49: 450. 1981. Schunke refers to this species as having "El tronco es semi-acanalado con los corteza rugosa de color amarillo pardo. Las hojas son caducas. Diámetro del tronco 30". He reports the tree 34—40 m. tall, the corolla light-violet, and the stamens dark-violet. He encountered it in high forests, at 500—600 m. altitude, in flower in May.

Additional citations: PERU: San Martín: Schunke Vigo 8382 (Ld).

**VITEX PUBERULA** J. G. Baker


**VITEX PYRAMIDATA** B. L. Robinson

The corollas are said to have been "blue" on Mason & Mason 3346.

Another vernacular name recorded for the species in Mexico is "tescalama".


**VITEX QUINATA** (Lour.) F. N. Will.


Corner (1952) describes this species as "A tree with light grey, shallow ridged and fissured bark and bright orange inner bark: like V. coriacea [Teijssmanniodendron coriaceum] but: -- Leaflets 3--5, with 8--10 pairs of side-veins, scarcely leathery. Panicles 6--14" long, larger, with stout branches. Fruit pear-shaped with a small point, dark green (?) yellow when ripe.

India, W. Malaysia to the Philippines: not infrequent in the middle of Malaya."

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Additional citations: CHINA: Kwangtung: Tsang 21194 (Mi), 21477 (Mi). CHINESE COASTAL ISLANDS: Hainan: Fung 20420 (Mi); How 70858 (Mi); Lei 66 (Mi), 714 (Mi); Liang 62220 (Mi); Wang 33204 (Mi), 33757 (Mi). HONG KONG: Chan s.n. [July 20, 1973] (Mi); Hu 8445 (Mi); Taam 1532 (Mi), 1846 (Mi).

**VITEX QUINATA** var. **SERRATA** Mold.


**VITEX RADULA** Mildbr.


Phillips describes this plant as a tree, 8--10 feet tall, the fruit green in May, and have found it growing in rainforests, at 4010 feet altitude. Material has been misidentified and distributed in some herbarias as V. buchanani Baker.

Additional citations: MALAWI: Phillips 2159 (Ba--376242).

**VITEX RAPINI** Beauvis.

13 — 15-jugis, subtus vix prominentibus; petioluli 1 — 1 1/2 cm. Inflorescentia paniculata; panicula 16 — 20 cm., ramis suberectis multifloris puberulis. Calyx cyathiformis, extus aspero-puberulus, dentibus 5 brevibus acutis, sinubus levissime excavatis, in fructu auctus incrassatus. Drupa sect, transversa 3 1/2 mm., ovato-globosa tetrasperma nigra. — V. negundo et V. trifoliatee.

He cites as cotypes "Teruto (1888), Coah (1892), Curtiss, n. 1683)" from the Langkawi Archipelago. Dop (1928), citing only Curtis 1683, says: "Je n'ai pas rencontré cette espèce en Indochine française. Je le signale à cause de son nom spécifique et de l'étroit parenté qu'elle présente avec le V. ajugaeflora."

Ridley (1911) cites the species from Langkawi, Dayong Bonting and Kwah on the basis of Fox s.n., Ridley 12720, and Curtis 1683 from "Limestone rocks and Selangor".

Fletcher (1938) cites Curtis 1683, Fox 12720, Haniff & Nur 7079, Henderson 21385 & 23094, Kerr 10948, 13175, 17317, 18775 & 18923, Put 1025, 1378, 1643, & 4149, and Rabil 307 from Thailand. He notes that "Kerr 18923 and Rabil 307 have been referred to this species in spite of the fact that the ovary is distinctly pilose. In every other way the plants are so identical with this species that the writer does not feel justified in separating them." Possibly a varietal or form designation would be appropriate.

Recent collectors describe V. siamica as a small tree, 2 — 10 m. tall, shrubby treelet, "dangling shrub", or climber, the trunk to 15 cm. in diameter at breast height, the bark marked with many pale lenticels, the flowers visited by bees, and the sepals green. The corollas are said to have been "blue" on Balgooy 2306, "pale-lilac" on Stone 5894, "pale-lilac lip with a central yellow patch" on Stone 6922, "pale-lavender" on Stone 9516, "white" on Stone 6994, and "white/yellow" on Chung 46.

Collectors have found the species growing on sandy shores, cliffs, and dry rocky summits, in limestone crevices, in rocky limestone ground, and on limestone hills, hill summits, and ridge-tops, in anthesis in February, July, August, and November, and in fruit in August. Stone refers to it as "common", "fairly common", and "rather common".

Lateral of this species has been misidentified and distributed in some herbaria as V. negundo L. and V. trifoliate L. On the other hand, the B. C. Stone 8931, distributed as V. siamica, actually is V. gamosepala W. Griff.

13--15-jugis, subtus vix prominentibus; petioluli 1 -- 1 1/2 cm. Inflorescentia paniculata; panicula 16--20 cm., ramis suberectis multifloris puberulis. Calyx cyathiformis, extus aspero-puberulus, dentibus 5 brevibus acutis, sinibus levisseme excavatis, in fructu auctum incrassatus. Drupa sect. transversa 3 1/2 mm., ovato-globosa tetrasperma nigra. -- *V. negundo* et *V. trifoliae* affinis." He cites as cotypes "Teruto (1888), Coah (1892), Curtis, n. 1683" from the Langkawi Archipelago. Dop (1928), citing only Curtis 1683, says: "Je n'ai pas rencontré cette espèce en Indochine française. Je le signale à cause de son nom spécifique et de l'étroite parenté qu'elle présente avec le *V. ajugaeflora*.

Ridley (1911) cites the species from Langkawi, Dayong Bonting and Kwah on the basis of Fox s.n., Ridley 12720, and Curtis 1683 from "Limestone rocks and Selangor".

Fletcher (1938) cites Curtis 1683, Fox 12720, Haniff & Nur 7079, Henderson 21385 & 23094, Kerr 10948, 13175, 17317, 18775, & 18923, Put 1025, 1378, 1643, & 4149, and Rabil 307 from Thailand. He notes that "Kerr 18923 and Rabil 307 have been referred to this species in spite of the fact that the ovary is distinctly pilose. In every other way the plants are so identical with this species that the writer does not feel justified in separating them." Possibly a varietal or form designation would be appropriate.

Recent collectors describe *V. siamica* as a small tree, 2--10 m. tall, shrubby treelet, "dangling shrub", or climber, the trunk to 15 cm. in diameter at breast height, the bark marked with many pale lenticels, the flowers visited by bees, and the sepals green. The corollas are said to have been "blue" on Balgooy 2306, "pale-lilac" on Stone 5894, "pale-lilac lip with a central yellow patch" on Stone 6922, "pale-lavender" on Stone 9516, "white" on Stone 6994, and "white/yellow" on Chung 46.

Collectors have found the species growing on sandy shores, cliffs, and dry rocky summits, in limestone crevices, in rocky limestone ground, and on limestone hills, hill summits, and ridge-tops, in anthesis in February, May, July, August, and November, and in fruit in August. Stone refers to it as "common", "fairly common", and "rather common".

Material of this species has been misidentified and distributed in some herbaria as *V. negundo* L. and *V. trifolia* L. On the other hand, the *B. C. Stone 8931*, distributed as *V. siamica*, actually is *V. gamosepala* W. Griff.


**VITEX SIMPLICIFOLIA** Oliv.

VITEX SPRUCEI Briq.


The Vitex bakeri B. L. Robinson and V. Schweinfurthii Baker, previously regarded by me as synonyms of V. simplicifolia Oliv., should be deleted from its synonymy. Vitex bakeri is a valid taxon, very different from the type collection of V. simplicifolia.

Vitex simplicifolia is said by Kershaw (1968) to be a member in Nigeria of the Gardenia erubescens-Detarium microcarpon plant association growing on massive vesicular laterite mounds, on ironstone concretions in the Isoberlinia--Detarium association and in the Isoberlinia--Vappaca association. He says that it is abundant with Detarium microcarpon and Combretum binderianum in ironstone areas, restricted in other areas, the inhibitory properties of manganese offering a possible explanation of this phenomenon, but it is not definitely known whether manganese is universally present in ironstone deposits or whether the pH falls sufficiently to mobilize it. He also reports that this species, along with Combretum binderianum and Crossopteryx febrifuga, is characteristic of the ironstone areas of Nigeria. Lewis & Elvin-Lewis (1977) state that in the Ivory Coast a decoction is made from V. simplicifolia and is used in the treatment of snake-bite.

Huber (1963) refers to the species as "A small tree or shrub with dense, pale indumentum and mauve flowers [corollas]", inhabiting savannas. Drar (1970) found it in fruit in April in the Kordofan of Sudan.

The Schweinfurth 1519, previously cited by me as V. simplicifolia, are now regarded by me as representing V. bakeri B. L. Robinson.

VITEX SIMPLICIFOLIA var. VOGELII (J. G. Baker) Pieper


VITEX SNEATHLAGIANA Huber

VITEX SPRUCEI Briq.


Recent collectors describe this plant as a bush or tree, to 20 m. tall, "muito copada", with fragrant flowers and green [immature] fruit, in flower in May, and in fruit in January. The corollas are said to have been "white" on Barata & Coelho s.n. and "white with purple on the larger petals" on Schultes & López 9949. Collectors have encountered it "at water's edge" and report the vernacular names, "leão-bravo" and "pião bravo".

Porto and her associates (1976) assert that this species is part of a Vitex—Micrandra ecologic community. They assert that Vitex sprucei, along with Carapa guianensis Aubl., Jessenia bataua (Mart.) Burret, and Euterpe precatoria Mart., are very frequent in the lowland associations. "Sendo Vitex sprucei Briq. a espécie mais uniformemente distribuída e de maior frequência dentro do grupo de espécies consideradas associadas, podemos denominar a vegetação estudada dê comunidade Vitex—Micrandra.... Dentro da comunidade Vitex—Micrandra temos, a rigor, somente uma unidade de vegetação.....Quanto ao aspecto estrutural da vegetação pode-se afirmar existirem na comunidade Vitex—Micrandra 3 estratos bem definidos: um herbáceo.....representado predominantemente por Rapateaceae, Marantaceae, Cannaceae, Zingiberaceae algumas Pteridophyta."


VITEX SPRUCEI var. LONGIDENTATA (Mold.) Mold.


VITEX SPRUCEI var. VAUPENSENSIS Mold.


VITEX STAHELII Mold.

Additional & emended synonymy: Vitex staheli Mold., Alph. List


Recent collectors describe this plant as a low-branched tree, 10--28 m. tall, nearly leafless during anthesis, the trunk 35--102 cm. in diameter at breast height, the bark shallowly and finely fissured, brownish-gray, the leaflets papery or firmly membranous, rich- or medium-green and slightly glossy above, paler green and dull beneath, calyx green, and the fruit subglobose, smooth, glossy, purple or dull-purple, finally black when mature. They have encountered it in semi-evergreen or deciduous forests, tall-tree primary forests (the trees 3--35 m. tall), and on savannas, rocky hillsides with semi-deciduous forests, at 50--400 m. altitude, in flower in April, October, and November, and in fruit in May and November. They record the additional vernacular names, "aceituno", "guarataro", and "totumillo' morado".

The corollas are said to have been "purple" on Blanco 476 & 490, "blue, the throat white" on Davidse & González 16376, "violet" on Sastre 6173, "violet, the large lobe more intensely so than the others" on Bunting 5672, and "blue, with white nectar-guides" on Davidse & González 16564.

Prévost describes the tree as "défolié et entièrement recouvert de fleurs bleu-nautes. Sexualité axillaire et rami florie, par inflorescences pédonculées à multiples fleurs zygomorphes, 1.5 cm. de long, à gorge blanche stiées de violet, 4 étamines. Les nouvelles unités de croissance apparaissent. Les feuilles sont opposées, pétiolées et tri- ou pentafoliolées."

The Herb. Poiret s.n. collection, cited below, is probably the holotype of Vochysia racemosa Lam. since it is annotated in Lamarck's own handwriting as "Vochysia racemosa m." My good friend and colleague, Dr. Alicia Lourteig, avers that it has been photographed in the Paris herbarium as "type (?) of Vochysia racemosa". Steyermark has suggested that it may be an Aegiphila species. An unknown Dutch hand has added "The 4 (5?) stamens are attached to the corolla throat, alternating with the lobes, at the place of attachment there is a hairy ring in the corolla-throat; anthers?; the ovary is 2-celled, with 4 ovules, apical, anatrop., the upper part hairy; style 1, forked (?)".

Steyermark cites (1968) for Vitex stahelii, from Venezuela, Blan-
co 476 & 490 and Marcano 143 & 163, while López-Palacios (1977) cites, from the same country, the following collections: Bolívar: Cardona 2119, Conejos 97, Little 17659, Rodríguez 2623, Williams 12696. Delta Amacuro: Blanco 475, 490, & 514, Marcano-Berti 143 & 163, Rusby & Squires 84 & 257, Wurdack & Monachino 39648.

Material of this species has been misidentified and distributed in some herbaria as Vitex compressa Turcz., V. triflora Vahl, and Tabebuia sp. On the other hand, the Breteler 3907, distributed as V. staheli, actually is V. orinocensis var. multiflora (Miq.) Huber. López-Palacios informs us that V. staheli may be distinguished from V. orinocensis var. multiflora by having its peduncles shorter than the petioles and by the fact that it is an upland (not a lowland) species.


VITEX STELLATA Mold.


VITEX STRICKERI Vatke & Hildebr.


Recent collectors describe this plant as a bush, scrambling shrub, or creeping woody vine or liana of vigorous growth, or even as a coppice-growing tree, growing singly or in groups, profusely leafy, 1—8 m. tall, the stems erect, purple-brown, the branchlets brown-pubescent, tips of the twigs with orange-colored pubescence, the bark dark gray-brown, glabrous, smooth or rough, the sap colorless, the leaves 3-foliolate, very dry, soft dull-green, rough, the flowers hairy, slightly to strongly aromatic, the calyx 2-lipped, the corolla 1-sided, the stamens 4, attached within the corolla, the filaments hairy, and the fruit hard and edible. They have found it growing in loose brown or sandy soil at the edge of forests or thick cover, "in thick forests on gravel and black cotton soil", in sand near beaches, in old cultivated areas, in thickets on red loam, along streams in ravine thickets, on ant-hills, among rocks on hillsides, along roadsides near swamps, on rocky slopes, and in Acacia—Commiphora woodlands, from sealvel
to 200 m. altitude, in flower from November to April, July, and August, and in fruit from March to June.

The corollas are said to have been "white" on Perdue & Kibuwa 8058 and Tanner 1305, 2383, 2872, 3422, 3427, & 3986, "cream" on Burtt 4640, "yellowish-white" on Strid 2796, "lime-white" on Tanner 630 & 3420, "yellow-pink" on Leippert 5513, "pale-pink" on Tanner 2065, "lilac" on Schlieben 5623, and "largest lip purple, otherwise white" on Archbold 1615.

Leippert refers to the species as "common" in brushland where the rainfall is 700 mm. per year. Archbold mistakenly calls the drupaceous fruit a "berry".

Baker (1900) describes V. strickeri as "A shrub 5--6 ft. high; branchlets densely clothed with short brown pubescence. Leaves trifoliolate, subcoriaceous, scabrous above, densely pubescent with raised main veins beneath; leaflets ovate, acute, 1 1/2 -- 2 in. long, entire or slightly toothed, end one shortly petioled; main petiole densely pubescent, 1 in. long. Cymes forming a thyrsoid terminal panicle 2--4 in. long; branches very pubescent; pedicels very short. Calyx campanulate, pubescent, minutely toothed, 1/12 in. long at flowering. Corolla pubescent, twice as long as the calyx. Drupe yellow, glossy, glabrous, the size of a pea." Gürke (1895) describes it as "Ein mehrere Meter hoher Str[acht] mit ziemlich kleinen, 3zähligen Blättern und etwas erbsengrossen, hellbraunen Früchten, in Buschgehölzen."

Dale & Greenway (1961) assert that V. strickeri is "Doubtfully distinct" from V. lamiana Pieper, claiming that it inhabits the coastal areas of Kikuyu and Teita.

Additional vernacular names recorded for V. strickeri are "mhamu", "mkungulungo", "mpulu'ngosha", "mugombo", "mukakinga", "mukichano", and "mvumba".

Mboro 1190 is placed here tentatively as its fruits seem to be borne solitary or paired at the ends of very short twigs.

The leaves of V. strickeri are used by natives to treat swollen gums. For this purpose the leaves are cooked and the resulting liquid is used to rinse the mouth. The roots are also boiled and the resulting liquid is drunk to alleviate "sharp stomach ache". The juice of pounded leaves is taken orally to combat snakebite or is "used directly for cobra poison in the eyes".


The Mears collections, cited below, were previously erroneously cited by me as V. volkensii Gürke.

Additional citations: TANZANIA: Tanganyika: Archbold 1615 (Ld); Burtt 4640 (Mu); Endlich 777 (Mu), 777a (Mu); Leippert 5513 (Mu); Mboro 1190 (Ts); Schlieben 5623 (Mu); Tanner 630 (N), 1305 (N), 2065 (Ba, N), 2383 (Ba, N), 2872 (Ba, N), 3420 (Ba, N), 3422 (Ba, N), 3427 (Ba), 3986 (Ba, N). KENYA: Mears 262 (W--630276), 269 (W--630284); Perdue & Kibuwa 8058 (Mu); Strid 2796 (Go).
VITEX STYLOSA Dop

VITEX TANGENSIS Gürke

A many-stemmed shrub or small tree, 12—20 feet tall; branchlets short, yellowish- or drab-pubescent; leaves mostly 3- or occasionally 5-foliolate. distinctly petiolate; petioles slender, 2.5—3.7 cm. long; petiolules 5—10 mm. long or obsolete; leaflets distinctly short-petiolulate or sessile, moderately firm, dark-green above (when mature) and paler beneath, oblong-lanceolate or lanceolate-elliptic to oblong, 2.5—8 cm. long, apically acute or acuminate, marginally entire, basally obtuse or attenuate into the petiolule, glabrous above when mature and pubescent or puberulent throughout beneath, glandular-resinous-punctate beneath; cymes very numerous, dense and congested, axillary, short-pedunculate, appearing with the new leaves; pedicels very short, densely pubescent; bracts lanceolate, yellow-subvelutinous; calyx campanulate, 2 mm. long, densely yellow-pubescent or -subvelutinous, its rim minutely 5-toothed, the teeth short and basally very broad, apically acute; corolla small, mauve, very pubescent, its tube twice as long as the calyx, 4 mm. long, the throat barbate; stamens and style exserted; fruits globose, 2.5—3 cm. wide, externally glabrous.

Gürke (1895) says of this species: "Dieser Straub ist durch die sehr grossen, kugeligen Frucht auffallend; die Unterlippe ist dunkel-veilchenblau mit gelbem Haarpolster am Eingang des Schlundes, die 4 Lappen der Oberlippe sind schmutzig-gelblichweiss, die Staubbeutel blau." He cites Volkens 92 from "Buschgehölz". Dale & Greenway (1961) cite, from coastal savannas and scrub in Kenya, Dale 2776, Gardner 1465, Jeffery 152, Swynnerton 41 & 105, Trump 99, and Wakefield s,n. Chiovenda (1916) records the species from what was then Italian Somaliland.

Vernacular names listed for this plant are "mfududu", "mgegi", "mkaligote", and "mufudumaji".

VITEX SUMATRANA Miq.

The Moore (1925) reference in the bibliography (above) is often cited to "Rendle" or "S. Moore in Rendle", but it seems that Moore alone was the author.

Clarke (1885) comments, under V. urceolata C. B. Clarke, that "The inflorescence, calyx, corolla and drupe are so like those of V. sumatrana......that it may be a variety of it; but in V. sumatrana the leaves are mostly 5-foliolate and pubescent beneath."

Dop (1928) says "Cette espèce me paraît avoir été souvent confonduë avec le V. quinata Williams, avec lequel elle présente une ressemblance telle que Koorders et Valeton ont réuni les deux espèces. Cependant, il existe un caractère important très net sur lequel King et Gamble.....ainsi que Lam.....ont insisté: c'est que la corolle est entièrement glabre en dedans dans V. sumatrana et n'offre pas l'anneau de poils blancs que l'on observe dans presque tous les Vitex à l'insertion des étamines. J'ai pu m'assurer que la forme des folioles (non acuminées ou courtement et brusquement ou longuement acuminées) n'avait aucune valeur différentielle. J'ai la conviction que la plupart des plantes chinoise rapportées au V. quinata Williams appartiennent au V. sumatrana var. urceolata. Les échantillons récoltés à Hai nan par Henry....appartiennent sans aucun doute à cette dernière espèce."

VITEX SWYNNERTONII S. Moore

The original type (holotype) specimen of this species, Swynnerton 1054 was photographed in the British Museum herbarium as Missouri Botanical Garden type photograph number A.850.

VI T E X  T A N G E N S I S  Gürke


A many-stemmed shrub or small tree, 12--20 feet tall; branchlets short, yellowish- or drab-pubescent; leaves mostly 3- or occasionally 5-foliolate, distinctly petiolate; petioles slender, 2.5--3.7 cm. long; petiolules 5--10 mm. long or obsolete; leaflets distinctly short-petiolulate or sessile, moderately firm, dark-green above (when mature) and paler beneath, oblong-lanceolate or lanceolate-elliptic to oblong, 2.5--8 cm. long, apically acute or acuminate, marginally entire, basally obtuse or attenuate into the petiolule, glabrous above when mature and pubescent or puberulent throughout beneath, glandular-resinous-punctate beneath; cymes very numerous, dense and congested, axillary, short-pedunculate, appearing with the new leaves; pedicels very short, densely pubescent; bracts lanceolate, yellow-subvelutinous; calyx campanulate, 2 mm. long, densely yellow-pubescent or -subvelutinous, its rim minutely 5-toothed, the teeth short and basally very broad, apically acute; corolla small, mauve, very pubescent, its tube twice as long as the calyx, 4 mm. long, the throat barbate; stamens and style exserted; fruits globose, 2.5--3 cm. wide, externally glabrous.

Gürke (1895) says of this species: "Dieser Str[ach] ist durch die sehr grossen, kugeligen Fr[ucht] auffallend; die Unterlippe ist dunkel-veilchenblau mit gelbem Haarpolster am Eingang des Schlundes, die 4 Lappen der Oberlippe sind schmutzig-gelblichweiss, die Staub-beutel blau." He cites Volkens 92 from "Buschgehölz". Dale & Greenway (1961) cite, from coastal savannas and scrub in Kenya, Dale 2776, Gardner 1465, Jeffery 152, Swynnerton 41 & 105, Trump 99, and Wakefield s.n. Chiovenda (1916) records the species from what was then Italian Somaliland.

Vernacular names listed for this plant are "nfududu", "mgegi", "mkaligote", and "mufudumaji".

VI T E X  T E L O R A V I N A  J. G. Baker


Bernardi refers to this plant as a tree, 3--8 m. tall, and encountered it in open places in woods on denuded granitic mountains, at 1000--1200 m. altitude, in flower in November.

Additional citations: MADAGASCAR: Bernardi 11172 (N).

VI T E X  T H O M A S I  DeWild.

Additional bibliography: Mold., Phytologia 17: 43. 1968; Mold.,
**VITEX THOMASII f. KASAIENSIS** DeWild.


**VITEX THONNERI** DeWild.


The G. F. Cooper 355, distributed as V. thonneri, actually is V. conglolensis DeWild. & Th. Dur.

**VITEX THONNERI var. TIBATENSIS** (Engl.) Pieper


**VITEX THORELLII** Dop


**VITEX THYRSIFLORA** J. G. Baker


Recent collectors have encountered Vitex thyrsi flora along gravelly roadsides and in gallery forests, at 1000—1200 m. altitude, describing it as a tree, 19 feet tall, and have found in it full flower in May. The corollas are said to have been "white" on Konnoh 175.

Additional citations:
- LIBERIA: Jacques-Georges 27676 (Mu); Konnoh 175 (W—2126712).
- BURUNDI: Lewalle 3515 (Ld).

VITEX THYRSIFLORA var. LAXIFLORA Pieper

Additional bibliography:

Schnell & Grout de Beaufort (1966) regard V. agraria Chev., V. obanensis Wernh., and V. staudtii Gürke as synonyms of V. thyrsiflora, but add also V. myrmecophila Mildbr. which I regard as V. thyrsiflora var. laxiflora Pieper. They cite Lebrun 2911 from Congo [Zaire] and LeTestu 4721 from Ubangi [Central African Republic] as typical of V. thyrsiflora and Letouzey 3882 from the Cameroons and Tisserant 1159 from Ubangi as "V. cf. thyrsiflora". Their conclusions regarding myrmecophily in this genus are worth repeating here: "Les espèces étudiées nous montrent des caractères myrmécophiles réalisés avec une fréquence remarquable. Sui vant les cas, les rameaux sont non colonisés (sans pores), ou colonisés, avec des pores, à localisation précise. Le lien avec les fourmis du genre Viticola paraît étroit. Wheeler admet que Viticola tessmanni est un hôte obligatoire de Vitex staudtii.

"La disposition paire et opposée des orifices, et leur rotation de 90° d'un noeud à l'autre sont des caractères remarquables. Une étude anatomique permettrait de préciser la structure histologique des emplacements prédéfinis, auxquels les fourmis percutent les orifices; les observations anatomiques de Bailey (1921-1922) ont mis en évidence que l'épaisseur de l'anneau ligneux est plus grande sur les faces du rameau correspondant aux feuilles que sur les faces intermédiaires, — sur lesquelles sont percés les pores. En raison de la disposition décussée des feuilles, cette structure se trouve décalée de 90° d'un entrenoeud au suivant; ainsi la disposition des pores, liée à l'épaisseur de l'anneau ligneux, se trouve commandée en définitive par la phylloaxie des rameaux; il serait également fort intéressant de pouvoir déterminer par quel processus (mécanique ou peut-être même chimique) les fourmis détectent ces emplacements de moindre résistance, dans lesquels elles feront les pores.

"L'existence de pores non noduleux, et même franchement inter-noduleux, montre cependant la possibilité d'une certaine latérité du déterminisme de la localisation. La présence assez fréquente de cicatrices subéreuses non percées, disposées en ligne sur les entrenoeuds, plaide dans le même sens. On notera toutefois que c'est essentiellement sur les noeuds que se trouvent les pores bien individualisés, alors que les attaques partielles sont presque toujours internodales. Par ailleurs, lorsqu'il existe des pores non noduleux, ceux-ci de même que les cicatrices dues à des attaques peu accentuées, se trouvent sur les faces de l'entre noeud ne portant pas les feuilles, — illustrant le caractère prédéterminé de cette localisation des pores en relation avec les insertions foliaires."
Recent collectors have encountered *Vitex thyrsiflora* along gravelly roadsides and in gallery forests, at 1000–1200 m. altitude, describing it as a tree, 19 feet tall, and have found it full flower in May. The corollas are said to have been "white" on *Konnoh 175*.


**VITEX THYRSIFLORA** var. **LAXIFLORA** Pieper


**VITEX TOMENTULOSA** Mold.


Recent collectors have encountered this plant in woods and coastal thickets and limestone cliffs.

Additional citations: CUBA: Oriente: León 16336 (W--2289548); Sagra 809 (P), 909 (P). Pinar del Río: Acuña & Zayas 19936 (N), 19938 (N).

**VITEX TRICHANTHERA** J. G. Baker


**VITEX TRIFLORA** Vahl


The corollas are said to have been "rosy" on Cid & al. 647, and Cordeiro 735, "rosy-white" on Cid & al. 78, "blue" on Cioat 20610, Mennaga 497, Prance & al. 6031 & 7093, Silva 1148, and Silva & Sousa 2393 & 2476, "light-blue" on Prance & al. 6060, "violet" on Granville B.4623, "brilliant-violet" on Schunke 8267, "light-violet (10 PB 6/3 or 10 PB 7/6)" on Schunke 843, 6569, & 6668, "violet with brown stripes in the throat" on Prance & al. 14344, "lilac" on Riheiro 1413, "pale-blue, lip darker blue" on Maas & al. 2220, "pale-purple, 2 lobes ('limbs') white" on Irwin S al. 55130, "white with brown hairs inside" on Halle 1029, "tube and throat dirty-white, limb purple-blue (10 PB 5/10), tube inside with dark-blue (10 PB 2/6) lines" on Lindeman & al. 547, and "tube light-purple outside, white with purple lines inside, lower petal blue, base with yellow pubescence, other petals white" on Bisby & al. P.18091.

Granville describes this species as follows: "Arbre 12 m. de haut environ; tronc cylindrique sans contreforts; bois brun jaune clair, dur; rhytidome mince, gris clair, mat; rameaux noirs kl lenticelles blanchit tre allongees; feuilles opposees, trifoliol^es; inflorescences en cymes axillaires de 3 fleurs parfum^es; calice zygomorphe, vert, ^ tube de 7 mm. et 5 dents etal^es groupees en 2 l^vres (une a 2 dents, une a 3 dents) de 1 cm. de long; corolle zygomorphe k tube de 28 ram. de long, blanchatre a I'ext^rieur, blanc stri^ de violet a 1 ' inter ieur, l^gerement arqu^, 5 dents etalees dont A oblongues, de 7 x 3 mm., blanc lilac^, les 2 dents sup^rieures soude'es sur le tiers de leur longueur, la cinquifeme dent est ^tal^e en forme d'un labelle, violet clair, suborbiculaire, de 12 mm. de 0, dentel^e sur les bords; ^tamines A libres exsertes, dont 2 de 22 mm. et 2 de 23 mm., anthferes violet tes; ovaire super 2 e vert obov^, de 2 mm. de long k style unique, filiforme, blanc, de 10 mm.; stigmate violet clair, discrktement bilobe." Oldeman, however, says "corolle jaune ambr^, style creme, etamine brun chocolat ."

Loudon (1832) and Sweet (1826) both assert that Vitex triflora was introduced into cultivation in England from French Guiana in 1823. Additional vernacular names reported for this species include "coramindn", "guarataro", "sacha tahuarf", "tahuari", "taraman", "taruma", "three-flowered chaste-tree", and "yanomano". Lopez-Palacios (1979) predicts that this species will eventually be found in Amazonian Colombia. Peckolt (190A) reports that "Die pflaumengrossen, wiessbefilzten, saftigen, wohlgeschmeckenden Steinbeeren sind ein beliebtes Waldobst.

Granville B.4171, collected on October 19, 1971, bears a statement on its accompanying label that it represents the first known collection of this species in French Guiana, but as early as in my 1958 work I have cited no less than 20 earlier collections (5A herbarium sheets) from this country!

Denslow 2414 is sterile, but judging by the material available seems to represent this taxon. Krukoff 5765 is a mixture of Vitex triflora and its f.quinquefoliolata (Mold.) Mold.

Macbride (1960) cites Ducke 7561, Klug 1254, 1492, & 2791, and 288 P H Y T O L O G I A Vol. 51, No. 4
The corollas are said to have been "rosy" on Cid & al. 647, and Cordeiro 735, "rosy-white" on Cid & al. 78, "blue" on Cioat 20610, Mennaga 497, Prance & al. 6031 & 7093, Silva 1148, and Silva & Sousa 2393 & 2476, "light-blue" on Prance & al. 6060, "violet" on Granville B.4623, "brilliant-violet" on Schunke 8267, "light-violet (10 PB 6/3 or 10 PB 7/6)" on Schunke 843, 6569, & 6668, "violet with brown stripes in the throat" on Prance & al. 14344, "lilac" on Riheiro 1413, "pale-blue, lip darker blue" on Maas & al. 2220, "pale-purple, 2 lobes ('limbs') white" on Irwin S al. 55130, "white with brown hairs inside" on Halle 1029, "tube and throat dirty-white, limb purple-blue (10 PB 5/10), tube inside with dark-blue (10 PB 2/6) lines" on Lindeman & al. 547, and "tube light-purple outside, white with purple lines inside, lower petal blue, base with yellow pubescence, other petals white" on Bisby & al. P.18091.


Recent collectors describe this plant as a shrub, 2--5 m. tall, treelet, or small tree, 3--20 m. tall; trunk to 70 cm. in diameter at breast height; bark with longitudinal furrows; wood white or light-yellow; leaves bright dark-green or brilliant pale-green, the venation prominent beneath; bracts brilliant yellow-green; buds brown; peduncles white; flower-buds white; flowers fragrant; calyx green, blue or whitish; anthers darker; fruiting-calyx enlarged, green; fruit green to light-yellow when young, brown to black when mature.

Cain (1959) states that the blade areas of the leaves average 67.4 percent of the length-breadth rectangles, showing by the application of the 'rule of thumb' that the blade area of the leaves is approximately 2/3 of the length-breadth rectangular area.

Collectors have encountered this plant in forests and disturbed primate forests (mata) on terra firme (non-inundated soil), in high, tall, seasonally very dry, and riverine forests, on forested slopes and granite peaks, in sandy soil of mata, on rocky outcrops on summits, on riverbanks, and on plateaus covered by ferrobauxite, at 118--800 m. altitude, in anthesis from May to November, and in fruit in January and from September to November.
The corollas are said to have been "rosy" on Cid & al. 647 and Cordeiro 735, "rosy-white" on Cid & al. 78, "blue" on Croat 20610, Mennega 497, France & al. 6031 & 7093, Silva 1148, and Silva & Sousa 2393 & 2476, "light-blue" on France & al. 6060, "violet" on Granville B.4623, "brilliant-violet" on Schunke 8267, "light-violet (10 PB 6/3 or 10 PB 7/6)" on Schunke 843, 6569, & 6668, "violet with brown stripes in the throat" on France & al. 14344, "lilac" on Ribeiro 1413, "pale-blue, lip darker blue" on Maas & al. 2220, "pale-purple, 2 lobes ("limbs") white" on Irwin & al. 55130, "white with brown hairs inside" on Hallé 1029, "tube and throat dirty-white, limb purple-blue (10 PB 5/10), tube inside with dark-blue (10 PB 2/6) lines" on Lindeman & al. 547, and "tube light-purple outside, white with purple lines inside, lower petal blue, base with yellow pubescence, other petals white" on Bisby & al. P.18091.

Granville describes this species as follows: "Arbre 12 m. de haut environ; tronc cylindrique sans contreforts; bois brun jaune clair, dur; rhytidome mince, gris clair, mat; rameaux noirs à lenticelles blanchâtre allongées; feuilles opposées, trifoliolées; inflorescences en cymes axillaires de 3 fleurs parfumées; calice zygomorphe, vert, à tube de 7 mm. et 5 dents étalées groupées en 2 lèvres (une a 2 dents, une a 3 dents) de 1 cm. de long; corolle zygomorphe à tube de 28 mm. de long, blanchâtre a l'extérieur, blanc strié de violet a l'intérieur, légèrement arqué, 5 dents étalées dont 4 oblongues, de 7 x 3 mm., blanc lilacé, les 2 dents supérieures soudées sur le tiers de leur longueur, la cinquième dent est étalée en forme de labelle, violet clair, suborbiculaire, de 12 mm. de Ø, dentelée sur les bords; étamines 4 libres exsertes, dont 2 de 22 mm. et 2 de 23 mm., anthères violettes; ovaire supére vert obové, de 4 mm. de long à style unique, filiforme, blanc, de 10 mm.; stigmate violet clair, discrètement bilobé." Oldeman, however, says "corolle jaune ambre, style creme, etamine brun chocolat."

Loudon (1832) and Sweet (1826) both assert that Vitex triflora was introduced into cultivation in England from French Guiana in 1823.

Additional vernacular names reported for this species include "coramiñón", "guarataro", "sacha tahuari", "tahuari", "taraman", "taruma", "three-flowered chaste-tree", and "yanomano".

Lopez-Palacios (1979) predicts that this species will eventually be found in Amazonian Colombia. Peckolt (1904) reports that "Die pflan mengrossen, wiessbefilzten, saftigen, wohlgeschmeckenden Steinbeeren sind ein beliebtes Waldobist."

Granville B.4171, collected on October 19, 1971, bears a statement on its accompanying label that it represents the first known collection of this species in French Guiana, but as early as in my 1958 work I have cited no less than 20 earlier collections (54 herbarium sheets) from this country!

Denslow 2414 is sterile, but judging by the material available seems to represent this taxon. Krukoff 5765 is a mixture of Vitex triflora and its f. quinquefoliolata (Mold.) Mold.

Macbride (1960) cites Ducke 7561, Klug 1254, 1492, & 2791, and
Willards 4195 from Peru. López-Palacios (1977) cites Aristeguieta & Lizot 7372 and Williams 15688 from Amazonas, Venezuela.

Material of Vitex triflora has been misidentified and distributed in some herbaria as V. klugii Mold. and V. stahelii Mold., Acanthaceae, Bignoniaceae, Boraginaceae, and Rubiaceae. On the other hand, the Gentry, Ayala, & Revilla 15638, distributed as typical V. triflora, actually is its var. coriacea Huber, while Albuquerque Lobo, Vilhena, & Ribeiro 19 is var. kraatzi Huber.

Additional citations: COLOMBIA: Antioquia: J. Denslow 2414 (Ws). VENEZUELA: Amazonas: Aristeguieta & Lizot 7362 (Ld, N, W—2882623); Steyermark, Davidse, & Guanchez 122148 (Ld); LL. Willi-ams 15688 (N). SURINAM: Irwin, France, Soderstrom, & Holmgren 55130 (N, W—2736812); Lindeman, Stoffers, Gärts-van Rijn, & Janssen-Jacobs 547 (N); B. Maguire 24837 (Se—182921); Mennaglia 497 (N); Mori & Bolten 8568 (Ld, N). FRENCH GUIANA: Cremers 7078 (Ld); Granville 3629 (Ld), B.4171 (N, N), 4569 (N, N), 4623 (N); Hallef 1029 (P); Maas, Maas, Mennega, & Koek-Noorman 2220 (N); Ol-deman B.752 (N), B.2326 (Cy, Cy); Prévost 330 (E, Ld). PERU: Huánuco: Schunke Vigo 843 (N, W—2863126), 5897 (W—2699136), 6569 (W—2653840). Loreto: Croat 20610 (Lc, Ld, N); R. Ramirez 7 (Ld). San Martín: Schunke Vigo 6668 (W—2788266), 8267 (N). BRA-ZIL: Acre: Kruhoff 5765 in part (Mu); Lowrie, Lowry, & Souza 248 (Ld); Prance, Coêlho, Ramos, & Farias 7786 (Ac, N). Amapo: Murça Pires & Cavalcante 52602 (S). Amazônas: Bisby, Steward, & Ramos P.18091 (N); Cid, Buck, Nelson, Almeida, Mota, & Lima 78 (Ld), 647 (Ld); Kruhoff 4704 (Mu); Monteiro, Pinheiro, & Ramos 14268 (N); Prance, Hill, Coêlho, & Ramos 24306 (N); Prance, Maas, Atchley, Steward, Woolcott, Coêlho, Monteiro, Pinheiro, & Ramos 14268 (Ac, N), 14344 (N); N. T. Silva 1148 (Ld, N). Pará: Cid, Ramos, Mota, & Rosas 2379 [Herb. Inst. Nac. Pesq. Amaz. 96728] (Ld, N); Murça Pires 9934 (N); N. T. Silva 1148 (N); Ribeiro 1413 [Herb. IPEAN. 162968] (Ld); Rosa 253 [Herb. IPEAN. 145967] (Ld); Silva & Rosário 3672 (N); Silva & Souza 2393 (Ac, N), 2476 (Ld, N), 2575 (Ac, N). Rondônia: Cordeiro 735 [Herb. IPEAN. 150399] (Ld); Forero & Wrig-ley 7093 (Ld, N); Prance, Forero, Wrigley, Ramos, & Farias 6005 (Ac, N), 6031 (N). BOLIVIA: Pando: Prance, Forero, Wrigley, Ramos, & Farias 6060 (Ld, W—2829507). MOUNTED ILLUSTRATIONS: Mart., Fl. Bras. 9: pl. 49. 1851 (Ld, N); Huber, Bol. Mus. Para. Goeldi 5: pl. 1, fig. 5—8. 1909 (W).

VITEX TRIFLORA var. ANGUSTILOBA Huber


Recent collectors describe this plant as a tree, 2—10 m. tall, the trunk 10 cm. in diameter at breast height, and the fruit green when immature. They have found it growing on terra firme, in flower in September and October and in fruit in October. The corollas are said to have been "rose" in color on Austin & al. 7228 and "corolla-tube light-purple outside, white with purple lines inside, the lower petal blue, the base with yellow pubescence, the other petals white" on Bisby & al. P.18091.
New species and combinations in Chrysanthellum (Asteraceae-Coreopsidae)
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Several workers have requested that I make formal the novelties and combinations pending in my revisional study of the genus Chrysanthellum. In my treatment I have recognized 10 species, one of which, C. indicum, is a widespread, subtropical, montane weed which I intend to treat as comprised of four infraspecific taxa as follows.

Chrysanthellum indicum subsp. afroamericanum, B. L. Turner, subsp. nov.
A subspecies indicum et subspecies mexicanum involucris fructifictibus amplioribus (4-6 mm longis), marginibus cartilagineis achaeiorum validioribus (0.2-0.4 mm latis), floribus radiatis pluribus (13-34 rarius 8) differt.
The subspecies consists of a single bicontinental (South America-Africa) variety: Chrysanthellum indicum var. afroamericanum B. L. Turner, var. nov., based upon the above type and diagnosis.

Mostly montane or moderately elevated regions of South America and Africa where it occurs as a weed along paths, in gardens and disturbed areas generally; possibly introduced into Africa from South America in relatively recent times.

An exceedingly variable, weedy variety, especially on the eastern side of the Andes in northern Argentina, Bolivia, and Peru where it is undoubtedly native.

Chrysanthellum indicum subsp. mexicanum (Greenm.) B. L. Turner, comb nov.
Based upon Chrysanthellum mexicanum, as cited below. The subspecies is represented by a single taxon, var. mexicanum.


VITEX TRIFLORA var. CORICAEA Huber
Recent collectors describe this plant as a tree, 5--10 m. tall, with "brown" fruit, and have found it growing in mostly cleared areas among remnant vegetation and in high woods on terra firme, in full anthesis in January and November, and in fruit in January. The corollas are said to have been "blue" on Gentry & al. 15638 and "lilac" on Oliveira 3641. The vernacular name, "tarumá", has been reported for it and material has been distributed in some herbaria as typical V. triflora Vahl.


VITEX TRIFLORA var. FLORIBUNDA Huber
Recent collectors describe this plant as a tree, 6--10 m. tall, the trunk to 8 cm. in diameter at breast height and 1 m. in circumference, the calyx green, the stamens white or rose, and the anthers cream-color. The corollas are said to have been "rose" on Cordeiro 536 and Murça Pires & Belém 12342. It has been found in anthesis in August.
The France & al. 12297, distributed as Vitex triflora var. floribunda, actually is not verbenaceous.


Schrone describes this plant as a tree, 4--5 m. tall, the leaves brilliant pale-green, fragrant, the calyx pale-green, and the immature fruit greenish-yellow and pubescent. He found it growing in a high forest at 295 m. altitude, in fruit in October. [to be continued]

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