FLORAE MALESIANAE PRAECURSORES LVII.

THE OLEACEAE OF MALESIA.

I. THE GENUS LIGUSTRUM

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SUMMARY

Ligustrum comprises six species in Malesia. Only one species, L. glomeratum Bl., is widespread from Malaya to New Guinea; in addition Malaya has an Indo-Chinese species, L. confusum Decaisne, and the cultivated L. sinense Lour., the Philippines has two endemics, L. cumingianum Decaisne and the rare L. stenophyllum Quis. & Merr., and New Guinea has the endemic L. novoguineense Lingelsheim. L. undulatum Bl. is reduced to L. glomeratum Bl. and L. glabrinerve Elmer to L. cumingianum Decaisne.

INTRODUCTION

The genus Ligustrum has been monographed twice: by Decaisne (1879) and by Mansfield (1924). Ligustrum has the reputation of being a difficult genus in that the species are difficult to distinguish, this in part is due to the uniform structure of the flower and the variability of characters such as indumentum and leaf shape and size. Fruit shape has been used as a key character, especially the distinction between globose and oblong fruits, but this is a difficult character to interpret in immature or dried fruits. For the Malesian species I have found characters of the inflorescence more constant, in particular the length of the inflorescence (measured from the apex to the lowest branch), the length of the lowest inflorescence branch, and the arrangement of the flowers on the inflorescence.

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LIGUSTRUM LINN.


Shrub or small tree. Young twigs hairy or glabrous, lenticellate. Exstipulate. Leaves opposite, entire, elliptic to more or less oval, rarely linear, apex rounded to acute, less than
15 by 6 cm, usually evergreen and more or less coriaceous, pubescence of leaves very variable, petiole short. Inflorescences paniculate, terminal (sometimes with additional inflorescences in axils of upper shoots), usually hairy. Bracts foliaceous, paired and caducous. Flowers hermaphrodite, regular and 4-merous, in axils of two caducous bracteoles 2–4 mm long, pedicel short or flowers subsessile. Calyx short, joined with 4 small teeth, persistent. Corolla tubular, 4 oval to lanceolate lobes, indupl-valvate in bud, opening more or less horizontally, lobes as long as or longer than tube, glabrous, white or yellow. Stamens 2, filaments thin and short, epipetalous, projecting beyond the corolla tube, anthers elliptic-elongate, extrorse. Ovary superior, 2-loculate, globose, placentation axile or pendant, ovules 2 per locule, style short or long, stigma shortly bifid. Fruit baccate or drupaceous, ellipsoid to subglobose or elongate, 4–15 mm across, pericarp fleshy, ripening purple or black, endocarp membranaceous to leathery. Seeds 1 (—3), testa thin, endosperm bony, embryo pendulous, radicle shortly superior.

Distribution: A genus of about 40 species, the majority in temperate Asia, extending to Europe and through Malesia to Australia.

Ecology: Usually of more open places, lowland to montane forest.

Uses: In Europe the Japanese L. ovalifolium Hassk. is a common hedge plant; L. sinense is cultivated for a similar purpose in Asia.

KEY TO MALESIAN SPECIES OF LIGUSTRUM

1a. Leaves narrowly lanceolate, four times longer than broad. Philippines

6. L. stenophyllum

b. Leaves lanceolate to ovate, up to about twice as long as broad

2. Inflorescence large, 8–17 cm long from lowest branch to apex and lowest branch

6–10 cm long

2a. Inflorescence small, 3–9(–11) cm long and lowest branch 1–5 cm long

3. L. glomeratum

b. Flowers well-spaced, pedicel 1–3 mm long; leaves large, 7–15 cm long. New Guinea

4. L. novoguineense

4a. Leaves softly downy; flowers with pedicels 1–3 mm long, densely pubescent; plant cultivated as a hedge plant in Malaya

5. L. sinense

b. Leaves glabrous or scarcely pubescent below; flowers with pedicels 0–2 mm long, glabrous or variably hairy

5a. Branches of inflorescence horizontal or recurved, flowers arranged in well spaced groups. Indo-China and Malaya

1. L. confusum

b. Branches of inflorescence ascending and crowded with flowers. Philippines

2. L. cumingianum

1. Ligustrum confusum Decaisne


Straggling shrub to small tree 1.5–4(–8) m tall. Twigs pale brown with conspicuous lenticels, youngest twigs hirsute. Leaves elliptic ovate, base rounded, apex acute to acuminate, (4.5–)7(–11) cm by (1.5–)4(–5) cm, subcoriaceous, glabrous beneath,
The genus Ligustrum in Malesia

Glossy above, midrib grooved above, prominent below, veins inconspicuous above, 5–6 pairs. Petiole 0.25–1 cm long, grooved above. Inflorescences bristly hairy, 3–9 cm long with 4–6 tiers of branches, lowest branch horizontal or recurved, 1–2.5(–4) cm long, flowering from apex. Bracts to 2.5 cm long. Flowers subsessile, clustered in widely spaced groups, 3–4 mm long, sweetly scented. Calyx scarcely lobed, tube 1–2 mm long. Corolla white or yellow, tube 2 mm long. Stamens with slender filaments 1.5–2 mm long, projecting beyond the corolla lobes in open flower, anthers large, 1.5 mm long. Style 1 mm long, projecting beyond the calyx after the corolla has fallen. Fruit oliveshaped and small, 7×5 mm, fleshy, green ripening purple-black; pedicel 2–4 mm.

Distribution: S. India, Bhutan, Assam, Burma, Thailand, Malaya, Tonkin and Yunnan.

Habitat: Swamp forest, primary forest, scrub; limestone.

Malaya. Perlis. mainland, Henderson 22865 (SING), 22941 (K, L, SING), Ridley 15223 (BM, K, SING); Langkawi Is. Kochummen 98764 (KEP), Symington 48749 (KEP). — Pahang. Chin 440 (KLU) — Selangor. Chin 400 (KLU), 414 (KLU), 574 (KLU), Ding Hou 704 (K, KEP, L), Kiew 188 (UPM), Stone 8942 (KLU).

Remarks. Ridley did not recognise Ligustrum in his flora having described specimens of Ligustrum confusum as a new species of Olea, (O. puberula), with a terminal inflorescence. Merrill considered that Ridley’s O. puberula ‘was apparently a form of L. robustum (Roxb.) Bl. with inflorescences narrower than the typical form’. L. robustum...
is a plant with a northern distribution reaching as far south as the Payap swamp in N. Thailand. It can readily be distinguished from *L. confusum*, a common plant in southern Thailand, by its larger (11—26 cm long) and pyramidal inflorescences with long lower branches (1.4—25 cm) and its markedly elongated fruits.

*L. confusum* in Thailand has a wide ecological amplitude and attains its maximum height in *Melaleuca* forest, it frequently has been collected from swamp forest and also once from a tidal stream. In north Malaya it grows in secondary forest but for its most southern distribution it is confined to limestone outcrops. On Bukit Takam it grows in crevices and has been used by countless climbers to pull themselves up the sheer limestone rockface.

Clarke (1882) records *L. robustum* as occurring in Malaya, but I have not been able to find any specimens to confirm this. He (as do most authors) also recorded the fruit shape as globose, but more strictly it is olive-shaped.

2. *Ligustrum cumingianum* Decaisne


Shrub or small tree to 8 m tall. Young twigs densely to minutely pubescent, bark pale brown with lenticels. *Leaves* ovate to narrowly oblong, base rounded, apex acute, (3—) 5.5—(8) cm by 2—4 cm, membranous to subcoriaceous, glabrous, glossy above, veins conspicuous below, 4—7 pairs. Petiole 0.25—0.75 cm long, glabrous or shortly pubescent. Inflorescences 3—7.5 cm long with 4—5 tiers of branches, lowest branch short, 1.5—3(—5) cm long and ascending, main axis glabrous to densely pubescent. Bracts to 2.5 cm long. *Flowers* densely crowded, pedicels 0—2 mm long, flowers large, 3—4 mm long, white or yellow, with a slight fragrance. *Calyx* scarcely lobed, tube 1—1.5 mm long. *Corolla* 3—4 mm long, with 4 lobes, recurved when open and exposing anthers. *Stamens* with a slender filament, 1.5—2 mm long, anthers 1.5 mm long. *Style* 2 mm long. *Fruit* oblong to subglobose, 6×4 mm to 7×6 mm, ripening black; pedicel 2—3 mm long.

**Distribution**: Philippines: Luzon, Mindoro.

**Habitat**: Primary forest, lowland to 2000 m.


**Remarks**: *Ligustrum cumingianum* is here restored to specific rank. Mansfeld reduced this species to a variety of *L. glomeratum* on the grounds that the only difference was in the fruit size and shape (globose and 4 by 3 mm as opposed to the oblong 8 by 5 mm fruit of *L. glomeratum*). This character is not always reliable as immature fruits of species with globose mature fruits are often oblong. *L. cumingianum* can readily be distinguished from *L. glomeratum* by its much smaller inflorescences and in this character more closely resembles *L. confusum* in Malaya.

Merrill (Philip. J. Sci. 7, 1912: 329) considered this taxon as 'only a more glabrous form' of *L. pubinerve* (i.e. *L. glomeratum*). Elmer emphasised the glabrous nature of his *L. glabrinerve* as the principle difference between it and *L. pubinerve*. Indumentum of *Ligustrum* species is extremely variable and is not reliable for separating the taxa of this genus. Elmer
also described his species as possessing five corolla lobes, atypical for the genus, and from dissection I have found his specimens to have only four.

3. Ligustrum glomeratum Blume


Philippia robusta auct. non Roxb.: Bl., Bijdr. (1826) 681.


L. pubinerve Bl., l.c. 314; Decaisne, l.c. 30; Merrill, Philip. J. Sci. 7 (1912) 329; Enum. Philip. Fl. Plants (1923) 305.


Visiania robusta Miq., Fl. Ind. Bat. 2 (1857) 547.

Visiania pubinervis (Bl.) Miq., l.c. 548.

Visiania undulata (Bl.) Miq., l.c. 548.

Visiania glomerata (Bl.) Miq., l.c. 549.

Visiania sumatrana Miq., l.c. 549.

Visiania phyllothera Miq., Fl. Ind. Bat. Suppl. 1 (1861) 558.

Shrub or small tree to 15 m tall. Twigs pale brown, densely hairy near apex, lenticellate. Leaves ovate-lanceolate to oblance elliptic, base rotund or cuneate to decurrent, apex acuminate to cuspidate (rarely obtuse), (3—)7—8—(9) cm by (2—)3.5—(5) cm, papery to subcoriaceous, glossy above, glabrous below or very hairy on lower midrib, midrib grooved above, veins conspicuous above and below, 6—7 pairs. Petiole 5—9 mm long, glabrous or pubescent. Inflorescences pyramidal, 8—17 cm long, with 5—9 tiers of branches, lowest branch 6—10 cm long, more or less horizontal, main axis pubescent to villous. Bracts 3 cm long. Flowers densely clustered, subsessile or with pedicel to 1 mm long, sweetly scented, 2—3(—4) mm long. Calyx scarcely lobed, tube 1 mm long, glabrous. Corolla white or yellow, tube 1 mm long. Stamens with filament 2 mm long, anthers projecting beyond the corolla tube in the open flower. Style 1—2 mm long, slender and projecting beyond the calyx tube after the corolla has fallen. Fruit ellipsoid to obovoid, 5—8 mm long and 4—5 mm broad, fleshy, ripening dark purple, tasting bitter sweet, with (1—3) seeds; pedicel 2—5 mm.

Distribution: S. Thailand, N. Malaya, Sumatra, Borneo, Philippines, Java, the Lesser Sundas Is., Celebes, the Moluccas, and New Guinea.

Habitat: Primary and secondary forest, lowland to 2650 m on mossy ridges.


Sumatra. Forbes 2102 (BM, L), 2315 (BM), and about 25 others.

Borneo. Sabah. Gibbs 3931 (BM, K), Lajingah 28444 (K, L, SAN), and about 10 others.


Java. Blume 935 (L), 1030 (L), Junghuhn s.n. (L), de Vriese s.n. (L), and about 40 others.


Moluccas. Toxopeus 87 (L), 437 (L), Kostermans 860 (K, L), Raut 773 (K), de Vriese & Teijssen s.n. (L).

Celebes. Boschroepfstation cc. 0570 (L), de Jong 40 (L), Kaudern 517 (L), Neth. Ind. For. Ser. bb 20425 (L), Rachmat 900 (L).

Remarks: *Ligustrum glomeratum* not only has a wide spread distribution throughout Malesia (Fig. 1), which it might owe to its ability to thrive in open places and secondary forests, but also shows a wide range of variation in leaf shape, size, and indumentum. Blume (1850) and Miguel (1857) tried to take account of this variation by describing several species (see synonymy above). Mansfeld (1924) did not designate a type specimen because he felt one specimen could not represent the variation within this species. Blume did not cite a type in his original description but as he considered *L. glomeratum* to be confined to Java, his description was probably based on his Javanese collections; thus *Blume 945* is designated the lectotype.

The description of *L. undulatum* was based on a New Guinea specimen from Zippelius' herbarium determined *Phillyrea undulatum*. Mansfeld considered that Zippelius' specimen was wrongly localised as, at that time, *Ligustrum* was not known from New Guinea, and that it differed from *L. glomeratum* (which has an oblong fruit) by its smaller (immature) round fruit. Examination of the type specimen shows it to be typical *L. glomeratum* in its infructescence and leaf characters and its location is no longer improbable as recent collections show that two species, *L. glomeratum* and *L. novoguineense*, are both indigenous to New Guinea.

*L. glomeratum* is cultivated as a hedge plant around Bogor, Java (Backer & Bakh. f., 1965).

4. *Ligustrum novoguineense* Lingelsheim


Shrub or small tree to 12 m tall. Twigs pale brown, glabrous and lenticellate. Leaves elliptic lanceolate, base rounded to cuneate, apex acuminate, 7—15 cm by 3—6.5 cm, membranous to subcoriaceous, dark green above, much paler below, glabrous, midrib slightly indented above and depressed below, veins conspicuous above and below, 5—9 pairs. Petiole 0.5—1.5 cm long, grooved above. Inflorescences pyramidal, 9—12(—15) cm long, with 7—9 tiers, lowest branch 6—9 cm long, main axis glabrous to minutely pubescent. Flowers widely spaced, pedicel 1—3 mm long, fragrant. Calyx scarcely lobed, tube 1 mm long. Corolla 3—4 mm long, with recurved lobes when open, white. Stamens with filaments 1 mm long, anthers scarcely projecting beyond the corolla tube in the open flower, 1 mm long. Style 1.5 mm long and projecting beyond the calyx tube after the corolla has fallen. Fruit globose to ovoid, 7 by 5 mm, green ripening black; pedicel 3—5 mm.

Distribution: New Guinea.

Habitat: Primary forest, lowlands to Castanopsis-oak forests.


Remark: The two species of *Ligustrum* in New Guinea are the endemic *L. novoguineense* and the widespread *L. glomeratum*. Although similar in their inflorescence form they can be distinguished by a combination of the following characters — *L. novoguineense* has larger leaves, well-spaced pedicellate flowers with a longer corolla, and its habitat is in primary forest (*L. glomeratum* in New Guinea is more commonly collected from open country or secondary forest).
5. Ligustrum sinense Loureiro

*L. sinense* Loureiro, Fl. Cochinchin. (1790) 19; DC., Prodr. 7 (1844) 396; Gard. Chron. n.s. 10 (1878) 364—5, fig. 64; Mansfeld, Bot. Jahrb. 39: Beibl. 132 (1924) 60; Corner, Wayside Trees Malaya (1940) 152, text fig. 172.

Shrub to 4 m. Twigs grey, densely pubescent to subvillous or more or less glabrous. *Leaves* ovate-elliptic, base cuneate to subrotund, apex acuminate to subrotund, 3—7 cm by 2—4 cm, twigs grey, densely pubescent to subvillous or more or less glabrous. Pubescence to subvillous, with 3—4 tiers of branches, lowest branch 2.5—4 cm long. *Flowers* 2—3 mm long, very fragrant; pedicel 1—3 mm long. *Calyx* scarcely lobed, tube 1 mm long. *Corolla* 3 mm long, white. *Stamens* with slender filament 1.5 mm long, anther 1 mm long. *Style* 1 mm long. *Fruits* oval 6 by 5 mm, green ripening black; pedicel 3—4 mm long.

**Distribution:** Southern China and Hongkong, cultivated in Malaya.

**Remarks:** This species is sometimes cultivated in Malaya as a hedge plant where it is apparently evergreen and flowers and forms fruits. The first record of its cultivation is a collection dated 1899 from Taiping Hills.

6. Ligustrum stenophyllum Quisumbing & Merrill

*L. stenophyllum* Quisumbing & Merrill, Philip. J. Sci. 37 (1928) 188. — *Type:* Ramos & Edano 47153 (iso in A, K).

Shrub to 3 m tall. Young twigs pale brown, shortly pubescent and lenticellate. *Leaves* narrowly lanceolate, base and apex narrowly acute, 6—8.5 cm long and 1—1.5 cm wide, membranous to subcoriaceous, glabrous, veins not conspicuous either above or below, lateral veins 5—7 pairs acutely ascending to margin. Petiole 0.5 cm long. *Inflorescences* 6—9 cm long with 6—7 tiers, lowest branch 2.5—4 cm long, axis densely pubescent. Bracts linear, 0.5—1 cm long. *Flowers* 2—3 mm long, not clustered; pedicel 1 mm long. *Calyx* tube 1—1.5 mm long, glabrous. *Corolla* 2—3 mm long, white, lobes more or less equal in length to tube, oblong to acute. *Stamens* with long slender filaments, anthers projecting beyond the corolla tube, oblong, 2 mm long. *Style* slender. *Fruit* not known.

**Distribution:** Philippines: Luzon.

**Habitat:** Forest streams at 400 m.

**Remarks:** This species is known from only two collections and is remarkable for its long narrow leaves which are quite unlike any other Malesian species. Collecting labels give the impression that it was collected from riverine communities but they are not sufficiently specific to judge if this species is a rheophyte or not.