Forsteronia  G.F.W. Mey. Lianas. Leaves opposite; some species with foliar glands. Latex white. Infra\textasciitilde{}r\texttildetilde{}cescence axillary or terminal. Fruit a pair of elongate, linear, cylindrical follicles to 20 cm long, brown when mature. Seeds numerous per fruit, plumose, the hairs golden-yellow. Distribution: Guianas, Brazil, Bolivia to Peru.

Geissospermum  F. Allen. Trees to 25 m tall, with fenestrate trunk. Leaves alternate. Infra\textasciitilde{}r\texttildetilde{}cescence terminal or axillary and seeming to be borne from the stems. Fruit a berry to 3.5 cm long, yellow when mature. Seeds 6–10 per fruit, surrounded by a milky, fleshy mesocarp. Distribution: Guianas, Brazil, Bolivia to Peru.

Himatanthus  Willd. Trees to 20 m tall, often growing in disturbed areas. Leaves alternate, spiral, clustered at branch apex. Latex white, abundant. Fruit a follicle, in pairs, to 35 cm long, dark brown when mature. Seeds numerous per fruit, completely surrounded by a wing of the same color. Wood is harvested for lumber. Latex, roots and fruit reported to have medicinal properties. Distribution: Guianas, Brazil, Bolivia to Peru.
Family and Genus Descriptions

matchsticks. Leaves and roots are medicinal. Distribution: New World and the Old World tropics.

*Schefflera* J.R. Forst. & G. Forst. Trees to 20 m tall. Trunk with a strongly aromatic sap. Leaves palmately compound, leaflets up to 12, clustered at the apices of the branches, sometimes with lobes, the petioles elongated and variable in size. Stigma persistent on fruit. Fruit a berry, to 2 cm diameter, purple or black when mature, longitudinally flattened. Some species with dry fruit composed of two parts, but the majority of species with a fleshy berry of 3–9 parts. Seeds 2–9 per fruit. Wood used in carpentry, to make matchsticks, and sometimes as a substitute for balsa wood. The petioles are sometimes used to make toys, as well as cages for birds. Leaves, resin, and bark medicinal. Distribution: New World and the Old World tropics.

**ARECACEAE**

Family diverse and variable. Appearing like trees or shrubs, herbaceous to woody, without branches, rarely lianas. Stems solitary or clustered or rarely subterranean, often with spines. Leaves usually clustered near stem apex, simple or compound, pinnate or palmate, the petiole base sheathing the stem, often leaving a circular scar after dehiscing. Infructescence in racemes or pseudospikes, covered initially by a bract. Fruit a drupe with one or rarely two seeds, some genera with more than two embryos per seed. Family typical of tropical and subtropical regions, and one of the most important economically.

*Astrocaryum* G.F.W. Mey. Palms to 10–20 m tall. Stems solitary, rarely clustered or subterranean, with conspicuous leaf scars and large, flattened, black caducous spines. Leaf rachis to 6 m long with black flat spines. Leaves with many pinnate, abaxially glaucous, the margins with short spines. Bract to 1 m long. Infructescence to 80 cm. Fruit sessile, orange or brownish, with very small hair-like spines on the exocarp, the mesocarp fleshy, abundant, somewhat fibrous and sweet. Calyx persistent. Seeds one per fruit with three pores on the apex. Young leaves of some species are used to make handicrafts. Fruits edible. Seeds often used in making handicrafts. Distribution: Mexico and Guianas to Peru and Bolivia, to 650 m elevation.

*Attalea* H. B. K. Palms to 25 m tall and stem to 40 cm diameter. Stems solitary, sometimes subterranean. Leaves with numerous pinnate. Rachis to 12 m long, arched and curved in such a manner that the pinnate appear vertical in the apex. Normally, the pinnate arranged in one plane, but in some species the pinnate are disorganized. Bract to 1 m long, indurate to woody. Infructescence to 60 cm. Fruits tightly clustered, sessile, brown when mature, the exocarp woody, the mesocarp white or orange and fibrous. Seeds one per fruit with 3–4 embryos per seed. Leaves used as roofing material for houses. Fruits edible. Seeds often used in making handicrafts. Distribution: Mexico to Bolivia.
ent between the petioles. Infructescence terminal or axillary. Fruit a bivalved capsule, to 30 cm long, smooth or verrucose, with a prominent midvein, brown or black when mature. Seeds winged, numerous per fruit. Distribution: Mexico to Argentina and Paraguay.

**Clytostoma** Miers ex Bur. Lianas. Stems often square. Leaves compound, opposite, trifoliolate or bifoliolate with third leaflet modified into a simple tendril. Infructescence terminal or axillary. Fruit a bivalved capsule, to 10 cm long, rarely to 20 cm, often warty, the protuberances to 1 cm long, the valves dehiscing in two parts when dry, brown when mature. Seeds winged, numerous per fruit, in two rows. Axillary pseudostipules present. Similar to *Cydistis*, differs in having warty fruit. Distribution: Mexico to Argentina and Paraguay.

**Distictella** O. Kuntze. Lianas. Leaves compound, opposite, trifoliolate or bifoliolate, with the third leaflet modified into a 3-branched tendril or in the form of a disk. Infructescence axillary or terminal. Fruit a bivalved capsule, to 20 cm long, typically smaller, weakly curved, smooth, the exocarp to 0.4 cm thick, tomentose or with very short, dense pubescence, with the texture of a chamois cloth, brown when mature. Seeds winged, numerous per fruit, in two rows. Plants with glands. Distribution: Costa Rica and Guianas to Peru and Argentina.

**Jacaranda** Juss. Trees to 35 m, common in secondary forest habitats. Leaves bipinnately compound, opposite, to 170 cm long. In Brazil some species with leaves pinnately compound or simple. Leaves weakly clustered at apex of branches, the leaflets with asymmetric base, the petiole base thickened, to 2 cm diameter. Some species caducifoliolate. Infructescence terminal or borne from the trunk. Fruit a bivalved capsule, to 15 cm long, indurate, somewhat woody, generally smooth, brown when mature. Seeds winged, numerous per fruit. The wood used to manufacture paper pulp, cardboard, banisters, cabinets, furniture, and particle board. Cultivated as an ornamental tree. The wood and bark contain high tannin content. Leaves, fruits, seeds, and bark medicinal. Distribution: Mexico and Belize to Peru and Bolivia.
that flakes away easily when rubbed. Leaves simple, coriaceous, the base cordate, clustered at the extreme apices of the branches. Fruit a samara to 14 cm long, the five wings membranous, brown when mature, tomentose. The seeds are edible and with pressure one can extract an oil that is used as a medicine and in cooking. Distribution: Nicaragua to Peru and Bolivia.

**Ceiba** Mill. Trees to 60 m tall. Trunks to 3–4 m diameter. Leaves palmately compound, with 3–9 leaflets, clustered at the apices of the branches. Fruit a woody, 5-valved capsule, to 25 cm long, brown when mature. Seeds many per fruit, surrounded by white or brown cotton-like fibers. The trunk buttresses very large, sometimes up to 15–20 m tall. The majority of species with prickles on the branches and trunk, especially when juveniles. Some species caducifolious, others with swollen trunks. Occurring in seasonally inundated forests along floodplains in old clearings, and in dry forests. The wood is used to construct canoes, and is commonly used in the boxing and packaging industry. Some people eat the seeds roasted or ground, and oil from the seed is used to make soap. The fibrous hairs from within the capsular fruit has been used widely in life vests, sleeping bags, pillows, and mattresses. Roots medicinal. Distribution: Mexico and Cuba to Peru, also western Africa and in the Malesian Peninsula, to 2600 m elevation.

**Chorisia** H. K. B. Trees to 40 m tall. Trunk with pronounced buttresses and swollen base. Leaves palmately compound with 5–7 leaflets, the margins entire or serrate. Fruit a woody, trivalved capsule, to 25 cm long, brown when mature. Seeds many per fruit, surrounded by white cotton-like fibers. The majority of species have prickles on the stems and trunk, especially in the juvenile stage, and are caducifolious. Found in forests that are seasonally inundated or not. Distribution: Tropical America to 1800 m elevation.

**Eriotheca** Schott and Endl. Trees to 30 m tall, caducifolious. Trunk with small to well-developed buttress roots, and some prickles scattered throughout. Leaves palmately compound, with 5–7 leaflets, clustered in the apices of the branches, light pubescent with stellate hairs. Fruit a woody, 5-valved capsule, to 7 cm long, brown when mature. Seeds many per fruit, surrounded by a mass of brown fibers. Distribution: Brazil, Colombia, to Peru and Bolivia.

**Huberodendron** Ducke. Trees to 45 m tall. Leaves simple, entire. Stipules caducous. Fruit a 5-valved woody capsule, to 20 cm long, brown when mature. Seeds many per fruit, with large wings. Distribution: Central America and Colombia to Peru and Bolivia.
**Pseudobombax** Dugand. Trees to 25 m tall, caducifolious. Trunk whitish-gray with longitudinal green lines, and a characteristic swelling at the base. Leaves palmately compound with 5–7 leaflets, clustered at branch apices. Fruit a 5-valved capsule, to 25 cm long, brown when mature. Seeds many per fruit surrounded by brown cotton-like fibers. Distribution: Mexico to Bolivia and Peru, to 2200 m elevation.

**Quararibea** Aubl. Trees to 25 m tall. Leaves simple, entire, trinerved, sometimes with a cordate base. Calyx persistent to 4 cm long covering half or more of the fruit. Infructescence borne from the stems. Fruit a berry, 3–5 cm diameter, yellow orange when mature. Seeds 1–2 per fruit. Branching in some species is characteristically verticillate. Distribution: Central America and Guianas to Peru and Bolivia.

**BORAGINACEAE**

Small family of shrubs, trees, herbs, and lianas. Leaves simple, alternate, rarely opposite or weakly clustered, sometimes pubescent and/or asperous to the touch. Some genera, such as *Cordia*, possess a solitary leaf arising at the point of apical bifurcation of the stems. Calyx persistent. Fruit variable, a drupe or dry berry with 2–4 locules. Seeds with indurate, solid endosperm.

**Cordia** L. Shrubs and trees to 25 m tall. Leaves simple, alternate and sometimes somewhat verticillate, entire or weakly serrate, glabrous or pubescent, some species asperous to the touch. Infructescence axillary or terminal. Fruit a drupe to 2 cm diameter, yellow or red to black when mature, the mesocarp fleshy, transparent. One species with drupaceous fruit with calyx and corolla persistent in the form of wings, brown when mature. Seeds one per fruit. Pubescence simple or compound. Some species with myrmecophilous swellings in the base of each ramification. In general a highly variable genus with much variation. The wood is used in construction and to make furniture. Leaves, seeds and bark medicinal. Distribution: Mexico and the Caribbean to Argentina to 2500 m elevation, also in the Old World.
Family and Genus Descriptions

one per fruit. Glands usually present on the petiole apex near the base of the lamina. Distribution: Panama and Puerto Rico to Peru and Bolivia, to 1500 m elevation.

Combretum Loefl. Usually lianas, rarely shrubs. Leaves opposite, rarely alternate. Infructescence terminal and axillary. Fruit a samara to 4 cm diameter, brown when mature, with four poorly or well-developed wings. Some species with spines on the stem. Distribution: Mexico and West Indies to Argentina. Better represented in the Old World.

Terminalia L. Trees to 35 m tall. Leaves alternate, clustered at the apices of the branches. Infructescence axillary. Fruit a samara to 5 cm long, brown-yellow to tan when mature, with two well-developed and 2–3 small, rudimentary wings; appearing drupe-like in some species. Trunk with outer bark papery-ceous, defoliating or peeling in plates in some species, and often with large buttress roots. The wood valued for construction, train tracks, and furniture. One species widely cultivated as an ornamental. Distribution: Mexico and Trinidad to Bolivia and Peru. Better represented in the Old World.

Thiloa Eichler. Lianas. Leaves opposite. Infructescence axillary. Fruit a samara to 4 cm diameter, brown when mature, with four wings that are usually small, or rarely well-developed. Distribution: Lowland Amazonia.
covering the fruit. Fruit a drupe to 1 cm long, brown when mature. Distribution: Colombia, Brazil, Peru, and Bolivia, but more speciose in Africa.

**Dicranostyles** Benth. Lianas. Leaves simple. Infrafructescence axillary. Calyx persistent but not forming a cupule. Fruit a drupe to 3 cm long, black when mature, the exocarp subwoody, the mesocarp juicy. Plants glabrous or pubescent. Distribution: Guianas and Venezuela to Brazil, and Peru.

**Ipomoea** L. Lianas, rarely shrubs. Leaves simple with a cordate base. Latex white. Calyx persistent completely covering the fruit. Fruit a 4-valved capsule, to 1.5 cm long, brown when mature. Seeds four per fruit. Distribution: Mexico and West Indies to Argentina, also in the Old World tropics.

**Maripa** Aubl. Lianas. Leaves simple. Infrafructescence axillary or terminal. Calyx persistent in the form of a cupule at the base of the fruit. Fruit an apiculate drupe to 2.5 cm long, black when mature, the exocarp subwoody, the mesocarp juicy. Seed one per fruit. Distribution: Panama and Guianas to Brazil, and Peru.

**Merremia** Dennst. ex Endl. Lianas. Leaves usually palmately compound, when simple the base cordate. Latex white. Calyx persistent covering one-third of the fruit. Fruit a 4-valved capsule, to 1 cm long, brown when mature. Seeds four per fruit. Pubescence white and short throughout. Distribution: Mexico to Bolivia and Peru, also in the Old World.

**COSTACEAE**

Herbs, rhizotamous, to 5 m tall. Stems succulent with distinct internodes. Leaves alternate, spirally arranged along the stem axis, sessile or with short petioles sheathing the stem; the secondary venation parallel or inconspicuous. Plants pubescent or glabrous. Infrafructescence terminal with many fruits covered by large bracts of attractive colors and maturing over a rather long period of time. Fruit a loculicidal capsule. Seeds with an aril, various per fruit.

**Costus** L. Herbs to 4 m tall. Leaves usually in a perfect spiral around the stem, sometimes clustered at the stem apex, sessile or short-petiolate. Bracts red, green, or a combination of these colors, weakly superimposed, usually with a line at the apex. Calyx and stigma persistent. Fruit a trivalved capsule, to 2 cm long, white when mature. Seeds various per fruit, surrounded by a white, fibrous aril. Plants glabrous to densely pubescent. Distribution: Mexico to Peru and Bolivia, also in the Old World.
**Dimerocostus** Kuntze. Herbs to 4 m tall. Leaves lanceolate, irregularly spiraled around the stem or clustered at the stem apex, the petiole base sheathing the stem leaving circular scars, the secondary veination fine, parallel. Infuctescence terminal. Stigma persistent. Bracts superimposed but not as strongly clustered as in *Costus*. Fruit a bivalved capsule, to 3 cm long, white when mature. Seeds many per fruit, surrounded by white aril. Plants glabrous or glabrescent. Distribution: Honduras and Costa Rica to Peru and Bolivia.

**Cayaponia** Silva Manso. Lianas. Tendrils branched, sometimes bifid or simple. Leaves simple, 3- to 7-lobed, rarely entire or trifoliatly compound, the base cordate, the margins often dentate. Large bract at the base of the infuctescence and many smaller bracts interspersed among the fruits. Stigma persistent. Fruit a pepo to 5 cm long, red or orange when mature, clustered in compact racemes, rarely solitary; the exocarp asperous, crustaceous, angled; the mesocarp white or yellow-orange, fibrous. Seeds 1–3 per fruit. Plants pubescent throughout. Distribution: Mexico and Surinam to all of tropical South America, also in Africa and Java.

**CUCURBITACEAE**

Lianas or herbaceous climbers. Tendrils simple or branched. Leaves alternate, simple, entire, trilobed, or divided, sometimes trifoliatly or palmately compound. Infuctescence axillary. Fruit a special berry called a pepo, with a few too many seeds; in one genus a pixis with winged seeds.

**Calycophysum** Arn. Lianas. Tendrils simple or branched. Leaves simple, cordate. Fruit a pepo to 11 cm long, orange when mature, the mesocarp orange. Seeds many per fruit. Distribution: Peru and Bolivia, to 2000 m elevation.

**Fevillea** L. Lianas. Tendril bifid. Leaves simple or compound, trifoliate, margins often dentate; one pair of glands on the upper half of the petiole in species with compound leaves. Fruit a pepo to 10 cm diameter, green when mature, the mesocarp white. Calyx leaving prominent scars on the exocarp at the apex of the fruit. Seeds various per fruit. Plants pubescent throughout. Distribution: Costa Rica to Brazil and Peru.

**Gurania** (Schltldl.) Cogn. Lianas. Tendrils simple. Leaves simple, lobed, or palmately compound with 3–5 leaflets; the margins often dentate, the lamina sometimes asperous to the touch. Stigma persistent.
**Cyperaceae**

Herbs, usually erect, sometimes climbing. Leaves lanceolate, often with strongly serrate margins sharp and abrasive to the touch; the petiole generally elongate. Infructescence with bracts. Fruit a drupe. Differing from the grass family (Poaceae) by the triangular stems.

**Diplasia** Pers. Herb to 1.5 m tall. Leaves to 120 cm long, the margins with tiny transparent spines. Fruit sessile, to 1 cm long, brown when mature. Distribution: Guianas to Peru.

**Pleurostachys** Brongn. Herbs to 1 m tall. Leaves with secondary venation parallel to the midvein, the margins with small spines, very fine along the midvein on the abaxial surface. Infructescence sometimes with spines and basal bracts. Fruit brown when mature. Seeds many per fruit, covered by various brown bracts. Distribution: Tropical South America.

**Scleria** Bergius. Herbs to 2 m tall, sometimes climbing. Plants with small spines throughout. Leaves with 3–5 conspicuous, finely parallel nerves; the margin abrasive, the petiole sheathing the stem. Infructescence axillary and terminal, with bracts. Fruit sessile, to 0.6 cm long, brown, black, or very shiny whitish-blue and smooth when mature, surrounded at the base by the persistent calyx. Distribution: Mexico and Cuba to Peru and Bolivia, also in Africa and Madagascar.
fructescence axillary. Fruit a trivalved capsule, to 1 cm diameter, brown when mature. Seeds three per fruit. Distribution: Tropical America.

**Pera** Mutis. Shrubs or trees to 30 m tall. Leaves opposite in some species, always entire; the laminar surface glaucous abaxially in some species due to presence of scales or stellate hairs; some species with inconspicuous laminar glands. Infrafructescence axillary or borne from the stems. Fruit a trivalved capsule, to 2 cm diameter, brown or reddish when mature. Seeds various per fruit, covered by red aril. Distribution: Tropical and subtropical America.

**Ricinus** L. Shrubs to 3 m tall. Leaves alternate, lobed, peltate, the margin serrate. Fruit a trivalved capsule, to 2 cm diameter, brown when mature, the exocarp spinose. Seeds 1–3 per fruit. Cultivated for oil extracted from the seeds. Seeds historically used to produce castor oil ingested by humans as medicine, but the toxic chemical ricin is also extracted from the seeds. Ornamental. Distribution: Introduced from Africa and occurring throughout tropical and subtropical America, to 3000 m elevation.

**Richeria** Vahl. Trees to 25 m tall. Leaves alternate, grouped at the branch apices, the young leaves and branch apices with dense pubescence. Infrafructescence terminal. Fruit a trivalved capsule, to 1.4 cm diameter, green when mature. Seeds 1–3 per fruit with red or orange aril. Genus common in secondary forests and natural clearings. Distribution: Panama and Guianas to Peru and Bolivia, to 1500 m elevation, also in the Old World tropics; introduced and invasive in some warm temperate zones of the southern United States.

**Sapium** P. Browne. Trees to 30 m tall. Leaves alternate, glabrous, the margins entire or lightly serrate, the secondary venation rather inconspicuous, the petiole or lamina base often with a conspicuous or inconspicuous pair of glands. Latex white, abundant. Infrafructescence terminal. Fruit a trivalved capsule, to 1.4 cm diameter, green when mature. Seeds 1–3 per fruit with red or orange aril. Genus common in secondary forests and natural clearings. Distribution: Panama and Guianas to Peru and Bolivia, to 1500 m elevation, also in the Old World tropics; introduced and invasive in some warm temperate zones of the southern United States.
**Hymenaea** L. Trees to 40 m tall. Leaves compound, bifoliate; the leaflets coriaceous with asymmetric bases; the principal vein of the leaflets curved and positioned slightly to one side. Stipules caducous. Inflorescence terminal. Fruit a legume to 16 cm long, brown when mature; the exocarp woody; the mesocarp white, mealy, sweet, edible. Seeds 1–4 per fruit. Some species pubescent. Plants valued for their wood and in some tropical cities the fruits are commercially available in markets. Distribution: Mexico to Paraguay, with one species in Africa, to 1300 m elevation.

**Inga** Mill. Shrubs or trees to 30 m tall. Leaves compound, paripinnate, with 1–8 pairs of opposite leaflets; the rachis sometimes winged; glands present between each pair of leaflets, making it one of the easiest genera to recognize in the Neotropics. Stipules caducous, sometimes quite conspicuous. Inflorescence axillary or terminal. Fruit a legume to 50 cm long, straight, curved, or spiraled, flat or round in cross section, sometimes only partially dehiscent, green or yellow when mature. Seeds various per fruit, with a white, mealy, often sweet aril. Plants pubescent or glabrous. Some species valued for wood, but usually used as firewood and to build fences. Plants also grown as shade for cacao and coffee plantations. Widely cultivated for edible fruits, which are often found in tropical fruit markets (i.e., pacay and guava). Distribution: Mexico to Peru and Bolivia, to 2400 m elevation.
MYRTACEAE

Shrubs and trees, usually aromatic. Trunks often smooth or with papyraceous, defoliating bark, usually whitish or reddish in color. Leaves simple, opposite, the margins entire; the secondary veins often anastomosing at the margins; the lamina with conspicuous translucent punctations. Inflorescence axillary, terminal, or borne from the stems or trunk. Fruit a drupe or berry, crowned by persistent calyx.

Calyptranthes Sw. Trees to 15 m tall. Leaves with undulate margins; the secondary venation very fine and decurrent, nearly perpendicular to the midvein; the lamina with conspicuous or inconspicuous translucent punctations. Inflorescence axillary, terminal, or borne from the trunk. Fruit a berry, to 6 cm diameter, crowned by a persistent calyx and sometimes marked with prominent longitudinal lines and grooves, yellow, dark purple to black when mature; the mesocarp white or transparent; the exocarp with translucent punctations. Seeds 1–2 per fruit. Plants pubescent, the hairs 2-branched. Distribution: Southern United States to Peru and Bolivia.

Campomanesia R. & P. Shrubs or trees to 10 m tall. Leaves strongly aromatic when crushed, the secondary venation reticulate, anastomosing only in the upper half of the lamina, usually inconspicuously. Punctations reddish-transparent and conspicuous at the apices of the branches and on the adaxial laminar surface, but hidden on the abaxial surface. Inflorescence axillary. Fruit a berry, to 3.3 cm long, crowned by persistent calyx, yellow when mature, with very dense reddish-transparent punctations on the pedicel and exocarp; the mesocarp transparent or white. Seeds 2–7 per fruit. Distribution: Tropical South America.

Eugenia L. Shrubs or trees to 25 m tall. Bark papyraceous on trunks and stems in some species. Leaves often with anastomosing secondary venation, the veins often conspicuously decurrent in the upper half, the translucent punctations very conspicuous or inconspicuous at a simple glance, with small black punctations on the abaxial laminar surface. Inflorescence axillary, terminal, or borne from the stems. Fruit a berry, pedunculate or sessile, to 5.5 cm diameter, red, dark purple, yellow, or orange when mature, terminated by a persistent stigma and crowned by persistent calyx; the exocarp with glandular punctations. Seeds 1–4 per fruit. Plants pubescent or glabrescent. Some species with edible fruit. Distribution: Tropical and subtropical America and Asia to 1400 m elevation.
Seguiera Loefl. Lianas. Stems with curved or erect spines. Leaves usually with elongate petioles. Inflorescence terminal. Fruit a samara, to 3.5 cm long, subtended by persistent calyx, very similar to Gallisia. Distribution: Tropical and subtropical America.

Trichostigma A. Rich. Lianas. Inflorescence axillary. Fruit a berry, to 0.9 cm diameter, black when mature. Seeds few per fruit. Distribution: Tropical America.

Piperaceae

Herbs and shrubs, erect or lianescent, epiphytes or rarely taking on the form of small trees, aromatic when rubbed or crushed. Nodes conspicuous, swollen along the stem. Leaves simple, opposite or alternate, the margins entire. Stipules present or absent. Inflorescence axillary, opposite the leaf, erect or pendulous. Fruit a drupe, many per inflorescence. Seeds one per fruit.

Piper L. Shrubs to 5 m tall. Leaves generally with asymmetric base, sometimes pellate; the petiole base sheathing the stem; the laminar surface asperous in some species. Inflorescence spicate, axillary to 30 cm long. Fruit a drupe, sessile, to 0.5 cm long, green or yellowish, generally aromatic to malodorous when mature; terminated by persistent stigma. Seed one per fruit. Plants pubescent or glabrous. One species
**Hillia** Jacq. Epiphytes. Branches red at young apex. Leaves succulent, the venation inconspicuous below, the petiole canaliculate, short, swollen. Inflorescence terminal. Fruit a septicidal capsule, to 10 cm long, striate, conspicuously crowned at the apex by a persistent calyx; brown when mature. Seeds plumose, many per fruit. Distribution: Guianas to Peru.

**Ixora** L. Trees to 8 m tall. Stems triangular in cross section. Leaves coriaceous, sometimes three-verticillate. Stipules completely sheathing the stem at each node. Inflorescence terminal or axillary. Fruit a berry, sessile or short-pedicellate, to 1.2 cm long, yellow or orange when immature, red or dark purple when mature; the mesocarp yellowish. Seeds 1–2 per fruit. Plants with short pubescence. Distribution: Tropical America, Asia, Africa, and Australia.

**Kotchubaea** Fish ex DC. Trees to 6 m tall. Leaves clustered at branch apices. Fruit to 7.3 cm long, the calyx persisting at the apex, elongate and conspicuous. Seeds many per fruit. Distribution: South America.

**Ladenbergia** Klotzsch. Shrubs or trees to 20 m tall. Leaves relatively large, petiolate. Stipules conspicuous, caducous. Inflorescence terminal. Fruit a septicidal capsule, to 1.2 cm long, brown when mature. Seeds winged, many per fruit. Distribution: Guianas to Peru and Bolivia, to 1200 m elevation.

**Macrocnemum** P. Browne. Trees to 25 m tall. Trunks fenestrate. Leaves large, somewhat clustered at the branch apex. Stipules caducous. Inflorescence terminal. Fruit a dry capsule, to 1 cm long, brown when mature. Seeds tiny, winged, many per fruit. Distribution: Costa Rica to Peru and Bolivia.
**Averrhoideum** Baill. Trees to 25 m tall, sometimes shrubs. Leaves compound, usually paripinnate, always terminating in an aborted bud; the leaflets alternate or subopposite; the margins entire or serrate at the apex. Infrauctescence terminal or axillary. Fruit a bivalved capsule, to 2.5 cm long, asymmetric, dehiscing irregularly from the base to the apex, red when mature. Seeds one per fruit, arillate. Distribution: Mexico to Brazil and Paraguay, to 500 m elevation.

**Cardiospermum** L. Herbaceous vines with tendrils. Leaves pinnately compound with many leaflets. Fruit a 3-celled inflated capsule, membranous, nerved, to 5 cm long, brown when mature. Seeds one per valve of the fruit. Some species reportedly used as aphrodisiacs or medicine. Distribution: Southern United States to lowland Amazonia, also in Asia and Africa.

**Cupania** L. Trees to 20 m tall. Leaves compound, imparipinnate, glabrous or pubescent; the rachis terminating in a conspicuous bud; the leaflet margins entire, crenate, or dentate. Infrauctescence terminal or axillary. Fruit a 2- to 5-valved capsule, round, 1-2 cm diameter, reddish when mature, with some of the capsular valves aborting. Seeds 1–2 per fruit, with a orange or yellow aril. Distribution: Mexico to Peru and Bolivia.

**Paullinia** L. Generally lianas, rarely shrubs to 2 m tall. Stems sometimes 3- to 4-angled or striate. Tendrils axillary when lianas. White latex in many species. Leaves compound, imparipinnate, with 3–7 op-