

Notes on the Systematy of Malayan Species of *Chionanthus* (Oleaceae)

R. KIEW

Department of Biology, Universiti Pertanian Malaysia, Serdang, Selangor, Malaysia

Abstract

Examination of Blume's type specimens shows that *Chionanthus platycarpus* (K. & G.) Kiew is synonymous with *C. callophyllus* Bl. and *C. elaeocarpus* (Stapf) Kiew is synonymous with *C. macrocarpus* Bl. Two new records of *Chionanthus* for Malaya are *C. grandifolius* (Elmer) Kiew (previously only recorded from the Philippines) and *C. curvicarpus* sp. nov. (formerly known as *C. cuspidatus* Bl. sensu Merrill).

Sabbatical leave gave me the opportunity of examining at the Rijksherbarium, Leiden, Blume's types (and other specimens determined by him) of *Chionanthus*, which show that several of the names of Malayan species need to be changed.

1. *Chionanthus macrocarpus* Blume

Mus. Bot. Lugd. Bat. 1 (1850) 319. Typus: Java, Herb. Lugd. Bat. 908. 161... 213 (L, lecto, here chosen).

Linociera macrocarpa (Bl.) Knobl. Bot. Centralbl. 61 (1895) 87; King & Gamble J. As. Soc. Beng. ii 74 (1905) 267; Back. & Bakh. f. Fl. Java 2 (1965) 214, non (*C. macrocarpus* sensu Kiew Mal. For. 42 (1979) 271).

Chionanthus insignis Miquel Fl. Ind. Bat. Suppl. (1862) 559.

Typus: *Teysmann*. Palembang, Sumatra (BO, K, L, syntypes); *pro parte* *Linociera insignis* (Miq.) C.B.Cl. in Hooker f. Fl. Brit. Ind. 2 (1882) 610; *pro parte* Ridley Fl. Mal. Pen. 2 (1923) 316.

Linociera elaeocarpa Stapf Kew Bull. (1915) 115; Typus: *Beccari* PB 725 (K, holo). Merrill J. Str. Br. R. As. Soc., Spec. No. (1921) 488. *Chionanthus elaeocarpus* (Stapf) Kiew var *elaecarpus* Mal. For. 42 (1979) 267; 43 (1980) 373; 44 (1981) 150.

Notes

Examination of the specimens of *Chionanthus macrocarpus* at Leiden annotated by Blume shows no differences between *C. macrocarpus* from Java and the Bornean type specimen of *Linociera elaeocarpa* Stapf. Specimens cited as *C. elaeocarpus* (Stapf) Kiew (Kiew 1980, 1981) are therefore also those of *C. macrocarpus*.

Backer & Bakhuizen f. (1965) described the fruit as more or less angular. Fruits sometimes dry with sides flat but the angles are not ridged and these fruits would not be confused with *Linociera beccarii* Stapf (from Sumatra) or *C. porcatus* Kiew (from Borneo), which have ridged fruits where the ridges correspond to those on the woody endocarp. The endocarp of *C. macrocarpus*, although hard and thick, is not woody.

The geographic distribution of *C. macrocarpus* covers Java, Sumatra, Borneo and Malaya (although it is less common in Malaya than elsewhere). It has been collected from lowland and hill forest up to 1500 m, sometimes from freshwater swamp or areas that flood periodically. In Malaya only the typical variety with ovoid fruits is found; the variety with a globose fruit, var *globosus* Kiew, is restricted to Borneo (Kiew, 1980).

Chionanthus insignis was originally described from Sumatra by Miquel who cited Teysmann's specimen from Palembang. This specimen has leaves, inflorescences and fruits of the same size and shape as *C. macrocarpus* with which *C. insignis* is thus synonymous. However, Clarke based his description of *Linociera insignis* on specimens from Burma (*Helper 3688*, K, L) which differ from those of *C. macrocarpus* Bl. in their smaller fruits (1 cm long) and glossy leaves. These non-Sumatran specimens are therefore not specimens of *C. macrocarpus* and must be excluded from *C. insignis* Miquel, which is a synonym of *C. macrocarpus*.

2. *Chionanthus callophyllus* Blume

Mus. Bot. Lugd. Bat. 1 (1850) 319. Typus: *Korthals s.n.* Borneo Herb. Lugd. Bat. 908. 158... 933 (L, lecto — here chosen). *Linociera callophylla* (Bl.) Knobl. Bot. Centralbl. 61 (1895) 319.

Linociera paludosa King & Gamble J. As. Soc. Beng. ii 74 (1905) 268. Typus: *Wray 2424* (SING), Ridley Fl. Mal. Pen. 2 (1923) 316.

Olea platycarpa King & Gamble l.c. 271. Typus: *King's Coll. 5541* (K), Ridley l.c. 319. *Chionanthus platycarpus* (K. & G.) Kiew Mal. For. 42 (1979) 272 & Fig 5, 44 (1981) 149.

Notes

Chionanthus callophyllus is a distinctive species with large, obovate leaves (23-38 by 7-13 cm) with a particularly thick petiole, the veins impressed above and prominent below. In addition, it has short ramiflorous inflorescences and the base of the fruit is flattened, the latter is a unique character for Malesian species of *Chionanthus*. In addition, the fruit is often covered with a white bloom. Ramiflory is known in only one other Malesian species viz., *C. gigas* (Lingelsheim) Kiew from New Guinea. Blume described the inflorescence as equal to or longer than the petiole (which they are) and as axillary or lateral. In fact the inflorescences are extra-axillary i.e., ramiflorous.

Chionanthus callophyllus is more common in Malaya (18 collections) than in Borneo (3 from Sabah and 3 from Kalimantan) or in East Sumatra (one collection, *Krukoff 310*, US).

3. *Chionanthus grandifolius* (Elmer) Kiew comb. nov.

Linociera grandifolia Elmer Leaflets Philip. Bot. 5 (1913) 1657. Typus: *Elmer 13425* (with fruits) Mindanao, Philippines (K, lecto — here chosen, BM, Gray, L; US, isolecto).

Chionanthus macrocarpus non Blume *sensu* Kiew Mal. For. 42 (1979) 271.

Malayan specimen: *Cockburn FRI 10578* (with flowers) Batu Biwa, Trengganu (K, KEP, L, SING).

Notes

The specimen *FRI 10578* is outstanding among Malayan *Chionanthus* species for its indumentum: no other species has leaves where the lamina is softly and densely hairy below. In this character it matches the single specimen of *Linociera grandifolia* from Mindanao, Philippines. Both these specimens have oblong leaves with a rounded to acuminate apex and a cuneate base, the leaf is subcoriaceous and slightly shiny above, the veins are impressed above and are prominent below and the twigs are flattened at the node. The Malayan specimen is therefore considered to be the same as *Linociera grandifolia* based on vegetative characters, as unfortunately the Malayan specimen is in flower and the Philippine one in fruit. *Linociera* is now considered synonymous with *Chionanthus* (Stearn, 1971) and the appropriate combination is made above.

Amended description

Small tree to 7 m. Twigs pale grey, flattened at nodes, pubescent. Leaves

chartaceous to subcoriaceous, drying deep reddish brown, elliptic oblong, 22-33 by 9-13.5 cm, apex obtusely rounded to acuminate, base acute. Lower surface of lamina and veins densely covered by long unicellular hairs, upper surface with sparse, short unicellular hairs. Veins 11-13 pairs, slightly impressed above, prominent below, tertiary veins inconspicuous. Petiole 1.5 cm long, 5 mm thick, shortly pubescent. *FRI 10578* — Inflorescence paniculate, 13-17 cm long, densely hairy, axillary clustered, branched from base. Flowers sessile, yellow with pleasant scent. Calyx lobes acute, 1.5 mm long, densely pubescent. Corolla 3.5 mm long, lobes joined in 2 pairs for 1 mm at the base, lobes narrowly linear, pubescent, valvate. Stamens almost sessile, anthers 1 mm long. Ovary conic, stigma obscurely lobed. *Elmer 13425* — Infructescence 3-5 cm long, pubescent. Fruits ovoid to subglobose, 17 by 19 mm, subsessile. Pericarp thin and brittle. Seed 1, endosperm copious.

4. *Chionanthus curvicaarpus* Kiew sp. nov.

Typus: *A. Gibot SAN 35826* (SAN — holo, K, UPM — iso).

Linociera cuspidata (Bl.) Knobl. *sensu* Merrill J. Str. Br. R. As. Soc. Spec. No. (1921) 488, Univ. Cal. Publ. Bot. 15 (1929) 249; non *Chionanthus cuspidatus* Bl. *sensu* Kiew Mal. For. 43 (1980) 372 & Fig 2J, 44 (1981) 152. Non *Chionanthus cuspidatus* Bl. Mus. Bot. Lugd. Bat. 1 (1850) 319. Typus: *Muller*, Gunung Bahay Herb. Lugd. Bat. 908. 158... 996 (L, lecto — here chosen).

Chionanthus curvicaarpus sp. nov. propter habitum arboris minoris cortice ramorum albo, folios chartaceos lanceolatosque, nervis subtus prominentibus, *C. oligantho* (Merrill) Kiew affinis sed nervis numerosioribus (8-15 paribus vice -9), inflorescentiis longioribus (1.5-6 cm vice 0.5-1.5 cm) et forma fructu differt; fructus *C. curvicaarpus* egregius, anguste-ellipsoideus, 2.5 × 1.75 cm, curvatus et porcatus vice in *C. oligantho* globosus.

Notes

Chionanthus curvicaarpus is common in Borneo where Merrill (1929) identified specimen *Elmer 21047* (BO) near Tawao as *Linociera cuspidata* (Bl.) Knoblauch. This interpretation was followed by Kiew (1980, 1981). However, Blume's type specimen of *C. cuspidatus* although similar in leaf shape and size, differs in possessing a shorter inflorescence (1.3 cm long as opposed to 1.5-6 cm in *C. curvicaarpus*), and the petals are longer (6 mm long as opposed to 2-3 mm long). The most striking difference is that the leaves dry chestnut-brown (in *C. curvicaarpus* the leaves of all specimens examined dry pale grey). There are no fruits on the type specimen of *C. cuspidatus*. *Linociera cuspidata sensu* Merrill is therefore not the same as *C. cuspidatus* and so a new name is required for this taxon. 'Curvicaarpus' is chosen as the curved fruit (which is also ridged longitudinally) is unique among Malesian *Chionanthus* species (Fig 2J in Kiew, 1980). Other species that have straight ridged fruits are larger (6.5 by 3.5 cm in *C. porcatus* from Borneo, 3-5 by 2-3 cm in *Linociera beccarii* from Sumatra and 3-7 by 1.5-3.5 cm in *C. sessiliflorus* (Hemsley) Kiew from New Guinea). The fruit of *C. curvicaarpus* is 2.5 by 1.7 cm.

Chionanthus curvicaarpus most closely resembles *C. oliganthus* (Merrill) Kiew of Borneo. Both species have white twigs, leaves which are thin, dry pale and have prominent veins below. However, it differs from *C. oliganthus* in the number of veins (8-15 as opposed to 6-9 in *C. curvicaarpus*), longer inflorescence (0.5-1.5 cm versus 1.5-6 cm) and fruit shape (*C. curvicaarpus* has globose fruits).

In Borneo *C. curvicaarpus* is found in the lowlands, sometimes on hillsides up to 1000 m or near rivers. It is most common in Sabah. In Malaya it is known from a single flowering specimen, *Kiah 32325* (A, K, KEP, L, SING) from Sungai Kayu, E. Johore and four specimens have also been collected from Sumatra. This same distribution pattern, the Borneo element of Corner (1960), is also seen in *C. laxiflorus* Bl., which in Malaya is also rare (collected once from Fraser's Hill and from the Kuantan-Kluang-Mersing area), whereas it is more common in Borneo and Sumatra and in addition its distribution extends through Celebes to New Guinea.

Acknowledgements

The author thanks the Director of the Rijksherbarium, Leiden, The Netherlands for permission to work there and to Dr J. Dransfield for help with the latin diagnosis.

References

- Corner, E. J. H. (1960). The Malayan Flora, in Purchon, R. D. ed, *Proc. of Centenary and Bicentenary Congress of Biology, Singapore*, pp 21-24.
- Stearn, W. T. (1976). Union of *Chionanthus* and *Linociera* (Oleaceae). *Ann. Missouri Bot. Gard.* 63: 355-357.