

**LECTOTYPIFICATION OF *ACTINODAPHNE LANATA* MEISN. (LAURACEAE)
AND NOTES ON ITS OCCURRENCE IN THE WESTERN GHATS, INDIA**

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Actinodaphne lanata Meisn. an endemic and critically endangered species that has previously been collected only four times, was recently located and re-collected from the Kerala part of Nilgiri sholas, South India. A lectotype is designated and detailed account on taxonomy, ecology of the species has been provided to facilitate its easy identification.

The genus *Actinodaphne* Nees was erected by C. G. D. Nees von Esenbeck (1831) based on *A. pruinosa* Nees from Peninsular Malasia. It comprises about 101 species, distributed from India and Sri Lanka to Myanmar, Thailand, Indo-China, Korea, Japan, Malaysia and the Solomon Islands (Rohwer, 1993; van der Werff, 2001; Julia, 2005).

Whilst revising the species of *Actinodaphne* in South India, the authors encountered problems in the typification of the *Actinodaphne lanata*. Meisner (1864) described this species based on the collections of Gardner and Wight from Nilgiris, India. In the protologue, Meisner erroneously mentioned one collection from Ceylon which was substantiated by the note given by Hooker (1886). While searching for Gardner's and Wight's specimens in different herbaria it was found that there are two sheets of Gardner and one sheet of Wight at K, all are considered as syntypes. Of the three sheets at K, one sheet of Wight bears two twigs; one with young leaves and the other with mature leaves and fruits (K000778989 image!), the two specimens of Gardner bear one twig with mature leaves and fruits and on both sheets a label annotated 'Nilghiri, 1847' (K000778987 image ! and K000778988 image!) is there. Amongst them, Wight's specimen *Wight* KD 2538, K000778989 image!) is a perfect match for the description given in the protologue, and is designated here as the lectotype. While exploring the Anginda and Sispara shola forests of Silent Valley National Park in Palakkad district of Kerala, the authors came across a few mature individuals of *Actinodaphne lanata*. Subsequent critical study and verification with the high resolution images of authentic type specimens from Kew Herbarium Catalogue (<http://apps.kew.org/herbcat/navigator.do>), confirmed the identity of the plant. According to Ramesh and Pascal (1997) "This species could never be collected again since its original collections, neither from its type locality nor elsewhere".

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Actinodaphne lanata Meisn. in DC., Prodr. 15(1): 219 (1864); Hook.f., Fl. Brit. India 5:149 (1886); Brandis, Indian Trees: 534 (1921); Gamble, Fl. Madras 2: 861 (1957) (Repr.); B. D. Sharma *et al.*, Biological Memoirs 2:122 (1977); E. Vajr. & P. Daniel in S.K. Jain & Sastry (Eds) Materials Catalogue Threat. Pl. of India: 33 (1983); Ahmed. & M.P. Nayar, End. Pl. Ind. Reg. 1: 64 (1987); M.P. Nayar & Sastry, Red Data Book Ind. Pl. 2: 140–141 (1990); B.R. Remesh & J.-P. Pascal, Atlas End. W. Ghats: 219 (1997); Jayakumar & K.K.N. Nair, J. Econ. Taxon. Bot. 29: 153 (2005); T.S. Nayar *et al.*, Fl. Pl. Kerala-Handb.: 368 (2006). **(Fig. 1).**

Lectotype (designated here): INDIA, Peninsular Indiae Orientalis, *s. die*, Wight, KD2538 (K000778989 image!). **(Fig. 2).**

Small tree, about. 6 m high. Twigs slender, brown, juvenile shoots densely rusty tomentose. Terminal buds perulate with imbricate scales, elliptic to ovate, 5–6 mm long, tomentose, margin ciliate. Leaves verticillate of 5–7 per node; lamina elliptic-oblong to narrowly lanceolate, 5–8 x 1.4–2.5 cm, apex attenuate to acuminate, base acute to cuneate, margin entire, chartaceous, areolate and shining green above, densely white-woolly when young, glabrous on both surfaces when mature, glaucous beneath; secondary veins 7–9 pairs, sunken above, raised beneath, arching and looping near margin, basal pair c. 7 mm away from leaf base, opposite and oblique; tertiary veins scalariform, obscure or slightly distinct on both surfaces; petioles slender, 1–2 cm long, slightly grooved above, rounded beneath, rusty tomentose, glabrescent when mature. Inflorescences fasciculate, ferruginous tomentose, borne on twigs between whorls of leaves, up to 8-flowers per fascicle, sessile or short stalked, peduncles c. 2 mm long, fulvous tomentose. Staminate flowers not seen. Pistillate flowers c. 7 mm long, pedicels 3–5 mm long, slightly angular, fulvous tomentose; perianth lobes oblong-elliptic or orbicular, acute or rounded at apex, margin ciliate, fulvous tomentose outside, glabrous inside, gland-dotted, 3-veined, membranaceous, inner 2.5 × 1.5–2.0 mm, flat, outer 2.0 × 1.5 mm long, concave, keeled at back; staminodes 9, nearly spatulate, linear-lanceolate, apex acute, 1–1.5 mm long, pilose at base, third row with bi-glandular, glands ca. 0.5 mm across, kidney-shaped, stipe linear; ovary obovoid, c. 1.5 by 1.0 mm, glabrous; style stout, sparsely pilose, curved, c. 1 mm long, yellow, stigma peltate, white. Fruits ellipsoid to obovoid, c. 1.5 mm long, apex with persistent styler remnants, drying black; mature perianth tube shallowly cup-shaped, c. 7 mm in diam., fulvous tomentose outside at early stage, puberulous when mature; pedicels slender, c. 1 cm long, glabrescent, greenish yellow.

Flowering and fruiting: February–May.

Distribution and Ecology: It grows in shola forests above 1800 m and is restricted to Sispara, Anginda (Kerala) and Upper Bhavani and Mukuruthi (Tamil Nadu, of Nilgiri Biosphere Reserve).

Conservation status: *Actinodaphne lanata* is endemic and listed as Critically Endangered (B1+2c ver. 2.3) in the IUCN Red List of Threatened Species (WCMC, 1998), because of its rarity, extremely limited distribution and fragmented habitat in the Nilgiri Mountains. However, our observations indicate that the habitat (shola forest) is intact, and no indication of habitat fragmentation in the nearby forest is seen. The species is, however, very rare, only a few individuals were seen on a single ridge.

Specimen examined: INDIA, **Kerala**, Palakkad district.: Anginda, ±2000 m, 12 October 2012, A.J. Robi & K.A. Anilkumar 4811 (CMPR!); Anginda, ±2200 m, 14 January 2016, A.J. Robi & K.J. Dantas 28084 (KFRI!). **Tamil Nadu**, Nilgiris dist.: Nilgherries, 1847, Gardner *s.n.* (K000778987, K000778988, images!); Anginda, ±2100 m, May 1889, J.S. Gamble 20644 (MH!); Sispara, ±1800 m, May 1889, J.S. Gamble 20585 (MH!).



Fig. 1. *Actinodaphne lanata* Meisn., A. Habit; B. Terminal bud scales; C. Leaves-abaxial view; D. Leaves-adaxial view; E. Female inflorescence; F. Flowers enlarged; G. & H. Immature fruits; I. Mature fruit.



Fig. 2. Lectotype of *Actinodaphne lanata* Meisn. (Wight KD 2538, K000778989).

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