

Taxonomy and distribution of *Ficus talbotii* (Moraceae) in India

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Abstract

Ficus talbotii King (Moraceae), earlier known only from Peninsular India, is extended its distribution to Andaman Islands. A detailed description, illustration, field and SEM images and distribution are provided.

Keywords: Andaman Islands, Extended Distribution, *Ficus*, SEM Images

Introduction

Ficus L. is one of the largest genera in India, represented by 91 species and 24 infra-specific taxa, and distributed mainly in the northeast and peninsular regions and Andaman and Nicobar Islands of the country (Chaudhary *et al.*, 2012). During the plant exploration in Andaman and Nicobar Islands, the first author collected some interesting *Ficus* specimens from Kalpong forest area in North Andamans in March 2016. After critical examination of fresh and herbarium specimens, including type material housed in various herbaria (CAL, MH and BSI) and perusal of literature (King, 1887–1888, 1888; Corner, 1965; Berg, 2007), these interesting specimens were identified as *Ficus talbotii* King, a monoecious species belonging to the subgenus *Urostigma*. This species was not reported from Andaman and Nicobar Islands by earlier workers (Parkinson, 1923; Tiwari *et al.*, 2014; Murugan *et al.*, 2016) and hitherto known only from peninsular India. It was also found that there were no earlier collections of this species at PBL. Therefore, the present collection is a new distributional record for Andaman Islands. A detailed description, illustration, field, micro-morphological and SEM images of floral parts are provided for the first time.

Ficus talbotii King, Ann. Roy. Bot. Gard. Calcutta 1: 51, t. 63, 84q. 1887 & in Hook.f., Fl. Brit. India 5: 512. 1888; Brandis, Indian Trees: 603. 1906; T. Cooke, Fl. Bombay 2: 147. 1907; C.E.C. Fisch. in Gamble, Fl. Madras: 1363. 1928; Corner, Gard. Bull. Singapore 21(1): 19. 1965; C.J. Saldanha, Fl. Karnataka 1: 119. 1984; R.S. Rao, Fl. Goa 2: 410. 1986; Chithra in A.N. Henry *et al.*, Fl. Tamil Nadu 2: 255.

1987; Pull. & Moulali, Fl. Andhra Pradesh 2: 903. 1997; Lakshmin. & Venkanna in N.P. Singh *et al.*, Fl. Maharashtra 2: 941. 2001; Sasidh., Biodivers. Doc. Kerala 6. Fl. Pl.: 441. 2004; L.B. Chaudhary *et al.*, Taiwania 57(2): 213. 2012. **Figs. 1, 2**

Tree, to 20 m high, hemi-epiphytic, monoecious; aerial roots absent or very few; branchlets slightly angular to subterete, puberulous or sub-tomentose when young, glabrous at maturity; latex milky white, abundant; bark smooth, greyish, whitish or yellowish; wood soft, white, turning yellow. Leaves simple, alternate, elliptic to ovate or oblong, 6–12 × 3.5–6 cm, narrowed, acute to rounded at base, entire to slightly undulate and slightly revolute or flat at margins, caudate-acuminate at apex with 1.2–2 cm long acumen, subcoriaceous, glabrous, dark green and shining above, pale beneath; basal veins 3–5; lateral veins 7–10 pairs, nearly parallel, looped at margins; tertiary veins subscalariform; cystoliths only on upper surface (hypergenous), sparsely on lower surface; petioles 2–3.5 cm long, 1.5–2 mm thick, glabrous, channelled, articulated; stipules ovate-lanceolate, 3–9 mm long, pubescent or subtomentose, semi-persistent. Receptacles sessile, axillary, in pairs, rarely 1 or 3 or 4 in clusters below the leaves, obovoid, obconical or subglobose, 3–5 mm across, puberulous when young, glabrous at maturity, greenish yellow or with brown dots at maturity; basal bracts 3, free, subequal, ovate-acute or triangular, 1.3–2 mm across, glabrous or puberulous, persistent; ostiole slightly depressed up to 0.5 mm or convex to flat, opened; ostiolar bracts 3, ovate-obtuse, 0.6–1.2 mm long, glabrous, brown; internal ostiolar bracts few, ovate-obtuse or rounded, 0.8–1 mm across,

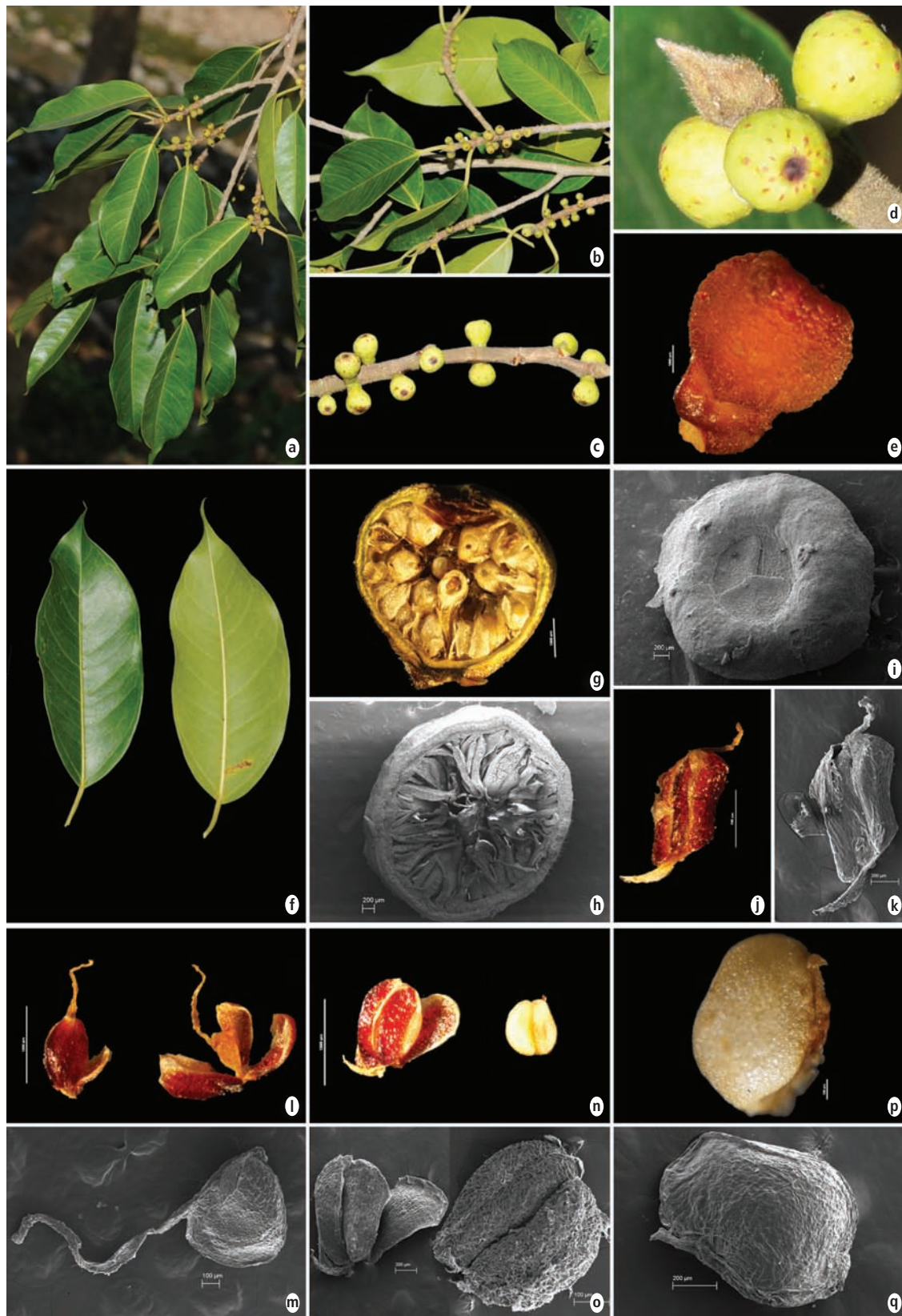


Fig. 1. *Ficus talbotii* King: a, b. Twig; c. Fruiting branch; d. Stipule with figs; e. Fig; f. Leaf adaxial and abaxial surfaces; g. L.S. of a fig; h. T.S. of a fig; i. Ostiolar bracts; j, k. Gall flower; l. Female flowers; m. Female flower ovary; n, o. Male flower and a stamen; p, q. Achene; (h, i, k, m, o and q – SEM images).

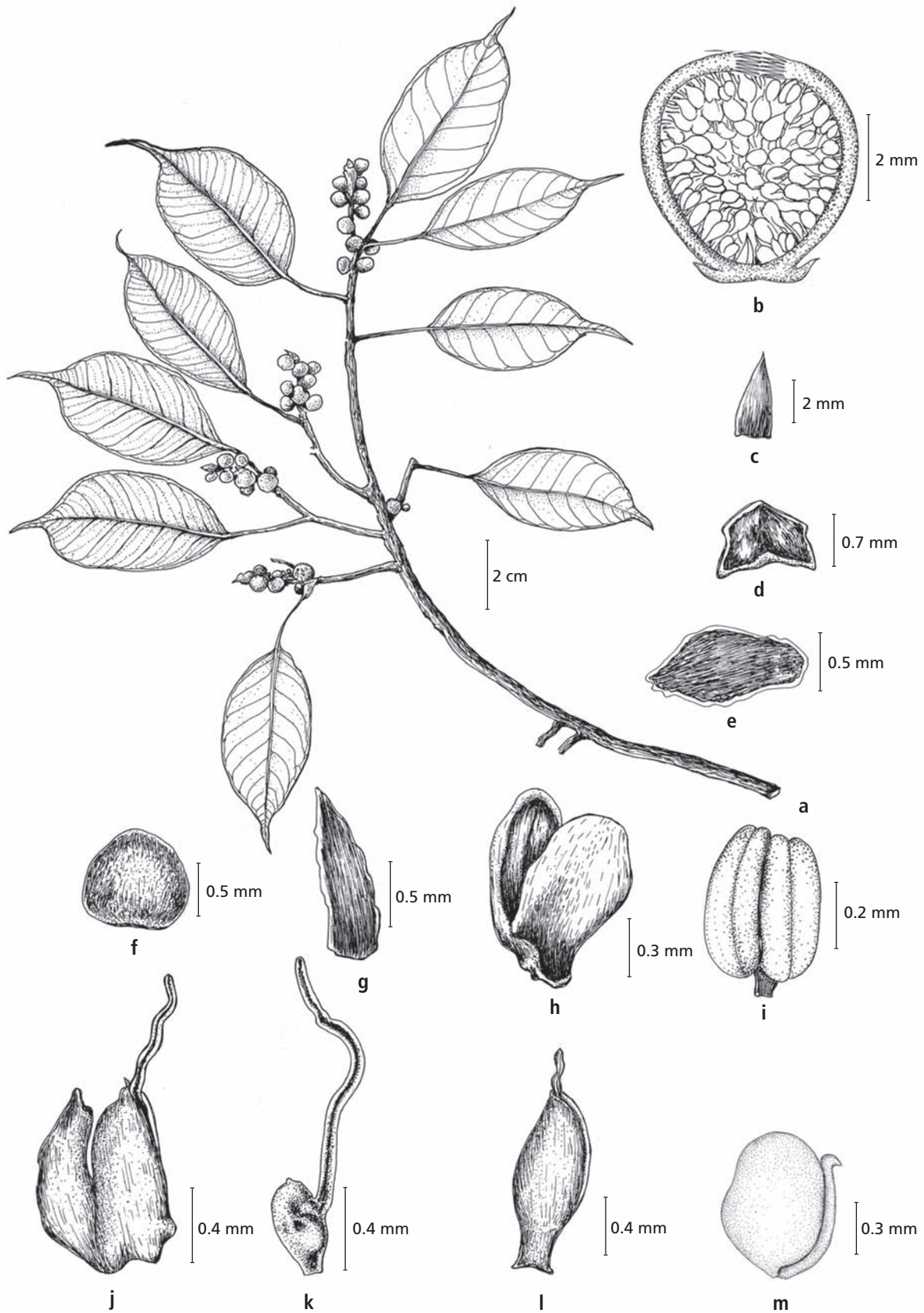


Fig. 2. *Ficus talbotii* King: a. Twig; b. L.S. of a fig; c. Stipule; d. Basal bract; e. Ostiolar bract; f. Internal ostiolar bract; g. Interfloral bract; h. Male flower; i. Stamen; j. Female flower; k. Female flower ovary; l. Gall flower; m. Achene.

glabrous, pale or brownish; interfloral bracts lanceolate, 0.7–0.9 mm long, glabrous, white. Male flowers: few, near ostiole, sessile, 0.8–1 mm long; tepals 3, free, broadly ovate or oblong, 0.7–0.9 mm long, glabrous, white; stamen 1, 0.6–0.7 mm long; anther oblong, 0.5–0.6 × 0.2–0.3 mm. Gall flowers: subsessile or pedicellate, 1.2–1.4 mm long; pedicels 0.2–0.3 mm long; tepals 3, free, ovate-elliptic or lanceolate, 0.8–0.9 mm long, glabrous, whitish; ovary obovoid or ovoid, narrowed at ends, 0.3–0.5 mm across, smooth; style terminal, to 0.5 mm long, glabrous; stigma simple, acute or blunt. Female flowers: many, sessile, 1–1.6 mm long; tepals 3, free, ovate-acute, 0.5–0.7 mm long, glabrous, white; ovary ovoid or globose, 0.3–0.4 mm across, smooth, yellowish white; style lateral, 0.9–1.2 mm long, glabrous, brownish; stigma simple, acute or blunt. Achenes ovoid or obovoid, 0.4–1 mm across, tuberculate, white or brown.

Flowering & Fruiting: September–March.

Habitat: Evergreen, semievergreen, deciduous and shola forests; mostly on rocks and cliffs.

Etymology: The specific epithet '*talbotii*' honours W.A. Talbot (1847–1917), an Irish botanist, who collected the type specimen of this species.

Specimens examined: INDIA, **Andaman and Nicobar Islands**, North Andamans, Diglipur Forest Division, way to Kalpong Hydroelectric Dam Site, 215 m, 15.3.2016, J.V. Sudhakar 120050 (MH & PBL).

Distribution: Cambodia, India (Andaman Islands, Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra and Tamil Nadu), Laos, Peninsular Malaysia, Myanmar, South China (Yunnan), Sri Lanka, Thailand and Vietnam.

Note: *Ficus talbotii* is widespread in the Western Ghats of Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala and Eastern Ghats of Tamil Nadu, and rare in Andhra Pradesh. During the exploration in the North Andamans only a single tree was located, further intensive explorations in the islands would result in finding the population and frequency of this species in the region. It is sometimes misidentified in herbaria and field as *F. amplissima* Sm. but, *F. talbotii* can easily be distinguished from the former by its caudate-acuminate apex of leaves, small-sized stipules (3–9 mm) and receptacles (3–5 mm across).

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Literature Cited

- Berg, C.C. 2007.** Precursory taxonomic studies on *Ficus* (Moraceae) for the Flora of Thailand. *Thai Forest Bull., Bot.* **35**: 4–28.
- Chaudhary, L.B., Sudhakar, J.V., Kumar, A., Bajpai, O., Tiwari, R. & G.V.S. Murthy 2012.** Synopsis of the Genus *Ficus* L. (Moraceae) in India. *Taiwania* **57**(2): 193–216.
- Corner, E.J.H. 1965.** Check List of *Ficus* in Asia and Australasia with keys to identification. *Gard. Bull. Singapore* **21**(1): 1–186.
- King, G. 1887–1888.** The species of *Ficus* of the Indo-Malayan and Chinese Countries. *Ann. Roy. Bot. Gard. Calcutta* **1**: 1–185, tt. 1–233.
- King, G. 1888.** *Ficus* L. In: Hooker, J.D. (ed.), *The Flora of British India*. Vol. 5. L. Reeve & Co., London. pp. 494–537.
- Murugan, C., Prabhu, S., Sathiyaseelan, R. & R.P. Pandey 2016.** A checklist of plants of Andaman and Nicobar Islands. (Edited by P. Singh & W. Arisdason). ENVIS Centre on Floral Diversity, Botanical Survey of India, Howrah. Published on the Internet <http://www.bsienviis.nic.in/database/Checklist-of-Nicobar-islands24427.aspx>
- Parkinson, C.E. 1923.** *A Forest Flora of the Andaman Islands*. Superintendent, Government Central Press, Simla. pp. 247–253.
- Tiwari, R., Chaudhary, L.B. & A. Durga Pal 2014.** An overview of the Genus *Ficus* L. (Moraceae) in India with special emphasis on Andaman and Nicobar Islands. *Island Biodiversity Souvenir*. Uttar Pradesh State Biodiversity Board, Lucknow. pp. 93–98.

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