



The less known *Mitrephora andamanica* (Annonaceae) from Andaman Islands

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Abstract

The unresolved status assigned to *Mitrephora andamanica* Thoth. & D. Das in majority plant databases is essentially owing to its incomplete characterization when it was first published and also due to absence of collections after the type from the Middle Andaman Islands. The present report concerns to its recollection from North Andaman Islands and is now wholly described and its populations in the Islands are assessed.

Keywords: Annonaceae, endemic, re-collection, taxonomy

Introduction

The genus, *Mitrephora* (Blume) Hook.f. & Thomson, (subfamily Annonoideae; tribe Miliuseae) consists of c. 47 species with the center of diversity in Borneo and the Philippines, further extending into China, India and Australia (Weerasooriya & Saunders, 2010). Though a few species are widespread, many confine to narrow and localized distribution and known by limited collections. Though the genus was established by Hooker and Thomson and later, many new species had been described, the generic boundaries and the phylogenetic affinities were unclear until recently. The monograph of *Mitrephora* (Weerasooriya & Saunders, 2010) and other phylogenetic studies (Chatrou *et al.*, 2012; Chaowasku *et al.*, 2014) had provided strong support for its generic monophyly.

The genus is characterized by leaf opposed or extra axillary (rarely terminal) inflorescences, sepals distinct from the outer petals, the outer petals usually larger than the inner petals, inner petals apically connivent to form a mitriform dome over the reproductive parts, the androecium composed of numerous "uvarioid" stamens with apically expanded connectives and carpels few to many with biseriated ovules (Weerasooriya & Saunders, 2005).

The genus is represented by 5 species in India, namely, *M. andamanica* Thoth. & D. Das, *M. harae* H. Ohashi, *M. grandiflora* Bedd., *M. heyneana* (Hook.f.

& Thomson) Thwaites and *M. tomentosa* Hook.f. & Thomson. The first two are endemic while the remaining three have distribution extended to neighboring Bangladesh, Myanmar, Sri Lanka and southern China (Hainan), Cambodia, Laos, Vietnam and Thailand (Mitra, 1993; Weerasooriya & Saunders, 2010). Thothathri and Das (1968) described *M. andamanica* based on incomplete material from Baratang Island (Middle Andamans). The species was never recollected by the later explorers from the Islands. But it got included in all the Indian Floras/checklists (Mitra, 1993; Rao, 1999; Karthikeyan *et al.*, 2009, Pandey & Diwakar, 2010; Weerasooriya & Saunders, 2010) based on the authority of Thothathri and Das.

Thothathri and Das (*l.c.*) appeared to be not in full knowledge of the new species described by them as the protologue lacks information on habitat, phenology, distribution and population. The authors examined the type specimen at CAL that has only immature flowers and also with no fruiting material. This has led to mention wrongly the number of carpels as three and also draw inaccurately the shape of carpel. Weerasooriya and Saunders (2010) had expressed similar views on the material handled by Thothathri and Das earlier. In the protologue, *M. andamanica* was compared with the Philippine species *M. lanotan* Merr. Later Weerasooriya and Saunders (2010) keyed out close



Fig. 1. *Mitrephora andamanica* Thoth. & D. Das: **a.** Habit; **b.** Twig; **c.** Leaf dorsal side; **d.** Flower buds; **e-f.** Flower; **g-i.** Fruits unripe & ripen; **j.** Seeds.

to *M. keithii* Ridl., that occurs in southern Myanmar, southern Thailand, and Peninsular Malaysia. Since the species was never recollected after the type for almost 50 years, it remained less known and was placed under 'unresolved' in major plant data bases including The Plant List (2013). As part of DBT funded project during 2010–2015 this species was sighted in flowering and fruiting from three different localities from North Andaman Islands. Specimens were collected only from two localities (Tuggapur, Mohanpur) and photographs were taken in the third locality (Ramnagar). It is now wholly described with habitat, phenology and distribution and its populations in Islands are assessed.

Mitrephora andamanica Thoth. & D. Das, J. Bombay Nat. Hist. Soc. 54 (3): 430. 1968; D. Mitra in N.P. Balakr. & Hajra, Fl. Ind. 1: 242.1993.

Type: INDIA, **Middle Andaman Islands**, Baratang, 30.04.1964, K. Thothathri 10840A, (CAL, Holotype); 10840 B-F (CAL, Isotypes). **Figs. 1,2**

Shrubs, 1–1.5 m high; main stem 10–15 cm diam., grayish, branched uniformly from base; young branches pale brown, glandular hairy. Leaves alternate, simple, elliptic to ovate-lanceolate, 7–13 × 3.5–6 cm, coriaceous, acute at base, entire at margins, acute to shortly acuminate at apex; both the surfaces puberulous on midrib, and nerves when young, glabrous when mature, lateral nerves 6–8 pairs, impressed above, ascending, join near the margins to form intra marginal loop; petiole closely wrinkled, vermicular, 3–6 mm, sulcate above, puberulous. Inflorescences leaf-opposed, 1 or 2-flowered reduced cymes; rachis slightly longer than pedicel, puberulous with pale brown hairs. Flowers bisexual, creamy yellow with pinkish dome, 10–12 mm in diam., bent downwards, hid in the foliage; pedicels 1–2 mm long, pubescent; basal bract ovate, 2–3 mm long, acute, pubescent, often persists in fruit; upper bract 1–2 mm long, pubescent. Sepals 3, free, broadly ovate–orbicular, 1.5–2.2 × 1.5–2.6 mm, pubescent with pale brown hairs on the outer side, glabrous on the inner side. Petals 6 in 2 whorls of 3 each, outer broadly ovate–orbicular, creamy yellow, 4–7 × 4–7 mm, acute, pubescent outside, glabrous within, acute at apex, ciliate along margins; inner petals creamy yellow to pinkish, 8–10 × 4–6 mm, clawed, blade rhomboid, vaulted above into a mitriform cap, sparsely, distally hairy outside, pilose within. Stamens c. 100, yellow, 0.8–1 × 0.4–0.6 mm; anther cells with prominent flat-topped connectives. Carpels 5–6, 1.5–2 mm long, distinctly angled; stigma narrowly obconical/funnel-shaped, hairy, ovules 1–2 per

carpel. Monocarps 2–4 on 5 mm long fruiting stalk, ovoid to oblong, 6–10 × 3–4 mm, falling off and leaving the stipe behind; pericarp greenish, leathery when young, smooth, orange yellow when ripe; seeds 1–2 per monocarp, ellipsoid–globose, 5–7 × 5–7 mm, punctate, brownish, shining; raphe grooved, encircled in the middle; hilum narrowly elliptic.

Phenology: Flowering from January to February; fruiting from March to June.

Habitat & distribution: As an understorey species in evergreen forests; more often seen under bamboo clumps; Middle & North Andaman Islands.

Note: It is the only shrubby species from India with more or less evenly sized outer and inner petals and distinctive stigmas.

Conservations status: Nayar and Sastry (1990), Rao *et al.* (2003) and Kundu (2006) assigned the species under category "Rare". Weerasooriya and Saunders (*l.c.*) had placed it under "Data deficient" (DD) stating that it requires additional data to place under threatened category. The species was noticed in three localities with c. 25 individuals from North Andaman Islands. They were in close proximity with the type locality, Baratang Island of the Middle Andamans. In the light of data acquired, the authors felt appropriate to apply geographic range in combination with population status and quality of habitat to designate status as per the IUCN (2014). Thus *M. andamanica* is assessed here as "Endangered" (EN: **B1a, b(iii)**).

Specimens examined: INDIA, **Middle Andaman Islands**, Baratang, 30.04.1964, K. Thothathri 10840 (CAL); North Andaman Islands, Tuggapur, Rest Camp, 12° 50' 15.4" N & 92° 52' 06.9" E, 62 m, 06.26.2012; M.V. Ramana 915 (CAL, PBL); Mohanpur, 12° 50' 54.7" N & 92° 52' 50.2" E, 72 m, 01.12.2013, M.V. Ramana 1271(BSID).

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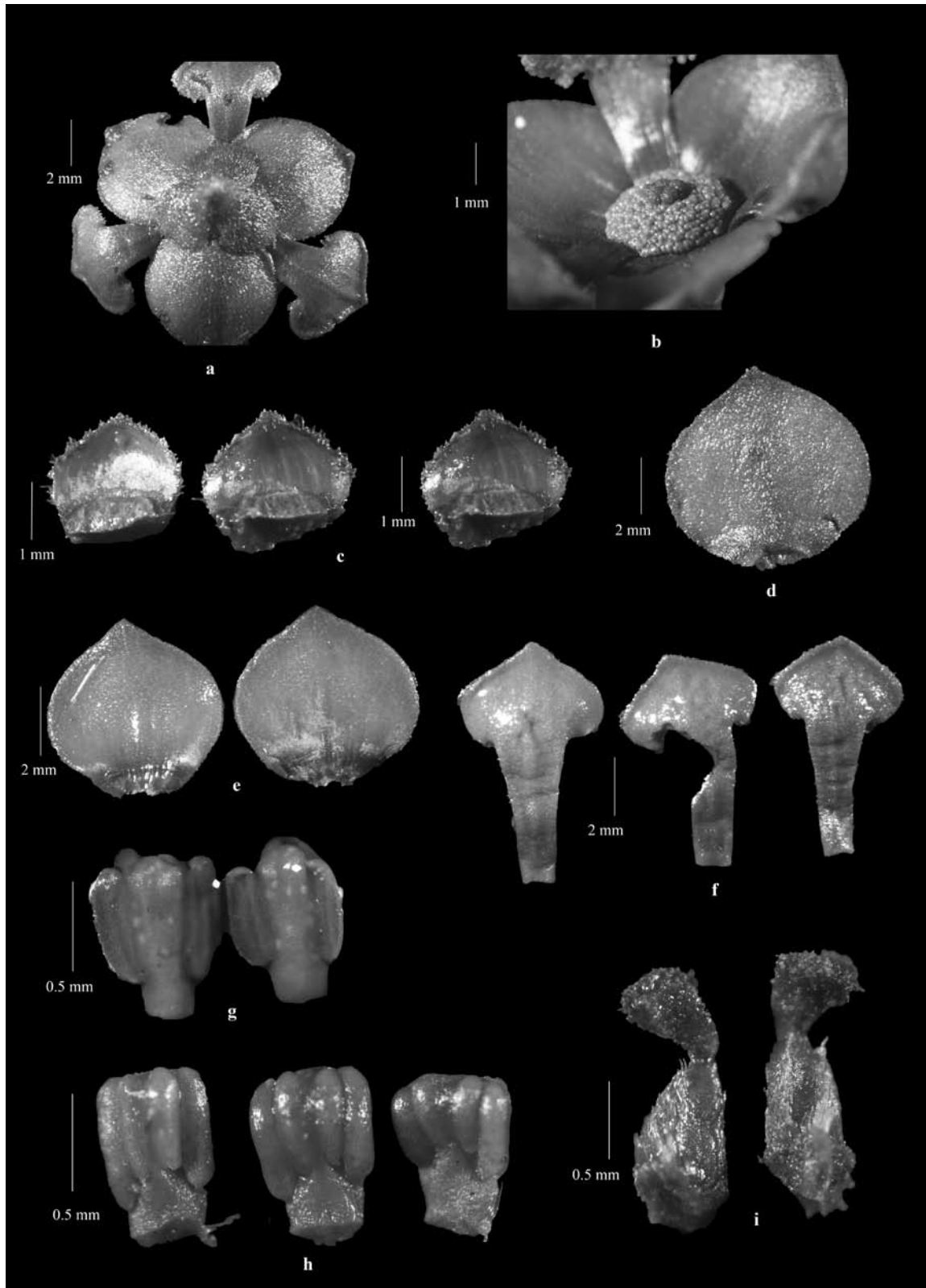


Fig. 2. *Mitrephora andamanica* Thoth. & D. Das: **a-b.** Flower dorsal & ventral views; **c.** Sepals; **d-f.** Outer & inner petals; **g-h.** Stamens; **i.** Carpels.

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