



ISSN NO. 2320-5407

Journal homepage: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH

RESEARCH ARTICLE

Extended distribution and floral description of *Antidesma keralense* Chakrab. & M. Gangop. (EUPHORBIACEAE) - an endemic edible fruit species of the southern Western Ghats

S.M. Shareef, T. Shaju & A.R. Sivu

Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) Palode, Thiruvananthapuram, Kerala, India- 695 562

Manuscript Info**Manuscript History:**

Received: 14 May 2015
Final Accepted: 15 June 2015
Published Online: July 2015

Key words: *Antidesma*,
Endemic, Western Ghats

***Corresponding Author**
S.M.Shareef

Abstract

Antidesma keralense Chakrab.& M. Gangop, is an endemic species of the southern Western Ghats. The paper discusses the rediscovery, recollection and extended distribution of the species with illustration and photographs.

Copy Right, IJAR, 2015,. All rights reserved

INTRODUCTION

The genus *Antidesma* L. (Euphorbiaceae) has about 150 species reported worldwide, which are distributed mainly in the Old World Tropics covering South-East Asia, Malesia, Australia and Pacific Islands, with 10 species in Africa and Madagascar and 15 species in India (Balakrishnan *et al.*, 2012). Among the 15 species occurring in India, seven are in the Western Ghats, viz. *Antidesma acidum* Retz., *A. alexiteria* L., *A. bunius* (L.) Spreng, *A. compactum* Tul., *A. ghaesembilla* Gaertn., *A. keralense* Chakrab. & M. Gangop. and *A. montanum* Blume., among which *A. keralense* is the only known endemic species of the Western Ghats, so far considered restricted within the state of Kerala (Balakrishnan *et al.*, 2012; Nayar *et al.*, 2014).

During the floristic study of Thiruvananthapuram district in Kerala, few fruiting specimens of an *Antidesma* (19 May, 1979; No. 61834) were collected from Chemunji Hills of the Agasthyamala Biosphere Reserve, and identified the same as *A. bunius* (L.) Spreng (Mohanan and Henry, 1994). Later on, while revising the genus *Antidesma* of the Indian subcontinent, Chakrabarty and Gangopadhyay (2000) re-examined the above specimens and confirmed distinctive taxonomic attributes to qualify the same for a new species. Accordingly, they proposed it as a new species viz. *Antidesma keralense* Chakrab. & M. Gangop. Interestingly, no further collection of the species was made after the type collection, although two comprehensive taxonomic studies have been carried out within the last two decades (Balakrishnan & Chakrabarty, 2007; Balakrishnan *et al.*, 2012).

While exploring wild edible fruit resources of the southern Western Ghats in 2008, the third author (of this paper) collected flowering specimens (male) of *Antidesma keralense* from Inchikuzhy-Kanniketty belt in the Tamil Nadu part of Agasthyamala Biosphere Reserve, and later, the first and second authors collected male and female flowering specimens from the type locality, i.e. the Chemunji Hills and adjoining forest areas. The collection from Tamil Nadu (Tirunelveli District) forms an extended distributional record and represents rediscovery of the species after a lapse of 29 years from its first collection. Correspondingly, the collection from Chemunji Hills represents the first

recollection of the species from the type locality. Since the protologue is based only on fruiting specimens, the present paper provides a detailed morphological description of the species with illustration and photographs.

Antidesma keralense Chakrab.& M. Gangop.in J. Econ. Taxon Bot. 24:23, f.1.2000.A. *Bunius* sensu M. Mohanan & A.N. Henry. Fl. Thiruvananthapuram.428. 1994, non (L.) Spreng. 1825. (**Fig.1 & 2**)

An under shrub, to 2.5 cm high; branchlets terete, grey or pale brown, glabrous; Tender parts sparsely hairy, usually dark pink. Leaves 6.8-14 x 2.5-4 cm, elliptic to elliptic-lanceolate or oblong elliptic, cuneate or acute at base, caudate to caudate acuminate at apex, coriaceous, live colour dark green above, pale green beneath, pale brown, dark brown or greenish brown above, coppery or pale brown beneath when dry; midrib shallowly channelled above, raised beneath; lateral nerves 7-12 pairs, faint above, raised beneath; tertiaries faint above, conspicuous beneath; young leaves dark pink, sparsely hairy beneath especially on midrib and leaf margin; stipules lanceolate, to 0.4 cm long, sparsely hairy; petioles channelled above, 0.5-1cm long, 0.1-0.2 cm thick. Male inflorescence axillary, simple, 3-4 cm long; rachis pubescent, yellow,1-1.5cm long basal portion without flowers; bracts broadly ovate,0.15-0.2 x 0.4-0.6mm, pubescent. Flowers 0.1-0.15 cm across, sessile, yellow; tepals uniseriate, 4-5 lobed, suborbicular, 0.2-0.3 x 0.4-0.6mm, pubescent without, fused at base; stamens 3-4, 0.2-0.4mm long; pistillode conic. Female inflorescence axillary, simple, 8-10 cm long; rachis adpressed yellow-puberulous to glabrous, pink, 2.5-3.2 cm long basal portion without flowers. Bracts ovate, acute, 0.5-1 mm long, pubescent. Flowers 0.2- 0.3cm across, sessile, dark pink; tepals uniseriate, 4-5 lobed, 0.2-0.3 x 0.5-0.8mm, deltoid with obtuse apices, pubescent without, fused at base; ovary bottle shaped, 1-1.3 x 0.8-1mm, hairy without, 1-celled; styles terminal; stigma 3-4 lobed. Fruits obliquely ovoid- ellipsoid, compressed, 9-11 x 6-7 mm, reddish on ripening, black when dry, alveolate; shortly pedicellate; style subterminal.

Flowering & Fruiting: February-June.

Specimens examined: INDIA, Tamil Nadu, Tirunelveli dist., Kalakkad-Mundanthura Tiger Reserve, Inchikuzhy to Kanniketty, 28 July 2008, A.R.Sivu 63567 (TBGT); Kerala, Thiruvananthapuram dist., Chemunji Hills, ca. 1200m, 24 Mar. 2015, T. Shaju & S.M. Shareef 79273 (TBGT); way to Pandipath, ca. 1350m, 25 Mar. 2015, S.M. Shareef & T. Shaju 79276(TBGT).

Ecology and distribution

The species is mostly found in evergreen forests within an altitudinal range of 900-1450 m. It is mainly associated with *Antidesma montanum* Blume, *Cinnamomum chemungianum* M.Mohanan & A.N.Henry, *Hedyotis travancoricum* Bedd., *Smilax wightii* A. DC., *Maesa indica* (Roxb.) DC., *Memecylon randerianum* S.M.Almeida & M.R.Almeida, *Calamus* sp., *Litsea beddomei* Hook.f., *Isonandra montana* (Thw.) Gamble, *Symplocos obtusa* Wall. Ex G. Don, etc. and the present belt of occurrence is a contiguous forest spread over Kerala and Tamil Nadu. The species is therefore considered endemic to the southern Western Ghats of Kerala (Thiruvananthapuram District) and Tamil Nadu (Tirunelveli District). The authors have observed more than 500 individuals of the species from Chemunji Hills to Pandipath and Pongalappara regions of Kerala and Inchikuzhy to Kanniketty of Tamil Nadu. The fruits are edible when ripe, though slightly acidic in taste. The authors have collected a few seedlings from the type locality, which are conserved in the field gene bank of JNTBGRI, as part of its *ex-situ* conservation programme.

Acknowledgements: Authors are thankful to the Director, JNTBGRI for constant encouragement, support and the facilities provided. Thanks are also due to the Forest Departments of Kerala and Tamil Nadu for their help in field studies.

Literature cited

- Balakrishnan, N.P. & T. Chakrabarty 2007.The family Euphorbiaceae in India- A synopsis of its profile, taxonomy and bibliography. Bishen Singh and Mahendra Pal Singh, Dehra Dun.
- Chakrabarty, T. & M. Gangopadhyay 2000.The genus *Antidesma* L. (Euphorbiaceae) in the Indian subcontinent. Journal of Economic and taxonomic Botany 24:1-55.
- Balakrishnan, N.P., Chakrabarty, T., Sanjappa, M., Lakshminarasimhan,P. & P. Singh (eds) 2012. Flora of India. Volume 23. Loranthaceae- Daphniphillaceae, Botanical Survey of India, Calcutta.
- Mohanan, M. & A.N. Henry 1994. Flora of Thiruvananthapuram. Botanical Survey of India, Calcutta.
- Nayar, T.S., A. Raziya Beegam & M. Sibi 2014. Flowering Plants of the Western Ghats, India Vol.1, Dicots. Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram.

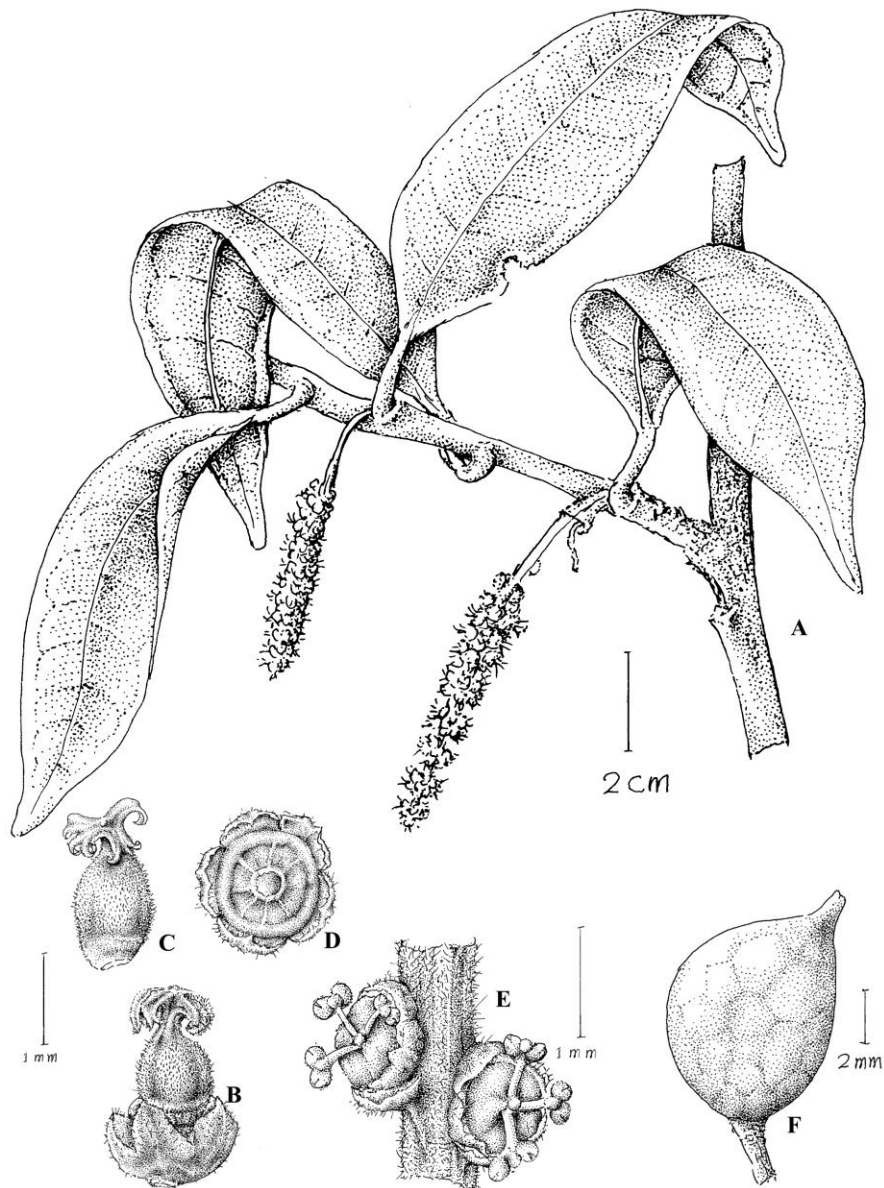


Fig.1. *Antidesma keralense* Chakrab.& M. Gangop.

- A. A flowering branch
- B. Female flower
- C. Ovary
- D. Disk of female flower
- E. Male flowers
- F. Mature fruit



Fig. 2. *Antidesma keralense* Chakrab. & M. Gangop.

- A. Habitat- the montane forest
- B. Habit
- C. Branch showing male inflorescence
- D. Branch showing female inflorescence
- E. Female inflorescence
- F. Male inflorescence