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*Brittonia*, Vol. 45, No. 1. (Jan. - Mar., 1993), pp. 56-94.

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*Brittonia* is currently published by New York Botanical Garden Press.

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# Euphorbiaceae of the Guianas: Annotated species checklist and key to the genera

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Gillespie, Lynn J. (Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, U.S.A.). Euphorbiaceae of the Guianas: Annotated species checklist and key to the genera. *Brittonia* 45: 56–94. 1993.—An annotated checklist of species of Euphorbiaceae of the Guianas (Guyana, Surinam, French Guiana) and the adjacent region is presented and a key to the genera is provided. A total of 47 indigenous genera and 153 species are known from the Guianas, where species endemism is 14%, with the greatest number of endemics occurring in Guyana and the fewest in French Guiana. An additional 86 species and an additional seven genera are known from neighboring areas of the Guayana Region; many of these may be expected to occur in the Guianas. Taxa known only in cultivation in the Guianas include 22 species and an additional six genera. The following new combination is proposed, *Croton vergarenae*.

**Key words:** Euphorbiaceae, Guianas, Guyana, Surinam, French Guiana, Venezuelan Guayana, species checklist, key, lectotypification.

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This checklist of species of Euphorbiaceae and key to the genera were written as a preliminary step in the treatment of the family for the *Flora of the Guianas*. The work presented here is intended to provide a reference to and to facilitate studies of the Euphorbiaceae in the Guianas and surrounding areas. While treatments of several genera will appear shortly (Gillespie, unpubl.; Armbruster, unpubl.), it will be many years before the complete treatment of Euphorbiaceae for the *Flora of the Guianas* appears. While floristic treatments exist for Surinam (Lanjouw, 1931) and French Guiana (Lemée, 1952), these are generally outdated taxonomically and no treatments exist for Guyana or for the region as a whole. In addition, recent fieldwork particularly in Guyana (such as that coordinated by the Smithsonian Institution's Biological Diversity of the Guianas Program) and in French Guiana has resulted in the discovery of new species and many new records for the countries. The *Flora of the Guianas* when published will expand on the information

presented here by providing species descriptions, keys to the species, and specimen citations.

The area covered by the *Flora of the Guianas* is limited to Guyana, Surinam, and French Guiana (collectively known as the Guianas). For the purposes of this checklist, however, I included taxa from throughout the Guayana Lowland Floristic Province (abbreviated here as the Guayana Region), a more biogeographically natural unit, defined as the area bounded by the Amazon, Negro, and Orinoco rivers (Mori, 1991). This region includes, in addition to the Guianas, the Venezuelan Guayana (Federal Territory of Amazonas and states of Bolívar and Delta Amacuro) and the Brazilian states of Roraima and Amapá and the portions of states of Pará and Amazonas north of the Amazon and Negro rivers. Some of these neighboring areas have been more intensively explored botanically (e.g., the Venezuelan Guayana), and many of the species found there might also be expected to occur in the Guianas. The Guayana Region can

be subdivided into the highland area predominantly in the west, characterized geologically by the Roraima sandstone formation (with land mostly above 500 m), and the remaining lowland area.

A total of 47 native genera of Euphorbiaceae are known from the Guianas, seven additional genera are known from the Guayana Region, and six additional genera are known only in cultivation in the Guianas. Although no genera are endemic to the Guianas, several are restricted to the Guayana Region. *Celianella* and *Senefelderopsis* are high-altitude Guayana Highland endemics, while *Haematostemon* and *Sandwithia* are primarily restricted to lowland areas of the Guayana Region (including the upper Rio Negro drainage).

Of the 153 species of Euphorbiaceae native to the Guianas, 21 (14%) are endemic, while 50 (33%) are confined to the Guayana Region. ("Native" or "indigenous" as used here excludes cultivated taxa and pantropical weeds originating in the Palaeotropics, but does include widespread weedy species originating in the Neotropics.) Among the Guianas, Guyana has the highest species endemism (8 of 111 species or 7%), Surinam the second highest (3 of 96 species or 3%), and French Guiana the lowest (1 of 98 species or 1%). In contrast, Mori (1991) found in several lowland tropical woody plant families significantly higher endemism in Guyana and French Guiana than in Surinam. Also, endemism in these woody families in the Guianas was found to be significantly higher than in the Euphorbiaceae, most probably due to a significant number of widespread herbaceous members of the Euphorbiaceae.

An additional 86 species of Euphorbiaceae are known from the Guayana Region outside of the Guianas. The degree of endemism appears to be much higher for the Guayana Region than for the Guianas; of the 239 native species listed for the Guayana Region, 107 (45%) are endemic. That the Euphorbiaceae is primarily a lowland tropical family is reflected in the elevational distribution of its endemics; the majority are restricted to the lowlands (60% for the Guianas, 49% for the Guayana Region), and

fewer to high elevations (13% for the Guianas, 33% for the Guayana Region). Range extensions of high-elevation endemics of Bolívar, Venezuela, are likely to be found in the Guianas only on Roraima and less likely on the lower elevation Guyanan peaks of Ayanganna, Wokomung, and Kopinang.

Apart from species restricted to the Guayana Region, the predominant distributional patterns of species of the Guianas are neotropical (24%), Amazonian (21%), pantropical (4%) and Mexico/Central American to northern South American (4%). Other species are distributed from the Guayana Region to the Amazon Delta (4 species or 3%; *Amanoa congesta*, *Plukenetia verrucosa*, *Phyllanthus attenuatus* and *Tragia lesertiana*) and from Central America to areas along the northern and western edges of the Amazon Basin (2 species, *Adenophaedra grandifolia* and *Mabea montana*). Four species (3%) are disjunct between the Guayana Region and eastern Brazil (*Caperonia stenophylla*, *Croton argyrophyloides*, and *Sebastiania bidentata*) or north-eastern Brazil (*Bernardia sidoides*). *Micrandra brownsbergensis* from the Guianas and *M. elata* from eastern Brazil are a species pair (perhaps conspecific) that also shows this distribution pattern.

#### Key to the Genera of Euphorbiaceae in the Guayana Region

The key to the genera follows for the most part that of Webster and Huft (1988), which reflects Webster's (1975) classification of the family. It was necessary to diverge somewhat from his phylogenetic classification where diagnostic characters (e.g., pollen morphology) are not easily observed. Genera are indigenous to the Guianas unless preceded by a single asterisk (\*), indicating a genus known from the Guayana Region outside of the Guianas, or by two asterisks (\*\*), indicating a genus known only in cultivation. A simple descriptive terminology was used for the often complicated inflorescence morphology. Many Euphorbiaceae have inflorescences usually described as thyrses, with cymose subunits (typically

glomerate) borne on main inflorescence axes. As used here, "spicate" and "racemose" refer to unbranched thyrses, as well as to true spikes and racemes (which in many Euphorbiaceae appear to be derived from unbranched thyrses), and "paniculate" refers to branched thyrses, as well as to true panicles (which occur rarely in the family). Spi-

cate inflorescences have highly condensed glomerate cymules, while racemose inflorescences have less condensed cymules and/or long-pedicellate flowers. The omission of habit and monoecy/dioecy from one lead of a couplet indicates that these characters are variable in that lead.

- 1 Ovules paired in each locule of the ovary; fruit with 1–10 (often 6) seeds, 1 or 2 in each locule; seeds ecarunculate (carunculate in *Piranhea*); staminate calyx imbricate in bud; latex absent; leaf (leaflet in *Piranhea*) blade pinnately veined, the margins unlobed, entire or obscurely crenate; leaf lacking petiolar glands and usually lacking embedded laminar glands; indumentum simple or lepidote.
- 2 Leaves trifoliate; petals absent; seeds carunculate; dioecious trees [part of subfamily Oldfieldioideae]. ..... 12. *Piranhea*
- 2 Leaves simple; petals present or absent; seeds ecarunculate [Subfamily Phyllanthoideae, part of subfamily Oldfieldioideae (*Podocalyx*)].
- 3 Staminate flowers in axillary clusters or glomerules (rarely in short racemes and then only on deciduous branchlets in *Phyllanthus*), pistillate flowers solitary or fasciculate in leaf axils; pistillode absent or present; seeds 2 in each locule (1 in *Drypetes* and *Discocarpus*); indumentum simple; monoecious or dioecious herbs, shrubs or trees.
  - 4 Disc of staminate flower intrastaminal; carpels 1 (1 or 2 outside Guayana Region); fruit drupaceous, the seed solitary in each locule; dioecious trees ..... 6. *Drypetes*
  - 4 Disc of staminate flower extrastaminal, absent, or in *Jablonskia* with disc segments alternating with stamens; carpels (2) 3 (5); fruit capsular (rarely baccate), the seeds 1 or 2 in each locule.
  - 5 Seed solitary in each locule; staminate flower with stamens connate at base and with central tuft of 3 hairy remnant styles; flowers subsessile; capsule tomentose; leaf blades coriaceous; dioecious trees ..... 5. *Discocarpus*
  - 5 Seeds 2 in each locule; staminate flower with stamens free to entirely connate and without central tuft; flowers pedicellate or subsessile; capsule glabrous or at most sparsely pubescent; leaf blades mostly chartaceous or membranous.
    - 6 Staminate flowers subsessile, with pistillode and with disc of 5 segments alternating with the stamens and seemingly in the same whorl; bracts conspicuous; outer seed coat fleshy; monoecious shrubs or small trees ..... 8. *Jablonskia*
    - 6 Staminate flowers pedicellate, without pistillode and with disc absent or present, if present segmented or annular and extrastaminal; bracts not conspicuous; outer seed coat dry or fleshy; monoecious or dioecious, habit various.
      - 7 Carpels 4 or 5 (rarely 3 or 6); capsule irregularly dehiscent; outer seed coat fleshy, bluish; staminate flower with 4 free stamens, the disc annular; branchlets not deciduous; dioecious trees ..... 9. *Margaritaria*
      - 7 Carpels 3 (rarely 2); capsule variously dehiscent; outer seed coat dry or fleshy; staminate flower with 2 or 3 (rarely 4 or 5, if 4 then disc absent), free to connate stamens, the disc segmented or absent, rarely annular; leaf-bearing branchlets usually deciduous (i.e., branching phyllanthoid); monoecious or rarely dioecious.
        - 8 Staminate and pistillate discs absent; stamens completely connate; capsule irregularly and incompletely dehiscent; outer seed coat fleshy; monoecious shrubs ..... 3. *Breynia*
        - 8 Staminate disc segmented, rarely annular or absent, pistillate disc present; stamens completely free or the filaments variously connate; capsule dehiscent into valves or fruit fleshy and subdehiscent; outer seed coat dry; monoecious or rarely dioecious, herbs, shrubs, or trees ..... 10. *Phyllanthus*
  - 3 Staminate and pistillate inflorescences racemose, spicate, or paniculate (in *Amanoa*, lower part of inflorescence may consist of axillary glomerules); pistillode present (absent in *Celianella*); seed solitary in each locule; indumentum lepidote or simple; dioecious (monoecious in *Amanoa*) trees or shrubs.
    - 9 Petals present, reduced; inflorescence terminal, with lower branches and glomerules of flowers often subtended by reduced leaves; leaf blade glabrous, coriaceous; monoecious ..... 1. *Amanoa*
    - 9 Petals absent; inflorescence axillary, without leaves in its lower part; leaf blade various; dioecious.
      - 10 Inflorescences paniculate; ovary 1- or 2-carpellate; fruit drupaceous, single-seeded; leaf blade and petiole with lepidote or simple indumentum.
        - 11 Indumentum lepidote; ovary 2-carpellate ..... 7. *Hyeronima*
        - 11 Indumentum simple; ovary 1-carpellate ..... 2. *Antidesma*

- 10 Inflorescences spicate or racemose; ovary 3-carpellate; fruit capsular, usually 3-seeded; leaf blade glabrous and petiole glabrous or with sparse simple indumentum.
- 12 Capsule depressed globose, 3-lobed in cross-section; staminate disc absent; pistillode present ..... 13. \**Podocalyx*
- 12 Capsule ellipsoid or ovoid, circular in cross-section; staminate disc intrastaminal, lobed or segmented; pistillode present or absent.
- 13 Capsule with persistent, greatly enlarged sepals, longer than and at least initially covering the mature capsule; staminate inflorescence racemose, consisting of a spike of pedunculate bracteate cymules of subsessile flowers; staminate flowers lacking a pistillode, the anthers pendulous ..... 4. \**Celianella*
- 13 Capsule with sepals not or only slightly enlarged, much shorter than the mature capsule; staminate inflorescence spicate consisting of a spike of glomerules of sessile flowers; staminate flowers with pistillode, the anthers not pendulous ..... 11. *Richeria*
- 1 Ovules solitary in each locule of the ovary; fruit with 1-3 (rarely to 20) seeds, these always solitary in each locule; seeds carunculate or ecarunculate; staminate calyx valvate, imbricate, or reduced in bud; latex often present, milky, colored or clear; leaf blade pinnately or palmately veined, the margins often lobed and/or dentate; leaf often with petiolar glands and/or embedded laminar glands; indumentum simple, lepidote, or stellate.
- 14 Inflorescence bracts eglandular (often biglandular in *Omphalea*); staminate sepals valvate or imbricate, covering the anthers in bud; petals present or absent; sepals sometimes petaloid; disc often present; leaf blades simple or compound, pinnately or palmately veined, the margins lobed or unlobed; indumentum of simple, stellate, or lepidote trichomes; latex clear, colored, milky white, or absent; monoecious or dioecious.
- 15 Petals absent (present in *Caperonia* and *Pogonophora*) from both staminate and pistillate flowers; petiolar glands absent (present in *Omphalea*); latex absent or rarely present and then never milky white; sepals never petaloid, those of staminate flowers mostly valvate in bud; styles entire to multifid, free to entirely connate; seeds mostly ecarunculate; pollen never with crotonoid exine sculpture [Subfamily Acalyphoideae].
- 16 Petals present in both staminate and pistillate flowers; staminate flower with pistillode.
- 17 Leaf blade margins entire, the secondary veins arcuate; stamens 5; styles entire; dioecious trees ..... 31. *Pogonophora*
- 17 Leaf blade margins finely serrate, the secondary veins straight, closely set and distinctly parallel; stamens 10; styles multifid; monoecious herbs ..... 22. *Caperonia*
- 16 Petals absent from both staminate and pistillate flowers; staminate flower with or without pistillode.
- 18 Flowers in stalked globose involucre, entirely enclosed in bud by a single petal-like globose bract opening by means of a slit along one side and subtended by 1 or 2 small bracteoles, the inflorescence pseudanthial; involucre in axillary clusters on woody branches below leaves; seeds carunculate, black and shiny; indumentum of lepidote or stellate-lepidote trichomes; dioecious trees ..... 29. *Pera*
- 18 Flowers not enclosed in globose involucre as above, the inflorescence not pseudanthial (except in *Dalechampia*); seeds ecarunculate or carunculate; indumentum of simple or minutely stellate trichomes.
- 19 Inflorescence pseudanthial, the flowers subtended by a bilabiate involucre of 2 palmately veined, often conspicuous, sometimes reduced, foliaceous bracts; styles entirely connate; ovary and capsule usually with stinging trichomes; leaves simple or palmately compound, the blade often lobed; monoecious twining vines or rarely subshrubs ..... 25. *Dalechampia*
- 19 Inflorescence not pseudanthial; styles free to connate; ovary and capsule lacking stinging trichomes (except in *Tragia* and *Acidoton*); leaves simple, the blade entire or lobed.
- 20 Stamens 100-1000, the filaments irregularly and partly connate; leaf blade peltate, the margins palmately lobed; inflorescence bisexual, the pistillate flowers numerous and distal; seeds carunculate; monoecious, weak-stemmed shrub ..... 32. \*\**Ricinus*
- 20 Stamens 2-60, the filaments free to completely connate; leaf blade not peltate, the margins rarely lobed; inflorescence unisexual or bisexual and then the pistillate flowers proximal; seeds mostly ecarunculate.
- 21 Flowers in axillary glomerules; staminate sepals imbricate in bud; capsule spiny-tuberculate (echinate); seeds black, shiny, with large red caruncle; dioecious shrubs or small trees ..... 23. *Chaetocarpus*
- 21 Flowers in spicate, racemose, or paniculate inflorescences (in terminal glomerules in *Bernardia*); staminate sepals valvate in bud (imbricate in *Om-*

*phalea*); capsule not spiny-tuberculate; seeds ecarunculate (or caruncle very small), usually not black.

- 22 Androecium mushroom-shaped, the stamens 2, entirely connate, with connective greatly expanded; staminate sepals imbricate in bud; inflorescence terminal, paniculate, the cymules bisexual or staminate; bracts often large, foliaceous, petiolate; fruit 8–12 cm in diam.; latex red; monoecious lianas ..... 28. *Omphalea*
- 22 Androecium not mushroom-shaped, the stamens 2–60, free or connate only at base, with connective not or only slightly expanded; staminate sepals valvate in bud; inflorescence axillary or terminal, spicate or racemose, the cymules unisexual or flowers solitary at a node; bracts small, not foliaceous (except sometimes subtending pistillate flowers in *Acalypha*); fruit less than 6 cm in diam. (1–12 cm in *Plukenetia*); latex absent or rarely present and then not red.
- 23 Styles entire, basally to entirely connate, often massive; inflorescence usually bisexual with 1 to several basal pistillate flowers (unisexual in *Acidoton* and then stinging trichomes present on ovary, capsule and anthers); stinging trichomes often present; plants often twining vines (if not then stinging trichomes present or styles connate and massive); monoecious (dioecious in *Acidoton*) [Tribe Plukenetieae].
- 24 Ovary 4-locular; fruit 4-lobed or subglobose, dehiscent or indehiscent; leaf blade with circular laminar glands at base; twining vines or lianas without stinging trichomes ..... 30. *Plukenetia*
- 24 Ovary 3-locular; fruit 3-lobed, dehiscent; leaf blade lacking laminar glands; habit various, with or without stinging trichomes.
- 25 Stinging hairs absent; sepals 4; stamens 4; styles entirely connate, forming a massive hollow structure; leaf blades pinnately veined; monoecious shrubs or trees.
- 26 Staminate disc extrastaminal, 4-segmented, each segment partially enclosing a filament; stamens not greatly dilated at base; style ovoid-urceolate; carpels conspicuously horned, divergent in fruit ..... 20. \**Astrococcus*
- 26 Staminate disc absent; stamens dilated at base (sometimes appearing like an intrastaminal disc); style cup-shaped with truncate apex; carpels not horned, unknown in fruit ..... 27. *Haematostemon*
- 25 Stinging hairs present at least on ovary and capsule; sepals 3 or 5; stamens (1–) 3 or numerous; styles slender, connate up to half of their length; leaf blades pinnately or palmately veined.
- 27 Anthers with apical tuft of stinging trichomes; leaves glabrescent, pinnately veined; dioecious shrubs or trees ..... 15. \**Acidoton*
- 27 Anthers not apically tufted; leaves with stinging trichomes, palmately or pinnately veined; monoecious twining vines (in the Guayana Region) ..... 33. *Tragia*
- 23 Styles branched or entire, free or sometimes basally connate (rarely long-connate and then bifid), not massive; inflorescence unisexual (sometimes bisexual in *Acalypha* and *Bernardia*, and then the styles bifid or multifid); plants not twining vines; stinging trichomes absent; mostly dioecious (except mostly monoecious in *Acalypha* and *Bernardia*).
- 28 Anthers vermiform; pistillate bracts usually large and conspicuous, lobed; styles lacinate (i.e., multifid with many filiform segments); herbs, shrubs, or small trees, mostly monoecious ..... 14. *Acalypha*
- 28 Anthers not vermiform, usually globose or ellipsoid; pistillate bracts inconspicuous, small and unlobed; styles entire or bifid; habit various, mostly dioecious.
- 29 Pistillate or bisexual inflorescence glomerate, terminal; staminate inflorescence, if present, racemose, less than 4 cm long; stamens 4–6, the anthers constricted at middle, hav-

- ing the appearance of 4 globose locules; styles stout, short, free, bipartite to base; leaf blade less than 10 cm long, hirsute, the margins coarsely serrate; herbs or weak-stemmed shrubs ..... 21. *Bernardia*
- 29 Pistillate and staminate inflorescences spicate, racemose or paniculate, greater than 5 cm long, axillary or terminal; stamens 2–60, the anthers not constricted; styles various; leaf blade usually longer than 10 cm, rarely hirsute, the margins entire to serrulate; shrubs or trees.
- 30 Stamens more than 15; styles bifid; capsules ovoid or pear-shaped, mostly circular in cross-section, greater than 1.5 cm in diam.; leaf blades palmately or pinnately veined; indumentum minutely stellate.
- 31 Carpels 2, styles 2; pistillate calyx cup-shaped, only slightly lobed; staminate inflorescence axillary; all stamens fertile; pistillode present ..... 26. *Gavarretia*
- 31 Carpels 3, styles 3; pistillate calyx deeply lobed; staminate inflorescence terminal; inner stamens often sterile; pistillode absent ..... 24. *Conceveiba*
- 30 Stamens fewer than 10; styles entire, indistinctly bifid, or absent; capsules subglobose to oblate, lobed in cross-section, less than 1.5 cm in diam.; leaf blades pinnately veined (either 1- or 3-nerved at base); indumentum simple or minutely stellate.
- 32 Style absent (i.e., stigmas sessile); stamens 2 (3); leaf blades 1-nerved and narrowly cuneate at base, eglandular ..... 16. *Adenophaedra*
- 32 Styles present; stamens 3–8; leaf blades 1- or 3-nerved at base, acute to rounded at base, usually with laminar glands.
- 33 Carpels 2; styles 2, elongate, free; stamens usually 8, pistillode absent; indumentum minutely stellate ..... 17. *Alchornea*
- 33 Carpels 3; styles 3, short, free or fused at base; stamens 3–8, pistillode present or absent (if stamens 8, then pistillode present); indumentum simple.
- 34 Staminate flower with large pubescent pistillode, the stamens 5–8, the anthers apiculate; pistillate flowers sessile; capsule less than 1 cm long; leaf blades less than 15 cm long, distinctly 3-nerved and without stipels at base ..... 18. *Alchorneopsis*
- 34 Staminate flower without pistillode, the stamens 3–5, the anthers not apiculate; pistillate flowers pedicellate, the pedicel longer than 4 mm; capsule greater than 1 cm long; leaf blades usually greater than 15 cm long, 1-nerved and with pair of stipels at base ..... 19. *Aparisthmium*
- 15 Petals present at least in staminate flowers or if absent then sepals petaloid or latex milky white (except scant in *Tetrorchidium* and clear in *Glycydendron*); petiolar glands often present; latex milky white, clear, colored, or rarely absent; staminate flowers with sepals mostly imbricate in bud; styles bifid or multifid (entire only in *Aleurites* and *Codiaeum*, both cultivated genera), free or connate only at base; seeds mostly carunculate; pollen with crotonoid exine sculpture (clavae arranged in regular hexagonal pattern) [Subfamily Crotonoideae].
- 34 Petals absent in both pistillate and staminate flowers and sepals not petaloid; seeds ecarunculate (carunculate in some species of *Micrandra*); trichomes simple (rarely forked at base); trees.
- 35 Ovary 2-locular; fruit drupaceous, ellipsoid; stamens 25–30; petiole eglandular; leaf blade distinctly 3-nerved at base; latex clear or colored; dioecious ..... 39. *Glycydendron*
- 35 Ovary 3-locular; fruit capsular, globose, often 3-lobed in cross-section; stamens 3–10; petiole apex biglandular; leaf or leaflet blade 1-nerved at base; latex milky white, clear, or colored; dioecious or monoecious.

- 36 Stamens 3; latex usually scant; inflorescence spicate, unisexual; dioecious ..... 47. *\*Tetrorchidium*
- 36 Stamens 5–10; latex copious; inflorescence paniculate, often bisexual; usually monoecious.
- 37 Leaf blade 3-foliolate; inflorescence axillary ..... 40. *Hevea*
- 37 Leaf blade simple; inflorescence terminal ..... 43. *Micrandra*
- 34 Petals present at least in staminate flowers (sometimes absent in pistillate flowers of monoecious taxa) or sepals petaloid; seeds carunculate (ecarunculate in *Aleurites* and *Dodecastigma*); trichomes simple, stellate, or lepidote; trees, shrubs, or herbs.
- 38 Sepals petaloid, petals absent; latex milky white; leaf blades palmately veined, the margins palmately lobed or compound; stamens 8–10; inflorescence bisexual, terminal; monoecious, often weak-stemmed shrubs, rarely small trees.
- 39 Stinging trichomes present, abundant on most plant parts; stamens connate; disc extrastaminal; inflorescence dichasial (i.e., determinate) ..... 35. *Cnidocolus*
- 39 Stinging trichomes absent; stamens free; disc intrastaminal; inflorescence racemose or paniculate (i.e., indeterminate) ..... 42. *Manihot*
- 38 Sepals not petaloid, petals present at least in staminate flowers; latex clear or colored, never milky white; leaf blades pinnately or palmately veined, the margins entire or lobed; stamens 5–40; inflorescence various.
- 40 Trichomes (at least in part) stellate or lepidote; petiole often biglandular at apex.
- 41 Ovary 2-locular; styles 2; fruit drupaceous; seeds ecarunculate; staminate bud with anthers erect, the calyx rupturing irregularly into 2 lobes at anthesis; inflorescence paniculate, bisexual; leaf blades palmately veined, often palmately lobed; monoecious trees ..... 34. *\*\*Aleurites*
- 41 Ovary 3-locular; styles 3; fruit capsular; seeds carunculate; staminate bud with anthers inflexed, the calyx regularly 4–6-parted, valvate or imbricate; inflorescence spicate or racemose, unisexual or bisexual; leaf blades pinnately or palmately veined, rarely lobed; herbs, shrubs, or trees, usually monoecious ..... 37. *Croton*
- 40 Trichomes simple or at most forked at base; petiole eglandular (glandular trichomes sometimes present in *Jatropha*).
- 42 Leaf blades palmately veined, the margins palmately lobed; stamens 8–10, the filaments connate for one third to one half of length; inflorescence dichasial, terminal, usually bisexual; monoecious shrubs ..... 41. *Jatropha*
- 42 Leaf blades pinnately veined, the margins not lobed (except sometimes in *Codiaeum*); stamens 5–40, the filaments free; inflorescence racemose, spicate, or paniculate, axillary or terminal, unisexual (except either unisexual or bisexual in *Sagotia*).
- 43 Stamens 5–8 (–16 in species outside Guayana Region); pistillate flowers with petals connate into tubular corolla longer than sepals; dioecious trees.
- 44 Styles multifid, divided to base, shorter than ovary; staminate disc pubescent; stamens 8 (–16); seeds ecarunculate; inflorescence paniculate with spicate branches, terminal; leaf blade margins entire ..... 38. *Dodecastigma*
- 44 Styles bifid, divided about halfway, equal to or longer than ovary; staminate disc glabrous; stamens 5–7; seeds carunculate; inflorescence spicate, axillary; leaf blade margins dentate ..... 44. *Pausandra*
- 43 Stamens 15–40; pistillate flowers without petals or with highly reduced petals much shorter than sepals; monoecious shrubs or trees.
- 45 Staminate disc 5-segmented; styles unlobed; inflorescence axillary (or less often subterminal), 10–20 cm long; leaf blades often variegated and sometimes lobed; cultivated shrubs ..... 36. *\*\*Codiaeum*
- 45 Staminate disc absent; styles deeply bifid; inflorescence terminal, 1–15 cm long; leaf blades never variegated or lobed; trees.
- 46 Sepals greatly enlarged and persistent in fruit; fruiting pedicel 1.5–4 cm long; pistillate flowers without petals; staminate calyx of 5 sepals free almost to base; inflorescence (2) 4–15 cm long, often bisexual with pistillate flowers basal ..... 45. *Sagotia*
- 46 Sepals not enlarged nor persistent in fruit; fruiting pedicel less than 1 cm long; pistillate flowers with highly reduced petals; staminate calyx shallowly 2 or 3 lobed, ruptured at anthesis; inflorescence less than 4 cm long, unisexual ..... 46. *Sandwithia*
- 14 Inflorescence bracts biglandular at base (eglandular in *Hura* and *Senefeldera*); staminate sepals



- imbricate or reduced, usually not covering the anthers in bud; petals absent; sepals not petaloid; disc absent; leaf blades simple, pinnately veined, the margins unlobed; indumentum if present of simple (or dendritic in some species of *Mabea* and *Senefeldera*) trichomes; latex milky white, sometimes scant, often caustic; monoecious or rarely dioecious [Subfamily Euphorbioideae].
- 47 Inflorescence pseudanthial (i.e., the flowers highly condensed within a cupular cyathium formed by 5 connate bracts), the pistillate flower solitary, terminal, the staminate flowers in 5 lateral cymes; styles usually bifid; stamen 1; milky latex copious; herbs or shrubs, rarely trees [Tribe Euphorbieae].
- 48 Cyathia distinctly zygomorphic, slipper-shaped, reddish, the involucrel glands hidden within the nectar spur; styles connate into a long column; succulent shrubs ..... 60. *Pedilanthus*
- 48 Cyathia actinomorphic or nearly so, cup-shaped, green or yellowish, the involucrel glands alternating with bract lobes around rim; styles free or nearly so.
- 49 Leaves opposite, the blade asymmetrical at base; stipules present, obvious, not glanduliform; main axis aborting just above the cotyledons; herbs ..... 49. *Chamaesyce*
- 49 Leaves alternate, opposite, or whorled (if opposite then blade symmetrical at base); stipules mostly obsolete or glanduliform; main axis not precociously aborting; herbs, shrubs or trees ..... 50. *Euphorbia*
- 47 Inflorescence spicate, racemose, or paniculate, not pseudanthial, the pistillate flower(s) basal; styles unlobed; stamens 2-40; milky latex copious or scant; shrubs or trees, rarely herbs.
- 50 Styles connate into a massive fleshy column, 2.5 cm or more long, ending in a fleshy lobed disc 2-3 cm in diam.; staminate flowers aggregated into a fleshy cone 4-6 cm long, each flower with 2 or 3 whorls of anthers borne on a stout column; carpels 5-20; fruit capsular about 8 cm in diam., woody, explosively dehiscent; trees with stout spines on trunk ..... 53. *Hura*
- 50 Styles free to connate, slender, not distinctly fleshy, 0.1-2.8 cm long; staminate flowers not aggregated into a fleshy cone, the anthers not borne in whorls; carpels (2) 3 (-9 in *Hippomane* and then fruit fleshy, indehiscent); fruit capsular or fleshy, less than 4 cm in diam.; herbs, shrubs or trees without spines on trunk [Tribe Hippomaneae].
- 51 Inflorescence racemose or paniculate (with spicate or racemose branches); stamens 2-50+, if 2-5 then inflorescence paniculate; filaments absent or present and less than 0.5 mm long; shrubs or small trees.
- 52 Inflorescence racemose or paniculate with racemose branches, usually pendant with flexuous axis(es); flowers usually long-pedicillate; stylar column 5 mm or more long, slender; stamens 10-50+, the anthers subsessile ..... 54. *Mabea*
- 52 Inflorescence paniculate with spicate branches, usually erect with rigid axes; flowers sessile or short-pedicillate; stylar column less than 2 mm long, often stout; stamens 2-12, the anthers subsessile or on filaments less than 0.5 mm long.
- 53 Stamens 3-12, the filaments, if present, free; staminate calyx 3-5 lobed; capsule 1 cm or more long; indumentum of simple trichomes or absent; leaf blades eglandular.
- 54 Stamens 5-12; bracts eglandular; capsule depressed-globose; latex scant; leaves with pulvinus at petiole apex, arranged in pseudowhorls ..... 58. *Senefeldera*
- 54 Stamens 3-5; bracts biglandular; capsule ellipsoid; latex copious; leaves without pulvinus, alternate ..... 59. *\*Senefelderopsis*
- 53 Stamens 2, entirely connate; staminate calyx 2-lobed; capsule less than 0.8 cm long; indumentum of dendritic (branched) trichomes; leaves with pair of basilaminar glands ..... 59. *\*Senefeldera yutajensis*
- 51 Inflorescence spicate (except in *Maprounea* with very short racemose inflorescence and in *Sebastiana* sometimes with solitary pistillate flower); stamens 2-5 (or rarely numerous and then filaments long, slender); filaments present, mostly greater than 0.5 mm long.
- 55 Ovary 6-9 locular; fruits fleshy, indehiscent, about 3.5 cm in diam.; seeds ecarunculate; petiole apex with single gland; trees ..... 52. *\*\*Hippomane*
- 55 Ovary (2) 3-locular; fruits capsular, less than 2 cm in diam.; seeds carunculate or ecarunculate; petiole apex biglandular or without glands; herbs, shrubs or trees.
- 56 Seeds ecarunculate, the outer seed coat fleshy; pistillate sepals distinctly connate; stamens 2 (in the Neotropics); petioles usually with pair of stipitate glands near apex; trees, less often shrubs ..... 56. *Sapium*
- 56 Seeds carunculate, the outer seed coat dry; pistillate sepals free; stamens 2-16; petioles eglandular.
- 57 Staminate part of inflorescence a condensed ovoid raceme, 1 cm or less long; stamens 2, the filaments entirely connate; caruncle large, cap-like, the seed coat foveolate; shrubs or trees ..... 55. *Maprounea*

- 57 Staminate part of inflorescence spicate, usually longer than 1 cm; stamens (2) 3–16, the filaments free or only partly connate; caruncle small, the seed coat smooth.
- 58 Staminate calyx 3-lobed, the stamens 3; pistillate flower pedicel less than 5 mm long; leaf margin minutely serrate, the blade without glands or with basal margin biglandular; herbs or shrubs ... 57. *Sebastiania*
- 58 Staminate calyx highly reduced or absent, the stamens (2) 3–16; pistillate flower pedicel greater than 5 mm long; leaf margin entire (in South America), the blade usually with scattered laminar glands on abaxial surface; shrubs or trees.
- 59 Bracts subtending inflorescence less than 1 mm long, not obviously striate, persistent, spreading; inflorescence axillary; leaves subcoriaceous, appearing glaucous below ..... 51. \**Gymnanthes*
- 59 Bracts subtending inflorescence (except lowermost) greater than 2 mm long, striate, often forming deciduous cap-like unit that encloses immature inflorescence; inflorescence mostly terminal; leaves chartaceous, green below ..... 48. *Actinostemon*

**Checklist of Euphorbiaceae  
of the Guianas**  
(including the Guayana Region)

The checklist was compiled from the literature and the study of herbarium specimens primarily from BRG and US (and also from A, CAY, G, GH, K, MO, NY, and P) and of recent collections of the Smithsonian Institution's "Biological Diversity of the Guianas Program."

The most recent floras and checklists of Euphorbiaceae in the Guianas include *The Euphorbiaceae of Surinam* (Lanjouw, 1931; additions, Lanjouw, 1934; updated by Görts-van Rijn, 1976), *Flore de la Guiane Française* (Lemée, 1952), and *Checklist of Woody Plants of Guyana* (Mennega et al., 1988). The following genera have been the subject of more recent revisionary studies: *Actinostemon* (Jablonski, 1969), *Amanoa* (Hayden, 1990), *Dalechampia* (Webster & Armbruster, 1991; Armbruster, in press), *Hyeronima* (Franco, 1990), *Jablonskia* (Webster, 1984), *Mabea* (den Hollander & Berg, 1986), *Manihot* (Rogers & Appan, 1973), *Margaritaria* (Webster, 1979), *Pausandra* (Secco, 1987), *Richeria* (Secco & Webster, 1990), *Sagotia* (Secco, 1985), *Sandwithia* (Secco, 1988), and *Sapium* (Jablonski, 1967c). Also consulted were studies of *Hevea* (Ducke, 1935) and *Micrandra* (Baldwin & Schultes, 1947; Schultes, 1952). Other references used in the compilation of the checklist include the works of Defillips (1992) and Cremers (1988) and the computerized inventory (AUBLET) of the

O.R.S.T.O.M. herbarium in Cayenne. The Euphorbiaceae flora of the Venezuelan Guayana is relatively well known due to the extensive publications in the *Botany of the Guayana Highland* series (Jablonski, 1965, 1967a, 1967b, 1972; Steyermark, 1980) and the *Flora of the Venezuelan Guayana* series (Steyermark, 1984; Webster, 1989). Another very useful reference is the treatment of the family in the *Flora of Panama* (Webster & Burch, 1967; updated, Webster & Huft, 1988), the most complete and up-to-date, neotropical Euphorbiaceae flora.

The checklist is organized according to the most recent classification of Euphorbiaceae (Webster, 1975), in which five subfamilies are recognized, each of which is represented in the Guianas. The checklist includes taxa from the entire Guayana Region; although the majority of taxa known from the Guayana Region have been included, the checklist is exhaustive only for the Guianas. Species known only from peripheral areas of the Guayana Region, such as those having a central Amazonian distribution and reaching only the southern edge of the Guayana Region, were thought to be unlikely to occur in the Guianas and thus not included in this list. Native or extensively naturalized taxa known only from the Guayana Region outside of the Guianas are preceded by an asterisk (\*) and within a genus are listed after the native Guianan taxa. Species known only in cultivation, including those cultivated and naturalized to a limited extent, are preceded by two asterisks (\*\*) and are listed following the native

species. For reasons of space only those synonyms that are new, commonly used, or based on types collected from the Guianas are given. For each species, distribution within the Guianas (listed by country or as the Guianas if found in all three countries) is given first, followed by distribution in the Venezuelan Guayana (listed by state/territory or as Venezuelan Guayana if found in all three), and finally by a brief statement of distribution elsewhere. If a specific locality is cited, the species is known only from that area. Lastly, a brief habitat description is given using broadly defined and commonly used terms. "Rain forest," "seasonal forest," "swamp forest," and "savanna" apply to lowland habitats unless specified otherwise. To distinguish the mid- to high-altitude, herbaceous, non-grass savanna or scrub of the Guayana Highland Region from lowland savanna (either grass or non-grass dominated) or scrub, the qualifier "on tepuis" is used (e.g., "savanna on tepuis"). Montane forest is loosely defined as occurring above 800 m, and submontane between approximately 300 to 800 m. The high-altitude, low montane forest on or near tepui summits is termed "dwarf forest."

This checklist must be regarded as preliminary; new species will be described, ranges will be extended, and other taxa will be reduced to synonymy as new collections are studied and generic treatments are completed for the *Flora of the Guianas*. A number of new taxa have already been recognized and are currently being described; these include a species of *Plukenetia* from French Guiana and Amapá and a species of *Tragia* endemic to a lateritic table mountain in French Guiana (Gillespie, submitted manuscripts) and a species of *Gymnanthes* (K. Wurdack, unpubl.). The taxonomy of several of the larger genera, such as *Croton*, has not been adequately studied, and changes in nomenclature and species circumscriptions will undoubtedly be necessary. Generic boundaries in the closely related complex of *Gymnanthes*, *Actinostemon*, and *Sebastiania* are vague and in need of further study. Although the three genera are treated as distinct here, Webster and Huft (1988) interpret *Actinostemon* to be

congeneric with *Gymnanthes*. *Ateramnus* P. Browne has also been suggested as the correct name for *Gymnanthes* (Kruijt & Zijlstra, 1989); nomenclatural problems involving the two genera, however, have not yet been satisfactorily resolved (Webster, 1983). For convenience, *Chamaesyce* is treated as a distinct, easily recognized genus for the purposes of the checklist (following Webster, 1975; Webster & Huft, 1988), but phylogenetically it is a segregate of the extremely large genus *Euphorbia* and could be treated as a subgenus of *Euphorbia* (Carter, 1988).

Two genera that have been recorded from the Guianas were excluded from the checklist. A report of *Cleidion* cultivated on Fort Island in Guyana (Mennega et al., 1988) was based on a misidentified specimen of *Plukenetia polyadenia*. *Angostyles? tabulamontana* Croizat (Bull. Torrey Bot. Club 75: 403. 1948) was based on a poor specimen with immature fruit from Tafelberg, Surinam (Maguire 24636). As Croizat mentioned, his choice of genus was entirely speculative; indeed, the evidence supporting its placement in *Angostyles* Benth., a monotypic genus known only from the Rio Negro region of Brazil, is extremely weak, and the species must, therefore, be excluded from the genus. The collection may possibly represent a new species in the Alchorneae or a related tribe; material is insufficient, however, to place it definitively.

#### PHYLLANTHOIDEAE

1. AMANOA Aubl., Hist. pl. Guiane 256. 1775. TYPE: *A. guianensis* Aubl.

#### AMANOA CONGESTA W. J. Hayden

*A. congesta* W. J. Hayden, Brittonia 42: 261. 1990.  
TYPE: BRAZIL. Amapá: Irwin & Westra 47755  
(HOLOTYPE: NY!; ISOTYPES: B, GH!, K, MO, U, US!).

French Guiana; Amazon Delta region of Amapá and Pará, Brazil; in rain forest.

#### AMANOA GUIANENSIS Aubl.

*A. guianensis* Aubl., Hist. pl. Guiane 256. 1775. TYPE: FRENCH GUIANA. "in sylvis remotis Sinemari-

ensibus," *Aublet s.n.* (LECTOTYPE, designated by Hayden, 1990: W; ISOLECTOTYPE: F—fragment).

*A. guianensis* var. *grandiflora* Muell. Arg. in DC., Prodr. 15(2): 219. 1866. *A. grandiflora* (Muell. Arg.) Muell. Arg., Flora 55: 2. 1872. SYNTYPES: GUYANA. *Schomburgk 36* (G!, G-DC!), *490* (G-DC!, US!); SURINAM. *Hostmann 1180* (K—2 sheets!).

The Guianas; Venezuela (Amazonas, Bolívar); widespread in Central and N South America; in rain forest.

#### AMANOA NEGLECTA W. J. Hayden

*A. neglecta* W. J. Hayden, Brittonia 42: 267. 1990. TYPE: FRENCH GUIANA. *Aublet s.n.* (HOLOTYPE: P; ISOTYPE: BM).

Surinam, French Guiana.

#### \*AMANOA ALMERINDAE Leal

*A. almerindae* Leal, Arq. Jard. Bot. Rio de Janeiro 11: 68. 1951. TYPE: BRAZIL. Amazonas: *Ducke HJBR-24241* (n.v.).

*A. pubescens* Steyerl., Fieldiana, Bot. 28: 304. 1952. TYPE: VENEZUELA. Amazonas: *Williams 14439* (HOLOTYPE: F; ISOTYPES: G—4 sheets!, NY).

Venezuela (Amazonas); upper Rio Negro region of Brazil; in savanna.

#### \*AMANOA CUPATENSIS Huber

*A. cupatensis* Huber, Bol. Mus. Paraense Hist. Nat. 7: 296. 1913. TYPE: BRAZIL. Amazonas: *Ducke 12296* (B—destroyed, photo F5007!).

Venezuela (Amazonas); Brazil (NW Amazonas); in savanna.

#### \*AMANOA OBLONGIFOLIA Muell. Arg.

*A. oblongifolia*, Linnaea 32: 77. 1863. TYPE: BRAZIL. Amazonas: *Spruce 1973* (n.v.).

Venezuela (Amazonas); W Amazon Basin; in rainforest.

#### \*AMANOA STEYERMARKII Jabl.

\**A. steyermarkii* Jabl., Acta Bot. Venez. 2: 237. 1967. TYPE: VENEZUELA. Bolívar: Auyan-tepui, *Steyermark 93238* (HOLOTYPE: NY; ISOTYPES: G!, GH!, NY, US!, VEN).

Venezuela (Bolívar); in montane and gallery forest on tepui tops.

2. \*\*ANTIDESMA L., Sp. pl. 1027. 1753. TYPE: *A. alexiteria* L.

#### \*\*ANTIDESMA GHAESEMBILLA Gaertn.

*A. ghaesembilla* Gaertn., Fruct. 1: 189, t. 39. 1788. TYPE: "hort. lugdb" (L).

Guyana; cultivated and apparently naturalized to a limited extent along the coast; native from S Asia to New Guinea.

3. \*\*BREYNIA J. R. & G. Forster, Char. gen. pl. 145, t. 73. 1776. TYPE: *B. disticha* J. R. & G. Forster.

#### \*\*BREYNIA DISTICHA J. R. & G. Forster

*B. disticha* J. R. & G. Forster, Char. gen. pl. 146, t. 73. 1776. TYPE: NEW HEBRIDES. *Forster s.n.* (HOLOTYPE: BM; ISOTYPES: P, S, UPS).

*Phyllanthus nivosus* Bull, Cat. 9. 1873. *B. nivosa* (Bull) Small, Bull. Torrey Bot. Club 37: 516. 1910. TYPE: Illustration in W. G. Smith, Fl. Mag. (London) n.s. 30: t. 120. 1874.

The Guianas; cultivated as an ornamental throughout the tropics; native to the New Hebrides.

4. \*CELIANELLA Jabl., Mem. New York Bot. Gard. 12: 176, fig. 28. 1965. TYPE: *C. montana* Jabl.

#### \*CELIANELLA MONTANA Jabl.

\**C. montana* Jabl., Mem. New York Bot. Gard. 12: 176, fig. 28. 1965. TYPE: VENEZUELA. Amazonas: Camp Yutajé, *Maguire & Maguire 35072* (HOLOTYPE: NY!; ISOTYPE: US!).

Venezuela (Amazonas, Bolívar); in scrub-savanna on tepui tops.

5. DISCOCARPUS Klotzsch, Arch. Naturgesch. 7: 201, t. 9C. 1841. TYPE: *D. essequiboensis* Klotzsch.

#### DISCOCARPUS ESSEQUIBOENSIS Klotzsch

*D. essequiboensis* Klotzsch, Arch. Naturgesch. 7: 201, t. 9C. 1841. SYNTYPES: GUYANA. Upper Essequibo R., *Schomburgk 35* (G!, G-DC!, K!), *659* (G!, G-DC!, K!), *706* (G!, G-DC!, K!).

Guyana, Surinam; Amazonian Brazil; in rain and swamp forest.

#### \*DISCOCARPUS SPRUCEANUS Muell. Arg.

*D. spruceanus* Muell. Arg., Linnaea 32: 78. 1863. SYNTYPES: BRAZIL. Amazonas: *Spruce 3527* (G-

DC!, GH!, K!, NY!, P!), 3781 (G-DC!, GH!, K!, NY!, P!).

Venezuela (Amazonas); upper Rio Negro region of Brazil; in rain and swamp forest.

6. DRYPETES Vahl, *Eclog. amer.* 3: 49. 1807. TYPE: *D. glauca* Vahl.

DRYPETES FANSHAWEI Sandw.

*D. fanshawei* Sandw., *Kew Bull.* 1952: 258. 1952. TYPE: GUYANA. Yarikita Creek, *Fanshawe 2447* = *FD 5183* (HOLOTYPE: K!; ISOTYPES: K!, NY!).

Guyana; Venezuela (Delta Amacuro); in rain forest.

DRYPETES VARIABILIS Uittien

*D. variabilis* Uittien, *Recueil Trav. Bot. Néerl.* 22: 348. t. 6. 1925. TYPE: SURINAM. Brownsberg, *Baum 1233, Hb. Nr. 6481* (U).

The Guianas; Venezuela (Bolívar, Delta Amacuro); Brazil (Pará, Roraima); in rain forest.

7. HYERONIMA Allemão, *Arch. med. Brasil* 4. 1848. TYPE: *H. alchorneoides* Allemão.

HYERONIMA ALCHORNEOIDES Allemão var. ALCHORNEOIDES

*H. alchorneoides* Allemão, *Arch. med. brasil.* 4. 1848. TYPE: BRAZIL. Rio de Janeiro: *Allemão s.n.* (LECTOTYPE, designated by Franco, 1990: BR). *Stilaginella laxiflora* Tul., *Ann. Sci. Nat. Bot.* 3, 15: 244. 1851. *H. laxiflora* (Tul.) Muell. Arg., *Linnaea* 34: 67. 1865. SYNTYPES: GUYANA. *Schomburgk 879* (K!, P!); SURINAM. *Hostmann 391* (K!).

The Guianas; Venezuela (Bolívar, Delta Amacuro); widespread from Belize to Peru and SE Brazil; in rain and submontane forest.

HYERONIMA ALCHORNEOIDES var. STIPULOSA Franco R.

*H. alchorneoides* var. *stipulosa* Franco R., *Bot. Jahrb. Syst.* 3: 321. 1990. TYPE: COLOMBIA. *Soejarto et al. 1238* (HOLOTYPE: COL; ISOTYPES: ECON!, GH!).

French Guiana; Venezuela (Delta Amacuro); Costa Rica and West Indies, along the

Andes to Peru; mostly in submontane forest.

HYERONIMA OBLONGA (Tul.) Muell. Arg.

*H. oblonga* (Tul.) Muell. Arg., *Linnaea* 34: 66. 1865. *Stilaginella oblonga* Tul., *Ann. Sci. Nat. Bot.* 3, 15: 248. 1851. TYPE: GUYANA. *Schomburgk 805* (HOLOTYPE: P!; ISOTYPE: F!).

Guyana, French Guiana; Venezuela (Amazonas, Bolívar); widespread from Mexico to Peru and SE Brazil; in rain and montane forest.

8. JABLONSKIA Webster, *Syst. Bot.* 9: 232. 1984. TYPE: *J. congesta* (Benth. ex Muell. Arg.) Webster.

JABLONSKIA CONGESTA (Benth. ex Muell. Arg.) Webster

*Phyllanthus congestus* Benth. ex Muell. Arg., *Linnaea* 32: 25. 1863. *Securinega congesta* (Benth. ex Muell. Arg.) Muell. Arg., in *Mart., Fl. bras.* 11(2): 76, t. 11. 1873. *J. congesta* (Benth. ex Muell. Arg.) Webster, *Syst. Bot.* 9: 232. 1984. TYPE: BRAZIL. Amazonas: *Spruce 1900* (LECTOTYPE, designated by Webster, 1984: G; ISOLECTOTYPE: K).

Guyana, Surinam; Venezuela (Amazonas); Amazon Basin; in rain forest.

9. MARGARITARIA L.f., *Suppl. pl.* 66. 1781. TYPE: *M. nobilis* L.f.

MARGARITARIA NOBILIS L.f.

*M. nobilis* L.f., *Suppl. pl.* 428. 1781. *Phyllanthus nobilis* (L.f.) Muell. Arg. in DC., *Prodr.* 15(2): 414. 1866. TYPE: SURINAM. *Dahlberg s.n.* (HOLOTYPE: LINN).

The Guianas; Venezuela (Bolívar, Delta Amacuro); widespread in the Neotropics; in seasonal, rain and gallery forest.

10. PHYLLANTHUS L. *Sp. pl.* 981. 1753. TYPE: *P. niruri* L.

PHYLLANTHUS ACUMINATUS Vahl

*P. acuminatus* Vahl, *Symb. bot.* 2: 95. 1791. TYPE: TRINIDAD. *Ryan s.n.* (HOLOTYPE: C).

Guyana, Surinam; widespread in the Neotropics; in secondary forest and scrub.

**PHYLLANTHUS ADIANTOIDES** Klotzsch

*P. adiantoides* Klotzsch, London J. Bot. 2: 51. 1843.  
TYPE: GUYANA. *Schomburgk 78* (HOLOTYPE: B—  
destroyed, photo F5019!; ISOTYPE: K!).

Guyana, Surinam; in rainforest.

**PHYLLANTHUS AMARUS** Schum. & Thonn.

*P. amarus* Schum. & Thonn., Kongel. Danske Vidensk.-Selsk. Skr. 4: 195. 1829. TYPE: GUINEA (Africa): *Schumacher & Thonning s.n.* (HOLOTYPE: C; ISOTYPE: K—fragment).

The Guianas; pantropical weed; native to the Neotropics.

**PHYLLANTHUS ATTENUATUS** Miq.

*P. attenuatus* Miq., Linnaea 21: 479. 1848. TYPE: SURINAM. *Kappler s.n.* (ISOTYPE: K!).  
*P. guyanensis* Muell. Arg. in DC., Prodr. 15(2): 376. 1866. SYNTYPES: GUYANA. *Schomburgk 997* (K!, P!); SURINAM. *Kappler 305* (G!); FRENCH GUIANA. *Aublet s.n.* (n.v.), *Perrot s.n.* (n.v.), *Sagot 1399* (n.v.), *Herb. Willdenow 17543* (n.v.); VENEZUELA. *Spruce 3592* (n.v.).

The Guianas; Venezuela (Amazonas); Brazil (Maranhão, Pará, Roraima).

**PHYLLANTHUS BRASILIENSIS** (Aubl.) Poir.

*Conami brasiliensis* Aubl., Hist. pl. Guiane 2: 929. 1775. *P. brasiliensis* (Aubl.) Poir., Encycl. méth., Bot. 5: 296. 1805. TYPE: FRENCH GUIANA. "In hortic Caienne & Guianae . . ." (n.v.).

The Guianas; Amazon Basin.

**PHYLLANTHUS CAROLINENSIS** Walter subsp. CAROLINENSIS

*P. carolinensis* Walter, Fl. carol. 228. 1788. TYPE: *Herb. Walter sheet 83* (HOLOTYPE: BM).

French Guiana; widespread in the Neotropics, north to SE United States.

**PHYLLANTHUS CAROLINENSIS** subsp. GUIANENSIS (Klotzsch) Webster

*P. guianensis* Klotzsch, London J. Bot. 2: 51. 1843. *P. carolinensis* subsp. *guianensis* (Klotzsch) Webster, Contr. Gray Herb. 176: 46. 1955. SYNTYPES: GUYANA. "On the Essequibo and Rupunoony," *Schomburgk 22* (K!), 529 (G!, K!).

The Guianas; Lesser Antilles, Brazil.

**PHYLLANTHUS CAROLINENSIS** subsp. STENOPTERUS (Muell. Arg.) Webster

*P. stenopterus* Muell. Arg. in DC., Prodr. 15(2): 399. 1866. *P. carolinensis* subsp. *stenopterus* (Muell. Arg.) Webster, J. Arnold Arbor. 37: 348. 1956. TYPE: COLOMBIA. *Hotton 870* (n.v.).

French Guiana; Colombia, Venezuela.

**PHYLLANTHUS DEBILIS** Klein ex Willd.

*P. debilis* Klein ex Willd., Sp. pl. 4: 582. 1804. TYPE: INDIA. *Klein s.n.* (B-WILLD—3 sheets).

The Guianas; West Indies, Palaeotropics; native to India.

**PHYLLANTHUS ELSIAE** Urban

*P. elsiae* Urban, Repert. Spec. Nov. Regni Veg. 15: 405. 1919. TYPE: TOBAGO. *Broadway 4789* (LECTOTYPE, designated by Webster, J. Arnold Arbor. 38: 74. 1957: US!; ISOLECTOTYPE: K!).

Guyana, Surinam; Venezuela (Bolívar, Delta Amacuro); Mexico to Colombia and Venezuela; in secondary rain forest.

**PHYLLANTHUS GALLINETAE** Jabl.

*P. gallinetae* Jabl., Mem. New York Bot. Gard. 17: 111. 1967. TYPE: VENEZUELA. Amazonas: Río Sipapo, *Wurdack & Adderley 43550* (HOLOTYPE: NY; ISOTYPES: NY, US!).

Guyana; Venezuela (Amazonas); Brazil (Amazonas); in savanna.

**PHYLLANTHUS HYSOPIFOLIOIDES** Kunth

*P. hyssopifolioides* Kunth in Humb., Bonpl. & Kunth, Nov. gen. sp. 2: 108. 1817. TYPE: VENEZUELA. Amazonas: Orinoco, *ex herb. Humboldt* (HOLOTYPE: B—destroyed, photo F5028!).

French Guiana; Venezuela (Amazonas, Bolívar); Costa Rica to Brazil and Paraguay; in open disturbed areas.

**PHYLLANTHUS JUGLANDIFOLIUS** Willd.

*P. juglandifolius* Willd., Enum. pl. suppl. 64. 1813. TYPE: *Herb. Willdenow* (HOLOTYPE: B).

Guyana, French Guiana; Venezuela (Bolívar); widespread in the Neotropics; in secondary forest and scrub.

**PHYLLANTHUS MAJUS** Steyererm.

*P. majus* Steyererm., Fieldiana, Bot. 28: 318. 1952. TYPE: VENEZUELA. Bolívar: Ptari-tepui, *Steyermark 59482* (ISOTYPES: NY, US!).

Guyana; Venezuela (Amazonas, Bolívar); in dwarf forest on tepuis.

**PHYLLANTHUS NIRURI L.**

*P. niruri* L., Sp. pl. 981. 1753. TYPE: *Herb. Hort. Cliffort.* (HOLOTYPE: BM).

Surinam, French Guiana; widespread neotropical weed.

**PHYLLANTHUS ORBICULATUS Rich.**

*P. orbiculatus* Rich., Actes Soc. Hist. Nat. Paris 113. 1792. TYPE: FRENCH GUIANA. Cayenne, *Leblond s.n.* (HOLOTYPE: P; ISOTYPE: C).

Surinam, French Guiana; Venezuela (Amazonas, Bolívar); tropical South America; in savanna and open disturbed areas.

**PHYLLANTHUS PYCNOPHYLLUS Muell. Arg.**

*P. pycnophyllus* Muell. Arg. in DC., Prodr. 15(2): 322. 1866. TYPE: GUYANA/VENEZUELA. Mt. Roraima, *Ri. Schomburgk 1006* (ISOTYPE: K!).

Guyana; Venezuela (Bolívar); in scrub on tepui tops.

**PHYLLANTHUS STIPULATUS (Raf.) Webster**

*Moeroris stipulata* Raf., Sylva tellur. 91. 1838. *P. stipulatus* (Raf.) Webster, Contr. Gray Herb. 176: 53, photo 19, fig. L–M. 1955. TYPE: JAMAICA. Swartz *s.n.* (HOLOTYPE: S).

The Guianas; Venezuela (Amazonas, Bolívar); widespread neotropical weed; in moist open areas.

**PHYLLANTHUS TENELLUS Roxb.**

*P. tenellus* Roxb., Fl. ind. ed. 1832, 3: 668. 1832. TYPE: INDIA. *Wallich 7892A* (HOLOTYPE: K).

Guyana, Surinam; pantropical weed; apparently native to the Mascarene Islands.

**PHYLLANTHUS URINARIA L.**

*P. urinaria* L., Sp. pl. 982. 1753. TYPE: CEYLON. *Herb. Hermann* (HOLOTYPE: BM; ISOTYPES: BM—2 sheets).

The Guianas; pantropical weed; native to Asia.

**PHYLLANTHUS VACCINIIFOLIUS (Muell. Arg.) Muell. Arg. subsp. VACCINIIFOLIUS**

*Glochidion vacciniifolius* Muell. Arg., Linnaea 32:

63. 1863. *P. vacciniifolius* (Muell. Arg.) Muell. Arg. in DC., Prodr. 15(2): 322. 1866. TYPE: GUYANA/VENEZUELA. Roraima, *Ri. Schomburgk 1007* (HOLOTYPE: B—destroyed).

Guyana; Venezuela (Bolívar); in scrub-savanna and dwarf forest on tepuis.

**\*PHYLLANTHUS VACCINIIFOLIUS subsp. VINILLAENSIS Steyererm.**

*P. vacciniifolius* subsp. *vinillaensis* Steyererm., Ann. Missouri Bot. Gard. 71: 317, fig. 7f–i. 1984. TYPE: VENEZUELA. Amazonas: Serranía Vinilla, *Steyermark et al. 130328* (HOLOTYPE: VEN; ISOTYPES: MO, US!).

Venezuela (Amazonas: Serranía Vinilla); in scrub at 400 to 500 m.

**\*PHYLLANTHUS ANADENUS Jabl.**

*P. anadenus* Jabl., Mem. New York Bot. Gard. 17: 93. 1967. TYPE: VENEZUELA. Amazonas: Cerro Sipapo, *Maguire & Politi 27922* (HOLOTYPE: NY; ISOTYPES: MO, NY, US!).

Venezuela (Amazonas); in scrub-savanna on tepuis.

**\*PHYLLANTHUS ATABAPOENSIS Jabl.**

*P. atabapoensis* Jabl., Mem. New York Bot. Gard. 17: 101. 1967. TYPE: VENEZUELA. Amazonas: Ríos Orinoco & Atabapo, *Wurdack & Bunting 37552* (HOLOTYPE: NY; ISOTYPES: GH!, NY, US!).

Venezuela (Amazonas); upper Rio Negro region of Brazil; in savanna.

**\*PHYLLANTHUS BOLIVARENSIS Steyererm.**

*P. bolivarensis* Steyererm., Fieldiana, Bot. 28: 317. 1952. TYPE: VENEZUELA. Bolívar: between Upata and Altagracia. *Steyermark 57688* (HOLOTYPE: F).

Venezuela (Bolívar); in submontane forest.

**\*PHYLLANTHUS BORJAENSIS Jabl.**

*P. borjaensis* Jabl., Mem. New York Bot. Gard. 17: 110. 1967. TYPE: VENEZUELA. Bolívar: base of Cerro San Borja, *Wurdack & Monachino 41424* (HOLOTYPE: NY; ISOTYPES: NY, US!).

Venezuela (Bolívar, Apure); in savanna.

**\*PHYLLANTHUS CARRENOI Steyererm.**

*P. carrenoi* Steyererm., Bol. Soc. Venez. Ci. Nat. 132–133: 343, fig. 14. 1976. TYPE: VENEZUELA. Bo-

lívar: Cerro Jaua, *Steyermark et al. 109596* (HOLOTYPE: VEN; ISOTYPE: NY).

Venezuela (Bolívar: Jaua massif); in scrub-savanna on tepui tops.

**\*PHYLLANTHUS CHIMANTAE** Jabl.

*P. chimantae* Jabl., Mem. New York Bot. Gard. 17: 100. 1967. TYPE: VENEZUELA. Bolívar: Churí-tepui, *Wurdack 34176* (HOLOTYPE: NY; ISOTYPE: NY).

Venezuela (Bolívar: Chimanta massif); in scrub-savanna and dwarf forest on tepui tops.

**\*PHYLLANTHUS DELICATISSIMUS** Jabl.

*P. delicatissimus* Jabl., Mem. New York Bot. Gard. 17: 105. 1967. TYPE: VENEZUELA. Amazonas: *Maguire et al. 41462* (HOLOTYPE: NY; ISOTYPES: G!, GH!, NY, US!).

Venezuela (Amazonas: upper Río Orinoco); river margin at low altitudes.

**\*PHYLLANTHUS DUIDAE** Gleason

*P. duidae* Gleason, Bull. Torrey Bot. Club 58: 383. 1931. TYPE: VENEZUELA. Amazonas: Mt. Duida summit, *Tate 629* (HOLOTYPE: NY; ISOTYPES: GH!, US).

Venezuela (Amazonas: Cerro Duida); in scrub and dwarf forest on summit.

**\*PHYLLANTHUS GLAUCOVIRIDIS** Jabl.

*P. glaucoviridis* Jabl., Mem. New York Bot. Gard. 17: 101. 1967. TYPE: VENEZUELA. Amazonas: *Wurdack & Adderley 42943* (HOLOTYPE: NY; ISOTYPE: US!).

Venezuela (Amazonas: Río Atabapo); at savanna/forest margin.

**\*PHYLLANTHUS JABLONSKIANUS** Steyerm. & Luteyn

*P. jablonskianus* Steyerm. & Luteyn, Ann. Missouri Bot. Gard. 71: 317, fig. 7a–e. 1984. TYPE: VENEZUELA. Amazonas: *Steyermark 129816* (HOLOTYPE: VEN; ISOTYPES: MO, NY) [perhaps conspecific with *P. neblinae*].

Venezuela (Amazonas: Cerro de la Neblina); in wet scrub-savanna on summit.

**\*PHYLLANTHUS JAUAENSIS** Jabl.

*P. jauaensis* Jabl., Mem. New York Bot. Gard. 23:

865. 1972. TYPE: VENEZUELA. Bolívar: Cerro Jaua, *Steyermark 97877* (HOLOTYPE: NY; ISOTYPES: US, VEN).

Venezuela (Bolívar: Jaua massif); in scrub-savanna on summits.

**\*PHYLLANTHUS LEDIFORMIS** Jabl.

*P. lediformis* Jabl., Mem. New York Bot. Gard. 17: 103. 1967. TYPE: VENEZUELA. Amazonas: *Maguire & Maguire 35110* (HOLOTYPE: NY; ISOTYPE: US).

Venezuela (Amazonas: Serranía Yutajé); in scrub-savanna.

**\*PHYLLANTHUS LONGISTYLUS** Jabl.

*P. longistylus* Jabl., Mem. New York Bot. Gard. 17: 100. 1967. TYPE: VENEZUELA. Bolívar: Auyán-tepui, *Tate 1181* (HOLOTYPE: NY).

Venezuela (Amazonas, Bolívar); in scrub-savanna on tepuis.

**\*PHYLLANTHUS MAGUIREI** Jabl.

*P. maguirei* Jabl., Mem. New York Bot. Gard. 17: 105. 1967. TYPE: VENEZUELA. Amazonas: *Maguire et al. 42360* (HOLOTYPE: NY; ISOTYPES: NY, US).

Venezuela (Amazonas: Cerro de la Neblina); in scrub-savanna on summit.

**\*PHYLLANTHUS MINUTIFOLIUS** Jabl.

*P. minutifolius* Jabl., Mem. New York Bot. Gard. 17: 115. 1967. TYPE: VENEZUELA. Amazonas: *Maguire & Politi 27648* (HOLOTYPE: NY; ISOTYPES: GH!, MO!, US!).

Venezuela (Amazonas: Cerro Sipapo); in scrub-savanna.

**\*PHYLLANTHUS MYRSINITES** Kunth

*P. myrsinites* Kunth in Humb., Bonpl. & Kunth, Nov. gen. sp. 2: 88. 1817. TYPE: VENEZUELA. Amazonas: Río Tuamini, *Humboldt s.n.* (B—destroyed, photo F5036!).

Venezuela (Amazonas); in submontane forest.

**\*PHYLLANTHUS NEBLINAE** Jabl.

*P. neblinae* Jabl., Mem. New York Bot. Gard. 17: 107. 1967. TYPE: VENEZUELA. Amazonas: *Maguire et al. 42256* (HOLOTYPE: NY; ISOTYPES: MO!, NY, US!).



Venezuela (Amazonas: Cerro de la Neblina); in scrub on summit.

**\*PHYLLANTHUS OBFALCATUS** Lasser & Maguire

*P. obfalcatus* Lasser & Maguire, *Brittonia* 7: 79. 1950. TYPE: VENEZUELA. Amazonas: Cerro Yaví, *Phelps & Hitchcock 45* (HOLOTYPE: NY).

Venezuela (Amazonas); in scrub-savanna and dwarf forest on tepuis.

**\*PHYLLANTHUS ORINOCENSIS** Steyerem.

*P. orinocensis* Steyerem., *Fieldiana, Bot.* 28: 321. 1952. TYPE: VENEZUELA. Amazonas: *Steyermark 57891* (HOLOTYPE: F).

Venezuela (Amazonas); known only from base of Cerro Duida at 200 m.

**\*PHYLLANTHUS PAEZENSIS** Jabl.

*P. paezensis* Jabl., *Mem. New York Bot. Gard.* 17: 113. 1967. TYPE: VENEZUELA. Bolívar: *Wurdack & Monachino 39970* (HOLOTYPE: NY; ISOTYPES: G!, GH!, MO!, NY, US!).

Venezuela (Bolívar: middle Río Orinoco); in riparian habitat.

**\*PHYLLANTHUS PARAQUEENSIS** Jabl.

*P. paraqueensis* Jabl., *Mem. New York Bot. Gard.* 17: 104. 1967. TYPE: VENEZUELA. Amazonas: *Maguire & Politi 27519* (HOLOTYPE: NY; ISOTYPES: MO!, NY, US!).

Venezuela (Amazonas: Cerro Sipapo); in scrub-savanna.

**\*PHYLLANTHUS PIMICHINIANUS** Jabl.

*P. pimichinianus* Jabl., *Mem. New York Bot. Gard.* 17: 111. 1967. TYPE: VENEZUELA. Amazonas: *Wurdack & Adderley 43233* (HOLOTYPE: NY; ISOTYPES: GH!, MO!, NY).

Venezuela (Amazonas: Río Guainía area).

**\*PHYLLANTHUS RUPESTRIS** Kunth

*P. rupestris* Kunth in Humb., *Bonpl. & Kunth, Nov. gen. sp.* 2: 110. 1817. TYPE: VENEZUELA. Amazonas: Río Orinoco, *Bonpland 924* (ISOTYPE: P!).

Venezuela (Amazonas, Apure); Rio Negro region of Brazil and Colombia; at river margin.

**\*PHYLLANTHUS SEQUOIFOLIUS** Jabl.

*P. sequoifolius* Jabl., *Mem. New York Bot. Gard.* 17: 93. 1967. TYPE: VENEZUELA. Bolívar: *Wurdack 34159* (HOLOTYPE: NY; ISOTYPE: NY).

Venezuela (Bolívar: Chimantá massif); in scrub forest.

**\*PHYLLANTHUS STROBILACEUS** Jabl.

*P. strobilaceus* Jabl., *Mem. New York Bot. Gard.* 17: 96. 1967. TYPE: VENEZUELA. Amazonas: Cerro de la Neblina, *Maguire et al. 42476* (HOLOTYPE: NY; ISOTYPES: GH!, NY, US!).

Venezuela (Amazonas, Bolívar); in montane forest on tepuis.

**\*PHYLLANTHUS SUBAPICALIS** Jabl.

*P. subapicalis* Jabl., *Mem. New York Bot. Gard.* 17: 101. 1967. TYPE: VENEZUELA. Amazonas: Cerro Sipapo, *Maguire & Politi 27549* (HOLOTYPE: NY; ISOTYPES: GH!, NY, US!).

Venezuela (Amazonas); in scrub-savanna and dwarf forest on tepuis.

**\*PHYLLANTHUS VENTAURI** Jabl.

*P. ventaurii* Jabl., *Mem. New York Bot. Gard.* 17: 104. 1967. TYPE: VENEZUELA. Amazonas: *Cowan & Wurdack 31229* (HOLOTYPE: NY; ISOTYPE: NY).

Venezuela (Amazonas: Serranía Parú); in scrub-savanna.

**\*\*PHYLLANTHUS ACIDUS** (L.) Skeels

*Averrhoa acida* L., *Sp. pl.* 428. 1753. *P. acidus* (L.) Skeels, *U.S.D.A. Bur. Pl. Industr. Bull.* 148: 17. 1909. TYPE: "India" (LINN 592-3).

Guyana, Surinam; cultivated for edible fruit; country of origin unknown.

**\*\*PHYLLANTHUS EMBLICA** L.

*P. emblica* L., *Sp. pl.* 982. 1753. TYPE: none designated.

Surinam; cultivated for medicinal use; native from S Asia to Indonesia.

11. **RICHERIA** Vahl, *Eclog. amer.* 1: 30, t. 4. 1796. TYPE: *R. grandis* Vahl.

**RICHERIA GRANDIS** Vahl

*R. grandis* Vahl, *Eclog. amer.* 1: 30, t. 4, 31, 32. 1796. TYPE: MONTSERRAT. *Ryan s.n.* (BM).

- Guarania laurifolia* Baill., Étude euphorb. 598. 1858.  
*R. laurifolia* (Baill.) Muell. Arg. in DC., Prodr. 15(2): 468. 1866. TYPE: BRAZIL. "Pará?" (HOLOTYPE: P!).
- R. grandis* var. *obovata* Muell. Arg. in DC., Prodr. 15(2): 468. 1866. *R. obovata* (Muell. Arg.) Pax & K. Hoffm., Pflanzenr. IV.147.XV.(Heft 81): 29. 1922. TYPE: VENEZUELA. Amazonas: *Spruce 3526* (ISOTYPES: GH!, NY).
- Amanoa racemosa* Poeppig & Endl., Nov. gen. sp. pl. 3: 23. 1845. *R. racemosa* (Poeppig & Endl.) Pax & K. Hoffm., Pflanzenr. IV.147.XV.(Heft 81): 28. 1922. TYPE: BRAZIL. *Spruce 2680* (ISOTYPES: K—3 sheets!).

Guyana, French Guiana; Venezuela (Amazonas, Bolívar); widespread in the West Indies, Panama and tropical South America; in montane, gallery and rain forest.

#### OLDFIELDIOIDEAE

12. PIRANHEA Baill., Adansonia 6: 236, t. 6. 1866. TYPE: *P. trifoliata* Baill.

#### PIRANHEA TRIFOLIATA Baill.

- P. trifoliata* Baill., Adansonia 6: 236, t. 6. 1866. TYPE: BRAZIL. Amazonas: *Spruce 1605* (ISOTYPES: G!, K—3 sheets!).

Guyana? (based on a single collection, *Par-ker s.n.*, from "Demerara"); Venezuela (Amazonas, Bolívar); Amazon and Orinoco Basins; in rain and gallery forest.

#### \*PIRANHEA LONGEPEDUNCULATA Jabl.

- P. longepedunculata* Jabl., Mem. New York Bot. Gard. 17: 122. 1967. TYPE: VENEZUELA. Bolívar: S of Tumeremo, *Steyermark 86568* (HOLOTYPE: NY).

Venezuela (Bolívar, Delta Amacuro); in rain forest.

13. \*PODOCALYX Klotzsch, Arch. Naturgesch. 7: 202. 1841. *Richeria* sect. *Podocalyx* (Klotzsch) Muell. Arg. in DC., Prodr. 15(2): 469. 1866. TYPE: *P. loranthoides* Klotzsch.

#### \*PODOCALYX LORANTHOIDES Klotzsch

- P. loranthoides* Klotzsch, Arch. Naturgesch. 7: 202. 1841. *Richeria loranthoides* (Klotzsch) Muell. Arg. in DC., Prodr. 15(2): 469. 1866. TYPE: none designated, possibly *Schomburgk 978* (K—3 sheets!) [Although described by Klotzsch as "arbor guja-

nensis," the species does not appear to occur in Guyana.]

Venezuela (Amazonas, Bolívar); Amazon Basin; in savanna and forest, often seasonally inundated.

#### ACALYPHOIDEAE

14. ACALYPHA L., Sp. pl. 1003. 1753. LECTOTYPE: *A. virginica* L.

#### ACALYPHA ARVENSIS Poeppig

- A. arvensis* Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 21. 1845. TYPE: BRAZIL. "Prov. Maynas ad Yurimaguas," *Poeppig 2215* (HOLOTYPE: W, photo F32497!).

Surinam, French Guiana; Venezuela (Amazonas); widespread neotropical weed.

#### ACALYPHA DIVERSIFOLIA Jacq.

- A. diversifolia* Jacq., Pl. hort. schoenbr. 2: 63, t. 244. 1797. TYPE: VENEZUELA. Caracas, cult. (n.v.).
- A. samydifolia* Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 21. 1845. TYPE: BRAZIL. "Amazonia," *Poeppig 2122* (HOLOTYPE: B—destroyed, photo F5317!; ISOTYPE: G!).

The Guianas; widespread in the Neotropics; in rain and seasonal forest.

#### ACALYPHA INDICA L.

- A. indica* L., Sp. pl. 1003. 1753. TYPE: *Herb. Hermann* (LECTOTYPE, designated by Radcliffe-Smith, in R. M. Polhill, editor, Flora of Tropical East Africa, Euphorbiaceae 1: 199. 1987: BM; ISOLECTOTYPE: BM).

Guyana, French Guiana; widespread pantropical weed; native to the Palaeotropics.

#### ACALYPHA LANCEOLATA Willd.

- A. lanceolata* Willd., Sp. pl. 4: 524. 1805. TYPE: Illustration 93-2 in Burman, Thes. zeylan. 205. 1737.
- A. boehmerioides* Miq., Fl. Ned. Ind., suppl. 1. 459. 1860. TYPE: INDONESIA. *Amman s.n.* (HOLOTYPE: U; ISOTYPE: K!).

Guyana; weed introduced from the Palaeotropics.

#### ACALYPHA MACROSTACHYA Jacq.

- A. macrostachya* Jacq., Pl. hort. schoenbr. 2: 63, t. 245. 1797. TYPE: none designated.

Guyana, Surinam; Venezuelan Guayana; widespread in the Neotropics; cultivated as ornamental in Surinam; in rain and montane forest, often in disturbed areas.

**ACALYPHA POIRETTII** Sprengel

*A. poiretii* Sprengel, Syst. veg. 3: 879. 1826. TYPE: none designated.

French Guiana; widespread neotropical weed.

**ACALYPHA SCANDENS** Benth.

*A. scandens* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 329. 1854. TYPE: BRAZIL. Pará: *Spruce 1000* (HOLOTYPE: K!).

Guyana, Surinam; Venezuelan Guayana; Amazon Basin; in rain forest, mostly riparian.

**ACALYPHA VILLOSA** Jacq.

*A. villosa* Jacq., Enum. syst. pl. 32. 1760. TYPE: not designated.

Guyana; Venezuela (Amazonas, Bolívar); widespread in the Neotropics; in seasonal and rain forest, mostly secondary.

**\*\*ACALYPHA AMENTACEA** subsp. **WILKESIANA** (Muell. Arg.) Fosberg

*A. wilkesiana* Muell. Arg. in DC., Prodr. 15(2): 817. 1866. *A. amentacea* ssp. *wilkesiana* (Muell. Arg.) Fosberg, Smithsonian Contr. Bot. 45: 10. 1980. SYNTYPES: FIJI. *U.S. Expl. Exped. under Capt. Wilkes* (K—2 sheets!, US!); *Seemann s.n.* (n.v.).

Guyana, Surinam; widely cultivated as ornamental in the tropics; native to Polynesia.

**\*\*ACALYPHA HISPIDA** N. L. Burm.

*A. hispida* N. L. Burm., Fl. indica 203. 1768. TYPE: Illustration t. 61 in N. L. Burm., Fl. indica, 1768.

The Guianas; widely cultivated as ornamental in the tropics; probably native to Malaysia or Melanesia.

15. **\*ACIDOTON** Sw., Prodr. 84. 1788. TYPE: *A. urens* Sw. *Gitara* Pax & K. Hoffm., Pflanzenr. IV.147.XVII.(Heft 85): 187. 1924. TYPE: *G. venezolana* Pax & K. Hoffm.

**\*ACIDOTON NICARAGUENSIS** (Hemsley) Webster

*Cleidion? nicaraguense* Hemsley, Biol. centr.-amer., Bot. 3: 130. 1883. *A. nicaraguensis* (Hemsley) Webster, Ann. Missouri Bot. Gard. 54: 191. 1967. SYNTYPES: NICARAGUA. *Tate 352* (K!), *455* (K!). *Gitara venezolana* Pax & K. Hoffm., Pflanzenr. IV.147.XVII.(Heft 85): 187. 1924. *A. venezolanus* (Pax & K. Hoffm.) Webster, Ann. Missouri Bot. Gard. 54: 191. 1967. TYPE: VENEZUELA. Carabobo: *Pittier 8836* (ISOTYPES: GH!, NY!, US—2 sheets!).

Venezuela (Amazonas, Bolívar); Nicaragua to Venezuela and Peru; in rain and montane forest.

16. **ADENOPHAEDRA** (Muell. Arg.) Muell. Arg. in Mart., Fl. bras. 11(2): 385. 1874. *Bernardia* section *Adenophaedra* Muell. Arg., Linnaea 34: 172. 1865. TYPE: *A. grandifolia* (Klotzsch) Muell. Arg.

**ADENOPHAEDRA GRANDIFOLIA** (Klotzsch) Muell. Arg.

*Tragia grandifolia* Klotzsch, London J. Bot. 2: 46. 1843. *A. grandifolia* (Klotzsch) Muell. Arg. in Mart., Fl. bras. 11(2): 386. 1874. TYPE: GUYANA. *Ri. Schomburgk 948* (HOLOTYPE: B—destroyed, photo F5272!; ISOTYPE: GH!). [*Ro. Schomburgk 593* (NY!) may possibly be a syntype.]

Guyana, French Guiana; Venezuela (Bolívar); Costa Rica to Peru and Brazil (Amazonas); mostly in submontane and montane forest.

17. **ALCHORNEA** Sw., Prodr. 98. 1788. TYPE: *A. latifolia* Sw.

**ALCHORNEA SCHOMBURGKII** Klotzsch

*A. schomburgkii* Klotzsch, London J. Bot. 2: 46. 1843. TYPE: GUYANA. *Schomburgk 591* (ISOTYPES: G!, K!, US!). *A. discolor* Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 19. 1845. SYNTYPES: BRAZIL. Amazonas: Ega, *Poeppig?* (n.v.). *A. brachygyne* Pax & K. Hoffm., Pflanzenr. IV.147.XIV.(Heft 68) Addit. VI: 20. 1919. SYNTYPES: BRAZIL. Roraima: *Ule 7719* (B—destroyed, photo F5264!), *8208* (B—destroyed, photo F5264!), G!, K!).

The Guianas; Venezuela (Amazonas); Amazon Basin; in savanna and forest on sandy soils.

**ALCHORNEA TRIPLINERVIA** (Sprengel) Muell. Arg.

*Antidesma triplinervium* Sprengel, Neue Entdeck. Pflanzenk. 2: 116. 1821. *A. triplinervia* (Sprengel) Muell. Arg. in DC., Prodr. 15(2): 909. 1866. TYPE: BRAZIL. Rio de Janeiro: *Gardner 617* (NEOTYPE, designated by Webster, Ann. Missouri Bot. Gard. 75: 1101. 1988: G-DC).

*A. triplinervia* var. *laevigata* Muell. Arg. in DC., Prodr. 15(2): 909. 1866. TYPE: BRAZIL. Amazonas: *Spruce 2117* (ISOTYPES: K—3 sheets!).

The Guianas; Venezuela (Amazonas, Bolívar); widespread in tropical and subtropical South America, and probably Panama (Webster & Huft, 1988); in rain and montane forest.

\***ALCHORNEA CASTANEIFOLIA** (Willd.) Adr. Juss.

*Hermesia castaneifolia* Willd., Sp. pl., ed. 4, 4: 809. 1805. *A. castaneifolia* (Willd.) Adr. Juss., Euphorb. gen. 42. 1824. TYPE: VENEZUELA. "Orinoci prope Apure" (n.v.).

Venezuela (Amazonas, Bolívar); Orinoco Basin, Amazon Basin and Paraguay; in rain forest, on sandy river banks.

18. **ALCHORNEOPSIS** Muell. Arg., *Linnaea* 34: 156. 1865. TYPE: *A. floribunda* (Benth.) Muell. Arg.

**ALCHORNEOPSIS FLORIBUNDA** (Benth.) Muell. Arg.

*A. glandulosa* var. ? *floribunda* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 331. 1854. *A. floribunda* (Benth.) Muell. Arg., *Linnaea* 34: 156. 1865. TYPE: BRAZIL. Amazonas: *Spruce 2681* (HOLOTYPE: K!; ISOTYPES: G!, GH!, K!, NY!).

*A. trimera* Lanj., Euphorb. Surinam 23, fig. 4. 1931. TYPE: SURINAM. *B.W. 2696* (ISOTYPES: K!, NY, US!).

The Guianas; Venezuela (Bolívar); widespread from Costa Rica and the West Indies to the Amazon Basin; in rain forest.

19. **APARISTHMIUM** Endl., Gen. pl. 1112. 1840. TYPE: *A. cordatum* (Adr. Juss.) Baill.

**APARISTHMIUM CORDATUM** (Adr. Juss.) Baill.

*Conceveibum cordatum* Adr. Juss., Euphorb. gen. 43, t. 13. 1824. *A. cordatum* (Adr. Juss.) Baill., Adan-

sonia 5: 307. 1865. TYPE: "Guiane," *Herb. Richard* (HOLOTYPE: P!).

The Guianas; Venezuelan Guayana; widespread in tropical South America; in rain forest.

20. \***ASTROCOCCUS** Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 327. 1854. TYPE: *A. cornutus* Benth.

\***ASTROCOCCUS CORNUTUS** Benth.

*A. cornutus* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 327. 1854. TYPE: BRAZIL. Amazonas: *Spruce 2090* (HOLOTYPE: K!; ISOTYPES: BM!, G-DC!, GH!, K!, NY!, P!).

Venezuela (Amazonas); upper Rio Negro region of Brazil; in blackwater seasonally inundated forest.

21. **BERNARDIA** Miller, Gard. Dict. abr. ed. 4. 1754. LECTOTYPE: *B. carpinifolia* Griseb.

**BERNARDIA SIDOIDES** (Klotzsch) Muell. Arg.

*Traganthus sidoides* Klotzsch, Arch. Naturgesch. 7: 188. fig. 9A. 1841. *B. sidoides* (Klotzsch) Muell. Arg., *Linnaea* 34: 177. 1865. TYPE: GUYANA. Rubbish at Anna-y, *Ro. Schomburgk 134* (ISOTYPES: G—2 sheets!, K—2 sheets!).

Guyana; Venezuela (Guárico), Brazil (Bahia, Pernambuco); in open disturbed sites.

\***BERNARDIA AMAZONICA** Croizat

*B. amazonica* Croizat, J. Arnold Arbor. 24: 166. 1943. TYPE: VENEZUELA. Amazonas: Puerto Ayacucho, *Williams 13142* (HOLOTYPE: A!; ISOTYPES: A!, US!).

Venezuela (Amazonas, Bolívar); in savanna and rocky areas at low altitude.

22. **CAPERONIA** A. St. Hil., Hist. pl. marq. Brésil 244. 1826. LECTOTYPE: *C. castaneifolia* (L.) A. St. Hil. (*Croton castaneifolius* L.).

**CAPERONIA CORCHOROIDES** Muell. Arg.

*C. corchoroides* Muell. Arg., *Linnaea* 34: 153. 1865. SYNTYPES: SURINAM. *Hostmann 1084* (B, photo F5218!, G, K!) [probably conspecific with *C. palustris*].

Surinam.

CAPERONIA PALUDOSA Klotzsch

*C. paludosa* Klotzsch, London J. Bot. 2: 51. 1843. TYPE: GUYANA. *Schomburgk 109* (ISOTYPE: K!) [possibly conspecific with *C. castaneifolia* (L.) A. St. Hil. (Webster & Huft, 1988)].

Guyana, French Guiana; Mexico to N South America; in marshes and wet savanna.

CAPERONIA PALUSTRIS (L.) A. St. Hil.

*Croton palustris* L., Sp. pl. 1004. 1753. *Caperonia palustris* (L.) A. St. Hil., Hist. pl. remarq. Brésil 245. 1824. TYPE: MEXICO. "Vera Cruce" (n.v.).

The Guianas; widespread weed in tropical and warm temperate regions of the New World; in open wet areas.

CAPERONIA STENOPHYLLA Muell. Arg.

*C. stenophylla* Muell. Arg. in Mart., Fl. bras. 11(2): 326. 1874. TYPE: BRAZIL. Minas Gerais: *Warming s.n.* (HOLOTYPE: GH!).

Guyana, Surinam; Brazil (Minas Gerais); in wet savanna.

23. CHAETOCARPUS Thwaites, Hooker's J. Bot. Kew Gard. Misc. 6: 300, t. 10A. 1854. TYPE: *C. castanocarpus* (Roxb.) Thwaites (*Adelia castanocarpa* Roxb.).

CHAETOCARPUS SCHOMBURGKIANUS (Kuntze) Pax & K. Hoffm.

*Gaedawakka schomburgkiana* Kuntze, Revis. gen. pl. 2: 606. 1891. *C. schomburgkianus* (Kuntze) Pax & K. Hoffm., Pflanzenr. IV.147.IV.(Heft 52): 10. 1912. TYPE: none designated, possibly *Schomburgk 776* (K!) from Guyana.

*C. williamsii* Steyermark, Fieldiana, Bot. 28: 306. 1952. TYPE: VENEZUELA. Amazonas: Río Guainía, *Williams 14312* (ISOTYPES: G!, NY!).

The Guianas; Venezuelan Guayana; Venezuela (Monagas), Brazil (Amazonas, Amapá); in rainforest.

\*CHAETOCARPUS STIPULARIS Gleason

*C. stipularis* Gleason, Bull. Torrey Bot. Club 56: 397. 1929. TYPE: VENEZUELA. Bolívar: *Tate 15* (NY!) [possibly a high altitude variant of *C. schomburgkianus*].

Venezuela (Bolívar); in savanna and gallery forest on tepuis.

24. CONCEVEIBA Aubl., Hist. pl. Guiane 2: 924, t. 353. 1775. TYPE: *C. guianensis* Aubl.

*Alchornea* section *Conceveibastrum* Muell. Arg. in Mart., Fl. bras. 11(2): 375. 1874. *Conceveibastrum* (Muell. Arg.) Pax & K. Hoffm., Pflanzenr. IV.147.VII.(Heft 63): 217. 1914. TYPE: *C. martianum* (Baill.) Pax & K. Hoffm.

CONCEVEIBA GUIANENSIS Aubl.

*C. guianensis* Aubl., Hist. pl. Guiane 924, t. 353. 1775. TYPE: FRENCH GUIANA. None designated.

The Guianas; Venezuelan Guayana; Amazon Basin; in rain forest.

CONCEVEIBA HOSTMANNII Benth.

*C. hostmannii* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 332. 1854. TYPE: SURINAM. *Hostmann 1261* (HOLOTYPE: K!; ISOTYPE: K!).

Surinam; Brazil (Amazonas); in rain forest.

CONCEVEIBA MARTIANA Baill.

*Conceveiba martiana* Baill., Adansonia 5: 221. 1865. *Conceveibastrum martianum* (Baill.) Pax & K. Hoffm., Pflanzenr. 63: 217. 1914. TYPE: BRAZIL. *Martius s.n.* (n.v.).

*C. megalophylla* Muell. Arg., Linnaea 34: 167. 1866. TYPE: BRAZIL. Amazonas: *Poeppig s.n.* (n.v.).

French Guiana; Venezuela (Amazonas); Amazon Basin; in rain forest.

\*CONCEVEIBA PTARIANA (Steyermark) Jabl.

*Conceveibastrum ptarianum* Steyermark, Fieldiana, Bot. 28: 308. 1952. *Conceveiba ptariana* (Steyermark) Jabl., Mem. New York Bot. Gard. 17: 134. 1967. TYPE: VENEZUELA. Bolívar: *Steyermark 60021* (ISOTYPE: NY).

Venezuela (Amazonas, Bolívar); in montane forest on tepuis.

25. DALECHAMPIA L., Sp. pl. 1054. 1753. TYPE: *D. scandens* L.

DALECHAMPIA AFFINIS Muell. Arg.

*D. affinis* Muell. Arg., Linnaea 34: 223. 1865. TYPE:

FRENCH GUIANA. *Sagot s.n.* (LECTOTYPE, designated by Webster & Armbruster, 1991: G).

The Guianas; Venezuela (Amazonas, Bolívar); Venezuela (Apure), Brazil (middle to lower Amazon Basin, E to Ceará); in rain forest, scrub, and savanna.

#### DALECHAMPIA ATTENUISTYLUS Armbruster

*D. attenuistylus* Armbruster, Brittonia 41: 44, fig. 1. 1989. TYPE: VENEZUELA. Bolívar: *Armbruster et al. 87-153* (HOLOTYPE: MO; ISOTYPES: ALA, MY, NY, VEN).

French Guiana; Venezuela (Bolívar); in rain forest.

#### DALECHAMPIA BROWNSBERGENSIS Webster & Armbruster

*D. brownsbergensis* Webster & Armbruster, Syst. Bot. 7: 484. 1982. TYPE: SURINAM. *Webster & Armbruster 24124* (HOLOTYPE: DAV; ISOTYPES: ALA, BBS, GH, MO, NY).

Surinam; Venezuela (Bolívar, Delta Amacuro); possibly also in Paraíba, Brazil (Webster & Armbruster, 1991); in rain forest.

#### DALECHAMPIA DIOSCOREIFOLIA Poeppig

*D. dioscoreifolia* Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 20. 1841. TYPE: PERU. *Poeppig 2163* (LECTOTYPE, designated by Webster & Armbruster, 1991: W).

French Guiana; Venezuela (Amazonas, Bolívar); Nicaragua to Amazon Basin; in rain forest.

#### DALECHAMPIA FRAGRANS Armbruster

*D. fragrans* Armbruster, J. Linn. Soc. Bot. 105: 137–177. 1991. TYPE: SURINAM. *Armbruster & Herzig 85-101* (HOLOTYPE: MO; ISOTYPES: ALA, NY, UVS).

Surinam, French Guiana; in rain forest.

#### DALECHAMPIA MAGNOLIIFOLIA Muell. Arg.

*D. magnoliifolia* Muell. Arg., Linnaea 34: 219. 1865. TYPE: BRAZIL. Pará: *Martius s.n.* (LECTOTYPE, designated by Webster & Armbruster, 1991: M).

French Guiana; Venezuela (Amazonas, Bolívar); Amazon Basin; in rain forest.

#### DALECHAMPIA MICRANTHA Poeppig

*D. micrantha* Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 19. 1841. TYPE: BRAZIL. Amazonas: *Poeppig 2807* (HOLOTYPE: W; ISOTYPE: K).

Surinam, French Guiana; Venezuela (Bolívar); Amazon Basin; in rain forest.

#### DALECHAMPIA PARVIBRACTEATA Lanjou

*D. parvibracteata* Lanjou, Recueil Trav. Bot. Néerl. 31: 463. 1934. TYPE: GUYANA. *Jenman 4088* (HOLOTYPE: K; ISOTYPE: BRG!).

Guyana, Surinam; Venezuela (Bolívar); Brazil (Amapá, N Pará); in rain forest.

#### DALECHAMPIA SCANDENS L.

*D. scandens* L., Sp. pl. 1054. 1753. TYPE: WEST INDIES. Illustration 101 in Plumier, Pl. amer. 5 (original plate at P).

The Guianas; Venezuelan Guayana; widespread in the Neotropics; in disturbed areas.

#### DALECHAMPIA TILIIFOLIA Lam.

*D. tiliifolia* Lam., Encycl. 2: 257. 1786. TYPE: without definite locality, *Herb. Jussieu* (P).

French Guiana; Venezuelan Guayana; widespread in the Neotropics; in rain and seasonal forest.

#### \*DALECHAMPIA LIESNERI Huft

*D. liesneri* Huft, Ann. Missouri Bot. Gard. 76: 1078. 1989. TYPE: VENEZUELA. Amazonas: *Leisner & Holst 21244* (HOLOTYPE: MO; ISOTYPES: U, VEN).

Venezuela (Amazonas); in rain forest.

#### \*DALECHAMPIA MEGACARPA Armbruster

*D. megacarpa* Armbruster, Brittonia 41: 47, fig. 2. 1989. TYPE: VENEZUELA. Bolívar: *Armbruster et al. 85-115* (HOLOTYPE: MO; ISOTYPES: ALA, MY, NY, VEN).

Venezuela (Amazonas, Bolívar); in rain forest.

#### \*DALECHAMPIA PAPILLISTIGMA Armbruster

*D. papillistigma* Armbruster, Brittonia 41: 49, fig. 3. 1989. TYPE: VENEZUELA. Bolívar: *Armbruster et al. 87-155* (HOLOTYPE: MO; ISOTYPES: ALA, MY, NY, VEN).

Venezuela (Bolívar); in rain forest.

## \*DALECHAMPIA TENUIRAMEA Muell. Arg.

*D. tenuiramea* Muell. Arg., *Linnaea* 34: 222. 1865.  
TYPE: BRAZIL. Amazonas: *Riedel 22* (LECTOTYPE, designated by Webster & Armbruster, 1991: G).

Venezuela (Amazonas); Bolivia and W Brazil; in seasonal and evergreen forests, on granitic outcrops in Venezuela.

26. GAVARRETIA Baill., *Adansonia* 1: 185, t. 7. 1860. TYPE: *G. terminalis* Baill.

## GAVARRETIA TERMINALIS Baill.

*G. terminalis* Baill., *Adansonia* 1: 185, t. 7. 1860.  
TYPE: VENEZUELA. Amazonas: *Spruce 3087* (HOLOTYPE: P!; ISOTYPES: GH!, NY, P!).

Guyana; Venezuela (Amazonas, Bolívar); Brazil (Amazonas), Peru; in rain and montane forest.

27. HAEMATOSTEMON (Muell. Arg.) Pax & K. Hoffm., *Pflanzenr.* IV.147-IX.(Heft 68): 31. 1919. *Astrococcus* sect. *Haematostemon* Muell. Arg., *Linnaea* 34: 157. 1865. TYPE: *H. coriaceus* (Baill.) Pax & K. Hoffm.

## HAEMATOSTEMON GUIANENSIS Sandw.

*H. guianensis* Sandw., *Kew Bull.* 1950: 133. 1950.  
TYPE: GUYANA. Eagle Mt., *Fanshawe 1123* = *FD 3859* (HOLOTYPE: K!; ISOTYPES: FDG!, K!, NY!, U!).

Guyana (near Mahdia); in submontane forest.

## \*HAEMATOSTEMON CORIACEUS (Baill.) Pax &amp; K. Hoffm.

*Astrococcus coriaceus* Baill., *Adansonia* 5: 308. 1864.  
*H. coriaceus* (Baill.) Pax & K. Hoffm., *Pflanzenr.* IV.147.IX.(Heft 68): 32. 1919. TYPE: VENEZUELA. Amazonas: Río Guainía, *Spruce 3759* (HOLOTYPE: K!; ISOTYPES: BM!, G!, GH!, K!, NY!, P!).

Venezuela (Amazonas); in blackwater swamp forest.

28. OMPHALEA L., *Syst. nat. ed.* 10, 1264. 1759. TYPE: *O. triandra* L.

## OMPHALEA DIANDRA L.

*O. diandra* L., *Syst. nat. ed.* 10, 1264. 1759. TYPE: JAMAICA. None designated.

The Guianas; Venezuela (Delta Amacuro); widespread in the Neotropics; in rain forest.

29. PERA Mutis, *Kongl. Svenska Vetensk. Acad. Handl.* 5: 299, t. 8. 1784. TYPE: *P. arborea* Mutis.

## PERA BICOLOR (Klotzsch) Muell. Arg.

*Peridium bicolor* Klotzsch, *London J. Bot.* 2: 44. 1843. *Pera bicolor* (Klotzsch) Muell. Arg. in DC., *Prodr.* 15(2): 1028. 1866. TYPE: VENEZUELA. Amazonas: *Schomburgk I 114* (HOLOTYPE: presumably B—destroyed; LECTOTYPE, here designated: G-DC!; ISOLECTOTYPES: G—2 sheets!, W—photo F32519!, K—2 sheets!, P—2 sheets!).

*Pera schomburgkiana* Muell. Arg. in DC., *Prodr.* 15(2): 1027. 1866. SYNTYPES: GUYANA/VENEZUELA. Roraima, *Ri. Schomburgk 901* (n.v.), *905* (B—destroyed, photo F5376!); *Ro. Schomburgk II 580* (G—2 sheets!, G-DC!, P—2 sheets!). [Bentham (Hooker's *J. Bot. Kew Gard. Misc.* 6: 323. 1854), to whom the epithet is usually attributed, mentioned the species only in passing and did not validly publish the name as a species of *Peridium*.]

Guyana, Surinam; Venezuela (Amazonas, Bolívar); Brazil (Amazonas); in savanna and seasonal forest on sandy soils.

## PERA DECIPIENS (Muell. Arg.) Muell. Arg.

*Peridium decipiens* Muell. Arg., *Linnaea* 34: 201. 1865. *Pera decipiens* (Muell. Arg.) Muell. Arg. in DC., *Prodr.* 15(2): 1029. 1866. *Peridium bicolor* var. *nitidum* Benth., Hooker's *J. Bot. Kew Gard. Misc.* 6: 323. 1854. *Pera nitida* (Benth.) Jabl., *Mem. New York Bot. Gard.* 17: 148. 1967. SYNTYPES: GUYANA. *Ri. Schomburgk 1070* (B—destroyed; LECTOTYPE, here designated: K!; ISOLECTOTYPE: G—fragment!); *1071* (B—destroyed, K!). [*P. nitida*, the name currently in use, must be rejected in favor of *P. decipiens*, an earlier species name based on the same type.]

Guyana, Surinam; Venezuela (Amazonas, Bolívar); Amazon Basin; in seasonal and gallery forest.

## PERA GLABRATA (Schott) Baill.

*Peridium glabratum* Schott in Spreng., *Syst. veg.* 4(2) (curae post.): 410. 1827. *P. glabrata* (Schott) Baill., *Étude Euphorb.* 434. 1858. TYPE: none designated. *Peridium ferrugineum* Schott in Spreng., *Syst. veg.* 4(2) (curae post.): 410. 1827. *Pera ferruginea* (Schott) Muell. Arg. in DC., *Prodr.* 15(2): 1031. 1866. TYPE: none designated.

The Guianas; Venezuelan Guayana; Amazon Basin and SE Brazil; in seasonal forest, mostly on sandy soils.

\*PERA CITRIODORA Baill.

*P. citriodora* Baill., *Adansonia* 5: 222. 1865. TYPE: VENEZUELA. Amazonas: near San Carlos, Río Negro, *Spruce* 3686 (HOLOTYPE: P!; ISOTYPES: G—2 sheets!, G-DC—2 sheets!, GH!, K—2 sheets!, MO!, NY!, P!).

Venezuela (Amazonas); Amazonian Brazil; in forest and scrub on sandy soils.

\*PERA DISTICHOPHYLLA (Mart.) Baill.

*Spixia distichophylla* Mart., *Flora* 24 (Bl. 2): 30. 1841. *P. distichophylla* (Mart.) Baill., *Étude Euphorb.* 434. 1858. TYPE: BRAZIL. Amazonas: *Martius* s.n. (n.v.).

Venezuela (Amazonas, Bolívar); Amazonian Brazil; in rain and swamp forest, often on sandy soils. [*Schomburgk* 918 appears to be mistakenly recorded as if from Guyana but it is most likely from Amazonas, Venezuela.]

\*PERA TOMENTOSA (Benth.) Muell. Arg.

*Peridium bicolor* var. *tomentosum* Benth., *Hooker's J. Bot. Kew Gard. Misc.* 6: 323. 1854. *Pera tomentosa* (Benth.) Muell. Arg. in DC., *Prodr.* 15(2): 1028. 1866. TYPE: BRAZIL. Amazonas: *Spruce* 1820 (LECTOTYPE, here designated: K!; ISOLECTOTYPES: G!, G-DC!, K!, NY!, P—2 sheets!). [Bentham cited two discordant types, *Schomburgk* 114 (the type of *P. bicolor*) and *Spruce* s.n. from "Capoeiras, near Barra do Rio Negro." *Spruce* 1820 cited by Mueller was collected at that locality in 1851. (*Spruce* 3774 was also collected on the Rio Negro, but not until Dec 1854, later than the publication of Bentham's description.) *Pera tomentosa* is treated by all later authors in the sense of *Spruce* 1820, a species very distinct from *P. bicolor* represented by *Schomburgk* 114. For this reason, *P. bicolor* var. *tomentosa* is lectotypified by *Spruce* 1820, and *Schomburgk* 114 is excluded as a type of the taxon. "Pera cinerea," an older species name used by Baillon, was not validly published and, therefore, is unavailable for use.]

Venezuela (Amazonas, Bolívar); Amazonian Brazil; in forest on sandy soils.

30. PLUKENETIA L., *Sp. pl.* 1192. 1753. TYPE: *P. volubilis* L.

*Apodandra* Pax & K. Hoffm., *Pflanzenr.* IV.147-

IX.(Heft 68): 20. 1919. LECTOTYPE: *A. lorentensis* (Ule) Pax & K. Hoffm.  
*Elaeophora* Ducke, *Arch. Jard. Bot. Rio de Janeiro* 4: 112. 1925. TYPE: *E. abutifolia* Ducke.

PLUKENETIA LORETENSIS Ule

*P. lorentensis* Ule, *Verh. Bot. Vereins Prov. Brandenburg* 50(Abh.): 81. 1908. *Apodandra lorentensis* (Ule) Pax & K. Hoffm., *Pflanzenr.* IV.147.IX.(Heft 68): 21. 1919. TYPE: PERU. *Ule* 6837 (HOLOTYPE: G!).

Guyana; Venezuela (Amazonas, Bolívar); W Amazon Basin; in rain forest.

PLUKENETIA POLYADENIA Muell. Arg.

*P. polyadenia* Muell. Arg. in *Mart.*, *Fl. bras.* 11(2): 334. 1874. *Elaeophora polyadenia* (Muell. Arg.) Ducke, *Arch. Jard. Bot. Rio de Janeiro* 5: 146. 1930. TYPE: BRAZIL. *Poeppig* 2385 (HOLOTYPE: W, F—fragment!; ISOTYPE: G!).  
*Elaeophora abutifolia* Ducke, *Arch. Jard. Bot. Rio de Janeiro* 4: 112. 1925. *P. abutifolia* (Ducke) Pax & K. Hoffm., *Pflanzenfam.*, ed. 2, 19c: 141. 1931. SYNTYPES: BRAZIL. Pará: *Ducke* HJBR-17892 (n.v.), *Kuhlmann* HJBR-17895 (U), HJBR-17893 (P!).

The Guianas; Venezuela (Bolívar, Delta Amacuro); Amazon Basin; in rain forest.

PLUKENETIA VERRUCOSA Smith

*P. verrucosa* Smith, *Nova Acta Regiae Soc. Sci. Upsal.* 6: 4. 1799. TYPE: SURINAM. *Herb. Linnaeus* (HOLOTYPE: S).

The Guianas; Brazil (Amapá, N Amazonas, N Pará); disturbed areas in rain forest.

PLUKENETIA VOLUBILIS L.

*P. volubilis* L., *Sp. pl.* 1192. 1753. TYPE: WEST INDIES. Illustration t. 13 (lower half) in Plumier, *Nov. pl. amer.* 47. 1703.

Surinam; Venezuela (Amazonas); widespread in tropical South America and the Lesser Antilles; disturbed areas in rain forest.

\*PLUKENETIA MULTIGLANDULOSA Jabl.

*P. multiglandulosa* Jabl., *Mem. New York Bot. Gard.* 17: 143. 1967. TYPE: VENEZUELA. Amazonas: Cerro Parú, *Cowan & Wurdack* 31400 (HOLOTYPE: NY!; ISOTYPES: NY!, US!).

Venezuela (Amazonas); in montane forest on tepuis.



**\*PLUKENETIA PENNINERVIA** Muell. Arg.

*P. penninervia* Muell. Arg., *Linnaea* 34: 158. 1864.  
TYPE: VENEZUELA. Near Biscaina, *Fendler 2412*  
(HOLOTYPE: G-DC!; ISOTYPES: GH!, MO!).

Venezuela (Bolívar, Delta Amacuro); Mexico to Venezuela; disturbed areas in seasonal and rain forest.

31. **POGONOPHORA** Miers ex Benth.,  
Hooker's J. Bot. Kew Gard. Misc. 6: 372.  
1854. TYPE: *P. schomburgkiana* Miers ex  
Benth.

**POGONOPHORA SCHOMBURGKIANA** Miers ex  
Benth.

*P. schomburgkiana* Miers ex Benth., Hooker's J. Bot.  
Kew Gard. Misc. 6: 373. 1854. SYNTYPES: BRA-  
ZIL. *Ro. Schomburgk I 859* (G!); *Spruce s.n.* (n.v.);  
*Gardner s.n.* (n.v.); *Swainson, Herb. Hooker* (n.v.).

The Guianas; Venezuela (Amazonas, Bolívar); Amazonian and NE Brazil; in rain forest.

32. **\*\*RICINUS** L., Sp. pl. 1007. 1753.  
TYPE: *R. communis* L.

**\*\*RICINUS COMMUNIS** L.

*R. communis* L., Sp. pl. 1007. 1753. TYPE: *Hort. Cliff.* p. 450 (LECTOTYPE, previously designated: BM).

The Guianas; cultivated and naturalized throughout the Neotropics; native to tropical Africa.

33. **TRAGIA** L., Sp. pl. 980. 1753.  
LECTOTYPE: *T. volubilis* L.

**TRAGIA FENDLERI** Muell. Arg.

*T. fendleri* Muell. Arg., *Linnaea* 34: 179. 1865. TYPE: VENEZUELA. *Fendler 1208* (HOLOTYPE: G-DC!; ISOTYPES: G!, GH!, MO!).

Guyana; Venezuelan Guayana; Venezuela and Brazil (Amazonas); in savanna and at savanna/forest edge.

**TRAGIA LESSERTIANA** (Baill.) Muell. Arg.

*Bia lessertiana* Baill., *Étude Euphorb.* 502. 1858. *T. lessertiana* (Baill.) Muell. Arg., *Linnaea* 34: 178.

1865. TYPE: "herb. Deless." (HOLOTYPE: G-24555!, fragment at F!).

The Guianas; Brazil (Amapá, Maranhão); disturbed areas in rain forest.

**TRAGIA VOLUBILIS** L.

*T. volubilis* L., Sp. pl. 980. 1753. TYPE: JAMAICA. Illustration in Sloane, *Voy. Jamaica* 1: t. 82, fig. 1. 1707.

Surinam, French Guiana; widespread neotropical weed, apparently absent from central Amazonia; in open and disturbed areas.

## CROTONOIDEAE

34. **\*\*ALEURITES** J. R. & G. Forster,  
Char. gen. pl. 111, t. 56. 1776. TYPE: *A. triloba* J. R. & G. Forster.

**\*\*ALEURITES MOLUCCANA** (L.) Willd.

*A. moluccana* (L.) Willd., Sp. pl. 4: 590. 1805. *Jatropha moluccana* L., Sp. pl. 1006. 1753. TYPE: CEYLON. *Hermann Herb.* III: 27 (LECTOTYPE, previously designated: BM).

*A. triloba* J. R. & G. Forster, Char. gen. pl. 111, t. 56. 1776. TYPE: TONGA. *Forster 214.360* (HOLOTYPE: BM).

Guyana; cultivated throughout the tropics; native to tropical Asia and Polynesia.

35. **CNIDOSCOLUS** Pohl, Pl. bras. icon. descr. 1: 156. 1827. LECTOTYPE: *C. hamosus* Pohl.

**CNIDOSCOLUS URENS** (L.) Arthur

*C. urens* (L.) Arthur, *Torreya* 21: 11. 1921. *Jatropha urens* L., Sp. pl. 1007. 1753. TYPE: "Brasilia" (n.v.).

The Guianas, Venezuelan Guayana; widespread in the Neotropics; in disturbed areas and on rocky outcrops.

36. **\*\*CODIAEUM** Rumph. ex Adr. Juss.,  
Euphorb. gen. 33, t. 9. 1824. TYPE: *C. variegatum* (L.) Adr. Juss.

**\*\*CODIAEUM VARIEGATUM** (L.) Adr. Juss.

*C. variegatum* (L.) Adr. Juss., *Euphorb. gen.* 111, t. 9, fig. 30. 1824. *Croton variegatus* L., Sp. pl. ed.

3, 1424. 1764. TYPE: Plate 25 in Rumph., *Herb. amboin.* 4: 68. 1743.

The Guianas; ornamental cultivated throughout the tropics; native to Indomalaysia.

37. CROTON L., *Sp. pl.* 1004. 1753.  
LECTOTYPE: *C. aromaticus* L.

*Julocroton* Martius, *Flora* 20: 119. 1837. TYPE: *J. phagedaenicus* Martius.

CROTON ARGYROPHYLLOIDES Muell. Arg.

*C. argyrophyloides* Muell. Arg., *Linnaea* 34: 96. 1865.  
TYPE: BRAZIL. Bahia: *Blanchet 2835* (n.v.).

French Guiana (collections most closely resemble this species); E Brazil; in secondary forest.

CROTON CUNEATUS Klotzsch

*C. cuneatus* Klotzsch, *London J. Bot.* 2: 49. 1843.  
SYNTYPES: GUYANA. *Schomburgk s.n.* (B—destroyed, photo F5079!); BRAZIL. *Poeppig 2593* (G!), *Martius s.n.* (n.v.).

*C. surinamensis* Muell. Arg., *Linnaea* 34: 82. 1865.  
TYPE: possibly *Hostmann 1094* (B—destroyed, photo F5184!; G!).

The Guianas; Venezuela (Bolívar); Amazon Basin; in rain forest, often riparian.

CROTON ESSEQUIBOENSIS Klotzsch

*C. essequiboensis* Klotzsch, *London J. Bot.* 2: 49. 1843. *C. populifolius* Mill. var. *essequiboensis* (Klotzsch) Muell. Arg. in DC., *Prodr.* 15(2): 654. 1866. TYPE: GUYANA. Berbice R., *Schomburgk 33* (ISOTYPES: G—2 sheets!) [possibly conspecific with *C. populifolius* of N South America and the West Indies].

Guyana; Venezuela (Bolívar).

CROTON GALEOPSIFOLIUS Lanj.

*C. galeopsifolius* Lanj., *Receuil Trav. Bot. Néerl.* 31: 455. 1934. TYPE: GUYANA. Potaro R., *Im Thurn s.n.* (ISOTYPE: K!).

Guyana.

CROTON GUIANENSIS Aubl.

*C. guianensis* Aubl., *Hist. pl. Guiane* 2: 882, t. 339. 1775. TYPE: FRENCH GUIANA. *Poiteau s.n.* (B—destroyed, photo F5110!).

French Guiana.

CROTON HIRTUS L'Hér.

*C. hirtus* L'Hér., *Prosp. Stirp. nov.* 17, t. 9. 1785. *C. glandulosus* subsp. *hirtus* (L'Hér.) Croizat, *Bull. Torrey Bot. Club* 75: 401. 1948. TYPE: FRENCH GUIANA. *Richard* (HOLOTYPE: P!).

The Guianas; Venezuela (Delta Amacuro); widespread neotropical weed.

CROTON HOSTMANNII Miquel

*C. hostmannii* Miquel, *Linnaea* 21: 477. 1848. TYPE: SURINAM. *Hostmann 1106* (HOLOTYPE: U; ISOTYPES: G!, P!, US!).

The Guianas; Venezuela (Amazonas, Bolívar); in savanna.

CROTON KAIETEURI Jabl.

*C. kaieteuri* Jabl., *Mem. New York Bot. Gard.* 12: 155. 1965. TYPE: GUYANA. Kaieteur Plateau, *Maguire & Fanshawe 23352* (HOLOTYPE: NY; ISOTYPE: US!) [probably conspecific with *C. cuneatus*].

Guyana; riparian forest.

CROTON LOBATUS L.

*C. lobatus* L., *Sp. pl.* 1005. 1753. TYPE: MEXICO. None designated.

The Guianas; Venezuela (Bolívar, Delta Amacuro); widespread neotropical weed.

CROTON LONGIRADIATUS Lanjouw

*C. longiradiatus* Lanjouw, *Euphorbiaceae of Surinam* 19, fig. 3a–c. 1931. TYPE: SURINAM. Brownsberg Top, *B.W. 6711* (HOLOTYPE: U, photo NY6031!; ISOTYPE: U).

Surinam, French Guiana; in submontane forest.

CROTON MACRADENIS Görts & Punt

*C. macradenis* Görts & Punt, *Bull. Mus. Natl. Hist. Nat., B, Adansonia* 5: 199. 1983. TYPE: FRENCH GUIANA. Sinnamary, *Granville B-5470* (HOLOTYPE: CAY; ISOTYPES: U, P).

Surinam, French Guiana; in savanna and on sandy river banks.

CROTON MATOURENSIS Aubl.

*C. matourensis* Aubl., *Hist. pl. Guiane* 2: 880, t. 338. 1775. TYPE: FRENCH GUIANA. (n.v.).

The Guianas; Venezuela (Amazonas, Bolívar); Peru, Brazil (Pará); savanna and forest on sandy soils at low to middle altitudes.

**CROTON NERVOSUS** Klotzsch

*C. nervosus* Klotzsch, London J. Bot. 2: 50. 1843.  
*C. argyrophyllus* Muell. Arg., Linnaea 34: 96. 1865.  
SYNTYPES: GUYANA. Takutu R., *Ri. Schomburgk* 802 (US!); Essequibo R., *Ro. Schomburgk* 44 (G!).

Guyana; Venezuela (Amazonas); in rain and gallery forest.

**CROTON NUNTIANS** Croizat

*C. nuntians* Croizat, Bull. Torrey Bot. Club 75: 402. 1948. TYPE: GUYANA. Potaro River Gorge, *Maguire & Fanshawe 23054A* (ISOTYPES: NY, US!).

Guyana, French Guiana; Venezuela (Delta Amacuro); in rain forest, often secondary.

**CROTON ORINOCOENSIS** Muell. Arg.

*C. orinocoensis* Muell. Arg. in Mart., Fl. bras. 11(2): 135. 1873. TYPE: VENEZUELA. Amazonas: Orinoco R., *Spruce 3723* (n.v.).

Guyana; Venezuela (Amazonas); in gallery forest.

**CROTON PAKARAIMAE** Jabl.

*C. pakaraimae* Jabl., Mem. New York Bot. Gard. 12: 159. 1965. TYPE: GUYANA. Kopinang Savanna, *Maguire et al. 46023A* (HOLOTYPE: NY; ISOTYPES: NY, US!).

Guyana (Pakaraima Mts); in montane forest.

**CROTON PALANOSTIGMA** Klotzsch

*C. palanostigma* Klotzsch, London J. Bot. 2: 48. 1843. *C. benthamianus* Muell. Arg. in Mart., Fl. Bras. 11(2): 105. 1873. SYNTYPES: BRAZIL. *Schomburgk 1008* (G!, US!); Rio Negro, *Spruce s.n.* (G!, US!); Rio Negro, *Martius s.n.* (G!).

French Guiana; Venezuela (Amazonas, Bolívar); Amazon Basin; in secondary rain and montane forest.

**CROTON POLYPLEURUS** Croizat

*C. polypleurus* Croizat, Darwiniana 6: 457. 1944. TYPE: GUYANA. W Kanuku Mts, *Smith 3138* (HOLOTYPE: A; ISOTYPE: NY).

Guyana; Brazil (Roraima); in seasonal forest.

**CROTON POTAROENSIS** Lanjouw

*C. potaroensis* Lanjouw, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 12: 457. 1934. TYPE: GUYANA. Tumatumari, Potaro R., *Gleason 329* (HOLOTYPE: K!; ISOTYPES: NY, US!).

*C. bartlettii* Lanjouw, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 12: 460. 1934. TYPE: GUYANA. Akawing Falls, Cuyuni R., *Bartlett 8082* (HOLOTYPE: K!; ISOTYPE: BRG!).

Guyana; Venezuela (Amazonas, Bolívar); in riparian scrub.

**CROTON PULLEI** Lanjouw var. **PULLEI**

*C. pullei* Lanjouw, Euphorbiaceae of Surinam 18, t. 3. 1931. TYPE: SURINAM. Upper Surinam R., *Stahel 76* (HOLOTYPE: U).

Surinam.

**CROTON PULLEI** var. **GLABRIOR** Lanjouw

*C. pullei* var. *glabrior* Lanjouw, Receuil Trav. Bot. Néerl. 36: 698. 1939. TYPE: SURINAM. Tapanahoni R., *Rombouts 654* (HOLOTYPE: U; ISOTYPE: US!).

Surinam, French Guiana.

**CROTON RORAIMENSIS** Croizat var. **RORAIMENSIS**

*C. roraimensis* Croizat, Bull. Torrey Bot. Club 67: 290. 1940. TYPE: VENEZUELA. Bolívar: Mt. Roraima, *Pinkus 122* (HOLOTYPE: NY; ISOTYPES: A, NY, US!).

Guyana; Venezuela (Bolívar); in dwarf forest on tepuis.

**\*CROTON RORAIMENSIS** var. **SUBINTEGER** Steyerl.

*C. roraimensis* var. *subinteger* Steyerl., Fieldiana, Bot. 28: 315. 1952. TYPE: VENEZUELA. Bolívar: Ptari-tepui, *Steyermark 29925* (HOLOTYPE: F).

Venezuela (Bolívar); in dwarf forest on tepuis.

**CROTON SCHIEDEANUS** Schlectd.

*C. schiedeanus* Schlectd., Linnaea 19: 243. 1847. TYPE: MEXICO. *Schiede s.n.* (n.v.) [includes specimens previously labelled *Croton glabellus* L., a

species apparently restricted to the West Indies (Webster & Burch, 1967)].

The Guianas; Venezuela (Bolívar); Mexico to Peru and Venezuela; in secondary rain forest.

**CROTON SIPALIWINENSIS** Lanjouw

*C. sipaliwinensis* Lanjouw, *Receuil Trav. Bot. Néerl.* 36: 698, fig. 1. 1979. TYPE: SURINAM. Sipalawini R., *Rombouts 357* (HOLOTYPE: U; ISOTYPE: US).

Surinam; in savanna and on sandy river banks in S Surinam.

**CROTON STAHELIANUS** Lanjouw

*C. stahelianus* Lanjouw, *Euphorbiaceae of Surinam* 17, fig. 2. 1931. TYPE: SURINAM. Upper Koe-tarie R., *Stahel 611 = B.W. 7002* (HOLOTYPE: U; ISOTYPE: US!).

Surinam.

**CROTON SUBINCANUS** Muell. Arg.

*C. subincanus* Muell. Arg., *Linnaea* 34: 139. 1865. SYNTYPES: GUYANA. *Schomburgk 665 (G!)*, *1029* (B—destroyed, photo F5173!).

Guyana, Surinam; Venezuela (Bolívar); Brazil (Roraima); in seasonal and gallery forest at low to middle altitudes, often in open rocky areas.

**CROTON TAFELBERGICUS** Croizat

*C. tafelbergicus* Croizat, *Bull. Torrey Bot. Club* 75: 401. 1948. TYPE: SURINAM. Tafelberg, *Maguire 24582* (ISOTYPES: NY, US!).

Surinam, French Guiana; in savanna and forest on sandy soils.

**CROTON TRINITATIS** Millsp.

*C. trinitatis* Millsp., *Publ. Field Columbian Mus., Bot. Ser.* 2: 57. 1900. TYPE: PUERTO RICO. *Millspaugh 280* (n.v.).  
*C. miquelensis* Ferg., *Annual Rep. Missouri Bot. Gard.* 12: 49. 1901. TYPE: U.S.A. Florida: *Curtis 15* (n.v.).

The Guianas; Venezuela (Amazonas, Delta Amacuro); widespread weed in tropical and subtropical areas of the New World.

**\*CROTON BOLIVARENSIS** Croizat

*C. bolivarensis* Croizat, *J. Arnold Arbor.* 21: 89. 1940.

TYPE: VENEZUELA. Delta Amacuro: Santa Catalina, *Rusby & Squires 278* (HOLOTYPE: A; ISOTYPE: NY).

Venezuela (Bolívar, Delta Amacuro).

**\*CROTON GUAQUINIMAE** Steyererm.

*C. guaiquinimae* Steyererm., *Brittonia* 32: 19, fig. 2. 1980. TYPE: VENEZUELA. Bolívar: Cerro Guaiquinima, *Steyermark et al. 117473* (HOLOTYPE: VEN).

Venezuela (Bolívar); in montane gallery forest.

**\*CROTON ICABARUI** Jabl.

*C. icabarui* Jabl., *Mem. New York Bot. Gard.* 12: 158. 1965. TYPE: VENEZUELA. Bolívar: Icabaru headwater, *Bernardi 2853* (HOLOTYPE: NY).

Venezuela (Bolívar).

**\*CROTON KAVANAYENSIS** Steyererm.

*C. kavanayensis* Steyererm., *Fieldiana, Bot.* 28: 313. 1952. TYPE: VENEZUELA. Bolívar: Quebrada O-paru-má, *Steyermark 60386* (HOLOTYPE: F; ISOTYPE: NY).

Venezuela (Bolívar); in montane forest.

**\*CROTON MONACHINOENSIS** Jabl.

*C. monachinoensis* Jabl., *Mem. New York Bot. Gard.* 12: 157. 1965. TYPE: VENEZUELA. Bolívar: Río Suapare, *Wurdack & Monachino 41251* (HOLOTYPE: NY; ISOTYPES: NY, US!).

Venezuela (Amazonas, Bolívar); at low altitudes.

**\*CROTON SPIRAEIFOLIUS** Jabl.

*C. spiraeifolius* Jabl., *Mem. New York Bot. Gard.* 12: 104. 1965. TYPE: VENEZUELA. Amazonas: Cerro Yapacana, *Maguire et al. 30571* (HOLOTYPE: NY).

Venezuela (Amazonas); in savannas of upper Río Orinoco region.

**\*CROTON SPRUCEANUS** Benth.

*C. spruceanus* Benth., *Hooker's J. Bot. Kew Gard. Misc.* 6: 375. 1854. TYPE: BRAZIL. Amazonas: *Spruce 2205* (ISOTYPE: NY).

Venezuela (Amazonas); Amazonian Brazil; in rain forest, along rivers.

**\*CROTON SUBCORIACEUS** Jabl.

*C. subcoriaceus* Jabl., Mem. New York Bot. Gard. 12: 156. 1965. TYPE: VENEZUELA. Amazonas: Caño Yapacana, *Wurdack & Adderley 43028* (HOLOTYPE: NY; ISOTYPE: NY).

Venezuela (Amazonas); at low altitudes.

**\*CROTON SUBSERRATUS** Jabl.

*C. subserratus* Jabl., Mem. New York Bot. Gard. 12: 104. 1965. TYPE: VENEZUELA. Amazonas: Cerro Guanay summit, *Maguire et al. 31731* (HOLOTYPE: NY).

Venezuela (Amazonas); on tepui tops.

**\*Croton vergarenae** (Jabl.) Gillespie, comb. nov.

*Julocroton vergarenae* Jabl., Mem. New York Bot. Gard. 12: 170. 1965. TYPE: VENEZUELA. Bolívar: headwaters of Río Saca, *Wurdack & Guppy 58* (HOLOTYPE: NY; ISOTYPE: US!).

Venezuela (Bolívar); in forest openings.

**\*CROTON YAVITENSIS** Croizat

*C. yavitensis* Croizat, J. Arnold Arbor. 26: 189. 1945. TYPE: VENEZUELA. Amazonas: Selva de Yavita, *Williams 14029* (HOLOTYPE: A; ISOTYPE: US!).

Venezuela (Amazonas); in forest at low altitudes.

**38. DODECASTIGMA** Ducke, Notizbl. Bot. Gart. Berlin-Dahlem 11(105): 343. 1932. TYPE: *D. amazonicum* Ducke.**DODECASTIGMA INTEGRIFOLIUM** (Lanjouw) Lanjouw & Sandw.

*Pausandra integrifolia* Lanjouw, Bull. Misc. Inform. Kew 1932: 183. 1932. *D. integrifolium* (Lanjouw) Lanjouw & Sandw., Kew Bull. 1950: 134. 1950. TYPE: GUYANA. Cuyuni R., *Sandwith 650* (ISOTYPE: NY).

*D. mazarunense* Croizat, Bull. Torrey Bot. Club 75: 404. 1948. TYPE: GUYANA. Mazaruni R., *Fan-shawe 2142 = FD 4878* (ISOTYPES: NY, US).

Guyana; in rain forest.

**39. GLYCYDENDRON** Ducke, Arch. Jard. Bot. Rio de Janeiro 3: 199. 1922. TYPE: *G. amazonicum* Ducke.**GLYCYDENDRON AMAZONICUM** Ducke

*G. amazonicum* Ducke, Arch. Jard. Bot. Rio de Ja-

neiro 3: 199. 1922. SYNTYPES: BRAZIL. *Ducke HJBR-10560* (US!), *15673* (n.v.), *16927* (US!), *17094* (n.v.), *17108* (US!).

The Guianas; Venezuela (Amazonas); Amazon Basin; in rain forest.

**40. HEVEA** Aubl., Hist. pl. Guiane 2: 871, t. 235. 1775. TYPE: *H. guianensis* Aubl.**HEVEA BRASILIENSIS** (Adr. Juss.) Muell. Arg.

*Siphonia brasiliensis* Adr. Juss., Euphorb. gen. 113, t. 12/38b. 1824. *H. brasiliensis* (Adr. Juss.) Muell. Arg., Linnaea 34: 204. 1865. TYPE: BRAZIL. Pará: *Sieber per Hoffmanssegg* (HOLOTYPE: B-WILLD; ISOTYPES: G, P).

French Guiana; native to Amazonian Brazil and possibly to French Guiana; cultivated in the Guianas and throughout the tropics; in rain forest.

**HEVEA GUIANENSIS** Aubl.

*H. guianensis* Aubl., Hist. pl. Guiane 2: 871. 1775. TYPE: FRENCH GUIANA. None designated.

French Guiana; Amazonian Brazil; in rain forest.

**HEVEA PAUCIFLORA** (Benth.) Muell. Arg.

*Siphonia pauciflora* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 370. 1854. *H. pauciflora* (Benth.) Muell. Arg., Linnaea 34: 203. 1865. TYPE: BRAZIL. Amazonas: *Spruce s.n.* (n.v.).

*H. confusa* Hemsley, Hooker's Icon. pl. 26: t. 2574. 1899. TYPE: GUYANA. *Jenman 621* (HOLOTYPE: K!; ISOTYPE: K!).

Guyana, Surinam; Venezuela (Amazonas); W Amazon Basin; in rain forest mostly on sandy soils.

**\*HEVEA BENTHAMIANA** Muell. Arg.

*H. benthamiana* Muell. Arg., Linnaea 34: 204. 1865. TYPE: BRAZIL. Amazonas: *Spruce 2560* (ISOTYPE: K!).

Venezuela (Amazonas); Amazonian Brazil and Colombia; in black water swamp forest.

**\*HEVEA LUTEA** (Benth.) Muell. Arg.

*Siphonia lutea* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 370. 1854. *H. lutea* (Benth.) Muell. Arg., Linnaea 34: 204. 1865. TYPE: BRAZIL. Amazo-

nas: *Spruce 2088* (HOLOTYPE: K!; ISOTYPES: GH!, K!) [indicated by Schultes on a herbarium label to be a variety of *H. guianensis*].

Venezuela (Amazonas); NW Amazon Basin; in rain forest.

**\*HEVEA MINOR** Hemsley

*H. minor* Hemsley, Hooker's Icon. pl. 26: t. 2572. 1899. TYPE: VENEZUELA. Amazonas: Río Casiquiare, *Spruce 3457* (n.v.).

Venezuela (Amazonas); Rio Negro region of Brazil; in swamp forest.

41. **JATROPHA L.**, Sp. pl. 1006. 1753.  
LECTOTYPE: *J. gossypifolia* L.

**JATROPHA CURCAS L.**

*J. curcas* L., Sp. pl. 1006. 1753. TYPE: "America calidiore," *Hort. Cliff.* (BM).

The Guianas; Venezuelan Guayana; cultivated and extensively naturalized throughout the Neotropics; probably native to Mexico and Guatemala.

**JATROPHA GOSSYPIIFOLIA L.**

*J. gossypifolia* L., Sp. pl. 1006. 1753. TYPE: "America meridionali" (HOLOTYPE: LINN 1141.1).

The Guianas; Venezuelan Guayana; widespread neotropical weed.

**\*\*JATROPHA INTEGERRIMA** Jacq.

*J. integerrima* Jacq., Select. stirp. amer. hist. 265, t. 183, fig. 47. 1763. TYPE: CUBA. Cultivated, *Sagra s.n.* (HOLOTYPE: W).

Guyana, Surinam; cultivated as ornamental; native to Cuba.

**\*\*JATROPHA MULTIFIDA L.**

*J. multifida* L., Sp. pl. 1006. 1753. TYPE: "America meridionali." Illustration in Dillenius, *Hortus Elthamensis*. 173/213. 1732 (LECTOTYPE, apparently designated by Radcliffe-Smith, in R. M. Polhill, editor, *Flora of Tropical East Africa*, Euphorbiaceae 1: 354. 1987).

Surinam, French Guiana; cultivated as ornamental throughout the tropics.

**\*\*JATROPHA PODAGRICA** Hooker

*J. podagrica* Hooker, Bot. Mag. 75: pl. 4376. 1848.

TYPE: PANAMA. Sta. Martha, cult., *Seemann s.n.* (n.v.).

The Guianas; cultivated as ornamental; probably native to Mexico.

42. **MANIHOT** Miller, Gard. dict. abr. ed. 4. 1754. TYPE: *M. esculenta* Crantz.

**MANIHOT BRACHYLOBA** Muell. Arg.

*M. brachyloba* Muell. Arg. in Mart., Fl. bras. 11(2): 451. 1874. SYNTYPES: BRAZIL. Pará: *Martius s.n.* (n.v.); *Sieber s.n.* (n.v.).

Surinam, French Guiana; widespread in the Neotropics; disturbed areas in rain forest.

**MANIHOT SURINAMENSIS** Rogers & Appan

*M. surinamensis* Rogers & Appan, *Flora Neotropica* 13: 80. 1973. TYPE: SURINAM. *Rombouts 464* (HOLOTYPE: U; ISOTYPES: K!, MO, NY).

The Guianas; Venezuela (Amazonas); in savanna.

**MANIHOT TRISTIS** subsp. **SAXICOLA** (Lanj.) Rogers & Appan

*M. saxicola* Lanj., Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 69: 544. 1939. *M. tristis* subsp. *saxicola* (Lanj.) Rogers & Appan, *Flora Neotropica* 13: 84. 1973. TYPE: SURINAM. Voltzberg, *Lanjouw 955* (HOLOTYPE: U; ISOTYPES: F, MO!, NY, U, US!).

The Guianas; Brazil (Amapá); on granitic outcrops.

**\*MANIHOT TRISTIS** subsp. **SURUMUENSIS** (Ule) Rogers & Appan

*M. surumuensis* Ule, Bot. Jahrb. Syst. 114: 12. 1914. *M. tristis* subsp. *surumuensis* (Ule) Rogers & Appan, *Flora Neotropica* 13: 86. 1973. TYPE: BRAZIL. Roraima: *Ule 7944* (ISOTYPE: K!).

Brazil (Roraima); in savanna.

**\*MANIHOT TRISTIS** Muell. Arg. subsp. **TRISTIS**

*M. tristis* Muell. Arg. in Mart., Fl. bras. 11(2): 449. 1874. TYPE: VENEZUELA. Amazonas: *Spruce 3604* (BM, G!, P, W). *M. orinocensis* Croizat, J. Arnold Arbor. 24: 169. 1943. TYPE: VENEZUELA. Amazonas: *Williams 13132* (HOLOTYPE: A!).

Venezuela (Amazonas, Bolívar); on granitic outcrops.

\***MANIHOT CARTHAGINENSIS** (Jacq.) Muell.  
Arg.

*Jatropha carthaginensis* Jacq., Select. stirp. amer. hist. 256, t. 162, fig. 1. 1763. *M. carthaginensis* (Jacq.) Muell Arg. in DC., Prodr. 15(2): 1073. 1866. TYPE: COLOMBIA. *Jacquin s.n.* (n.v.).

Venezuela (Bolívar); Colombia, Venezuela, Trinidad; in scrub forest on limestone.

\***MANIHOT MAGUIREIANA** Rogers & Appan

*M. maguireiana* Rogers & Appan, Flora Neotropica 13: 161. 1973. TYPE: VENEZUELA. Bolívar; *Cardona 530* (HOLOTYPE: VEN; ISOTYPES: A!, US!).

Venezuela (Bolívar); in savanna and on rocky ridges.

\*\***MANIHOT ESCULENTA** Crantz

*M. esculenta* Crantz, Inst. rei herb. 1: 167. 1766. TYPE: Figures 4 & 5 in Merian, Dissertatio de generatione et metamorphosisibus insectorum Surinamensium, 1726 (LECTOTYPE, designated by Rogers & Appan, 1973).

*M. utilissima*, Pohl, Pl. bras. icon. desc. 1: 32, t. 4. 1827. TYPE: *Pohl 3775* (W).

The Guianas; Venezuelan Guayana; cultivated and naturalized throughout the Neotropics.

43. **MICRANDRA** Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 371. 1854. TYPE: *M. siphonoides* Benth.

*Cunuria* Baill., Adansonia 4: 287. 1864. TYPE: *C. spruceana* Baill.

**MICRANDRA BROWNSBERGENSIS** Lanjouw

*M. brownsbergensis* Lanjouw, Euphorbiaceae of Surinam 34, fig. 7-8. 1931. TYPE: SURINAM. Brownsberg, *B.W. 6687* (HOLOTYPE: U; ISOTYPE: K!) [probably conspecific with *Micrandra elata* (Didrichs.) Muell. Arg. of SE Brazil].

Surinam, French Guiana; in forest on granitic outcrops.

**MICRANDRA GLEASONIANA** (Croizat) R. E. Schultes

*Cunuria gleasoniana* Croizat, Bull. Torrey Bot. Club 57: 289. 1940. *M. gleasoniana* (Croizat) R. E. Schultes, Bot. Mus. Leaflet. 12: 203, t. 65. 1952.

TYPE: GUYANA. *Pinkus 176* (HOLOTYPE: AAH; ISOTYPES: NY, US!).

Guyana (upper Mazaruni region); in montane forest.

**MICRANDRA GLABRA** (R. E. Schultes) R. E. Schultes

*Cunuria glabra* R. E. Schultes, Bot. Mus. Leaflet. 12: 339, t. 44. 1947. *M. glabra* (R. E. Schultes) R. E. Schultes, Bot. Mus. Leaflet. 15: 203. 1952. SYNTYPES: SURINAM. *Maguire 24279* (A, K!, NY, U, US!); GUYANA. *Pinkus 236* (A, F, MO, US!).

Guyana, Surinam; Venezuela (Bolívar); in submontane and montane forest on tepuis.

**MICRANDRA ROSSIANA** R. E. Schultes

*M. rossiana* R. E. Schultes, Bot. Mus. Leaflet. 15: 211. 1952. TYPE: BRAZIL. Amazonas: *Schultes & Pires 9058* (ISOTYPES: K!, NY, US!).

Guyana (according to Jablonski, 1967a); Venezuela (Amazonas, Bolívar); NW Amazon Basin; in rain and montane forest, often on sandy soils.

**MICRANDRA SIPHONOIDES** Benth.

*M. siphonoides* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 371. 1854. TYPE: BRAZIL. Amazonas: *Spruce 2427* (HOLOTYPE: K!; ISOTYPE: K!, NY, P!). *M. minor* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 372. 1854. TYPE: BRAZIL. Amazonas: *Spruce 2479* (HOLOTYPE: K!; ISOTYPE: NY).

French Guiana; Venezuela (Amazonas, Bolívar); N Amazon Basin; in swamp forest on sandy soils.

\***MICRANDRA SPRUCEANA** (Baill.) R. E. Schultes

*Cunuria spruceana* Baill., Adansonia 4: 288. 1864. *M. spruceana* (Baill.) R. E. Schultes, Bot. Mus. Leaflet. 15: 217. 1952. TYPE: VENEZUELA. Amazonas: *Spruce 3299* (HOLOTYPE: P!; ISOTYPES: K!, NY, P!).

Venezuela (Amazonas); NW Amazon Basin; in rain forest. A report from Guyana by Mennega et al. (1988) appears to be based on misidentified specimens.

\***MICRANDRA SPRUCEI** (Muell. Arg.) R. E. Schultes

*Clusiophyllum sprucei* Muell. Arg., Flora 57: 518.

1864. *Cunuria crassipes* Muell. Arg. in Mart., Fl. bras. 11(2): 510. 1874. *M. sprucei* (Muell. Arg.) R. E. Schultes, Bot. Mus. Leaf. 15: 218. 1952. TYPE: VENEZUELA. Amazonas: *Spruce 3474* (LECTOTYPE, designated by Schultes, 1952: GH; ISOLECTOTYPES: A, NY, P!).

Venezuela (Amazonas); upper Rio Negro region of Brazil and Colombia; in swamp forest on sandy soils.

44. PAUSANDRA Radlk., Flora 53: 92, t. 2. 1870. TYPE: *P. morisiana* (Casar.) Radlk. (*Thouinia morisiana* Casar.).

PAUSANDRA FORDII R. Secco

*P. fordii* R. Secco, Bol. Mus. Paraense Hist. Nat. 3: 60. 1987. TYPE: FRENCH GUIANA. Montagne de Kaw, *Cowan 38370* (HOLOTYPE: NY; ISOTYPE: NY).

French Guiana; Brazil (Amapá); in rain forest.

PAUSANDRA MARTINII Baill.

*P. martinii* Baill., Adansonia 11: 92. 1873. TYPE: FRENCH GUIANA. "Cayenne," *Martin* (HOLOTYPE: P!) [possibly conspecific with *P. morisiana* (Casar.) Radlk. from SE Brazil].

*P. flagellorhachis* Lanjouw, Euphorbiaceae of Surinam 30, fig. 6. 1931. SYNTYPES: SURINAM. Brownsberg, *B.W. 3290* (A!, GH!, US!); *B.W. 6725* (K!).

The Guianas; Venezuelan Guayana; Amazon Basin; in rain forest.

45. SAGOTIA Baill., Adansonia 1: 54. 1860. TYPE: *S. racemosa* Baill.

SAGOTIA RACEMOSA Baill.

*S. racemosa* Baill., Adansonia 1: 54. 1860. SYNTYPES: GUYANA. *Martin 27* (P!); SURINAM. *Hostmann 115* (K—2 sheets!, P!).

*S. tafelbergii* Croizat, Bull. Torrey Bot. Club 75: 404. 1948. TYPE: SURINAM. *Maguire 24802* (ISOTYPES: NY, US!).

The Guianas; Venezuelan Guayana; Costa Rica to Amazon Basin; in rain forest.

SAGOTIA BRACHYSEPALA (Muell. Arg.) R. Secco

*Sagotia racemosa* var. *brachysepala* Muell. Arg., Flora 33: 516. 1864. *S. brachysepala* (Muell. Arg.) R. Secco, Acta Amaz. Supl. 15: 81. 1985. TYPE:

GUYANA. *Schomburgk 569* (HOLOTYPE: G-DCI; ISOTYPES: K!, P!).

The Guianas; Venezuela (Bolívar); Amazon Basin; in rain forest.

46. SANDWITHTIA Lanjouw, Bul. Misc. Inform. Kew 1932: 185. 1932. TYPE: *S. guyanensis* Lanjouw.

SANDWITHTIA GUYANENSIS Lanjouw

*S. guyanensis* Lanjouw, Kew Bull. 1932: 185. 1932. TYPE: GUYANA. Moraballi Creek, *Sandwith 125-B* (ISOTYPES: K—3 sheets!, NY, P!).

Guyana, French Guiana; Venezuelan Guayana; Brazil (N Amazonas, Amapá); in rain forest.

\*SANDWITHTIA HETEROCALYX R. Secco

*S. heterocalyx* R. Secco, Bol. Mus. Paraense Hist. Nat. 4: 179. 1988. TYPE: VENEZUELA. Amazonas: *Steyermark 122236* (HOLOTYPE: NY).

Venezuela (Amazonas); upper Rio Negro region of Brazil.

47. \*TETTORCHIDIUM Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 23, t. 227. 1841. TYPE: *T. rubrivenium* Poeppig.

\*TETTORCHIDIUM RUBRIVENIUM Poeppig

*T. rubrivenium* Poeppig in Poeppig & Endl., Nov. gen. sp. pl. 3: 23, t. 227. 1841. TYPE: PERU. *Poeppig 2034* (W).

Venezuela (Bolívar); widespread in the Neotropics, apparently absent from Amazonian Brazil; in rain and montane forest.

EUPHORBIOIDEAE

48. ACTINOSTEMON Klotzsch, Arch. Naturgesch. 7: 184. 1841. TYPE: *A. concolor* (Spreng.) Muell. Arg., Linnaea 32: 109. 1863.

ACTINOSTEMON SCHOMBURGKII (Klotzsch) Hochr.

*Dactylostemon schomburgkii* Klotzsch, Arch. Na-



turgesch. 7: 181. 1841. *A. schomburgkii* (Klotzsch) Hochr., Bull. New York Bot. Gard. 6: 278. 1910. TYPE: GUYANA. *Schomburgk 716* (ISOTYPES: F, G-DC!, K!, MO!).

*A. depauperatus* Pax & K. Hoffm., Pflanzenr. IV.147.XIV.(Heft 68), Addit. 6: 58. 1919. TYPE: BRAZIL. Roraima: *Ule 7947* (HOLOTYPE: B—destroyed, photo F5484!; ISOTYPE: US!).

*A. parvifolius* Pittier, Bol. Soc. Venez. Ci. Nat. 5: 306. 1938–39. TYPE: VENEZUELA. Bolívar: *Delgado 211* (HOLOTYPE: VEN; ISOTYPES: US—2 sheets!).

Guyana, French Guiana; Venezuela (Bolívar); Brazil (Roraima); in seasonal and low forest on granitic hills.

49. CHAMAESYCE S. F. Gray, Nat. arr. Brit. pl. 2: 260. 1821. TYPE: *C. maritima* S. F. Gray.

CHAMAESYCE ADENOPTERA (Bertol.) Small

*Euphorbia adenoptera* Bertol., Misc. bot. 3: 436, t. 23, fig. 3. 1844. *C. adenoptera* (Bertol.) Small, Fl. s.e. U.S. 714. 1903. TYPE: none designated.

Guyana, French Guiana; Mexico and Florida to E Brazil; in savanna.

CHAMAESYCE HIRTA (L.) Millsp.

*Euphorbia hirta* L., Sp. pl. 454. 1753. *C. hirta* (L.) Millsp., Publ. Field Columbian Mus., Bot. Ser. 2: 303. 1909. SYNTYPES: "India" (LINN 630: 5, 6, 7).

The Guianas; Venezuela (Bolívar); pantropical weed, probably native to Central America.

CHAMAESYCE HYPERICIFOLIA (L.) Millsp.

*Euphorbia hypericifolia* L., Sp. pl. 454. 1753. *C. hypericifolia* (L.) Millsp., Publ. Field Columbian Mus., Bot. Ser. 2: 302. 1909. TYPE: "India" (n.v.). *C. glomerifera* Millsp., Publ. Field Columbian Mus., Bot. Ser. 2: 377. 1913. TYPE: GUATEMALA. *Kellerman 8053* (ISOTYPE: NY).

The Guianas; widespread neotropical weed.

CHAMAESYCE HYSOPIFOLIA (L.) Small

*Euphorbia hyssopifolia* L., Syst. nat. ed. 10, 1048. 1759. *C. hyssopifolia* (L.) Small, J. New York Bot. Gard. 3: 429. 1905. TYPE: JAMAICA. *Browne* (LINN 630: 9).

*Euphorbia brasiliensis* Lam., Encycl. 2: 423. 1788. TYPE: BRAZIL. *Commerson* (ISOTYPES: P—2 sheets!).

The Guianas; Venezuela (Bolívar); widespread neotropical weed.

CHAMAESYCE PROSTRATA (Ait.) Small

*Euphorbia prostrata* Ait., Hort. Kew 2: 139. 1789. *C. prostrata* (Ait.) Small, Fl. s.e. U.S. 713, 1333. 1903. TYPE: WEST INDIES. Cult. in England, *Milner* (BM).

French Guiana; widespread pantropical weed; native to the West Indies.

CHAMAESYCE SERPENS (Kunth) Small

*Euphorbia serpens* Kunth in Humb., Bonpl. & Kunth, Nov. gen. sp. 2: 52. 1817. *C. serpens* (Kunth) Small, Fl. s.e. U.S. 709, 1333. 1903. TYPE: VENEZUELA. Cumana, *Bonpland 407* (ISOTYPE: P!).

Guyana, French Guiana; widespread in tropical and warm temperate regions of the New World.

CHAMAESYCE THYMIFOLIA (L.) Millsp.

*Euphorbia thymifolia* L., Sp. pl. 454. 1753. *C. thymifolia* (L.) Millsp., Publ. Field Columbian Mus., Bot. Ser. 2: 412. 1916. TYPE: "India" (HOLOTYPE: LINN 630: 10).

The Guianas; Venezuela (Bolívar); pantropical weed, native to the Neotropics.

50. EUPHORBIA L., Sp. pl. 450. 1753. LECTOTYPE: *E. antiquorum* L.

*Poinsettia* Graham, Edinburgh New Philos. J. 20: 412. 1836. TYPE: *P. pulcherrima* (Willd. ex Klotzsch) Graham.

EUPHORBIA COTINIFOLIA L.

*E. cotinifolia* L., Sp. pl. 453. 1753. TYPE: none designated.

*E. cotinoides* Miq., Stirp. surinam. select. 96. 1851. TYPE: none designated.

The Guianas; Venezuela (Bolívar); Mexico to N South America; sometimes cultivated as living fence post.

EUPHORBIA CYATHOPHORA Murray

*E. cyathophora* Murray, Commentat. Soc. Regiae Sci. Gott. 7: 81. 1786. *Poinsettia cyathophora* (Murray) Klotzsch & Garcke, Monatsber. Königl. Preuss. Akad. Wiss. Berlin 1859: 253. 1859. TYPE: Illustration in Murray, Commentat. Soc. Regiae Sci. Gott. 7: t. 1. 1786.

Surinam; cultivated and naturalized throughout the tropics and subtropics; probably native to Mexico and Central America.

**EUPHORBIA GRAMINEA** Jacq.

*E. graminea* Jacq., Select. stirp. amer. hist. 151. 1763. TYPE: none designated.

French Guiana; Mexico to N South America.

**EUPHORBIA HETEROPHYLLA** L.

*E. heterophylla* L., Sp. pl., ed. 2, 649. 1763. *Poinsettia heterophylla* (L.) Klotzsch & Garcke, Monatsber. Königl. Preuss. Akad. Wiss. Berlin 1859: 253. 1859. TYPE: Illustration in Pluk., Phytographia 369, t. 12. 1696.

*E. geniculata* Ortega, Nov. pl. descr. dec. 18. 1797. TYPE: CUBA. *Hort. Madrid* (n.v.).

Guyana, Surinam; cultivated and naturalized throughout the tropics and subtropics; native to Central America.

**EUPHORBIA SURINAMENSIS** Lanjouw

*E. surinamensis* Lanjouw, Euphorbiaceae of Surinam 48, fig. 13. 1931. TYPE: SURINAM. Tapanahoni R., *Versteeg 832* (n.v.).

Guyana, Surinam; in riparian scrub.

**\*EUPHORBIA COMOSA** Vell.

*E. comosa* Vell., Fl. flumin. 5: 202, t. 15. 1825. TYPE: none designated.

Venezuela (Bolívar); Colombia, Venezuela and E Brazil; in pasture and secondary scrub.

**\*EUPHORBIA SPRUCEANA** Boissier

*E. spruceana* Boissier in DC., Prodr. 15(2): 53. 1862. TYPE: PERU. *Spruce 4378* (ISOTYPE: NY).

Venezuela (Bolívar); Andes from Venezuela to Bolivia; in disturbed submontane and montane forest.

**\*\*EUPHORBIA CAERULESCENS** Haworth

*E. caerulescens* Haworth, Philos. Mag. 276. 1827. TYPE: none designated, based on cultivated specimens from South Africa.

French Guiana; cultivated as ornamental; native to South Africa.

**\*\*EUPHORBIA LACTEA** Haworth

*E. lactea* Haworth, Syn. pl. succ. 127. 1812. TYPE: "India orientali."

The Guianas; cultivated as ornamental; native to S India and Sri Lanka.

**\*\*EUPHORBIA LEUCOCEPHALA** Lotsy

*E. leucocephala* Lotsy, Bot. Gaz. (Crawfordsville) 20: 350, t. 24. 1895. TYPE: GUATEMALA. (none designated).

Guyana; cultivated as ornamental; native from Mexico to El Salvador.

**\*\*EUPHORBIA MILII** Desmoulins var. **SPLENDENS** (Bojer ex Hooker) Ursch & Leandri

*E. splendens* Bojer ex Hooker, Bot. Mag. 56, pl. 2902. 1829. *E. milii* Desmoulins var. *splendens* (Bojer ex Hooker) Ursch & Leandri, Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 5: 148. 1954. TYPE: Plate 2902 in Hooker, Bot. Mag. 56. 1829.

The Guianas; cultivated as ornamental; native to Madagascar.

**\*\*EUPHORBIA NERIIFOLIA** L.

*E. nerifolia* L., Sp. pl. 451. 1753. TYPE: none designated.

Guyana, Surinam; cultivated as ornamental; native to India.

**\*\*EUPHORBIA PULCHERRIMA** Klotzsch

*E. pulcherrima* Klotzsch, Allg. Gartenzeitung 2: 27. 1824. *Poinsettia pulcherrima* (Klotzsch) Graham, Edinburgh New Philos. J. 20: 412. 1836. TYPE: *Willd. Herb. 9259* (n.v.).

The Guianas; cultivated as ornamental; native to W Mexico.

**\*\*EUPHORBIA TIRUCALLI** L.

*E. tirucalli* L., Sp. pl. 452. 1753. TYPE: SRI LANKA. Illustration in Commelin, Horti med. amstelod. 1: 27, t. 14. 1697 (LECTOTYPE, designated by Leach, *Kirkia* 9: 70. 1973).

The Guianas; cultivated as ornamental; native to tropical Africa.

**\*\*EUPHORBIA TRIGONA** Haworth

*E. trigona* Miller, Gard. dict. ed. 3. 1737. TYPE: none designated.

Surinam; cultivated as ornamental; known only in cultivation, possibly native to India.

51. \*GYMNANTHES Sw., Prodr. 95. 1788. LECTOTYPE: *G. lucida* Sw.

\*GYMNANTHES HYPOLEUCA Benth.

*G. hypoleuca* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 325. 1854. *Ateramnus hypoleucus* (Benth.) Rothm., Feddes Repert. 53: 5. 1944. SYNTYPES: VENEZUELA. Amazonas: *Spruce 2806* (GH!, K—2 sheets!, NY), *3780* (GH!, K!, NY).

Venezuela (Amazonas); Brazil (Amazonas, Pará); in rain forest, often riparian.

52. \*\*HIPPOMANE L., Sp. pl. 1191. 1753. TYPE: *H. mancinella* L.

\*\*HIPPOMANE MANCINELLA L.

*H. mancinella* L., Sp. pl. 1191. 1753. TYPE: WEST INDIES.

Guyana; apparently grown as ornamental; native on coastal beaches from Florida to Colombia and Venezuela.

53. HURA L., Sp. pl. 1008. 1753. TYPE: *H. crepitans* L.

HURA CREPITANS L.

*H. crepitans* L., Sp. pl. 1008. 1753. TYPE: Illustration in Hernandez, Plantarum . . . mexicanorum historia 88. 1651.

The Guianas; widespread in the Neotropics; in rain forest.

54. MABEA Aubl., Hist. pl. Guiane 867. 1775. TYPE: *M. piriri* Aubl.

MABEA ANGULARIS den Hollander

*M. angularis* den Hollander in den Hollander & Berg, Proc. Kon. Ned. Akad. Wetensch. C. 89: 147. 1986. TYPE: BRAZIL. Mato Grosso: *Krukoff 1502* (HOLOTYPE: U; ISOTYPE: NY).

Guyana; Amazonian Brazil; in rain forest.

MABEA MONTANA Muell. Arg. subsp. MONTANA

*M. montana* Muell. Arg. in DC., Prodr. 15(2): 1151. 1866. TYPE: COLOMBIA. *Schlim 1132* (LECTOTYPE, designated by den Hollander & Berg, 1986: G).

Guyana; Panama to Peru and Brazil (Amazonas); in rain and gallery forest.

MABEA MONTANA subsp. BIGLANDULOSA (Muell. Arg.) den Hollander

*M. biglandulosa* Muell. Arg. in DC., Prodr. 15(2): 1151. 1866. *M. montana* subsp. *biglandulosa* (Muell. Arg.) den Hollander in den Hollander & Berg, Proc. Kon. Ned. Akad. Wetensch., C. 89: 149. 1986. TYPE: GUYANA/VENEZUELA. Mt. Roraima, *Ro. Schomburgk 731* (HOLOTYPE?: P!). *M. piriri* Aublet var. *laevigata* Muell. Arg. in DC., Prodr. 15(2): 1150. 1866. *M. occidentalis* Benth. var. *laevigata* (Muell. Arg.) Muell. Arg. in Mart., Fl. bras. 11(2): 522. 1874. TYPE: GUYANA/VENEZUELA. Mt. Roraima, *Ri. Schomburgk 1109* (ISOTYPE: K!).

Guyana; Venezuela (Amazonas); Brazil (Roraima); in gallery forest and scrub.

MABEA MONTANA subsp. LUCIDA (Pax & K. Hoffm.) den Hollander

*M. lucida* Pax & K. Hoffm., Pflanzenr. IV.147.V.(Heft 52): 36. 1912. *M. montana* subsp. *lucida* (Pax & K. Hoffm.) den Hollander in den Hollander & Berg, Proc. Kon. Ned. Akad. Wetensch., C. 89: 150. 1986. TYPE: VENEZUELA. *Karsten* (LECTOTYPE, designated by den Hollander & Berg, 1986: W).

*M. costata* Pax & K. Hoffm., Pflanzenr. IV.147.VII. Addit. V.(Heft 63): 419. 1914. TYPE: GUYANA. *Jenman 7545* (B—destroyed, photo F5419!).

Guyana; Venezuela (Bolívar); Colombia and Venezuela.

MABEA PIRIRI Aubl.

*M. piriri* Aubl., Hist. pl. Guiane 2: 867. 1775. TYPE: FRENCH GUIANA. *Aublet* (W, photo F32469!).

The Guianas; Venezuela (Bolívar, Delta Amacuro); Colombia, Brazil (Maranhão, Pará); in seasonal and rain forest.

MABEA PULCHERRIMA Muell. Arg.

*M. pulcherrima* Muell. Arg., Flora 55: 44. 1872. TYPE: FRENCH GUIANA. *Leprieur* (LECTOTYPE, designated by den Hollander & Berg, 1986: G-DC). *M. eximia* Ducke, Arch. Jard. Bot. Rio de Janeiro 4: 107. 1925. TYPE: BRAZIL. Pará: *Ducke HJBR-17715* (ISOTYPE: US!).

Guyana, French Guiana; Venezuela (Bolívar); Amazon Basin; in swamp and riparian forest.

**MABEA RUBICUNDA** Jabl.

*M. rubicunda* Jabl., Mem. New York Bot. Gard. 17: 170. 1967. TYPE: GUYANA. Kopinang Falls, *Maguire et al. 46031A* (HOLOTYPE: NY; ISOTYPE: US!).

Guyana; in montane forest.

**MABEA SPECIOSA** Muell. Arg. subsp. SPECIOSA

*M. speciosa* Muell. Arg. in Mart., Fl. bras. 11(2): 520. 1874. TYPE: BRAZIL. Amazonas: *Riedel 1583* (G).

*Mabea caudata* Pax & K. Hoffm., Pflanzenr. IV.147.V.(Heft 52): 282. 1912. TYPE: GUYANA. Conowaruk R., *Bartlett 8217* (K).

Guyana, Surinam; Venezuela (Amazonas); upper Orinoco Basin, Amazon Basin and E. Brazil; in rain forest.

**MABEA SPECIOSA** subsp. CONCOLOR (Muell. Arg.) den Hollander

*M. piriri* var. *concolor* Muell. Arg. in DC., Prodr. 15 (2): 1150. 1866. *M. speciosa* subsp. *concolor* (Muell. Arg.) den Hollander in den Hollander & Berg, Proc. Kon. Ned. Akad. Wetensch., C. 89: 154. 1986. TYPE: BRAZIL. Bahia: *Blanchet 2326* (LECTOTYPE, designated by den Hollander & Berg, 1986: G; ISOLECTOTYPE: NY).

*M. saramaccensis* Croizat, Bull. Torrey Bot. Club 75: 405. 1948. TYPE: SURINAM. Maguire 24123 (ISOTYPES: NY, U, US!). [For further synonymy refer to den Hollander and Berg, 1986.]

Surinam, French Guiana; Venezuela (Amazonas, Bolívar); Costa Rica to Brazil (Amapá, Amazonas, Bahia); in rain forest.

**MABEA SUBSESSILIS** Pax & K. Hoffm.

*M. subsessilis* Pax & K. Hoffm., Pflanzenr. IV.147.V.(Heft 52): 282. 1912. TYPE: BRAZIL. *Glaziou 10035* (P).

*M. argutissima* Croizat, Bull. Torrey Bot. Club 67: 288. 1940. TYPE: VENEZUELA. Bolívar: *Pinkus 275* (ISOTYPES: NY, US!).

The Guianas; Venezuelan Guayana; Amazon Basin; in rain and montane forest.

**MABEA TAQUARI** Aubl.

*M. taquari* Aubl., Hist. pl. Guiane 2: 870. 1775. TYPE: FRENCH GUIANA. *Aublet s.n.* (BM; probable type: P!).

*M. schomburgkii* Benth. Hooker's J. Bot. Kew Gard. Misc. 6: 365. 1854. TYPE: GUYANA. *Schomburgk 40* (LECTOTYPE, designated by den Hollander & Berg, 1986: K!; ISOLECTOTYPE: K!).

*M. taquari* var. *angustifolia* Muell. Arg. in DC., Prodr. 15(2): 1150. 1866. TYPE: GUYANA. *Schomburgk 347* (HOLOTYPE: B—destroyed; LECTOTYPE, designated by den Hollander & Berg, 1986: P).

*M. ciliata* Gleason, Bull. Torrey Bot. Club 54: 610. 1927. TYPE: GUYANA. Rockstone, *Gleason 831* (NY).

The Guianas; Venezuelan Guayana; West Indies, Colombia, Brazil (Amapá, Pará); in rain forest.

**\*MABEA FLORIBUNDA** Jabl.

*M. floribunda* Jabl., Mem. New York Bot. Gard. 17: 174. 1967. TYPE: VENEZUELA. Bolívar: Cerro Guaiquinima, *Maguire 33156* (HOLOTYPE: NY; ISOTYPES: A!, GH!, US!).

Venezuela (Bolívar); in seasonal and gallery forest.

**\*MABEA FRUTESCENS** Jabl.

*M. frutescens* Jabl., Mem. New York Bot. Gard. 17: 175. 1967. TYPE: VENEZUELA. Amazonas: Río Atabapo, *Wurdack & Adderley 42846* (HOLOTYPE: NY).

Venezuela (Amazonas); in savanna.

**\*MABEA LINEARIFOLIA** Jabl.

*M. linearifolia* Jabl. Mem. New York Bot. Gard. 17: 176. 1967. TYPE: VENEZUELA. Amazonas: Yacapana Savannas, *Maguire et al. 41524* (HOLOTYPE: NY; ISOTYPE: US!).

Venezuela (Amazonas); in savanna.

**\*MABEA NITIDA** Benth.

*M. nitida* Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 367. 1854. TYPE: BRAZIL. Amazonas: *Spruce 1118* (LECTOTYPE, designated by den Hollander & Berg, 1986: M).

*M. muricata* Jabl., Mem. New York Bot. Gard. 17: 169. 1967. TYPE: VENEZUELA. Amazonas: *Maguire et al. 35010* (HOLOTYPE: NY; ISOTYPE: US).

Venezuela (Amazonas, Bolívar); Amazon and upper Orinoco Basins; in rain forest.

**\*MABEA ORBICULATA** Jabl.

*M. orbiculata* Jabl., Mem. New York Bot. Gard. 17: 176. 1967. TYPE: VENEZUELA. Amazonas: Río Atabapo, *Wurdack & Adderley 42942* (HOLOTYPE: NY; ISOTYPE: US!).

Venezuela (Amazonas); in swamp forest on sandy soils.

**\*MABEA PARGUAZAE** Jabl.

*M. parguazae* Jabl., Mem. New York Bot. Gard. 17: 168. 1967. TYPE: VENEZUELA. Bolívar: Río Paragua, *Wurdack & Monachino 40981* (HOLOTYPE: NY; ISOTYPE: US!).

Venezuela (Bolívar); on low altitude granitic hills.

55. **MAPROUNEA** Aubl., Hist. pl. Guiane 2: 895. 1775. TYPE: *M. guianensis* Aubl.**MAPROUNEA GUIANENSIS** Aubl.

*M. guianensis* Aubl., Hist. pl. Guiane 2: 895, t. 342. 1775. TYPE: none designated.

The Guianas; Venezuela (Amazonas, Bolívar); widespread in Panama and tropical South America; in forest openings and disturbed sites in seasonal and rain forest.

56. **SAPIUM** P. Browne, Civ. nat. hist. Jamaica 338. 1756. TYPE?: *S. jamaicense* Sw. [see Kruijt & Zijlstra, 1989].**SAPIUM CILIATUM** Hemsl.

*S. ciliatum* Hemsl., Icon pl. 27, pl. 2638. 1901. SYNTYPES: BRAZIL. Pará: Santarem, *Spruce s.n.* (K—2 sheets!); Amazonas: *Traill 770* (K!).

French Guiana; Amazonian Brazil; in rain forest.

**SAPIUM GLANDULOSUM** (L.) Morong

*Hippomane glandulosa* L., Sp. pl. 1191. 1753. *S. glandulosum* (L.) Morong, Ann. New York Acad. Sci. 7: 227. 1893. TYPE: Illustration in Pluk., *Phytographia* t. 229, fig. 8. 1696 (LECTOTYPE, designated by Croizat, *J. Arnold Arbor.* 24: 176. 1943). [Although Kruijt and Zijlstra (1989) have been followed here, there is much confusion as to the correct name for this species, also known as *Sapium biglandulosum* (L.) Muell. Arg. (Webster & Burch, 1967) and *Sapium aucuparium* Jacq. (Webster & Huft, 1988). *S. hippomane* G. Mey. described from the Guianas is a nomenclatural synonym of this species.]

*S. prunifolium* Klotzsch, London J. Bot. 2: 45. 1843. TYPE: GUYANA. *Schomburgk 283* (ISOTYPES: G-DC! US).

*S. biglandulosum* var. *aubletianum* Muell. Arg., *Linnaea* 32: 117. 1863. *S. aubletianum* (Muell. Arg.) Huber, Bull. Herb. Boissier, sér. 2, 6: 362. 1906. TYPE: none designated.

*S. biglandulosum* var. *klotzschianum* Muell. Arg., *Linnaea* 32: 117. 1863. *S. klotzschianum* (Muell. Arg.) Huber, Bull. Herb. Boissier, sér. 2, 6: 438. 1906. TYPE: none designated.

*S. biglandulosum* var. *lanceolatum* Muell. Arg., *Linnaea* 32: 118. 1863. *S. lanceolatum* (Muell. Arg.) Huber, Bull. Herb. Boissier, sér. 2, 6: 441. 1906. SYNTYPES: FRENCH GUIANA. *Perrotet s.n.* (n.v.); *Sagot 514* (n.v.); and 5 collections from Brazil.

The Guianas; Venezuelan Guayana; widespread in the Neotropics; in rain forest.

**SAPIUM JENMANII** Hemsley

*S. jenmanii* Hemsley, Hooker's Icon. pl. 27: t. 2649. 1900. SYNTYPES: GUYANA. *Jenman 2091* (BRG!, GH!, NY), 6645 (BRG!), 7505 (BRG!, K!, NY).

*S. cladogyne* Hutch., Kew Bull. 1912: 224. 1912. SYNTYPES: GUYANA. *Beckett 8628* (K!, NY!), 8767 (K—2 sheets!); and 7 more collections from Guyana.

Guyana, Surinam; Venezuela (Bolívar); in rain forest.

**SAPIUM MONTANUM** Lanjouw

*S. montanum* Lanjouw, Euphorbiaceae of Surinam 47, fig. 5. 1931. TYPE: SURINAM. Emma Range, *B.W. 5889* (ISOTYPES: NY, US!) [considered to be conspecific with *S. argutum* (Muell. Arg.) Huber of NE Brazil by Kruijt (1989)].

Surinam, French Guiana; Venezuela (Delta Amacuro) according to Jablonski (1967a); in submontane and montane forest.

**SAPIUM PAUCINERVIUM** Hemsley

*S. paucinervium* Hemsley, Hooker's Icon. pl. 27: t. 2648. 1900. TYPE: GUYANA. Pomeroun R., *Jenman 2092* (HOLOTYPE: K!; ISOTYPES: BRG!, GH!, K!, NY, US!).

*S. microdentatum* Lanjouw, Euphorbiaceae of Surinam 46, fig. 12. 1931. TYPE: SURINAM. Brownsberg, *B.W. 1769* (ISOTYPE: NY).

The Guianas; Venezuela (Bolívar, Delta Amacuro); in rain forest.

57. **SEBASTIANA** Spreng., Neue Entdeck. Pflanzenk. 2: 118, pl. 3. 1821. TYPE: *S. brasiliensis* Spreng.**SEBASTIANA BIDENTATA** (Mart.) Pax

*Cnemidostachys bidentata* Mart., Nov. Gen. sp. pl. 69, t. 43. 1824. *S. bidentata* (Mart.) Pax, Pflanzenr. IV.147.V.(Heft 52): 113. 1912. TYPE: BRAZIL. *Martius s.n.* (n.v.).

*S. linearifolia* Lanj., Receuil Trav. Bot. Néerl. 36: 701, fig. 2. 1930. TYPE: SURINAM. *Rombouts 301* (U).

Surinam; Brazil (Amazonas, Pará, E Brazil); in savanna and open rocky areas.

**SEBASTIANA CORNICULATA (Vahl) Muell. Arg.**

*Tragia corniculata* Vahl, *Eclog. amer.* 255, pl. 19. 1798. *S. corniculata* (Vahl) Muell. Arg. in DC., *Prodr.* 15(2): 1158. 1866. TYPE: Trinidad. *Ryan* (n.v.).

*Microstachys guianensis* Klotzsch, *J. Bot. (Hooker)* 2: 45. 1843. *S. corniculata* var. *guyanensis* (Klotzsch) Pax & K. Hoffm., *Pflanzenr.* IV.147.V.(Heft 52): 99. 1912. TYPE: GUYANA. *Schomburgk 912* (ISOTYPE: US).

The Guianas; Venezuela (Bolívar); widespread in tropical and subtropical areas of the New World; in savanna and old fields.

**SEBASTIANA GUYANENSIS (Muell. Arg.) Muell. Arg.**

*Gymnanthes guyanensis* Muell. Arg., *Linnaea* 32: 102. 1863. *S. guyanensis* (Muell. Arg.) Muell. Arg. in DC., *Prodr.* 15(2): 1183. 1866. TYPE: GUYANA. *Schomburgk 1280* (HOLOTYPE: B—destroyed).

Guyana (Rupununi Savannas); in riparian scrub.

**58. SENEFLDERA Mart., *Flora* 24: 29. 1841. TYPE: *S. multiflora* Mart.****SENEFLDERA MACROPHYLLA Ducke**

*S. macrophylla* Ducke, *Arch. Jard. Bot. Rio de Janeiro* 4: 113, fig. 27a–j. 1925. SYNTYPES: BRAZIL. Pará: *Ducke HJRB-18001* (n.v.); *HJRB-18002* (US!).

Guyana, Surinam; Amazon Basin; in rain forest.

**\*SENEFLDERA INCLINATA Muell. Arg.**

*S. inclinata* Muell. Arg. in *Mart., Fl. bras.* 11(2): 530, fig. 27o–v. 1874. TYPE: VENEZUELA. Amazonas: Río Casiquiare, *Spruce 3431* (HOLOTYPE: G-DC!; ISOTYPES: BM, K, NY, GH!).

Venezuela (Amazonas); NW Amazon Basin; in rain forest.

**\*SENEFLDERA YUTAJENSIS (Jabl.) Webster**

*Sapium yutajense* Jablonski, *Mem. New York Bot. Gard.* 17: 184. 1967. *Senefeldera yutajensis* (Jabl.) Webster, *Ann. Missouri Bot. Gard.* 76: 958. 1989. TYPE: VENEZUELA. Amazonas: *Maguire & Maguire 35261* (HOLOTYPE: NY; ISOTYPE: US) [appears to be more closely related to species of *Senefelderopsis* than *Senefeldera*].

Venezuela (Amazonas, Bolívar); Brazil (Amazonas); in scrub-savanna and dwarf forest on tepui tops.

**59. \*SENEFLDEROPSIS Steyer., *Bot. Mus. Leaf.* 15: 45. 1951. TYPE: *S. croizat-ii* Steyer.****\*SENEFLDEROPSIS CHIRIBIQUETENSIS (Schultes & Croizat) Steyer.**

*Senefeldera chiribiquetensis* Schultes & Croizat, *Caldasia* 3: 122. 1944. *Senefelderopsis chiribiquetensis* (Schultes & Croizat) Steyer., *Bot. Mus. Leaf.* 15: 47. 1951. TYPE: COLOMBIA. *Schultes 5456* (HOLOTYPE: AMES; ISOTYPES: GH—2 sheets!).

Venezuela (Amazonas); Colombia (Vaupés); in scrub-savanna on tepuis.

**\*SENEFLDEROPSIS CROIZATII Steyer.**

*S. croizatii* Steyer., *Bot. Mus. Leaf.* 15: 45, pl. 16. 1951. TYPE: VENEZUELA. Bolívar: *Steyermark 60849* (HOLOTYPE: F; ISOTYPE: MO!).

Venezuela (Bolívar: Carrao-tepui); in dwarf and montane forest.

**\*SENEFLDEROPSIS SIPAPOËNSIS Jabl.**

*S. sipapoënsis* Jabl., *Mem. New York Bot. Gard.* 15: 175. 1965. TYPE: VENEZUELA. Amazonas: *Maguire & Politi 27544* (HOLOTYPE: F; ISOTYPES: MO, NY!).

Venezuela (Amazonas: Cerro Sipapo); in scrub and dwarf forest.

**\*SENEFLDEROPSIS VENAMOËNSIS Jabl.**

*S. venamoënsis* Jabl., *Mem. New York Bot. Gard.* 15: 176. 1965. TYPE: VENEZUELA. Bolívar: *Steyermark & Nilsson 126* (HOLOTYPE: NY!; ISOTYPES: NY!, US!).

Venezuela (Bolívar: Cerro Venamo); in scrub and dwarf forest.

**60. PEDILANTHUS Necker ex Poit., *Ann. Mus. Natl. Hist. Nat.* 19: 388. 1812. TYPE: *Euphorbia tithymaloides* L.****PEDILANTHUS TITHYMALOIDES (L.) Poiteau**

*Euphorbia tithymaloides* L., *Sp. pl.* 453. 1753. *P. tithymaloides* (L.) Poiteau, *Ann. Mus. Natl. Hist. Nat.* 19: 390. 1812. TYPE: none designated.

The Guianas; Venezuela (Bolívar); Mexico to N South America; also cultivated as ornamental throughout the tropics.

### Excluded Species

*Actinostemon guyanensis* Pax & K. Hoffm., Pflanzenn. IV. 147. V. (Heft 52): 80. 1912 [genus uncertain, based on a sterile collection, *Schomburgk 1412*, at B, probably destroyed].

*Alchornea orinocoensis* Croizat, J. Arnold Arbor. 26: 191. 1945. = *Aparisthmium cordatum* (Adr. Juss.) Baill.

*Angostyles tabulamontana* Croizat, Bull. Torrey Bot. Club 75: 403. 1948 [genus unknown, based on a poorly preserved collection with immature fruit].

*Cunuria casiquirensis* Croizat, J. Arnold Arbor. 26: 191. 1945. = *Podocalyx loranthoides* Klotzsch.

*Discocarpus mazarunensis* Croizat, Bull. Torrey Bot. Club 75: 400. 1948. = *Chaetocarpus schomburgkianus* (Kuntze) Pax & K. Hoffm.

*Drypetes maguireana* Monach., Phytologia 3: 33. 1948. = *Chaetocarpus schomburgkianus* (Kuntze) Pax & K. Hoffm.

*Drypetes monachinoi* Jabl., Mem. New York Bot. Gard. 17: 120. 1967 [genus unknown, probably not a species of Euphorbiaceae].

*Drypetes spruceana* Muell. Arg. in DC., Prodr. 15(2): 454. 1866. = *Chaetocarpus schomburgkianus* (Kuntze) Pax & K. Hoffm.

"*Nealchornea amazonica*" = *Glycydendron amazonicum* Ducke. [Although Pax (1931, p. 181) suggested, incorrectly, that *Glycydendron* was congeneric with *Nealchornea*, the new combination was apparently never made.]

### Acknowledgments

I wish to thank the following people for their helpful comments on particular sections of the manuscript: Scott Armbruster (*Dalechampia*), Geoffrey Levin (*Drypetes*), Kenneth Wurdack (*Conceveiba* and *Hippomaneae*), John Hayden (*Amanoa*), Anna Weitzman, Pedro Acevedo, and Vicki Funk. I would especially like to thank Vicki Funk and Carol Kelloff for facilitating the research. The checklist was initiated at the Jenman Herbarium (BRG) while stationed in Guyana as a field botanist with the Smithsonian Institution's Biological Diversity of the Guianas Program. I would like to thank the staff of the Jenman Herbarium, University of Guyana, for facilitating my research in Guyana. In addition, I would like to thank the curators of the following her-

baria for loans or facilitating visits: BRG, CAY, DAV, G, K, MO, NY, and P. This research was supported by the Smithsonian Institution's Biological Diversity of the Guianas Program. The study is publication no. 5 in the series "Biological Diversity of the Guianas."

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Accepted names of genera are followed by the number assigned to that genus in the checklist.

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<i>Amanoa</i> 1	<i>Elaeophora</i> = <i>Plukenetia</i>	<i>Phyllanthus</i> 10
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