

Surinam (Pulle, 1906).

8. *Gliricidia* Kunth & Endlicher

Unarmed, deciduous trees and shrubs. Leaves alternate, petiolate, odd-pinnate, 1-pinnate. Inflorescence an axillary, many-flowered raceme. Flowers papilionaceous; sepals united in a cupuliform, weakly 5-toothed tube; standard petal reflexed; keel incurved, the petals united. Stamens 10; 9 united by the filaments in a tube, 1 free. Fruit dehiscent, flat, narrow; seeds numerous.

1. *Gliricidia sepium* (Jacquin) Kunth ex Grisebach, *Abhandlungen der Akademie der Wissenschaften, Gottingen* 7: 52 (1857). MADRE DE CACAO (Surinam); ACACIA DES ANTILLES (French Guiana). Tree to 9 m; branches hairy when young; poisonous. Leaves with 4-8 pairs of leaflets; leaflets elliptical, acuminate, often dark-spotted or -blotched beneath, to 7 x 3 (-4) cm. Inflorescence to 15 cm. Petals pale purplish-pink, c.1.2 cm; standard petal marked with yellow from middle to base. Fruit narrowly oblong, somewhat woody, to 15 x 1.2 cm; seeds up to 11 per fruit.

Range: Mexico to South America. Grown as an ornamental in the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982) and in French Guiana (de Granville, 1985). Grown as a shade tree in Surinam (Ostendorf, 1962).

In tropical America this species is often interplanted with coffee and cacao trees to shade them; it is recommended for intensified utilization as a fuelwood for the humid tropics (National Academy of Sciences, 1980; Little, 1983).

9. *Pterocarpus* Jacquin

Unarmed, nearly evergreen trees, sometimes lianas. Leaves alternate, petiolate, odd-pinnate, 1-pinnate; leaflets alternate. Inflorescence an axillary or terminal panicle or raceme. Flowers papilionaceous; sepals united in an unequally 5-toothed tube; standard and wing petals crisped (wavy); keel petals free or nearly so. Stamens 10, all united by the filaments in 1 or 2 groups, or 9 united and 1 free. Fruit indehiscent, flat, orbicular, sometimes surrounded by a wide, flat wing, laterally beaked; seeds 1-3.

1. *Pterocarpus indicus* Willdenow, *Species Plantarum*, ed.4, 3(2): 904 (1802). BURMA ROSEWOOD, PADAUK. Tree to 24 (-30) m, buttressed in age. Leaves with 5-11 alternate, unpaired leaflets; leaflets ovate, acuminate, petiolulate, to 12.5 cm. Inflorescence an axillary panicle or raceme. Calyx pubescent with brown hairs. Petals crisped, yellow or orange, c.1.5 cm; standard petal recurved. Stamens united in 2 groups of 5. Fruit orbicular, winged, laterally beaked, to c.6 x 6 cm, with network of raised veins over the seed-bearing portion; seed 1 (-2), smooth, shiny.

Range: Southeast Asia and East Indies. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982). This may be the undetermined *Pterocarpus* sp. grown as an ornamental in French Guiana (de Granville, 1985A).

Literature: Rojo, J.P. 1972. *Pterocarpus - Revised for the World*. Phanerogamarum

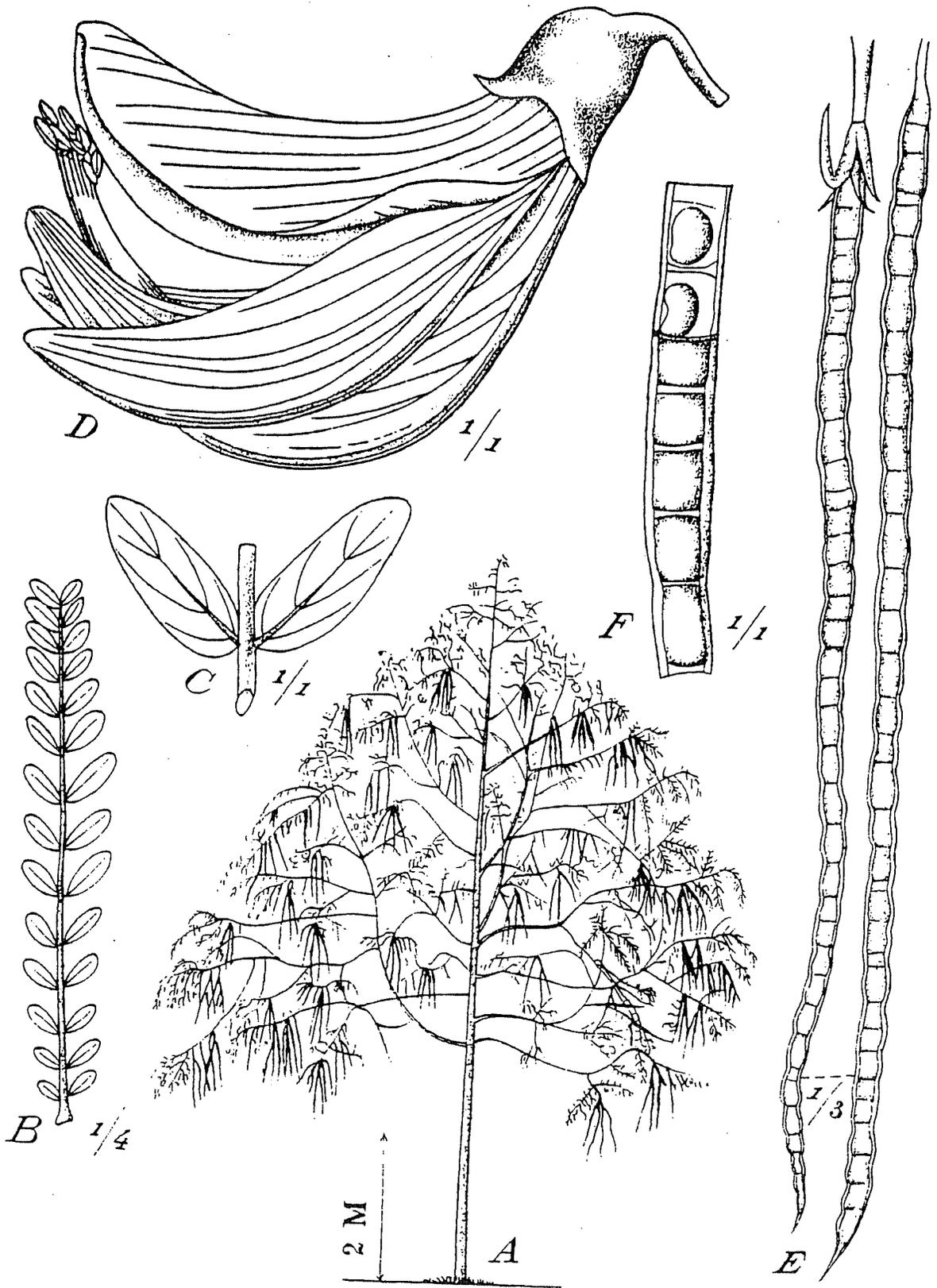


Fig. 109. *Sesbania grandiflora* (Fabaceae).

Recommended for increased utilization as a luxury timber tree (National Academy of Sciences, pp.224-225, 1979).

10. *Sabinea* DeCandolle

Unarmed, deciduous shrubs or trees. Leaves alternate, even-pinnate, 1-pinnate. Inflorescence of individual fascicles or clusters along multiflorous branches. Flowers papilionaceous; sepals united in a tube, nearly truncate at apex; standard petal spreading to reflexed; keel petals slightly united, the keel incurved. Stamens 10, with 9 united by the filaments and 1 free. Fruit dehiscent, linear, flat; seeds numerous.

1. *Sabinea carinalis* Grisebach, *Flora of the British West Indian Islands* 183 (1859). CARIB WOOD. Shrub or small tree to 6 m. Leaves with 6-10 pairs of leaflets; leaflets oblong, obtuse, to c.2 cm. Inflorescence-fascicles of 2-5 flowers. Petals red or crimson; standard and wing petals to 2.5 cm; keel to 4 cm. Fruit stipitate, the body c.9-10 cm.

Range: Endemic to Dominica. Grown as an ornamental in the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982).

11. *Sesbania* Scopoli

Unarmed, annual or perennial herbs, or shrubs or trees. Leaves alternate, even-pinnate, 1-pinnate; leaflets numerous. Inflorescence an axillary raceme. Flowers papilionaceous; sepals united in a campanulate, 5-toothed or -lobed tube, sometimes with irregularly-margined rim; standard petal spreading or reflexed; wings falcate (sickle-shaped); keel incurved, the petals united. Stamens 10, with 9 united by their filaments and 1 free. Fruit dehiscent or indehiscent, linear, compressed to subcylindrical or 4-angled or -winged; seeds numerous.

1. *Sesbania grandiflora* (Linnaeus) Poiret, *Encyclopedie Methodique. Botanique* 7: 127 (1806). (Synonym: *Agati grandiflora* (Linnaeus) Desvaux). AUGUST FLOWER (Guyana), TOERI (Surinamese Javan); VEGETABLE HUMMINGBIRD. Evergreen tree to 10 (-12) m. Leaves with 10-30 pairs of leaflets; leaflets narrowly oblong to elliptical, to 4 (-5) x 1.2 cm. Inflorescence a raceme of 2-5 flowers. Calyx circumscissile (opening in a circle around calyx-tube) or splitting into 2 lobes, or split along one side and spathe-like. Petals fleshy, edible, pink or whitish, 6-11 cm; standard petal shorter than the wings and keel. Fruit indehiscent, stipitate, linear, rectangular in x.s., to 50 x 8 cm; seeds c.50-60, to 8 mm.

Range: India and tropical Asia. Grown as an ornamental in the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982) and in the Cultuurtuin, Paramaribo and elsewhere as a shade tree in Surinam (Ostendorf, 1962; Teunissen & Lande, 1980).

Literature: Evans, D.O. and P.P. Rotar. 1986. *Sesbania in Agriculture*. 192 pp. Boulder, Colorado: Westview Press. Sachet, M.-H. 1987. The littoral species of *Sesbania* (Leguminosae) in the South Pacific islands and its relatives. *Adansonia* 1: 3-27.

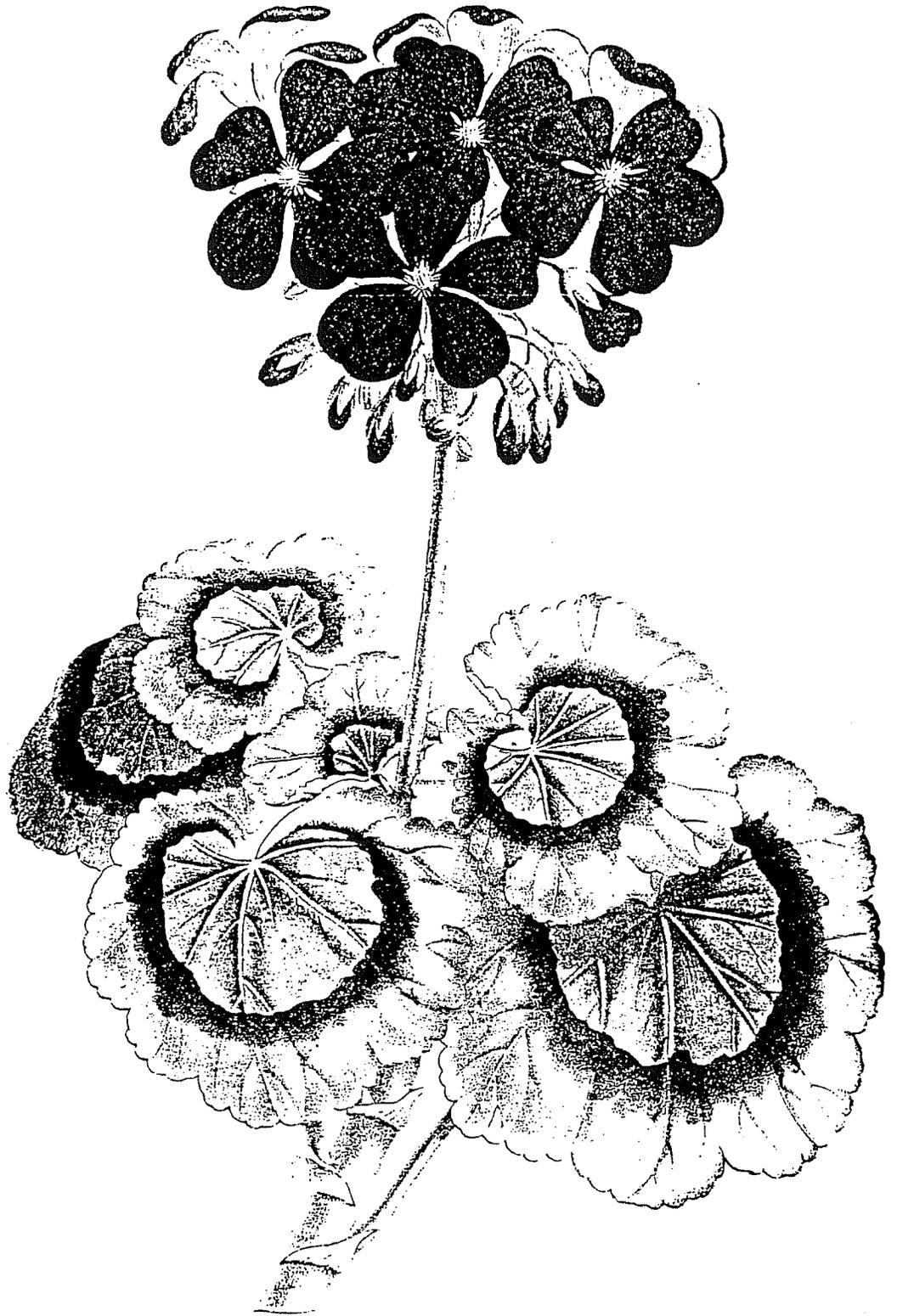


Fig. 110. *Pelargonium zonale* (Geraniaceae).

Recommended as a fast-growing fuelwood species for the humid tropics by Little (1983) and the National Academy of Sciences (1979, 1980).

Geraniaceae

Annual or perennial herbs, or subshrubs. Leaves alternate, spirally arranged, or opposite, simple, often palmately lobed or divided, sometimes pinnatisect, petiolate. Inflorescence a terminal or axillary umbel, or flowers solitary. Flowers bisexual, regular or irregular; sepals 5, free or united below, the upper sepal sometimes with a concealed, hollow nectar-spur or tube adnate up to as much as the entire length of the pedicel; petals 5, free. Stamens 5, 10 or 15, sometimes not all bearing anthers. Ovary superior, 5-celled; carpels 5. Fruit a 5-valved, often beaked, schizocarp, the valves often coiling upwards at dehiscence; seeds few.

Literature: Webb, W.J. 1984. *The Pelargonium Family*. 104 pp. London & Sydney: Croom Helm Ltd.

1. *Pelargonium* L'Heritier

Characteristics of the family Geraniaceae; flowers in umbels, irregular with the upper 2 petals often larger; calyx with concealed, hollow spur; fertile (anther-bearing) stamens 5-7; stigmas 5; fruit 5-valved.

1. *Pelargonium x hortorum* L.H. Bailey, *The Standard Cyclopaedia of Horticulture* 2531 (1916). GERANIUM, GARDEN GERANIUM. Perennial herb or subshrub to 90 cm (-3.6 m). Leaves orbicular or nearly so, toothed or scalloped, often variegated with a purplish circular zone, to c.13 cm wide, glandular-pubescent. Inflorescence a terminal, many-flowered umbel. Petals subequal, red, pink or white, c.2 cm. Fertile stamens 7.

Range: Of hybrid origin; derived mostly from crosses involving two South African species, *P. zonale* (Linnaeus) L'Heritier ex Aiton and *P. inquinans* (Linnaeus) L'Heritier ex Aiton. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Moore, H.E. 1955. Pelargoniums in cultivation, II. *Baileya* 3(2): 70-97. Singer, W. 1958. Geraniums. *Garden Journal* 8(4): 127-129; *op. cit.* 20(3): 76-83 (1970). Van der Walt, J. 1977. *Pelargoniums of Southern Africa*. 50 pp. Cape Town: Purnell.

Gesneriaceae

Perennial herbs or shrubs, or lianas, sometimes epiphytic; rhizomes, stolons or tubers sometimes present. Leaves simple, either opposite and with those of a pair sometimes unequal, or whorled in a basal or cauline rosette, or alternate; usually toothed and petiolate. Inflorescence of axillary, solitary flowers, or few- to many-flowered axillary or terminal racemes, umbels or cymes. Flowers bisexual, mostly irregular; calyx of 4-5 free or united sepals; corolla campanulate, tubular or funnelform, 2-lipped or 5-lobed, the corolla-tube sometimes very short and the whole flower rotate, sometimes gibbous or curved. Stamens 2, 4 or 5 (-7); anthers often connate in pairs. Ovary superior, semi-inferior or inferior, 1-celled. Fruit a 2- to 4-valved, dry or fleshy capsule, or berry; seeds numerous,

minute.

Literature: Elbert, V.F. and G.A. Elbert. 1984. *The Miracle Houseplants: The Gesneriad Family*. 272 pp. New York: Crown Publishers, Inc. Leeuwenberg, A.J.M. 1958. *The Gesneriaceae of Guiana*. *Acta Botanica Neerlandica* 7(3): 291-444. Leeuwenberg, A.J.M. 1984. Gesneriaceae, pp.592-650, in Stoffers, A.L. and J.C. Lindeman, eds., *Flora of Suriname*, Vol.5, Part 1. Leiden: E.J. Brill. Milstein, G. and N. Weaver. 1975. The glorious gesneriads. *Garden Journal* 25(5): 134-140. Moore, H.E. 1957. *African Violets, Gloxinias and Their Relatives*. 323 pp. New York: Macmillan Co. Singer, W. 1966. Gesneriads. *Garden Journal* 16(1): 7-9. Skog, L.E. 1979 ("1978"). Flora of Panama, Part IX. Family 175. Gesneriaceae. *Annals of the Missouri Botanical Garden* 65(3): 783-996.

Key to Genera

1. Fertile stamens 2; style laterally exerted to one side of corolla-mouth; corolla-tube very short to nearly non-existent; anthers with porose dehiscence 5. *Saintpaulia*
1. Fertile stamens 4 or 5 (-7); style central, and not laterally exerted, in the corolla-mouth; corolla-tube prominent; anthers dehiscing by longitudinal slits.
 2. Fertile stamens 5 (-7); corolla-lobes 5-12 6. *Sinningia*
 2. Fertile stamens 4; corolla-lobes 5.
3. Calyx orange-red, the lobes much shorter than the tube; leaves to 30 cm 1. *Chrysothemis*
3. Calyx green, the lobes longer than the tube; leaves to 15 cm.
 4. Stems often rooting at the nodes; calyx-lobes unequal; corolla magenta 4. *Nautilocalyx*
 4. Stems not rooting at the nodes (but stolons or rhizomes present); calyx-lobes equal; corolla red, yellow, lavender or purple.
5. Ovary superior; plant to 20 cm; flowers yellow or red; stolons present; rhizomes absent 2. *Episcia*
5. Ovary inferior; plant to 1 m; flowers purple, with a purple spot in throat; stolons absent; scaly rhizomes present 3. *Gloxinia*

Columnea gloriosa T. Sprague from Costa Rica, a pendent-stemmed epiphyte with flowers 2-lipped, red with a yellow throat and to 8 cm, 4 fertile stamens, green sepals and superior ovary, is sometimes grown as an ornamental in Guyana (Ted Hubbard, pers. comm., 1986). Another epiphyte, *Aeschynanthus radicans* Jack (Synonym: *A. lobbianus* Hort. Veitch ex Hooker), differing from *Columnea gloriosa* in its sepals dark green to blackish-purple and corolla to 5 cm, is sometimes grown in Guyana as an ornamental (Ted Hubbard, pers. comm., 1986); it is native to Java and the Malay Peninsula.

1. *Chrysothemis* Decaisne

Perennial herbs; tubers present. Leaves opposite, those of a pair often equal, toothed. Inflorescence an axillary, few-flowered cyme or umbel. Flowers bisexual, slightly irregular; calyx campanulate, 5-angled or -winged, persistent; corolla cylindrical, 5-lobed, the limb short, the lobes rounded. Stamens 4; filaments connate at the base. Ovary superior. Fruit a capsule.

1. *Chrysothemis pulchella* (J. Donn ex Sims) Decaisne, *Revue Horticole* ser.3, 3: 242 (1849). (Synonym: *Tussacia pulchella* Reichenbach). Herb to 90 cm; tubers to c.3 cm wide. Leaves lanceolate, elliptical or ovate, dentate, to 30 x 12 cm. Calyx campanulate, orange-red, to 2 cm. Corolla yellowish or orange, with reddish-orange stripes in the tube, pilose above, to 3 cm. Fruit ovoid, pubescent.

Range: West Indies; Panama; South America, including Surinam. Grown as an ornamental in Guyana (Ted Hubbard, pers. comm., 1986), in Surinam (Ostendorf, 1962), and in French Guiana (de Granville, 1985A).

Literature: Batcheller, F.N. 1985. *Chrysothemis*. *The Gloxinian* 35(1): 18-20.

2. *Episcia* Martius

Perennial herbs; stolons present. Leaves opposite, toothed. Inflorescence of axillary, solitary flowers, or an axillary, few-flowered cyme. Flowers bisexual, slightly irregular with 2 corolla-lobes smaller; calyx often irregularly 5-lobed; corolla salverform or tubular, 5-lobed, the limb long, the lobes rounded. Stamens 4; filaments free. Ovary superior. Fruit a capsule.

Literature: Batcheller, F.N. 1972. Gesneriads one by one: *Episcia*. *The Gloxinian* 22(3): 5-10; *op. cit.* 22(4): 7-10. Moore, H.E. 1954. The cultivated episcias. *Baileya* 2(3): 69-75. Schulz, P. 1955. Episcias and how to grow them. *Garden Journal* 5(4): 123-125.

Key to Species

- 1. Corolla-tube white, with lavender-blue limb 2. *E. lilacina*
- 1. Corolla-tube red, or yellow with red markings.
 - 2. Calyx-lobes entire; corolla-tube c.2.5 cm, the outside yellowish with red markings below, and reddish above, the inside yellow with red spots (flower also with a white "eye") 1. *E. cupreata*
 - 2. Calyx-lobes toothed at apex; corolla-tube c.3.3 cm, the outside pale rose-red, the inside blood-red (flower also with a white "eye") 3. *E. reptans*

1. *Episcia cupreata* (Hooker) Hanstein, *Linnaea* 34: 340 (1865). FLAME VIOLET. Stoloniferous herb to 20 cm. Leaves elliptical, toothed, pubescent, green or coppery-green, the veins often variegated with pale green or silver, to 12.5 x 7.5 cm. Flowers as described in Key.

Range: Colombia, Venezuela, Brazil. Grown as an ornamental at the nursery of the Botanic Gardens, Georgetown, Guyana; in outdoor planting in Tankarastraat, Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

2. *Episcia lilacina* Hanstein, *Linnaea* 34: 342 (1865-1866). Stoloniferous herb to 20 cm. Leaves elliptical or ovate, toothed, pubescent, green or dark reddish-green, the veins often variegated with pale green or silver, to 10 X 6 cm. Calyx-lobes entire or minutely toothed at apex. Corolla-tube c.3 cm, white, with lavender-blue limb and a yellow "eye".

Range: Costa Rica. Grown as an ornamental in Cayenne and St. Laurent, French

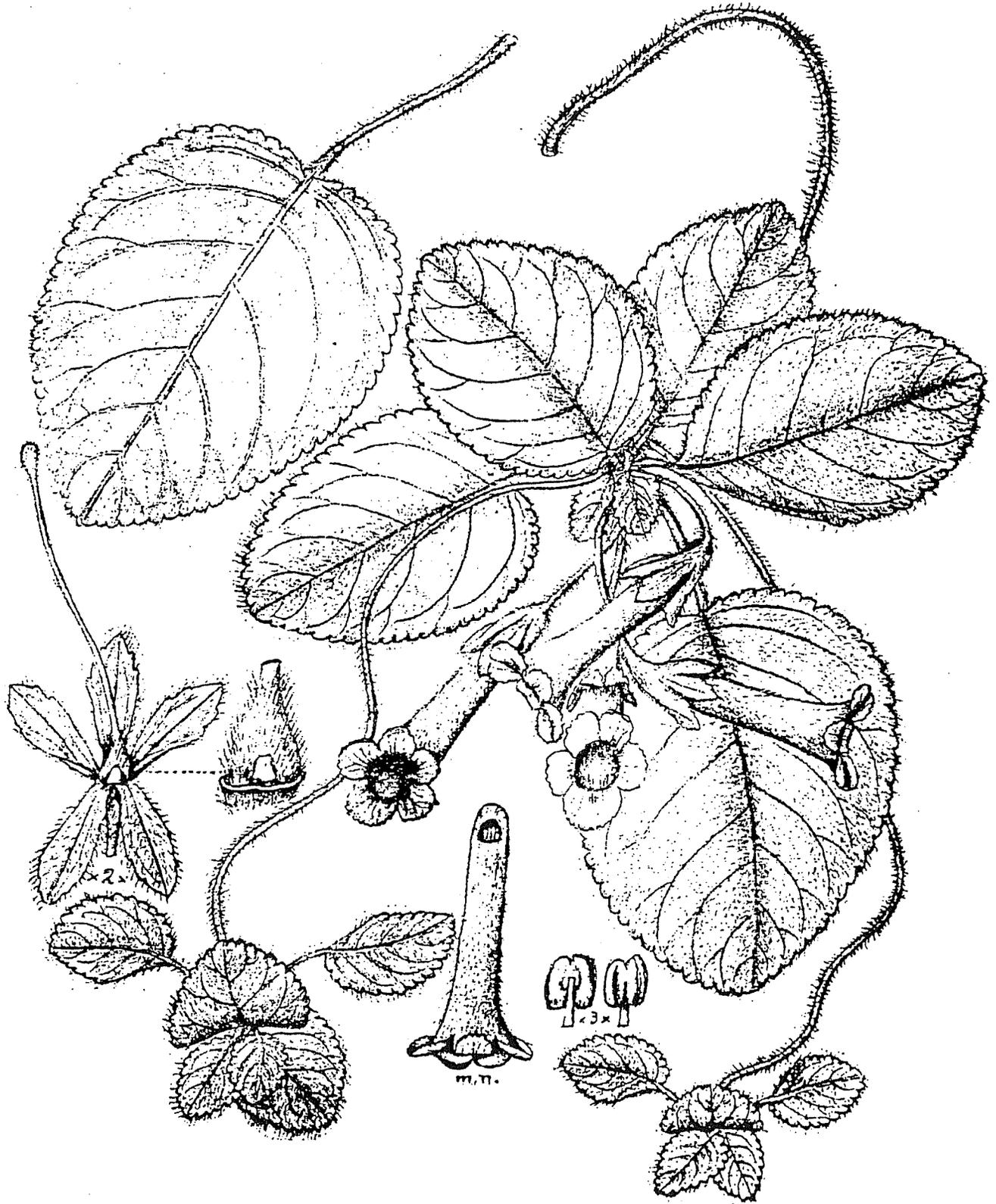


Fig. 111. *Episcia cupreata* (Gesneriaceae).

Guiana (Christian Feuillet, pers. comm., 1990).

3. *Episcia reptans* Martius, *Nova Genera et Species Plantarum* 3(1): 39, t.217 (1829). FLAME VIOLET. Stoloniferous herb to 20 cm. Leaves elliptical, toothed, pubescent, green, the veins often variegated with pale green or silver, to 7.5 x 6.3 cm. Flowers as described in Key.

Range: Northern South America. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

Achimenes longiflora DeCandolle, from Mexico and Central America, was formerly (1911) grown at the Botanic Gardens, Georgetown, Guyana. It has 4 fertile stamens, semi-inferior ovary, and a purple corolla.

3. *Gloxinia* L'Heritier

Perennial herbs; rhizomes present. Leaves opposite, those of a pair equal, toothed. Inflorescence of axillary, solitary flowers, or a terminal raceme. Flowers bisexual, irregular; calyx tubular, 5-lobed; corolla campanulate or funnellform, 5-lobed, the lobes rounded. Stamens 4; anthers connate. Ovary inferior. Fruit an elongated capsule.

1. *Gloxinia perennis* (Linnaeus) Fritsch in Engler & Prantl, *Die Naturlichen Pflanzenfamilien* 4(3b): 174 (1894). CANTERBURY-BELLS GLOXINIA. Herb to 1 m; rhizome scaly. Leaves ovate, crenately toothed, glabrous to sparsely strigose, to c.13 x 9 cm. Inflorescence a terminal raceme. Calyx 10-ribbed, glandular. Corolla campanulate, pubescent outside, glandular inside, gibbous (pouched) at the base, lavender or purple, with a violet spot inside at the base, to 3 cm, the lower lobe incurved and with a toothed margin. Filaments glandular-pubescent.

Range: Northern South America. Grown as an ornamental in Surinam (Ostendorf, 1962) and in French Guiana (de Granville, 1985A).

Literature: Wiehler, H. 1986. *Gloxinia perennis*. *The Gloxinian* 36(2): 7-9.

The violet spot inside the pouch of the flower is a perfume gland which attracts the pollinator, the male euglossine bee of the species *Eulaema meriana*.

An unidentified species of *Kohleria* Regel, a genus which, like *Gloxinia*, has scaly rhizomes and terminal racemes, is grown in French Guiana (de Granville, 1985). The plants have leaves opposite or whorled, ovary two-thirds inferior and orange-red flowers. The species may possibly be *K. hirsuta* (Kunth) Regel, *Flora* 31: 250 (1848), which occurs in Guyana, Surinam, Colombia, Venezuela and Trinidad; cf. Raymond, M. 1968. *Kohleria hirsuta* and *Seemannia latifolia* in cultivation (Gesneriaceae). *Baileya* 16(1): 23-28.

4. *Nautilocalyx* Linden ex Hanstein

Perennial herbs or shrubs; tubers sometimes present; stolons absent. Leaves opposite, those of a pair equal or unequal, toothed. Inflorescence of axillary, solitary or fasciculate



Fig. 112. *Kohleria hirsuta* (Gesneriaceae).

flowers, or few-flowered, bracteate cymes. Flowers bisexual; calyx irregular, shortly tubular, unequally 5-lobed; corolla slightly irregular, tubular, somewhat flattened and with small basal spur, 5-lobed, the lobes rounded. Stamens 4; filaments connate at base; anthers connate in pairs. Ovary superior. Fruit a 2-valved capsule.

Literature: Batcheller, F.N. 1970. Gesneriads one by one: *Nautilocalyx. The Gloxinian* 20(3): 15-19. Batcheller, F.N. 1991. *Nautilocalyx. The Gloxinian* 41(5): 18-21.

1. *Nautilocalyx melittifolius* (Linnaeus) Wiehler, *Phytologia* 27(5): 307 (1973). Herb to 30 cm; stems erect, or decumbent and rooting at the nodes. Leaves ovate, crenate, pubescent, to 15 (-25) x 10 cm. Flowers up to 12 per axillary fascicle, long-pedicellate. Corolla pubescent, slightly curved along the tube, magenta, c.1.8 cm.

Range: West Indies (Lesser Antilles) and French Guiana. Grown as an ornamental in French Guiana (de Granville, 1985A).

5. *Saintpaulia* H. Wendland

Perennial herbs; stems absent or erect to decumbent. Leaves in a basal rosette or the cauline leaves opposite, toothed. Inflorescence of axillary, solitary flowers or few- to many-flowered subumbellate racemes or cymes. Flowers bisexual, irregular; calyx of 5 free, or nearly so, sepals; corolla broadly campanulate, the tube very short, the rotate limb 2-lipped with upper lip 2-lobed, lower lip 3-lobed, the lobes rounded. Stamens 2; anthers connate. Ovary superior; style laterally exerted at one side (either left or right) of corolla-mouth. Fruit a capsule.

Literature: Burt, B.L. 1958. Studies in the Gesneriaceae of the Old World, XV. The genus *Saintpaulia*. *Notes from the Royal Botanical Garden Edinburgh* 22 (6): 547-568; XXV. Additional notes on *Saintpaulia*, op. cit. 25(3): 191-195. Johansson, D.R. 1978. *Saintpaulias* in their natural environment with notes on their present status in Tanzania and Kenya. *Biological Conservation* 14 (1): 45-62.

1. *Saintpaulia ionantha* H. Wendland, *Gartenflora* 42: 321 (1893). KAAPS VIOOLTJE (Surinam); AFRICAN VIOLET. Acaulescent rosette-plant, sometimes developing a short stem in advanced age. Leaves in a basal rosette or subopposite, ovate, cordate or suborbicular, crenate, pubescent, to c.7.5 cm. Inflorescence of up to 10 flowers. Corolla deep purple or violet-blue, pubescent on outer surface, glandular-ciliate on margin, to c.2.5 cm wide, the upper, 2-lobed lip smaller than the lower, 3-lobed lip. Fertile stamens 2; staminodial pegs 2.

Range: Tanzania. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Free, M. 1979. *All About African Violets*. 255 pp. Garden City, New York: Doubleday & Co. Peters, R.M. 1955. So you want to grow African violets. *Garden Journal* 5(4): 118-119. Hill, J. and G. Goodship. 1991. *Saintpaulia*, the far-from-shrinking African violet. *The Garden* (R.H.S.) 116(8): 408-413.

African violets in cultivation are likely to be cultivars resulting from hybrids among

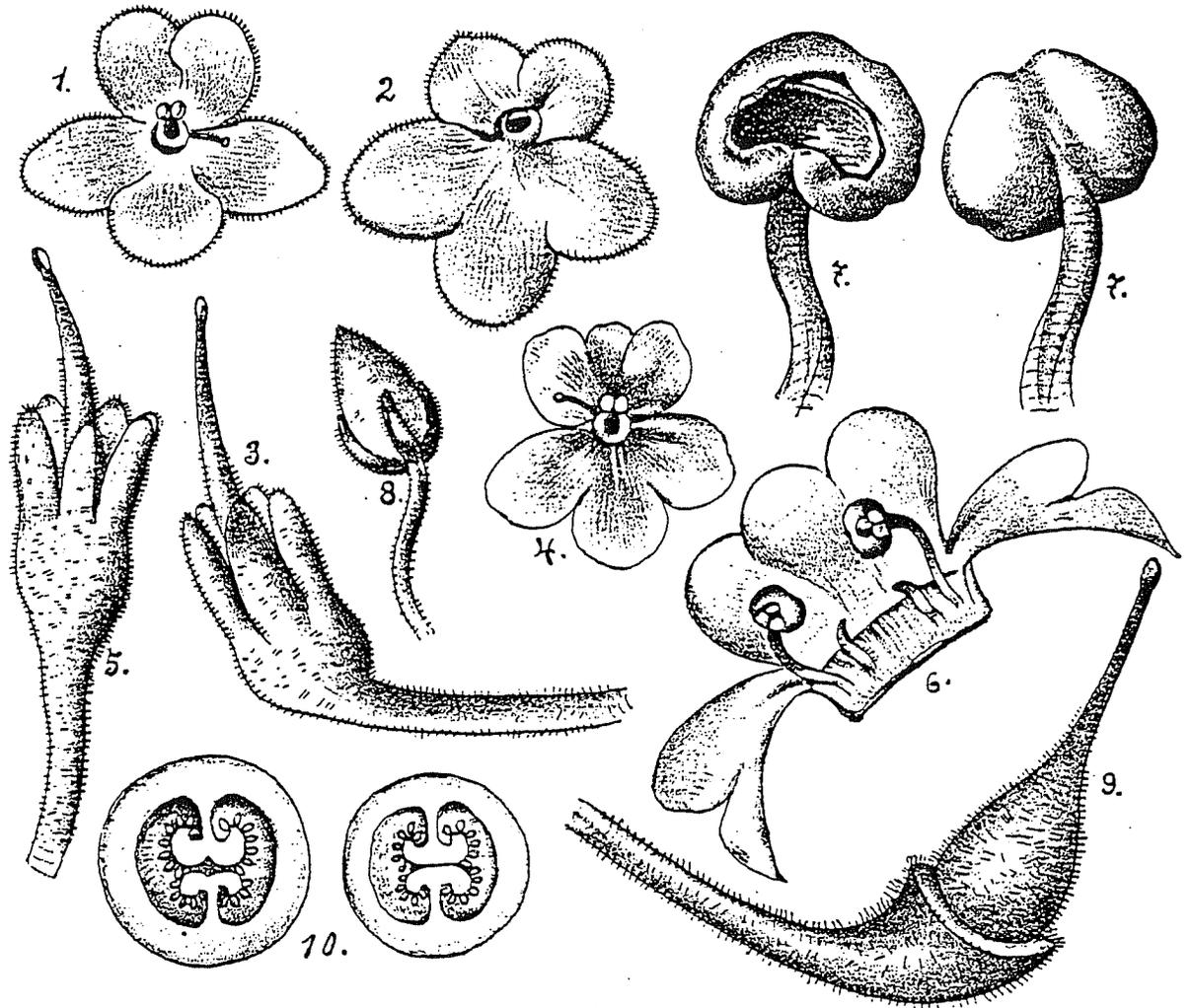


Fig. 113. *Saintpaulia ionantha* (Gesneriaceae).

species. *Streptocarpus rexii* (Bowie ex Hooker) Lindley from South Africa was formerly (1908) cultivated at the Botanic Gardens, Georgetown, Guyana. Like *Saintpaulia* it has 2 stamens and superior ovary, but *Streptocarpus* has a corolla-tube to 7.5 cm in contrast to the very short or nearly non-existent corolla-tube of *Saintpaulia*.

6. *Sinningia* Nees

Perennial herbs or shrubs; tubers and/or rhizomes sometimes present. Leaves opposite or in a basal rosette, toothed. Inflorescence of axillary, solitary, long-pedicellate or -pedunculate flowers, or few-flowered, axillary cymes. Flowers bisexual, irregular (regular in some cultivars); calyx of 5 sepals free nearly to the base; corolla tubular, campanulate or cylindrical, sometimes gibbous, 2-lipped or 5-lobed (-12-lobed in some cultivars), the lobes rounded. Stamens 4 (5-7 in some cultivars); anthers connate. Ovary semi-inferior or superior. Fruit a 2- to 4-valved capsule.

1. *Sinningia speciosa* (Loddiges) Hiern, *Videnskabelige Meddelelser Dansk Naturhistorisk Forening Kjobenhavn* 1877-1878: 91 (1877), Fyfianna Group. FLORIST'S GLOXINIA, GLOXINIA. Perennial herb; stems to 30 cm. Leaves ovate or ovate-oblong, dentate, pubescent, to 20 (-30) x 15 cm. Inflorescence 1- to few-flowered. Calyx densely pubescent, the teeth acuminate. Corolla regular, funnelform, rotate, erect or pendent, 5- to 12-lobed, sparsely pubescent or subglabrous, white, pink, purple or red, with spots and lines deep in the throat, to 7.5 x 12.5 cm. Fertile stamens 5-7.

Range: A peloric mutant of cultivated origin, without a natural range; parent strain from Brazil. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Schulz, P. 1954. Gloxinias - sinningias. *Garden Journal* 4(5): 139-140,150-151.

Hydrangeaceae

Evergreen or deciduous shrubs, sometimes climbing. Leaves opposite, rarely whorled, simple, petiolate. Inflorescence of terminal, compound corymbs or panicles. Flowers bisexual, regular, those situated around edge of the inflorescence often sterile and with 3-5 petaloid, greatly enlarged sepals. Sepals of fertile flowers 4-5, united below in a 4- or 5-toothed calyx-tube; petals 4-5, free. Stamens (8-) 10 (-20). Ovary inferior or half-inferior. Fruit a capsule; seeds numerous, minute.

Literature: Haworth-Booth, M. 1984. *The Hydrangeas*. 217 pp. London: Constable and Company.

1. *Hydrangea* Linnaeus

Characteristics of the family Hydrangeaceae.

1. *Hydrangea macrophylla* (Thunberg) Seringe, in A.P. DeCandolle, *Prodromus Systematis Naturalis Regni Vegetabilis* 4: 15 (1830). HORTENSIA (Surinam); FRENCH HYDRANGEA, COMMON HYDRANGEA, HYDRANGEA. Evergreen or deciduous

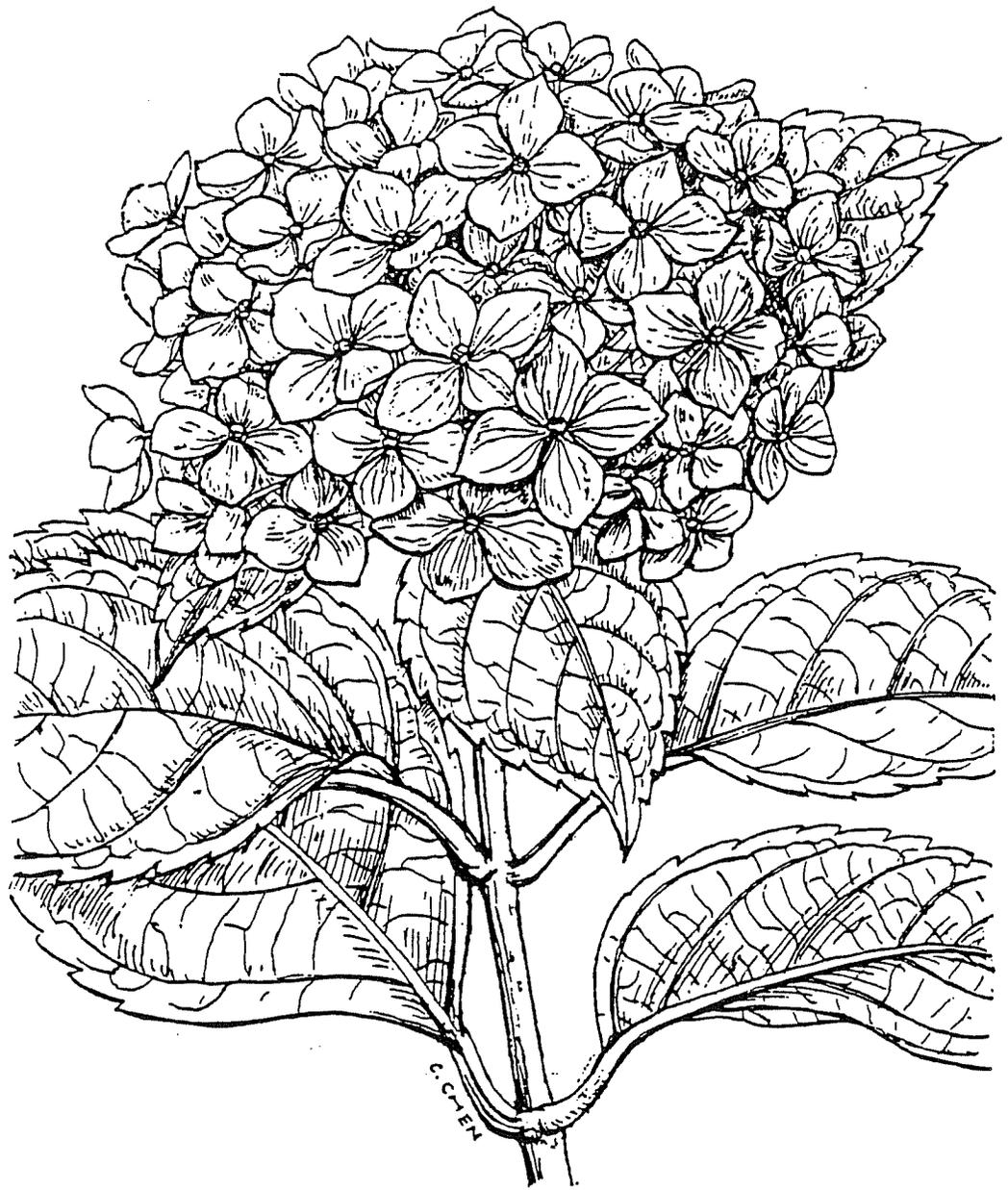


Fig. 114. *Hydrangea macrophylla* (Hydrangeaceae).

shrub to 2.5 m. Leaves ovate, serrate, glabrous, to 22.5 cm. Inflorescence a globular corymb, comprised largely of sterile flowers. Sterile flowers white, pink or blue.

Range: Japan. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana, and occasionally in gardens of Paramaribo, Surinam.

Technically, this plant is referable to *H. macrophylla* subsp. *macrophylla* var. *macrophylla*.

Lamiaceae

Annual or perennial herbs, subshrubs or shrubs; stems square. Leaves opposite, simple, often toothed and glandular-punctate, petiolate or sessile. Inflorescence of flowers in verticillasters (few- to many-flowered whorls) arranged on terminal or axillary racemiform or paniculiform axes, often bracteate. Flowers bisexual, irregular; calyx tubular to campanulate, 4- to 5-lobed, 2-lipped, the upper lip entire or 3- to 4-lobed, the lower lip entire or 3- to 4-lobed. Corolla tubular or cylindrical, sometimes slipper-shaped (calceiform), 4- to 6-lobed, (1-) 2-lipped, the upper lip entire or 2- to 4-lobed, the lower lip 3-lobed, sometimes gibbous or spurred at the base. Stamens 2 or 4, paired when 4; filaments free or united below in a tube; fertile anther-cells (thecae) usually 2, sometimes only 1 and connected to a sterile theca by a long connective. Ovary superior, 2-celled. Fruit of 4, 1-seeded nutlets.

Key to Genera

1. Corolla scarlet red; stamens 2; fertile anther-cell (theca) 1 per stamen 4. *Salvia*
1. Corolla purple, blue or white; stamens 4; fertile anther-cells (thecae) 2 per stamen.
 2. Leaves succulent; corolla white, densely and minutely purple-spotted; stems decumbent, often rooting at the nodes 2. *Plectranthus*
 2. Leaves not succulent; corolla white, blue or purple, not purple-spotted; stems erect, not rooting at the nodes.
3. Stamens included in corolla, connate below in a tube; corolla slipper-shaped; leaves often variegated 4. *Solenostemon*
3. Stamens long-exserted, free; corolla tubular; leaves green 1. *Orthosiphon*

1. *Orthosiphon* Benth

Perennial herbs or subshrubs; stems square. Leaves opposite, toothed, petiolate. Inflorescence of verticillasters in a terminal raceme. Flowers irregular; calyx tubular or campanulate, 2-lipped, the upper lip entire (unlobed), the lower 4-lobed or -toothed. Corolla 2-lipped; upper lip 3- to 4-lobed; lower lip entire. Stamens 4, free, included or long-exserted. Nutlets smooth or rugose.

1. *Orthosiphon aristatus* (Blume) Miquel, *Flora Indiae Batavae* 2: 943 (1858). (Synonyms: *O. grandiflorus* (Blume) Boldingh, *O. stamineus* Benth). KOEMIS KOETJING (Surinamese Malayan); MOUSTACHE DE CHAT (French Guiana). Perennial herb to 2 m. Leaves ovate, rhombic or lanceolate, acute or acuminate, coarsely serrate, pubescent on the veins, glandular-punctate, the blade to 9 x 4.5 cm. Corolla white or lilac, tubular, straight, pubescent, 1-2 cm; flowers sometimes cleistogamous (closed) with corolla only 2-3 mm, not opening, and concealed in the calyx. Stamens long-exserted to 2 cm or more beyond corolla-throat. Nutlets rugose.

Range: Southeast Asia to Malaysia and tropical Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in French Guiana (de Granville, 1985).

Literature: Keng, H. 1978. *Orthosiphon*, pp.379-382, in Steenis, C.G.G.J. van, ed., *Flora*

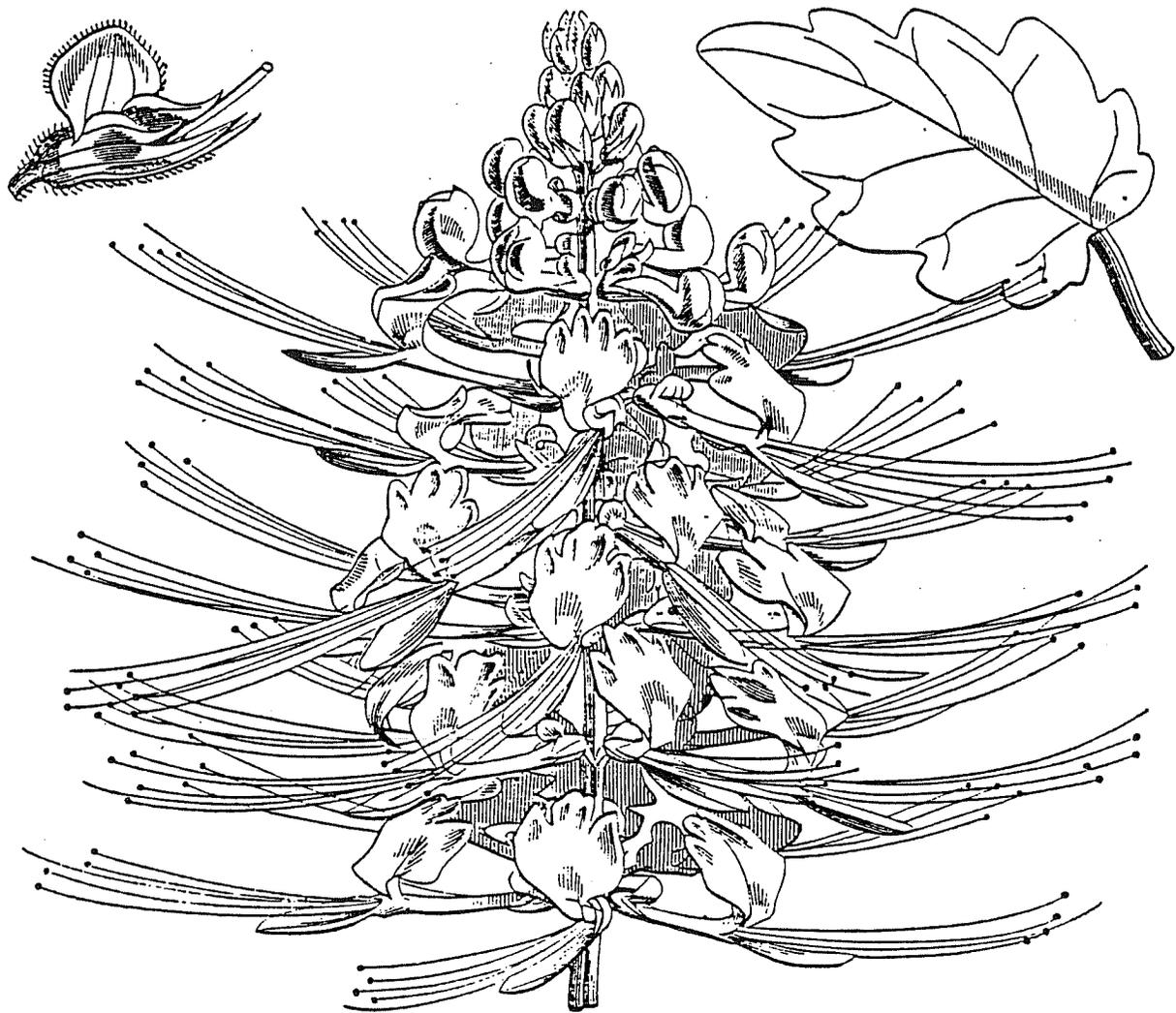


Fig. 115. *Orthosiphon aristatus* (Lamiaceae).

2. *Plectranthus* L'Heritier

Annual or perennial, often succulent, herbs and subshrubs; stems usually square. Leaves opposite, often toothed, petiolate. Inflorescence of verticillasters in a terminal racemose cyme or panicle. Flowers irregular; calyx campanulate, 2-lipped or 5-toothed. Corolla cylindrical, gibbous or spurred at the base, 2-lipped; upper lip (3-) or 4-lobed; lower lip entire (unlobed), boat-shaped. Stamens 4; filaments free or united in a sheath at the base. Nutlets smooth or granulose.

1. *Plectranthus verticillatus* (Linnaeus fil.) Druce, *Botanical Exchange Club of the British Isles* 1916: 640 (1917). (Synonym: *P. nummularius* Briquet). SWEDISH IVY. Perennial herb; stems decumbent, often rooting at the nodes, glabrous or sparsely hairy, to 120 cm. Leaves softly to distinctly succulent, green, suborbicular or triangular, dentate, the blade to c.4 cm. Inflorescence a few-branched panicle to 15 (-22) cm. Corolla white, densely and minutely purple-spotted, to c.1.4 cm.

Range: Southern Africa. Grown as an ornamental on Isle Royale, French Guiana.

Literature: Codd, L.E. 1975. *Plectranthus* (Labiatae) and allied genera in Southern Africa. *Bothalia* 11(4): 371-442.

3. *Salvia* Linnaeus

Annual or perennial herbs, subshrubs or shrubs; stems square. Leaves opposite, simple, sometimes lobed or pinnatisect, toothed, petiolate. Inflorescence of verticillasters in terminal racemes or few-branched panicles. Flowers irregular; calyx tubular, 2-lipped, the upper lip 3-toothed or entire, the lower lip 2-toothed. Corolla cylindrical or tubular; upper lip 1-lobed (simple), emarginate; lower lip 3-lobed, the central lobe sometimes pouched or toothed. Stamens 2; filaments free; fertile anther-cell (theca) 1, separated from a sterile theca by a long, filiform connective; 2 staminodes often present. Nutlets triangular.

Literature: Starr, G. 1985. New World salvias for cultivation in southern Arizona. *Desert Plants* 7(4): 167-171,184-189,204-207.

Key to Species

1. Stems pubescent; leaves pubescent, obtuse; calyx green or purplish, not inflated, 7 mm; corolla to 2.5 cm 1. *S. coccinea*
1. Stems glabrous; leaves glabrous, acuminate; calyx red, inflated, to 2.3 cm; corolla to 4.5 cm 2. *S. splendens*

1. *Salvia coccinea* Jussieu ex J. Murray, *Commentationes Societatis Regiae Scientiarum Gottingensis* 1: 86 (1778). SCARLET SAGE, TEXAS SAGE. Annual or perennial herb or subshrub to 1 m; stems pubescent. Leaves ovate or triangular-ovate, obtuse, crenate-serrate, pubescent, the blade to 7 cm. Calyx not inflated, green or purplish, 7 mm. Corolla to 2.5 cm, scarlet red.

Fig. 116. *Salvia splendens* (Lamiaceae).

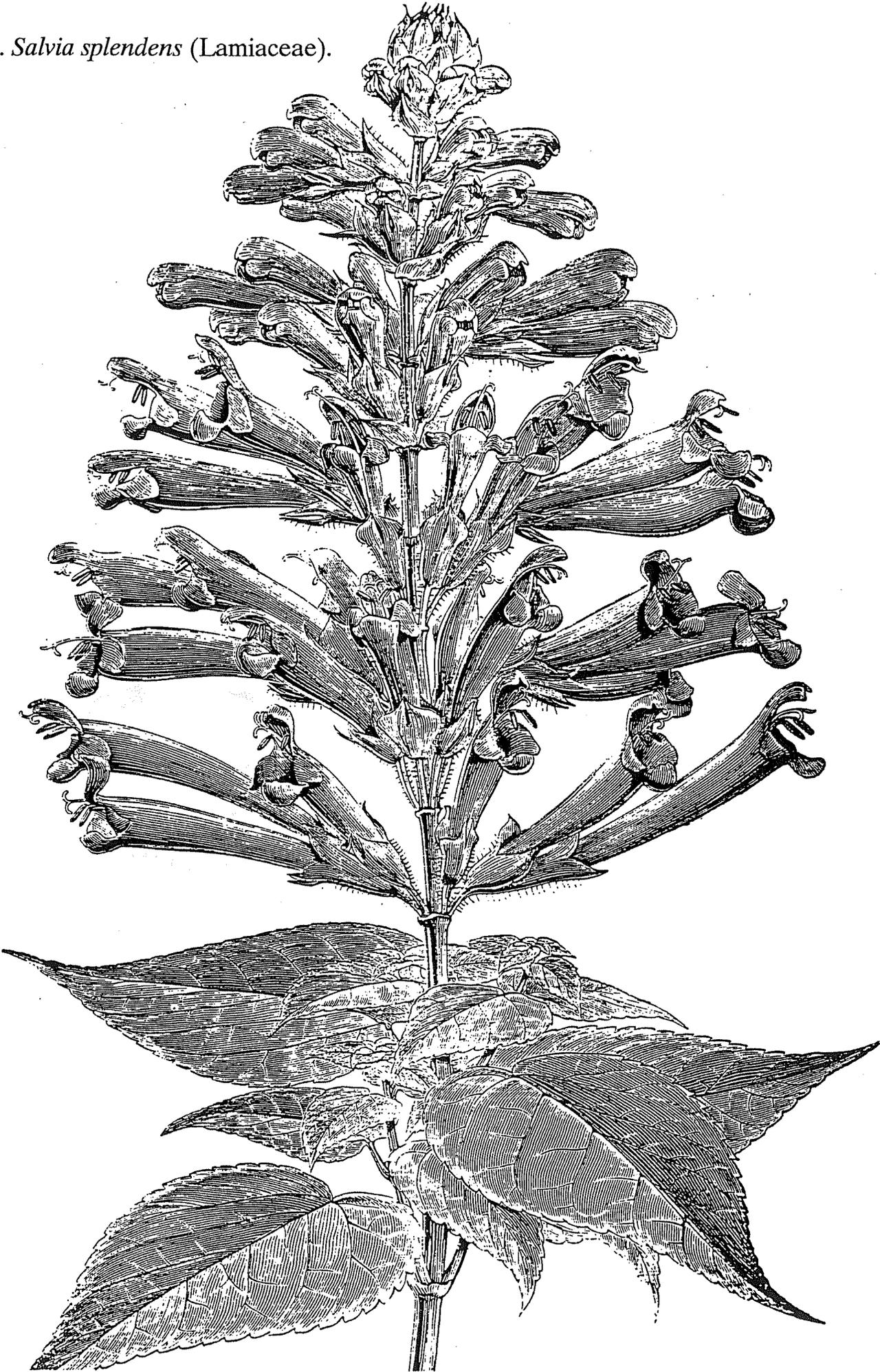




Fig. 117. *Solenostemon scutellarioides* (Lamiaceae).

Range: Southern United States; West Indies; Mexico to Peru. Grown as an ornamental in Surinam (Ostendorf, 1962).

2. *Salvia splendens* F. Sellow ex Nees in Wied-Neuwied, *Reise nach Brasilien* 2: 335 (1821). SCARLET SAGE. Annual herb, or perennial subshrub to 2.4 m; stems glabrous. Leaves ovate, acuminate, crenate-serrate, glabrous, the blade to 12.5 cm. Calyx inflated, red, to 2.3 cm. Corolla to 4.5 cm, scarlet red.

Range: Brazil. Grown as an ornamental in Surinam (Ostendorf, 1962).

An undetermined species with calyx dusty greyish-tomentose and corolla purple is grown at the Promenade Gardens, Georgetown, Guyana.

4. *Solenostemon* Schumacher

Annual or perennial herbs; stems square. Leaves opposite, toothed, glandular-punctate beneath, petiolate or sessile. Inflorescence of verticillasters in a terminal panicle or raceme. Flowers irregular; calyx campanulate, 2-lipped, the upper lip entire (unlobed), the lower lip 4-lobed. Corolla 2-lipped; upper lip 2- to 4-lobed, shorter than the lower lip; lower lip entire or 3-lobed, boat-shaped (navicular). Stamens 4; filaments deflexed, connate below in a tube. Nutlets smooth.

1. *Solenostemon scutellarioides* (Linnaeus) Codd, *Bothalia* 11(4): 439 (1975). (Synonyms: *Coleus blumei* Bentham, *Plectranthus blumei* (Bentham) Launert). JAPANESE FLOWERS (Surinam); COLEUS, COMMON COLEUS, GARDEN COLEUS. Perennial herb or subshrub to 1 m. Leaves ovate, acuminate, crenate or incised, sparsely puberulent above, glabrous below except for the veins, green or often variegated with shades or combinations of green, white, yellow, pink or purple, the blade to 15 x 10 cm; petiole pubescent. Corolla slipper-shaped (calceiform), 2-lipped, the upper lip 3-lobed with a notched central lobe, the lower lip entire, boat-shaped, blue or purplish, to 1 cm.

Range: Eastern Asia (including Java) and Malesia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; in pots at the Esther Stichting near Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

This is the familiar "coleus", which is a complex of numerous forms and hybrid cultivars; in *Hortus Third* (1976) it is collectively referred to as *Coleus x hybridus* A. Voss, *Vilmorin's Blumengartnerei* 1: 844 (1895).

Lecythidaceae

Evergreen or deciduous trees and shrubs. Leaves alternate, simple, sessile or petiolate. Inflorescence of solitary flowers, or of terminal or axillary spikes, racemes or panicles, sometimes cauliflorous. Flowers bisexual, regular or with irregular androecium or both corolla and androecium irregular; sepals 2-6, free or united at base; petals 4-6, free. Stamens numerous, long-exserted, borne on a fleshy disc or ring and on a hooded overarching structure developed from one side of the ring. Ovary inferior, 2- to 6-celled.

Fruit a many-seeded, indehiscent, woody pyxidium, or a 1-seeded drupe.

Literature: Mori, S.A. and G.T. Prance. 1987. A guide to collecting Lecythidaceae. *Annals of the Missouri Botanical Garden* 74(2): 321-330. Mori, S.A. and Collaborators. 1987. The Lecythidaceae of a lowland neotropical forest: La Fumee Mountain, French Guiana. *Memoirs of the New York Botanical Garden* 44: 1-190. Mori, S.A. and G.T. Prance. 1990. Lecythidaceae - Part II. The Zygomorphic-flowered New World Genera (*Couroupita*, *Corythophora*, *Bertholletia*, *Couratari*, *Eschweilera*, & *Lecythis*). *Flora Neotropica Monograph* 21(II): 1-376.

Key to Genera

1. Leaves crowded at the tips of branches, sessile; flowers actinomorphic; petals 4; stamens not borne on a fleshy disc, long-exserted; fruit 4-angled, the mesocarp thick (more than 15 mm); seed 1 1. *Barringtonia*
1. Leaves not crowded at the tips of branches, petiolate; flowers zygomorphic; petals 6; stamens borne on a fleshy disc with hooded, overarching portion developed from one side of disc, not long-exserted; fruit globose, the mesocarp thin (less than 15 mm); seeds numerous.
 2. Trunk buttressed; inflorescence not cauliflorous; sepals 2; petals whitish-yellow; ovary 4-celled; seeds to c.6 cm, not embedded in pulp, the testa bony 2. *Bertholletia*
 2. Trunk not buttressed; inflorescence often cauliflorous; sepals 6; petals red; ovary 6-celled; seeds small, to 4 mm, embedded in pulp, the testa not bony 3. *Couroupita*

1. *Barringtonia* J.R. Forster & G. Forster

Evergreen trees and shrubs. Leaves alternate, opposite, spirally arranged or whorled, crowded at the tips of branches, sessile or shortly petiolate. Inflorescence a terminal or lateral spike or raceme. Flowers bisexual, regular; sepals 2-5, free; petals 4 (-5), free. Stamens very numerous; filaments free, although connate at the very base in a ring of several whorls, and deciduous as a unit, long-exserted. Ovary 2- to 4-celled. Fruit a 1-seeded drupe; seed oily, poisonous.

1. *Barringtonia asiatica* (Linnaeus) Kurz, *Journal of the Asiatic Society of Bengal* 45: 131 (1876). (Synonym: *B. speciosa* J.R. Forster & G. Forster). Shrub, or tree to 21 m. Leaves alternate, progressing to spirally arranged and crowded at the tips of branches, coriaceous, obovate, entire, glabrous, shining, to 45 x 22.5 cm, sessile. Inflorescence an erect raceme to 30 cm; flowers to 17.5 cm wide, with thick pedicels. Sepals 2, elliptical, c.3 cm. Petals 4, oblong-ob lanceolate, white, to c.7.5 x 2 cm. Stamens c.350; filaments in 6 whorls (the inner of staminodes), to 10 cm, reddish or pink above. Ovary 4-celled. Fruit 4-angled, squat-ovoid or square, to 10 x 10 cm, with spongy, fibrous husk; seed c.5 cm.

Range: Madagascar, India, Asia to the Pacific Islands. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982); and in French Guiana (de Granville, 1985).

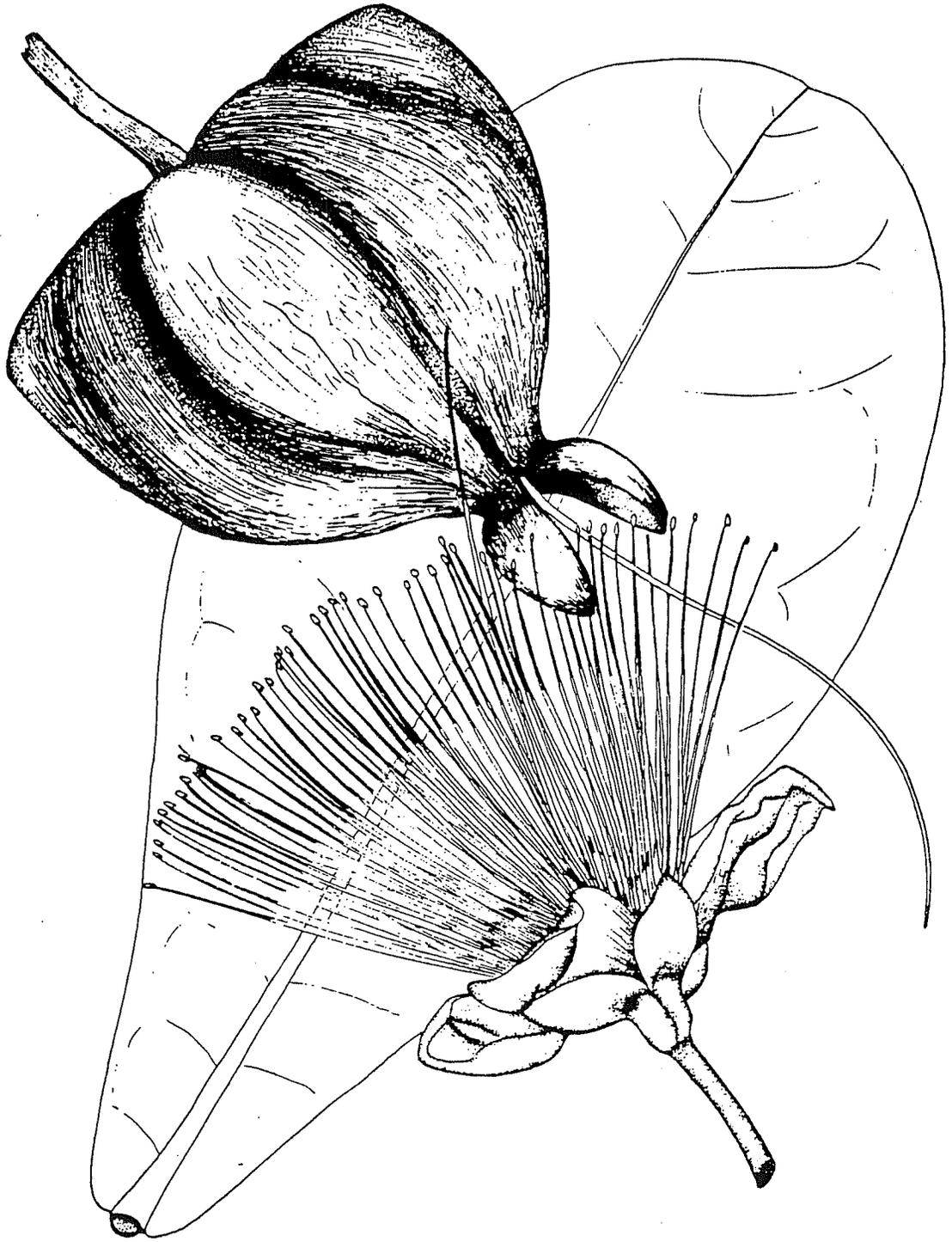


Fig. 118. *Barringtonia asiatica* (Lecythidaceae).

2. *Bertholletia* Humboldt & Bonpland

Evergreen trees. Leaves alternate, simple, petiolate. Inflorescence a terminal, few-branched panicle. Flowers bisexual, with irregular androecium; sepals 2, united at the base; petals 6, free. Stamens numerous; androecium of stamens on a basal disc or ring, and staminodes on the inner surface of a hooded, overarching structure developed from one side of the ring. Ovary 4-celled. Fruit a large, woody, globose, dehiscent pyxidium, but the opening smaller in diameter than the seeds; seeds numerous, large.

1. *Bertholletia excelsa* Humboldt & Bonpland, *Plantae Aequinoctiales* 1(5): 122, t.36 (1807). TONKA (French Guiana); TOKA, TETOKA (Surinamese Carib); INGINOTO (Surinamese Creole); PARA-NOOT (Surinam); BRAZIL NUT. Tree to 45 (-50) m; trunk buttressed, to 4 m wide at base. Leaves oblong, ovate-oblong or elliptical, coriaceous, with undulate margin, glabrous, to 60 cm. Inflorescence to 40 cm. Petals oblong-ovate, whitish-yellow, aromatic. Fruit globose, thick-walled, to 15 cm; seeds 12-24 per fruit, triangular, oily, hard-shelled, to c.6 cm.

Range: Amazonian Venezuela, Colombia, Peru, Brazil, Bolivia, Guyana and Surinam. Grown as an ornamental in French Guiana (de Granville, 1985).

Literature: Forest Resources Division, FAO Forestry Department. 1986. *Bertholletia excelsa* H.B.K., pp.145-154, in *Databook on Endangered Tree and Shrub Species and Provenances*. 524 pp. FAO Forestry Paper No.77. Rome: FAO. Mori, S.A. and G.T. Prance. 1990. Taxonomy, ecology, and economic botany of the Brazil nut (*Bertholletia excelsa* Humb. & Bonpl.: Lecythidaceae). *Advances in Economic Botany* 8: 130-150.

The genus name of the Brazil nut commemorates Count Claude Louis de Berthollet (1748-1822), a French chemist who founded the theory of chemical affinity; he was also the first person to realize the value of chlorine for bleach.

3. *Couroupita* Aublet

Evergreen or deciduous trees. Leaves alternate, simple, petiolate. Inflorescences cauliflorous from the trunk or from larger branches, of panicles or racemes. Flowers bisexual, with irregular androecium; sepals 6, free; petals 6, free, unequal. Stamens numerous; androecium of stamens on a basal disc or ring, and staminodes on the inner surface of a hooded, overarching structure developed from one side of the ring. Ovary 6-celled. Fruit a large, woody, globose, indehiscent structure with woody pericarp; seeds numerous, small, embedded in pulp.

1. *Couroupita guianensis* Aublet, *Histoire des Plantes de la Guiane Francaise* 2: 708, t.282 (1775). (Synonym: *C. guianensis* var. *surinamensis* (Martius) Eyma). BOESMAMI, BOSKALEBAS, KANONSKOGELBOOM (Surinam); ARBRE A BOMBES, BOULET DE CANON, ABRICOT DE SINGE (French Guiana); CANNONBALL TREE. Evergreen or deciduous tree to 24 m; trunk not buttressed, to 90 cm wide. Leaves elliptical, oblong or obovate, entire or subentire, glabrous (except for veins beneath, and petiole), to 30 cm. Inflorescence of racemes from trunk or larger branches, from 0.9-1.8 m and successively elongating to 3.6 (-4.5) m; flowering branches twisted, borne on lower part of

Fig. 119. *Bertholletia excelsa* (Lecythidaceae).

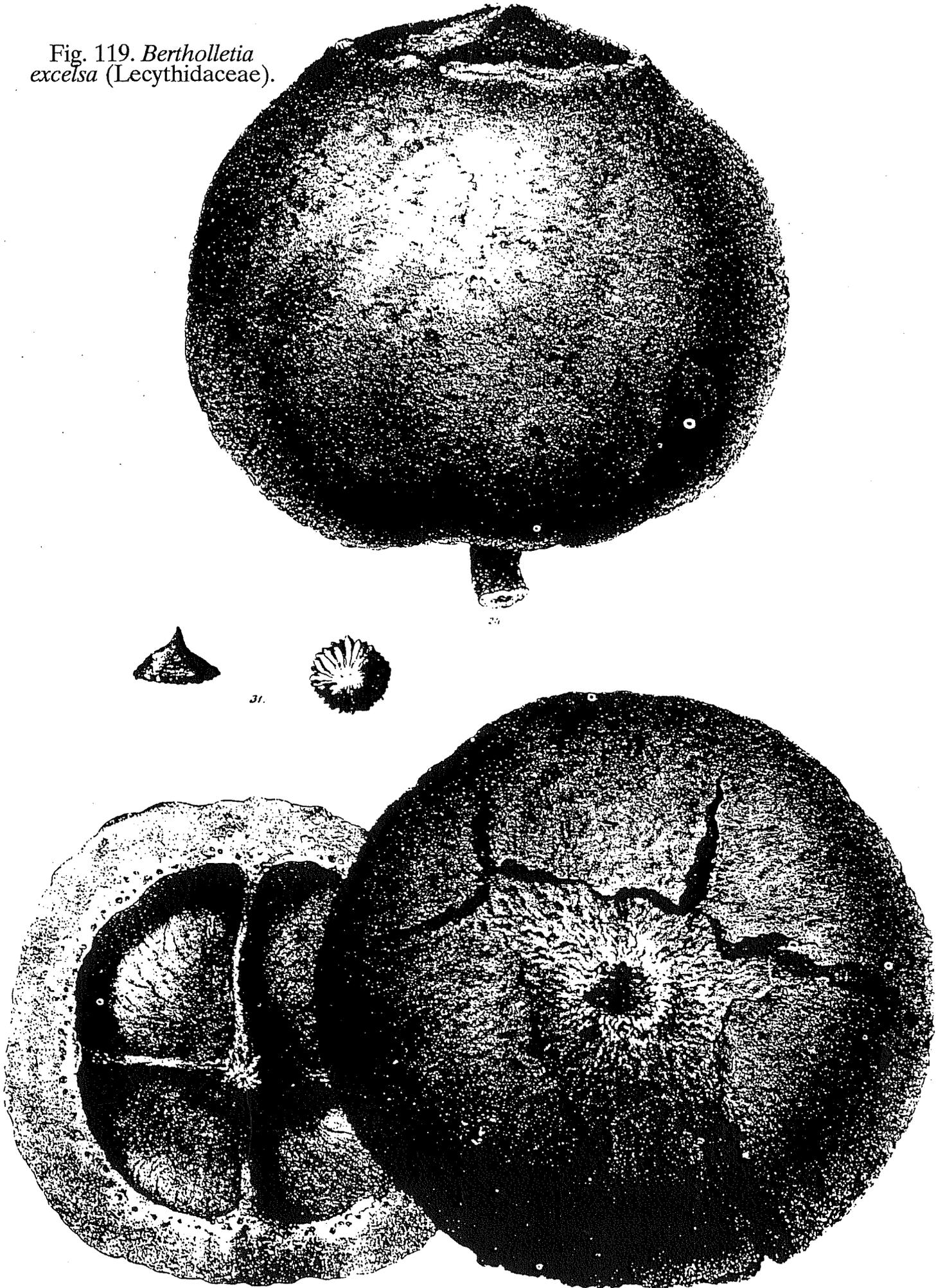




Fig. 120. *Couroupita guianensis* (Lecythidaceae).

trunk, and leafy (sterile) branches borne on upper part of trunk; flowers to 12.5 cm wide. Petals broadly obovate, pinkish-red or orange-red, to c.6.3 cm. Ring stamens white, hood staminodes red. Fruit globose, to 20 cm, with malodorous pulp; seeds ovoid, c.4 mm.

Range: South America, including the three Guianas. Grown as an ornamental at the Promenade Gardens and Botanic Gardens, Georgetown, Guyana; as a roadside planting on University grounds in Paramaribo, Surinam; and in French Guiana (de Granville, 1985A).

Literature: Miranda Schoenberg, M. 1983. Carpology of *Couroupita guianensis* Aublet (Lecythidaceae), I.Morphology and classification. *Acta Biologica Paranaense* (Curitiba, Parana, Brazil) 12(1-4): 43-77; II.Anatomy, *loc. cit.* 79-123; III.Phylogeny, *loc. cit.* 125-135. Yarsick, S., *et al.* 1986. Notes on the floral biology of *Couroupita guianensis* Aubl. (Lecythidaceae). *Annals of the Missouri Botanical Garden* 73(1): 99-101.

Lythraceae

Annual or perennial herbs, and evergreen or deciduous shrubs and trees. Leaves opposite or whorled, simple, petiolate. Inflorescence of solitary, axillary flowers, or a terminal or axillary panicle. Flowers bisexual, regular or irregular; sepals 4-6, united below in a 4- to 6-lobed calyx-tube, often with 3-5 triangular appendages alternating with the lobes; petals 4-6, free, sometimes clawed (narrowed into a petiolule-like "stalk" below the expanded limb). Stamens 4-200. Ovary superior, 2- to 6-celled. Fruit a capsule; seeds numerous.

Key to Genera

1. Petals 4, not clawed; stamens 4 or 8; calyx-lobes 4; branches sometimes modified into thorns
3. *Lawsonia*
1. Petals 6, clawed; stamens 11-200; calyx-lobes 6; branches not thorny.
 2. Stems procumbent, glandular-pubescent with purplish hairs; calyx-tube gibbous at the base; petals not crisped; stamens 11
1. *Cuphea*
 2. Stems erect, not glandular; calyx-tube not gibbous; petals often crisped; stamens 15-200
2. *Lagerstroemia*

1. *Cuphea* P. Browne

Annual or perennial herbs, or shrubs. Leaves opposite or whorled, simple, petiolate. Inflorescence of solitary, axillary flowers, or in terminal or axillary fascicles or racemes. Flowers bisexual, irregular; calyx-tube 6-lobed, often gibbous or spurred at the base, the lobes sometimes unequal, with appendages present or absent; petals usually 6, rarely fewer or absent, free, clawed. Stamens 11, in 2 unequal sets. Fruit a capsule; seeds numerous, flattened.

1. *Cuphea procumbens* Cavanilles, *Icones et Descriptiones Plantarum* 4: 55, t.380 (1798). Annual herb to c.45 cm; stems procumbent, glandular-pubescent with purplish hairs. Leaves opposite, lanceolate, acuminate, entire, pubescent, to 7.5 cm. Inflorescence of solitary, axillary, deflexed flowers. Calyx-tube with purple veins, slightly inflated, glandular-pubescent, without appendages, c.2.8 cm. Petals 6, pinkish-purple, unequal (upper 2 larger



Fig. 121. *Lawsonia inermis* (Lythraceae).

than lower 4). Longer stamens pilose.

Range: Mexico. Grown as an ornamental in Surinam (Ostendorf, 1962).

2. *Lagerstroemia* Linnaeus

Evergreen or deciduous trees and shrubs. Leaves usually opposite, sometimes alternate or whorled, simple, petiolate. Inflorescence a terminal or axillary panicle. Flowers bisexual, regular; calyx-tube (5-) 6 (9-) -lobed, with appendages present; petals 6 (-9), free, often clawed and crisped. Stamens numerous (15-200). Fruit a capsule; seeds elongated, winged.

Literature: Egolf, D.R. and A.O. Andrick. 1978. *The Lagerstroemia Handbook/Checklist*. 72 pp. American Association of Botanical Gardens and Arboreta, Inc. Furtado, C.X. and M. Srisuko. 1969. A revision of *Lagerstroemia* L. (Lythraceae). *Gardens' Bulletin Singapore* 24: 185-335.

Key to Species

1. Petal-blade oblong, undulate but not crisped; ovary pubescent 1. *L. floribunda*
1. Petal-blade suborbicular, undulate and moderately to strongly crisped; ovary glabrous.
 2. Tree to c.9 m; leaves to 10 cm; petals to c.1.8 cm, strongly crisped; stamens 36-42; calyx glabrous 2. *L. indica*
 2. Tree to 30 m; leaves to 19.5 cm or more; petals to 3 cm, moderately crisped; stamens 130-200; calyx pubescent 3. *L. speciosa*

1. *Lagerstroemia floribunda* Jack, *Malayan Miscellanies* 1: 38 (1820-1822). FRANSMANKOEGROE (Surinam). Tree to 10 m. Leaves oblong or elliptic-oblong, glabrous or sparsely pubescent, to 23 cm. Calyx-tube ribbed, tomentose. Petals 6, pink or white, with undulate margin, to 1.6 cm. Stamens 48-70. Ovary pubescent.

Range: Southeast Asia. Grown as an ornamental at the Palmentuin in Paramaribo, Surinam.

2. *Lagerstroemia indica* Linnaeus, *Amoenitates Academicae* 4: 137 (1759). JAPONICA (Surinam); CRAPE MYRTLE. Deciduous shrub, or tree to 9 m; bark peeling. Leaves oblong, obovate or suborbicular, glabrous, or pubescent on the veins beneath, to 10 cm. Calyx-tube not ribbed, glabrous. Petals 6, pink, lavender or white, with undulate margin, strongly crisped, to c.1.8 cm. Stamens 36-42. Ovary glabrous.

Range: Himalayas to China and Japan. Grown as an ornamental at the Promenade Gardens, Botanic Gardens, and British Embassy grounds in Georgetown, Guyana; in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam; and at the Jardin Botanique and elsewhere in Cayenne, French Guiana.

3. *Lagerstroemia speciosa* (Linnaeus) Persoon, *Synopsis Plantarum* 2: 72 (1807). (Synonym: *L. flos-reginae* Retzius). KING OF FLOWERS (Guyana); FRANSMANKOEGROE (Surinamese Creole); BOENGOER (Surinamese Malayan); WOENGOE (Surinamese Javan); QUEEN CRAPE MYRTLE. Deciduous tree to 30 m;



Fig. 122. *Lagerstroemia indica* (Lythraceae).



Fig. 123. *Lagerstroemia speciosa* (Lythraceae).

bark peeling. Leaves elliptical, oblong or ovate, glabrous, coriaceous, to 19.5 cm or more. Calyx-tube 12-ribbed, pubescent. Petals 6, pink or purple, with undulate margin, moderately crisped, to 3 cm. Stamens 130-200. Ovary glabrous.

Range: India to Southeast Asia and Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982); at the Cultuurtuin, Paramaribo (Teunissen & Lande, 1980) and elsewhere in Surinam (Ostendorf, 1962); and in French Guiana (de Granville, 1985A).

3. *Lawsonia* Linnaeus

Evergreen, sometimes armed, shrubs or small trees. Leaves opposite, simple, petiolate. Inflorescence of terminal and axillary panicles. Flowers bisexual, regular; calyx-tube 4-lobed; petals 4, free, crisped, not clawed, the margin undulate. Stamens 4 or 8 (12). Fruit an irregularly dehiscent capsule; seeds numerous, 4-angled.

1. *Lawsonia inermis* Linnaeus, *Species Plantarum* 349 (1753). RESEDA (Surinam); MEHDI (Surinamese Hindu); HENNA. Shrub or small tree to 6 m; branches, under poor growth conditions, sometimes modified into thorns. Leaves lanceolate, elliptical or obovate, entire, glabrous, to 5 cm. Petals cream, pink or red, fragrant, c.1 cm. Fruit to 6 mm wide; seeds reddish-brown, c.1.5 cm.

Range: North Africa and Southwest Asia to India. Grown as an ornamental at the Promenade Gardens and Botanic Gardens, Georgetown, Guyana. Cultivated as a useful plant, for the orange dye (henna) yielded by the crushed leaves, in Surinam (Ostendorf, 1962) and in French Guiana (Lemee 3: 111. 1953).

Malpighiaceae

Evergreen trees and shrubs, sometimes scrambling. Leaves opposite, simple, often glandular towards the base, petiolate. Inflorescence a terminal or axillary raceme, panicle, corymb or umbel. Flowers bisexual, regular or somewhat irregular; sepals 5, free, sometimes glandular; petals 5, free, clawed, sometimes fringed. Stamens 10. Ovary superior, 3-celled. Fruit a capsule, drupe, berry or samara.

Key to Genera

1. Petals yellow, not fringed; calyx eglandular; leaves 2-glandular at base of blade; fruit a capsule 1. *Galphimia*
1. Petals white or pink, fringed; calyx 6- to 10-glandular; leaves eglandular; fruit a drupe 2. *Malpighia*

1. *Galphimia* Cavanilles

Evergreen shrubs and trees. Leaves opposite, simple, 2-glandular near the base, petiolate. Inflorescence a terminal or axillary raceme, panicle or corymb. Flowers bisexual; sepals 5, glandular; petals 5, clawed. Stamens 10. Fruit a 3-sectioned capsule.

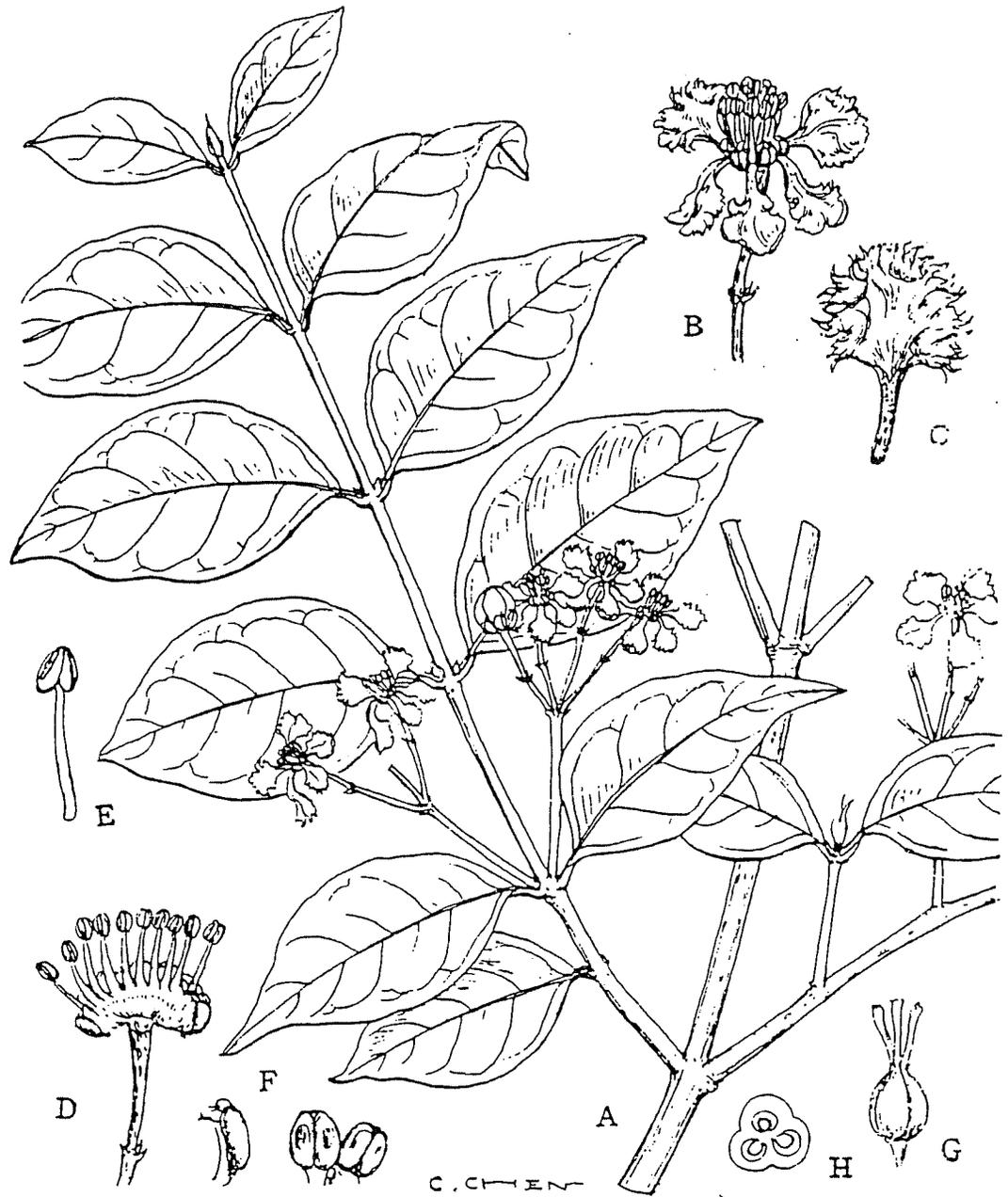


Fig. 124. *Malpighia glabra* (Malpighiaceae).

1. *Galphimia gracilis* Bartling, *Linnaea* 13: 552 (1839). (Synonyms: *G. glauca* sensu auth., non Cavanilles; *Thryallis glauca* sensu auth., non O. Kuntze). KLEINE GOUDENREGEN (Surinam). Shrub or tree to 2.5-3 m. Leaves oblong, elliptical, lanceolate or ovate, with 2 glands near the base. Calyx-glands absent. Petals yellow, the margin not fringed. Fruit 3-lobed.

Range: Mexico, Central America and northwestern South America. Grown as an ornamental at the Promenade Gardens and Botanic Gardens, Georgetown, Guyana.

2. *Malpighia* Linnaeus

Evergreen shrubs and trees. Leaves opposite, simple, shortly petiolate. Inflorescence an axillary umbel, corymb or panicle. Flowers bisexual; sepals 5, with 6-10 glands on the calyx; petals 5, clawed. Stamens 10. Fruit a 1- to 3-seeded drupe.

Key to Species

- 1. Leaves spinose-dentate; shrub to 1 m, the branches often prostrate; leaves to 2.5 cm
1. *M. coccigera*
- 1. Leaves entire; shrub to 4.8 m, the branches erect; leaves to 10 cm
2. *M. glabra*

1. *Malpighia coccigera* Linnaeus, *Species Plantarum* 426 (1753). SINGAPORE HOLLY. Shrub to 1 m, the branches often prostrate. Leaves orbicular, obovate, or broadly elliptical, spinose-dentate, to 2.5 cm. Calyx-glands 6-10. Petals white or pink, with fringed margin. Fruit subglobose, red.

Range: West Indies. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana.

2. *Malpighia glabra* Linnaeus, *Species Plantarum* 425 (1753). RED CHERRY (Surinam); BARBADOS CHERRY. Shrub to 4.8 m, the branches erect. Leaves ovate or elliptic-lanceolate, entire, not spiny, to 10 cm. Calyx-glands 10. Petals pink, with fringed margin. Fruit subglobose, red.

Range: West Indies; Mexico to northern South America. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana.

Malvaceae

Trees, shrubs and herbs. Leaves alternate, simple, lobed or unlobed, petiolate. Inflorescence usually of axillary, solitary flowers; pedicels sometimes jointed. Flowers bisexual, regular, subtended by a whorl of 3-12 prominent, sepal-like, involucre bracts (involucre, epicalyx) at base of the true calyx; sepals 5, united in an entire to 5-toothed, sometimes cupular, calyx; petals 5, free for most or all of their length. Stamens numerous, united in a filament-tube surrounding the style. Ovary superior, 3- to 6-celled; style unbranched, or 5- or 10-branched (stigmas coherent as 5 longitudinal grooves, or 5 or 10 and free). Fruit a dehiscent, membranous or woody capsule, or a schizocarp; seeds often pubescent.



Fig. 125. *Gossypium barbadense* (Malvaceae).

Key to Genera

1. Involucral bracts 3; style unbranched (stigmas coherent); petals yellow with a red basal spot.
 2. Leaves 3- to 5-lobed, glandular-punctate; involucral bracts lacerate, persistent; seeds with a coma of long, woolly hair; fruit dehiscent 1. *Gossypium*
 2. Leaves unlobed, epunctate; involucral bracts entire, caducous; seeds not comose; fruit indehiscent 4. *Thespesia*
1. Involucral bracts 6-12; style 5- or 10-branched (stigmas 5 or 10, free); petals red, pink, salmon, white or yellow, sometimes (*Hibiscus*) with a basal spot.
3. Flowers open, with spreading petals; stigmas 5; fruit a capsule; flowers any of various colors 2. *Hibiscus*
3. Flowers closed, with contorted petals; stigmas 10; fruit a schizocarp; flowers red 3. *Malvaviscus*

1. *Gossypium* Linnaeus

Shrubs or subshrubs. Leaves alternate, simple, usually palmately lobed and glandular-punctate, petiolate. Inflorescence of axillary, solitary flowers, or flowers few together. Flowers bisexual, regular, subtended by a whorl of 3 prominent, leafy, lacerate involucral bracts (involucel, epicalyx) at base of the true calyx; sepals 5, united in an entire to 5-toothed, cupular calyx; petals 5, free. Stamens numerous, united in a filament-tube surrounding the style. Ovary 3- to 5-celled; style unbranched (stigmas coherent as 5 longitudinal grooves). Fruit a membranous or woody capsule; seeds 2 to several per cell, often with a coma of long, woolly hair.

Literature: Fryxell, P.A. 1979. *The Natural History of the Cotton Tribe (Malvaceae, Tribe Gossypieae)*. 245 pp. College Station, Texas and London, England: Texas A & M University Press.

1. *Gossypium barbadense* Linnaeus, *Species Plantarum* 693 (1753). SEA-ISLAND KATOEN, KATOEN, WIT KATOEN, SIRI KATOEN (Surinam), JAHO KHALEMEROE (Surinamese Arawak), MAOELOE (Surinamese Carib); SEA ISLAND COTTON, TREE COTTON. Shrub to 5 m. Leaves 3- to 5-lobed, glabrous or pubescent, minutely glandular-punctate, with entire margin, to 16 cm. Involucral bracts 3, ovate, lacerate with 7-15 teeth, c.5 cm. Calyx densely glandular-punctate. Petals yellow, with red spot at the base, to 9 cm. Ovary 3- or 4-celled. Capsule pitted, to 7 cm; seeds numerous, black, with long, white, woolly hair (lint).

Range: Tropical America. Occasionally grown as an ornamental at the Esther Stichting near Paramaribo, as well as in a roadside yard near Waterland, Surinam; and for decoration in French Guiana (de Granville, 1985A).

2. *Hibiscus* Linnaeus

Herbs, shrubs or trees, often stellate-pubescent. Leaves alternate, simple, often lobed, petiolate. Inflorescence of axillary, solitary flowers, sometimes clustered near the tips of

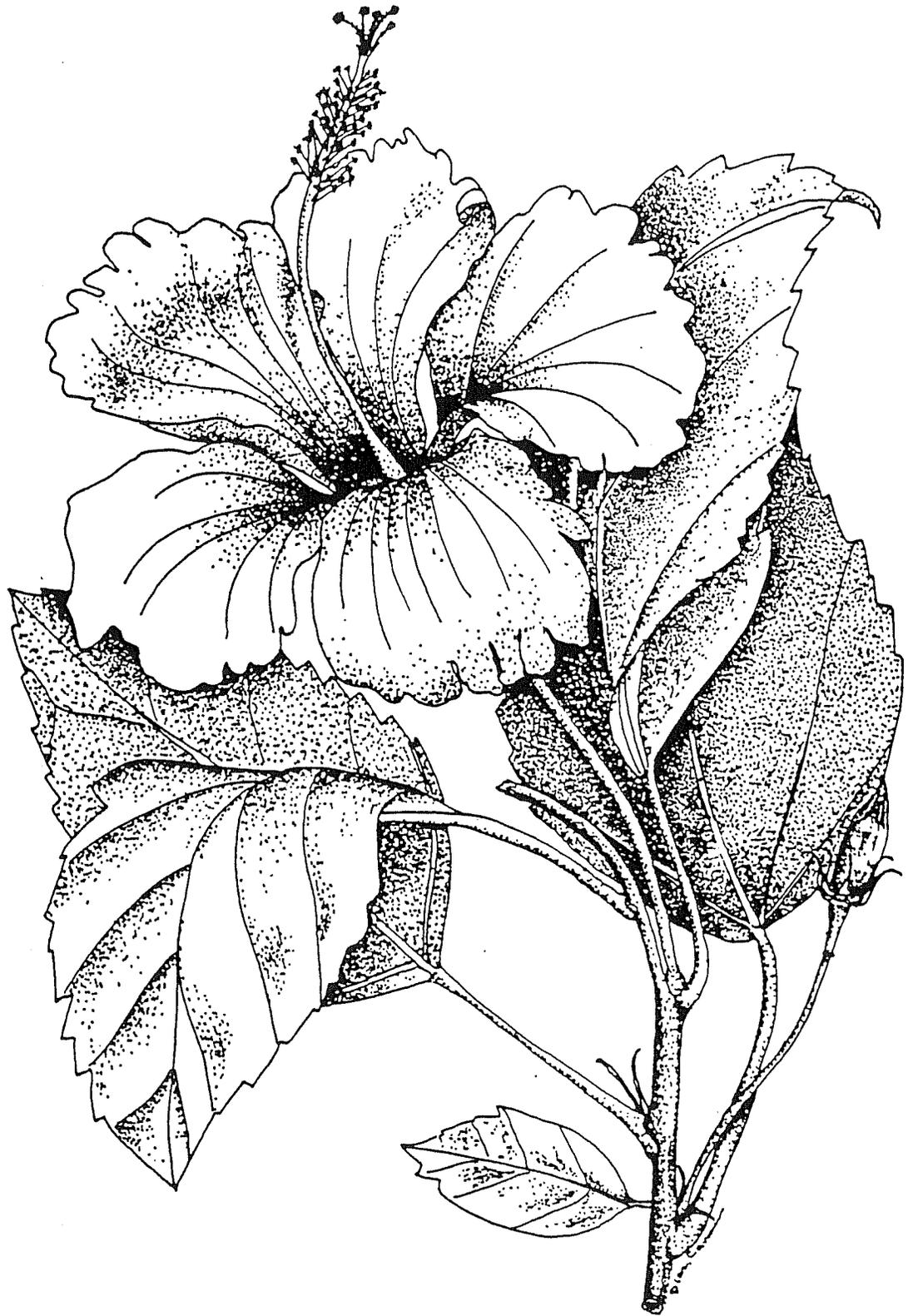


Fig. 126. *Hibiscus rosa-sinensis* (Malvaceae).

branches. Flowers bisexual, regular, usually subtended by a whorl of several prominent, sepal-like involucral bracts (involucel, epicalyx) at base of the true calyx, often long-pedicellate; pedicel sometimes jointed; sepals 5, free or united in a (3-) 5-toothed or -lobed calyx; petals 5, free for most of their length. Stamens numerous, united in a filament-tube surrounding the style. Ovary 5-celled; style 5-branched (stigmas 5). Fruit a 5-celled capsule; seeds 3 or more per cell.

Literature: Bates, D.M. 1965. Notes on the cultivated Malvaceae, 1. *Hibiscus*. *Baileya* 13(2,3): 56-130. Chin, H.F. 1986. *The Hibiscus: Queen of Tropical Flowers*. 151 pp. Kuala Lumpur, Malaysia: Tropical Press.

Key to Species

1. Involucral bracts rudimentary, to 2 mm; calyx 3-lobed; petals strongly recurved, lacinate into numerous divisions; flowers pendent 4. *H. schizopetalus*
1. Involucral bracts prominent, 1 cm or more; calyx 5-lobed; petals straight, entire or slightly toothed; flowers erect or patent.
 2. Leaves unlobed, cordate at the base, white-tomentose beneath; involucral bracts united to more than 1/2 their length 6. *H. tiliaceus*
 2. Leaves lobed or unlobed, cuneate at the base (or if cordate, then lobed), glabrous beneath; involucral bracts free.
3. Herb; sepals becoming red, fleshy and inflated at maturity; petals yellow with brownish-red base 3. *H. sabdariffa*
3. Shrub or tree; sepals green, not becoming fleshy; petals white, pink, red, purplish or yellow.
 4. Leaves unlobed; staminal column exerted; seeds glabrous 2. *H. rosa-sinensis*
 4. Leaves 3- to 7-lobed; staminal column included; seeds pubescent.
5. Leaves 5- to 7-lobed, pubescent; flowers clustered near the tips of branches 1. *H. mutabilis*
5. Leaves 3-lobed, glabrous; flowers solitary, axillary 5. *H. syriacus*

1. *Hibiscus mutabilis* Linnaeus, *Species Plantarum* 694 (1753). COTTON ROSE. Shrub or tree to 5 m. Leaves 5- or 7-lobed, cordate at the base, serrate, pubescent, to 15 cm. Flowers clustered near the tips of branches. Involucral bracts 8-12, free, to 2.5 cm. Petals white or pink, turning to red, to 8 cm. Staminal column included. Seeds with a line of long hair.

Range: South China. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982).

2. *Hibiscus rosa-sinensis* Linnaeus, *Species Plantarum* 694 (1753). HIBISCUS (French Guiana); MATROZENROOS (Surinam); CHINESE HIBISCUS. Shrub or tree to 4 (-8) m. Leaves unlobed, ovate, serrate, glabrous, to 15 cm. Flowers solitary, axillary. Involucral bracts 6-9, free, to 1.6 cm. Flowers single or double. Calyx 5-lobed, or split above into one 3-lobed and one 2-lobed portion. Petals white, cream, yellow, salmon, pink or red, often with a darker basal spot inside, to 9 (-12.5) cm. Staminal column exerted. Seeds glabrous.

Range: Tropical Asia. Grown as an ornamental in Georgetown and elsewhere in Guyana; in numerous places in Paramaribo and elsewhere in Surinam; and in Cayenne and



Fig. 127. *Hibiscus sabdariffa* (Malvaceae).

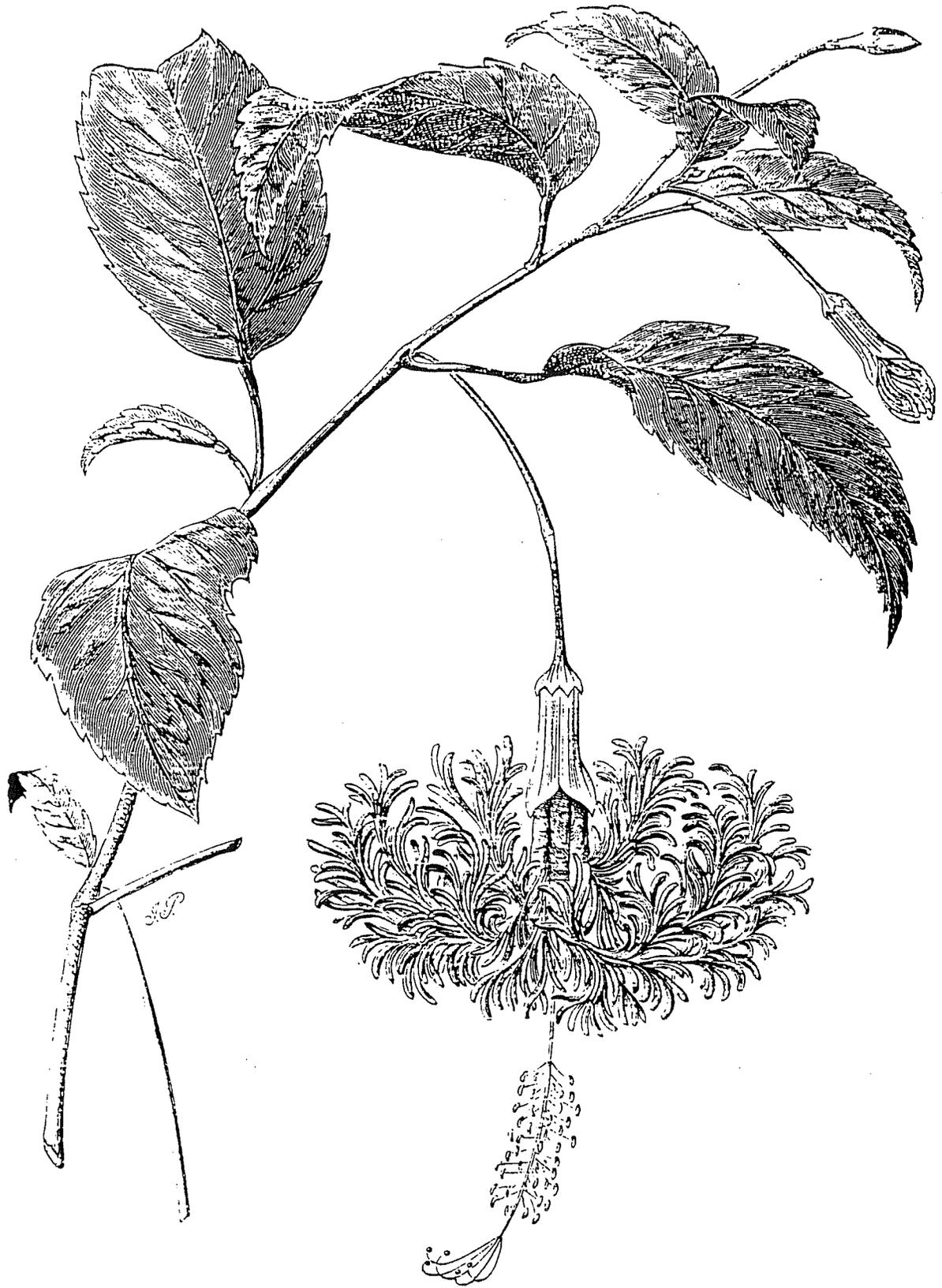


Fig. 128. *Hibiscus schizopetalus* (Malvaceae).

various settlements in French Guiana.

Literature: Zareski, N.L. 1977. The care and culture of *Hibiscus rosa-sinensis*. *Fairchild Tropical Garden Bulletin* 32(4): 9-13.

To demonstrate the variation in this species, Mr. Geert Eerkens of Commewijne, Surinam grows approximately 36 cultivars of Chinese hibiscus.

3. *Hibiscus sabdariffa* Linnaeus, *Species Plantarum* 978 (1753). ZURING (Surinam); SORREL, ROSELLE. Annual or perennial herb to 2 (-5) m; stem purplish. Leaves unlobed near bottom of plant, to 3- to 7-lobed near top of plant, serrate, glabrous, to 15 cm. Flowers solitary or few together, axillary. Involucral bracts 9-11, free, to 1.6 cm. Calyx, at maturity, elongating to 3.5 cm, becoming red, inflated, fleshy and succulent. Petals yellow with brownish-red base inside, to 5 cm. Staminal column included. Seeds puberulent.

Range: Tropical Africa. Grown as an ornamental at the Botanic Gardens, Georgetown, and in front gardens near Georgetown, Guyana.

When crushed, the succulent sepals yield a pink juice which is mixed with water for a cool, refreshing drink that tastes like strawberries (*Fragaria*).

4. *Hibiscus schizopetalus* (Dyer) J.D. Hooker, *Curtis's Botanical Magazine* 106: t.6524 (1880). (Synonym: *H. rosa-sinensis* Linnaeus, var. *schizopetalus* Dyer). ANGA-LAMPOE (Surinamese Creole); HIBISCUS (French Guiana); FRINGED HIBISCUS, JAPANESE HIBISCUS. Shrub or tree to 4.5 m. Leaves unlobed, ovate, serrate, glabrous, to 12.5 cm. Flowers solitary, axillary, pendent. Involucral bracts 5-8, free, rudimentary, 1-2 mm. Calyx-tube 3-lobed. Petals strongly recurved, lacinate into numerous divisions, red or orange-red, to 7 cm. Staminal column exerted. Seeds glabrous.

Range: Tropical East Africa. Grown as an ornamental at the Palmentuin and on hotel grounds in Paramaribo as well as elsewhere in Surinam; and in Cayenne, Isle Royale and elsewhere in French Guiana.

Literature: Cheek, M. 1989. Lectotypification and authorship of *Hibiscus schizopetalus* (Malvaceae). *Taxon* 38(2): 261-263.

Hibiscus schizopetalus cv. Pagoda has the apex of the staminal column proliferous into an assemblage of massed petals which extends beyond the regular perianth of the flower; it is grown on Torarica hotel grounds in Paramaribo, Surinam. This "flower-within-a-flower" phenomenon is observable also in specimens which closely resemble (by means of a 5-lobed calyx) or seemingly intergrade with *H. rosa-sinensis*, and are cultivated on Torarica hotel grounds.

5. *Hibiscus syriacus* Linnaeus, *Species Plantarum* 695 (1753). ROSE OF SHARON. Deciduous shrub or tree to 4 (-6) m. Leaves 3-lobed, serrate, glabrous, to 7.5 cm. Flowers solitary, axillary. Involucral bracts 6-8, free, to 1.5 cm. Petals white, reddish or purplish, to 7.5 cm. Staminal column included. Seeds crested-pubescent.

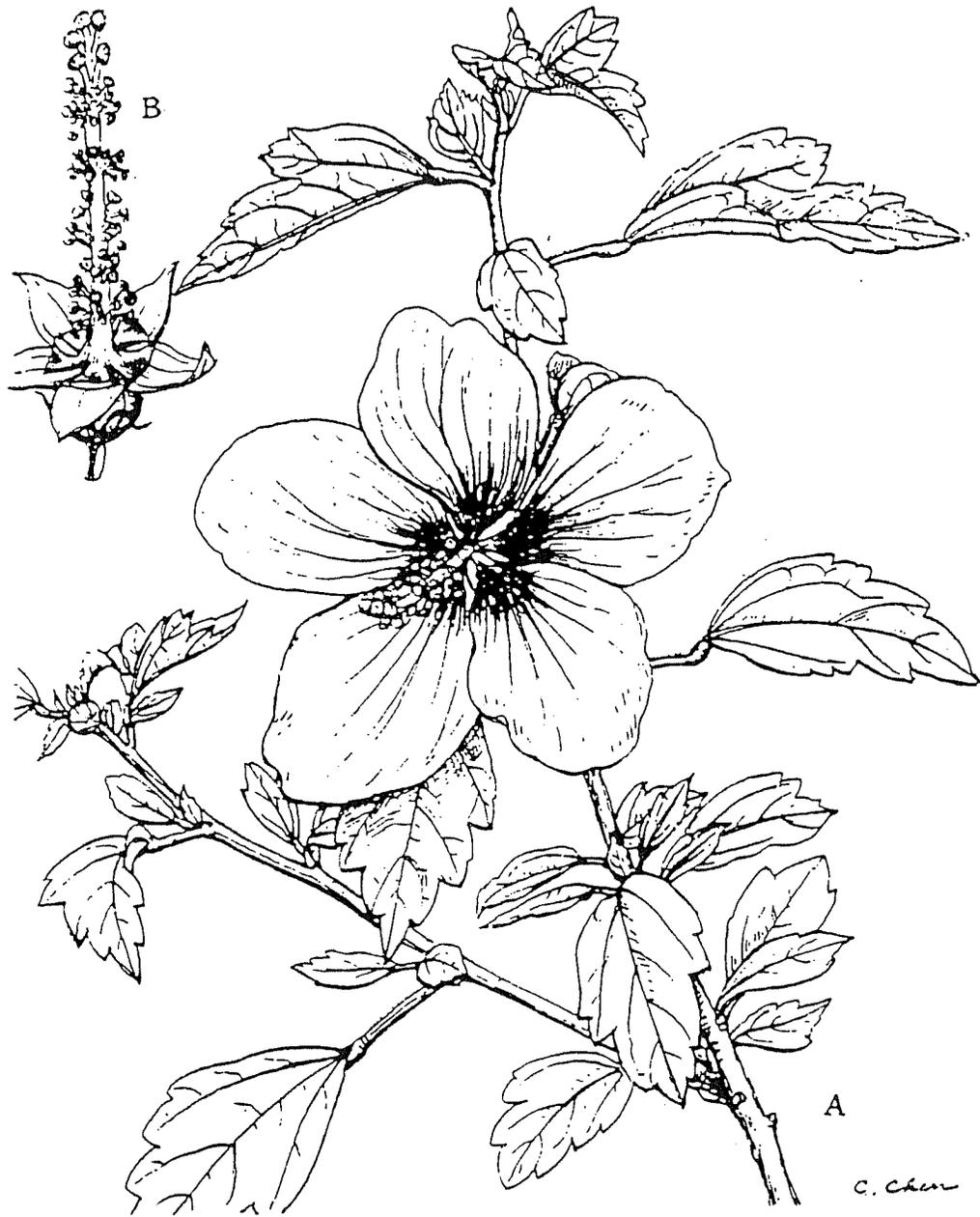


Fig. 129. *Hibiscus syriacus* (Malvaceae).

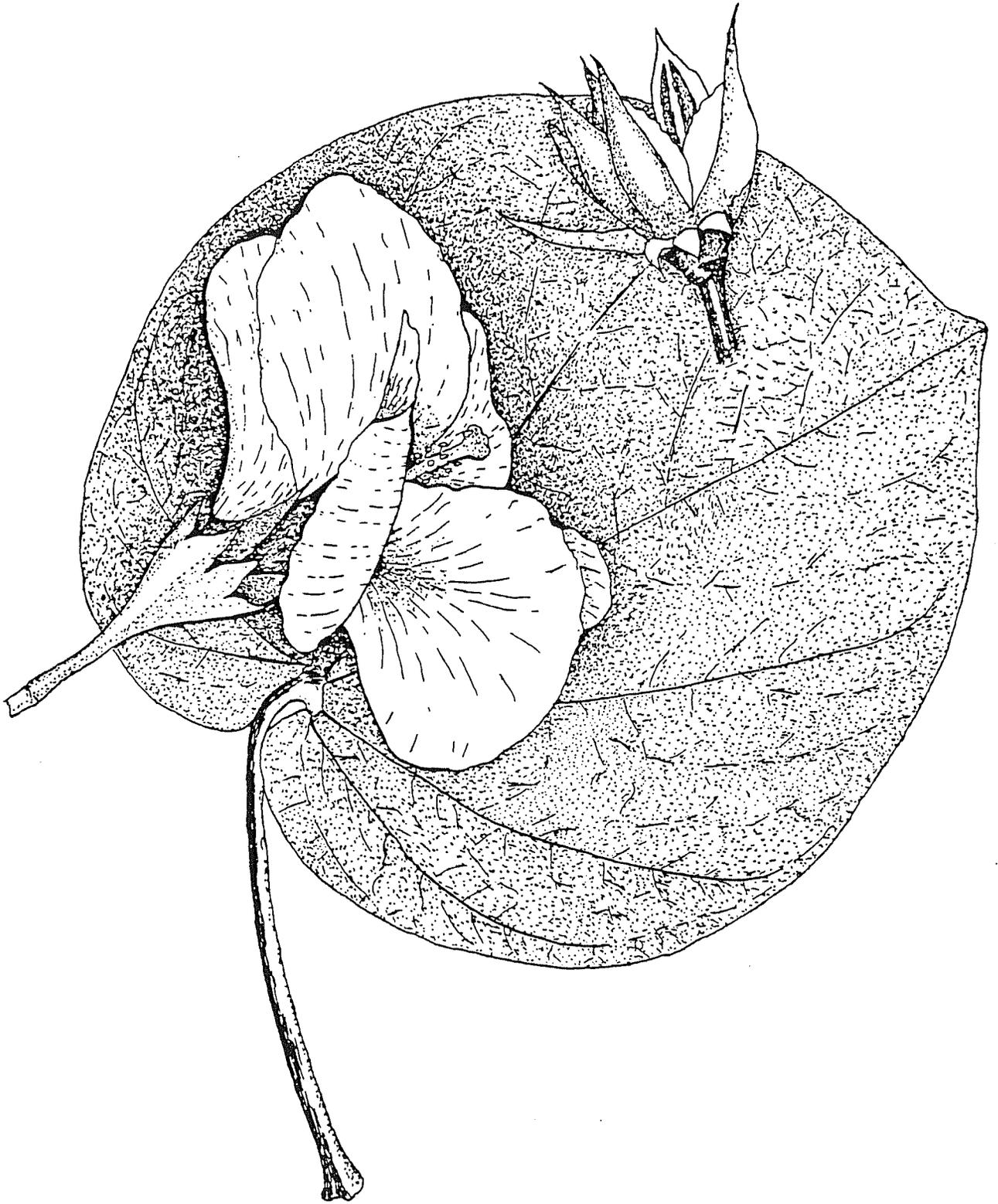


Fig. 130. *Hibiscus tiliaceus* (Malvaceae).

Range: Eastern Asia. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana.

6. *Hibiscus tiliaceus* Linnaeus, *Species Plantarum* 694 (1753). MAHOT (French Guiana); MAHO (Surinam); MA'O, TJAWASI (Surinamese Creole); KAJOWA (Surinamese Arawak); MAHOE. Tree to 6 (-15) m. Leaves unlobed, ovate or orbicular, entire or crenulate, white-tomentose beneath, to 25 (-30) cm. Flowers solitary, axillary or 2-3 clustered near the tips of branches. Involucral bracts 7-12, united to more than 1/2 their length. Petals yellow with maroon base inside, to 7.5 cm. Staminal column included. Seeds tufted-pubescent.

Range: Old and New World tropics. Grown as an ornamental in French Guiana (de Granville, 1985A). Used as an economic plant in Surinam (Ostendorf, 1962).

3. *Malvaviscus* Adanson

Shrubs, sometimes vine-like. Leaves alternate, simple, unlobed or lobed, petiolate. Inflorescence of axillary, solitary flowers, sometimes a terminal, few-flowered raceme or cyme. Flowers bisexual, regular, subtended by a whorl of several prominent, sepal-like involucral bracts (involucel, epicalyx) at base of the true calyx; sepals 5, free; petals 5, free for most of their length, with a basal auricle, remaining closed at maturity. Stamens numerous, united in a filament-tube surrounding the style. Ovary 5-celled; style 10-branched (stigmas 10). Fruit a 5-celled schizocarp; seed 1 per cell.

Literature: Schery, R.W. 1942. Monograph of *Malvaviscus*. *Annals of the Missouri Botanical Garden* 29(3): 183-245.

1. *Malvaviscus arboreus* Cavanilles, *Monadelphiae Classis Dissertationes Decem* 3: 131, t.48, fig.1 (1787), var. *mexicanus* Schlechtendahl, *Linnaea* 11: 359 (1837). (Synonym: *M. arboreus* var. *penduliflorus* (Sesse & Mocino ex DeCandolle) Schery). SCHOTSE BEURS (Surinam); SLEEPING HIBISCUS, TURK'S CAP, WAX MALLOW. Evergreen, erect or somewhat vine-like shrub to 5 m. Leaves lanceolate or ovate-lanceolate, unlobed or scarcely lobed, serrate, glabrescent, to c.11 cm. Involucral bracts 7-12. Flowers often pendent, not opening at maturity; petals contorted, red, to 7 cm.

Range: West Indies; Southern United States; Mexico to South America. Grown as an ornamental in roadside gardens near Georgetown, Guyana; on hotel grounds, in the Palmentuin, and in gardens of Paramaribo, Surinam; and on hotel grounds in Cayenne, French Guiana.

4. *Thespesia* Solander ex Correa

Trees and shrubs. Leaves alternate, simple, unlobed or lobed, petiolate. Inflorescence of axillary, solitary flowers. Flowers bisexual, regular, subtended by a whorl of several prominent, sepal-like, often caducous involucral bracts (involucel, epicalyx) at base of the true calyx; sepals 5, united in an entire to very shallowly 5-toothed, cupular calyx; petals 5, free. Stamens numerous, united in a filament-tube surrounding the style. Ovary (4-) 5 (-6)-celled; style unbranched (stigmas coherent as 5 longitudinal grooves). Fruit an indehiscent



Fig. 131. *Malvaviscus arboreus* (Malvaceae).

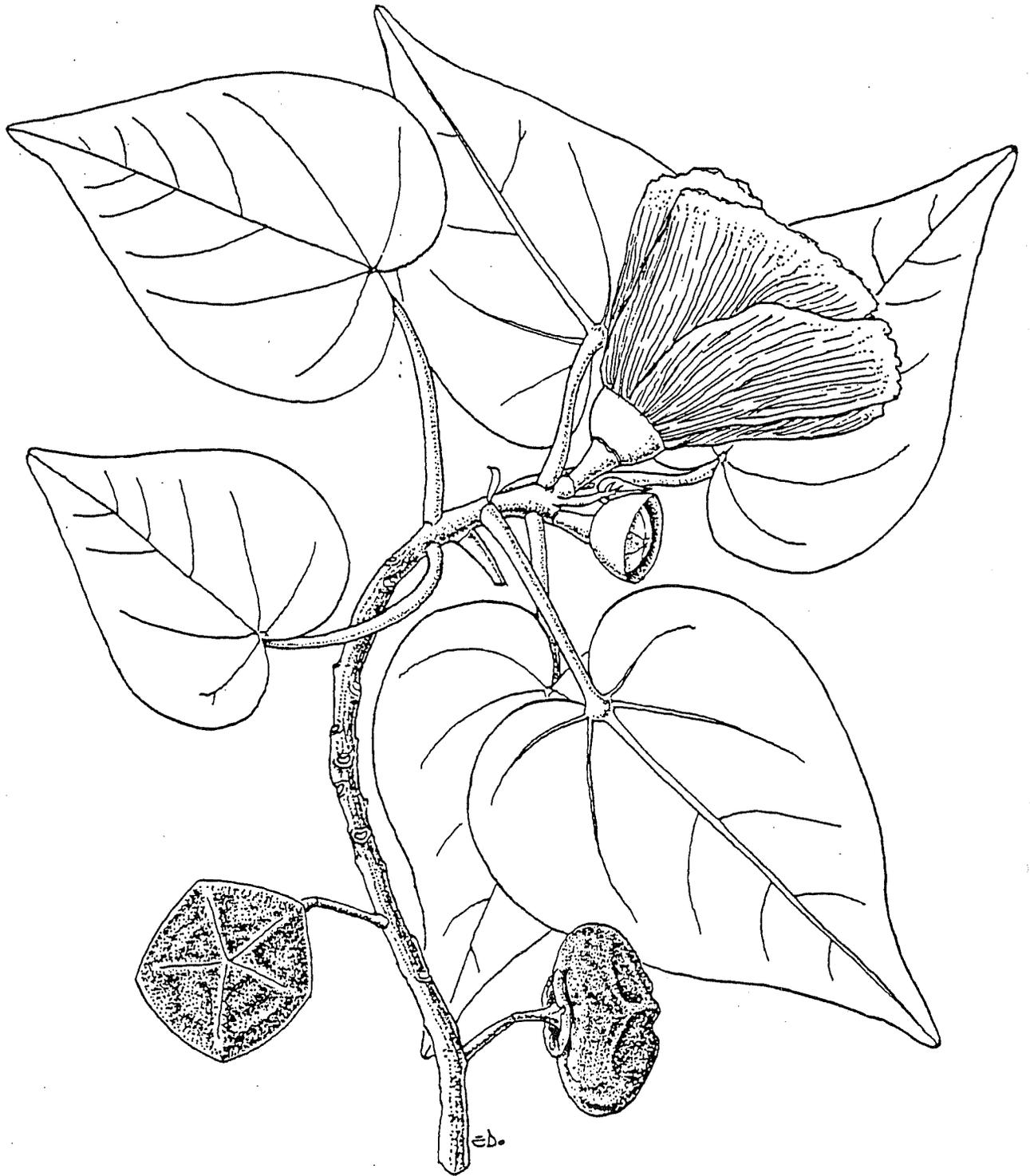


Fig. 132. *Thespesia populnea* (Malvaceae).

or dehiscent, coriaceous or woody capsule; seeds 2-3 per cell, pubescent.

1. *Thespesia populnea* (Linnaeus) Solander ex Correa, *Annales du Museum National d'Histoire Naturelle, Paris* 9: 290 (1807). BASRA-MAHO, BOSCHKATOEN, BOSKATOEN (Surinam); BEACH MAHO, MAHO (Guyana); PORTIA TREE. Shrub or tree to 10 (-20) m. Leaves ovate, cordate at the base, acute or acuminate, unlobed, entire to undulate, shiny, the blade to 22 cm. Involucral bracts 3, caducous; pedicels jointed near the base. Calyx entire to minutely 5-mucronate. Petals yellow, with a red or purple spot at the base, fading to orange or purple, to 7 cm. Fruit indehiscent, depressed-globose, faintly 5-angled, to 4.5 cm wide.

Range: Old World tropics. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982); and in the Cultuurtuin, Paramaribo (Teunissen & Lande, 1980) and elsewhere in Surinam (Pulle, 1932).

Literature: Fosberg, F.R. and M.-H. Sachet. 1972. *Thespesia populnea* (L.) Solander ex Correa and *Thespesia populneoides* (Roxburgh) Kosteletsky (Malvaceae). *Smithsonian Contributions to Botany* 7: 1-13.

The Southeast Asian *Abutilon indicum* (Linnaeus) Sweet, with yellow flowers and involucral bracts absent, was formerly grown for ornament in Surinam and French Guiana (Pulle 3: 2-3. 1932; Lemee 2: 355-356. 1952).

Marcgraviaceae

Evergreen, epiphytic or climbing shrubs. Leaves alternate, simple, sometimes dimorphic, coriaceous, sessile or shortly petiolate. Inflorescence a terminal, erect or pendent spike, raceme or sub-umbel, bracteate; bracts free from, or adnate to, the floral pedicels, conspicuous, modified into colorful, stalked, hollow nectaries; 2 small bracteoles also present and subtending the calyx. Flowers bisexual, regular; sepals 4-5, united below in a 4- or 5-lobed calyx; petals 4-5, free above, connate below and sometimes deciduous as a calyptra. Ovary superior, 3- to 12-celled; stigma peltate. Fruit a berry or capsule; seeds numerous.

1. *Norantea* Aublet

Epiphytic or climbing shrubs. Leaves coriaceous, entire, not dimorphic. Inflorescence a terminal, many-flowered spike, raceme or sub-umbel. Sepals 5, imbricate; petals 5, imbricate. Stamens 8 - numerous. Ovary 3- to 5-celled. Fruit a berry.

1. *Norantea guianensis* Aublet, *Histoire des Plantes de la Guiane Francaise* 1: 554, t.220 (1775). (Synonym: *N. paraensis* Martius). RAFROETERE, DJABRA TERE, RAVETERE (Surinamese Creole); KARAKARA, KARRAKARRA, CARACALLA, KARAGALLA (Surinamese Arawak); KONOPOJOLOKO, KONOPO JOLOKOLI, NOPOJOROGORLI, KUNOPO JOROKORE (Surinamese Carib); RED POPCORN VINE. High-climbing shrub or liana; aerial roots present. Leaves oblanceolate or obovate, entire, to 18 x 8 cm. Inflorescence a terminal, erect or patent, many-flowered raceme to 50 (-100) cm. Nectaries (bracts) fleshy, spoon- or urn-shaped, hollow or hooded, inserted on

the pedicels, much longer than the flowers and aligned in apposition to them, red or orange-red, the stalk to 2 cm, the enlarged portion to 2.5 cm. Flowers shortly pedicellate, secund, violet. Stamens 25-50. Fruit globose, coriaceous, to 1 cm; seeds curved, black, glossy, to 4 mm.

Range: Trinidad, Brazil and the three Guianas. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (Ted Hubbard, pers. comm., 1985).

Melastomataceae

Trees, shrubs, vines and herbs; stems often 4-angled. Leaves opposite with one leaf of a pair often larger than the other, or whorled, simple, distinctively longitudinally veined from the base and with cross-veins perpendicular to the principal veins, petiolate. Inflorescence of solitary, axillary flowers, or terminal or axillary panicles or cymes. Flowers bisexual, regular; sepals 3-6 (-10), united below in a lobed calyx; petals 3-5 (-10), free. Stamens 3-10 (-90), free, isomorphic or dimorphic; anthers conspicuously appendaged, dehiscing by apical pores. Ovary inferior to superior, 2- to many-celled. Fruit a capsule or berry.

Key to Genera

1. Leaves with bladder at base of blade; stamens isomorphic; petals whitish-pink 3. *Tococa*
1. Leaves without a bladder; stamens dimorphic; petals purple or carmine.
 2. Stems trailing; leaves to 2.5 cm; inflorescence a solitary terminal flower; stamens 8; seeds oblong-ovoid 1. *Heterocentron*
 2. Stems erect; leaves to 18 cm; inflorescence a terminal panicle; stamens 10; seeds cochleate (spiral shell-like) 2. *Tibouchina*

1. *Heterocentron* Hooker & Arnott

Shrubs and perennial herbs. Leaves opposite, without bladder at base of blade, 3- to 15-veined. Inflorescence a solitary terminal flower, or terminal panicle. Flowers bisexual, regular; sepals 4; petals 4. Stamens 8, dimorphic. Fruit a capsule; seeds oblong-ovoid.

1. *Heterocentron elegans* (Schlechtendahl) O. Kuntze, *Revisio Generum Plantarum* 247 (1891). (Synonym: *Schizocentron elegans* (Schlechtendahl) Rose). SPANISH SHAWL. Evergreen perennial subshrub; stems trailing. Leaves ovate or broadly elliptical, entire or crenate, pubescent, to 2.5 cm; petiole to c.2 mm. Inflorescence a solitary terminal flower. Flowers purple or carmine.

Range: Mexico and Central America. Grown as an ornamental in the nursery area of the Botanic Gardens, Georgetown, Guyana.

2. *Tibouchina* Aublet

Shrubs or herbs. Leaves opposite, without a bladder at base of blade, 3- to 7-veined. Inflorescence a solitary terminal flower, or terminal panicle. Flowers bisexual, regular; sepals 4-8; petals 4-8. Stamens 10, isomorphic or dimorphic. Fruit a capsule; seeds

cochleate (spiral shell-like).

1. *Tibouchina multiflora* (G. Gardner) Cogniaux in Martius, *Flora Brasiliensis* 14(3): 333 (1885). Shrub to 4 m. Leaves ovate, entire, tomentose, to 18 cm; petiole to 2.3 cm. Inflorescence a terminal panicle. Flowers purple.

Range: Brazil. Grown as an ornamental in the village of Saul, French Guiana (*Mori & Mitchell 18782* (US)).

3. *Tococa* Aublet

Shrubs. Leaves opposite, often with a 2-lobed bladder (myrmecodomatium) at base of blade, 3- to 7-veined. Inflorescence a terminal panicle. Flowers bisexual, regular; sepals 4-6; petals 4-5. Stamens 8 or 10 (12), isomorphic. Fruit a berry; seeds oblong-ovoid.

1. *Tococa guianensis* Aublet, *Histoire des Plantes de la Guiane Francaise* 1: 438, t.174 (1775). TOCOCO. Shrub to 8 m. Leaves ovate or broadly elliptical, entire or crenate, pubescent, to 25 cm; petiole to 4 cm. Inflorescence a terminal panicle. Flowers whitish-pink.

Range: Guyana, Surinam, French Guiana. Grown as an ornamental on hotel grounds in Cayenne, French Guiana.

Literature: Schnell, R. 1967. Contribution a l'etude des genres guyano-amazoniens *Tococa* Aubl. et *Maieta* Aubl. (Melastomaceae) et de leurs poches foliaires. *Adansonia* ser.2, 6(4): 525-532.

Meliaceae

Trees and shrubs. Leaves alternate, pinnately compound, petiolate. Inflorescence usually of terminal or axillary spikes, cymes, fascicles or panicles. Flowers bisexual, regular; sepals 4-5, united below; petals 4-5, free. Stamens 8-10; filaments united in a tube. Ovary superior, 2- to 5-celled. Fruit a capsule or berry; seeds often winged.

1. *Swietenia* Aublet

Evergreen trees with very hard wood. Leaves even-pinnately compound. Inflorescence a terminal or axillary panicle. Sepals 5, united in a 5-lobed calyx; petals 5. Stamens 10; filament-tube urceolate (urn-shaped). Ovary 5-celled. Fruit a large, 5-valved, woody capsule, splitting upwards from the base; seeds with terminal wing.

1. *Swietenia macrophylla* King, in W.J. Hooker, *Icones Plantarum* 16: t.1550 (1886). ACAJOU, MAHOGANY (French Guiana); HONDURAS MAHOGANY. Tree to 45 m. Leaves glabrous, shining, to 45 cm; leaflets 4-6 pairs, lanceolate, acuminate, petiolulate. Flowers greenish-yellow. Fruit erect, ovoid or pyriform, to 17.5 cm; seeds winged, to 9 cm.

Range: Tropical America. Grown as an ornamental in French Guiana (de Granville, 1985).

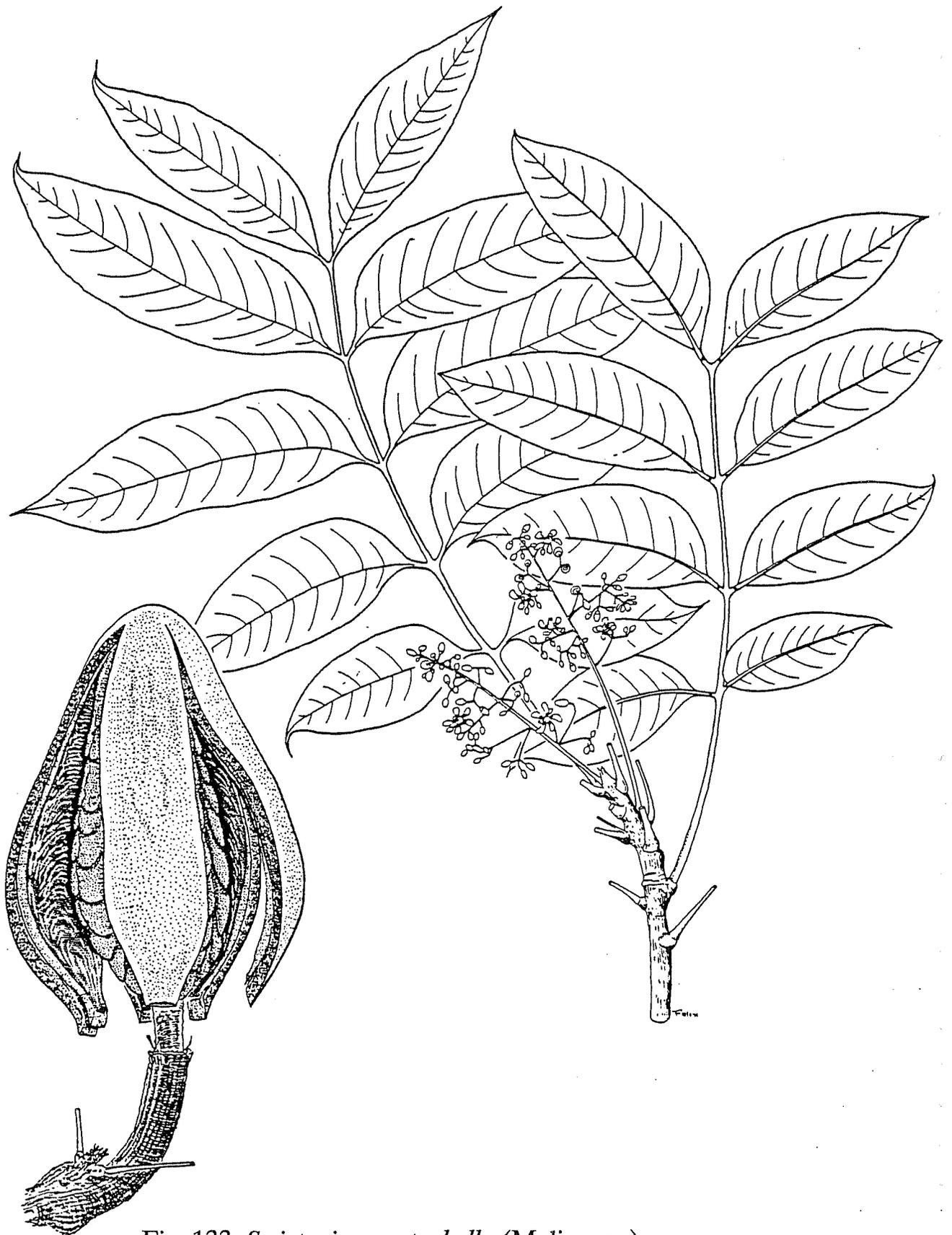


Fig. 133. *Swietenia macrophylla* (Meliaceae).

Mimosaceae

Trees, shrubs or herbs, sometimes armed with spines (modified stipules). Leaves alternate, petiolate, 2-pinnate, often with glands on petiole or base of pinnae. Inflorescence of axillary or terminal heads, spikes, racemes or panicles. Flowers usually bisexual, 4- or 5-merous, regular; calyx and corolla of free segments, or the segments united below in a tube. Stamens 5 to numerous, free or united below, often forming the showy part of the flower; anthers often with a deciduous apical gland. Ovary superior, 1-celled. Fruit a dehiscent or indehiscent legume, sometimes breaking into 1-seeded joints.

Key to Genera

1. Aquatic or waterside herbs or subshrubs 5. *Neptunia*
1. Trees.
 2. Plants armed with stipular spines 6. *Pithecellobium*
 2. Plants unarmed.
3. Leaflets alternate; inflorescence a raceme, the flowers not congested in heads; stamens 10, filaments free 1. *Adenantha*
3. Leaflets opposite; inflorescence a congested (densely-flowered) head; stamens more than 10; filaments united below in a tube.
 4. Fruit coiled nearly in a full circle and ear-shaped, indehiscent, to 11 cm wide 4. *Enterolobium*
 4. Fruit straight (the valves sometimes coiled after dehiscence), dehiscent or indehiscent, to 5 cm wide (usually less).
5. Fruit indehiscent; seeds embedded in pulp 7. *Samanea*
5. Fruit dehiscent; seeds not embedded in pulp.
 6. Filaments cream- or greenish-yellow; valves of fruit straight after dehiscence; seeds 8-10 per legume 2. *Albizia*
 6. Filaments red or pink; valves of fruit coiled after dehiscence; seeds 2-6 per legume 3. *Calliandra*

Inga ingoides Willdenow, an unarmed Guianan tree with 1-pinnate leaves having opposite leaflets, an indehiscent, straight or slightly curved fruit and white flowers, is infrequently grown as an ornamental in private gardens in French Guiana (de Granville, 1985A). Literature: Poncy, O. 1985. Le Genre *Inga* (Legumineuses, Mimosoideae) en Guyane Francaise. Systematique, Morphologie des Formes Juveniles, Ecologie. 153 pp. Museum National d'Histoire Naturelle, Paris. Memoires, Ser. B. Botanique, Vol. 31.

1. *Adenantha* Linnaeus

Unarmed, evergreen trees or shrubs. Leaves alternate, petiolate, 2- or 3-pinnate; leaflets numerous. Inflorescence a terminal panicle with spike-like racemes as branches, or an axillary, solitary raceme. Flowers 5-merous, small; petals valvate. Stamens 10, free; anthers with an apical, stipitate, globose, deciduous gland. Fruit narrow, coiled after dehiscence, flattened. Seeds lens-shaped (biconvex, lenticular), red, or red and black.

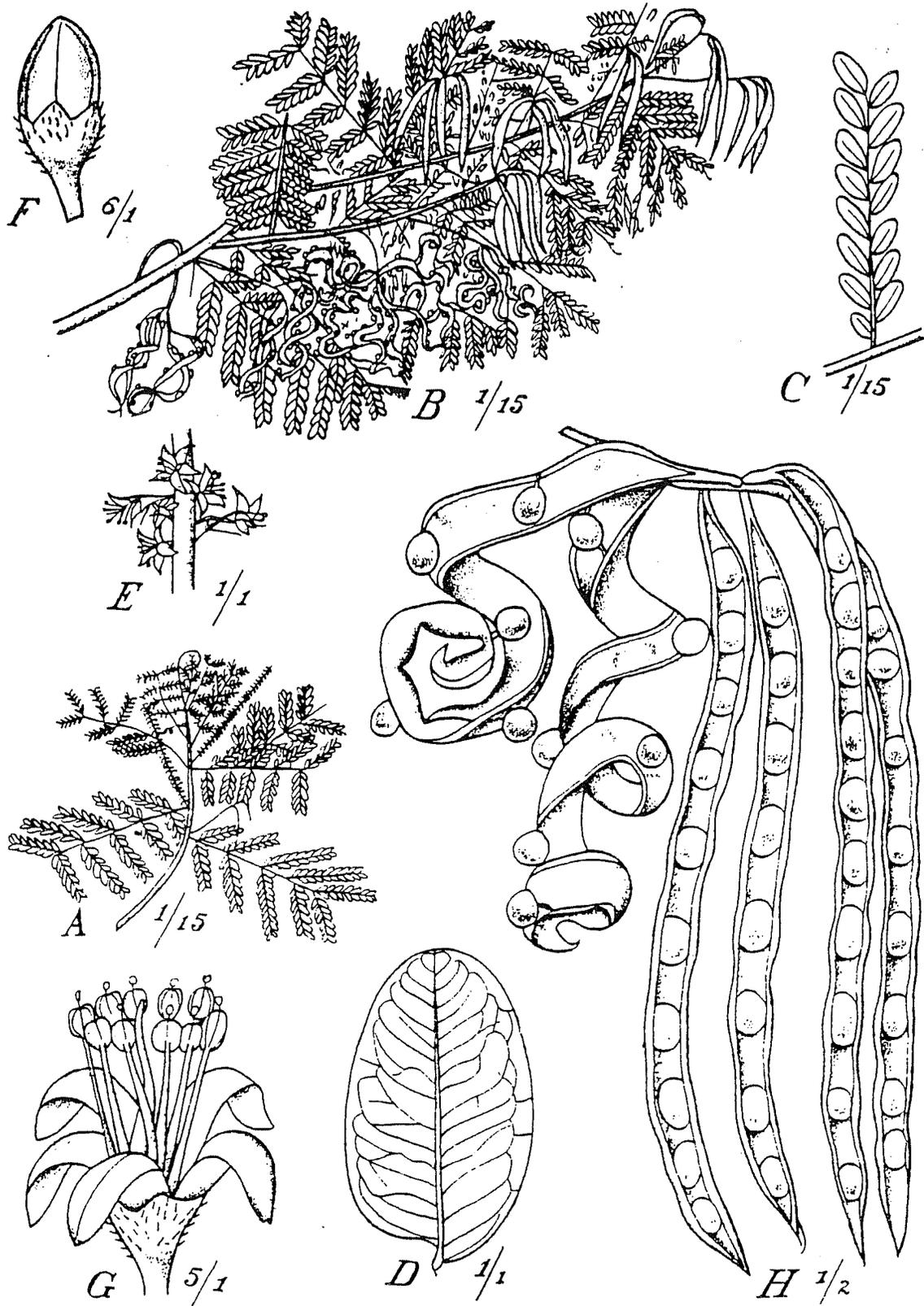


Fig. 134. *Adenanthera pavonina* (Mimosaceae).

1. *Adenanthera pavonina* Linnaeus, *Species Plantarum* 384 (1753). BUCK BEAD (Guyana); SEGAWÉ (Surinamese Javan); CORALWOOD, RED SANDALWOOD. Tree to 15 (-24) m, often smaller as a shrub. Leaves 2-pinnate, to 40 cm, with 2-5 pairs of pinnae; leaflets 6-8 pairs per pinna, usually alternate, broadly elliptical to ovate, obtuse, apiculate, glabrous or very sparsely puberulent, 2-4 x 1-2 cm; petiole to 15 cm. Inflorescence to 30 cm, paniculate at tips of branches and also some solitary racemes from base of leaves. Flowers spreading, yellowish to orange, to 8 mm. Ovary sessile. Fruit narrowly oblong, highly coiled after dehiscence, to 25 x 2 cm; seeds bright red, 10-12 per fruit, 6-10 mm wide.

Range: India and Southeast Asia. Grown for ornament in Paramaribo, Surinam (Pulle, 1906; Ostendorf, 1962), and French Guiana (Lemee, 1952); formerly planted in the Botanic Gardens, Georgetown, Guyana (Department of Agriculture, 1934).

2. *Albizia* Durazzini

Unarmed, deciduous trees or shrubs. Leaves alternate, petiolate, 2-pinnate, with 1 gland at base of petiole and pinnae. Inflorescences of several axillary, long-pedunculate, head-like umbels or cylindrical spikes. Flowers 5-merous, the sepals and petals united below in a tube. Stamens numerous, long-exserted, connate below in a tube. Fruit dehiscent, flat; seeds numerous.

1. *Albizia lebbek* (Linnaeus) Benth, *London Journal of Botany* 3: 87 (1844). WOMAN'S TONGUE. Wide-crowned tree to 24 (-30) m x 90 cm. Leaves 7.5-22.5 cm, with 2-8 pairs of pinnae, each with 3-12 pairs of leaflets; leaflets elliptic-oblong, oblique at the base, obtuse, glabrous or puberulent, to 5 x 2 cm. Flowers puberulent, cream- or greenish-yellow, in long-pedunculate, head-like umbels of up to c.40 flowers, c.8 mm wide. Stamens c.30 per flower, thread-like, to 3 cm; anthers not glandular at apex. Fruits narrowly oblong, flat, glabrous, persistent, c.8- to 10-seeded, 15-30 x 3.5-5 cm.

Range: India and Southeast Asia. Grown as an ornamental in Surinam (Ostendorf, 1962) and Cayenne, French Guiana (Lemee, 1952); formerly grown in Guyana (British Guiana Handbook, 1909).

Recommended by Little (pp.51-54, 1983) and the National Academy of Sciences (pp.177-178, 1979; pp.110-111, 1980) for intensified utilization as a firewood crop.

3. *Calliandra* Benth

Unarmed, evergreen trees or shrubs. Leaves alternate, petiolate, 2-pinnate, eglandular; leaflets oblique at base. Inflorescence of several axillary or terminal, pedunculate heads or umbels. Flowers 5-merous, bisexual or functionally male, the sepals and petals united below in a tube; anthers not glandular. Fruit dehiscent, flat, with thickened margin, the valves coiled after dehiscence; seeds few.

Key to Species

1. Leaves with 2 pairs of pinnae; leaflets to 8 cm; filaments red towards the apex

1. *C. haematocephala*

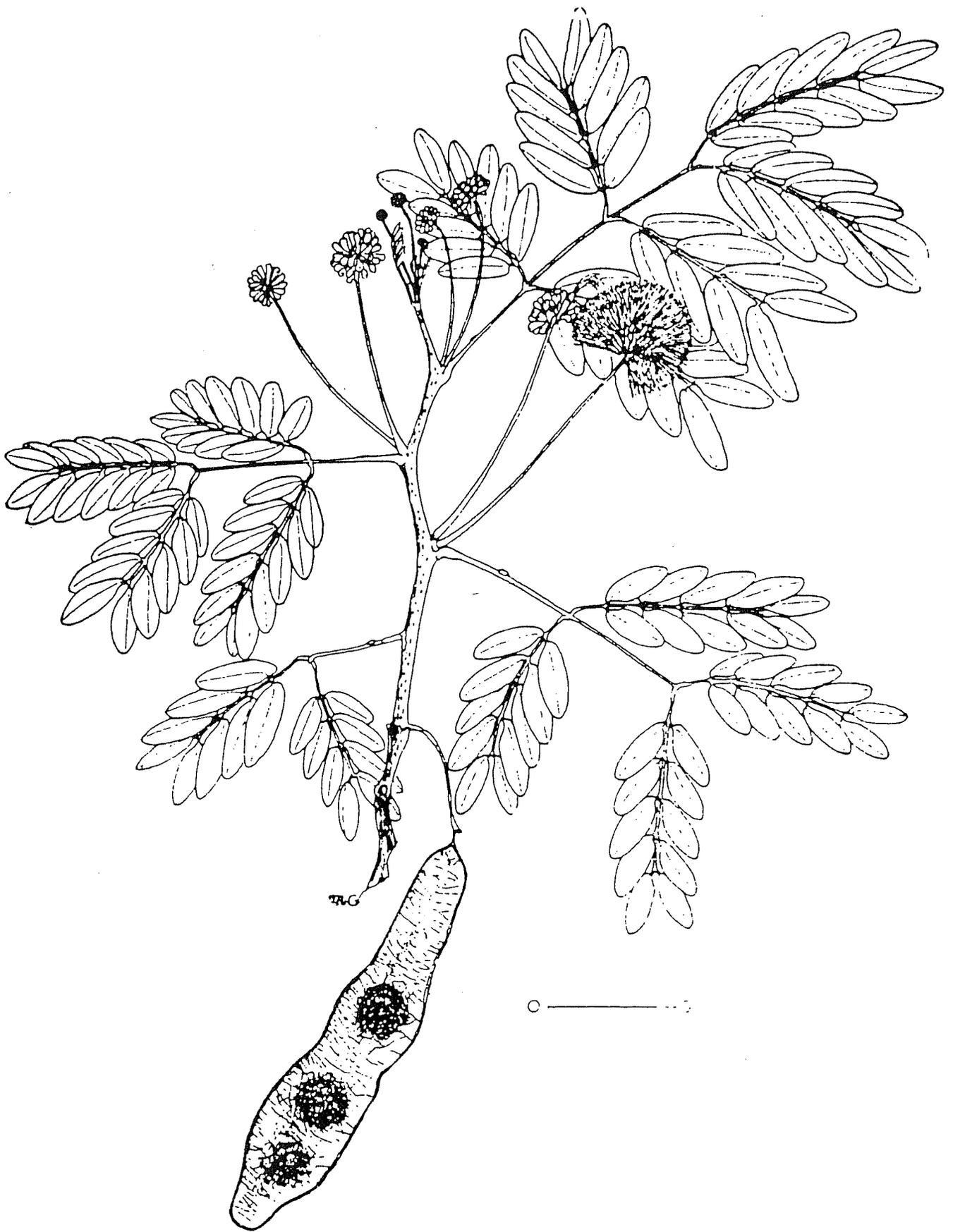


Fig. 135. *Albizia lebeck* (Mimosaceae).

1. Leaves with 1 pair of pinnae; leaflets to 2.5 cm; filaments pink towards apex

2. *C. surinamensis*

1. *Calliandra haematocephala* Hasskarl, *Retzia* 21 (1855). (Synonym: *C. inaequilatera* Rusby). RED POWDER PUFF. Sprawling shrub or tree to c.5 m. Leaves with 2 pairs of pinnae; leaflets (4-) 5-10 pairs per pinna, oblong-lanceolate, to 8 cm. Filaments red towards the apex.

Range: Bolivia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982).

Literature: Nevling, L.I. and T.S. Elias. 1971. *Calliandra haematocephala*: history, morphology, and taxonomy. *Journal of the Arnold Arboretum* 52: 69-85.

2. *Calliandra surinamensis* Bentham, *London Journal of Botany* 3: 105 (1844). OFFICIERSKWASTJE (Surinam); PINK POWDER PUFF. Sprawling or somewhat climbing shrub to c.5 m. Leaves with 1 pair of pinnae; leaflets 7-14 pairs per pinna, oblong-lanceolate, to 2.5 cm. Filaments pink towards apex.

Range: Northern South America, including the three Guianas. Grown for ornament at the Botanic Gardens and Promenade Gardens, Georgetown, Guyana; as a garden hedge in Paramaribo as well as in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam; and in French Guiana (de Granville, 1985A).

Literature: National Research Council. 1983. *Calliandra: A Versatile Small Tree for the Humid Tropics*. 52 pp. Washington, D.C.: National Academy Press.

C. calothyrsus Meissner, described from a type specimen collected in Surinam in the 1800's, has red filaments; it has been suggested for supplementary use in reforestation for fuelwood at high altitudes where leucaena does not prosper (National Research Council, 1983).

4. *Enterolobium* Martius

Unarmed, periodically deciduous trees. Leaves alternate, petiolate, 2-pinnate, with gland at base of pinnae; leaflets numerous, oblique at the base. Inflorescence from a solitary, pedunculate head (capitulum) to clusters or fascicles of heads arranged in a loose panicle. Flowers 5-merous, usually bisexual; sepals and petals united below in a tube. Stamens numerous, exerted, united below in a tube. Fruit indehiscent, flat, the margins not thickened, coiled in a circle (discoïd); seeds numerous.

1. *Enterolobium cyclocarpum* (Jacquin) Grisebach, *Flora of the British West Indian Islands* 226 (1860). EAR POD, ELEPHANT'S EAR. Tree to 37.5 m, with trunk to 1.5 (-3) m wide and spreading crown, branched from near the base. Leaves puberulent, with 4-15 pairs of pinnae; leaflets 15-30 pairs per pinna, oblong, glaucous beneath, to 15 x 4 mm. Heads c.2 cm wide, arranged in loose panicles; perianth white to pale green; stamens creamy yellow. Fruit brown to black, reniform, 4-11 cm wide, coiled into an almost full to completely full circle, the curves sometimes overlapping; seeds to 2 x 1 cm.

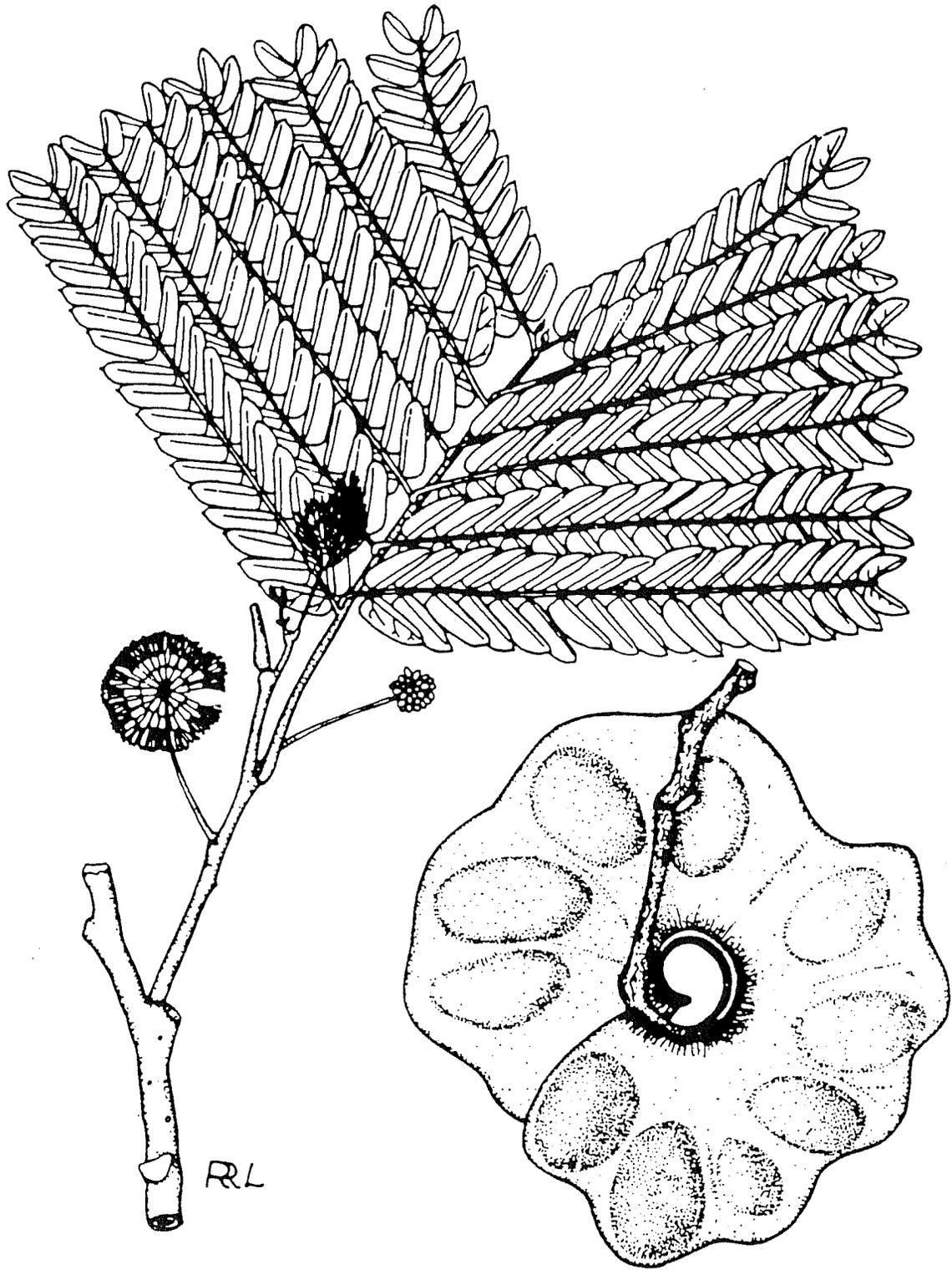


Fig. 136. *Enterolobium cyclocarpum* (Mimosaceae).

Range: Trinidad; Mexico to Central and northern South America, including (although rare in) Guyana and Surinam. Grown as an ornamental shade and avenue tree in Paramaribo and near Meerzorg, Surinam (Ostendorf, 1962).

This species has been recommended for intensified utilization as a fast-growing multi-purpose tree by the National Academy of Sciences (pp.200-201, 1979).

5. *Neptunia* Loureiro

Unarmed, perennial, rhizomatous, sometimes aquatic herbs or subshrubs. Stems prostrate to ascending, simple or few-branched. Leaves alternate, frequently sensitive (folding partially when touched), petiolate, glandular or eglandular, stipulate, 2-pinnate. Inflorescence a solitary (rarely 2), densely flowered, pedunculate, axillary, head-like spike. Flowers dimorphic, the upper ones bisexual, the lower ones staminate with either fertile stamens or sterile, petaloid stamens. Flowers 5-merous; stamens 5 or 10, free, exerted, the anthers usually with an apical gland. Fruit pedicellate, flat, dehiscent, septate between the seeds.

1. *Neptunia oleracea* Loureiro, *Flora Cochinchinensis* 654 (1790). (Synonym: *N. prostrata* (Lamarck) Baillon). WATER MIMOSA. Aquatic, floating or prostrate herb or subshrub. Stems rarely branched, to 1.5 m, the lower internodes becoming spongy-thickened. Leaves eglandular, with 2-3 (-4) pairs of pinnae; leaflets 8-20 pairs per pinna, oblong, to 18 x 3.5 mm. Inflorescence solitary, long-pedunculate, 30- to 50-flowered; flowers green; stamens 10, the anthers lacking an apical gland. Fruit broadly oblong, to 2.8 x 1 cm, 4- to 8-seeded, borne in a spreading cluster.

Range: Tropical Africa; India and Southeast Asia; Mexico to northern South America, including the three Guianas. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Windler, D.R. 1966. A revision of the genus *Neptunia* (Leguminosae). *Australian Journal of Botany* 14(3): 379-420.

6. *Pithecellobium* Martius

Armed or unarmed, evergreen trees or shrubs. Leaves alternate, petiolate, 2-pinnate, with 2 to numerous pairs of pinnae; petiole with gland near apex. Inflorescence axillary or at tips of branches, of heads or spikes in a raceme-like panicle. Flowers 5- or 6-merous; sepals and petals united below in a tube; stamens numerous (20-50), united below in a tube. Fruit dehiscent, 2-valved, constricted between the seeds, flat, usually coiled or contorted; seeds with a soft, pulpy aril.

1. *Pithecellobium dulce* (Roxburgh) Bentham, *London Journal of Botany* 3: 199 (1844). MANILA TAMARIND. Spiny tree to 16 m x 60 cm, with spreading crown. Branches with sharp, short spines (reduced stipules) at base of leaves. Leaves with 1 pair of pinnae; leaflets 2 per pinna, elliptical, oblong or obovate, obtuse, glabrous or pubescent, to 6 x 2 cm. Inflorescence pendulous, of densely 5- to 24-flowered heads in a raceme-like panicle. Flowers pubescent, white. Stamens c.50. Fruit spirally coiled, flat, pinkish to reddish-brown,

Range: Trinidad; Mexico to Central and northern South America, including (although rare in) Guyana and Surinam. Grown as an ornamental shade and avenue tree in Paramaribo and near Meerzorg, Surinam (Ostendorf, 1962).

This species has been recommended for intensified utilization as a fast-growing multi-purpose tree by the National Academy of Sciences (pp.200-201, 1979).

5. *Neptunia* Loureiro

Unarmed, perennial, rhizomatous, sometimes aquatic herbs or subshrubs. Stems prostrate to ascending, simple or few-branched. Leaves alternate, frequently sensitive (folding partially when touched), petiolate, glandular or eglandular, stipulate, 2-pinnate. Inflorescence a solitary (rarely 2), densely flowered, pedunculate, axillary, head-like spike. Flowers dimorphic, the upper ones bisexual, the lower ones staminate with either fertile stamens or sterile, petaloid stamens. Flowers 5-merous; stamens 5 or 10, free, exerted, the anthers usually with an apical gland. Fruit pedicellate, flat, dehiscent, septate between the seeds.

1. *Neptunia oleracea* Loureiro, *Flora Cochinchinensis* 654 (1790). (Synonym: *N. prostrata* (Lamarck) Baillon). WATER MIMOSA. Aquatic, floating or prostrate herb or subshrub. Stems rarely branched, to 1.5 m, the lower internodes becoming spongy-thickened. Leaves eglandular, with 2-3 (-4) pairs of pinnae; leaflets 8-20 pairs per pinna, oblong, to 18 x 3.5 mm. Inflorescence solitary, long-pedunculate, 30- to 50-flowered; flowers green; stamens 10, the anthers lacking an apical gland. Fruit broadly oblong, to 2.8 x 1 cm, 4- to 8-seeded, borne in a spreading cluster.

Range: Tropical Africa; India and Southeast Asia; Mexico to northern South America, including the three Guianas. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Windler, D.R. 1966. A revision of the genus *Neptunia* (Leguminosae). *Australian Journal of Botany* 14(3): 379-420.

6. *Pithecellobium* Martius

Armed or unarmed, evergreen trees or shrubs. Leaves alternate, petiolate, 2-pinnate, with 2 to numerous pairs of pinnae; petiole with gland near apex. Inflorescence axillary or at tips of branches, of heads or spikes in a raceme-like panicle. Flowers 5- or 6-merous; sepals and petals united below in a tube; stamens numerous (20-50), united below in a tube. Fruit dehiscent, 2-valved, constricted between the seeds, flat, usually coiled or contorted; seeds with a soft, pulpy aril.

1. *Pithecellobium dulce* (Roxburgh) Bentham, *London Journal of Botany* 3: 199 (1844). MANILA TAMARIND. Spiny tree to 16 m x 60 cm, with spreading crown. Branches with sharp, short spines (reduced stipules) at base of leaves. Leaves with 1 pair of pinnae; leaflets 2 per pinna, elliptical, oblong or obovate, obtuse, glabrous or pubescent, to 6 x 2 cm. Inflorescence pendulous, of densely 5- to 24-flowered heads in a raceme-like panicle. Flowers pubescent, white. Stamens c.50. Fruit spirally coiled, flat, pinkish to reddish-brown,

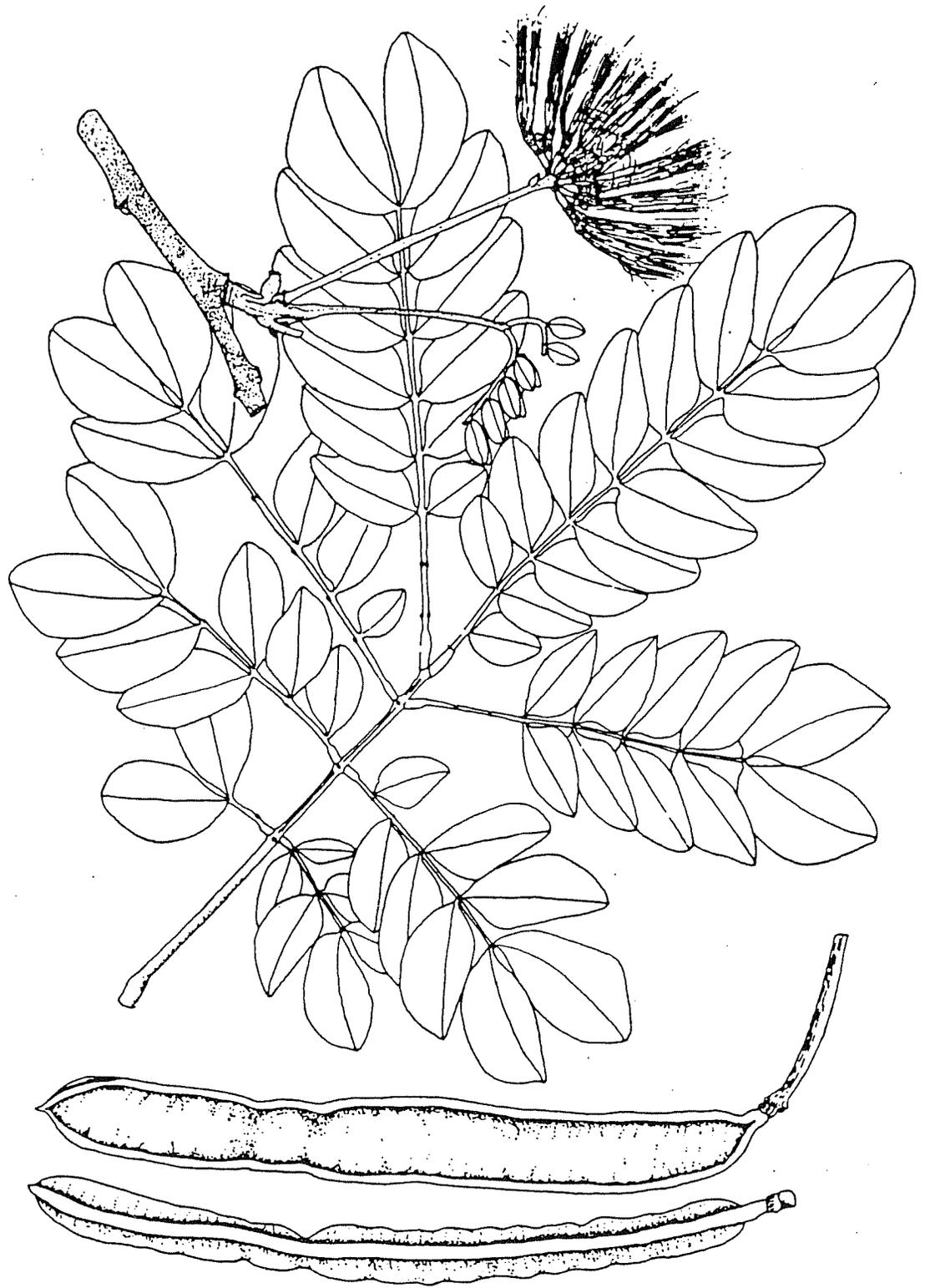


Fig. 137. *Samanea saman* (Mimosaceae).

5- to 12-seeded; seeds black, shiny, flat, triangular, with pink, fleshy aril.

Range: Mexico to northwestern South America. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982).

Introduced as a useful plant in Surinam (Ostendorf, 1962) and French Guiana (Lemee, 1952). Recommended for intensified utilization as a useful fuelwood source by the National Academy of Sciences (pp.144-145, 1980) and Little (pp.219-221, 1983).

7. *Samanea* Merrill

Unarmed, evergreen trees and shrubs. Leaves alternate, petiolate, 2-pinnate; glands present. Inflorescence of axillary, pedunculate, densely-flowered, umbel-like heads. Flowers 5-merous; calyx and corolla united below in a tube; stamens numerous, united below in a tube. Fruit indehiscent, straight or nearly so, partitioned between the seeds; seeds numerous, embedded in pulp.

1. *Samanea saman* (Jacquin) Merrill, *Journal of the Washington Academy of Sciences* 6: 47 (1916). (Synonym: *Pithecellobium saman* (Jacquin) Bentham). REGENBOOM (Surinam); FRENCH TAMARIND, GUANGO (Guyana); RAIN TREE. Tree to 24 (-44) m; branches spreading in an umbrella-shaped crown to 30 (-56) m in breadth. Leaves with 2-8 pairs of pinnae; leaflets 3-8 pairs per pinna, ovate-oblong, falcate, pubescent beneath, the terminal pair markedly the longest and to 6.5 cm, the others to 3.5 cm. Flowers to 50 per head, pinkish-green; stamens to c.3.5 cm, pink above, white below. Fruit narrowly oblong, to c.25-seeded, to 20 x 1.8 cm, black or brown; seeds to 11 x 6 mm.

Range: Tropical America. Grown as an ornamental at the Botanic Gardens, Georgetown and near Timehri, Guyana; in Surinam (Ostendorf, 1962); and in Cayenne, French Guiana.

Literature: Cowen, D.V. 1970. *Flowering Trees and Shrubs in India*. Bombay, India: Thacker & Co.(pp.41-42). Menninger, E.A. 1946. Tropical rain trees. *Journal of the New York Botanical Garden* 47 (564): 296-299.

Cowen (1970) explains that the leaflets "have the remarkable power of changing their position in accordance with atmospheric conditions. In full sunshine they are horizontally spread, allowing no single beam of light to penetrate the dense crown; but at night, in dull weather, or during rain, the pairs of leaflets fold together, the leaf stalks droop and each pinna swivels on its thickened base so that the leaves all lie sideways. In Malaya this drooping of the leaves is considered to portend rain and is the explanation of the name Rain Tree." Recommended for intensified utilization as a fast-growing leguminous tree for reforestation projects, by the National Academy of Sciences (pp.202-203, 1979).

Moraceae

Trees, shrubs, vines or herbs; sap usually milky. Leaves alternate, simple, petiolate. Inflorescence of lateral spikes or capitula, or situated within a hollowed, fleshy receptacle (fig). Flowers unisexual, regular; sepals 4, sometimes united below; petals 4, free. Stamens

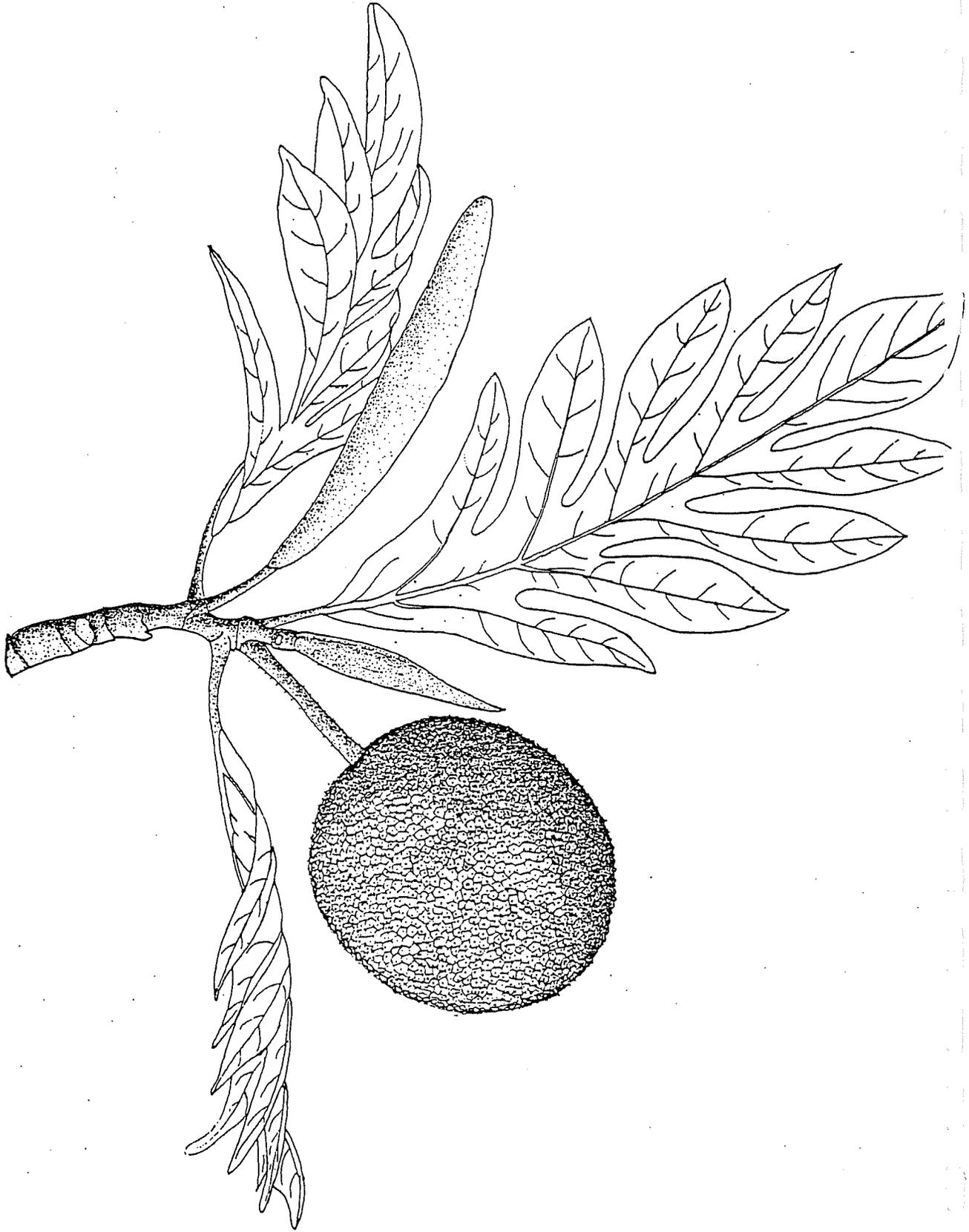


Fig. 138. *Artocarpus altilis* (Moraceae).

1-4, free. Ovary superior or inferior, 1-celled. Fruit an achene or drupe, sometimes aggregated into a syncarp with fleshy receptacle, or surrounded by a fleshy or fibrous receptacle.

Key to Genera

1. Leaves pinnately 3- to 9-lobed, to 90 cm; fruit a syncarp with fleshy receptacle, to 30 cm wide, with pyramidal prickles 1. *Artocarpus*
1. Leaves entire, rarely lobed (if lobed, to 20 cm); fruit a fig with fibrous receptacle, to 5 cm wide (often less), not prickly 2. *Ficus*

1. *Artocarpus* J.R. Forster & G. Forster

Monoecious, evergreen or deciduous trees; sap milky. Leaves alternate, simple, petiolate. Female inflorescence an axillary capitulum; male inflorescence an axillary spike or group of spikes. Fruit a large, pulpy syncarp, comprised of flowers with fleshy perianth embedded in a fleshy receptacle.

1. *Artocarpus altilis* (Parkinson) Fosberg, *Journal of the Washington Academy of Sciences* 31: 95 (1941). BROODVRUCHTBOOM, BREDEBON (Surinam); ARBRE A PAIN (French Guiana); BREADFRUIT. Evergreen tree to 18 m or more. Leaves ovate in broad outline, pinnately 3- to 9-lobed, coriaceous, pale beneath, to 90 cm. Spikes of male inflorescence clavate, yellow, to 30 cm. Fruit globose or ovoid, covered with pyramidal prickles, yellow, to 30 cm wide. needleless

Range: Malaya. Grown as an ornamental at the Palmentuin and on hotel grounds in Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

2. *Ficus* Linnaeus

Monoecious or dioecious, evergreen trees, shrubs or woody vines; sap milky. Leaves alternate, simple, petiolate. Inflorescences axillary, solitary or paired, the male and female flowers formed together within a hollowed, fleshy or fibrous receptacle. Fruit an enlarged receptacle (fig) with an apical opening (ostiole).

Key to Species

1. Leaves lobed; prostrate-branched shrub 4. *F. montana*
1. Leaves entire; erect tree or climbing vine.
 2. Climbing vine; fruits pedunculate; leaves on sterile stems to 2.5 cm 6. *F. pumila*
 2. Erect tree; fruits sessile or shortly pedunculate; leaves 30-90 cm.
3. Leaves crowded at apex of branches, giving a palm-like appearance, to 90 cm 5. *F. pseudo-palma*
3. Leaves evenly distributed along branches.
 4. Leaves lyrate (fiddle-shaped), the surface quilted, the margin undulate 3. *F. lyrata*
 4. Leaves elliptical, oblong or ovate (not lyrate), the surface flat, the margin not undulate.
5. Leaves elliptical, acute, 15-30 cm; emerging leaves enveloped in a pink sheath

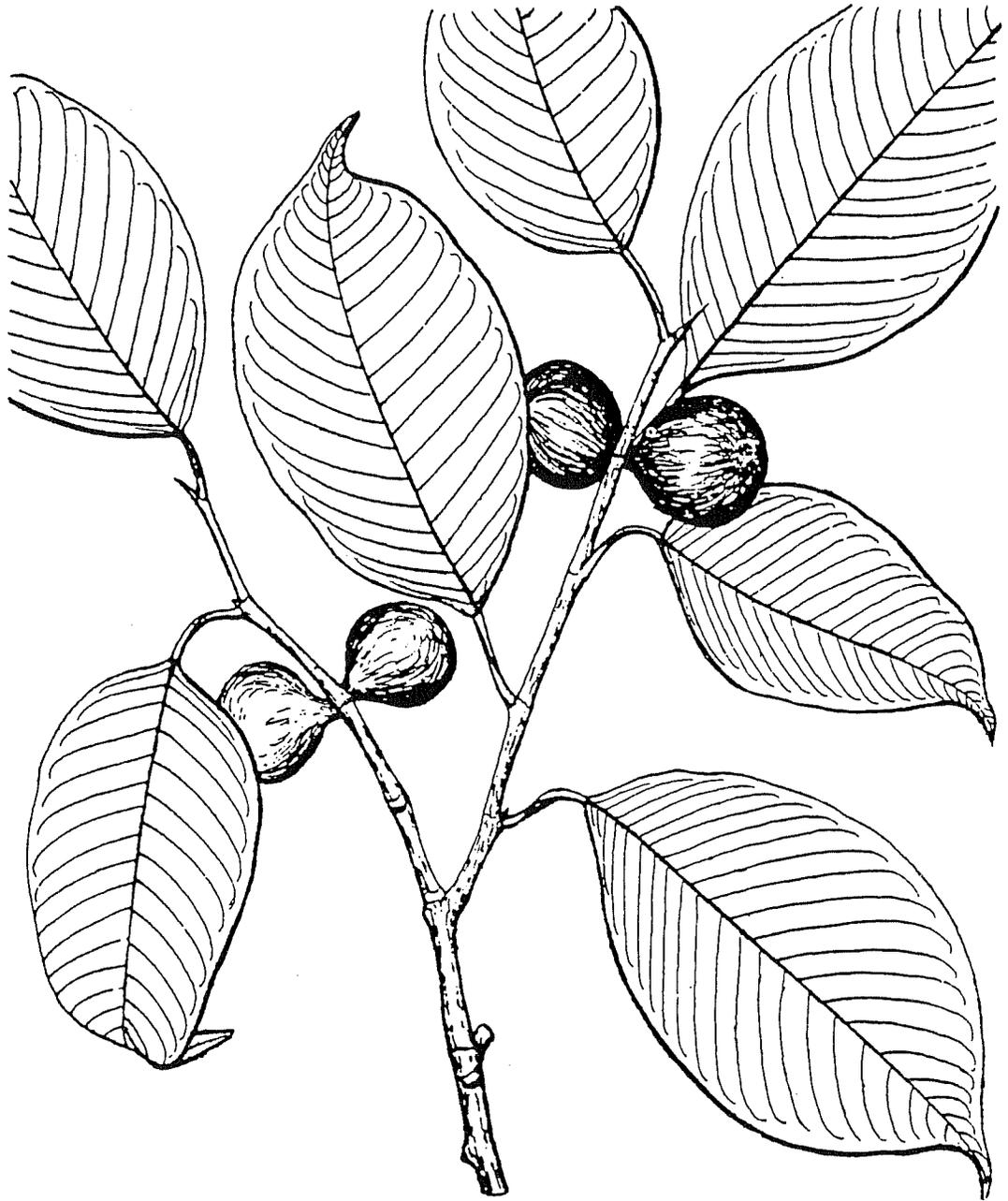


Fig. 139. *Ficus benjamina* (Moraceae).

2. *F. elastica*

5. Leaves oblong, elliptical or ovate, acuminate or cuspidate, 4-11 cm; emerging leaves without sheath

1. *F. benjamina*

1. *Ficus benjamina* Linnaeus, *Mantissa Plantarum* 1: 129 (1767). BENJAMIN FIG, WEEPING FIG. Tree to 9 m, developing accessory trunks, aerial roots, and drooping branches. Leaves oblong, elliptical or ovate, acuminate or cuspidate, smooth, 4-11 cm, green or variegated with cream. Fruits sessile, globose, orange or purplish, to c.1.2 cm wide.

1a. *F. benjamina* cv. *Variegata*. Leaves variegated with cream margin and markings. Range: Without a natural range. Grown, from recently introduced plants, as an ornamental in Guyana (Ted Hubbard, pers. comm., 1985).

1b. *F. benjamina* var. *benjamina*. Leaves green. Range: India, tropical Asia, northern Australia. Grown as an ornamental on hotel and other building grounds, and indoors, in Paramaribo, Surinam; and as an indoor potted plant in Cayenne and at Rochambeau Airport, French Guiana.

2. *Ficus elastica* Roxburgh, *Flora Indica* 3: 541 (1832). RUBBERPLANT (Surinam); CAOUTCHOUC (French Guiana); RUBBER PLANT, INDIA RUBBER TREE. Tree to 12 (-30) m. Leaves elliptical, acute, smooth, 15-30 (-45) cm, green above, yellowish-green beneath. Fruits sessile, ovoid-oblongoid, greenish-yellow, to c.1.2 cm wide.

Range: Nepal, India, Burma. Grown as an ornamental on grounds near New Hope and Timehri, Guyana; on grounds of CELOS buildings at Leysweg and as a street tree in Paramaribo, Surinam; and on hotel grounds in Cayenne and Isle Royale, French Guiana.

3. *Ficus lyrata* Warburg, *Botanische Jahrbucher* 20: 172 (1894). FIDDLE-LEAF FIG. Tree to 12 m. Leaves lyrate (fiddle-shaped) with an obovate or broadly oblanceolate general shape or outline, cordate at the narrowed base, emarginate at the apex, leathery, green, the surface quilted, the margin undulate, to 60 cm; veins prominent, whitish or yellowish-green. Fruits sessile, globose, white-dotted, c.3 cm.

Range: Tropical West Africa. Grown as a tubbed outdoor ornamental on grounds of Torarica Hotel, Paramaribo, Surinam.

4. *Ficus montana* N.L. Burman, *Flora India* 226 (1768). (Synonym: *F. quercifolia* Roxburgh). OAK-LEAF FIG. Prostrate-branched shrub. Leaves ovate or elliptical, lobed and notched, scabrid, to 15 cm. Fruits pedunculate, globose, to c.1.2 cm wide.

Range: Southeast Asia, Malaysia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (Ted Hubbard, pers. comm., 1985).

5. *Ficus pseudo-palma* Blanco, *Flora de Filipinas* 3: 84 (1879). DRACAENA FIG, PHILIPPINE FIG. Tree to 10 m. Leaves crowded at apex of branches, giving a palm-like appearance, oblanceolate, to 90 cm, long-tapering to the base, coarsely toothed, green. Fruits shortly pedunculate, ovoid, green, to 4 cm.

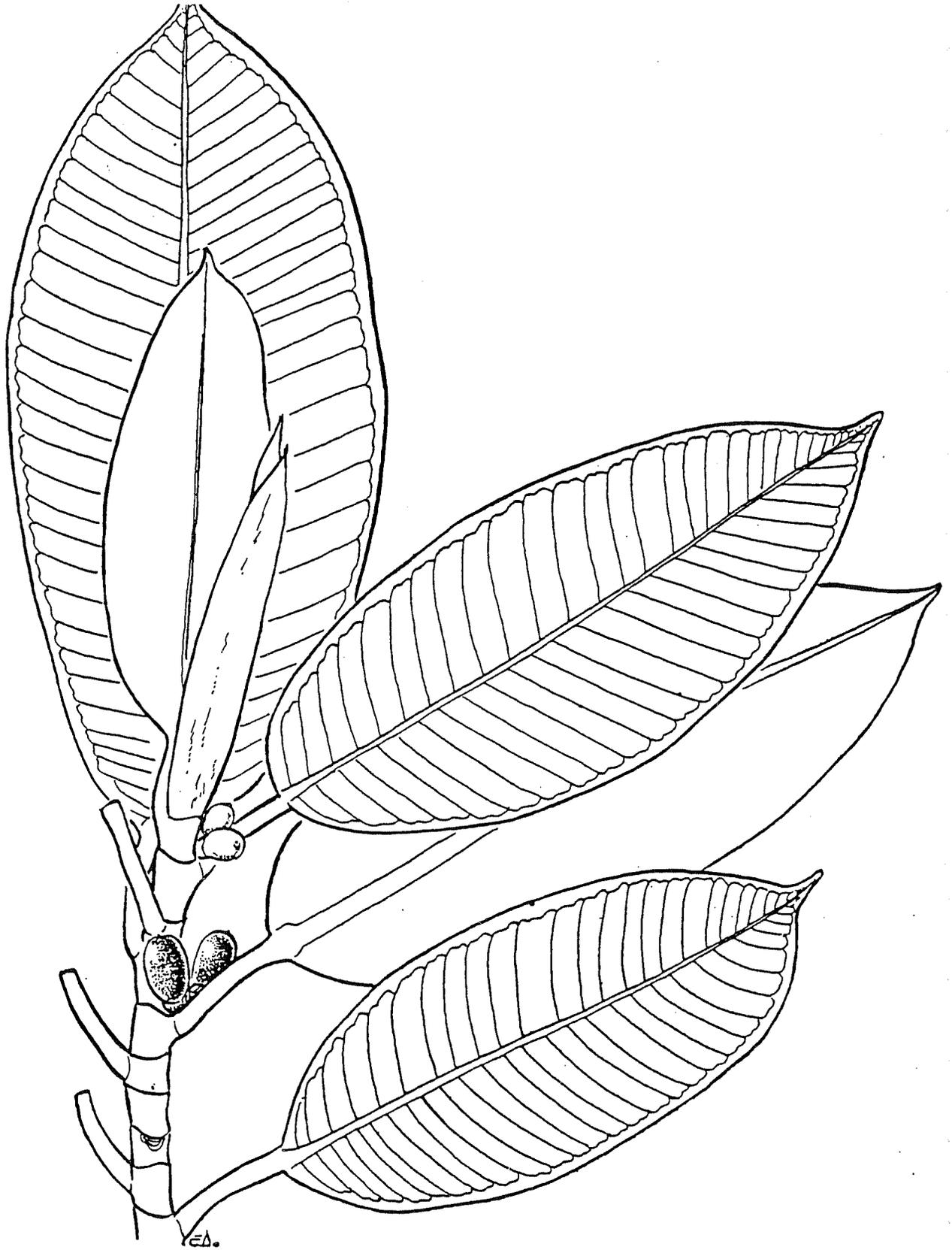


Fig. 140. *Ficus elastica* (Moraceae).

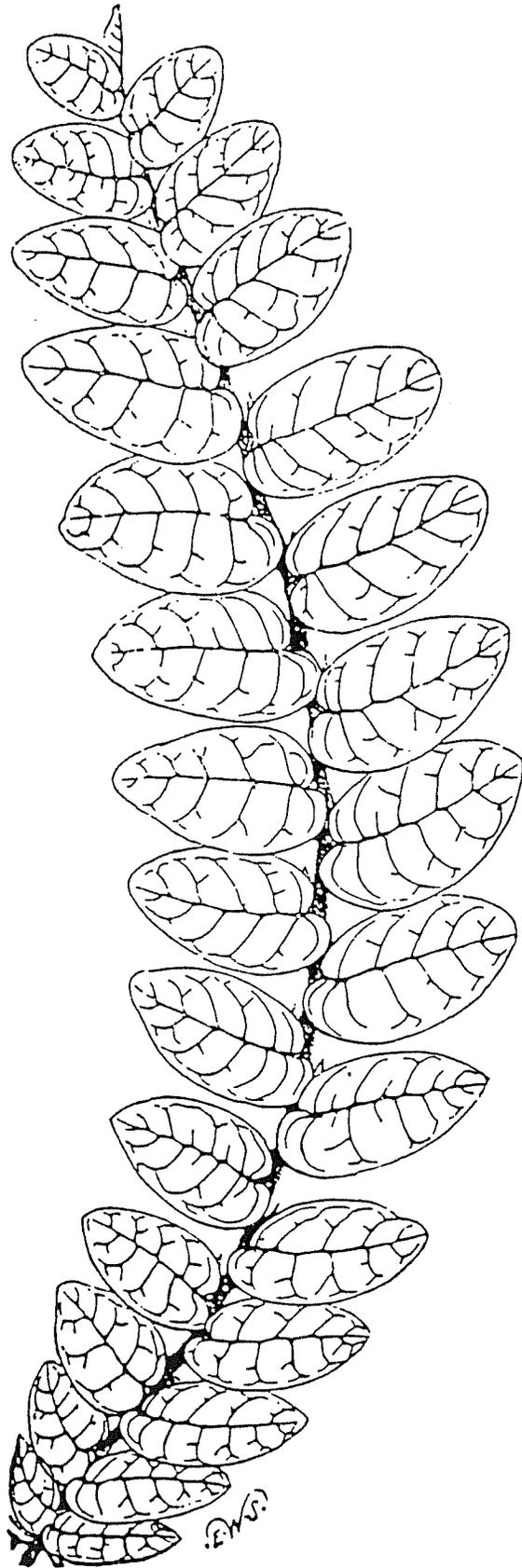


Fig. 141. *Ficus pumila* (Moraceae).

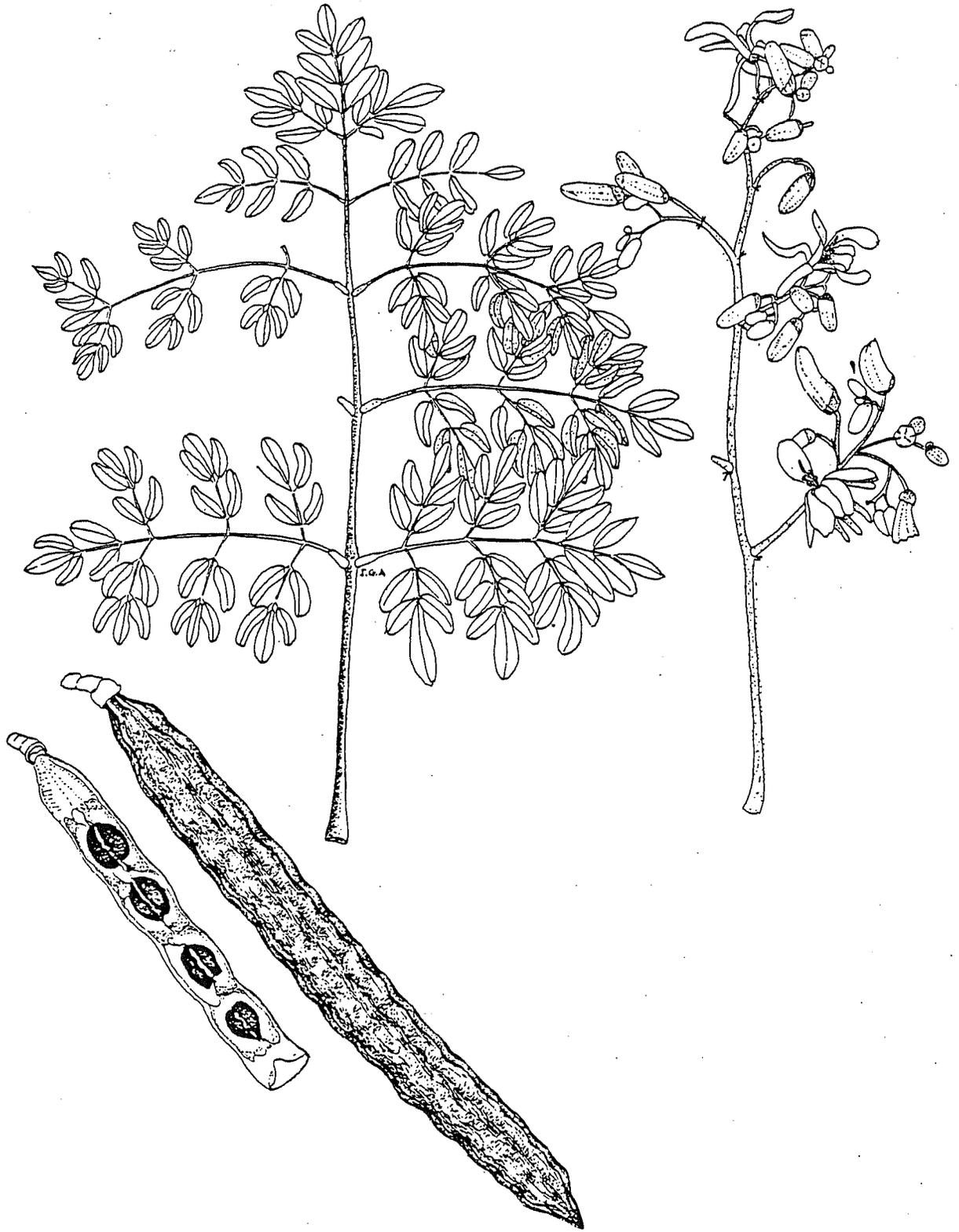


Fig. 142. *Moringa pterygosperma* (Moringaceae).

Range: Philippines. Grown as an ornamental at the Cultuurtuin, Paramaribo, Surinam.

6. *Ficus pumila* Linnaeus, *Species Plantarum* 1060 (1753). CREEPING FIG, CLIMBING FIG. High-climbing vine, spreading and creeping on flat surfaces, developing aerial roots for attaching to substrate. Leaves dimorphic, hirtellous, those on sterile, creeping stems ovate-cordate and to 2.5 cm, those on fruiting stems elliptical or oblong, to c.10 cm. Fruits pedunculate, pyriform, yellow, to 5 cm.

Range: Southeast Asia, Japan. Grown as an indoor bedding plant in hotel in Paramaribo, Surinam.

Moringaceae

Deciduous trees. Leaves alternate, 2- or 3-, and odd-pinnately compound, petiolate. Inflorescence an axillary panicle. Flowers bisexual, slightly irregular; sepals 5, free; petals 5, free, one erect and larger than the others; minute hypanthium present. Fertile stamens 5; staminodes 3-5. Ovary superior, 1-celled, stipitate. Fruit a linear, angular capsule; seeds numerous, often 3-winged.

1. *Moringa* Adanson

Characteristics of the family Moringaceae.

1. *Moringa pterygosperma* Gaertner, *De Fructibus et Seminibus Plantarum* 2(2): 314 (1791). (Synonym: *M. oleifera* Lamarck). Tree to 9 m; roots with smell and taste of horseradish (*Armoracia*). Leaves 2- or 3-pinnate, to 60 cm; leaflets elliptical or obovate, to c.2.5 cm. Petals greenish below, white above. Fruit linear, 3-angled, pendent, to 45 cm; seeds 3-winged.

Range: India. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982).

Literature: Peter, K.V. 1987. Drumstick (*Moringa oleifera* Lam.) - a multipurpose perennial Indian vegetable tree of considerable medicinal value, pp.124-127, in Leeuwenberg, A.J.M., comp., *Medicinal and Poisonous Plants of the Tropics*. Wageningen, The Netherlands: Pudoc. Morton, J.F. 1991. The horseradish tree, *Moringa pterygosperma* (Moringaceae) - a boon to arid lands? *Economic Botany* 45(3): 318-333.

Myrtaceae

Trees and shrubs. Leaves alterate or opposite, simple, often glandular-punctate, subsessile to petiole. Inflorescence a terminal or axillary spike, raceme, umbel, cyme or panicle. Flowers bisexual, regular; sepals 4-5, free, sometimes absent and represented by a bud cap (operculum); petals (0) 4-5, free. Stamens numerous, free or united in fascicles. Ovary inferior or half-inferior, 1- to 3 (or more)-celled. Fruit a woody capsule or berry; seeds few to numerous.

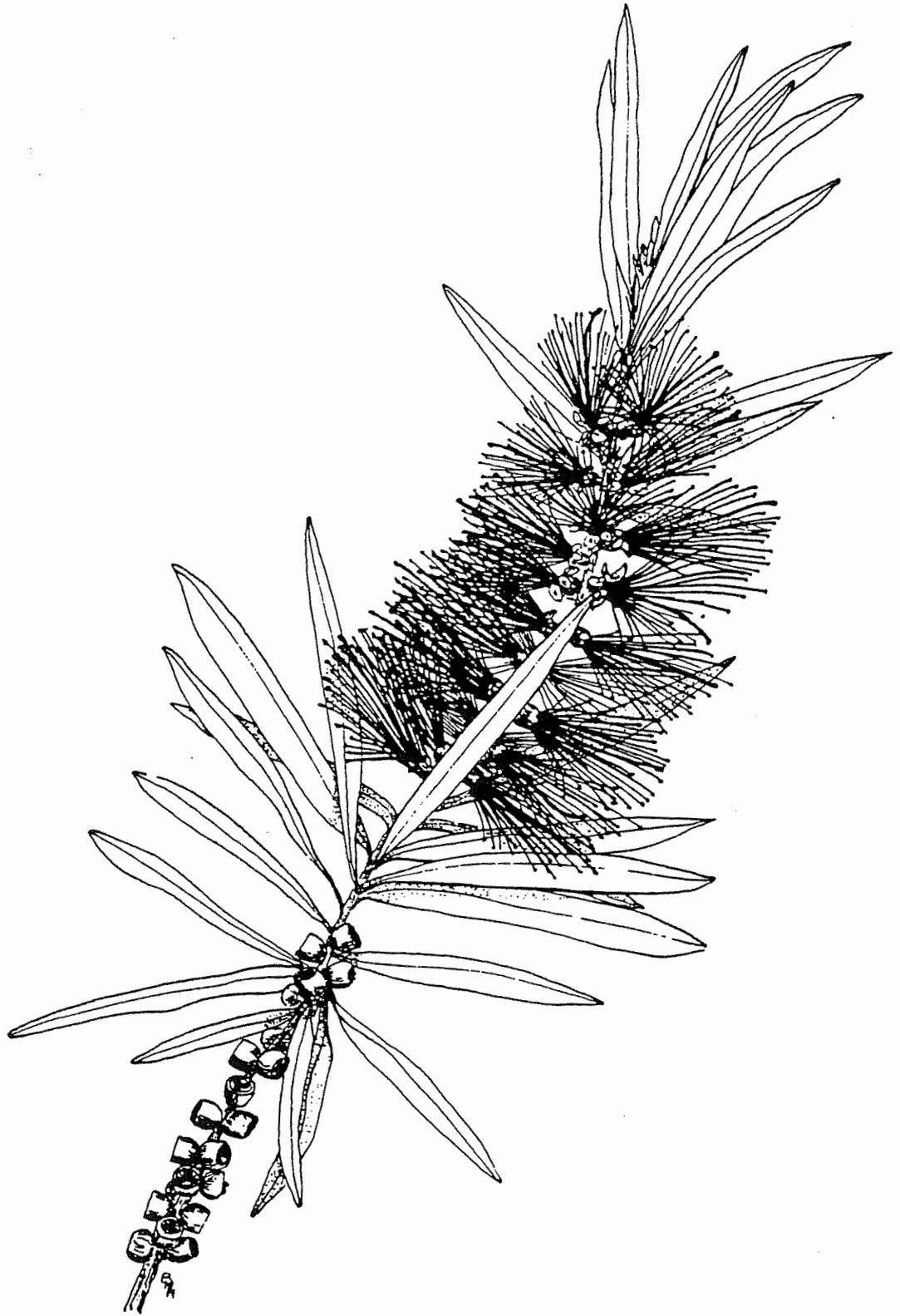


Fig. 143. *Callistemon citrinus* (Myrtaceae).

Key to Genera

1. Inflorescence a cylindrical spike ("bottle-brush", due to long-exserted stamens), the axis growing into a leafy shoot beyond the flowering portion; flowers with distinct sepals and petals, without a bud cap.
 1. Petals red; anthers red; filaments free; bark not spongy 1. *Callistemon*
 2. Petals white; anthers yellow; filaments united in 5 fascicles; bark spongy 3. *Melaleuca*
1. Inflorescence a panicle (not "bottle-brush"), the axis not growing beyond the flowering portion; flowers often with a bud cap.
 3. Mature leaves alternate; fruit a capsule; bud cap always present 2. *Eucalyptus*
 3. Mature leaves opposite; fruit a berry; bud cap present or absent 4. *Syzygium*

The BAYLEAF or BAY RUM TREE, *Pimenta racemosa* J. W. Moore, is present in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam (Ostendorf, 1962).

1. *Callistemon* R. Brown

Trees and shrubs. Leaves alternate, simple. Inflorescence of terminal, cylindrical spikes ("bottle-brush") or capitula, the axis growing into a leafy shoot beyond the flowering portion. Sepals united in a 5-lobed calyx-tube; petals 5, free, deciduous. Stamens numerous, free, or united in a basal ring only, long-exserted. Fruit a capsule.

1. *Callistemon citrinus* (Curtis) Skeels, *United States Department of Agriculture, Bureau of Plant Industry Bulletin* 282: 49 (1913). (Synonym: *Metrosideros citrina* Curtis). CRIMSON BOTTLEBRUSH. Shrub or tree to 7.5 m; young branches sericeous. Leaves lanceolate or linear-lanceolate, entire, glabrous, prominently glandular-punctate, to c.9 cm. Inflorescence a cylindrical spike to 10 cm. Petals crimson-red. Stamens red, to 2.5 cm. Fruit globose, c.8 mm.

Range: Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana.

2. *Eucalyptus* L'Heritier

Evergreen trees. Leaves alternate (mature) and opposite (juvenile), simple, petiolate. Inflorescence of axillary capitula, or of solitary, axillary flowers. Sepals and petals absent and represented by a bud cap. Stamens numerous, free. Fruit a woody capsule.

Literature: FAO. 1985. *The Ecological Effects of Eucalyptus*. FAO Forestry Paper No.59. Rome, Italy: FAO. FAO. 1979. *Eucalypts for Planting*. FAO Forestry Paper No.11. Rome, Italy: FAO. Friedman, R. 1988. Strangers in our midst. *Pacific Discovery* 41(3): 22-30. Penfold, A.R. and J.L. Willis. 1961. *The Eucalypts*. London: Leonard Hill, and New York: Interscience. Shiva, V. and J.B. Bandyopadhyay. 1983. Eucalyptus - a disastrous tree for India. *The Ecologist* 13(5): 184-187.



Fig. 144. *Melaleuca quinquenervia* (Myrtaceae).

Key to Species

1. Inflorescence a solitary (rarely 3 together) flower; bark bluish; fruit sessile 2. *E. globulus*
1. Inflorescence a 5- to 10-flowered umbel; bark ashen; fruit pedicellate 1. *E. camaldulensis*

1. *Eucalyptus camaldulensis* Dehnhardt, *Catalogus Plantarum Horti Camalduensis* ed.2, 20 (1832). MURRAY RED GUM. Tree to 45 m; bark ashen-grey. Mature leaves alternate, lanceolate, acuminate, to 15 (-30) cm. Inflorescence a 5- to 10-flowered umbel. Bud cap smooth. Fruit hemispherical, c.1.2 cm wide, pedicellate.

Range: Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982); and in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam.

2. *Eucalyptus globulus* Labillardiere, *Novae Hollandiae Plantarum Specimen* 2: 121 (1806). BLUE GUM, TASMANIAN BLUE GUM. Tree to 60 (-80) m; bark bluish. Mature leaves alternate, lanceolate, acuminate, falcate, to 15 (-30) cm; young leaves glaucous-blue. Inflorescence a solitary (rarely 3 together) flower. Bud cap warty. Fruit turbinate, c.2.5 cm wide, sessile.

Range: Tasmania, Australia. Grown as an ornamental in French Guiana (de Granville, 1985).

Literature: FAO. 1986. *Databook on Endangered Tree and Shrub Species and Provenances*. FAO Forestry Paper No.77. Rome, Italy: FAO (pp.271-278).

3. *Melaleuca* Linnaeus

Trees or shrubs. Leaves often alternate, sometimes opposite or whorled, flat to subcylindrical, subsessile. Inflorescence of terminal, cylindrical spikes ("bottle-brush") or capitula, the axis growing into a leafy shoot beyond the flowering portion. Sepals united in a 5-lobed calyx-tube; petals 5, free. Stamens numerous, united in 5 fascicles, long-exserted. Fruit a capsule.

1. *Melaleuca quinquenervia* (Cavanilles) S.T. Blake, *Proceedings of the Royal Society of Queensland* 69: 76 (1958). (Synonym: *M. leucadendron* sensu auth., non (Linnaeus) Linnaeus). CAJEPUT TREE, PAPERBARK TREE. Tree to 7.5 m; bark spongy. Leaves alternate, lanceolate to oblanceolate, flat, to 10 (-12.5) cm. Inflorescence a cylindrical spike to 15 cm. Petals white.

Range: New Caledonia, Papua New Guinea. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in French Guiana (Blake, pp.28-35, 1968).

Literature: Blake, S.T. 1968. A revision of *Melaleuca leucadendron* and its allies. *Contributions from the Queensland Herbarium*, No.1. 114 pp. Morton, J.F. 1966. The cajeput tree - a boon and an affliction. *Economic Botany* 20(1): 31-39.

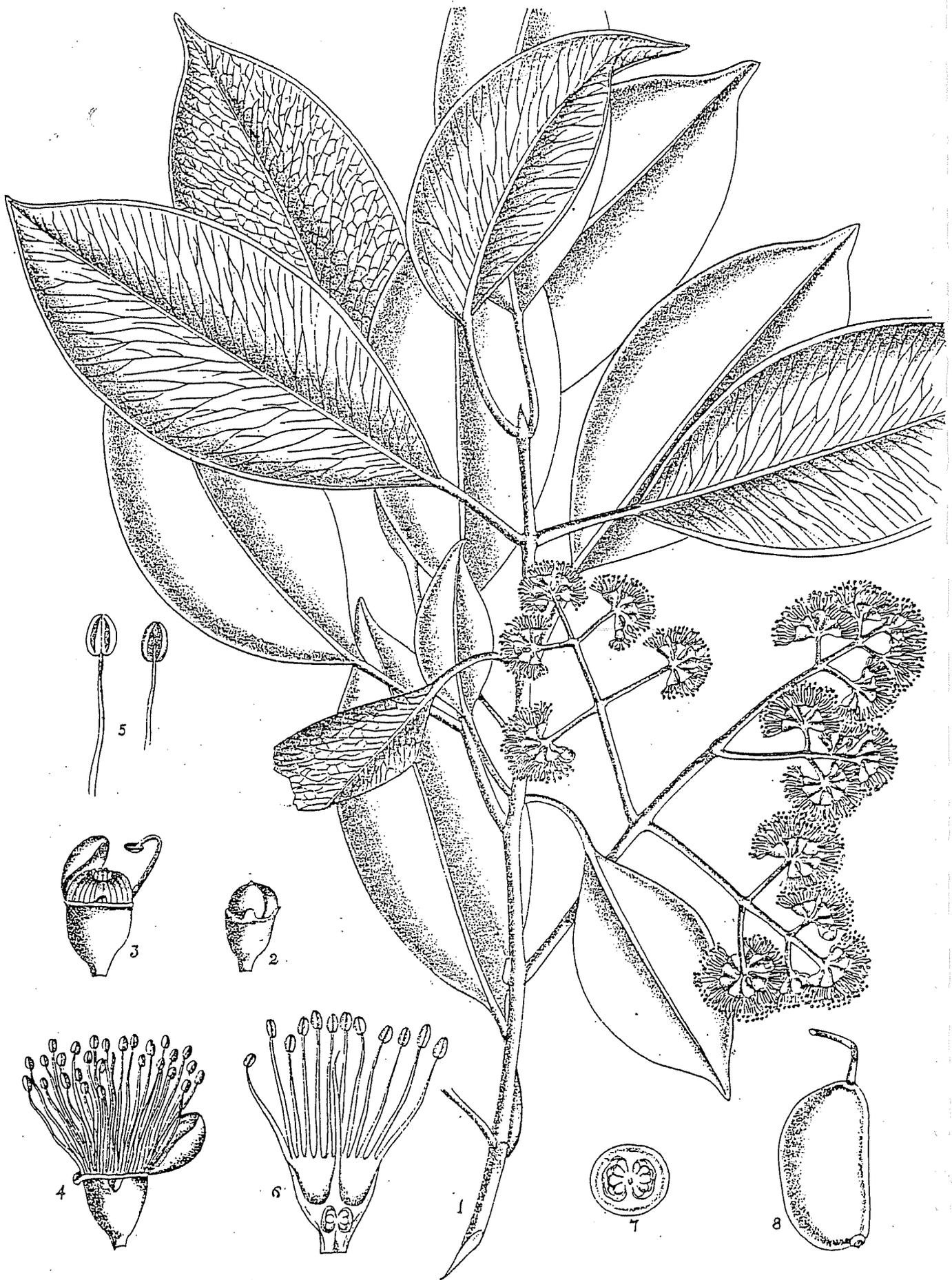


Fig. 145. *Syzygium cumini* (Myrtaceae).

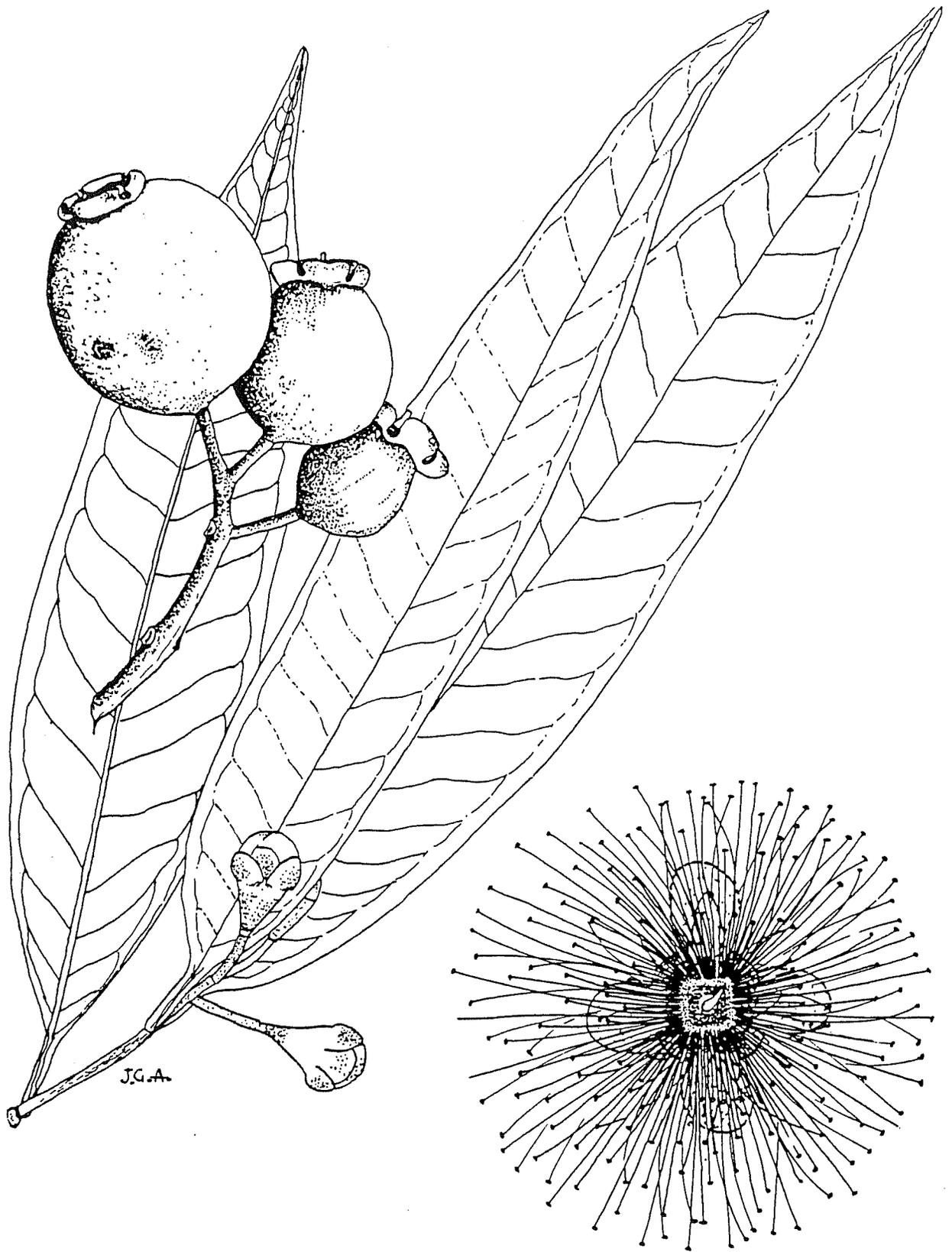


Fig. 146. *Syzygium jambos* (Myrtaceae).

4. *Syzygium* Gaertner

Evergreen trees. Leaves opposite, simple, petiolate. Inflorescence a terminal or axillary panicle, cyme or raceme. Sepals 4-5, united in a 4- or 5-lobed calyx-tube (tube sometimes truncate); petals 4-5, free or united in a bud cap with a lid. Stamens numerous, free. Fruit a 1-seeded berry.

Key to Species

1. Petals united in a bud cap with a lid; fruit purplish-black; filaments 2-6 mm; inflorescence a panicle 1. *S. cumini*
1. Petals free; fruit pale yellow; filaments to 4 cm; inflorescence a raceme 2. *S. jambos*

1. *Syzygium cumini* (Linnaeus) Skeels, *United States Department of Agriculture, Bureau of Plant Industry, Bulletin* 248: 25 (1912). (Synonyms: *Eugenia jambolana* Lamarck, *Syzygium jambolana* (Lamarck) DeCandolle). JAVA PLUM, JAMBOLAN. Tree to 24 m. Leaves elliptical or obovate, to 20 cm. Inflorescence a few-flowered panicle. Petals united in a white bud cap with a lid. Filaments 2-6 mm. Fruit purplish-black, to 2 cm, edible.

Range: India, Sri Lanka. Grown as an ornamental in French Guiana (de Granville, 1985).

Literature: Morton, J.F. 1963. The jambolan (*Syzygium cumini* Skeels) - its food, medicinal, ornamental and other uses. *Proceedings of the Florida State Horticultural Society* 76: 328-338.

2. *Syzygium jambos* (Linnaeus) Alston in Trimen, *A Hand-book to the Flora of Ceylon* 6: Supplement 115 (1931). (Synonym: *Eugenia jambos* Linnaeus). POMME ROSA (French Guiana); ROSE APPLE, MALABAR PLUM. Tree to 18 m. Leaves oblong-lanceolate, to 22 cm. Inflorescence a few-flowered raceme. Petals free, white or greenish-white. Filaments to 4 cm. Fruit pale yellow, to 6 cm wide, edible.

Range: Southeast Asia. Grown as an ornamental on hotel grounds in Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

Nyctaginaceae

Trees, shrubs, vines and herbs, sometimes armed. Leaves alternate, opposite or whorled, simple, petiolate. Inflorescence of solitary, capitate, corymbose, paniculate or umbellate flowers; flowers often subtended by sepaloid or foliaceous and colored involucre bracts. Flowers bisexual or unisexual, regular; sepals 5, united in a 5-lobed, often petaloid perianth-tube; petals absent. Stamens (3-) 5 (-10), free. Ovary superior, 1-celled. Fruit a 1-seeded achene, enclosed by the persistent calyx.

Key to Genera

1. Shrubby vines; plants often armed; leaves alternate; involucre bracts large, colored; perianth-tube cylindrical; achene linear 1. *Bougainvillea*

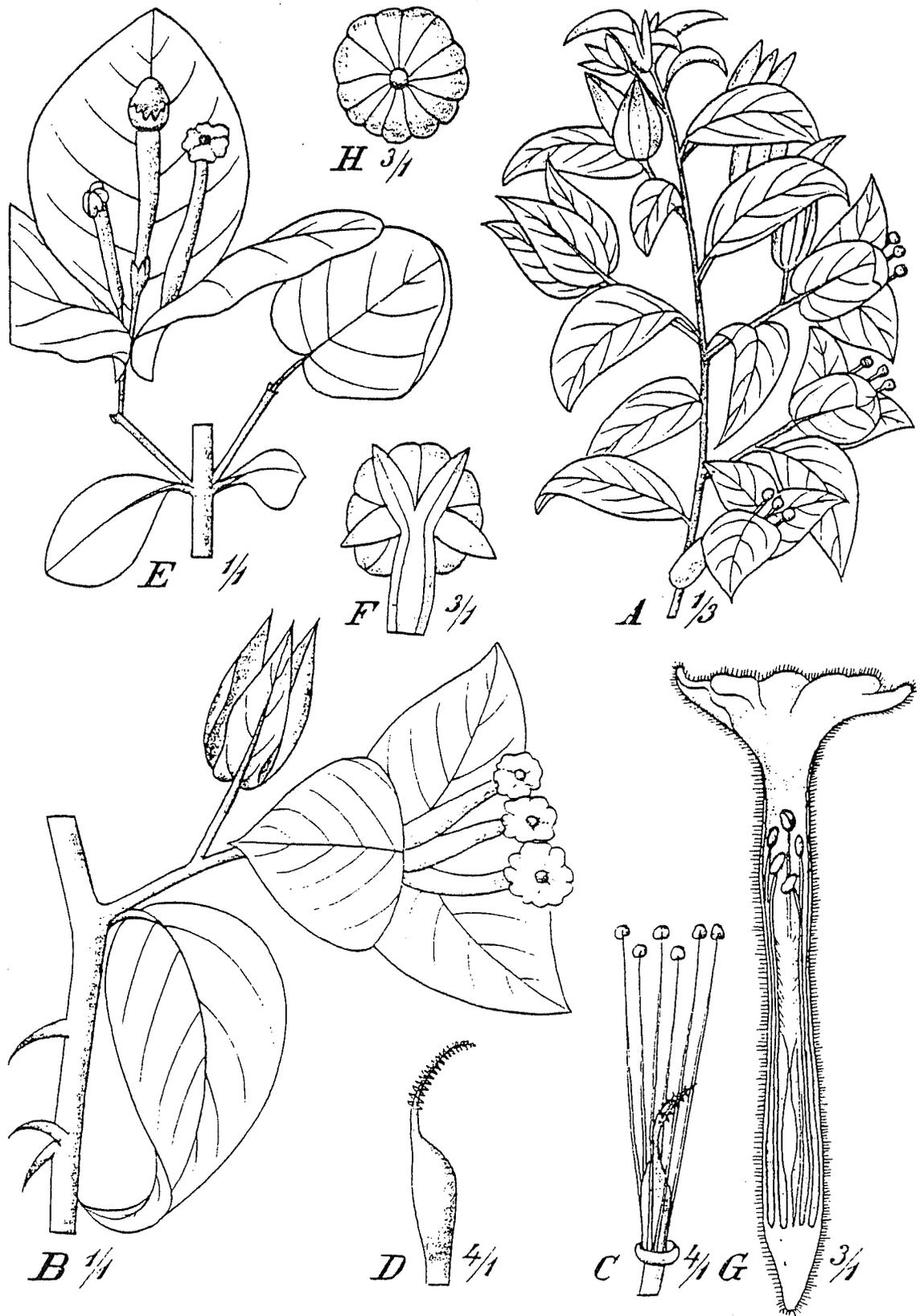


Fig. 147. *Bougainvillea spectabilis* (Nyctaginaceae).

1. Perennial herbs; plants unarmed; leaves opposite; involucre bracts small, sepeloid, green; perianth-tube funnellform or salverform; achene ellipsoid to globose 2. *Mirabilis*

1. *Bougainvillaea* Commerson ex Jussieu

Shrubby vines, sometimes small trees, often armed. Leaves alternate, simple, petiolate. Inflorescence of solitary, 3-bracteate flowers, or of 3-flowered clusters with each flower subtended by a large, colorful bract adnate to the pedicel. Sepals 5, united in a cylindrical perianth-tube. Stamens 5-10. Fruit an elongated achene.

Key to Species

1. Perianth-tube distinctly 5-angled below, with antrorsely curved hairs to 0.5 mm; leaves and stems glabrate 1. *B. glabra*
1. Perianth-tube veined but not distinctly angular below, with spreading, straight hairs to 1 mm; leaves and stems villous 2. *B. spectabilis*

1. *Bougainvillaea glabra* Choisy in DeCandolle, *Prodromus Systematis Naturalis Regni Vegetabilis* 13(2): 437 (1849). BOUGAINVILLE (Surinam); BOUGAINVILLAEA. Shrubby vine; stems long, weakly spinose or unarmed. Leaves narrowly ovate to elliptical, glabrate, to 10 cm. Bracts ovate or oblong-ovate, purple or magenta, to c.5 cm. Perianth-tube distinctly 5-angled below, with appressed, antrorsely curved hairs to 0.5 mm, greenish.

Range: Brazil. Grown as an ornamental in Georgetown, Guyana, and on hotel grounds in Paramaribo, Surinam.

2. *Bougainvillaea spectabilis* Willdenow, *Species Plantarum* ed.4, 2: 348 (1799). BOUGAINVILLE (Surinam); BOUGAINVILLIER, BOUGAINVILLEE (French Guiana); BOUGAINVILLAEA. Shrubby vine; stems long, armed with stout, recurved spines. Leaves ovate, villous beneath, to 10 cm. Bracts pink, salmon, purple or white, to c.5 cm. Perianth-tube veined but not distinctly angular below, with spreading, straight hairs to 1 mm, yellowish above.

Range: Brazil. Grown as an ornamental at the Promenade Gardens and the Botanic Gardens, Georgetown, Guyana; in a garden in Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

2. *Mirabilis* Linnaeus

Unarmed annual or perennial herbs; roots usually tuberous. Leaves opposite, simple, petiolate. Inflorescence of axillary corymbs or panicles, the flowers ultimately 1-few subtended by a 5-lobed, sepeloid involucre. Sepals 5, united in a funnellform or salverform, petaloid perianth-tube. Stamens 5-6. Fruit an ellipsoid to globular achene.

1. *Mirabilis jalapa* Linnaeus, *Species Plantarum* 177 (1753). NACHTSCHONE, VIERUURSBLOEM (Surinam); FOUR O'CLOCK, MARVEL OF PERU. Perennial herb to 90 cm; roots tuberous. Leaves ovate or ovate-lanceolate, entire, glabrate, to 14 cm. Perianth-tube funnellform or salverform, in various shades of pink, red, yellow or white, to 5

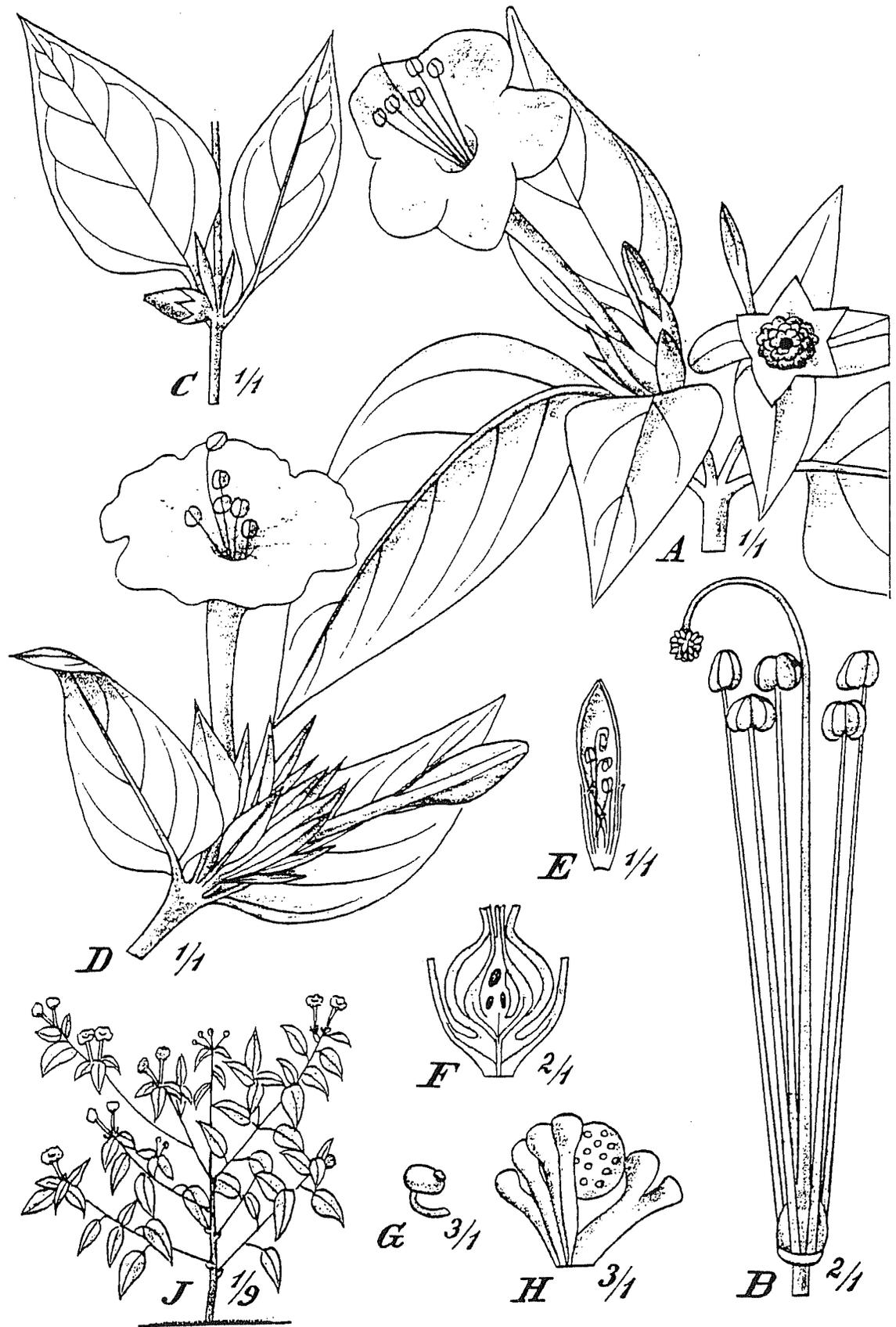


Fig. 148. *Mirabilis jalapa* (Nyctaginaceae).

cm.

Range: Tropical America. Grown as an ornamental in gardens of Paramaribo, Surinam.

Nymphaeaceae

Perennial aquatic herbs; tuberous anchoring rhizomes often present. Leaves simple, orbicular or nearly so, aerial, floating or submerged, often long-petiolate. Inflorescence of axillary, solitary flowers. Flowers bisexual, regular; sepals 4-6, free or united at the base; petals (6) numerous, free, often intergrading into the stamens. Stamens numerous, spirally arranged, free. Ovary superior; carpels 3 - numerous, free or united, sometimes free and embedded in the enlarged receptacle. Fruit a berry or berry-like capsule, or an aggregate fruit arising from the enlarged capsule.

Key to Genera

1. Flowers and leaf-blades aerial; leaf-blades without a basal sinus; fruits (carpels) free, aggregated and sunken into the top of an expanded, obconical receptacle 1. *Nelumbo*
1. Flowers and leaf-blades floating; leaf-blades with a basal sinus, at least when young; fruits (carpels) not in an expanded receptacle.
 2. Leaves small or medium, to c.45 cm wide, with flat margin, smooth or at most the petioles rugose (roughened), not peltate 2. *Nymphaea*
 2. Leaves large, to 1.9 m wide, with upturned margin, prickly beneath and with prickly petioles, peltate 3. *Victoria*

1. *Nelumbo* Adanson

Aquatic herbs; rhizomes often tuberous. Leaves orbicular or nearly so, peltate, long-petiolate, the blade aerial. Flowers solitary, aerial and higher than the leaf-bases; sepals 4-5; petals numerous, free; stamens numerous. Receptacle enlarged, obconical, with flat, circular top in which c.14-25 pistils are embedded, each protruding through a circular pore; carpels 1-seeded.

1. *Nelumbo nucifera* Gaertner, *De Fructibus et Seminibus Plantarum* 1: 73 (1788). SACRED LOTUS, EAST INDIAN LOTUS. Plant to 2.1 m. Leaves raised to 1.8 m above the water, the blade orbicular or ellipsoid, glaucous, entire, peltate, often with gently sinuate margin and depressed slightly in the center, to 75 (-90) cm wide; petiole rugose. Pedicel rugose; flowers borne higher than the leaves, to 30 cm wide, pink, or sometimes whitish.

Range: Asia to Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, and by Hindus in roadside canals near Georgetown, Guyana, and in roadside canals near Domburg, Surinam.

The perfection and purity of the flower is revered by devotees of Hinduism and Buddhism.

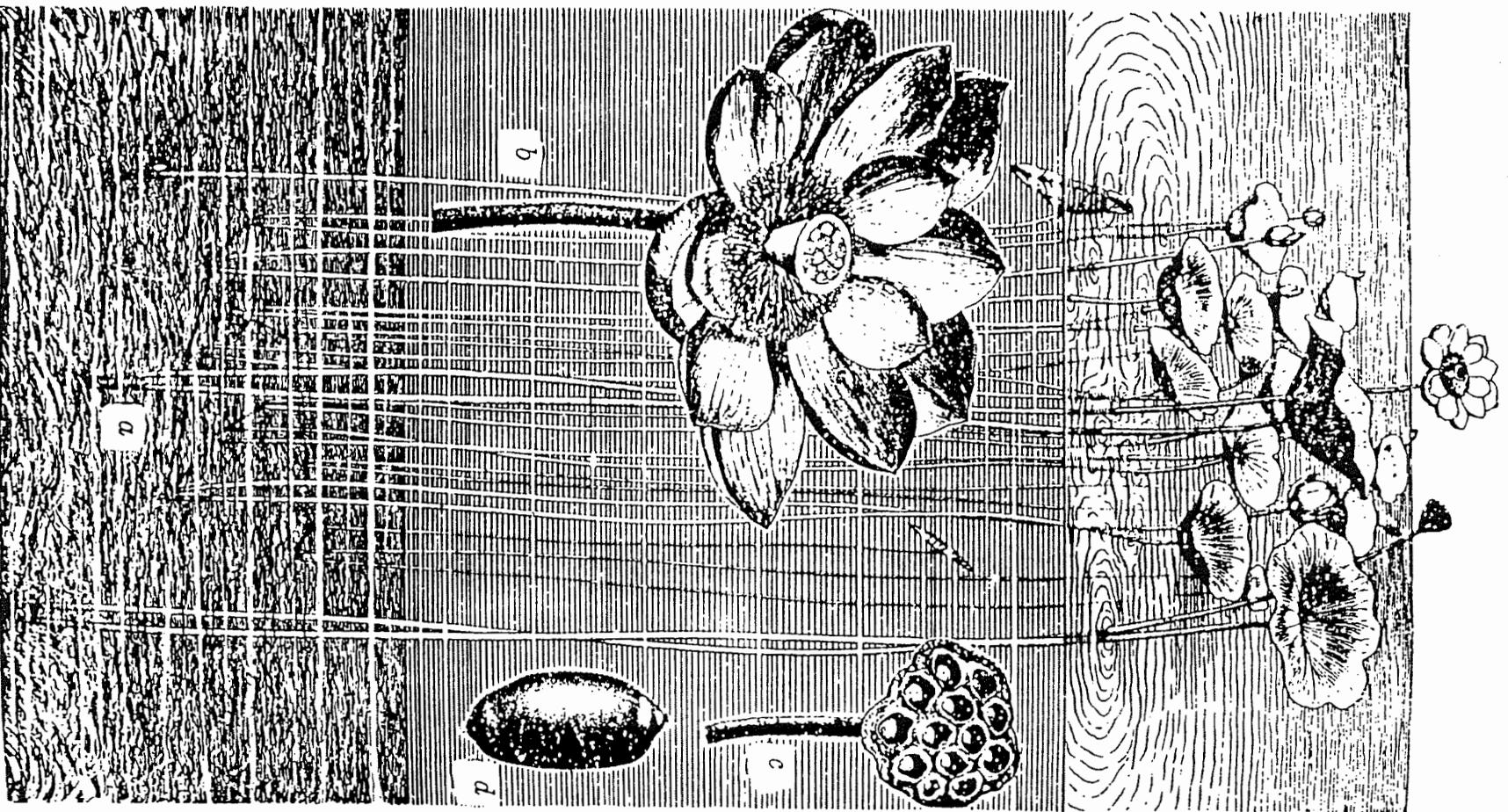


Fig. 149. *Nelumbo nucifera* (Nymphaeaceae).

2. *Nymphaea* Linnaeus

Aquatic herbs; rhizome often tuberous. Leaves orbicular or nearly so, with a basal sinus, long-petiolate, the blades floating. Flowers solitary, floating or borne slightly above water surface; sepals 4; petals numerous, free; stamens numerous (20-700). Receptacle not enlarged. Fruit a depressed-subglobose, berry-like capsule; seeds numerous, minute.

Literature: Meeuse, B.J.D. and E.L. Schneider. 1979-1980. *Nymphaea* revisited: a preliminary communication. *Israel Journal of Botany* 28: 65-79. Wiersema, J.H. 1987. A monograph of *Nymphaea* Subgenus *Hydrocallis* (Nymphaeaceae). *Systematic Botany Monographs* 16: 1-112.

Key to Species

1. Flowers diurnal (open in daytime).
 2. Leaves to 45 cm wide, entire to irregularly dentate; sepals marked with blackish lines; ovary with incompletely fused carpels 2. *N. ampla*
 2. Leaves to 25 cm wide, entire; sepals without lines; ovary with free carpels 3. *N. odorata*
1. Flowers nocturnal (open at night).
 3. Leaves entire, to 26 cm wide; sepals marked with blackish lines; petals creamy-white 1. *N. amazonum*
 3. Leaves irregularly dentate, to 36 (-45) cm wide; sepals without lines; petals creamy-white to pale yellow, tinged pink 4. *N. rudgeana*

Note: Unidentified blue-flowered and lavender-flowered plants are respectively grown at the Botanic Gardens, Georgetown, Guyana, and indoors in a hotel pool in Paramaribo, Surinam.

1. *Nymphaea amazonum* Martius & Zuccarini, *Abhandlungen der Mathematisch-Physikalischen Classe der Koniglich Bayerischen Akademie der Wissenschaften, Munich* 1: 363 (1832), subsp. *amazonum*. Leaves broadly ovate to elliptical, green with purple spots above, usually reddish beneath, entire, to 26 cm wide. Flowers nocturnal, creamy-white, to 12 cm wide, fragrant.

Range: Tropical America, including the three Guianas. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

2. *Nymphaea ampla* (Salisbury) DeCandolle, *Regni Vegetabilis Systema Naturale* 2: 54 (1821). WATERLELIE (Surinam); PANKOEKOE-WIWIRI (Surinamese Creole); WHITE WATER LILY. Leaves suborbicular or broadly elliptical, light green above, dull green to reddish beneath, both surfaces slightly reddish-flecked, entire to irregularly dentate, to 45 cm wide. Flowers diurnal, white, to 13 cm wide.

Range: Tropical America. Grown as an ornamental in Surinam (Ostendorf, 1962).

3. *Nymphaea odorata* Solander in Aiton, *Hortus Kewensis* ed.1, 2: 227 (1789). WHITE WATER LILY, FRAGRANT WATER LILY. Leaves orbicular, green above, purplish

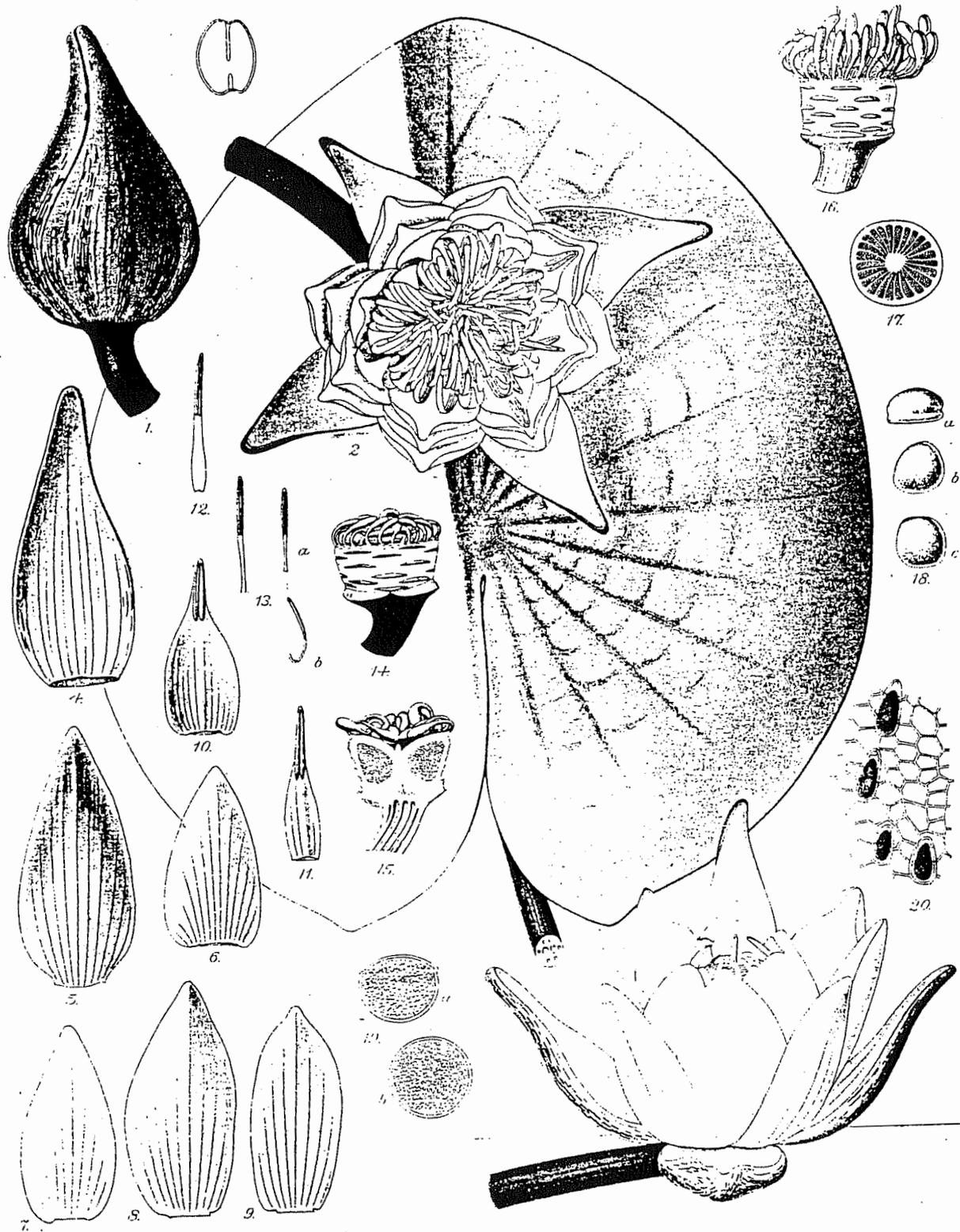


Fig. 150. *Nymphaea amazonum* (Nymphaeaceae).

beneath, entire, to 25 cm wide. Flowers diurnal, white, to 15 cm wide.

Range: Eastern United States to South America, including Guyana. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Schneider, E.L. and T. Chaney. 1981. The floral biology of *Nymphaea odorata* (Nymphaeaceae). *The Southwestern Naturalist* 26(2): 159-165.

4. *Nymphaea rudgeana* G.F.W. Meyer, *Primitiae Florae Essequiboensis* 198 (1818). Leaves suborbicular, green or sometimes purplish above, greenish or brownish-purple beneath, both surfaces sometimes dark-flecked, irregularly dentate, to 36 (-40) cm wide. Flowers nocturnal, creamy-white to pale yellow, tinged pink.

Range: Tropical America, including the three Guianas. Grown as an ornamental in Surinam (Ostendorf, 1962).

3. *Victoria* Lindley

Giant aquatic herbs; plants prickly; rhizomes tuberous. Leaves orbicular, peltate, long-petiolate, floating, the margin upturned. Flowers solitary, floating; sepals 4; petals numerous free; stamens numerous. Receptacle not enlarged. Fruit an urceolate berry.

Literature: Schneider, E.L., Williamson, P.S. and D.C. Whitenberg. 1990. Hot sex in water lilies. *Water Garden Journal* 6(4): 41-51.

1. *Victoria amazonica* (Poeppig) Sowerby, *Annals and Magazine of Natural History* ser.2, 6: 310 (1850). (Synonym: *V. regia* Lindley). ROYAL WATER LILY. Leaves orbicular, green and reticulate-rugose above, purple or green and prickly on raised ribs beneath, to 1.9 m wide, the margin upturned to 15 cm high; petiole to 5.1 m, prickly. Sepals prickly. Flowers opening white, changing to pink or rose, to 45 cm wide. Fruit prickly.

Range: Amazonian South America, including Guyana. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana.

Literature: Bernhardt, P. 1988. Queen of the waterlilies. *Garden* 12(5): 6-8. Mabey, R. 1988. *The Flowering of Kew*. 208 pp. London: Century (pp. 151-157). Cowgill, U.M. and G.T. Prance. 1989. A comparison of the chemical composition of injured leaves in contrast to uninjured leaves of *Victoria amazonica* (Nymphaeaceae). *Annals of Botany* 64(6): 697-706. Masters, C.O. 1968. *Victoria*, wonder flower of the Rio-Mar. *Garden Journal* 18(3): 74-78. Munns, L.B. 1987. Water lily for a queen. *Garden* 11(6): *Lasca* 5-7. Prance, G.T. 1985. On the correct name for the royal water lily. *Plants and Gardens* 41(1): 9. Prance, G.T. and J.R. Arias. 1975. A study of the floral biology of *Victoria amazonica* (Poepp.) Sowerby (Nymphaeaceae). *Acta Amazonica* 5(2): 109-139. Prance, G.T. and A.E. Prance. 1976. The beetle and the waterlily. *Garden Journal* 26(4): 118-121. Tricker, W. 1985. The *Victoria regia*. *Plants and Gardens* 41(1): 6-8 (reprinted 1897 article).

h Pagen, F. 1992. Schwimmende Schüsseln und geheizte Blüten.
↳ Agua-Planta 1-92: 10-17.

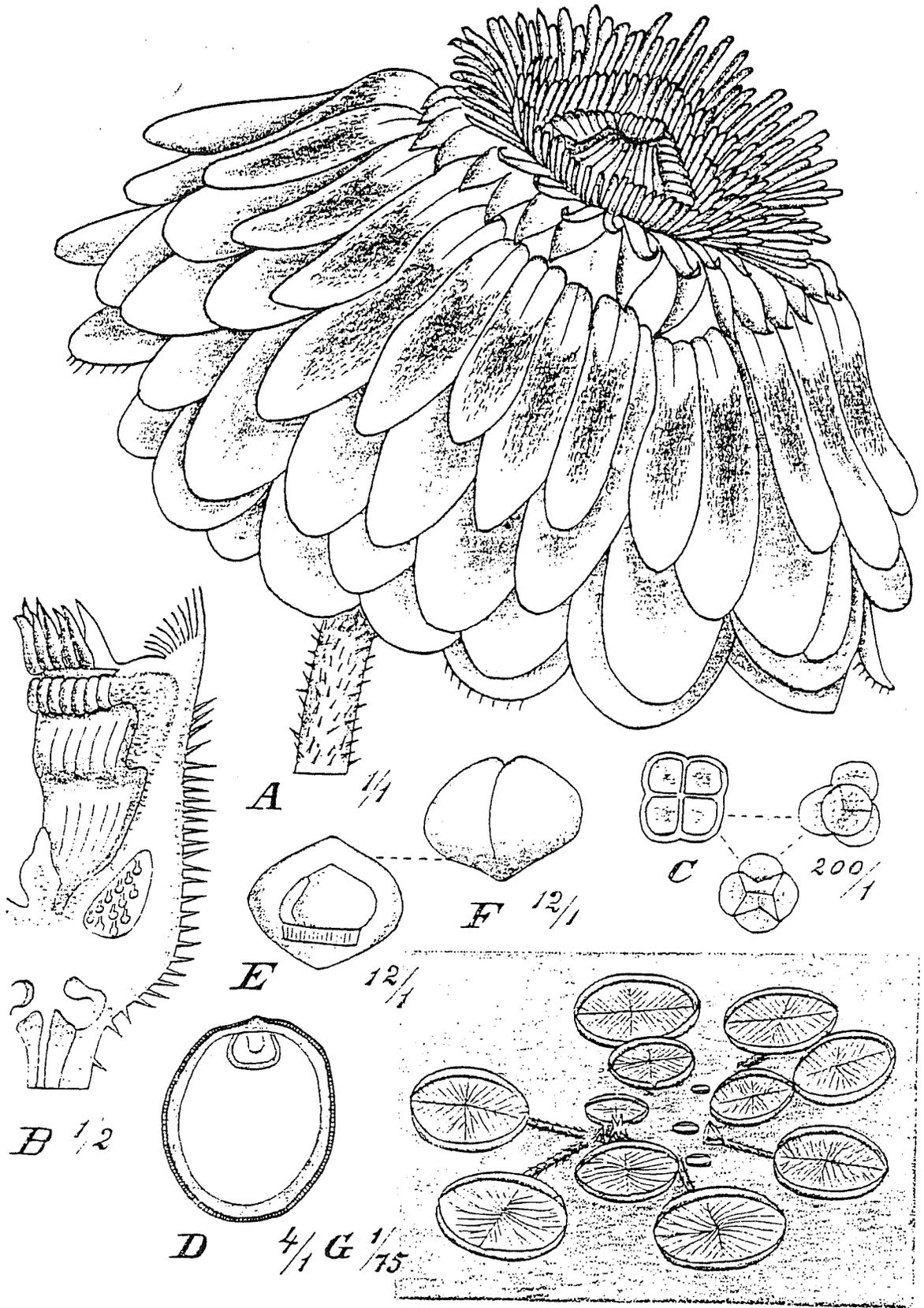


Fig. 151. *Victoria amazonica* (Nymphaeaceae).

Ochnaceae

Trees, shrubs and herbs. Leaves alternate, simple, petiolate. Inflorescence an axillary raceme, umbel, corymb or panicle, or the flowers solitary and axillary. Flowers bisexual, regular; sepals 5-6, free; petals 5-12, free. Stamens 5-numerous, free or united at the base. Ovary superior, 2- to 5- (15-) celled, sometimes lobed. Fruit of 1-seeded drupes clustered around an enlarged receptacle, rarely a berry.

1. *Ochna* Linnaeus

Deciduous trees and shrubs. Leaves alternate, simple, coriaceous, often serrate. Sepals 5-6, colored in fruit. Petals 5-6. Stamens numerous, anthers dehiscing by terminal pores. Ovary 3- to 12-lobed.

1. *Ochna mossambicensis* Klotzsch in Peters, *Naturwissenschaftliche Reise Nach Mossambique* 6(1): 88, t.16 (1861). BIRDS-EYE BUSH. Shrub to 3 m. Leaves obovate or oblanceolate, coriaceous, serrulate, to 22.5 cm. Inflorescence an ample panicle. Calyx red in fruit. Petals yellow, c.1.5 cm. Fruit of 8-10 drupes.

Range: Mozambique. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

Oleaceae

Evergreen or deciduous trees and shrubs, sometimes dioecious. Leaves opposite or alternate, appearing simple or pinnately compound, petiolate. Inflorescence a terminal or lateral raceme, panicle or cyme, or of solitary, axillary flowers. Flowers bisexual, or unisexual and plants dioecious, regular; sepals (0) 4 (-9), united in a 4- (to 9-) lobed calyx-tube; petals (0) 4 (-9), often united in a 4- (-9) lobed corolla-tube. Stamens 2. Ovary superior, 2-celled. Fruit a capsule, drupe, berry or samara.

1. *Jasminum* Linnaeus

Evergreen or deciduous shrubs, sometimes climbing. Leaves opposite or alternate, once- and odd-pinnately compound, or appearing simple. Inflorescence a terminal or axillary cyme, or flowers solitary. Calyx-lobes 4-9, unequal. Corolla 4- to 9-lobed, salverform. Fruit a 2-lobed berry, often twinned but usually one of them aborting.

Key to Species

1. Leaves pinnately compound with 5-9 leaflets, deciduous or semi-evergreen 2. *J. officinale*
1. Leaves appearing simple, with 1 "leaf" (leaflet), evergreen.
 2. Calyx-teeth to c.1.2 cm; leaves pubescent beneath; inflorescence a dense capitate cyme, terminal on short side-branches 1. *J. multiflorum*
 2. Calyx-teeth c.5 mm; leaves glabrous beneath; inflorescence a terminal few-flowered cyme 3. *J. sambac*

1. *Jasminum multiflorum* (N.L. Burman) Andrews, *Botanists Repository* 8(102): 496

(1807). MELATI GAMBIR (Surinamese Malaysian); PONTJOSOEDO (Surinamese Javan); STAR JASMINE. Evergreen climbing shrub to 2 m or more. Leaves opposite, appearing simple with 1 "leaf" (leaflet), ovate, cordate, pubescent beneath, to c.7.5 cm. Inflorescence a dense capitate cyme, terminal on short side-branches. Calyx-teeth to c.1.2 cm. Corolla white.

Range: India. Grown as an ornamental in Surinam (Ostendorf, 1962); and on hotel grounds in Cayenne, French Guiana.

2. *Jasminum officinale* Linnaeus, *Species Plantarum* 7 (1753). COMMON JASMINE, POET'S JESSAMINE. Deciduous or semi-evergreen climbing shrub to 12 m. Leaves opposite, pinnately compound with (3-) 5-9 leaflets; leaflets oblong-ovate, glabrous or glabrate, to c.6.5 cm. Inflorescence of terminal and axillary few-flowered cymes, or flowers solitary. Calyx-teeth to c.1.2 cm. Corolla white.

Range: Western China (Himalaya Mts.). Grown as an ornamental in Surinam (Ostendorf, 1962).

3. *Jasminum sambac* (Linnaeus) Aiton, *Hortus Kewensis* 1: 8 (1789). ARABISCHE JASMIJN (Surinam); MELATI (Surinamese Malaysian); MLATI (Surinamese Javan); ARABIAN JASMINE. Evergreen climbing shrub to c.1.5 m. Leaves opposite, appearing simple with 1 "leaf" (leaflet), ovate, oblong or cordate, glabrous, to 9 cm. Inflorescence a terminal few-flowered cyme. Calyx-teeth c.5 mm. Corolla white.

Range: Origin uncertain, perhaps Asia. Grown as an ornamental in Surinam (Ostendorf, 1962).

Oxalidaceae

Herbs or shrubs. Leaves alternate, palmately (digitately) or pinnately compound, petiolate. Inflorescence of axillary umbels, racemes or cymes, or of solitary, axillary flowers. Flowers bisexual, regular; sepals 5, free or united below. Ovary superior, 5-celled; stigmas 5. Fruit a capsule or berry.

1. *Oxalis* Linnaeus

Annual or perennial herbs or shrubs; rhizomes, bulbs or tubers sometimes present. Leaves alternate, all basal, or with cauline leaves present, palmately or pinnately compound with 3 to numerous leaflets. Inflorescence a long-pedunculate (scapose) umbel or subumbellate cyme. Sepals 5; petals 5; stamens 10, in 2 unequal series. Fruit a capsule.

1. *Oxalis adenophylla* Gillies in W.J. Hooker, *Botanical Miscellany* 3: 165 (1833). Perennial, scapose herb to 15 cm; base bulbous. Leaves digitately compound; leaflets (9-) 12 (-22), obcordate, glaucous, glabrous, c.1.2 cm; petioles to 12.5 cm. Inflorescence a 1- to 3-flowered umbel; peduncles to 30 cm. Flowers pink, with purple base, to c.3.7 cm wide.

Range: Chile, Argentina. Grown as an ornamental in French Guiana (de Granville, 1985).

Papaveraceae

Annual or perennial herbs; sap usually colored or milky. Leaves alternate, simple and entire, to deeply pinnatifid or palmately cleft, clasping or sessile to petiolate. Inflorescence of terminal or axillary, solitary, long-pedicellate flowers. Flowers regular, bisexual; sepals 2-3, often united below; petals 4-12, free, crumpled in bud. Stamens numerous, free. Ovary superior, 1-celled. Fruit a valvate or terminally porose, armed or unarmed capsule; seeds numerous, small.

1. *Argemone* Linnaeus

Annual or perennial herbs; sap yellow. Leaves pinnately compound, prickly. Sepals 2-3, with an apical spine; petals 4-6. Fruit a 3- to 6-valved, prickly or spiny capsule.

1. *Argemone mexicana* Linnaeus, *Species Plantarum* 508 (1753). STEKELPAPAVER, MEXICAANSE PAPAVER (Surinam); MEXICAN POPPY, PRICKLY POPPY. Annual herb to 1 m; stem prickly. Leaves coarsely pinnatifid to various degrees, spiny, glaucous, with white mottlings and blue veins, to 20 cm, the upper leaves clasping the stem. Sepals 3; petals 6, orange or pale yellow; flowers to 6.5 cm wide. Fruit spiny, to 5 cm.

Range: Florida to Central America; West Indies. Grown as an ornamental in Surinam (Ostendorf, 1962).

Phytolaccaceae

Herbs, shrubs or trees, sometimes climbing. Leaves alternate, simple, sessile to petiolate. Inflorescence a terminal or lateral raceme or spiciform raceme. Flowers bisexual or unisexual, regular; sepals 4 (5), united below in a 4- or 5-lobed calyx, sometimes solely comprising the perianth; petals 0-5. Stamens 3-25, free. Ovary superior or half-inferior, 1- to 16-celled; carpels free or united. Fruit a berry, achene, capsule or drupe; seeds 1- numerous.

Key to Genera

1. Flowers distant, very shortly (c.1 mm) pedicellate; petioles to 20 cm; fruit an oblong, dry, apically and retrorsely bristly, achene; crushed plant with garlic or onion odor 1. *Petiveria*
1. Flowers approximate, with pedicel to 3 mm in flower and to 0.8-1.5 cm in fruit; petioles to 6 cm; stamens 4; fruit an ovoid, juicy, smooth and glabrous, drupe; crushed plant not odoriferous 2. *Rivina*

1. *Petiveria* Plumier ex Linnaeus

Subshrubs or herbs. Leaves alternate, shortly petiolate. Inflorescence a spiciform raceme. Calyx 4-lobed; petals absent; stamens 4-8. Ovary 1-celled. Fruit an achene, with retrorse apical bristles.

1. *Petiveria alliacea* Linnaeus, *Species Plantarum* 342 (1753). GUINEA HEN WEED.

Herb to 2 m, shrubby at the base, with odor of garlic or onion when crushed. Leaves elliptical or ovate, entire, pellucid-punctate, to 16 (-20) cm. Inflorescence to 45 cm. Flowers white, greenish or pinkish. Fruit oblong, with 4-6 apical, retrorse bristles, c.1 cm.

Range: Southern United States to South America. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982).

Literature: Palacios, S.L. 1984. Notas bibliograficas sobre una planta posiblemente anticancerigena, el mapurite o anamu (*Petiveria alliacea* L.). *Pittiera* 12: 5-30.

2. *Rivina* Linnaeus

Subshrubs or herbs. Leaves alternate, petiolate. Inflorescence a raceme. Calyx 4-lobed; petals absent; stamens 4. Ovary 1-celled. Fruit a drupe, with persistent calyx.

1. *Rivina humilis* Linnaeus, *Species Plantarum* 121 (1753). BLOODBERRY, ROUGE PLANT. Herb to 1.2 m, often shrubby at the base. Leaves ovate or oblong, entire or nearly so, glabrous or pubescent, to 13 cm. Inflorescence to 20 cm. Flowers white, greenish or pinkish. Fruit ovoid, smooth, reddish or black, to 5 mm wide.

Range: Southern United States to South America. Grown as an ornamental in Surinam (Ostendorf, 1962).

Piperaceae

Perennial herbs or shrubs, sometimes climbing, often sub-succulent. Leaves alternate, sometimes opposite or whorled, simple, petiolate. Inflorescence a densely flowered, terminal or axillary spike. Flowers bisexual or unisexual, 1-bracteate; sepals and petals absent. Stamens 1-10, free. Ovary superior, 1-celled. Fruit a 1-seeded berry.

Key to Genera

1. Non-climbing herb; stems not swollen at the nodes; leaves equal at the base; plants monoecious 1. *Peperomia*
1. Climbing shrub or shrubby vine; stems swollen at the nodes; leaves unequal at the base; plants dioecious 2. *Piper*

1. *Peperomia* Ruiz & Pavon

Sub-succulent herbs. Leaves alternate, opposite or whorled, simple, palmately veined from base of the blade, petiolate. Inflorescence of terminal or axillary spikes. Flowers unisexual, 1-bracteate, sessile. Stamens 2. Stigma 1, often bifid. Fruit a 1-seeded berry.

Key to Species

1. Leaves bluish-green, variegated with wide silvery bands 3. *P.verschaffeltii*
1. Leaves all-green.
 2. Leaves obovate-spathulate, 5-7 (-20) cm 2. *P. obtusifolia*

2. Leaves ovate or lanceolate, 5 cm or less (-6.3 cm)

1. *P. glabella*

1. *Peperomia glabella* (Swartz) A. Dietrich in Linnaeus, *Species Plantarum* ed.6, 1: 156 (1831), var. *glabella*. Herb to 15 cm. Leaves alternate, ovate or lanceolate, the base acute or acuminate, green, to 5 cm or less (-6.3 cm). Inflorescence of solitary spikes to 15 cm.

Range: Tropical America. Grown as an ornamental in the nursery area of the Botanic Gardens, Georgetown, Guyana.

2. *Peperomia obtusifolia* (Linnaeus) A. Dietrich in Linnaeus, *Species Plantarum* ed.6, 1: 154 (1831). COMMON PEPEROMIA. Herb to 30 cm. Leaves alternate, obovate-spathulate, the base cuneate or rounded, green, 5-7 (-20) cm. Inflorescence of solitary or paired spikes to 15 cm.

Range: Southern Florida and tropical America. Grown as a potted ornamental on hotel grounds in Georgetown, Guyana, and in outdoor and indoor settings on hotel grounds in Paramaribo, Surinam.

3. *Peperomia versaffeltii* Lemaire, *L'Illustration Horticole* 16: t.598 (1969). Herb to 30 cm. Leaves alternate, orbicular or ovate, the base cordate, bluish-green, variegated with wide silvery bands, to 15 cm. Inflorescence of solitary spikes to c.15 cm.

Range: Origin uncertain, possibly Peru. Grown as an ornamental in the nursery area of the Botanic Gardens, Georgetown, Guyana.

2. *Piper* Linnaeus

Shrubs, vines or trees; stems often swollen at the nodes. Leaves alternate, simple, often unequal at the base, petiolate; petiole often sheathing below. Inflorescence of axillary spikes, often opposite the leaves. Flowers bisexual or unisexual, 1-bracteate, sessile. Stamens 2-5. Stigmas 2-4. Fruit a 1-seeded berry.

1. *Piper betle* Linnaeus, *Species Plantarum* 28 (1753). BETEL NUT. Evergreen, dioecious, climbing shrub or shrubby vine. Leaves ovate-orbicular or oblong-ovate, cordate and unequal (oblique, inequilateral) at the base, to 17.5 cm. Inflorescence of solitary spikes, the female to 7.5 cm, the male to 15 cm.

Range: India, Southeast Asia to Malaysia. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana.

Literature: Rawat, A.K.S., Shome, U. and V.R. Balasubrahmanyam. 1987. Analysis of the volatile constituents of *Piper betle* L. cultivars - a chemosystematic approach, pp.104-108, in Leeuwenberg, A.J.M., comp., *Medicinal and Poisonous Plants of the Tropics*. 152 pp. Wageningen, The Netherlands: Pudoc.

Plumbaginaceae

Evergreen shrubs, climbers or perennial herbs, sometimes rosette plants. Leaves in a

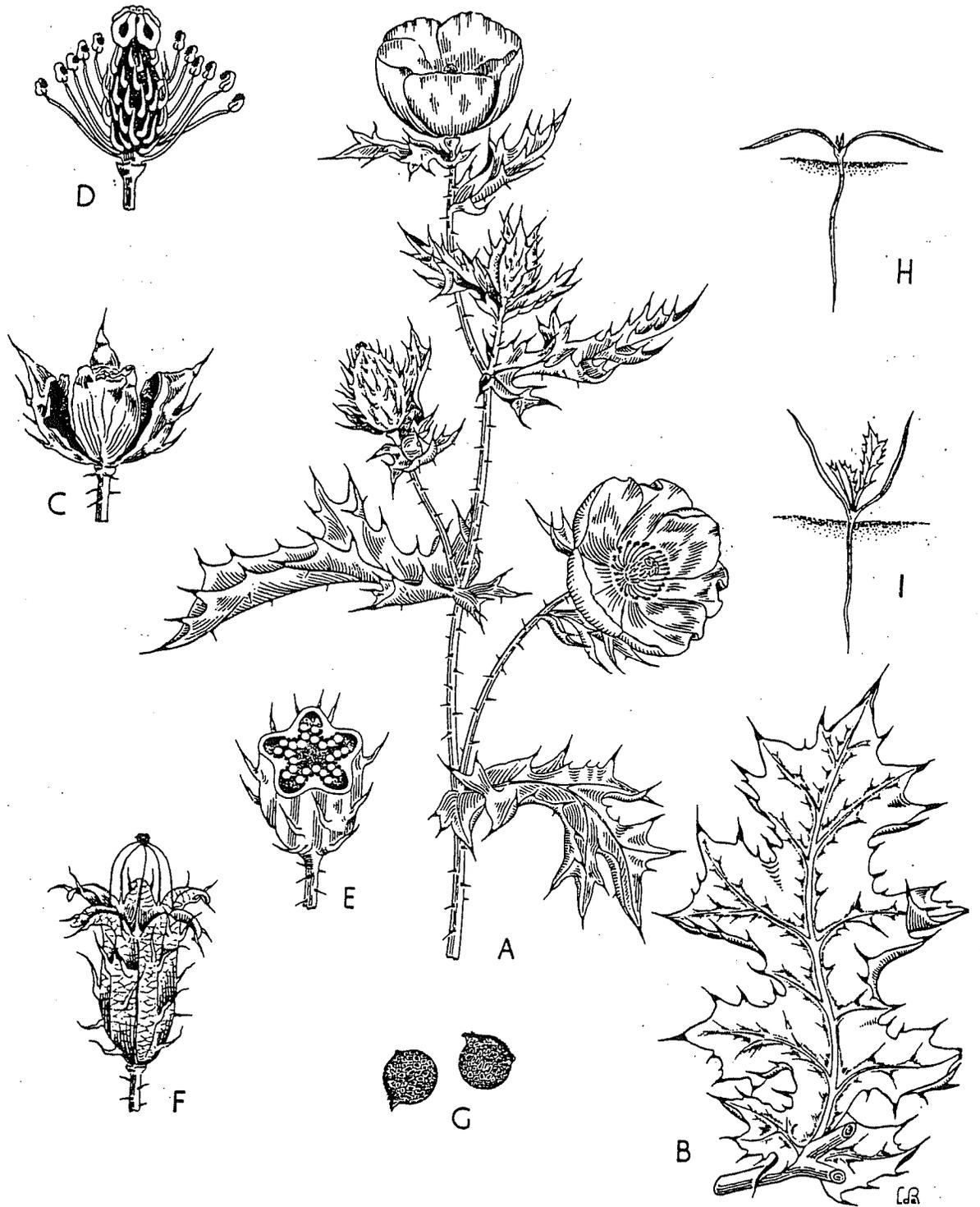


Fig. 152. *Argemone mexicana* (Papaveraceae).

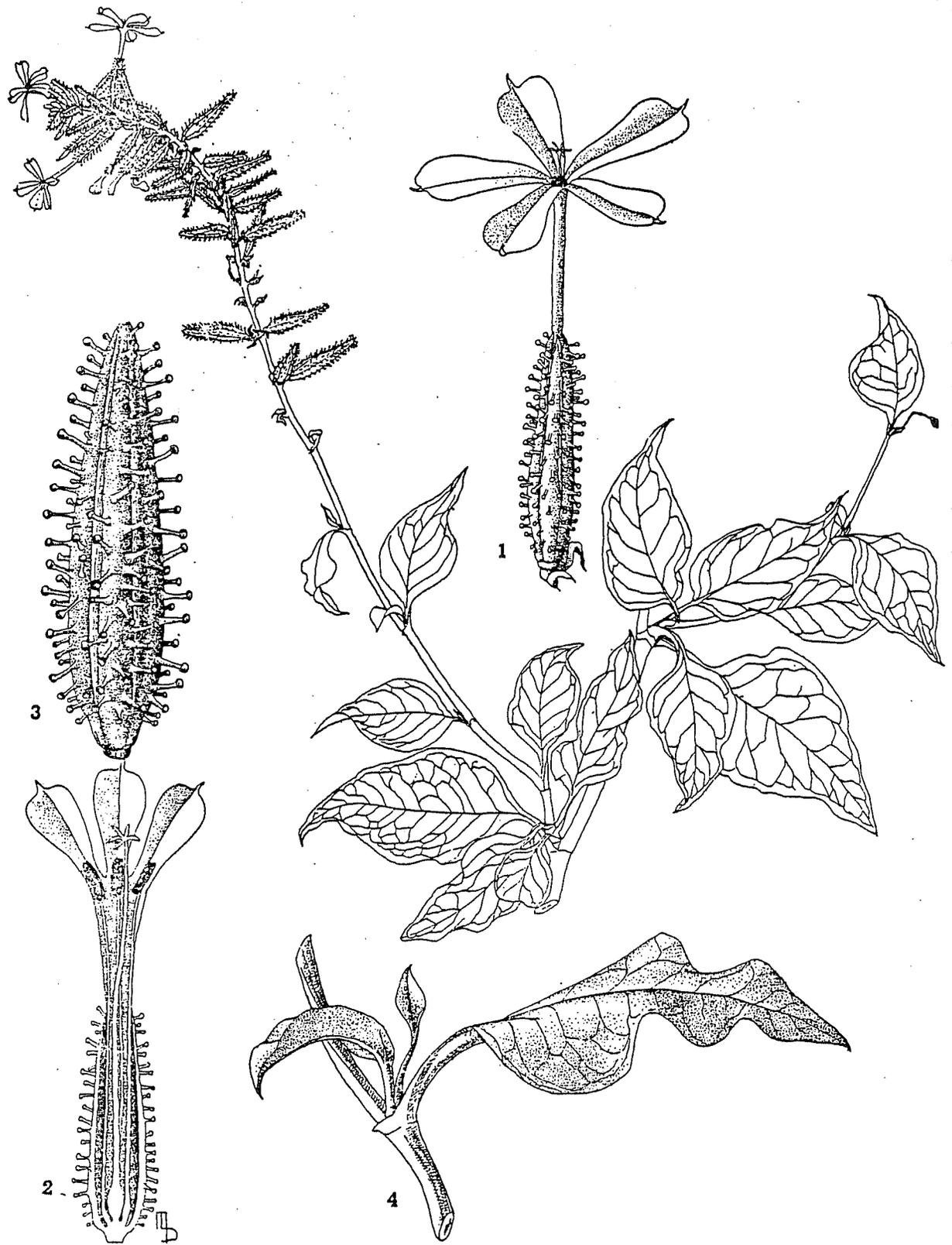


Fig. 153. *Plumbago zeylanica* (Plumbaginaceae).

basal rosette, or cauline and alternate, simple, sessile to petiolate. Inflorescence terminal, lateral or scapose, of spikes, racemes, panicles or heads. Flowers bisexual, regular; sepals 5, united in a tubular or funnellform, 5-toothed, often scarious calyx; petals 5, united in a tubular, 5-lobed corolla. Stamens 5, free. Ovary superior, 1-celled; styles 5, free or united. Fruit a capsule, sometimes indehiscent.

1. *Plumbago* Linnaeus

Shrubs, climbing shrubs or perennial herbs. Leaves cauline, alternate, simple, often auriculate or clasping the stem. Inflorescence a terminal raceme, spike or panicle, the flowers subtended by 2 unequal bracts. Calyx-tube 5-ribbed, the ribs with stalked glands. Corolla-lobes spreading. Fruit a 1-seeded, 5-angled capsule.

Key to Species

1. Corolla red, the tube 4 times longer than the calyx; leaves to 6 cm; inflorescence to 60 cm terminal
a raceme
2. *P. indica* ✓
1. Corolla white or blue, the tube 2-3 times longer than the calyx; leaves to 7.5 cm; inflorescence to 30 cm.
 2. Corolla blue, the tube 3 times longer than the calyx; stems erect or semi-scandent; calyx-ribs stipitate-glandular above, smooth below 1. *P. auriculata*
 2. Corolla white, the tube 2 times longer than the calyx; stems scandent; calyx-ribs stipitate-glandular throughout 3. *P. zeylanica* ✓

1. *Plumbago auriculata* Lamarck, *Encyclopedie Methodique. Botanique* 2: 270 (1786). (Synonym: *P. capensis* Thunberg). MANNETROUW (Surinam); CAPE LEADWORT. Shrubs with erect or semi-scandent (clambering) stems to 6 m. Leaves oblong or spatulate-oblong, to 7.5 cm, shortly petiolate. Inflorescence a terminal raceme to c.30 cm. Calyx-ribs stipitate-glandular above, smooth below. Corolla pale blue, the tube 3 times longer than the calyx.

Range: Southern Africa. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana, and on University grounds in Paramaribo, Surinam.

2. *Plumbago indica* Linnaeus, *Herbarium Amboinense* 24 (1754). (Synonym: *P. rosea* Linnaeus). SCARLET LEADWORT. Shrubs with semi-scandent (clambering) stems to c.60 cm or more. Leaves oblong or ovate-elliptical, to 6 cm, shortly petiolate. Calyx-ribs stipitate-glandular throughout. Corolla red, the tube 4 times longer than the calyx.

Range: Southeast Asia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

3. *Plumbago zeylanica* Linnaeus, *Species Plantarum* 151 (1753). Shrubs with scandent (climbing) stems to 1 m. Leaves ovate or oblong, to c.7 cm, shortly petiolate. Inflorescence a terminal panicle or raceme to c.30 cm. Calyx-ribs stipitate-glandular throughout. Corolla white, the tube 2 times longer than the calyx.

Range: Southeast Asia. Grown as an ornamental at the Botanic Gardens, Georgetown,

Guyana, and on grounds of Zanderij Airport, Surinam.

Polemoniaceae

Annual, or evergreen or deciduous perennial herbs, or subshrubs; rarely vines. Leaves alternate or opposite, simple or pinnately compound, sessile or petiolate. Inflorescence a terminal or axillary corymb, cyme, panicle or capitulum, or of solitary, axillary flowers. Flowers bisexual, regular or nearly so; sepals 5, united in a 5-lobed calyx; petals 5, united in a 5-lobed corolla. Stamens 5. Ovary superior, 2- to 5-celled. Fruit a capsule; seeds few to numerous.

1. *Phlox* Linnaeus

Annual or perennial herbs or subshrubs. Leaves opposite below, often alternate above. Inflorescence a terminal corymb, cyme or panicle, or flowers solitary. Corolla salverform. Stigmas 3. Fruit a 3-valved capsule.

1. *Phlox drummondii* W.J. Hooker, in *Curtis's Botanical Magazine* 62: t.3441 (1835). ANNUAL PHLOX, DRUMMOND PHLOX. Annual, glandular-pubescent herb to 50 cm. Leaves ovate, oblong or lanceolate, entire, to 7.5 cm. Inflorescence of densely flowered corymbs or cymes. Flowers pink, red, purple or white, to 2.5 cm wide.

Range: Texas. Grown as an ornamental in Surinam (Ostendorf, 1962).

Polygalaceae

Trees, shrubs, climbing shrubs, and herbs. Leaves alternate, simple, petiolate. Inflorescence of solitary, axillary flowers, or of terminal or axillary spikes, racemes or panicles. Flowers bisexual, irregular, sometimes cleistogamous (not opening); sepals 5, the 2 inner ones resembling petals or wings; petals 3-5, the 2 upper ones free, connate or adnate to the stamens, the lower one (keel) fringed or cristate. Stamens 6-8, in 2 series, the filaments united in a sheath split down one side. Ovary superior, 1- or 2-celled. Fruit a drupe, nut, capsule or samara; seeds often arillate.

1. *Securidaca* Linnaeus

Climbing shrubs, the branches acting as encircling tendrils. Leaves alternate, simple, entire; stipules glandular. Inflorescences terminal and axillary, of racemes often arranged in panicles. Flowers irregular; petals 3, the keel 2-lobed, clawed, cristate. Stamens 8. Ovary 1-celled. Fruit an indehiscent, winged samara, often with 1 primary, large wing and 1 very much smaller wing.

Literature: Oort, A.J.P. 1939. Critical remarks on the Suriname species of the genus *Securidaca* (Polygalaceae). *Recueil des Travaux Botaniques Neerlandais* 36(2): 677-685.

Key to Species

1. Leaves acute or obtuse, to 8 cm; petals to 1 cm; fruit to 5 cm, the wing to 4.5 cm

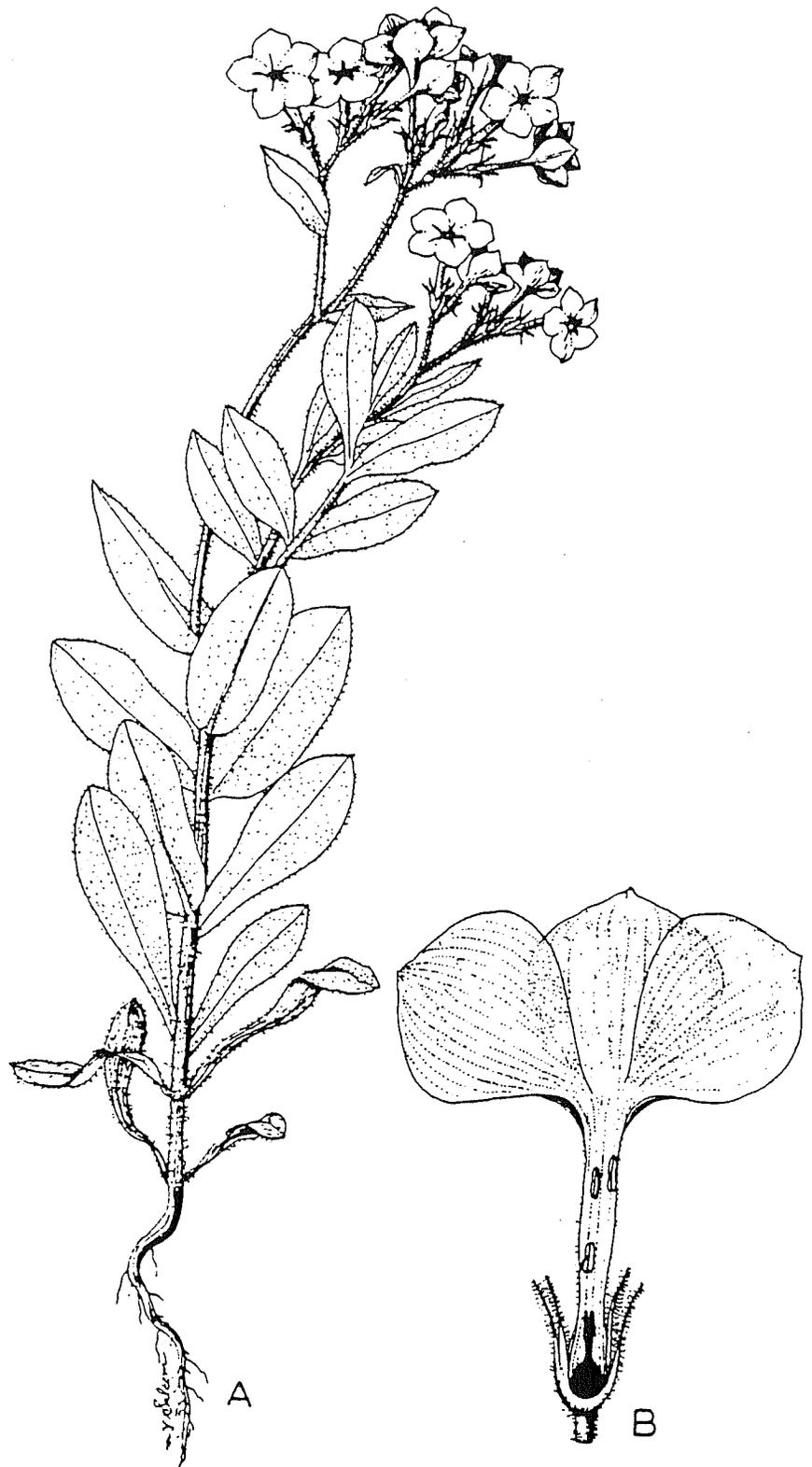


Fig. 154. *Phlox drummondii* (Polemoniaceae).

1. *S. diversifolia*

1. Leaves acuminate, to 15 cm; petals 6-7 mm; fruit to 3 cm, the wing to 2 cm 2. *S. paniculata*

1. *Securidaca diversifolia* (Linnaeus) S.F. Blake, *Contributions from the United States National Herbarium* 23: 594 (1923). SOEKROEDJANI (Surinam). Climbing shrub to 30 m. Leaves ovate, lanceolate, elliptical, or oblong, acute or obtuse, to 8 cm. Petals rose-pink or purple, to 1 cm. Fruit to 5 cm, the nut puberulent, the primary wing to 4.5 cm.

Range: West Indies; Mexico to South America, including the three Guianas. Grown as an ornamental in Guyana (Ted Hubbard, pers. comm., 1986) and in Surinam (Ostendorf, 1962); also occurring along a ditch in the Cultuurtuin, Paramaribo, Surinam (*Lindeman* 5723 (US)).

2. *Securidaca paniculata* Richard, *Actes de la Societe d'Histoire Naturelle de Paris* 1: 111 (1792), var. *paniculata*. Climbing shrub to 25 m, sometimes a tree. Leaves oblong or broadly elliptical, acuminate, to 15 cm. Petals pink or violet, 6-7 mm. Fruit to 3 cm, the nut puberulent, the primary wing to 2 cm.

Range: Northern South America, including the three Guianas. Grown as an ornamental in Surinam (Ostendorf, 1962).

Polygonaceae

Trees, shrubs, vines or herbs; stems jointed and swollen at the nodes. Leaves alternate, simple, sessile or petiolate; stipules united in a tubular sheath (ochrea) around the stem. Inflorescence of terminal or axillary spikes, racemes or panicles. Flowers bisexual or unisexual, regular; sepals 2-6, free or united below in a 2- to 6-lobed calyx-tube; petals absent. Stamens 6-9. Ovary superior, 1-celled. Fruit a lenticular or 3-angled achene, often with persistent calyx, sometimes covered by pulp.

Key to Genera

1. Vine climbing by tendrils; flowers bisexual, pink or coral-red 1. *Antigonon*
1. Tree or shrub, non-climbing; flowers unisexual, white or cream, sometimes turning red or pink.
 2. Stems flat, ribbon-like, segmented 3. *Homalocladium*
 2. Stems round.
3. Fruit globose, pulpy, berry-like, not winged; leaves orbicular or subreniform 2. *Coccoloba*
3. Fruit 3-angled, with 3 wings to 3.8 cm, not pulpy and berry-like; leaves oblong or nearly so 4. *Triplaris*

1. *Antigonon* Endlicher

Vines climbing by tendrils. Leaves alternate. Inflorescence an axillary raceme with terminal, branched tendril. Flowers bisexual; sepals 5, petaloid; stamens 8; styles 3. Fruit a 3-angled achene.

1. *Antigonon leptopus* Hooker & Arnott, *The Botany of Captain Beechey's Voyage* 308:

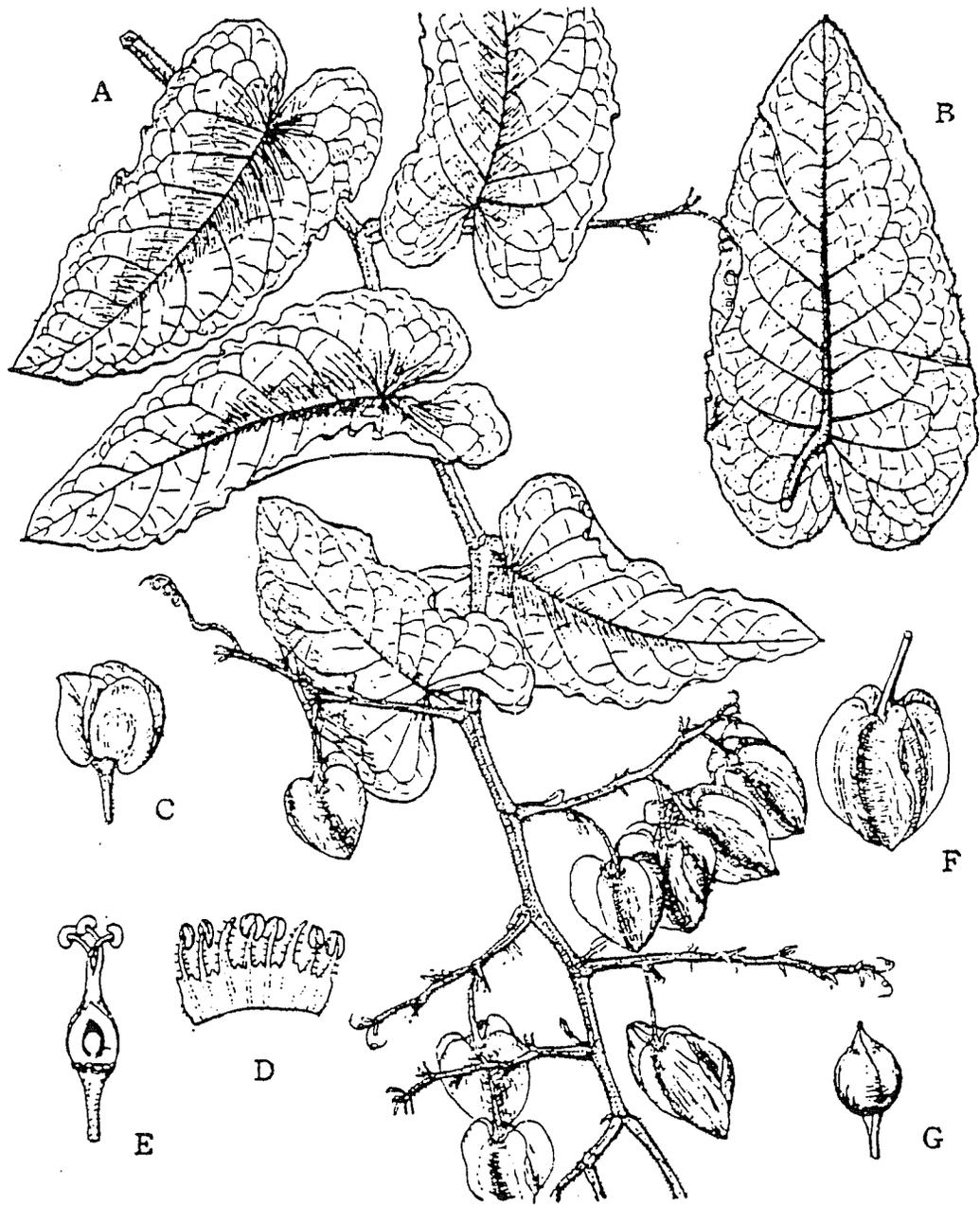


Fig. 155. *Antigonon leptopus* (Polygonaceae).

t.69 (1838). BRUIDSTRANEN, KRANSBLOEM, CORALLITA (Surinam); CORAL VINE, LOVE VINE. Evergreen vine climbing to 15 m; tubers present. Leaves sagittate, hastate or cordate-ovate, entire but crisped, glabrous, to 12.5 cm. Inflorescence an axillary raceme. Flowers pink or coral-red. Fruit prominently angled at the apex.

Range: Mexico. Grown as an ornamental in villages of Guyana (Ted Hubbard, pers. comm., 1985), on fences of roadside gardens in Paramaribo, Surinam, and on Isle Royale and Isle St. Joseph, French Guiana.

2. *Coccoloba* P. Browne

Evergreen or deciduous trees, shrubs or vines, usually dioecious. Leaves alternate. Inflorescence of axillary or terminal spikes, racemes or panicles. Flowers unisexual; sepals 5; stamens 7-8. Fruit a striate achene, covered by pulp, berry-like.

1. *Coccoloba uvifera* Linnaeus, *Systema Naturae* ed.10, 2: 1007 (1759). ZEEDRUIF, SCHUSTERDRUIF, ZUSTERDRUIF (Surinam); SEA GRAPE. Evergreen tree to 6 (-15) m. Leaves orbicular or subreniform, cordate at the base, entire, undulate, coriaceous, to 20 cm wide. Inflorescence a densely flowered raceme to 25 cm. Flowers white, c.3.5 cm wide. Fruit purple, globose, pulpy, berry-like, in pendent clusters.

Range: Southern Florida to South America. Occasionally grown as an ornamental in front gardens along airport road near Timehri, and at the nursery in the Botanic Gardens, Georgetown, Guyana; and as a garden tree in Paramaribo, Surinam.

3. *Homalocladium* (F.J. Mueller) L.H. Bailey

Evergreen shrubs. Stems flat, ribbon-like, segmented (articulated), striate, often leafless at anthesis. Leaves alternate. Inflorescence of sessile fascicles at alternate joints of the stem. Flowers unisexual; sepals 5; stamens 8; styles 3. Fruit a 3-angled achene, enclosed by enlarged calyx.

1. *Homalocladium platycladum* (F.J. Mueller) L.H. Bailey, *Gentes Herbarum* 2: 58 (1929). (Synonym: *Muehlenbeckia platyclada* (F.J. Mueller) Meissner). RIBBON BUSH, TAPEWORM PLANT. Erect shrub; stems to 3.6 m, flat, ribbon-like, green, to c.1.2 cm wide. Leaves borne at stem-margin, oblong-lanceolate or hastate, glabrous, to c.6.5 cm. Flowers minute, white. Fruit enclosed by purplish, enlarged calyx, c.3 mm.

Range: Solomon Islands. Grown as an ornamental in the nursery area of the Botanic Gardens, Georgetown, Guyana.

4. *Triplaris* Loefling

Dioecious trees or shrubs. Leaves alternate. Inflorescence a panicle of spiciform racemes. Flowers unisexual, regular, subtended by a bract; sepals 6, 3 prominently winged, in the female flowers united below in a 3-lobed calyx-tube, in the male flowers united below in a 6-lobed calyx-tube; stamens 9. Fruit a 3-angled achene, 3-winged from the persistent calyx.

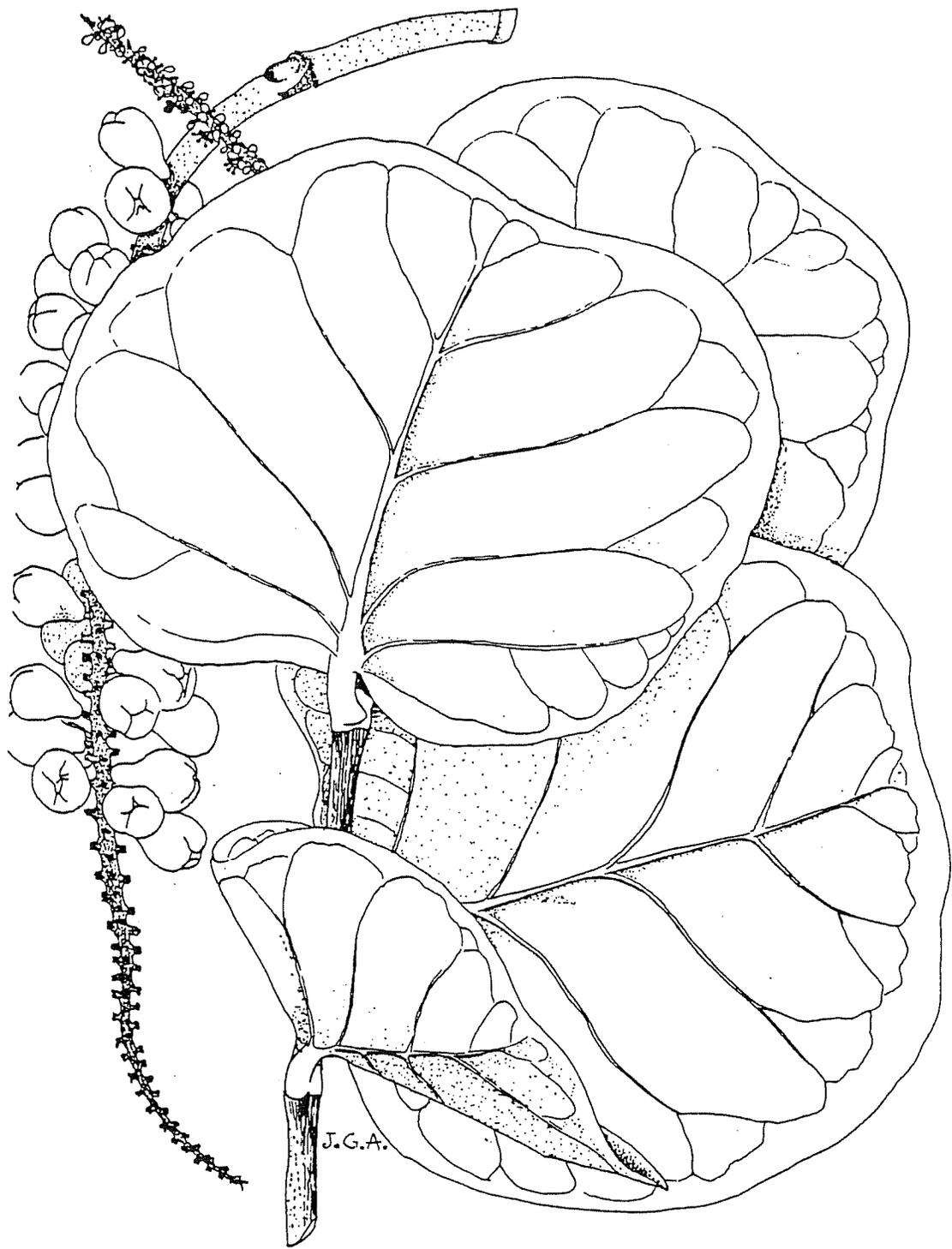


Fig. 156. *Cocoloba uvifera* (Polygonaceae).

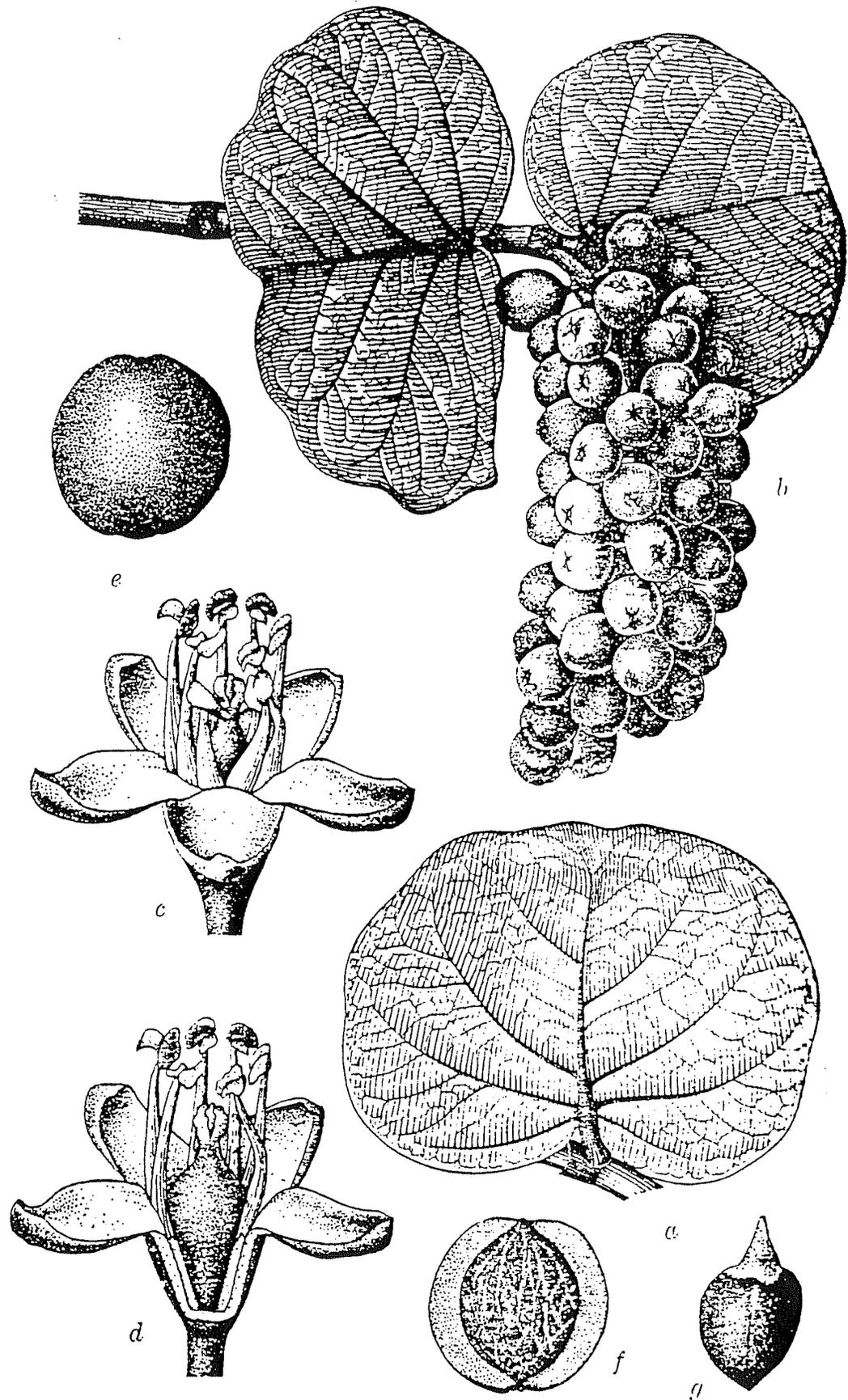


Fig. 157. *Coccoloba uvifera* (Polygonaceae).

1. *Triplaris surinamensis* Chamisso, *Linnaea* 8: 138 (1833). MIRA-OEDOE, DON-OEDOE (Surinamese Creole); JEKOENA (Surinamese Arawak); TASSI (Surinamese Carib); LONG JOHN. Narrowly buttressed tree to 25 m; stems hollow, in nature inhabited by ants. Leaves oblong, elliptic-oblong or ovate, entire, prominently veined, to 35 cm. Female flowers cream or greenish-white, turning pink or red. Winged sepals to 3.8 (-5) cm.

Range: Guyana, Surinam, French Guiana. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana.

Portulacaceae

Annual or perennial herbs, or subshrubs. Leaves alternate or opposite, simple, often succulent, sessile or petiolate. Inflorescence of terminal or lateral racemes or cymes, or the flowers axillary and solitary. Flowers bisexual, regular; sepals 2, free or united below; petals (4) 5 (-18), free, caducous. Ovary superior, 1-celled at least above. Fruit a capsule; seeds numerous.

1. *Portulaca* Linnaeus

Annual herbs. Leaves alternate, often crowded above in a foliar involucre. Calyx deeply 2-cleft; petals (4) 5 (6); stamens 8 or more. Fruit an operculate capsule.

1. *Portulaca grandiflora* W.J. Hooker, in *Curtis's Botanical Magazine* 56: t.2885 (1829). PORTULAK, TIENUURSKLOKJE (Surinam); POURPIER (French Guiana); ROSE MOSS. Annual herb; stems ascending or prostrate, to 30 cm. Leaves linear-cylindrical, acuminate, fleshy, to 2.5 cm. Flowers white, pink, purple, red or yellow, sometimes striped, to c.2.5 cm wide. Fruit conical.

Range: Brazil, Argentina, Uruguay. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana, at the Esther Stichting near Paramaribo, Surinam, and at the Jardin Botanique, Cayenne, French Guiana.

Proteaceae

Evergreen trees, shrubs and herbs. Leaves alternate, simple or pinnately 1- or 2-compound, sessile or petiolate. Inflorescence of terminal or axillary heads, fascicles, spikes or racemes, often subtended by a collar of involucre bracts. Flowers bisexual or unisexual, irregular; perianth-segments (sepals) 4, united below in an apically recurved tube. Stamens 4, comprising a sessile anther near apex of each perianth-segment. Ovary superior, 1-celled. Fruit a capsule, follicle, drupe or nut, often beaked.

1. *Grevillea* R. Brown

Trees and shrubs. Leaves pinnately compound, or simple and often pinnately cleft or divided. Inflorescence a terminal raceme or panicle. Flowers bisexual, paired; styles elongated and conspicuous. Fruit a coriaceous follicle.

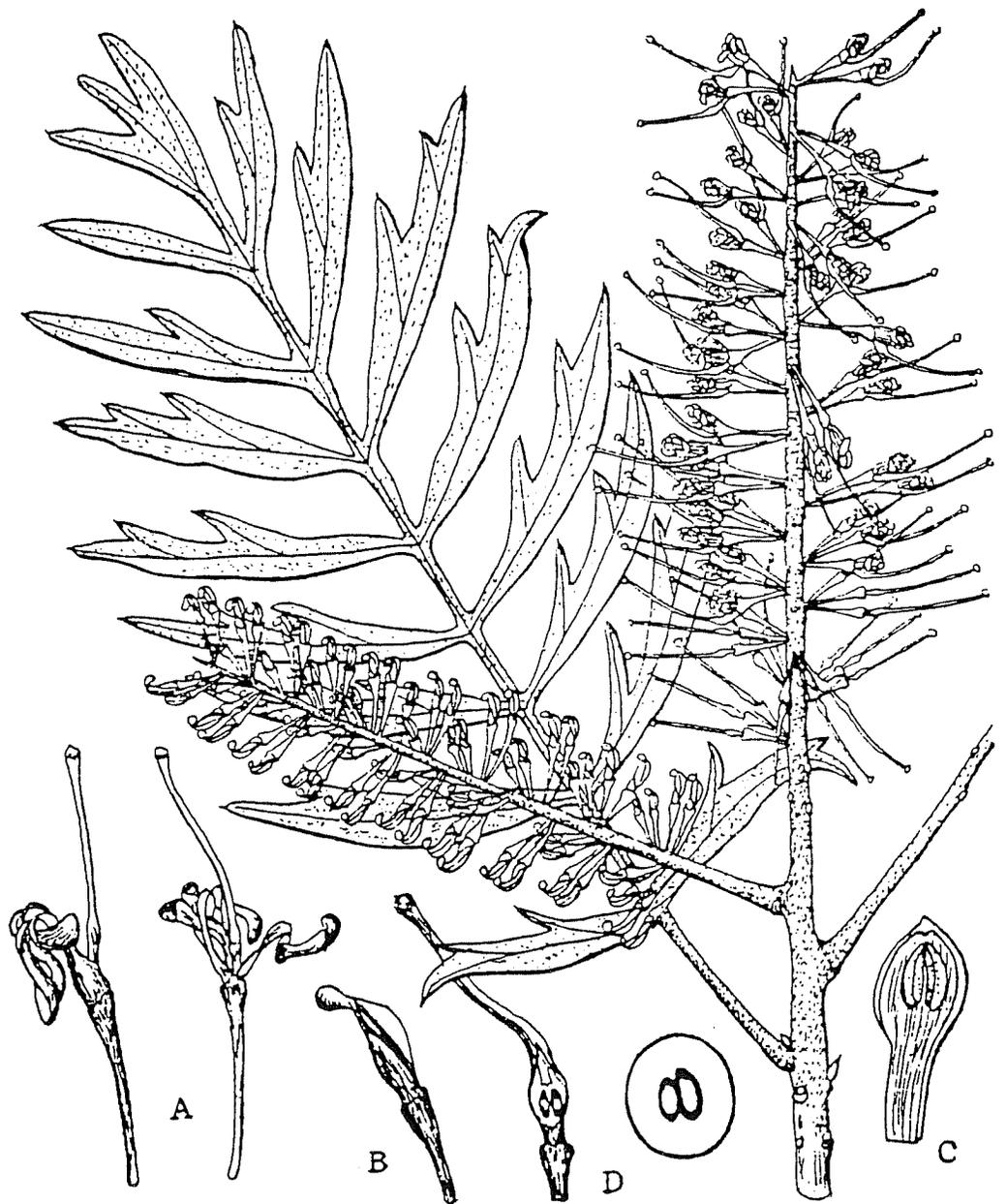


Fig. 158. *Grevillea robusta* (Proteaceae).

1. *Grevillea robusta* A. Cunningham in R. Brown, *Supplementum Primum Prodromi Florae Novae Hollandiae* 24 (1830). SILK OAK. Tree to 45 m; stems silvery-pubescent. Leaves 1- or 2-pinnately compound, fern-like, silvery-pubescent beneath, to 22.5 (-45) cm; leaflets lanceolate, entire to lobed, with revolute margin, to 5 cm. Inflorescence a second raceme to 10 cm. Flowers orange or golden yellow.

Range: Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana.

Literature: Nelson, R.E. 1960. *Silk-oak in Hawaii: Pest or Potential Timber?* 5 pp. Pacific Forest and Range Experiment Station, Miscellaneous Paper No. 47.

Rosaceae

Trees, shrubs and herbs, sometimes armed. Leaves alternate, simple, or palmately or pinnately compound, petiolate. Inflorescence a terminal or axillary raceme, cyme, fascicle, panicle, corymb or umbel, or the flowers axillary and solitary. Flowers bisexual, regular; sepals 4-5, united below in a 4- or 5-lobed calyx-tube or hypanthium; petals (0) 4-5, free. Stamens 5-numerous, inserted on the hypanthium. Ovary superior or inferior, 1- to several-celled; pistils 1-numerous. Fruit a berry, drupe, pome, follicle or achene.

1. *Rosa* Linnaeus

Armed shrubs. Leaves alternate, odd-pinnately compound; stipules united to the petiole. Inflorescence a corymb or panicle, or the flowers solitary. Petals 5, inserted on an hypanthium. Pistils numerous. Fruit a mealy, enlarged hypanthium (hip) enclosing numerous achenes; achenes pubescent.

Literature: Coats, P. 1962. *Roses*. 128 pp. New York: Putnam's. Crockett, J.U. 1971. *Roses*. 160 pp. New York: Time-Life Books. Gault, S.M. and P.M. Syngé. 1971. *The Dictionary of Roses in Colour*. 191 pp. London: Rainbird Reference Books Ltd. Werger, J. and R.E. Burton. 1972. *Roses: A Bibliography of Botanical, Horticultural, and Other Works Related to the Genus Rosa*. 169 pp. Metuchen, New Jersey: Scarecrow Press.

1. *Rosa x borboniana* Desportes, *Rosetum Gallicum* 106 (1828). ROOS (Surinam); ROSIER (French Guiana); BOURBON ROSE; HYBRID BOURBON ROSE, HYBRID PERPETUAL ROSE. Shrubs with erect stems (canes). Leaflets 7. Flowers globose, double, carmine-rose.

Range: A hybrid complex of cultivated origin. Grown as an ornamental at the Promenade Gardens, Georgetown and on grounds of Timehri Airport, Guyana, at the Esther Stichting near Paramaribo, Surinam, and on hotel grounds in Cayenne, French Guiana.

Identification of this species is provisional. A species with small, rose-red flowers is grown in a restaurant garden and at the Palmentuin in Paramaribo, Surinam.

Rubiaceae

Trees, shrubs or herbs. Leaves opposite or whorled, simple, petiolate; stipules interpetiolar or not, entire or parted into setae. Inflorescence a terminal or axillary cyme, panicle, raceme, corymb or capitulum, or sometimes flowers solitary. Flowers bisexual, sometimes dimorphic (long-styled, short-styled) or trimorphic; sepals 4-5 (-7), united below in a short tube; petals 4-5 (-11), united below in a corolla-tube with 4-5 lobes. Stamens 4-5 (-9), epipetalous. Ovary inferior, usually 2-celled; seeds 1 to numerous per cell; stigmas 2, or 1 with bilobed apex. Fruit a berry, drupe or capsule, rarely syncarpous.

Key to Genera

1. One sepal of the calyx greatly enlarged in a foliaceous, brightly colored bract.
 2. Fruit a berry; inflorescence a rounded corymb or cyme, not on an elongated axis; corolla cream or yellow 4. *Mussaenda*
 2. Fruit a capsule; inflorescence of short panicles on an elongated axis to 30 cm; corolla yellowish- or reddish-orange 9. *Warszewiczia*
1. All sepals equal, or only very slightly unequal.
3. Flowers solitary; petals 6 1. *Gardenia*
3. Flowers not solitary; petals 4-5 (-7).
 4. Fruit compound, an aggregate or syncarp of succulent calyces; inflorescence a congested capitulum 3. *Morinda*
 4. Fruit a capsule or berry, not compound or syncarpous; inflorescence a cyme, corymb, raceme or panicle, not a capitulum.
5. Fruit a capsule.
 6. Herb or subshrub; stipules parted into filaments; corolla pink to red or white; corolla-lobes valvate in bud 5. *Pentas*
 6. Shrub; stipules entire; corolla orange-red or cinnabar-red; corolla-lobes imbricate in bud 8. *Rondeletia*
5. Fruit a berry or drupe.
7. Corolla-tube 9-16 cm; flowers pendent; anthers with sterile appendage at base; ovules several per cell 6. *Posoqueria*
7. Corolla-tube less than 9 cm; flowers not pendent; anthers without basal appendage; ovule 1 per cell.
 8. Corolla-lobes valvate in bud, corniculate (bearing a knob of tissue) on the back, white; fruit a drupe 7. *Psychotria*
 8. Corolla-lobes contorted in bud, not corniculate, of a red, orange, yellow, pink or white color; fruit a berry 2. *Ixora*

1. *Gardenia* Ellis

Shrubs or sometimes trees, deciduous or evergreen, armed or unarmed. Leaves opposite or in whorls of 3 or more; stipules interpetiolar, fused, often with resin glands. Inflorescence of solitary or paired, axillary or terminal flowers. Flowers regular, bisexual, or unisexual and the plants dioecious; sepals united in a 5-toothed or -lobed calyx-tube, glandular inside; petals 5-11, united below in a funnelform to campanulate or salverform corolla-tube. Stamens 5-9. Ovary 1-celled; fruit a berry; seeds numerous, embedded in

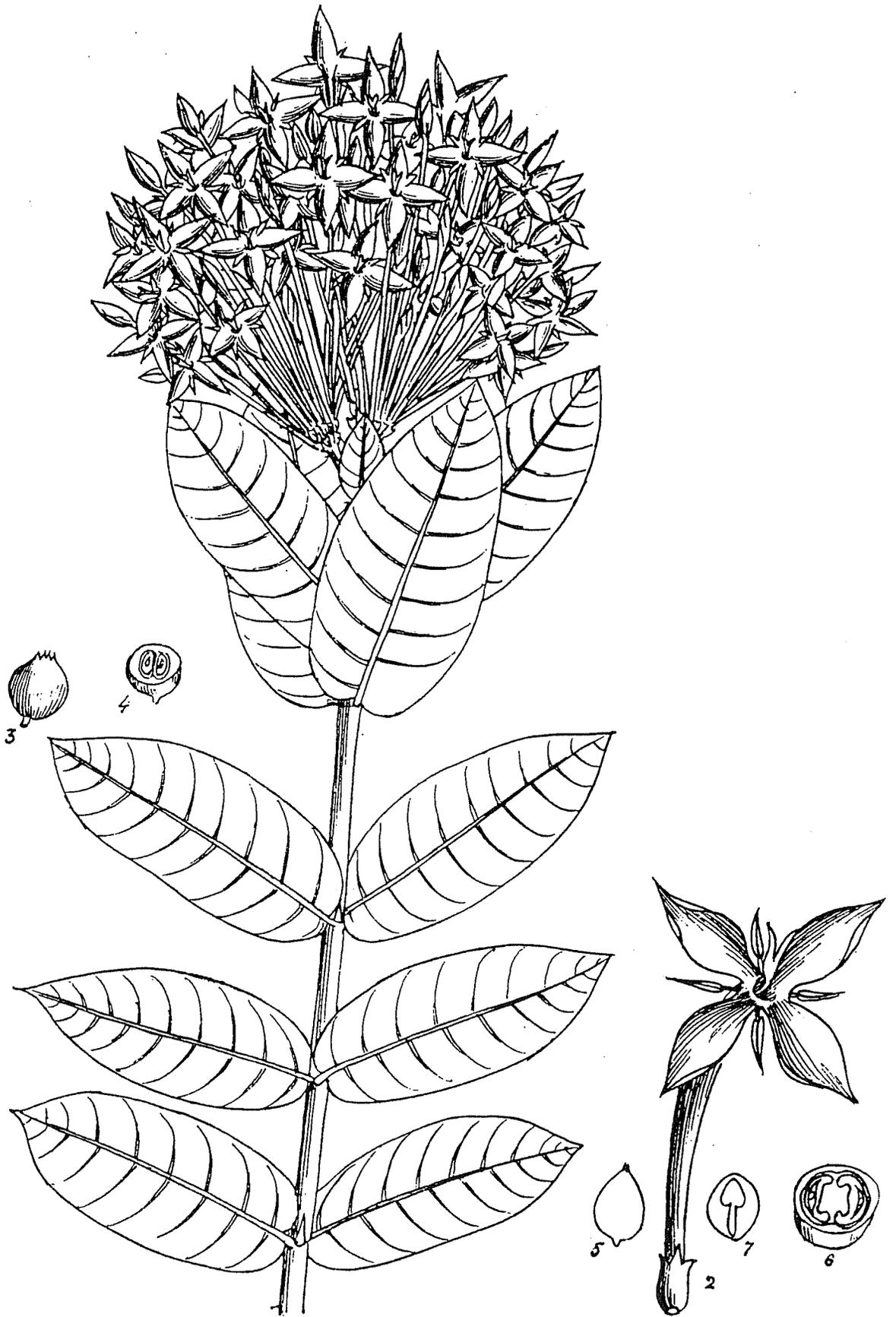


Fig. 159. *Ixora coccinea* (Rubiaceae).

gelatinous pulp.

1. *Gardenia jasminoides* Ellis, *Philosophical Transactions of the Royal Society of London* 51(2): 935 (1761). (Synonym: *G. florida* Linnaeus). WILKENS JASMIJN, KAAPSE JASMIJN (Surinam), KATJA PIRING (Surinamese Malayan); CAPE JASMINE. Unarmed evergreen shrub to 1.8 m. Leaves opposite, lanceolate to elliptical, glossy above, to 7 x 2.6 cm; stipules ovate, c.1 cm. Flowers bisexual, solitary, terminal or subterminal; calyx funnelform, the calyx-teeth 5, long; corolla of 6 petals (often double), fragrant, white or cream, to 7.5 cm wide, the tube cylindrical, to 3.8 cm. Stigma 2-lobed. Fruit fleshy, globose to cylindrical, orange, to 3.8 cm.

Range: China. Grown as a *flore pleno* (double-flowered) ornamental at the Cultuurtuin, Paramaribo, Surinam; and in French Guiana (Lemee, 1953).

2. *Ixora* Linnaeus

Unarmed, evergreen shrubs or trees. Leaves opposite, rarely whorled; stipules interpetiolar. Inflorescence a terminal corymb or panicle; pedicels bracteate. Flowers regular; calyx-lobes 4; corolla-tube long, with 4-5 lobes. Stamens 4-5. Style 2-branched. Fruit a berry; seeds 2.

Key to Species

1. Flowers white, or white tinged with pink.
 2. Inflorescence a trichotomously branched, laxly flowered panicle; flowers white tinged with pink 4. *I. laxiflora*
 2. Inflorescence a densely flowered corymb; flowers white 3. *I. finlaysoniana*
1. Flowers red, orange-red or yellow. 1. *I. coccinea*
3. Flowers yellow 1. *I. coccinea*
3. Flowers red or orange-red.
 4. Inflorescence a very large corymb; leaves to 30 cm 2. *I. duffii*
 4. Inflorescence a small to medium-sized corymb; leaves to 8 (-10) cm 1. *I. coccinea*

1. *Ixora coccinea* Linnaeus, *Species Plantarum* 159 (1753). BUISSON ARDENT (French Guiana); FAJA-LOBBIE (Surinam); FLAME OF THE WOODS. Shrub to 2 m. Leaves elliptical, ovate or oblong, to 8 (-10) cm. Inflorescence a dense corymb. Flowers red, orange-red or yellow; corolla-tube 5-7 cm.

Key to Cultivars

1. Flowers red 1a. f. *coccinea*
1. Flowers yellow 1b. f. *lutea*

1a. *I. coccinea* var. *coccinea* f. *coccinea*. Range: South India. Grown as an ornamental at the Botanic Gardens, Georgetown and elsewhere in Guyana, and on hotel grounds in Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

1b. *I. coccinea* var. *coccinea* f. *lutea* (Hutchinson) Fosberg & Sachet, *Baileya* 23(2): 79



Fig. 160. *Ixora laxiflora* (Rubiaceae).

(1989). (Synonym: *I. coccinea* var. *lutea* (Hutchinson) Corner). Range: Sri Lanka garden origin. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana; in Surinam (Ostendorf, 1962); and in the Jardin Botanique, Cayenne, French Guiana.

2. *Ixora duffii* T. Moore, *Florist and Pomologist* 32: 76 (1878). (Synonym: *I. macrothyrsa* sensu auth., non Teysmann & Binnendijk). Shrub to 3 m. Leaves linear- to lanceolate-oblong, to 30 cm. Inflorescence a very large corymb. Flowers red; corolla-tube c.3.7 cm.

Range: Celebes Islands. Grown as an ornamental on hotel grounds in Paramaribo, Surinam, and on hotel grounds in Cayenne, French Guiana.

3. *Ixora finlaysonian* Wallich ex G. Don, *General System of Gardening and Botany* 3: 572 (1834). Tree or shrub to 5.4 m. Leaves oblong to oblanceolate or obovate, to 13 (-15) cm. Inflorescence a large corymb. Flowers white; corolla-tube to 3.5 cm.

Range: Southeast Asia. Grown as an ornamental at the Esther Stichting near Paramaribo, Surinam.

4. *Ixora laxiflora* J.E. Smith in Rees, *The Cyclopaedia* 19(1,37): n.8 (1811). Tree or shrub to 10.5 m. Leaves oblong-lanceolate, to 20 cm. Inflorescence a trichotomously branched, laxly flowered panicle. Flowers white tinged with pink; corolla-tube c.3.2 cm.

Range: Tropical West Africa. Grown as an ornamental in Surinam (Ostendorf, 1962).

3. *Morinda* Linnaeus

Evergreen trees, shrubs or vines. Leaves opposite or whorled; stipules interpetiolar. Inflorescence an axillary or terminal, pedunculate or sessile capitulum (head) of congested flowers. Flowers regular; sepals united in a short truncate or toothed calyx-tube, becoming succulent in fruit; petals united in a short, 4- to 7-lobed, funnelform to hypocrateriform corolla-tube. Stamens 4-6. Ovary 2- to 4-celled; style bifid. Fruit an aggregate or syncarpic head of juicy, soft (succulent), enlarged calyces, each enclosing a 1-seeded drupelet or nutlet.

1. *Morinda citrifolia* Linnaeus, *Species Plantarum* 176 (1753). DIDIBRI-APRA (Surinam), MENGKOEDOE (Surinamese Malayan); PAIN KILLER (Guyana); INDIAN MULBERRY. Shrub or tree to 6 m; young branches 4-angled. Leaves opposite, mostly broadly elliptical, narrowed at base and apex, entire, prominently veined on an undulating surface, to 45 x 24 cm; stipules ovate, 2 cm. Inflorescence pedunculate. Flowers white; corolla-tube c.1 cm. Fruit (syncarp) irregularly bumpy, ovoid or ellipsoid, to 10 x 6 cm, white, cream or yellowish, fleshy, foetid with cheesy odor, reportedly both edible and poisonous.

Range: East Indies and Australia. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; as a windbreak tree in Surinam (Ostendorf, 1962); cultivated in French Guiana (Lemee, 1953).

The popular name of "pain killer" for this plant in Guyana refers to the use in that

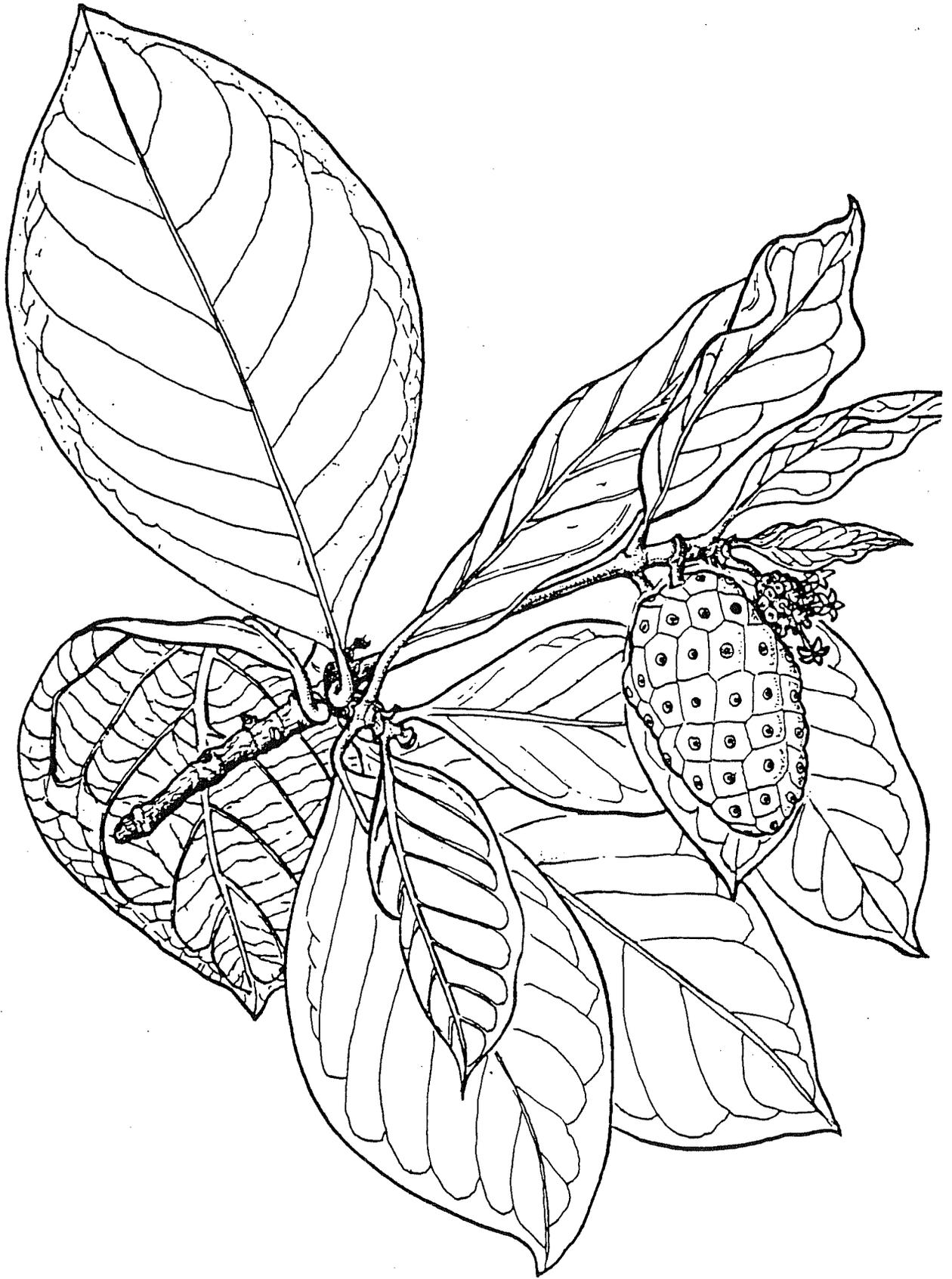


Fig. 161. *Morinda citrifolia* (Rubiaceae).

country of the heated or wilted leaf to alleviate pain of headaches, swellings and head colds (Little & Wadsworth, p.518, 1964).

4. *Mussaenda* Linnaeus

Shrubs or climbers, rarely perennial herbs. Leaves opposite or whorled, petiolate; stipules interpetiolar. Inflorescence a terminal corymb or cyme. Flowers regular, 5-merous; sepals 5, united below in a toothed tube, usually 1 or more sepals greatly enlarged, leaf-like and colored; petals 5, united below in a funnelform, 5-lobed tube, hairy at orifice of throat. Stamens 5. Style bifid. Fruit a fleshy berry; seeds numerous.

Literature: Sharma, S.C., Sharga, A.N. and S. Srivastava. 1990. Horto-taxonomical studies on some mussaendas. *The Plantsman* 12(3): 184-187.

Key to Species

- | | |
|--|----------------------------|
| 1. Enlarged sepal red or pink | 1. <i>M. erythrophylla</i> |
| 1. Enlarged sepal white. | |
| 2. One sepal of the flower enlarged | 2. <i>M. flava</i> |
| 2. One or more (up to 5) sepals of the flower enlarged | 3. <i>M. philippica</i> |

1. *Mussaenda erythrophylla* Schumacher & Thonning, *Beskrivelse af Guineiske Planter* 116 (1827). ASHANTI BLOOD. Tree-like shrub, low shrub or climber to 12 m; plant rusty-pubescent. Leaves broadly ovate or elliptic-ovate. Enlarged sepal broadly ovate, red or pink. Corolla cream to sulphur-yellow, with red throat.

Range: Tropical West Africa. Plants with red enlarged sepal are cultivated as ornamentals at the Cultuurtuin, Paramaribo, Surinam. The cv. Rosea, with pink enlarged sepal, is grown for ornament at the Botanic Gardens, Georgetown, Guyana, and on hotel grounds and in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam.

2. *Mussaenda flava* (Verdcourt) Bakhuisen fil. in Backer, *Beknopte Flora van Java*, Afl.15, Fam.173, 72 (1956). (Synonym: *M. luteola* Delile). Shrub to 2 m. Leaves lanceolate or ovate-lanceolate, pubescent beneath. Enlarged sepal ovate, white. Corolla yellow, with orange throat.

Range: Tropical Africa. Grown as an ornamental at the Botanic Gardens and Promenade Gardens, Georgetown, Guyana; possibly in Surinam (Ostendorf, 1962).

3. *Mussaenda philippica* A. Richard, *Memoires da la Societe d'Histoire Naturelle ds Paris* 5: 245 (1834), cv. Aurorae. (Synonyms: *M. philippica* var. *aurorae* Sulit, *M. philippica* cv. Dona Aurora). BUDDHA'S LAMP, VIRGIN TREE. Shrub or tree to 5 m; plant glabrous or pubescent. Leaves oblong-ovate to oblong-lanceolate. Enlarged sepals elliptic-ovate, white. Corolla yellow.

Range: Philippines. Grown as an ornamental on hotel grounds, and in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam.

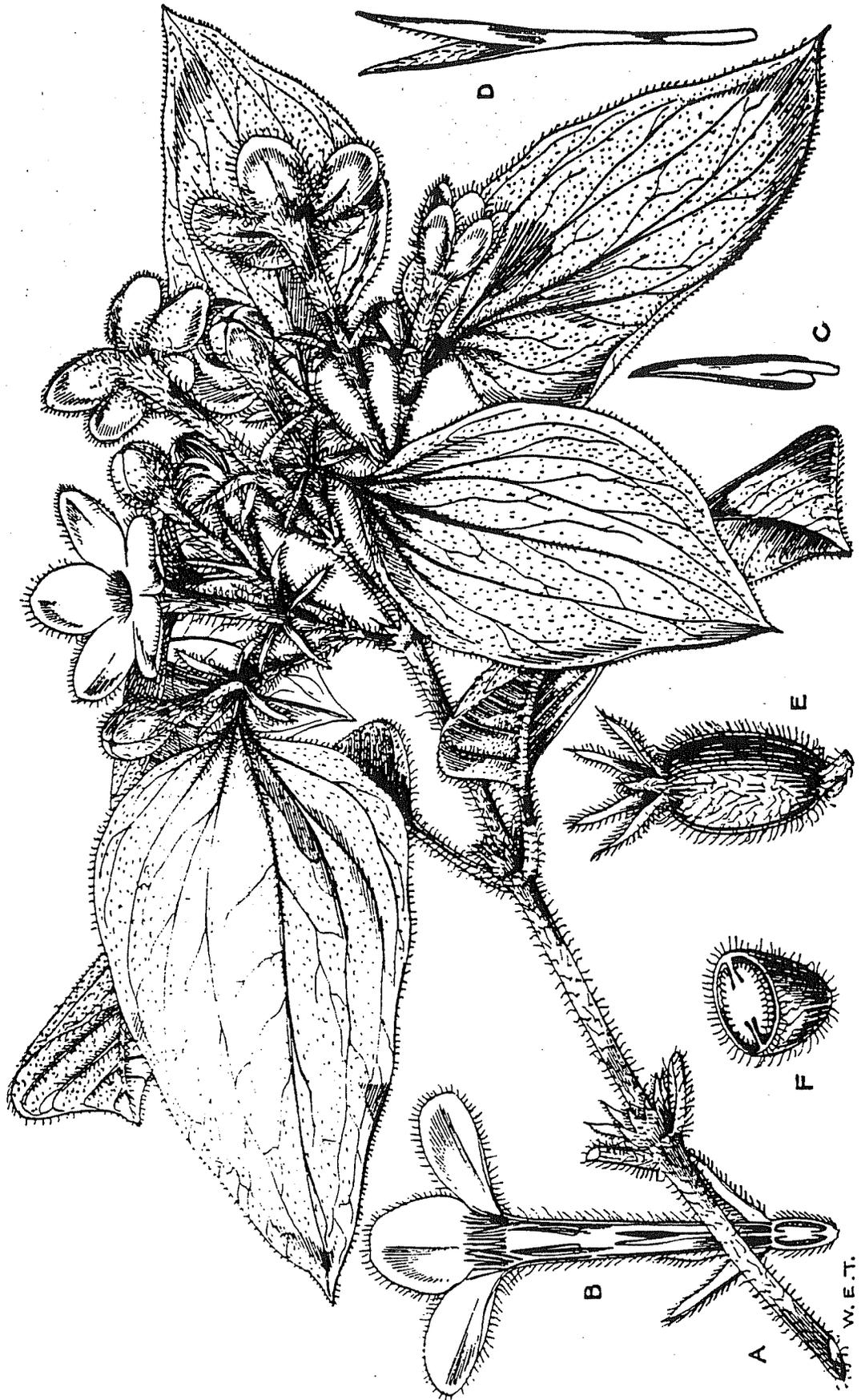


Fig. 162. *Mussaenda erythrophylla* (Rubiaceae).

5. *Pentas* Bentham

Evergreen, erect or prostrate herbs and subshrubs. Leaves opposite or whorled, petiolate; stipules parted into filaments. Inflorescence a terminal corymb. Flowers regular, (4-) 5 (-6)-merous, often dimorphic (some flowers of the inflorescence long-styled with exerted stigmas and hidden anthers, other flowers short-styled with exerted anthers and hidden stigmas) or trimorphic; sepals 4-6, comprising calyx-lobes of unequal size; petals (4-) 5, united below in a long tube with 5 lobes and very hairy orifice of the throat. Stamens 4-6. Ovary 2-celled; style bifid. Fruit a septicidal capsule; seeds numerous, minute.

1. *Pentas lanceolata* (Forsskal) Deflers, *Voyage au Yemen* 142 (1889). EGYPTIAN STAR-CLUSTER. Pubescent herb or subshrub to c.1.5 m, erect or decumbent. Leaves opposite, ovate, elliptical or lanceolate, to 15 cm. Flowers dimorphic, varying from pink to red in various shades, sometimes white; sepals of unequal size, to 1.3 cm; corolla-tube to c.3.8 cm. Stamens 5. Seeds pitted, brown.

Range: Tropical Africa and Arabia. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

6. *Posoqueria* Aublet

Trees and shrubs. Leaves opposite, petiolate, coriaceous; stipules interpetiolar, not divided. Inflorescence a terminal corymb, raceme or umbel. Flowers slightly irregular, 5-merous, pendent; sepals united in a long, funnelform tube with unequal lobes, often hairy in the throat. Stamens 5; filaments unequal. Ovary 2-celled; stigma 2-lobed. Fruit a fleshy berry; seeds numerous.

1. *Posoqueria latifolia* (Rudge) Roemer & Schultes, *Systema Vegetabilium* 5: 227 (1819). KAMADAN, KORORITIBALLI (Surinamese Arawak); ATALITJAKA, KOEJAKINEREPARE, TAMAARA (Surinamese Carib); BOESI-AGOESJITON, BOESI-MAMMI, DAGOESTON, PAIPIARAN, PIPA-OEDOE, SPIKRIETIEKIE (Surinamese Creole); NEEDLE FLOWER. Shrub or tree to 6 (-13.5) m. Leaves ovate or elliptical, with slightly revolute margin, to 24 x 13 cm. Inflorescence a corymb; corolla white, with long cylindrical tube 9-10 (-16) cm, hairy in the throat, the face of flower c.4.5 cm wide. Fruit globose, yellow or orange, 4-7.5 cm.

Range: Mexico to South America, including the three Guianas. Grown as an ornamental in Surinam (Ostendorf, 1962).

Posoqueria longiflora Aublet, also indigenous to the three Guianas, has flowers with corolla-tube more than 20 cm long.

7. *Psychotria* Linnaeus

Trees or shrubs, rarely perennial herbs. Leaves opposite, rarely whorled, petiolate; stipules connate. Inflorescence a terminal or axillary corymb or panicle. Flowers regular, often dimorphic (with long-styled and short-styled flowers), (4-) 5 (-6) -merous; sepals united in a short tube; petals united in a short, 5-lobed tube. Stamens (4-) 5 (-6). Ovary 2-

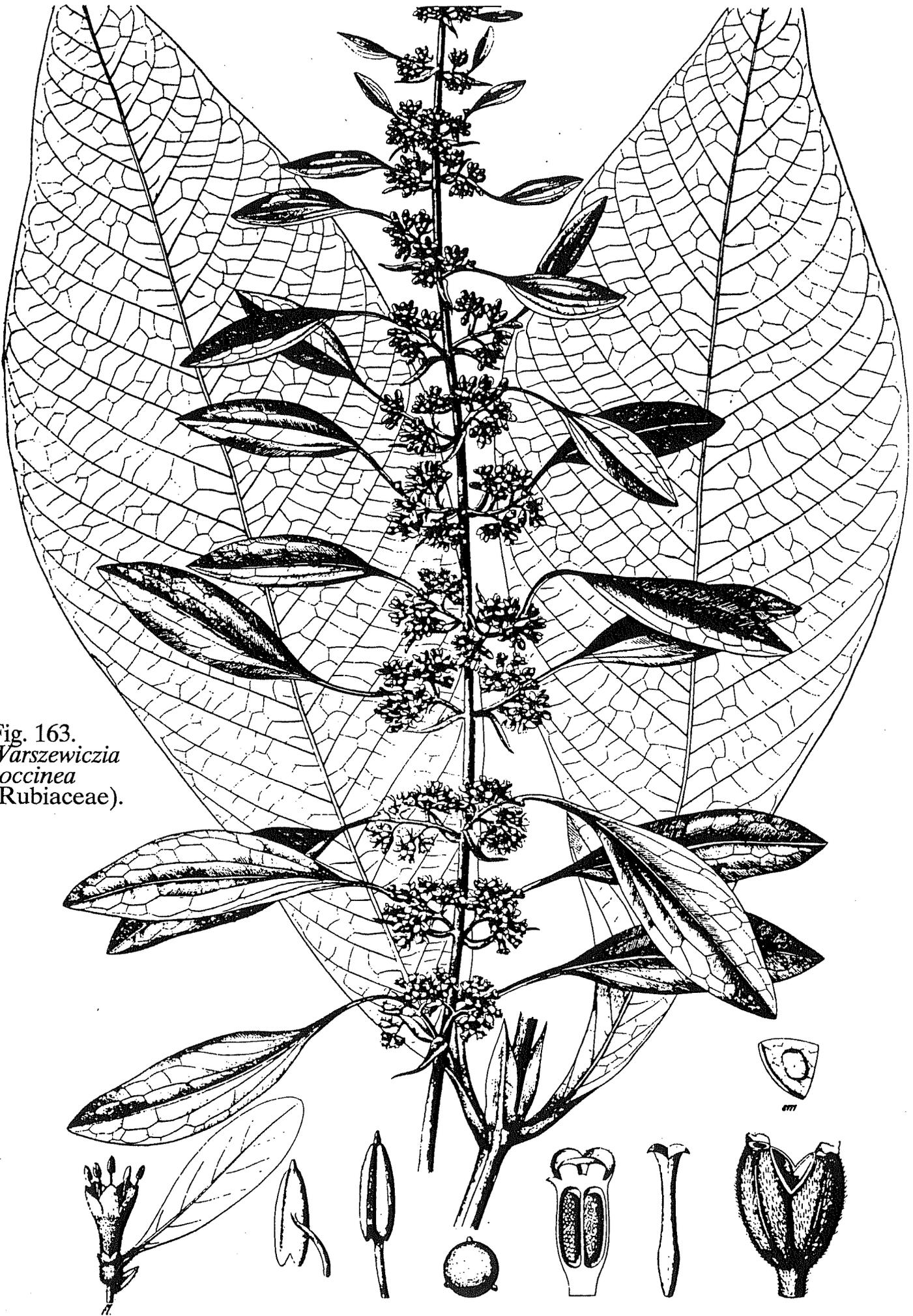


Fig. 163.
Warszewiczia
coccinea
(Rubiaceae).

celled; style bifid. Fruit a berry or drupe; seeds 2.

1. *Psychotria bahiensis* DeCandolle, *Prodromus* 4: 509 (1830), var. *cornigera* (Benth) Steyermark, *Memoirs of the New York Botanical Garden* 23: 518 (1972). (Synonym: *P. cuspidata* sensu auth., non Bredemeyer ex Roemer & Schultes). BOFROE-KASABA, BOSCHVLIER (Surinam). Shrub to 3 m. Leaves oblong-elliptical, caudate, to 15 x 10.5 cm. Inflorescence a puberulent corymb, 2-3 cm, reddish or purplish when in fruit. Corolla white, 6-8.5 mm, hairy in the throat, each lobe corniculate (bearing a knob of tissue) on the back near apex. Fruit a 2-lobed drupe.

Range: Trinidad and northern South America, including the three Guianas. Grown as an ornamental in Paramaribo, Surinam (Ostendorf, 1962).

8. *Rondeletia* Linnaeus

Evergreen trees and shrubs. Leaves opposite or rarely whorled, petiolate or sessile; stipules interpetiolar. Inflorescence a terminal or axillary cyme, corymb or panicle. Flowers regular, 4- or 5-merous; calyx 4- to 5-lobed; petals united in a long, funnellform or salverform, 4- to 5-lobed corolla-tube. Stamens 4 or 5. Ovary 2-celled; style bilobed. Fruit a capsule; seeds numerous, winged or unwinged.

1. *Rondeletia odorata* Jacquin, *Enumeratio Systematica Plantarum* 16 (1760). Shrub to 1.8 m; branches pubescent. Leaves ovate or oblong, textured, puberulent, often with revolute margin, c.5 cm. Inflorescence a terminal, trichotomously branched corymb. Corolla 5 (-6)-lobed, without hairs at orifice of throat, orange-red or cinnabar-red, with yellow center at the slightly raised, shallowly cup-like throat; lobes rotate (spreading).

Range: Cuba, Panama. Grown as an ornamental at the Promenade Gardens and Botanic Gardens, Georgetown, Guyana; and in the Cultuurtuin, Paramaribo and elsewhere in Surinam (Ostendorf, 1962; Teunissen & Lande, 1980).

9. *Warszewiczia* Klotzsch

Trees and shrubs. Leaves opposite; stipules interpetiolar, adaxially glandular. Inflorescence of numerous short cymes arranged in terminal and axillary, narrow panicles on a long axis. Flowers regular, 5-merous; sepals united below in a 5-lobed tube, one of the lobes often greatly enlarged into a long-stipitate, foliaceous, highly colored bract; petals united in a small, funnellform, 5-lobed corolla-tube, hairy in the throat. Stamens 5. Ovary 2-celled; style bifid, with short, squat lobes. Fruit a capsule; seeds numerous.

1. *Warszewiczia coccinea* (Vahl) Klotzsch, *Monatsberichte der Koniglich Akademie der Wissenschaften zu Berlin* 1853: 497 (1853). Tree to 15 m, or shorter shrub. Leaves broadly elliptical or elliptic-oblong, to 60 x 30 cm. Inflorescence to 30 cm. Leaf-like calyx-lobe (bract) red, to 12 x 4 cm. Corolla yellow- or red-orange, to 8 mm.

Range: Trinidad; Mexico to northern South America. Grown as an ornamental in Surinam (Ostendorf, 1962). The cv. David Auyong, which has a much fuller inflorescence due to double rows of leaf-like calyx-lobes (bracts), is grown as an ornamental in Guyana



Fig. 164. *Murraya paniculata* (Rutaceae).

(Ted Hubbard, pers. comm., 1985).

Rutaceae

Evergreen or deciduous trees and shrubs; stems armed or unarmed. Leaves alternate or opposite, simple, or palmately or pinnately compound, often glandular-punctate, subsessile to petiolate. Inflorescence of terminal or lateral racemes, panicles, corymbs or cymes, or of axillary, solitary flowers. Flowers often bisexual, often regular; sepals 3-5, free or united below; petals 3-5, free. Stamens 2-60, free or united in fascicles. Ovary superior, 4- or 5-celled. Fruit a berry, capsule, drupe, follicle or samara; seeds numerous.

Key to Genera

1. Branches unarmed; leaflets 3-9, alternate; sepals and petals 5; stamens 10 1. *Murraya*
1. Branches armed with paired spines; leaflets 3, the lateral ones opposite; sepals and petals 3; stamens 6 2. *Triphasia*

1. *Murraya* J. Koenig ex Linnaeus

Unarmed trees and shrubs. Leaves alternate, odd-pinnately compound, petiolate; leaflets alternate. Inflorescence of terminal or axillary panicles, cymes or corymbs, or of axillary, solitary flowers. Sepals 5; petals 4-5; stamens 8 or 10. Fruit a berry; seeds few to numerous.

1. *Murraya paniculata* (Linnaeus) Jack, *Malayan Miscellanies* 1: 31 (1820). (Synonym: *M. exotica* Linnaeus). LIMONIA (Surinam); KEMOENING (Surinamese Javan); ORANGE JASMINE, ORANGE JESSAMINE. Evergreen shrub or tree to 7.5 m. Leaves odd-pinnately compound; leaflets 3-9 (1-4 pairs), alternate, rhombic or obovate, entire or crenate, shiny, to 7 cm. Inflorescence a few-flowered corymb. Flowers white. Fruit red, c.1.2 cm wide; seeds 1-2.

Range: Southeast Asia. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

Literature: Kong, Y.C., et al. 1986. A case study on the multidisciplinary investigation on yuehchukene, the anti-implantation agent of *Murraya paniculata*. *Fitoterapia* 57(6): 387-396.

2. *Triphasia* Loureiro

Armed trees and shrubs. Leaves alternate, simple or trifoliolate, glandular-punctate, petiolate; lateral leaflets opposite. Inflorescence of axillary, solitary flowers or fascicles of up to 3 flowers. Sepals 3-5; petals 3-5; stamens 6-10. Fruit a berry; seed 1 (-3).

1. *Triphasia trifolia* (N.L. Burman) P. Wilson, *Torreya* 9: 33 (1909). ZOETE LEMMETJE, SWIT-LEMKI (Surinam); LIMEBERRY. Evergreen tree to 4.5 m; branches armed with paired spines. Leaves trifoliolate; leaflets 3, ovate or elliptical, crenate, to c.4.5 cm, the lateral leaflets opposite, the terminal leaflet much larger than the laterals.

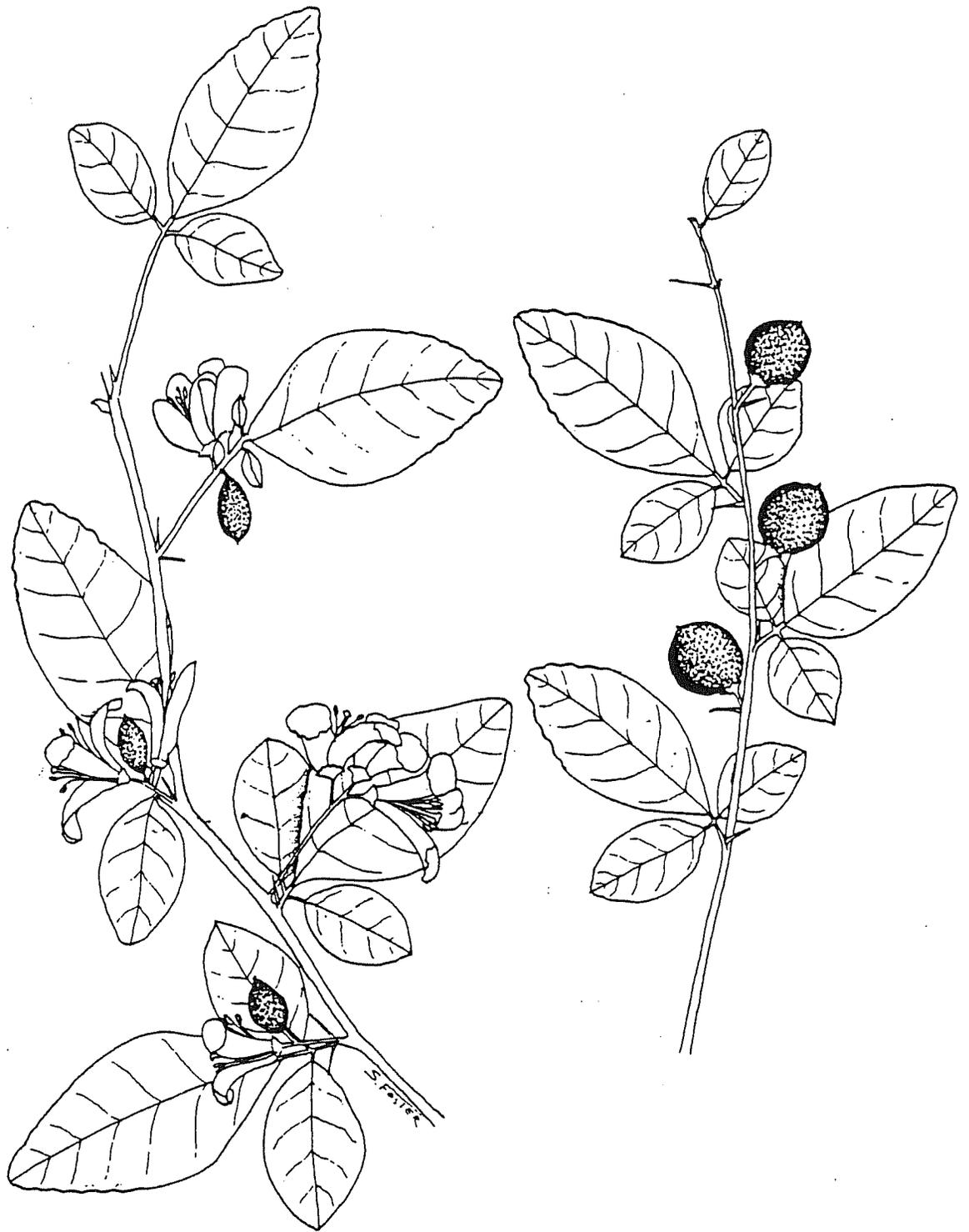


Fig. 165. *Triphasia trifolia* (Rutaceae).

Inflorescence of axillary, solitary flowers. Flowers white. Fruit dark red, to c.1 cm wide.

Range: Malaysia. Grown as an ornamental hedge at the President's House, Paramaribo, Surinam.

The grapefruit, *Citrus x paradisi* Macfadyen, with simple leaves and very large, yellow fruit, is occasionally seen planted on hotel grounds in Paramaribo, Surinam in sites suggesting an ornamental, rather than culinary, purpose.

Salicaceae

Dioecious, deciduous trees and shrubs. Leaves alternate, simple, petiolate. Inflorescence of terminal or axillary, specialized cymules arranged in spikes (catkins, aments). Flowers unisexual, bracteate; bract (scale) entire to fimbriate, often accompanied by a gland; sepals and petals absent. Stamens 2-30, free or united. Ovary superior, 1-celled. Fruit a 2-valved capsule; seeds numerous, pubescent or comose.

1. *Salix* Linnaeus

Characteristics of the family Salicaceae.

1. *Salix canariensis* C. Smith ex Link, in Buch, *Physicalische Beschreibung der Canarischen Inseln* 159 (1825). MADEIRAWILG (Surinam). Shrub or tree to 10 m. Leaves oblong or lanceolate, entire to crenate, pubescent beneath, to 10 (-15) cm. Inflorescence (catkins) erect, to 6 cm.

Range: Madeira; Canary Islands. Grown as an ornamental in Surinam (provisional identification by Ostendorf, 1962).

Sapindaceae

Evergreen or deciduous trees, shrubs or woody vines, monoecious or dioecious or polygamous. Leaves alternate, 1- or 2-pinnately compound, or 1- or 2-ternately compound, petiolate. Inflorescence a terminal or axillary panicle or raceme. Flowers bisexual or functionally unisexual, regular or irregular; sepals 4-5, free or united below in a 4- or 5-toothed calyx; petals (0) 4-5, free, usually with appendages on adaxial surface. Nectary disc annular or glandular, extra-staminal. Stamens (6) 8-10, free. Ovary superior, 3-celled. Fruit a capsule, berry, drupe, nut or samara; seeds often arillate.

Key to Genera

1. Fruit an unarmed, 3-seeded, pyriform, 3-valved, dehiscent capsule; seed exposed at top of fleshy, corrugated, basal aril 1. *Blighia*
1. Fruit a softly spinose-armed, 1-seeded, globose or ellipsoid, indehiscent drupe; seed embedded completely in fleshy, smooth, all-surrounding aril 2. *Nephelium*

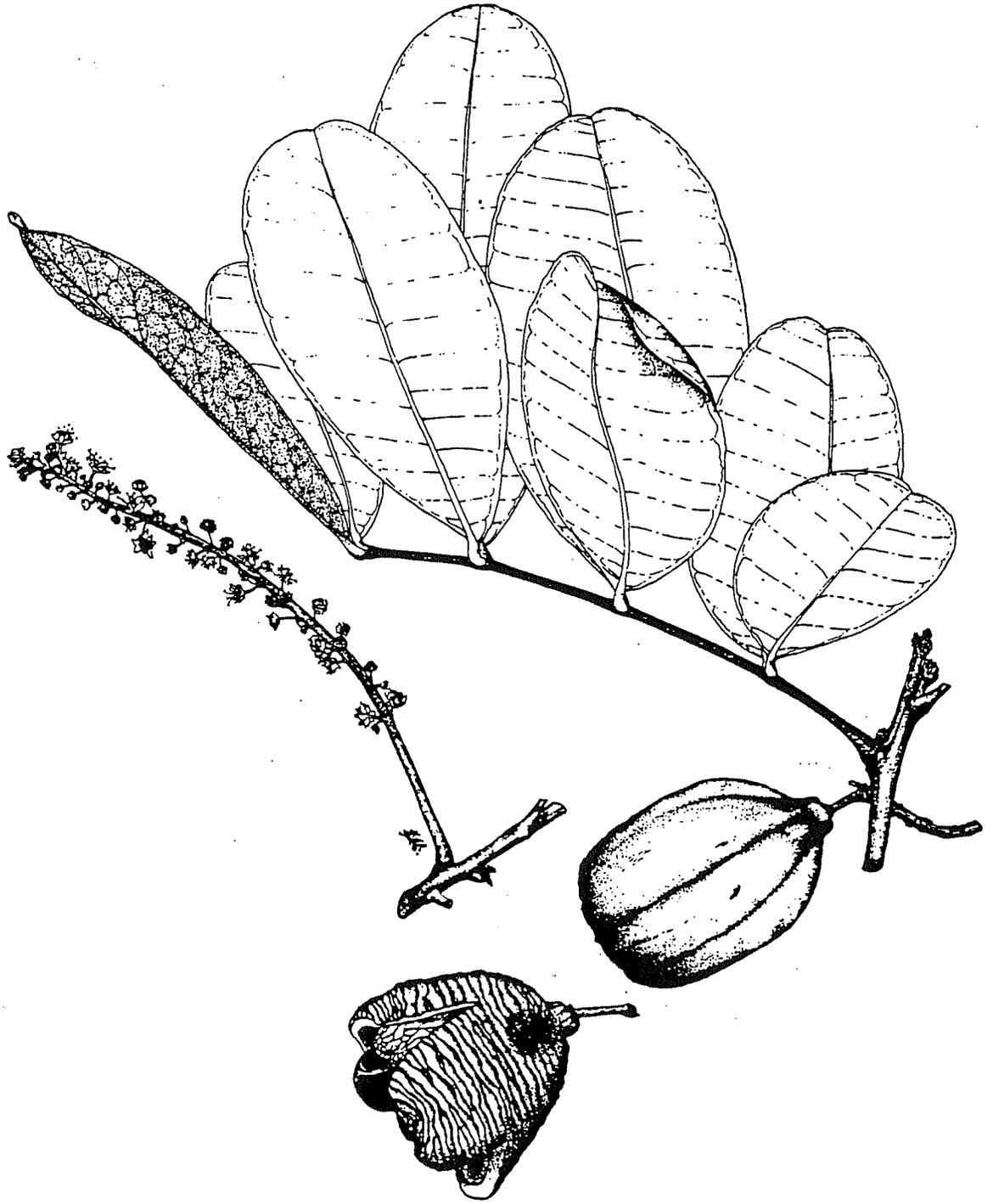


Fig. 166. *Blighia sapida* (Sapindaceae).

1. *Blighia* K. Koenig

Evergreen, monoecious trees and shrubs. Leaves alternate, pinnately compound. Inflorescence an axillary, simple or compound raceme. Flowers unisexual, regular; sepals 5 (6); petals 5; stamens 8-10. Fruit a 3-valved capsule; seeds 3, with fleshy aril.

1. *Blighia sapida* K. Koenig, in K. Koenig & Sims, *Annals of Botany* 2: 571 (1806). AKEE, VEGETABLE BRAIN. Monoecious tree to 15 (-22) m. Leaves to 37.5 cm; leaflets 6-10 (3-5 pairs), elliptical or obovate, yellowish-green above, to 20 cm. Flowers whitish. Fruit pyriform, depressed at apex, 3-lobed, red, or yellow tinged with red, splitting into 3, 1-seeded valves with a thick rind; seed shining, black or dark brown, with a fleshy, corrugated, cream or white, basal aril; aril attached to seed by a pink, red or orange, poisonous membrane (raphe).

Range: West Africa. Grown as an ornamental at the Promenade Gardens, Georgetown, Guyana.

2. *Nephelium* Linnaeus

Evergreen, monoecious trees. Leaves alternate, pinnately compound. Inflorescence an axillary, simple or compound raceme. Flowers unisexual, regular; sepals 5; petals 5; stamens 8. Fruit a drupe; seed 1, with fleshy aril.

1. *Nephelium lappaceum* Linnaeus, *Mantissa Plantarum Altera* 566 (1771). RAMBUTAN. Tree to 18 m. Leaflets 5-11, elliptical, oblong or obovate, to 15 cm. Flowers whitish. Fruit ellipsoid or globose, covered with long, fleshy, soft, curved, red spines; seed large, surrounded by soft, smooth, whitish, translucent aril; aril juicy, edible.

Range: Malaysia. Grown as an ornamental novelty on a flower-farm near Timehri, Guyana, and in the sierplanten area of the Cultuurtuin, Paramaribo, Surinam.

Scrophulariaceae

Annual or perennial herbs or shrubs. Leaves usually opposite, sometimes alternate or whorled, simple to pinnatifid, sessile or petiolate. Inflorescence of axillary spikes, racemes, cymes or panicles. Flowers bisexual, irregular; sepals (4) 5, united in a (4-) 5-toothed calyx-tube; petals 4-5, united in a 4- or 5-lobed, usually 2-lipped, sometimes saccate or spurred corolla-tube. Stamens (2) 4, didynamous. Ovary superior, 2-celled. Fruit a capsule or berry; seeds numerous.

Key to Genera

1. Corolla-tube absent or very short; inflorescence a long, many-flowered, terminal raceme
1. *Angelonia*
1. Corolla-tube prominent; inflorescence of solitary, axillary flowers, or a short, few-flowered, terminal or axillary cyme or raceme.
 2. Perennial shrub; leaves whorled, sometimes reduced to scales; flowers red 2. *Russelia*
 2. Annual herb; leaves opposite, foliose; flowers purple, with white or yellow blotch

1. *Angelonia* Humboldt & Bonpland

Perennial herbs or subshrubs. Leaves opposite (rarely whorled), or the upper alternate, simple. Inflorescence a terminal raceme, or of axillary, solitary flowers. Flowers bisexual, irregular; corolla 2-lipped, the tube absent or very short, the throat swollen or inflated on one side. Fruit a capsule.

Key to Species

- | | |
|--|---------------------------|
| 1. Plant glabrous, to 60 cm | 1. <i>A. angustifolia</i> |
| 1. Plant glandular-pubescent, to 90 cm | 2. <i>A. salicifolia</i> |

1. *Angelonia angustifolia* Benthams, in A.P. DeCandolle, *Prodromus Systematis Naturalis Regni Vegetabilis* 10: 254 (1846). ANANASBLOEM (Surinam); VUILE OORTJES (Surinamese Indonesian). Perennial herb to 60 cm; plants glabrous. Leaves narrowly lanceolate, serrulate, to 6 cm. Flowers purplish-blue.

Range: Mexico, West Indies. Grown as an ornamental in Surinam (Ostendorf, 1962).

2. *Angelonia salicariifolia* Humboldt & Bonpland, *Plantae Aequinoctiales* 2 (14): 92, t.108 (1812). Perennial herb to 90 cm; plant glandular-pubescent. Leaves lanceolate or oblong, serrulate at least distally, to 7.5 cm. Flowers purplish-blue.

Range: Northern South America, West Indies. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana; and in Surinam (Ostendorf, 1962).

2. *Russelia* Jacquin

Evergreen shrubs and subshrubs. Leaves opposite or whorled, simple, those on branchlets sometimes reduced to scales. Inflorescence an axillary cyme. Flowers bisexual, somewhat irregular; corolla somewhat 2-lipped, 5-lobed, the tube cylindrical. Fruit a capsule.

1. *Russelia equisetiformis* Schlechtendahl & Chamisso, *Linnaea* 6: 377 (1831). JEZUSTRANEN, DAMESLIPPEN (Surinam); CORAL PLANT, FOUNTAIN PLANT. Shrub to 1.2 m; stem-branches green, photosynthetic, rush (*Equisetum*)-like and conspicuously ribbed, 4- to 12-angled, arcuate, whorled. Leaves whorled, 3-6 per whorl, either ovate to elliptical and to 1.2 cm, or reduced to minute scales. Inflorescence a 1- to 3-flowered cyme. Flowers red, narrowly cylindrical, c.2.5 cm.

Range: Mexico. Grown as an ornamental at a waterfront park along the Surinam River in Paramaribo, Surinam; and in French Guiana (de Granville, 1985).

3. *Torenia* Linnaeus

Annual or perennial herbs; stems erect to prostrate. Leaves opposite, simple.

Inflorescence a terminal raceme, or of axillary, solitary flowers. Flowers bisexual, irregular; calyx 3- to 5-winged or pleated; corolla 2-lipped, the tube cylindrical. Fruit a capsule.

Key to Species

1. Stems prostrate; leaves ovate-deltate, to 2.5 cm; calyx cylindrical, only slightly winged; lower corolla-lip white 1. *T. asiatica*
1. Stems erect; leaves ovate, to 5 cm; calyx ellipsoid, prominently 5-winged; lower corolla-lip with yellow blotch 2. *T. fournieri*

1. *Torenia asiatica* Linnaeus, *Species Plantarum* 619 (1753). VIOOLTJE (Surinam); WISHBONE PLANT. Annual herb; stems prostrate or trailing, rooting at the nodes. Leaves ovate-deltate, serrate, to 2.5 cm. Inflorescence of axillary, solitary flowers. Flowers violet-purple, with white lower lip.

Range: India. Grown as an ornamental in Surinam (Ostendorf, 1962).

2. *Torenia fournieri* Linden ex Fournier, *L'Illustration Horticole* 23: 129, t.249 (1876). BLUEWINGS. Annual herb; stems erect. Leaves ovate, serrate, to 5 cm. Inflorescence of axillary, solitary flowers, or a short terminal raceme. Flowers violet-purple, the tube yellow on the outside, the middle lobe of lower corolla-lip with basal yellow blotch.

Range: South Vietnam. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana, and in gardens of Paramaribo, Surinam.

Solanaceae

Armed or unarmed trees, shrubs, annual or perennial herbs, and vines. Leaves alternate or opposite, simple or pinnately compound, sessile or petiolate. Inflorescence of axillary or terminal racemes, corymbs, cymes or panicles, or of solitary, axillary flowers. Flowers bisexual, regular, rarely irregular; calyx 4- or 5-lobed or -toothed, sometimes circumscissile; corolla often rotate or funnelform, 5 (-6)-lobed. Stamens 4 or 5; anthers dehiscent by longitudinal slits or apical pores, free or united in a cone above the style; staminodes present or absent. Ovary superior. Fruit a 2- or 4-celled capsule or berry; seeds numerous.

Key to Genera

1. Anthers united in a cone above the style, each dehiscent by 2 apical pores 7. *Solanum*
1. Anthers free, dehiscent by longitudinal slits.
 2. Fertile stamens 4.
 3. Leaves sessile; corolla-limb plicate; anthers 2-locular 5. *Petunia*
 3. Leaves petiolate; corolla-limb not plicate; anthers, at least the upper pair, 1-locular.
 4. Annual herb; corolla irregular, violet-blue, to 1.5 cm, the lobes cleft at apex; fruit a capsule 1. *Browallia*
 4. Shrub or tree; corolla regular, white, to 6.3 cm, the lobes entire; fruit a berry 2. *Brunfelsia*
 2. Fertile stamens 5.
 5. Fruit an often prickly capsule; lower part of calyx circumscissile and subtending the fruit

- as a collar, cup or frill 4. *Datura*
5. Fruit an unarmed berry; calyx not circumscissile and collar-like.
6. Herbs or shrubs; corolla white, less than 5 cm, the lobes not frilled 3. *Capsicum*
6. Climbing shrubs or vines; corolla yellow, 15-22.5 cm, the lobes frilled 6. *Solantra*

1. *Browallia* Linnaeus

Annual or perennial herbs. Leaves alternate or opposite, simple, petiolate. Inflorescence of solitary, axillary flowers or terminal racemes. Flowers irregular (zygomorphic); calyx 4- or 5-toothed; corolla salverform, 5-lobed, with straight tube. Stamens 4, paired; anthers of upper (shorter) pair 1-celled; staminode present or absent. Fruit a capsule, surrounded by persistent calyx; seeds numerous, minute.

1. *Browallia americana* Linnaeus, *Species Plantarum* 631 (1753). Annual herb to 70 cm; branches puberulent with non-glandular or glandular hairs. Leaves alternate, ovate to lanceolate, glabrous or puberulent with non-glandular hairs, to 8 cm. Calyx-teeth unequal, glandular-puberulent. Corolla violet-blue, the tube to c.1.5 cm, the lobes cleft at apex, the face to 1.3 cm wide. Staminode absent.

Range: Tropical America. Grown as an ornamental in Surinam (Ostendorf, 1962).

2. *Brunfelsia* Linnaeus

Shrubs or trees. Leaves alternate, simple, petiolate. Inflorescence a terminal cyme, or of solitary, axillary flowers. Flowers slightly irregular (slightly zygomorphic); calyx tubular or campanulate, 5-toothed; corolla salverform or funnelform, 5-lobed, the lobes sometimes undulate or unevenly crisped. Stamens 4, paired; anthers all 1-celled; staminode present or absent. Fruit a berry; seeds angular.

1. *Brunfelsia americana* Linnaeus, *Species Plantarum* 191 (1753). LADY OF THE NIGHT. Shrub or tree to 6 m. Leaves elliptical or obovate, to 12.5 cm. Calyx campanulate. Corolla white, later changing to cream yellow, the tube puberulent outside and to c.6.3 cm, the face to 6.3 cm wide. Fruit orange.

Range: West Indies. Grown as an ornamental in Surinam (Ostendorf, 1962).

3. *Capsicum* Linnaeus

Annual or perennial herbs or shrubs. Leaves alternate, simple, entire, petiolate. Inflorescence of solitary, axillary or terminal flowers, or of few-flowered fascicles. Flowers regular; calyx campanulate or rotate, truncate or 5-toothed; corolla subrotate, 5-lobed. Stamens 5, equal. Fruit a dry or fleshy, pungent berry; seeds numerous, flattened, lenticular.

1. *Capsicum annuum* Linnaeus, *Species Plantarum* 188 (1753), var. *aviculare* (Dierbach) D'Arcy & Eshbaugh, *Phytologia* 25(6): 350 (1973). (Synonyms: *C. minimum* Miller, *C. annuum* var. *conoide* (Miller) Irish). CONE PEPPER. Annual herb or perennial shrub to 2 m. Leaves ovate to lanceolate, usually glabrous, to 12.5 cm. Flowers usually solitary, axillary. Corolla white, the face to 1.5 cm wide. Fruit globose to elongate-conical, erect, red



Fig. 167. *Capsicum annuum* var. *aviculare* (Solanaceae).

at maturity, to 3 (-5) x 1 cm.

Range: West Indies; southern United States to South America. A cultivar with dark purple leaves is grown as an ornamental at the Botanic Gardens nursery, Georgetown, Guyana.

Literature: D'Arcy, W.G. and W.H. Eshbaugh. 1974. New World peppers (*Capsicum* - Solanaceae) north of Colombia: a resume. *Baileya* 19(3): 93-105. Heiser, C.B. and B. Pickersgill. 1975. Names for the bird peppers (*Capsicum* - Solanaceae). *Baileya* 19(4): 151-156.

The unequivocally correct scientific name of the cone pepper is a contested subject in the literature of pepper taxonomy. Several unidentified species of *Capsicum* are grown as ornamentals in French Guiana (de Granville, 1985).

4. *Datura* Linnaeus

Annual or perennial herbs or shrubs. Leaves alternate, simple, petiolate. Inflorescence of solitary, axillary flowers, sometimes in branch-axils. Flowers regular; calyx either tubular, spathaceous, or 2- to 5-toothed, circumscissile above base of tube, persistent as a collar, cup or frill; corolla funnelform, shallowly 5- or 10-toothed or -lobed, the limb plaited. Stamens 5, equal. Fruit a 4-celled capsule, often prickly; seeds numerous, flat or angular, often rugulose-pitted.

Literature: Avery, A.G., Satina, S. and J. Rietsema. 1959. *Blakeslee: The Genus Datura*. 289 pp. New York: Ronald Press.

1. *Datura stramonium* Linnaeus, *Species Plantarum* 179 (1753). DOORNAPPEL (Surinam); JIMSON WEED. Annual herb to 1.5 m; poisonous. Leaves ovate, sinuately dentate or lobed, glabrous or pubescent, to 20 cm. Calyx unequally 5-toothed, keeled on the angles, the part remaining after circumscission a reflexed frill. Corolla white or tinged purplish, 5-toothed, to 10 cm. Capsule erect, ovoid, spiny or smooth, to 7 cm.

Range: North America. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana (*Index Seminum*, 1982), and in Surinam (Ostendorf, 1962).

An unidentified species of *Datura* is indicated by J.-J. de Granville (1985) as an infrequent ornamental in French Guiana.

5. *Petunia* Jussieu

Annual or perennial herbs. Leaves alternate, entire, sessile. Inflorescence of solitary, axillary or terminal, pedicellate flowers. Flowers bisexual; calyx campanulate or tubular, 5-lobed or -parted; corolla funnelform or salverform, of 5 united petals, the limb plicate. Stamens 5, comprising 4 fertile, didynamous ones and 1 small or rudimentary and sterile stamen. Fruit a 2-celled capsule; seeds numerous.

Literature: Sink, K.C., ed. 1984. *Petunia*. 256 pp. Berlin and New York: Springer-

Fig. 168. *Datura stramonium* (Solanaceae).



Verlag.

1. *Petunia x hybrida* Vilmorin, *Les Fleurs de Pleine Terre* ed.1, 615 (1863). PETUNIA, COMMON GARDEN PETUNIA. Annual or perennial herb, dwarf or up to 80 cm (-1 m). Leaves ovate or ovate-lanceolate, glandular-pubescent, sessile, to c.6.5 cm. Flowers sometimes double; corolla funnelform, of various colors including white, pink, purple or red, to c.9 x (face) 12.5 cm.

Range: A hybrid complex without natural range; parent species are South American. Grown as an ornamental in Surinam (Ostendorf, 1962).

Literature: Cherry, E.C. 1969. Petunias. *Garden Journal* 19(2): 48-49.

6. *Solandra* Swartz

Climbing shrubs or vines. Leaves alternate, simple, entire, petiolate. Inflorescence of solitary, axillary, pedicellate flowers, sometimes a few-flowered fascicle. Flowers regular, or slightly irregular; calyx tubular, long, 2- to 5-lobed; corolla funnelform, the throat campanulate, 5-lobed, the lobes reflexed and often frilled or undulate. Stamens 5. Fruit a 4-celled, fleshy, globose berry, somewhat included in the persistent calyx; seeds numerous, reniform.

The flower of *Solandra* may superficially resemble that of *Beaumontia* (Apocynaceae).

Key to Species

- | | |
|---|-------------------------|
| 1. Corolla opening white, changing to yellow or eggshell-brownish | 1. <i>S. longiflora</i> |
| 1. Corolla yellow, with purple marks in throat | 2. <i>S. maxima</i> |

1. *Solandra longiflora* Tussac, *Flore des Antilles* 2: 49, t.12 (1818). CUP OF MILK. Climbing shrub to 9 m or more; stems and leaves glabrous. Leaves elliptic-oblong or oblong-lanceolate, to 17.5 cm. Calyx 2-lobed, to 10 cm. Corolla opening white at night, changing the next day to yellow or eggshell-brownish, to 15 cm, the lobes frilled.

Range: Greater Antilles. Grown as an ornamental at the Botanic Gardens, Georgetown, Guyana in the 1950's (Herklots, 1976).

2. *Solandra maxima* (Sesse & Mocino) P.S. Green, *Curtis's Botanical Magazine* n.s. 176(3): t.506 (1967). (Synonyms: *S. grandiflora* auct., non Swartz; *S. guttata* auct., non D. Don; *S. nitida* auct., non (Zuccarini) Standley). CHALICE VINE (Guyana); TROMPET-BLOEM (Surinam); CUP OF GOLD. Climbing shrub to 50 m; stems and leaves glabrous. Leaves elliptical, to 15 cm. Calyx (3-) 5-lobed, to 6 cm. Corolla yellow, with purple marks, spots or lines in throat, to 22.5 cm, the lobes frilled.

Range: Mexico. Grown as an ornamental in Surinam (Ostendorf, 1962); and at the Botanic Gardens, Georgetown, Guyana in the 1930's (Department of Agriculture, 1934).

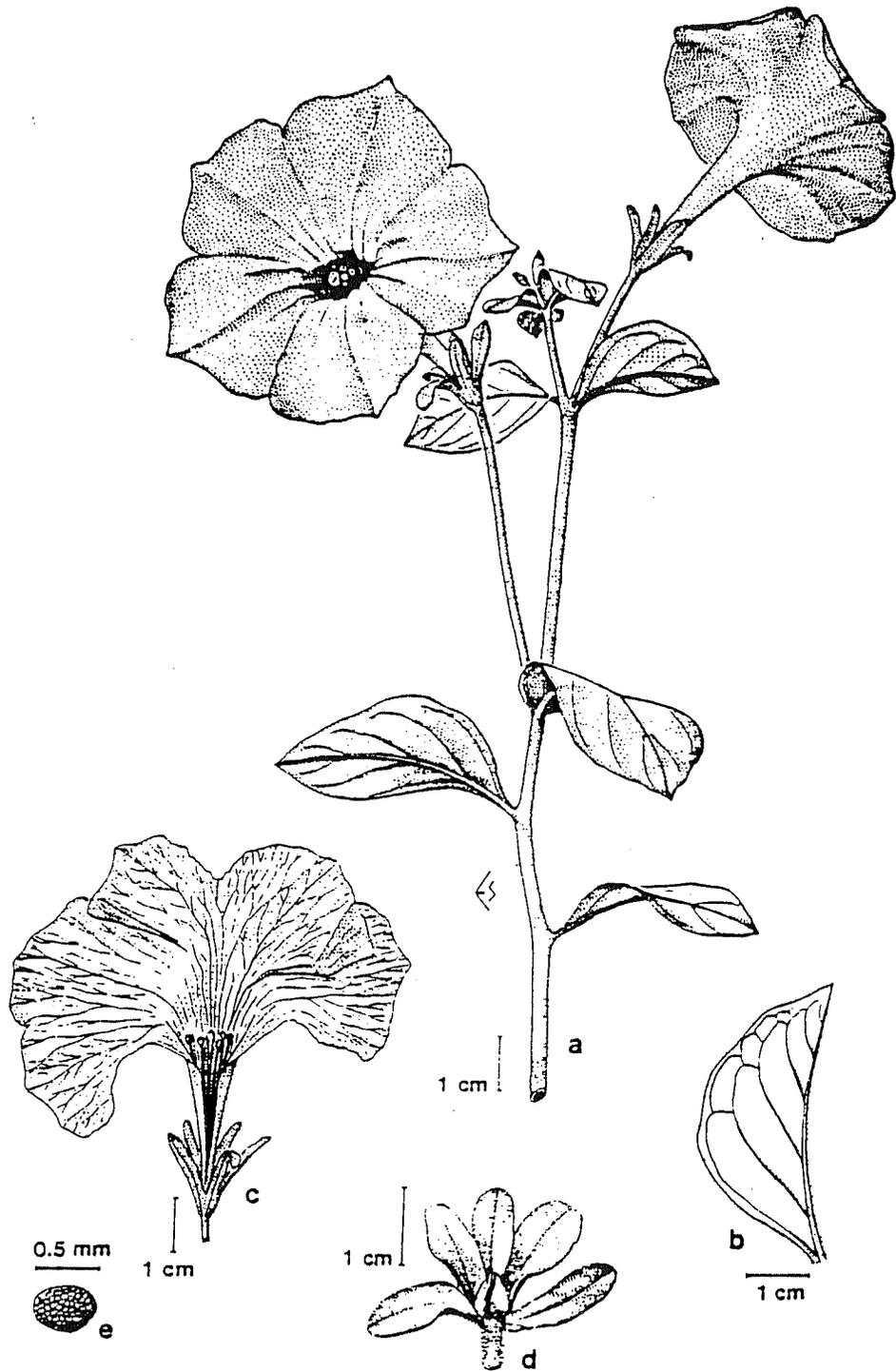


Fig. 169. *Petunia x hybrida* (Solanaceae).