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NOTE

Knema andamanica (Warb.) W. J. de Wilde subsp. *peninsularis* W. J. de Wilde (Myristicaceae) and *Ficus annulata* Blume (Moraceae) – New Additions to the Flora of India

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ABSTRACT: *Knema andamanica* (Warb.) W. J. de Wilde subsp. *peninsularis* W. J. de Wilde and *Ficus annulata* Blume are reported here as new additions to the flora of India from Little Andaman Island. Detailed information on taxonomy, description, ecology, distribution, specimens, and illustrations are provided.

KEY WORDS: Andaman and Nicobar Islands, *Ficus annulata*, India, *Knema andamanica*, new addition.

INTRODUCTION

The volcanic nature, biological isolation, endemism and their evolutionary history and relatively less human population altogether contribute in making the Andaman and Nicobar Islands in Indo-Burma and Sunda-shelf, the hottest hotspots of biodiversity (Myers *et al*., 2000; Rasingam and Parthasarathy, 2012). The Andaman and Nicobar Islands form an arched string of about 349 islands stretching from Myanmar in the north to Sumatra in south and is situated between 6° 45" to 13° 14" N latitudes and 92° 12" and 93° 51" E longitudes. Geographically these islands can be distinguished into two groups, the Andaman group and the Nicobar group separated by the 10 degree channel. The total area of these two groups of islands is 8,249 Sq km stretching over a distance of 700 km from North to South. In the entire archipelago, only 38 islands are inhabited, 11 in the Andaman group and the rest in the Nicobar group.

Little Andaman is the third largest Island of Andaman group covering an area of 733 Sq km, located in between 10° 30' to 10° 54' N latitude and 92° 30' E longitude (Vasudeva Rao, 1986; Rasingam and Parthasarathy, 2008, 2009). The Island is separated from the Great Andaman group by Duncan passage and Nicobar Islands by sea at 10 degree channel. Little Andaman island is dumbbell shaped and more or less flat with very few undulations in the northeastern parts. The central and western portions are hilly and the highest elevation is about 210 m above the sea level (Kumar, 2004). The major vegetation types in the island include Andaman tropical evergreen, Andaman semi-evergreen, Andaman moist-deciduous and littoral forests, representing the forest types 1A/C2, 2A/C1, 3A/C1 and 4A/L1 respectively (Champion and Seth, 1968).

During the floristic collection tours to Little Andaman Island, two interesting tree species have been collected by the senior author. On critical study the plants were identified as *Knema andamanica* (Warb.) W. J. de Wilde subsp. *peninsularis* W. J. de Wilde (Myristicaceae) and *Ficus annulata* Blume (Moraceae). Scrutiny of literature revealed that these two species has not been reported so far from Andaman and Nicobar Islands as well as mainland in India (Parkinson, 1923; Vasudeva Rao, 1986; Mathew, 1998; Lakshminarasimhan and Rao, 1996; Pandey and Diwakar, 2008, Chaudhary *et al*., 2012). *Knema andamanica* (Warb.) W. J. de Wilde subsp. *peninsularis* W. J. de Wilde was earlier considered to be endemic to Thailand (de Wilde, 1979, 2002) and their present collection reveals their extended distribution in India. *Ficus annulata* Blume was earlier recorded from Myanmar, Indo-China, Yunnan, Thailand, Sumatra, Malay Peninsula, Banka, Java, Borneo, Sulawesi, SW Philippines (King, 1887; Berg and Corner, 2005). An updated nomenclature, important synonyms, description, ecology, distribution and line drawings are provided for both species.

TAXONOMIC TREATMENT

Knema andamanica (Warb.) W. J. de Wilde subsp. ***peninsularis*** W. J. de Wilde in Blumea 25(2): 372. 1979 & Fl. Thailand 7(4): 751. 2002.

Fig. 1

A medium-sized evergreen tree, up to 8 m high

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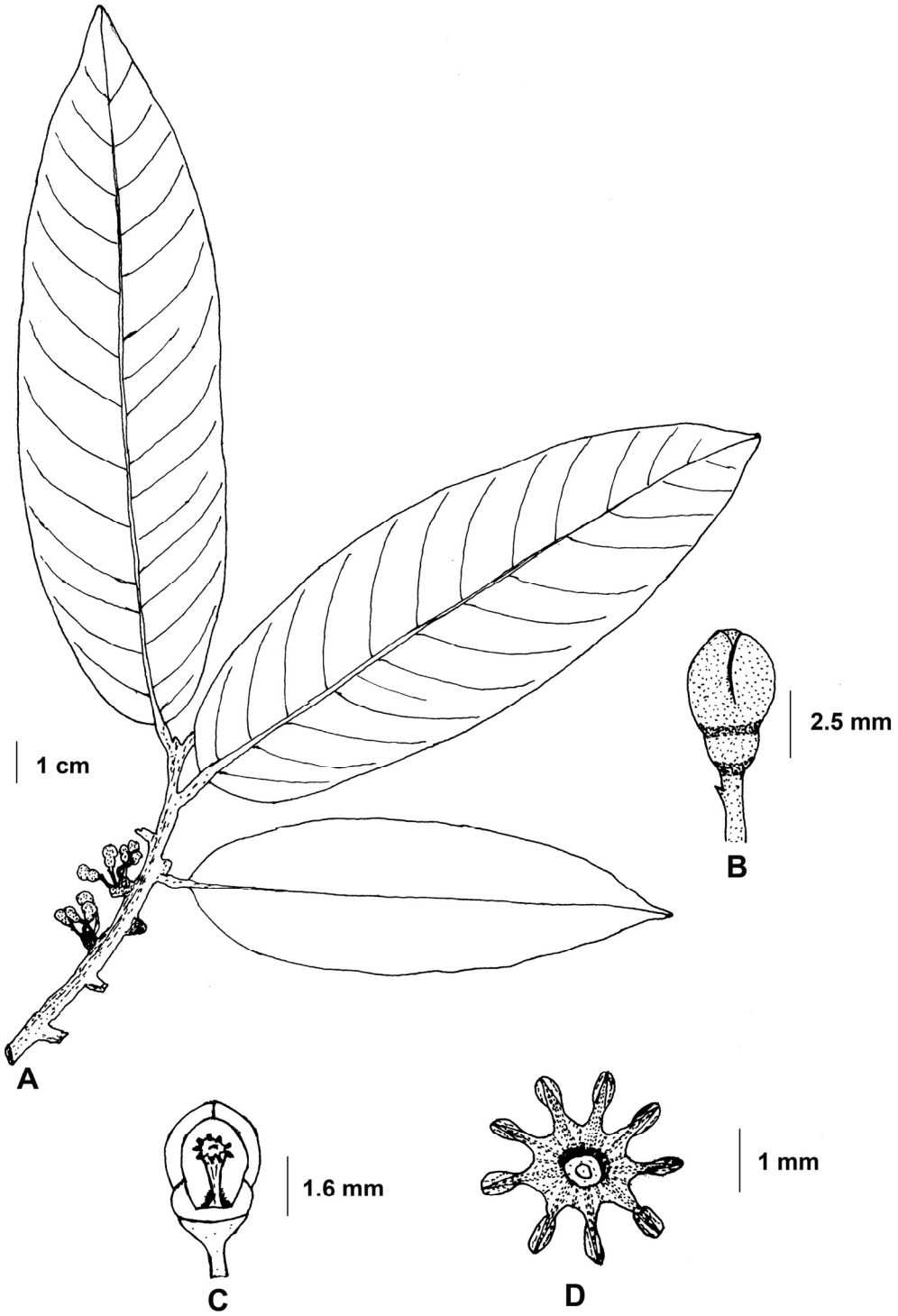


Fig. 1. ***Knema andamanica*** **(Warb.) W. J. de Wilde subsp.** ***peninsularis*** **W. J. de Wilde. A: Flowering twig. B: Male flower bud. C: Male flower cut open. D: Staminal disc.**

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branchlets reddish-brown, minutely fissured, terete, glabrous. Leaves simple, alternate. petioles dark brown, channelled above, 7–12 mm long, glabrous, lamina 12–23 × 3.5–7.5 cm, oblong to lanceolate, rounded or shortly attenuate at base, acute to acuminate at apex, entire along margins, coriaceous, pale brownish-green and glabrous above, pale and glaucous below, midrib slightly raised above, prominent below; lateral nerves 16–20 pairs, faint above prominent beneath; tertiary nerves slender, scalariform, finely visible on both sides. Inflorescences axillary, sessile or peduncled fascicles; peduncle *c.* 5 mm long, rusty pubescent. Male flowers 3–5 per peduncle, buds obovoid, densely rusty pubescent, *c.* 5 × 3.5 mm; pedicels slender, 4–7.5 mm long, rusty pubescent; bracteole minute, sub-apical, caducous, less than 1mm long. Perianth 3, yellow within; lobes very thick, splitting the bud to *c.* ½ deep, ovate-triangular, acute, *c.* 5 mm long. Staminal column *c.* 3.5 mm long, slender, sparse to densely hairy at base. Disc *c.* 3 mm in diam., including anthers, circular, convex; anthers 9, subsessile or very shortly stiped, free, suberect.

Distribution: India: Little Andaman Island; Thailand.

Flowering and Fruiting: November–March.

Ecology: Rare in inland evergreen and semi-evergreen forests from sea level to 100 m altitude growing along with *Pometia pinnata* J. R. Forst. & G. Forst., *Myristica andamanica* Hook. f., *Dysoxylum arborescens* (Blume) Miq., *Drypetes longifolia* (Blume) Pax & K. Hoffm., *Dipterocarpus grandiflorus* (Blanco) Blanco, *D. kerrii* King, *Terminalia procera* Roxb., *Dillenia andamanica* C. E. Parkinson and *Artocarpus gomezianus* Wall. ex Trecul.

Specimens examined: **INDIA**: Andaman and Nicobar Islands, Little Andaman Island, Vivekananthapur, 27th November 2006, *L.Rasingam 25820* (PBL).

Notes: *Knema andamanica* subsp. *peninsularis* differ from the other two subspecies of *Knema andamanica* by having 9 sub-sessile anthers. In *Knema andamanica* subsp. *andamanica* anthers are 10–12 and just stiped and *Knema andamanica* subsp. *nicobarica* anthers are 6–7, half sessile.

Ficus annulata Blume, Bijdr. 448. 1825; Miq., Ann. Mus. Bot. Lugd.-Bat. 3: 261, 262, 285. 1867; Kurz, Forest Fl. Brit. Burma 2: 443. 1877; King, Ann. Roy. Bot. Gard. (Calcutta) 1: 25, t.22. 1887; Burkill, Dict. 1004. 1935; Corner, Wayside Trees 674, f. 251. 1940 & Gard. Bull. Singapore 21: 12. 1965; Backer, Bekn. Fl. Java (em. ed.) 6: 42. 1948; Berg & Corner, Fl. Males. ser. 1, 17: 625. 2005. *Urostigma annulata* (Blume) Miq., in Zoll., Syst. Verz. 2: 90. 1854; Fl. Ind. Bat. 1, 2: 352. 1859 & Fl. Ind. Bat. Suppl. 440. 1861. Fig. 2

A medium sized evergreen tree up to 15 m high; epiphytic when young and semi-climbing; branchlets thick with many leaf scars. Leaves simple, alternate, petioles very thick, channelled above, *c.* 3 cm long, glabrous; lamina 10–16 × 3–5 cm, oblong-elliptic to elliptically lanceolate, acute at base, acuminate at apex, entire along margins, coriaceous, glabrous on both sides with small circular galls; midrib flat above, prominent below; lateral nerves up to 11 pairs, flat above, prominent below. Stipules oblong-lanceolate, 2.5–7 cm long, acuminate at apex, acute at base, caducous; Figs axillary on leafy branchlets, paired, green with scattered white spots. ovoid to oblong, *c.* 2 × 1.5 cm, umbonate, glabrous, winkled when dry; peduncle *c.* 1.5 cm long, 3-bracted at the base, the bracts free, ovate, acute, pubescent or glabrous, *c.* 4 mm long, the peduncle annular, thickened under the bracts. Male, gall and female flowers within same fig. Male flower scattered all over the interior of the receptacle, numerous, pedicellate, stamen 1; gall flower numerous, the perianth gamophyllus, apex 3-lobed, achene ovoid, smooth, style long, with long flattened stigma; fertile female flowers very few, the perianth deeply 4-cleft, style shorter than achene, stigma clavate; achene tubular.

Flowering & Fruiting: March–June.

Distribution: India: Andaman and Nicobar Islands, Myanmar, Indo-China, Yunnan, Thailand, Sumatra, Malay Peninsula, Banka, Java, Borneo, Sulawesi and SW Philippines.

Ecology: Uncommon along the streams of semi-evergreen and littoral forests from sea level to 100 m altitudes. Very scarcely distributed inside inland semi-evergreen forests, may be 5–7 in number per 10,000 square meter area. Found in association with *Manilkara littoralis* (Kurz) Dubard, *Syzygium samarangense* (Blume) Merr. & L. M. Perry, *Heritiera littoralis* Dryand., *Planchonella obovata* (R. Br.) Pierre, *Gyrocarpus americanus* Jacq., *Ficus microcarpa* L. f., *Ficus benjamina* L., *Hibiscus tiliaceus* L., *Thespesia populnea* (L.) Sol. ex Correa and *Bombax insigne* Wall.

Specimens examined: **INDIA**: Andaman and Nicobar Islands, Little Andaman Island, Hut Bay, 15th May 2008, *L. Rasingam 25974* (PBL).

Notes: As per the present conspectus of the sections of the genus proposed by Berg (2004), *Ficus annulata* Blume belongs to the subgenus *Urostigma* (Gasp.) Miq. sect. *Urostigma* (Gasp.) Endl. subsect. *Conosycea* (Miq.) C. C. Berg (Berg, 2004) as it is characterized by trees, without clear indication of intermittent growth, internodes not conspicuously different in length, spirally arranged leaves, free stipules, pedunculate figs in pairs, prominent basal bracts. It is closely allied to *F. chrysolepis* Miq., but differs by the presence of clasping trunk, glabrous stipules and basal bracts, ellipsoid to ovoid receptacle, longer basal bracts and comparatively small receptacle, peduncular annulus just under the basal bracts of receptacle.

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Fig. 2. *Ficus annulata* Blume. A: Fruiting twig.

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印度植物誌之新見－*Knema andamanica* subsp. *peninsularis*（肉豆蔻科）與環紋榕（桑科）

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摘要：本文報導了在印度小安達曼群島發現的*Knema andamanica* subsp. *peninsularis*（肉豆蔻科）和環紋榕（桑科）印度新紀錄分布。詳細的分類描述、標本檢視、以及地理分布和生態資訊等一併提供於文中。

關鍵詞：安達曼群島、環紋榕、印度、*Knema andamanica*、新見。

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