

Annotated List of Seed Plants of Singapore (IX)*

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II. Angiospermae-Dicotyledons (cont'd)

125. RUBIACEAE

Synoptic key to the genera†

1. Ovary containing numerous (rarely few) ovules in each locule
 2. Fruit dry, capsular
 3. Flower-clusters in globular heads *Adina*, *Nauclea*, *Neonauclea*, *Uncaria*
 3. Flowers in cyme, corymbose or paniculate
 4. Shrubs or trees or woody climbers *Coptosapelta*, *Mussaendopsis*
 4. Herbs or herbaceous twiners *Argostemma*, *Dentella*, *Hedyotis*, *Ophiorrhiza*
 2. Fruit drupaceous or baccate
 5. Corolla-lobes valvate in bud
 6. Flowers in compact heads *Lecananthus*, *Lucinaea*
 6. Flowers in cymose clusters, corymbose or paniculate *Mussaenda*, *Mycetia*, *Urophyllum*
 5. Corolla-lobes twisted in bud *Diplospora*, *Gardenia*, *Hypobathrum*, *Jackia*, *Randia*
Scyphiphora
1. Ovary containing a single (rarely 2 or few) ovule in each locule
 7. Epiphyte with tuberous stems tenanted by ants *Hydnophytum*, *Myrmecodia*
 7. Not as above
 8. Corolla-lobes imbricate or twisted in bud *Ixora*, *Coffea* (introduced), *Gardeniopsis*,
Guettarda, *Pavetta*, *Tarrena*
 8. Corolla-lobes valvate in bud
 9. Flowers unisexual *Prismatomeris*, *Timonius*
 9. Flowers bisexual
 10. Flowers 1-3 together on a terminal, slender stalk; creeping herbs *Geophila*
 10. Flowers many in compact umbels or heads, terminal and axillary; trees, shrubs or woody climbers *Cephaelis*, *Coelospermum*, *Gynochthodes*, *Morinda*
 10. Not as above
 11. Flower cymes in axillary fascicles
 12. Woody plants *Canthium*, *Lasianthus*, *Saprosma*
 12. Herbaceous *Borreria*, *Diodia*
 11. Flower-cymes in corymbs or panicles *Chassalia*, *Paederia*, *Psychotria*

* Continued from *Gdns' Bull. Sing.* 36: 124, 1983.

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† Based on Ridley, *Fl. Mal. Pen.* 2 (1923) 3, modified and simplified; some cultivated genera are not included.

Adina rubescens Hemsl. (alt. name: *Pertusadina eurhyncha* (Miq.) Ridsdale)

Tall tree, the trunk full of elliptic holes so the bark appears reticulate; leaves elliptic, 6-10 cm long; flowers in small heads, 6-8 mm across, usually 3 heads together on a slender peduncle. Scattered in forests; Bukit Timah (*Keng & Jumali 3483*). Vern. *Berambong*.

Borreria alata (Aubl.) DC. (= *B. latifolia* K. Sch.)

Fleshy herb, to 60 cm tall; stems winged; leaves obovate or elliptic, 2-7 cm long, hairy on both sides; flowers in axillary clusters; corolla 3-6 mm long, white; fruit subglobose, of two 1-seeded cocci, hairy. A weed of West Indian and S. American origin.

Bor. articularis (L.f.) F.N. Will. (= *B. hispida* K. Sch.)

Diffused herb, about 30 cm high; hairy; leaves obovate or oblong, 1.5-4 cm long; flowers in axillary clusters; corolla 4.5-7 mm long, pale purple. In waste ground and sandy spots; Changi (*Md Nur 29739*).

Bor. laevicaulis (Miq.) Ridl.

Slender herb, to 45 cm long, glabrous, often tinted purple; leaves sessile; oblong-lanceolate, 1.5-3 cm long; flowers in dense axillary clusters; corolla 2-3 mm long, white. In roadsides and sandy waste places; Pulau Ubin (*Furtado 18343*).

Bor. setidens (Miq.) Bold.

Diffused herb, sometimes creeping, 5-20 cm tall; branches winged; leaves lanceolate or ovate, 0.8-1.5 cm long; flowers in small axillary clusters; corolla very short, 2-3 mm long, white. In waste ground, Pasir Panjang (*Ridley 8109*).

Canthium confertum Korth.

Small tree, to 10 m tall, glabrous; leaves leathery, elliptic, 5-15 cm long, nerves 3-4 pairs; flowers in small clusters, 1.5-2 cm across; corolla 2-3 mm long, short-tubed, 5-lobed. Along tidal rivers near the sea, P. Tekong (*Ridley 4893*).

Canth. dicoccum (Gaertn.) T. & B. (= *C. didymum* Gaertn.)

Small tree, 7-8 m tall; leaves thin-leathery, ovate-lanceolate or elliptic, 6-10 cm long, nerves 4-5 pairs; flowers in clusters, 3-5 cm across. In forests or in mangroves, Pulau Serimbun (*Sinclair 39530*), Chua Chu Kang.

Canth. glabrum Bl.

Small tree to 13 m tall, glabrous; leaves ovate, 12-18 cm long; flowers in small cymose clusters; corolla 3-4 mm long, 5-lobed; berry ellipsoid, 2-3 cm long, greenish, with 2 flattened stones inside. In forests; Bukit Mandai (*Ridley 4434*), Tuas.

Canth. horridum Bl.

Spiny shrub, pubescent; spines straight or curved, 3-5 cm long; leaves ovate or elliptic, 2-3 cm long; nerves 3-4 pairs; flowers in cymose clusters; corolla 2-3 mm long, pale green. In forest edges or open places; Gardens' Jungle; Bukit Timah (*Ridley s.n.* in 1893).

Canth. molle K. & G.

Spiny climber, velvety; spines decurved, 1.5-2 cm long; leaves lanceolate to ovate, 5-7 cm long, brown-hairy; nerves 4-5 pairs; cymes small, axillary. In forests, Gardens' Jungle, MacRitchie Reservoir (*Sinclair SF 39147*).

Cephaelis singaporensis Ridley

Low shrub; leaves oblong, 2-6 cm long, narrowed at base; nerves 14-16 pairs; cymose heads 2-2.5 cm across; corolla trumpet-shaped, 2-3 cm long, yellow; drupe light blue, flattened. In forests; Bajau (Ridley 4966).

Chassalia curviflora (Wall.) Thw. (= *C. chartacea* Wall.)

Small shrub, 1-1.5 m tall, glabrous; leaves membranous, variable elliptic to oblanceolate, 6-20 cm long, nerves 5-6 pairs; cymes terminal, 3-5 cm long, peduncles and its branches purple or white tinted purple; flowers subsessile; corolla 1.5-2 cm long, 5-lobed. Berry ellipsoid or globose, 5-6 mm across, 2-seeded, seated on the swollen white branches of the inflorescence. In forests; Bukit Mandai (Ridley s.n. in 1889). (The generic name often spelled as *Chasalia*; some authors have reduced it to *Psychotria*).

Chas. pubescens Ridl.

Small shrub, much branched, hairy; leaves lanceolate, 12-15 cm long; pubescent beneath; nerves 7-8 pairs; compound cymose dense, 2-3 cm long, hairy; flowers in small clusters, rosy white; corolla 6-8 mm long. In forests; once collected at Bukit Timah (Ridley s.n. in 1884).

Coelospermum scandens Bl.

Slender climber; leaves elliptic or obovate, 6-12 cm long; nerves 4-7 pairs; flower-cymes umbellate, fragrant, arranged in a small terminal panicle, 3-4 cm long; corolla 2-3 mm long, 5-lobed, white. Berry depressed globose, 1-1.5 cm across, 2-4 seeded. Climbing on trees in forests; Changi (Ridley 5926), Bukit Timah. (The generic name sometimes spelled as *Caelospermum*).

Coffea liberica Bull. ex. Hiern.

Stout herb or small tree; leaves obovate, thick-leathery, 16-35 cm long, nerves 6-12 pairs; cymes axillary, subsessile; corolla white, 2.5-3 cm long, 6-8 lobed; berry subglobose, 1.5-2.5 cm long, red, with 2 flattened stones inside. Native to W. Africa, formerly planted.

Cof. robusta Linden ex De Wild.

Stout shrub; leaves broadly oblong, 15-30 cm long; nerves 10-12 pairs; cymes 3-5 flowered, axillary; corolla 1.5-2 cm long, 5-7 lobed; berry ovoid-globose, 1-1.5 cm long, red. Native to tropical Africa, formerly planted. Some authors have reduced this species to a variety of *Cof. canephora* Pierre ex Froehner.

Coptosapelta griffithii Hook.f.

Climbing shrub; leaves ovate-orbiculate, 4-6 cm long; nerves 3-4 pairs, hairy beneath; panicles terminal and axillary; corolla salver-shaped, 1.5-2 cm long, white, throat woolly, 5-lobed; capsule obovoid, pubescent, 0.8-1 cm long, seeds numerous. In forests; Gardens' Jungle, Chua Chu Kang (Che Mat 6891).

Copt. parviflora Ridl.

Lofty climber; leaves elliptic, narrowed on both ends, 6-8 cm long; nerves 4-5 pairs; panicle terminal, spreading, 6-8 cm long; corolla 6-8 mm long, green; capsule obovoid, glabrous, 2-4 mm long. Climbing to tops of trees in forests; Bukit Timah (no specimens available).

Copt. tomentosa (Bl.) Val. ex K. Heyne (= *C. flavescens* Korth.)

Lofty climber; leaves ovate or elliptic, 5-10 cm long, nerves 4-5 pairs, soft hairy beneath; corolla 2-2.5 cm long, white, fragrant; capsule obovoid, 4-6 mm long, glabrous. In forests, climbing on trees; Bukit Timah (*Ridley 14117*).

Dentella repens (L.) J.R. & G. Forst.

Creeping branched herb; leaves oblong to elliptic, 4-10 mm long; flowers solitary, in one axil of the paired leaves, 5-merous; corolla 0.5-1.5 cm long, yellowish; fruit ovoid, 2-3 mm long, dry, indehiscent; seeds numerous. In waste ground and damp places; Tanglin, Kallang, Sembawang (*Keng et al 4070*).

Diplospora malaccensis Hook.f.

Small tree, to 10 m tall, glabrous; leaves elliptic, 5-15 cm long; flowers 4-5 in small axillary clusters; corolla tubular, 2-3 mm long, 4-lobed, greenish white; berry globose, orange, few-seeded. In forests; Water Catchment Area, Bukit Timah (*Maxwell 8146*).

Diodia ocymifolia (Willd. ex R. & S.) Bremek.

Rough herb, to 1 m tall; leaves oblong-lanceolate, 3-7 cm long; nerves 5-8 pairs, hairy on nerves and near margin; flowers 6-many, in axillary clusters; corolla 2-4 mm long, 4-lobed; fruit of two 1-seeded cocci. A native of S. America; in damp places, forest edges and grassland.

Diodia sarmentosa Swartz

Herb; leaves oblong-ovate, 3-6 cm long, nerves 3-5 pairs, scabrous above, nerves hairy beneath; flowers 1-8, in axillary clusters. In forest edges and grassland. Native to S. America.

Gaertnera grisea Hook.f. ex Clarke

Shrub, to 1.2 m tall; leaves thin leathery, oblong or oblanceolate, apex acuminate, 20-35 cm long, densely hairy beneath, nerves 7-8 pairs; petiole 6-8 mm long, thick; stipule-sheath tubular, 2-2.5 cm long; cymes terminal and axillary, 6-8 cm long, hairy; corolla white, cylindric, 6-8 mm long; lobes valvate. In forests; Bukit Timah, Bukit Panjang, Ponggol (*Burkill 7613*), Changi. This genus differs from almost all the rubiaceous genera in having a superior ovary, therefore it was classified under Loganiaceae in *Ridley's Flora*.

Gaert. obesa Hook.f. ex Clarke

Stout, fleshy shrub, 1.2 m tall; leaves fleshy leathery, oblong or lanceolate, apex short-acuminate, 25-35 cm long; nerves 9-12 pairs; stipule-sheath 3-4 cm long; cymes dense, umbellate, 4-5 cm across; corolla white, 6-8 mm long, sessile or subsessile, densely hairy in the mouth. In forests; Gardens' Jungle, Tuas, Chua Chu Kang (*Ridley 2680*).

Gaert. vaginans (DC.) Merr. (= *G. acuminata* Benth.)

Shrub; leaves membranous, elliptic, apex acute, 7-9 cm long; stipule-sheath 1-1.5 cm long; panicles terminal, 8-12 cm long; corolla 5-6 mm long, white, lobes acute, as long as the tube, mouth hairy. (In forests, collected in Singapore only once (*Wallich 8342*, not seen).

Gaert. viminea Hook.f. ex Clarke

Slender shrub, 1 m tall; leaves membranous, narrowly lanceolate, apex caudate, 6-9 cm long, nerves 6-7 pairs; cymes 4-6 cm long, 3-chotomously branched; corolla short-cylindric, 5-6 mm long, white, lobes 4, broadly ovate, as long as the tube. In forests; Gardens' Jungle, Bukit Mandai, Changi.

Gardenia carinata Wall. ex Roxb.

Small tree to 7 m tall; leaves thin-leathery, obovate or oblanceolate, 10-40 cm long; flowers solitary, in upper axils; calyx tube 1.5 cm long, 5-6 ribbed; corolla golden yellow, the tube 2.5 cm long, the limb 6-7 cm across, 6-9 lobed; fruit ellipsoid, 3-4 cm long, ribbed, crowned with the calyx lobes. Introduced from N. Malaya, planted as a roadside tree.

Gard. griffithii Hook.f.

Shrub or small tree, to 7 m tall; leaves obovate, thick-leathery, narrowed at base, 12-20 cm long; nerves 12-13 pairs; flowers solitary, terminal; calyx tubular, 6-8 cm long, the mouth expanded; corolla cylindric, 8-10 cm long, orange; fruit globose, woody, 4-5 cm across, crowned by the calyx-lobes. In edge of forests; Bukit Timah, Bukit Mandai (Ridley 6673).

Gard. jasminoides Ellis (= *G. angusta* Merr.; *G. florida* L.)

Shrub, 1-2 m tall; leaves obovate, thick and shining, 8-10 cm long; flowers solitary, axillary; calyx tubular, angled or winged; corolla waxy white, turning yellowish, 3-5 cm long, 5-10-lobed, fragrant. Native of S. China, in several horticultural forms, some double-flowered, sometimes planted in gardens. Vern. *Bunga Susu*, *Bunga China*, 梔子花

Gard. tubifera Wall.

Shrub, to 2 m tall; leaves oblanceolate, much narrowed at the base, 8-24 cm long, nerves 15-18 pairs; flowers terminal; calyx tubular, 1.5-2 cm long; corolla 12-14 cm long, creamy white turning orange-yellow, fragrant; fruit globose, 3-5 cm across. Along river banks in mud; Chua Chu Kang (Ridley s.n. in 1895).

Gardeniopsis longifolia Miq.

Shrub, with few stout branches, 2-3 m tall; leaves oblanceolate, 20-30 cm long; flowers sessile, in axillary clusters; corolla cylindric, 2-2.5 cm long, 5-lobed, rosy white; fruit ovoid or ellipsoid, with 10 ridges, 2-2.5 cm long, crowned with the enlarged, incurved calyx-lobes. In dense forests, Bukit Timah (no specimens available).

Geophila pilosa Pears

Small creeping herb, hairy; leaves ovate-cordate, 1-2.5 cm long; flowers terminal, solitary or 3 together on a slender stalk; corolla small, white, funnel-shaped, 4-6 lobed; drupe globose, black, with 2 stones inside. Rare in forests; Bukit Timah, (Ridley 9516), Reservoir woods.

Guettarda speciosa L.

Small tree, 5-10 m tall; leaves obovate, 10-25 cm long, the base heart-shaped; cymes axillary, 4-11 cm long; corolla trumpet-shaped, 6-11 cm long, limb 6-8-lobed, white, fragrant; fruit depressed globose, 2-2.5 cm across, greenish, faintly and closely ribbed, with a circular calyx-scar on the top. On sandy and rocky shores; Pulau Seletar (Samsuri SA 1214).

Gynochthodes coriacea Bl.

Woody climber, glabrous; leaves leathery, ovate-lanceolate, 6-10 cm long, tip blunt; nerves 4-6 pairs; flowers small, few in an axillary cluster; corolla 2-4 mm long, woolly inside; drupe globose, 1 cm across, white, with 2-4 stones inside. In forests, climbing on trees; Changi, Gardens' Jungle, Mandai (*Samsuri 1388*).

Gynoch. sublanceolata Miq.

Slender woody climber; leaves thin-leathery, elliptic-lanceolate, 5-8 cm long, tip acuminate, nerves 5-6 pairs; flowers sessile, few on very short axillary branches; corolla white; drupe globose, 4-5 mm across. In open country, often near the sea; Changi, Pulau Tekong (*Goodenough 2836*).

Hedyotis auricularia L.

Perennial, to 50 cm high; stems 4-angled, covered with white hairs; leaves lanceolate-oblong, 4-8 cm long; flowers in axillary, sessile, dense cymes; corolla salver-shaped, 2-3 mm long, white; capsule globose, hairy, indehiscent, few-seeded. In open places and road sides; Tuas, Chua Chu Kang (*Ridley 4125*).

Hedy. biflora (L.) Lamk. (= *Oldenlandia paniculata* L., *O. biflora* L.)

Ascending herb, to 20 cm high; leaves oblong or ovate, slightly fleshy, 5-10 mm long; flowers 3-10 in peduncled and often branched (terminal and axillary) cymes; corolla 2-2.5 mm long, white or purplish; capsule ribbed. In waste places; Tanglin (*Kassim 518*).

Hedy. capitellata Wall. ex G. Don

Climbing shrub, glabrous; leaves from branches lanceolate to oblong, 3.5-11 cm long; terminal panicles consisting of umbellate heads (1-1.5 across); corolla creamy coloured, 4-merous, fragrant, hairy inside. Climbing over bushes and hedges; Tanglin (*Ridley 15429*).

Hedy. congesta Wall. ex G. Don

Shrubby herb, to 2 m high; leaves leathery, lanceolate or elliptic, 10-15 cm long; flowers in axillary dense cymes, sessile; corolla campanulate, 3-4 mm long; fruit fleshy, oblong, white. In forests; Gardens' Jungle, Bukit Timah (*Burkill HMB 1894*).

Hedy. corymbosa (L.) Lamk. (= *Oldenlandia corymbosa* L.)

Erect or ascending herb, to 30 cm high; leaves oblong, acute, 1-3 cm long; flowers axillary, solitary or 2-8 in peduncled cymes; corolla white or pale purple, 2 mm long. In sunny places or rocky areas. Singapore (*Furtado s.n.* in 1924).

Hedy. dichotoma Koen. ex Roth (= *Oldenlandia dichotoma* Hook.f.)

Slender, diffused herb, 30-40 cm tall; leaves lanceolate or oblong, 1.5-3 cm long; cymes axillary, and terminal, in several dichotomous branches; corolla bell-shaped, 1.5-2 mm long, the lobes spreading. In dry sandy places near the sea; Geylang (*Ridley 11512*).

Hedy. diffusa Willd. (= *Oldenlandia diffusa* (Willd.) Roxb.)

Prostrate herb, to 40 cm high; leaves sessile, linear lanceolate, 1-2 cm long; flowers solitary or in pairs, axillary sessile or nearly so; corolla white or purple; capsule depressed globose, 2-3 mm long, usually nodding. In open sandy places; Chua Chu Kang (*Hullett 333*), Water Catchment Areas. 白花蛇舌草

Hedy. herbacea L.

Annual, to 20 cm high; leaves sessile, linear or narrowly elliptic, 1-2.5 cm long; flowers axillary, solitary or 2-4 in peduncled cymes; corolla white, 2 mm long. In open places, Singapore (*Ridley s.n.* in 1892).

Hedy. pinifolia Wall. ex G. Don.

Prostrate annual, to 30 cm high; leaves thick, sessile, linear to lanceolate, 1-1.5 cm long; flowers solitary, or 2-4 in peduncled cymes, axillary; corolla 3 mm long, white or purple; capsule with long bristles. In sandy places by the sea; Jurong (*Ridley 8924*).

Hedy. trinervia (Retz.) R. & S. (= *Old. trinervia* Retz.)

Prostrate annual, to 20 cm long; leaves thin, obovate, 0.2-0.5 cm long; flowers solitary, sessile or nearly so, axillary; corolla 1.5 mm long, white. In open spaces with sandy soil; Geylang, Pulau Sudong (*Maxwell 82295*).

Hydnophytum formicarium Jack

Epiphytic small shrub; fleshy tuber irregularly lobed, 16-20 cm across, glabrous, tunnelled and perforated forming an ant's nest; leaves leathery, elliptic, 4-10 cm long, subsessile, nerves 7-11 pairs; flowers 3-5, in axillary sessile cymes; corolla salver-shaped, 3-4 mm long, white; drupe narrowly ellipsoid, 4-5 mm long, with 2 stones inside. In secondary forests, often near the sea; Jurong, Changi (*Ridley 303*).

Hypobathrum coniferum (Ridl.) Bakh. f. (= *Petunga conifera* Ridl.)

Slender tree, 10 m tall; branches 4-angled, glabrous; leaves leathery, 15-22 cm long, nerves 7-9 pairs; flowers small, in pairs on cone-like dense axillary spikes, 4-angled, 1-1.5 cm long; corolla funnel-shaped, 2-3 mm long, 4-lobed, white. Only one tree formerly found in the Gardens' Jungle (*Ridley 10722*, type).

Ixora chinensis Lamk.

Shrub, branched, to 2 m tall; leaves short-stalked, obovate-oblong, leathery, 6-10 cm long; flowers in dense cymose corymbs, 5-10 cm across; corolla 3-3.5 cm long, 4-lobed, the lobes rounded, yellow turning red. Native to S. China and Thailand, cultivated. 仙丹花

Ixora coccinea L.

Branched shrub; leaves sessile, ovate to obovate, 3.5-10 cm long, the base heart-shaped, clasping the stem; corolla 3-4.5 cm long, red or sometimes yellow or pink, often fragrant; the lobes pointed. Native of India, cultivated.

Ixora congesta Roxb.

Shrub or small tree, to 7 m tall; leaves elliptic-oblong, 12-30 cm long; corymbiform inflorescence 15-20 cm across; corolla yellow turning orange or pink. In forests, Bukit Timah, Chua Chu Kang.

Ixora finlaysoniana Wall. ex G. Don

Shrub or small tree; leaves oblong or oblanceolate, leathery, 10-18 cm long; flowers white, fragrant. Native to India and Andaman Islands, sometimes cultivated.

***Ixora grandifolia* Z. & M.**

Bushy tree, to 2 m tall; leaves variable, lanceolate or obovate, 12-20 cm long, narrowed at base; corymbiform inflorescence 10-20 cm across; corolla 1-1.5 cm long, white tinged with pink; fruit ellipsoid, red, 6-8 mm long. In forests, formerly collected from Chua Chu Kang (*Ridley 4120*).

***Ixora javanica* (Bl.) DC.**

Shrub, variable; leaves elliptic oblong, 10-25 cm long, shortly stalked; corolla 2.5-3.5 cm long, yellow turning red; the lobes bluntly pointed. Native to Java, cultivated.

***Ixora lobbii* K. & G.**

Shrub, 2-3 m tall; leaves lanceolate or oblong, 10-25 cm long, many (15-25)-nerved; corymbiform inflorescence 12-15 cm across; corolla 3-4 cm long, yellow-orange turning red, the lobes acute. In forests; Sungei Morai, Gardens' Jungle, Changi (*Hullett s.n.* in 1893).

***Ixora pendula* Jack**

Shrub, to 8 m tall, glabrous; leaves variable, oblong or elliptic, 10-25 cm long; corymbiform inflorescence 10-20 cm across; corolla 2-3.5 cm long, rose-red. In forests; Changi (*Ridley 2868*), Gardens' Jungle.

***Jackia ornata* Wall.**

Slender tree, to 10 m tall; leaves leathery, oblanceolate, 15-40 cm long, pubescent, nerves 10-12 pairs; withering red; stipule-sheath with many long bristles or teeth round the edge; flowers small in axillary hanging panicles, 15-35 cm long; corolla funnel-shaped, less than 1 cm long, yellowish white; fruit obconic, nut-like, 1.5 cm long, crowned by 3 enlarged calyx-lobes. In swampy forests, Kranji, Dalvey Road (*Ridley 4114*).

***Lasianthus appressus* Hook.f.**

Small shrub, densely covered with soft yellow hairs; leaves leathery, lanceolate or oblong, 5-8 cm long; nerves 6 to 7 pairs; stipules prominent; flowers axillary, few together, sessile, surrounded by linear hairy bracts; corolla trumpet-shaped, 4-5 lobed, 5-6 mm long; drupe globose, 2-3 mm across, blue, hairy, with 2-6 stones inside. In forests; Chua Chu Kang (*Ridley 4122*).

***Las. attenuatus* Jack (Syn. *L. densifolius* Miq.)**

Shrub, covered with yellow hairs; leaves membranous, lanceolate-oblong, 5-8 cm long nerves, nerves 7-8 pairs; flowers 1-3 in axillary cymes. In forests; Bukit Timah, Chua Chu Kang (*Ridley 16704*).

***Las. chryseus* Ridl.**

Small shrub, 1 m tall, covered with appressed yellow hairs; leaves thin leathery, lanceolate, 10-12 cm long, nerves 8-9 pairs; cymes 5-6 flowered, sessile. In forests: Gardens' Jungle, Chua Chu Kang, Bukit Timah (*Ridley 8126*).

***Las. constricta* Wight**

Shrub; leaves thin-leathery, elliptic-oblong, 8-11 cm long, nerves 3-5 pairs; axillary cymes 4-6 flowered, sessile. In forests; Changi (*Ridley s.n.* 1892), Kranji, Sungei Buloh.

Las. cyanocarpus Jack

Shrub, hairy; leaves, leathery, oblanceolate to oblong, 10-16 cm long, the base narrowed, unequal, nerves 7-10 pairs; axillary cymes 3-4-flowered, sessile. In dry sandy places near the sea; Changi, Pulau Ubin (Ridley 9499).

Las. ellipticus Wight

Shrub, hairy; leaves thin-leathery, ovate or elliptic, 10-16 cm long, nerves 6-8 pairs; cymes few-flowered. In forests, Chua Chu Kang (Ridley 6146), Pasir Panjang.

Las. griffithii Wight

Small shrub, sparsely pubescent; leaves leathery, oblanceolate or elliptic, 20-30 cm long, nerves 13-15 pairs; flower-clusters 2-2.5 cm across; corolla white. In forests; Chua Chu Kang (Ridley 4121).

Las. maingayi Hook.f.

Small shrub, young parts covered with yellow hairs; leaves membranous, narrowly elliptic, 12-17 cm long, nerves 4-5 pairs; cymes few-flowered. In forests; Bukit Timah (Ridley 12550), Gardens' Jungle.

Las. ridleyi K. & G.

Shrub, soft-pubescent; leaves thin-leathery, oblong or elliptic, 12-20 cm long; flower-clusters 1-1.5 cm across. In forests, Gardens' Jungle (Ridley 4894), Bukit Timah.

Las. scabridus K. & G.

Shrub, densely hairy; leaves leathery, elliptic-oblong, 10-20 cm long, nerves 10-12 pairs; flower-clusters dense globose, 2-1.5 cm across. In forests; Jurong (Burkill 713).

Las. singaporensis K. & G.

Shrub, soft-hairy; leaves thin-leathery, elliptic, narrowed to both ends, 12-15 cm long; cymes 4-6 flowered. In forests; Bukit Timah (Ridley s.n. in 1891), Seletar.

Las. stipularis Bl.

Slender shrub, glabrous; leaves thin-membranous, lanceolate or oblong, base narrowed, decurrent to the petiole, 12-16 cm long; stipules broad-deltoid, completely covering the flowering heads. In forests; Bukit Timah, Bukit Panjang (Ridley 12547).

Las. tomentosus Bl.

Shrub, densely hairy; leaves leathery, oblong-lanceolate, 5-8 cm long, nerves 7-10 pairs; flowers in dense axillary cymes, sessile. In forests: Woodlands, Kranji (Ridley s.n. in 1891).

Lecananthus erubescens Jack

Woody climber; branches 4-angled, glabrous; leaves fleshy membranous, narrowly oblong or elliptic, 7-20 cm long; flowers in axillary involucre, round or oblong, clusters, 2-2.5 cm across; corolla funnel-shaped, white, tinted purple, 5-lobed. In wet forests, creeping on trees; Jurong, Kranji, Chua Chu Kang (Ridley 3814).

Lucinaea membranacea King

Epiphytic climber, pubescent; leaves membranous, oblong or elliptic, 8-12 cm long, nerves 8-9 pairs, midrib red beneath; flowers sessile, 8-10 in terminal and axillary heads, 1.5-2 cm across; heads 1-3 together, peduncled; corolla funnel-shaped, 2-3 mm long, 5-6 lobed; berry subglobose, fused at base forming a small head 6-8 cm across, red. In forests; Bukit Mandai (*Ridley s.n.* in 1891), Chua Chu Kang.

Luc. morinda DC.

Scandent shrub sometimes epiphytic, glabrous; leaves leathery, elliptic-lanceolate to ovate, 3-6 cm long, nerves 8-11 pairs; flower-heads 2 cm across, peduncled, 1-6 heads together terminal; corolla 5-6 mm long, white, fragrant; fruiting heads 1.5-2 cm across. In open sandy spots near the sea; formerly collected by W. Jack at Thomson Road, no specimens available.

Morinda citrifolia L.

Shrub or small tree, 3-4 m tall; leaves membranous, elliptic, 15-20 cm long; flowers sessile, in globose heads, 1.5-2 cm across, terminal and axillary; corolla cylindric 1.5 cm long, white; fruit-cluster oblong-ovoid, 5-7 cm long, whitish, formed by the fusion of small fruits with their succulent calyces and the axis. Leaves are edible and fruits are used in local medicine; according to Ridley, it was probably introduced from Moluccas. Vern. *Mengkudu*.

Mor. ridleyi (K. & G.) Ridl.

Large climber; leaves obovate or oblong, base round, 6-8 cm long, densely red-hairy beneath, nerves 4 pairs; small heads 5-6 mm across, umbellate; berry black. In forests; Gardens' Jungle (Ridley 6470).

Mor. rigida Miq.

Stout climber, soft-hairy; leaves thick-leathery, elliptic, 6-10 cm long, nerves 18-20 pairs; fruiting heads 2-2.5 cm long, green. Usually near the sea; Changi, Kranji (*Ridley 4126*).

Mor. umbellata L.

Climbing shrub; leaves thin-leathery, lanceolate or elliptic, 7-12 cm long, glabrous, nerves 5-7 pairs; flower-heads subglobose, 5-6 mm across, umbellate; fruiting heads orange. In open sandy places; Kranji (*Ridley s.n.* in 1892), Changi, Pulau Ubin.

Mussaenda erythrophylla Schum. & Thonn.

Shrub, drooping or climbing, 2-4 m high; the calyx-lobes directed to the outside of inflorescence, enlarged, petaloid, obliquely ovate, 5-10 cm long, bright red above, pale red beneath. Native to tropical Africa, cultivated in gardens.

Mus. glabra Vahl

Climbing shrub, glabrous; leaves leathery, variable, lanceolate or elliptic, 6-9 cm long, nerves 5-6 pairs; cymes dense, terminal; calyx bell-shaped, the enlarged, petaloid lobe broadly ovate, 8-10 cm long and wide, white; corolla trumpet-shaped, dark red or orange-red. In secondary forests; Chua Chu Kang (*Hullett 846*). 玉葉金花

Mus. flava (Verdcourt) Bakh. f. (= *M. luteola* Delile)

The enlarged, petaloid lobe lemon yellow, 2.5-3.5 cm long. Native to tropical Africa.

Mus. mutabilis Hook.f.

Glabrous shrub; leaves membranous, elliptic to ovate, 12-18 cm long, nerves 8-9 pairs; compound cymes terminal; calyx cylindric, the 5 lobes all narrow lanceolate, similar, not enlarged; corolla tubular, 5-lobed, orange or bright red, fading orange-yellow. In forests; Seletar (*Goodenough* 1643).

Mus. philippica L. C. Rich.

Shrub or rarely small tree, to 5 m tall; branches drooping; flowers prolifically most of the year. Several hybrid forms: only one of the calyx-lobes enlarged, pale pinkish ("Alicia"), or all five of the calyx-lobes enlarged, creamy white ("Dona Aurora") or pink ("Dona Luz"). Introduced from the Philippines, widely planted.

Mussaendopsis beccariana Baill.

Large tree, glabrous; leaves leathery, nearly orbicular, 8-15 cm long, nerves 5-6 pairs; cymes in panicles, 15-20 cm across; calyx bell-shaped, usually with 5 small lobes and 1 large, the large lobes obovate, white, 2-3 cm long; capsule oblong, 1-1.5 cm long. In forests, Jurong, Sembawang, Chua Chu Kang (*Goodenough* 1850).

Mycetia malayana (Wall.) Craib (= *Adenosacme malayana* Wall.)

Shrublets, 50-70 cm high; bark white, shiny; leaves membranous, elliptic-lanceolate, 15-25 cm long, densely hairy; flowers in terminal cymose panicles, 5-15 cm across; corolla yellow, very short (2-3 mm long), 5-lobed; berry subglobose, 2-3 mm across, white, pulpy. In dense forests; Bukit Timah (*Holtum* 19794).

Myrmecodia armata DC. (= *M. tuberosa* Bl.)

Epiphytic shrub, tuber 10-20 cm across, strongly spiny, tunnelled and perforated forming an ant's nest; leaves leathery, elliptic, base narrow, 7-12 cm long, nerves 7-10 pairs; flowers solitary or few together at base of cup-shaped cavities in stem; sessile; corolla cylindric, 3-4 mm long, 4-lobed; drupe oblong, orange, 2 cm long, 4-8 seeded. On trees near the sea, not common; Jurong (*Ridley* 3854), Bukit Timah.

Nauclea officinalis (Pitard) Merr. & Chun (= *Sarcocephalus junghuhnii* Miq.)

Bushy tree, to 10 m tall; leaves leathery, elliptic to obovate, shortly acuminate, 10-15 cm long, nerves 5-7 pairs; flowers sessile, joined by the fused calyx-tubes into axillary globular heads, 1-1.5 cm across; peduncles stout, 3-7 cm long; corolla funnel-shaped, 2-3 mm long, creamy yellow, fruiting heads globose, 1.5-2 cm across. In forests; Upper Thomson Road (*Sinclair* SF 40379).

Nauc. subdita (Korth.) Steud.

Small trees, 4-10 m tall; branches glabrous; leaves thin-leathery, elliptic to broadly oblong, 8-14 cm long, nerves 5-7 pairs; flowers in peduncled heads, 1.5-2 cm across; corolla 5-6 mm long, pale yellow. In forests; Bukit Timah (No specimens available).

Ophiorrhiza singaporensis Ridl.

Herb, 10-30 cm long; stems succulent, hairy; leaves lanceolate-oblong, 10-15 cm long; flowers on the upper side of the branched terminal inflorescence; corolla cylindric, white, 4-5 mm long, 5-lobed; capsule strongly flattened, broadly heart-shaped, 4-5 mm long, hairy. In forests; Bukit Timah, Chua Chu Kang (*Ridley* s.n. in 1890).

Paederia scandens (Lour.) Merr. (= *P. foetida* L.)

Twining slender shrub, foetid; leaves opposite, lanceolate or ovate, 5-8 cm long, nerves 4-5 pairs; flowers in terminal or axillary cymose panicles, 10-15 cm long; corolla funnel-shaped, pubescent, 1-1.5 cm long, violet; fruit orbicular, thin-walled, 4-6 mm wide, orange. In open places.

Paed. verticillata Bl.

Like the above species, but stems stouter and the leaves thicker and larger (6-10 cm long), opposite or in whorls of three; fruit white, flattened. In forest edges; Chua Chu Kang (*Ridley* 3647).

Pavetta indica L.

Shrub or small tree, Ixora-like; leaves oblanceolate or elliptic, 7-15 cm long, velvety; flowers in corymbose cymes, 5-10 cm across; corolla 1.5-2 cm long, 4-lobed, white, style projecting 1.5-2.5 cm beyond the corolla-tube. In forests; Chua Chu Kang, Kranji (*Cantley* 2699). A highly variable species, this plant sometimes considered to be a variety of *P. indica*, namely *P. indica* L. var *canescens* (Wall.) Ridl.

Pentas lanceolata (Forsk.) Deflers. (= *P. carnea* Beth.)

Herb or subshrub, hairy; leaves opposite, ovate, pointed, 3-8 cm long; cymes congested in terminal corymbose or head-like, 6-8 cm across; corolla tubular, 2 cm long, 5-lobed, purple, pink or white. Native to tropical Africa, sometimes cultivated in pots.

Prismatomeris tetrandra K. Schum. (= *P. malayana* Ridl.)

Shrub, 2-3 m tall, glabrous; leaves thin-leathery, variable, lanceolate to elliptic, 6-12 cm long, nerves 5-7 pairs; flowers with slender pedicels (1-1.5 cm long), in terminal sessile fascicle; corolla slender, white, fragrant, 1.5 cm long, 5-lobed; drupe globose, 1- or 2-seeded. In open places: Changi (*Ridley s.n.* in 1891), Chua Chu Kang.

Psychotria angulata Korth.

Erect shrub, glabrous; leaves leathery, oblanceolate, 9-15 cm long, nerves 8-10 pairs; cymes paniculate, terminal, 2-3 cm across; corolla 2-3 mm long, tubular, 5-lobed, the lobes silky inside; drupe red or black, ellipsoid, 4-5 mm long, 2-seeded, the seed grooved. In forests; Changi (No specimens available).

Psych. cantleyi Ridl.

Slender climber; leaves lanceolate or ovate, 5-8 cm long, nerves 5-6 pairs; flowers in compact cymes. In forests; Chua Chu Kang (*Ridley s.n.* in 1892).

Psych. griffithii Hook.f.

Low shrub, glabrous; leaves leathery, oblong, 14-24 cm long, nerves 11-15 pairs; cymes paniculate, 3-4 cm across; corolla fleshy. In forests; Bukit Timah (*Md. Shah & Ali* 4144), Bukit Mandai.

Psych. helferiana Hook.f.

Tiny shrub, densely hairy; leaves membranous, lanceolate or elliptic, 15-22 cm long; cymose heads globose; corolla white. In forests; Gardens' Jungle, Chua Chu Kang, Bukit Timah (*Md. Shah* 749).

Psych. maingayi Hook.f.

Slender climber, pubescent; leaves thick membranous, elliptic, narrowed at base, 5-9 cm long, nerves 5-6 pairs; cymes terminal and axillary; corolla yellowish green or white, 3-4 mm long. In woods near the sea; Kranji (*Ridley* 6924), Pasir Panjang.

Psych. malayana Jack

Shrub, to 2 m tall; leaves leathery, elliptic or elliptic-lanceolate, narrowed at base, 12-24 cm long, nerves 12-18 pairs; cymes corymbiform, 6-8 cm across. In edge of forests; Bukit Timah, Bukit Panjang (No specimens available).

Psych. obovata Wall.

Climbing shrub, glabrous; leaves ovate to obovate, leathery, 5-8 cm long, nerves 5-6 pairs; corymbiform inflorescence large, many-flowered; corolla greenish white, 2-3 mm long, the tube very short, 5-lobed. In forest edges; Gardens' Jungle, Kranji (*Ridley* 2874).

Psych. ovoidea Wall.

Slender climber, hairy; leaves leathery, ovate or cordate, 4-6 cm long, nerves 5-7 pairs; cymes dense, 2 cm across; corolla white, 4-lobed. In forests, Seletar, Gardens' Jungle, Bajau (*Ridley s.n.* in 1894).

Psych. penangensis Hook.f.

Woody climber, glabrous; leaves fleshy, leathery, obovate-elliptic, 7-11 cm long, nerves 5-9 pairs; cymes 4-5 in corymbiform inflorescence, 8-10 cm across; corolla white. In forests; Gardens' Jungle (*Ridley s.n.* in 1900); Water Catchment Areas.

Psych. ridleyi K. & G.

Low climber, 2 m tall, glabrous; leaves membranous, lanceolate to oblong-elliptic 10-14 cm long, nerves 8-10 pairs; branched cymes 4-5 cm across; corolla white. In forests; Gardens' Jungle, Bukit Timah (*Ridley* 10818).

Psych. rostrata Bl.

Erect shrub; leaves thin membranous, elliptic-oblong, narrowed at base, 7-14 cm long, nerves 5-6 pairs; cymes in small panicles; corolla white. In forests; Seletar, Pulau Ubin (No specimens available).

Psych. sarmentosa Bl.

Climber, often creeping with aerial roots on tree trunks; leaves thin leathery, elliptic, 6-10 cm long, nerves 7-10 pairs; cymose corymbs 4-5 cm across; corolla greenish. In forests; Kranji, Serangoon, Changi (*Ridley* 2875).

Psych. stipulacea Wall. ex Roxb.

Stout low shrub, glabrous; leaves membranous, oblanceolate or elliptic, 12-22 cm long, nerves 10-12 pairs; cymes densely flowered, 1-1.5 cm across; corolla greenish white. In forests; Bukit Timah (No specimens available).

Randia anisophyllea (Jack ex Roxb.) Hook.f. (Alt. name: *Porterandia anisophylla* Ridl.)

Small tree, to 10 m tall, often much branched, hairy; leaves obovate or elliptic, the base subequal, 10-30 cm long, nerves 10-14 pairs; cymes terminal, in dense clusters, 3-6 cm across; corolla tubular, 1.5-1.8 cm long, 5-lobed, white; berry

ovoid, 3-4 cm across, green, many-seeded, crowned by the 5-lobed calyx. In forests; common in Bukit Timah (*Burkill HMB 318*). (*Randia* as noted by Backer and Bakhuizen f. is an "extremely heterogenous" genus. The Malayan species were formerly dispersed in seven sections. Recently it was revised by Mr K. M. Wong (in *Mal. Nat. J.* Vol. 38). The names which appear in Mr Wong's paper are cited here as alternative names).

***Randia auriculata* (Wall.) Steud. (Alt. name: *Aidia corymbosa* (Bl.) Wong)**

Stout climber; leaves leathery, elliptic or oblong, 10-15 cm long, nerves 6-8 pairs; cymes in terminal and axillary corymbs, 6-8 cm across, hairy; berry globose, 5-6 mm across, 2-loculate, many-seeded. In forests; Singapore (*Wallich*).

***Randia cochinchinensis* (Lour.) Merr. (Alt. name, *Aidia cochinchinensis* Lour.)**

Shrub or small tree, to 12 m tall; leaves lanceolate to oblong-elliptic, 10-15 cm long; leathery; cymes in small dense clusters, axillary, 4-6 cm across, many-flowered; corolla 2-3 mm long. In forests; Chua Chu Kang (*Ridley 5662*).

***Randia fragrantissima* Ridl. (Alt. name: *Oxyceros fragrantissima* (Ridl.) Wong)**

A stout climber, with paired recurved wood thorns, glabrous; leaves elliptic or ovate, leathery, 11-16 cm long; corymbiform inflorescences terminal and axillary, 4-5 cm across, of many fragrant flowers; corolla tubular, 2.5-3.5 cm long, creamy white. In forests, climbing on trees; Bukit Timah (*Ridley 13022*), Pulau Tekong, Changi.

***Randia longiflora* Lam. (Alt.: name, *Oxyceros longiflora* (Lam.) Yamazaki)**

Climber with paired hooked thorns; leaves leathery, obovate or oblong, 4-8 cm long; umbellate cymes terminal or axillary; corolla 3-4 cm long, white. In tidal rivers and mangrove swamps; Changi, Pasir Ris (*Furtado SFN 18640*).

***Randia macrophylla* R. Br. ex Hook.f. (Alt. name: *Rothmannia macrophylla* Bremek).**

Slender shrub, to about 1 m high, pubescent; leaves membranous, oblanceolate, 18-30 cm long, subsessile, nerves 11-14 pairs; flowers 1 or 2, in upper axils, pendulous; corolla trumpet-shaped, 15-20 cm long, 8-10 cm across at the mouth, white with purple spots inside ("purple trumpet"). In forests; Singapore (*Hullett 339*).

***Randia macrantha* DC. (Alt. name: *Euclinia longiflora* Salisb.)**

A garden shrub, 3-4 m tall, with a cluster of long (20-23 cm long) white flowers at the end of a branch. Native to tropical Africa, sometimes cultivated.

***Randia penangiana* K. & G. (Alt. name: *Oxyceros penangianus* Tirvang.)**

Woody climber with stout paired axillary thorns (to 1 cm long); leaves elliptic, thin-leathery, 8-10 cm long, nerves 5-7 pairs; cymes 3-4-flowered, terminal and axillary; corolla 3-4 cm long, white. In forests; Gardens' Jungle (*Ridley s.n.* in 1902), Bukit Timah.

***Randia scandens* (Bl.) DC. (Alt. name: *Oxyceros scandens* (Bl.) Tirvang.)**

Climber, with paired recurved hooks, glabrous; leaves elliptic-oblong, thick leathery, 10-15 cm long; flowers 3 in a cyme; corolla tubular, 4-5 cm long, white. In forests, climbing on trees; Bukit Timah (*Ridley s.n.* in 1894).

Saprosma glomerulatum K. & G.

Low shrub, glabrous, twigs and leaves foetid when bruised; leaves thin-leathery, elliptic or ovate, 10-16 cm long, nerves 7-9 pairs; flowers 4-5 in a sessile axillary cluster; corolla salver-shaped, 3-4 mm long, 4-lobed; fruit depressed globose, blue. In forests; Bukit Timah (*Md. Shah & Samsuri 3896*), Bukit Mandai.

Scyphiphora hydrophyllacea Gaertn.f.

Shrub, rarely a small tree, glabrous; twigs and petioles reddish when young; leaves ovate, leathery, upright, 3-5 cm long; flowers in dense cymes, 3-4 cm across; corolla about 1 cm long, cylindric, 4-lobed, pinkish; drupe green then whitish, 1 cm long, 6-8 grooved with two ribbed pyrenes inside. Common in mangroves and along muddy seashores; Jurong (*Ridley s.n.* in 1894). Vern. *Cengan*.

Tarenna adpressa (King) Corner (= *Stylocaryna adpressa* King, *Tarrena lancifolia* Ridl.)

Shrub, to 2 m tall; branches 4-angled, pubescent; leaves lanceolate or narrowly elliptic, thin-leathery, 15-20 cm long, nerves 6-10 pairs; many-flowered cymes forming dense corymbs, terminal; corolla cylindric, 1 cm long, 5-lobed; berry globose 5 mm across, whitish, with 2 pyrenes inside. In damp forests; Bukit Timah (*Ridley s.n.* in 1896).

Taren. fragrans (Bl.) K. & V.

Shrub, to 2 m tall; leaves oblong or elliptic, 6-15 cm long; corymbs 5-7 cm across; berry globose, black. In forests; Geylang (*Ridley 10933*), Katong.

Taren. grandifolia (Hook.f.) Ridl.

Shrub, 1 m tall; leaves oblong-elliptic, thin-leathery, 10-20 cm long, nerves 8-12 pairs; cymes 2-3 cm across, in corymbs, pubescent; corolla 1.2 cm long, white. In forests; Bukit Timah, Seletar (No specimens available).

Taren. ridleyi (Pears.) Ridl.

Shrub, 60 cm high, glabrous; leaves broad-elliptic, thin-leathery, 12-15 cm long, nerves 10-14 pairs; corymbs 5-6 cm across; berry fusiform. In open damp forests; Chua Chu Kang (*Ridley s.n.* in 1892).

Taren. mollis (Wall.) Ridl.

Small tree, hairy; leaves lanceolate to ovate, leathery, 10-15 cm long, nerves 10-12 pairs; corymbs 4-5 cm across; corolla white; berry black. In forests, Tanglin (*Ridley s.n.* in 1905).

Taren. stellulata Ridl.

Shrub, to 1 m tall; leaves elliptic, cuspidate, 10-20 cm long, nerves 7-10 pairs; corymbs 3-5 cm across; corolla 1 cm long; berry ovoid, 1 cm long. In forests; Woodlands (*Ridley 11645*); Bukit Mandai.

Timonius compressicaulis (Miq.) Boerl. (= *T. finlaysonianus* Hook.f.)

Shrub; leaves fleshy-leathery, oblanceolate or elliptic, 8-15 cm long, nerves 4-5 pairs; flowers unisexual, on separate trees; male in short cymes about 2 cm long; corolla silky white, 2-3 mm long; female solitary; berry globose, bluntly 4-angled, many-seeded. In tidal mud along seashores; Serangoon (*Ridley 2762*).

Timon. flavescens (Jack) Baker (= *T. peduncularis* Ridl.)

Small tree; leaves thin-leathery, elliptic, narrowed at both ends, 6-10 cm long, nerves 4-7 pairs; male cymes 3-7 flowered; corolla yellow, 1-1.2 cm long; berry oblong, 5-6 mm long, 4-angled, red. In open places; Bukit Mandai, Kranji, Seletar (*Kadim Tassim* 512).

Timon. wallichianus (Korth.) Valetton

Small tree; leaves lanceolate, 6-9 cm long, glabrous above, silvery hairy beneath, nerves 7-11 pairs; male cymes in dense clusters, 1.5-2.5 cm across; female cymes 3-flowered, stalked; berry oblong, 1.2-1.5 cm long, bluntly 4-shouldered. In forest edges; Bukit Timah, Changi, Chua Chu Kang (*Ridley s.n.* in 1889).

Timon. wrayi K. & G

Tree, 15 m tall; leaves leathery, obovate-elliptic, base narrow, 12-20 cm long, nerves 6-7 pairs; male flowers 6-8 in a cyme, pubescent; berry solitary, ellipsoid or globose, crowned by calyx-lobes. Changi (No specimens available).

Uncaria attenuata Korth.

Slender climber; leaves elliptic, 6-12 cm long, nerves 6-8 pairs; flowers in a globose head, 3-4 cm across; peduncles 2-5 cm long, hairy; corolla slender, 8-10 mm long; capsules fusiform, 2-valved, many-seeded. In forests; Bukit Mandai, Bukit Timah (*Ridley s.n.* in 1889). (Species of *Uncaria* are climbers, climbing by the aid of short, hook-shaped modified lateral branches. They can supply clear drinking water).

Uncar. cordata (Lour.) Merr. (= *U. pedicellata* Roxb.)

Climber; leaves coriaceous, ovate-elliptic, 8-12 cm long, nerves 7-8 pairs; heads 4-5 cm across; peduncles 4-5 cm long; corolla slender, 1.5-2 cm long. In open forests; Bukit Timah, Tuas (*Goodenough* 2852).

Uncar. gambir Roxb.

Slender climber or bush (in cultivation); leaves ovate-oblong, 8-14 cm long, nerves 4-5 pairs; flower-heads 3-4.5 cm across; peduncles 2.5 cm long, slender, glabrous; corolla 1-1.2 cm long, tubular, slender, red, the lobes oblong, white. Native to Sumatra and Borneo, formerly cultivated in large plantations. An astringent extract, the gambier or pale catechu, prepared by boiling down the leaves and stems, is used by tanners and dyers.

Uncar. glabrata (Bl.) DC.

Slender climber, glabrous; leaves oblong, 6-8 cm long; flower-heads 2-2.5 cm across; peduncle thick, 2.5 cm long; corolla tubular, 6-8 mm long. In forests; Jurong, Bukit Mandai (*Ridley* 2846), Pulau Ubin.

Uncar. jasminiflora Hook.f.

Slender climber; leaves thin-leathery, elliptic, acuminate, 6-12 cm long, nerves 5-6 pairs; flower-heads about 3 cm across; corolla slender, 1-1.2 cm long. In forests and mangrove swamps; Jurong, Bukit Mandai (*Ridley* 10415).

Uncar. longiflora (Poir.) Merr. (= *U. pteropoda* Miq.)

Large climber; leaves leathery, glabrous, elliptic, 12-16 cm long, nerves 7-8 pairs; petioles winged; flower-heads 2.5-3 cm across; peduncle as long. In forests; Bukit Timah (*Ridley* 2854), Gardens' Jungle.

Uncar. ovalifolia Roxb.

Slender climber; leaves membranous, elliptic, shortly acuminate, 4-7 cm long, nerves 3-4 pairs; flower-heads 2-2.5 cm across; peduncle 1.5-2.5 cm long, slender; corolla tubular, 1.5 cm long. In damp forests; Chua Chu Kang, Ang Mo Kio (*Ridley s.n.* in 1889), Gardens' Jungle.

Uncar. roxburgiana Korth.

Slender climber, soft hairy; leaves thin-leathery, ovate 5-8 cm long, nerves 5-6 pairs; flower-heads 1.5-2 cm across; peduncles 1 cm long; corolla 1-1.2 cm long, slender, pinkish. In forest margins; Bukit Timah, Bukit Panjang, Chua Chu Kang (*Ridley 6716*).

Uncar. sclerophylla Roxb.

Large climber, covered with red soft hairs; leaves leathery, ovate or oblong, 10-15 cm long, nerves 9-10 pairs; flower-heads 7-10 cm across; peduncle 6-8 cm long; corolla 2-3 cm long; silvery hairy. In thickets; Jurong, Gardens' Jungle, Water Catchment Areas (*Ridley 10635*).

Urophyllum glabrum Wall. ex Roxb.

Slender shrub, to 2 m tall, glabrous; leaves thin-leathery, elliptic, acuminate, 10-14 cm long, nerves 5-8 pairs; axillary clusters few-flowered, shortly peduncled; corolla greenish-yellow; berry globose, top flattened, orange, many-seeded. In forests; Ang Mo Kio (*Ridley 61160*).

Uroph. griffithianum Hook.f.

Shrub or small tree; leaves leathery, elliptic or oblong, 12-18 cm long, nerves 7-8 pairs; axillary cymes many-flowered. In forests; Gardens' Jungle, Changi, MacRitchie Reservoir (*Md. Shah & Md. Ali 3873*).

Uroph. hirsutum Hook.f.

Shrub, or small tree, soft hairy; leaves oblong-lanceolate, 7-12 cm long, nerves 8-10 pairs; flowers in small cymes; corolla 2-3 mm long, hairy. Common in forests; Gardens' Jungle, Chua Chu Kang (*Ridley 3906*, ♂).

Uroph. macrophyllum (Bl.) Korth.

Shrub or small tree; leaves elliptical oblong, acuminate, 3-8 cm long, nerves 9-11 pairs; flowers in dense short-peduncled umbels, pubescent; corolla cylindric, 2-3 mm long. In forests; Kranji.

Uroph. streptopodium Wall.

Slender shrub, to 2 m tall; young branches 4-angled, yellow, soft-hairy; leaves thin-leathery, elliptic-oblong, 5-15 cm long; flowers in short, dense cymes about 1 cm long. In forests; Bukit Timah, Jurong, Pulau Ubin, Chua Chu Kang (*Ridley 4906*).

Uroph. trifurcum Pears.

Shrub or small tree, glabrous; leaves leathery, oblong-elliptic, 12-18 cm long, nerves 10-12 pairs; flowers in small umbels, usually 3 umbels in a common peduncle. In forests; Changi, Kranji.

Warszewiczia coccinea (Vahl.) Klotzsch.

Shrub, 3-6 m tall; leaves oblong or obovate, 15-60 cm long; cymes in terminal panicles; one of the calyx-lobes of the outermost flowers enlarged, petaloid, elliptic, bright red, 3-11 cm long; corolla-tube yellow or orange, 1 cm long, 5-lobed. Native to tropical America, sometimes cultivated in gardens.

126. CAPRIFOLIACEAE

Key to the Genera

- A. Leaves pinnately or bipinnately compound; flowers regular, in terminal corymbose inflorescence *Sambucus*
- A. Leaves simple
 - B. Flowers regular, in terminal panicles *Viburnum*
 - B. Flowers irregular, in axillary pairs *Lonicera*

Lonicera japonica Thunb.

Twining shrub; leaves simple, opposite, ovate, 3-7 cm long; flowers axillary, in pairs; corolla tubular, 2-lipped, 4-5 cm long, at first yellow, then becoming white, very fragrant; the bract below each flower-pair leaf-like, 1-1.8 cm long. Native to S. China and Japan. Another introduced species with smaller bracts is probably referable to *L. confusa* DC. of S. China.

Sambucus javanica Reinw. ex Bl.

Erect shrub, 2-3 m tall; leaves simple pinnate; flowers small, white, fragrant, in a large terminal corymbose inflorescence. Native to Java, sometimes cultivated. Another species, *S. canadensis* L. from N. America, with bi-pinnate leaves, occasionally also cultivated.

Viburnum sambucinum Bl.

Large shrub; leaves lanceolate-elliptic, 12-20 cm long; flowers small, white; drupe red. Formerly found in Chua Chu Kang (*Ridley* 6829), Kranji, Bukit Panjang and Bukit Mandai, now probably extinct.

127. CAMPANULACEAE

Key to the Genera

- A. Flowers regular; anthers free; inflorescences axillary, in scorpioid cymes *Pentaphragma*
- A. Flowers irregular; anthers mostly joined to form a tube
 - B. Corolla-tube long and narrow, the limb not 2-lipped *Laurentia*
 - B. Corolla-tube short, the limb 2-lipped *Lobelia*

Laurentia longiflora (L.) Peterm. (= *Isotoma longiflora* (L.) Presl)

Herb, 30-50 cm high, thick-stemmed, with milky sap; leaves simple, narrowly oblanceolate, 8-11 cm long, dentate or pinnatifid; flowers axillary, solitary; corolla white, tubulate, 7-11 cm long, 5-lobed near the top. Native to the West Indies, under hedges or along roadside. Vern. *Star of Bethlehem*.

Lobelia zeylanica L. (= *L. affinis* Wall.)

Ascending herb, to 15 cm long, usually pubescent; leaves ovate, acute, 1.5-4 cm long; flowers solitary, axillary; corolla white or pale blue, 2-lipped, upper lip 2-lobed, lower 3-lobed, 6-8 mm long; capsule ribbed. In damp spots; Bukit Timah, Kranji (*Ridley s.n.* in 1890).

Pentaphragma horsfieldii (Miq.) Airy-Shaw (= *P. scortechinii* K. & G.)

Succulent, woolly herb; leaves alternate, ovate-elliptic, slightly unequal-sided; flowers small, densely arranged in thick, curved scorpioid cymes, 5-6 cm long; corolla campanulate, yellowish; berry many-seeded. In damp forests, often on banks; formerly found in Bukit Timah, Sungei Morai, Pulau Damar (*Ridley s.n.* in 1894), Chua Chu Kang, now confined to Bukit Timah.

Pent. ridleyi King

Easily distinguished from the above species by its glabrous, often narrowly elliptic leaves with a narrowed base. In damp forests; Bukit Timah, Bajau (*Burkill* 723). According to Airy-Shaw, this is a natural hybrid, namely \times *elliptica* Poulsen, a cross between *P. acuminata* Airy-Shaw and *P. horsfieldii*.

128. GOODENIACEAE**Scaevola taccada** (Gaertn.) Roxb. (= *S. frutescens* Krause, *S. sericea* Vahl)

Succulent shrub; leaves fleshy, oblong-obovate, round-tipped, 15-25 cm long, spirally arranged; flowers in leaf-axillary branched clusters; corolla white or tinged lilac, about 2 cm long, the tube split open along the upper side, limb 5-lobed; drupe white, the endocarp corky, 1-2 seeded. A seashore plant, all round the coasts; Changi, Seletar, Labrador, Pulau Ubin, P. Tekong (*Ridley s.n.* in 1890).

129. STYLIDIACEAE**Stylidium tenellum** Swartz (?)

Slender shrub, 5-20 cm high, rarely branched; leaves obovate, alternate, 1-1.2 cm long; flowers very small, zygomorphic, purple, usually 2-3 together. In damp places in India and in the central and northern Malaya, recorded in Singapore by a specimen (*Furtado s.n.* in 1924) bought from a local Chinese drug shop. The identification of this specimen is highly questionable.

130. COMPOSITAE*Synoptic key to the genera**

1. Flower-heads several in a cluster, surrounded by bracts
 2. Clusters of flower-heads globose *Sphaeranthus*
 2. Clusters of flower-heads \pm flattened *Elephantopus*, *Sparganophorus*
1. Flower-heads solitary or in branched inflorescences, not in clusters
 3. Leaves (at least the lower ones) opposite or crowded at the base of the stems
 4. Creeping or climbing herbs
 5. Creeping and sprawling *Acanthospermum*, *Tridax*, *Wedelia*
 5. Climbing or twining *Eupatoria*, *Mikania*
 4. Erect herbs
 6. Flower-heads in leaf-axils or at shoot-apex, sessile or nearly so, not in branched inflorescences *Eleutheranthera*, *Enydra*, *Synedrella*
 6. Flower-heads in branched inflorescences *Adenostemma*, *Ageratum*, *Bidens*, *Eclipta*, *Siegesbeckia*, *Spilanthes*
 3. Leaves alternate; flower-heads usually in branched inflorescences
 7. Flower-heads globose *Dicrocephala*
 7. Flower-heads mostly cylindric, not globose
 8. Shrubs or shrubby, rarely trees *Blumea* (p.p.), *Pluchea*, *Vernonia* (p.p.)
 8. Herbs
 9. Scrambling or climbing *Centipeda*, *Gynura*, *Microglossa*
 9. Erect *Blumea* (p.p.), *Emilia*, *Erechtites*, *Erigeron*, *Vernonia* (p.p.), *Youngia*

Acanthospermum australe O. Ktze. (= *A. brasilum* Schrank)

Greening herb, branched; leaves opposite, ovate, toothed, 1-2.5 cm long; flower-heads small, axillary; flowers white, the outer ones rayed. Native to tropical America, reported in Singapore in the last century.

* Many cultivated genera are not included.

Adenostemma lavenia (L.) O. Ktze. (= *A. viscosum* Forst.)

Erect shrub, to 1 m tall; leaves opposite, ovate, varying from 5 to 18 cm long, stalked and toothed; flower-heads in terminal branched and spreading inflorescences; flowers white, all tubular; achenes warty. In waste ground, often in damp places; Chua Chu Kang, Pulau Ubin (*Hullett* 78), Bukit Panjang.

Ageratum conyzoides L.

Herb, erect and hairy, to 1 m tall; leaves opposite below and alternate above, ovate, 2-9 cm long, toothed; flower-heads usually 3-4 (each stalked) together on a common stalk in leaf-axils and terminal; flowers white or pale blue, all tubular; fruit black. Common in waste places throughout the Island, a garden weed.

Artemisia lactiflora Wall. ex DC.

Like the species below, also strongly aromatic, but leaves usually smaller (0.5-2.5 cm long) and not white hairy beneath. Native of China, sometimes cultivated as a garden plant.

Art. vulgaris L.

Branched perennial, very aromatic; leaves ovate or lanceolate, 2-10 cm long, pinnately-lobed, densely white hairy beneath; flower-heads very small, in much branched panicles; light green, with one series of ray flowers enveloping the tubular ones. Native of north temperate countries, formerly commonly cultivated for medicine in Chinese villages.

Bidens pilosa L.

A branched herb, 30-50 cm high; leaves opposite, simple or compound (with 3-5 leaflets), 1-12 cm long, toothed; flower-heads on the top of branched stalks, each about 2 cm across, with marginal white or yellow ray-flowers; achenes long and narrow, black, bristled. Native of America, in waste places, common in hill stations in Malaya, occasionally recorded in Singapore.

Blumea balsamifera (L.) DC.

Shrubby herb, up to 3 meters or more high, hairy, aromatic; leaves alternate, elliptic, toothed, 8-40 cm long, the stalk often with 2-3 pairs of narrow-lobed appendages; flower-heads numerous, forming a very large terminal and axillary branched inflorescence; flowers all tubular, yellow. In open places, Bajau (*Goodenough* 2742). Leaves and stems with a strong smell of camphor when crushed; used in local medicine. Vern. *Sumbong*, Ngai camphor.

Blumea lacera (Burm. f.) DC.

Erect herb, 30-50 cm tall, strongly smelling; leaves oblong, 2-5 cm long, the lower leaves often lobed; flowers yellow. A weed on roadsides and grassland.

Centipeda minima (L.) A. Br. & Asch.

Tiny prostrate herb, much branched; leaves oblong, alternate, pinnately lobed, 0.4-2 cm long; flower-heads solitary, axillary, very small (0.2-0.4 cm across); marginal flowers white or purplish, central disc-flowers yellow. In waste ground; Botanic Gardens, Woodlands (*Sinclair* SF 39237).

Chrysanthemum morifolium Ramat. (= *C. indicum* Hort.)

The chrysanthemum is imported as a pot plant or a cut flower, very various in form and colour in the flower-heads. Native of E. Asia of ancient cultivation.

菊, 菊花

***Coreopsis lanceolata* L.**

Perennial, 30-60 cm tall, branched; leaves tufted at base, opposite above, narrow spoon-shaped entire or 2-3 lobed; flower-heads 5-6 cm across, long stalked, ray and central flowers yellow. Native to N. America, sometimes cultivated.

***Coreopsis tinctoria* Nut.**

Like the above, but leaves twice-pinnately divided; flower-heads 3-6 cm across; ray flowers reddish brown and central flowers reddish purple. Native to N. America.

***Cosmos sulphureus* Cav.**

Tall herb, to 1 m high; leaves opposite, finely divided; flower-heads 4-6 cm across, solitary or few together, on long stalks; ray flowers light to deep yellow or orange, central ones yellow. Native to Mexico, sometimes cultivated.

***Crassocephalum crepidioides* (Benth.) S. Moore**

Erect herb, fragrant, hairy, to 1 m high; leaves oblong or elliptic, 8-15 cm long, pinnately lobed or pinnatifid; flower-heads cylindric, 1.5 cm long, yellow with a reddish top, forming small branched corymbs. A weed of tropical African origin, a fairly recent introduction.

***Dahlia pinnata* Cav.**

Perennial herb with tuberous roots; leaves opposite, simple or pinnately divided; flower-heads flat to globose; marginal ray flowers white, pink to purple, flat, tubular or rolled; central tubular flowers yellow. Native to Mexico, sometimes cultivated.

***Eclipta prostrata* L. (= *E. alba* Hassk.)**

Branched creeping herb; leaves opposite, lanceolate, 2-10 cm long, almost sessile; flower-heads stalked (the stalk 2-5 cm long), solitary or 2-3 in a leaf axil, less than 1 cm across; ray flowers white. Common weed in waste ground.

***Elephantopus scaber* L.**

Herb, varying from 2-3 cm to over 30 cm high, hairy; leaves often crowded at the base of stem, lanceolate or oblong, 4-15 (or more) cm long; flower-heads few-flowered, several heads together in a bracteate cluster at the end of branched terminal inflorescence; flowers all tubular, pinkish white. A common weed often found in waste places throughout the Island. Vern. *Tutup Bumi*.

***Eleutheranthera ruderalis* (Sw.) Sch.-Bip.**

Annual aromatic herb, 10-60 cm high; leaves ovate, 1.5-7 cm long; flower-heads terminal and axillary, single or in pairs, few-flowered; flowers yellow. In sandy places; Changi, Pulau Ubin (*Furtado 18629*).

***Emilia sonchifolia* (L.) DC.**

Erect shrub, 20-30 cm tall; leaves alternate, from rounded (lower ones) to heart-shaped (upper ones), toothed or variously lobed; the upper leaves sessile, the lower ones stalked; flower heads narrow-tubular, 1.5-2 cm long, solitary or few in long-stalked terminal inflorescence; flowers all tubular, upper part bright pink. A common weed in waste ground and in gardens. Vern. *Katumbi Jantan*.

***Enydra fluctuans* Lour.**

Creeping herb; leaves opposite, narrowly oblong, 2-10 cm long, entire or toothed, fleshy; flower-heads white or greenish, axillary, less than 1.5 cm across, sessile. In wet places; Geylang (*Ridley 10829*). Leaves and stem are edible (called 'Buffalo spinach'). (The generic name is often incorrectly spelled as *Enhydra*).

***Erechtites hieracifolia* (L.) Rafin. ex DC.**

Erect shrub, to 1 m tall; leaves alternate, narrowly oblong, 10-12 cm long, toothed; flower-heads cylindric, 1-1.5 cm long, 2-5 together in branched terminal (or upper axillary) inflorescence; flowers tubular, yellow, with silky-white pappus hairs. In waste grounds; native to tropical America.

***Erecht. valerianifolia* (Wolf) DC.**

Differs from the above species in the broader and often deeply lobed leaves and in the pinkish-orange flowers with reddish violet pappus hairs. In waste grounds; also native to tropical America.

***Erigeron sumatrense* Retz.**

Annual, to 2 m high, branched; leaves alternate, long-spoon-shaped, 3-14 cm long, the upper ones smaller and narrower than the lower ones; flower-heads bell-shaped, about 0.5 cm long, greenish-white, numerous in large and much branched inflorescence. A common weed in waste and cultivated ground. Vern. *Sumbong Jantan*.

***Eupatorium odoratum* L. f.**

Tall herb sometimes shrubby; leaves opposite, ovate, pointed, 5-10 cm long; flower-heads pale blue to white, about 1.5 cm long, in paniculate inflorescences; flowers all tubular. A weed originally from N. America, arrived from Thailand to Malaya during the first World War, hence the Malay name "Pokok German"; occasionally found in Singapore since late 1970s.

***Gaillardia pulchella* Fong.**

Annual, 15-30 cm tall; leaves alternate, narrowly spatula-shaped, 5-12 cm long, entire or wavy-lobed; flower-heads 5-10 cm across, long-stalked; ray flowers 10-18, wedge-shaped, yellow or red; central flowers purplish. Native to N. America, sometimes cultivated.

***Gerbera jamesonii* Bolus. ex Hook.**

Perennial, hairy; leaves pinnately lobed, 20-30 cm long, in a basal rosette; flower-heads solitary, arising from a long stalk; ray flowers narrow, red or orange, in one or two rows surrounding the central white flowers. Native of Transvaal, S. Africa, often planted.

***Gynura procumbens* (Lour.) Merr. (= *G. sarmentosa* DC.)**

Creeping or climbing herb; leaves alternate, fleshy, ovate, pointed, 5-8 cm long, toothed; flower-heads tubulate, 1.5-2 cm long, 3-7 together in terminal branched inflorescence; flowers all tubular, orange yellow in a purple involucre. Common in open places or in secondary growth; Bukit Mandai, Bukit Timah (*Ridley s.n.* in 1891), Tanglin. Vern. *Akar Subiak*.

***Helianthus angustifolius* L.**

Herb, branched, 1 m or so high; leaves linear or linear-lanceolate, 4-30 cm long; flower-heads 5-7 cm across, several to many (in short and long stalks) in a leafy panicle; ray flowers golden yellow, surrounding a dark purple centre. Native to N. America, sometimes growing in borders or for cut flowers.

Helianthus annuus L.

Stout annual, 1-2 m tall; leaves alternate, ovate, 7-45 cm long, serrate; flower-heads 15-35 cm across, often nodding and turning towards the sun (thus 'Sun Flower'); ray flowers yellow, surrounding a brown-purple centre; achenes (known as 'Sunflower seeds') large, edible. Native of N. America, sometimes cultivated. 向日葵

Helianthus tuberosus L.

Erect shrub, 2-4 m high; tuberous root ellipsoid, up to 15 cm long ('Jerusalem artichoke'); leaves ovate oblong, 10-20 cm long; flower-heads 5-8 cm across, in leaf panicles; ray flowers golden yellow, surrounding a bright yellow centre. Native of N. America, sometimes cultivated for its edible tubers.

Lactuca indica L.

Herb, 1-2 m high; leaves lanceolate, 8-25 cm long, entire or dentate; flower-heads in large panicles; branches of the panicle with a few linear bracts only at the base. Native to E. Asia, cultivated as vegetables. 莴苣, 生菜

Lact. sativa L.

Herb, 0.3-1 m high; leaves broadly oblong, 6-14 cm long, finely dissected; flower-heads in large flat-topped inflorescence with many cordate bracts. Native to Europe, sometimes cultivated.

Melapodium divaricatum (Pers.) DC.

Herb with angular stems; leaves opposite, ovate, 2-9 cm long; flower-heads solitary, axillary, 1-1.5 cm across; ray flowers yellow. Native to Central America, sometimes cultivated as a pot plant.

Mikania cordata (Burm. f.) B. L. Robins.

Fast-growing climbing herb; leaves cordate or ovate, tip acuminate, base heart-shaped, 3-12 cm long; petiole 1-8 cm long; flower-heads cylindric, 6-9 mm long, in dense corymbs; corolla white or pale yellowish, all tubular; bracts enveloping the individual florets 5-6 mm long. Formerly very common in waste lands; Tanglin (*Burkill* 407); now almost completely replaced by the following slightly smaller-flowered exotic species, *M. micrantha*. This species sometimes was erroneously called *M. scandens* (L.) Willd., a species restricted to N. America.

Mikania micrantha HBK.

A very fast-growing climbing herb, commonly called 'Mile-a-minute'; leaves narrowly or broadly ovate, tip pointed, base heart-shaped, 4-8 cm long, 2-4 cm wide; flower-heads small, white, usually hanging at the ends of a much branched inflorescence; bracts enveloping the individual floret 3-4 mm long. In forest edges, secondary growth and open places, common.*

Pluchea indica (L.) Less.

Shrubby herb, to 1.5 m tall; leaves spirally alternate, thick, oblong, 2-6 cm long, toothed short-stalked; flower-heads cylindric, in much branched terminal inflorescences; flowers all tubular, purplish or white. Common in tidal swamps and on sea coast, rarely in inland grounds; Changi, Geylang, Jurong (*Ridley s.n.* in 1888). Vern. *Pokok Beluntas*.

* Information on this species was kindly supplied by Dr Richard Corlett.

Rudbeckia serotina Nutt.

Hairy herb, to 1 m high; leaves alternate, lanceolate or oblong, 5-12 cm long; flower-heads solitary, terminal, 10-12 cm across; ray flowers golden yellow, surrounding a dull brown or black centre (thus called 'black-eyed Susan'). Native to N. America, sometimes growing in gardens.

Sigesbeckia orientalis L.

Hispid herb, 0.3-1 m tall, branched; lower leaves petiolate, ovate or oblong 5-20 cm long; upper leaves narrower, smaller and sessile; flower-heads greenish, 1.5-2 cm across, in loose panicles; the ray flowers surrounded by linear glandulate spreading bracts. In moist waste places, not common.

Solidago altissima L.

Herb, to 1 m tall; lower leaves forming a rosette at the base; the upper ones alternate, spatulate, 3-14 cm long; flower-heads golden yellow, rather small, usually borne on one side of the branches (hence called 'Golden rod') of a large panicle. Native to N. America; this and some other related species sometimes sold as cut flowers.

Sparganophorus vaillantii Crantz.

Fleshy herb, 30-40 cm high; leaves alternate, elliptic, 2-12 cm long; flower-heads sessile in leaf-axils, flattend, 0.5-1.5 cm across; flowers white, all tubular. In damp places; a tropical American weed.

Sphaeranthus africanus L.

Branched herb; stems and branches winged; leaves alternate, oblong, 2-3 cm long; flower-heads globose, less than 1 cm across, consisting of many small tubular florets, greenish white, solitary, terminal or in upper axillary, shortly stalked. In muddy waste places or in ditches; Geylang (*Ridley* 5069).

Spilanthes acmella (L.) Murr.

Herb to 50 cm tall; leaves opposite, broadly ovate, 3-6 cm long, toothed; flower-heads terminal, solitary, ovoid, about 1 cm across, long-stalked (12 to 15 cm long); marginal ray-flowers yellow; achenes black. In waste ground; Seletar (*Hullett* 630); formerly sold in local herb shops for curing toothache (thus "the toothache plant"). Vern. *Krabo*.

Syndrella nodiflora (L.) Gaertn.

Annual, with branched slender stems; leaves opposite, elliptic, 1-5 cm long; flower-heads axillary, yellow, small and few-flowered, sessile or subsessile, fruit black. Native of tropical America. (Similar to *Eleutheranthera ruderalis* but differing from the latter in having narrower stalked flower-heads with smaller bracts and 2-3 stiff spines on the achenes).

Tagetes erecta L.

Herb, 30-50 cm tall; leaves opposite (lower ones) or alternate (upper ones), 5-12 cm long, deeply lobed or compound; flower-heads solitary, terminal, yellow or orange, 5-10 cm across; ray flowers many, flat or rolled. Native to Mexico, but horticulturally known as African Marigold. Another species also from Mexico but erroneously called French marigold, *Tagetes patula* L. having smaller flower-heads (3-4 cm across), the ray flowers are marked with red colour.

Tithonia diversifolia Gray

Shrubby; leaves alternate, ovate, entire or 3-5 lobed, 10-25 cm long; flower-heads 8-10 cm across; ray flowers (about 12) orange yellow, surrounding the small yellow central tubular flowers. Native to Mexico and C. America, sometimes cultivated.

Tridax procumbens L.

Creeping herb; leaves opposite, narrowly ovate, coarsely serrate, 1-5 cm long; flower-heads 2 cm across, on upright long-stalk (10-30 cm long); ray flowers pale yellow to white. A weed in open dry, sandy places; native to Central America.

Vernonia arborea Buch. Ham. (incl. *V. javanica* DC.)

Tree, 10-20 m tall, much branched above; leaves alternate, ovate to oblong, 8-20 cm long; flower-heads 0.5 cm long, white or pink, 5-6 flowered, all tubular; panicle inflorescences terminal, widely branched. In mature secondary forests; Changi, Chua Chu Kang, Jurong and Water Catchment Areas (*Corner s.n.* in 1936). Vern. *Merambong*. (This is the only tree species of the Compositae in this region. Two forms can be recognized: one a tall straight tree with glabrous leaves, and the other often stunted and gnarled, with pubescent leaves. The latter is either treated as a variety, i.e., var. *javanica* Clarke, or a separate species, *V. javanica* DC.).

Vernonia cinerea (L.) Less.

Herb, to 1 m tall; leaves alternate, generally ovate, 1-8 cm long, but very variable; flower-heads narrowly cylindric, 6-7 mm long, violet or pink, all tubular, many in a terminal, much branched inflorescence. Common weed, in waste places or in gardens.

Vernonia patula (Dryand.) Merr. (= *V. chinensis* Less.)

Similar to *V. cinerea*, but stouter and with larger flower-heads and bracts. Technically, the two aspects can be distinguished by the following characters: in *V. patula*, achenes 5-angular, pappus hairs in 1 series; in *V. cinerea*, achenes cylindric, pappus hairs in 2 series. Common in waste grounds and clearings; Geylang (*Teruya* 2523).

Wedelia biflora (L.) DC.

Hairy scrambling herb, sometimes shrubby; leaves ovate, pointed, 3-nerved, 3-15 cm long; flower-heads usually solitary, bright yellow, about 1.5 cm across, with ray-flowers surrounding the tubular ones. On sandy beaches; Pulau Ubin (*Hullett* 387). Vern. *Serenai Laut*.

Wed. trilobata (L.) Hitch.

Creeping herb; leaves fleshy, oval-shaped, toothed or 3-lobed; flower-heads of prominent yellow ray-flowers. A species of tropical American origin, often planted in gardens as a ground cover.

Xanthium inequilaterum DC. (= *X. strumarium* Auct. non L.)

Herb, 30-60 cm tall; leaves alternate, ovate, toothed and lobed, 5-10 cm long; flower-heads unisexual, in spikes on upper leaf-axils; achenes oblong, enclosed in the enlarged involucre covered with hooked bristles known as 'burs'. Formerly recorded once at Rochore (*Ridley s.n.* in 1904) as a casual weed, now apparently disappeared.

***Youngia japonica* (L.) DC. (= *Crepis japonica* (L.) Benth.)**

Herb, 10-30 cm high; leaves nearly all basal, 5-10 cm long, round-topped, toothed or lobed below; flower-heads oblong, 5 mm long, yellow tipped, in loosely branched inflorescences. A weed commonly found in hill stations in Malaya, occasionally reported from Singapore.

***Zinnia linearis* Benth.**

Herb, 20-60 cm tall; leaves linear or lanceolate, 1-6 cm long; flower-heads 2-3.5 cm across; ray-flowers orange. Native of Mexico, sometimes cultivated.

***Zinnia elegans* Jacq.**

Herb, 0.3-1 m tall, branched; leaves elliptic, ovate, 3-15 cm long; flower-heads terminal, 3-7 cm across; ray-flowers red, pink, white or yellow. Native to Mexico, sometimes cultivated.



Keng, Hsuan. 1985. "Annotated List of Seed Plants of Singapore (IX)." *The Gardens' bulletin, Singapore* 38, 149–174.

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