

**MITREPHORA SIMEULUENSIS (ANNONACEAE):  
A NEW SPECIES FROM SIMEULUË, INDONESIA**

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SUMMARY

A new species of *Mitrephora* is described from the swamp forests of Simeuluë Island, north-west of Sumatra. *Mitrephora simeuluensis*, spec. nov., is most closely related to *M. korthalsiana* Miq.

**Key words:** Annonaceae, *Mitrephora*, Simeuluë Island, systematics, taxonomy.

The genus *Mitrephora* (Blume) Hook.f. & Thomson (Annonaceae) consists of 48 species of shrubs and small to large trees, widely distributed in tropical Southeast Asia (with a centre of distribution in Borneo and the Philippines). The flowers are borne in extra-axillary (rarely terminal) inflorescences. Each flower has two whorls of three petals, with the inner petals distally connivent, forming a mitreform dome over the reproductive organs. A similar floral structure is observed in the putative relatives *Orophea* and *Pseuduvaria*, although *Mitrephora* is distinct in possessing outer petals that are larger than the inner petals. *Mitrephora* flowers are furthermore bisexual, with 'uvarioid' staminal connectives (sensu Prantl, 1891).

During a comprehensive taxonomic revision of the genus, a new species was discovered among herbarium collections from Simeuluë (Simaloer) Island, north-west of Sumatra. All the available specimens were collected by Achmad (one of the main collectors for Karel Heyne) between 1918 and 1919, and the species does not appear to have been collected subsequently.

***Mitrephora simeuluensis* Weeras. & R.M.K. Saunders, spec. nov. — Fig. 1**

*Mitrephora korthalsianae* Miq. affinis, a qua imprimis differt ramis juvenibus sericeis, laminis grandibus cum venis secundariis amplis, bracteis basalibus et medianis grandibus, sepalis et petalis grandibus, petalis externis late ovatis cum indumentis adaxialibus sparsim pubescentibus et indumentis abaxialibus dense pubescentibus, et monocarpellis parvis obovoideis, non glaucis. — Typus: *Achmad 568* (holo BO (herb. no. 1307659); iso BO, L, U), Simaloer [Simeuluë] Island, 14 Aug. 1918. — Paratypus: *Achmad 686* (para BO), Simaloer [Simeuluë] Island, 23 Oct. 1918; *Achmad 976* (para BO, L), 11 March 1919; *Achmad 1298*, (para BO, L, U), 9 Aug. 1919.

Large trees to 26 m, dbh not known. Young branches sericeous with short brown appressed hairs, becoming glabrous, lenticellate. *Leaf* laminas ovate, lanceolate or oblong, coriaceous, (9–)10.5–29(–34.5) by 5–14(–18) cm, length:width ratio 1.3–2.5(–2.9),



Fig. 1. *Mitrephora simeuluensis* Weeras. & R.M.K. Saunders. a. Flowering branch; b. median bract; c. sepal; d. inner petal (adaxial surface); e. outer petal; f. stamen (abaxial surface); g. carpel; h. monocarp; i. fruiting pedicel (a–g: *Achmad 568* (herb. no. 1307659), BO; h–i: *Achmad 686* (herb. no. 1307744), BO). — Scale bars: a = 2 cm; b, c, e = 5 mm; d = 3 mm; f, g = 0.5 mm; h = 1.5 cm; i = 1 cm. — Drawing by Ngai Yuen Yi.

subglabrous and matt adaxially and abaxially, primary vein slightly impressed or prominent and subglabrous adaxially, prominent and sparsely pubescent abaxially; secondary veins (10–)11–19(–21) pairs per leaf, glabrous and inconspicuous adaxially, prominent and sparsely pubescent abaxially; base acute, rounded or rarely cordate, apex acute or shortly acuminate to acuminate, margin entire; petioles 7–20 mm long, 1.8–4.6 mm diam., shallowly grooved on upper surface, sparsely pubescent with isolated short brown hairs. *Inflorescences* cymose, opposite leaves, becoming extra-axillary, sericeous with short brown appressed hairs; inflorescence rachides short, fewer than 3 flowers per inflorescence, single flower open at any time. *Flower* pedicel 4.5–10.5 mm long, 1.3–2.1 mm diam., not fleshy, densely pubescent with brown hairs; basal pedicel bract ovate, 3.5–6 by 2.5–3.5 mm, caducous; median pedicel bract ovate, 3–4.5 by 4–5 mm, persistent; sepals 3, valvate, ovate, 4–5.5 by 3.5–5.5 mm, outer surface densely pubescent with short brown appressed hairs, inner surface glabrous; petals 6, valvate, free, in 2 whorls; outer petals broadly ovate, 20–24(–27) by 11–17.5 mm, colour unknown, apex obtuse, base not clawed, outer surface densely pubescent with short brown appressed hairs, inner surface sparsely pubescent with short brown appressed hairs; inner petals rhombic, 9–11 by 7–8.5 mm, colour unknown, clawed, outer surface sparsely pubescent with short brown appressed hairs, inner surface woolly distally, margins connivent distally, forming a dome with 3 basal apertures between adjacent petals; stamens numerous (>100), 1.5–1.7 by 0.5–0.8 mm, glabrous, connective apically discoid over thecae, thecae not septate, extrorse; pollen in tetrahedral tetrads, exine verrucate; carpels 7–10, free, 2–2.1 by 0.4–0.5 mm, pubescent, style absent, stigma narrowly obconical, ovules 10–14, biseriate, lateral. *Fruits* apocarpous; fruiting pedicel woody, 10.5–11(–17) mm long, 4–5.5 mm diam., sparsely hairy; stipe not seen; monocarps 8–10 per fruit, c. 28 mm long, c. 20 mm diam., obovoid, becoming blackish when dry, with pale brown simple hairs. *Seeds* not seen (only single monocarp known, which was not dissected).

*Distribution* — Only known from Simeuluë Island.

*Habitat* — Marshy forests.

*Notes* — *Mitrephora simeuluensis* is closely allied to *M. korthalsiana* Miq. (Miquel, 1865; pers. obs.) from Borneo: both species are large trees with very similar foliar characteristics, and large flowers. The young branches of *M. korthalsiana* are densely pubescent, however, and the leaves are smaller (laminae 8.5–20.5 by 4–10 cm) with only 9–14(–15) secondary veins. Although the flowers of *M. korthalsiana* are large compared to most *Mitrephora* species, they are nonetheless smaller than those of *M. simeuluensis*, with smaller pedicel bracts (basal bracts c. 2 by c. 2 mm; median bracts 1.4–2.1 by 2–2.6 mm), smaller sepals (2–3.5 by 2.5–3 mm), smaller ovate outer petals (10.5–16.5 by 7.5–11.5 mm), and smaller inner petals (8–9 by 2.5–3.5 mm). The outer petals of *M. korthalsiana* flowers are furthermore glabrous but sparsely pubescent towards the apex adaxially, and sparsely pubescent abaxially. The two species are also distinct in fruit characters: *M. korthalsiana* has larger, globose monocarps (28–41 by 21–36 mm) that are glaucous.

*Mitrephora simeuluensis* is apparently endemic to Simeuluë, and has not been recorded from neighbouring Sumatra. Only two *Mitrephora* species have been recorded from Sumatra, viz. *M. maingayi* Hook.f. & Thomson (1872) (syn. *M. teysmannii*

Scheff.) and *M. rufescens* Ridl. (1912); both species are clearly distinct from *M. simeuluensis*. *Mitrephora maingayi* can be distinguished from *M. simeuluensis* on the basis of the following characters (pers. obs.): fewer secondary veins in the leaf laminae (5–13 pairs); longer flowering pedicels (10–39 mm); smaller pedicel bracts (basal pedicel bracts 2–4 by 1.5–3 mm; median pedicel bracts 1.5–4 by 1.5–4 mm); elliptic to ovate outer petals; smaller stamens (0.6–1 by 0.4–0.6 mm); more carpels per flower (10–14); and smaller carpels (0.8–1.2 by 0.4–0.6 mm). *Mitrephora rufescens* can similarly be distinguished using the following characters (pers. obs.): fewer secondary veins in the leaf laminae (8–15 pairs); shorter flowering pedicels (2–4.5 mm long, 1–1.1 mm diam.); smaller pedicel bracts (basal pedicel bract c. 3 by c. 2 mm; median pedicel bract 2–4 by 2.5–3.5 mm); smaller, lanceolate outer petals (7–16 by 4.5–7.5 mm); smaller stamens (0.8–1.1 by 0.4–0.6 mm); fewer carpels per flower (4–6); smaller carpels (1–1.2 by 0.6–0.8 mm); fewer ovules per carpel (4–8); fewer monocarps per fruit (4–6); and monocarps that are oblong.

*Mitrephora* species generally grow in rather dry habitats such as limestone or rocky hill forests, and only a few, including *M. simeuluensis*, are known from water-logged or riverine forests. *Mitrephora glabra* Scheff. is reported from riverine and seasonally flooded forests in Borneo (Van Steenis, 1987, as '*Mitrephora* sp. '; pers. obs.), and *M. basilanensis* Merr. is reported from forests close to mangrove swamps in Basilan in the Philippines (Merrill, 1923; pers. obs.). According to Achmad's field notes, *M. simeuluensis* is relatively common in marshy (swamp) forests on Simeuluë. Little information has been published on this habitat on Simeuluë, although it is presumably similar to the alluvial freshwater swamp formations on the west coast of Sumatra (Laumonier, 1996).

#### ACKNOWLEDGEMENTS

Financial support for this project was provided by a grant from The University of Hong Kong Research Committee, awarded to RMKS. We are grateful to the directors of BO, L and U herbaria for the loan of specimens, Dr. Y. Laumonier for valuable comments, and Ngai Yuen Yi for her skilful drawing.

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