

## Typification of ten taxa in the genus *Actinodaphne* Nees (Lauraceae) in India

A.J. Robi<sup>1, 3, 4</sup> and P.S. Udayan<sup>2</sup>

<sup>1</sup>Department of Silviculture, Kerala Forest Research Institute, Peechi, Thrissur, Kerala 676 503, India

<sup>2</sup>P.G. Department of Botany & Research Centre, Sree Krishna College, Ariyannur P.O., Guruvayur, Thrissur, Kerala 680 102, India

<sup>3</sup>Present address: Department of Botany, Bishop Abraham Memorial College, Thuruthicad P.O., Mallappally, Pathanamthitta, Kerala 689 597, India

<sup>4</sup>Author for correspondence: [ajrobin80@gmail.com](mailto:ajrobin80@gmail.com)

### Abstract

Recent studies on the Indian genus *Actinodaphne* revealed that several names need typification. From the available syntypes, we designate lectotypes here for each of the following names: *A. bourdillonii*, *A. campanulata*, *A. campanulata* var. *obtusata*, *A. hookeri*, *A. hookeri* var. *glabrata*, *A. hookeri* var. *longifolia*, *A. lawsonii*, *A. madraspatana*, *A. salicina* and *A. tadulingamii*.

### Introduction

The genus *Actinodaphne* Nees, commonly known as ray laurels, is a member of the family Lauraceae, comprising 100 species worldwide (Van der Werff 2001), and is predominantly found in Southeast Asia and Malaysia. The preferred habitats of these plants are semi-evergreen, evergreen, and shola forests. In India, the genus includes 15 species and a variety (Robi 2014). During studies towards a monograph of *Actinodaphne*, the type specimens of all taxa published in the genus have been studied. As a result, lectotypes are designated here for names of seven species and three varieties. Lectotypes are chosen following the principle outlined in Art. 9.2 of the International Code of Nomenclature (McNeill *et al.* 2012).

### Lectotypifications

1. *Actinodaphne bourdillonii* Gamble, Bull. Misc. Inform. Kew 1925(3): 129 (17 Apr 1925) & Gamble, Fl. Madras 2(pt. 7): 1231 (Nov–Dec 1925)

**Type citation:** “S. India. Hills of Travancore, 200–1200 m. alt., in evergreen forest, *T.F. Bourdillon* 19, 37, 504, (Small tree 19, 37; large tree 504); S. Canara, forests, *Beddome*; Iyerpadi, Anamalai hills, April 1903, *C.A. Barber* 5469; Lord Hobart’s road, Nilgiris, 2000 m. alt., June 1883, *J.S. Gamble* 11800”

**Lectotype** (designated here): Travancore, ±1200 m, 1890, *T.F. Bourdillon* 504 (K000793026!). **Fig. 1.**

**Residual syntypes:** South India, hills of Travancore, 200–1200 m, *T.F. Bourdillon* 37 (K000793025!, CAL!); Lord Hobart’s road, Nilgiris, 2000 m, June 1883, *J.S. Gamble* 11800 (K!).

**Distribution:** South India (Karnataka, Kerala & Tamil Nadu).

**Notes:** Gamble (1925) cited six collections, viz., T.F. Bourdillon, R.H. Beddome, C.A. Barber, and J.S. Gamble, and these constitute syntypes. Of these, the specimen *Bourdillon 504* (K) is selected here as the lectotype, which allows for a more complete comparison with the protologue. The specimen at K comprises a male flowering branch with several leaves.



**Fig. 1.** Lectotype of *Actinodaphne bourdillonii* (K000793026, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).

2. *Actinodaphne campanulata* Hook.f., Fl. Brit. Ind. 5(pt. 13): 148 (1886) var. *campanulata*.

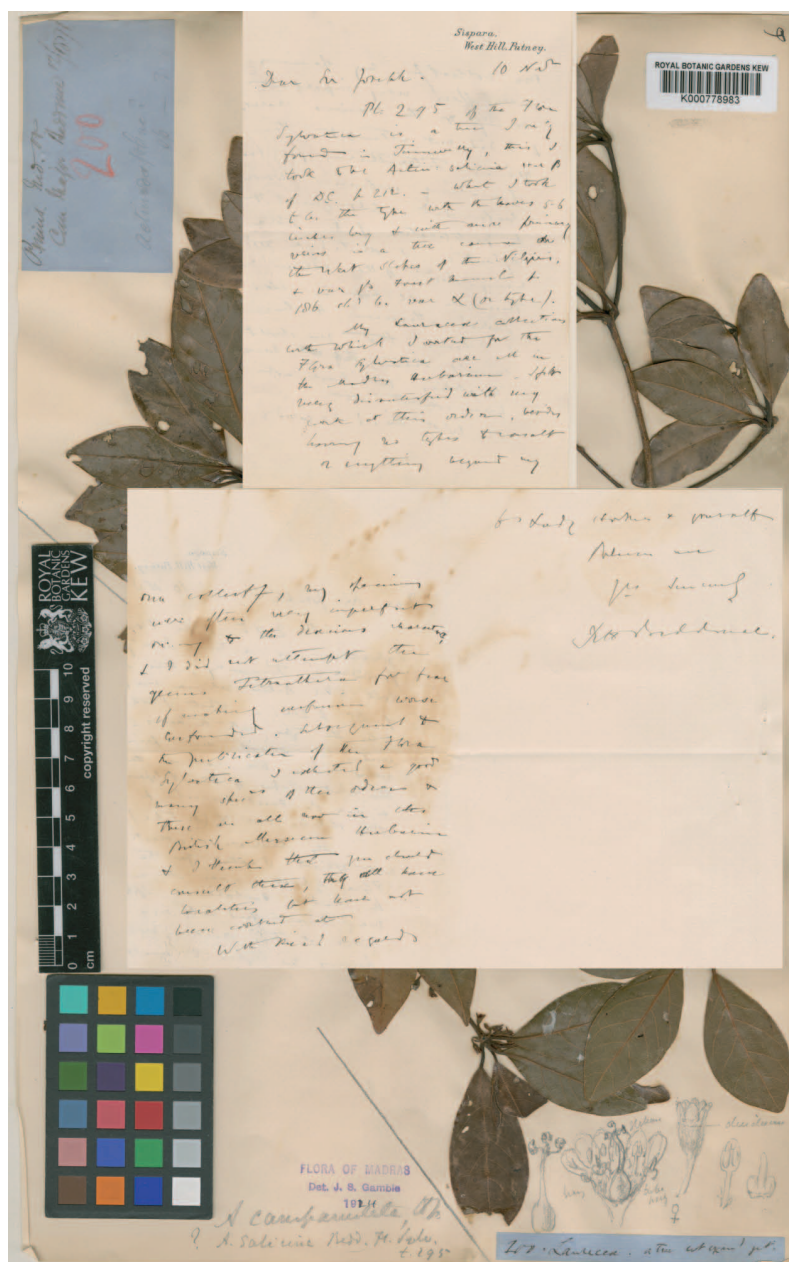
**Type citation:** “Tinnevely, Beddome”

**Lectotype** (designated here): Tinnevely, *R.H. Beddome 200* (K000778983!). **Fig. 2.**

**Distribution:** South India (Kerala & Tamil Nadu).

**Notes:** Hooker (1886) based his species on Beddome’s collection from Tirunelveli, Tamil Nadu. As noted by Hooker, Beddome (1873) had incorrectly included his collection as *A. salicina* Meisn. Since the Kew Herbarium, wherein Hooker worked, has a single specimen of the Beddome collection, one may argue that the relevant

specimen is the holotype. Nevertheless, Hooker did not use the term type or mention the name of the herbarium housing the type. Therefore, we recognize *Beddome 200* (K) as a lectotype. The type specimen comprises several leaves and immature fruits.



**Fig. 2.** Lectotype of *Actinodaphne campanulata* var. *campanulata* (K000778983, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).

### 3. *Actinodaphne campanulata* Hook.f. var. *obtusata* Gamble, Fl. Madras 2(pt. 7): 1230 (1925).

**Type citation:** “W. Ghats, evergreen forests of Travancore at 3,000–4,000 ft. (Bourdillon)”.

**Lectotype** (designated here): Travancore, Chemunji, 3000–4000 ft, 7 March 1897, *T.F. Bourdillon 543* (K000778984!); isolectotypes: K000778985!, K000778986! **Fig. 3.**

**Distribution:** South India (Kerala & Tamil Nadu).

**Note:** Gamble (1925) based his varietal name on the collection by *Bourdillon 543* (K), which is mounted on three sheets all with immature fruits. Since Gamble did not designate a holotype, a lectotype needs to be selected; one specimen (K000778984!), which is more complete than the other two specimens, is selected as the lectotype, and the remaining two are therefore isolectotypes (K000778985! & K000778986!).





Fig. 3. Lectotype of *Actinodaphne campanulata* var. *obtusa* (K000778984, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).

4. *Actinodaphne hookeri* Meisn. in A.P. de Candolle, Prodr. 15(1): 218 (1864)

**Lectotype** (designated here): Concan, J.S. Law s.n. (K000778992!); isolectotype: K000778993! **Fig. 4.**

*Actinodaphne hookeri* Meisn. var. *dasypoda* Meisn. in A.P. De Candolle, Prodr. 15(1): 218 (1864)

**Type citation:** “Circa Bombay, in Concan, Sikkim (Law! Hook. fil.)”

**Lectotype:** as for the species

*Actinodaphne hookeri* Meisn. var. *glabrata* Meisn. in A.P. De Candolle, Prodr. 15(1): 218 (1864)

**Type citation:** “in Concan (Law!)”

**Lectotype** (designated here): Concan, J.S. Law s.n. (K000778995!); isolectotype: K000778996! **Fig. 5.**

**Distribution:** South India (Karnataka).

**Notes:** Under his new species *A. hookeri*, Meisner (1864) included three new varieties viz., *dasy-poda*, *longifolia* and *glabrata*. Later, Hooker (1886), placed var. *longifolia* in synonymy under *A. madraspatana*. For *A. hookeri*, he cited its distribution as India and Sri Lanka ('Ceylon') but did not cite any specific specimen. We here select the specimen *J.S. Law s.n.* (K000778992) from Concan, cited by Meisner under var. *dasy-poda*, as lectotype of *A. hookeri*. This sheet comprises two twigs; the first is a female with fruits, and the second has male flowers. This sheet has annotations and illustrations of male floral parts by Gamble. For *A. hookeri* var. *glabrata*, we here select the specimen *J.S. Law s.n.* (K000778995) from Concan as lectotype. This sheet bears Gamble's drawings and Meisner's annotations.



**Fig. 4.** Lectotype of *Actinodaphne hookeri* (K000778992, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).



**Fig. 5.** Lectotype of *Actinodaphne hookeri* var. *glabrata* (K000778995, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).

5. *Actinodaphne lawsonii* Gamble, Bull. Misc. Inform. Kew 1925 (pt. 3): 129 (17 Apr 1925); & Gamble, Fl. Madras 2 (pt. 7): 1231 (Nov–Dec 1925).

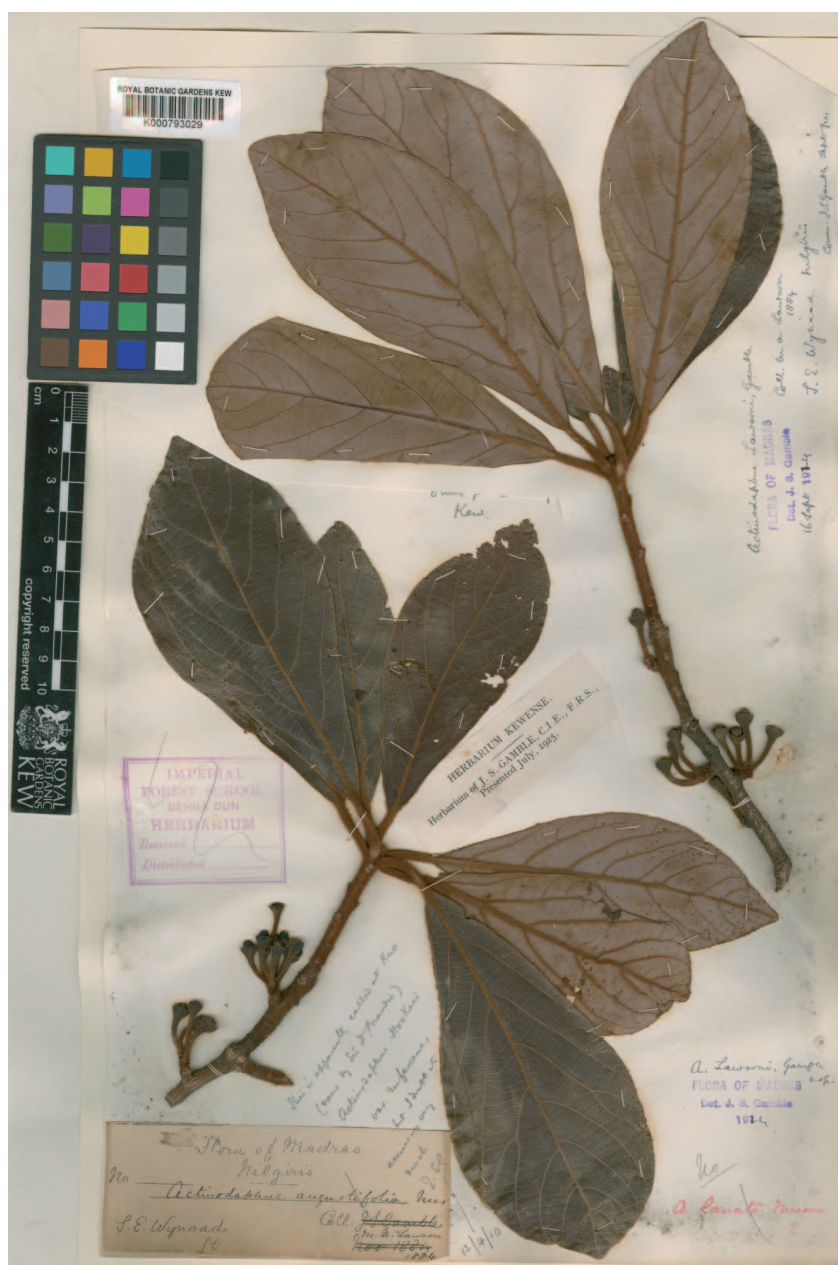
**Type citation:** “S. India. South-East Wynaad, Nilgiris, about 1500 m. alt., M.A. Lawson 1884; also probably, C.B. Clarke 11079 from Coonoor Nilgiris, leaves only, a large tree!, the leaves obovate, thinner, 24 cm. by 10 cm.”

**Lectotype** (designated here): Nilgiris, South-East Wayanad, ±1500 m, 1884, M.A. Lawson s.n. (K000793029!) **Fig. 6.**

**Distribution:** South India (Karnataka, Kerala & Tamil Nadu).

**Notes:** *Actinodaphne lawsonii* was based on two collections, which should be considered as syntypes, viz., M.A. Lawson s.n. (K000793029) and C.B. Clarke 11079 (K000793028). The first collection bears an annotation by J.S. Gamble as new species, and the specimen gives a more complete comparison with the protologue; therefore, M.A. Lawson s.n. (K000793029) is here selected as the lectotype.





**Fig. 6.** Lectotype of *Actinodaphne lawsonii* (K000793029, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).

6. *Actinodaphne madraspatana* Bedd. ex Hook.f., Fl. Brit. India 5(pt. 13): 149 (1886)

**Type citation:** “Deccan Peninsula: On the Cudeppah Hills, *Wight, Beddome*”.

**Lectotype** (designated here): Andhra Pradesh, Cuddapha hills, *R.H. Beddome* 259 (K000778990!). **Fig. 7.**

*Actinodaphne hookeri* Meisn. var. *longifolia* Meisn. in A.P. De Candolle, Prodr.15(1): 219 (1864)

**Type citation:** “in Penins. Ind. or. (Wight!)”

**Lectotype** (designated here): Peninsula Indiae Orientalis, *Robert Wight* 2537 (K000778991!); isolectotype: P01954955! **Fig. 8.**

**Distribution:** South India (Andhra Pradesh & Tamil Nadu).

**Notes:** As noted in Hooker's treatment, Beddome (1873) misapplied the name *A. hookeri* Meisn. However, he observed that this species was very common on the hills of the eastern side of the Presidency of Madras (North Arcot and Cuddapah), an area representing many Laurels. He also added that the species was poorly or not represented in the Western Ghats.

In spite of his misapplication of the name *A. hookeri*, it was Beddome who coined the name *A. madraspatana* on a herbarium specimen collected from Cuddapah hills in Andhra Pradesh. Later, Hooker (1886) validated the name *A. madraspatana*. Furthermore, both he and Gamble (1925) cited the locality as Cuddapah hills alone. In the protologue, Hooker cited two collections: R.H. Beddome (259; K000778990!) and R. Wight (2537; K000778991!). The first collection bears the annotation of Hooker, which is selected and designated here as the lectotype.

Meisner erected *Actinodaphne hookeri* Meisn. var. *longifolia* based on a collection by Robert Wight from Peninsular India (Wight 2537; K000778991!), which was later synonymised by Hooker (1886), and he suggested the type, as that of *A. madraspatana*. In fact, *A. hookeri* var. *longifolia* has two type sheets, one at Kew and another in the Paris Herbarium, both syntypes. Since the sheet at K is in good agreement with the protologue, it is here selected as lectotype.



**Fig. 7.** Lectotype of *Actinodaphne madraspatana* (K000778990, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).





**Fig. 8.** Lectotype of *Actinodaphne hookeri* Meisn. var. *longifolia* (K000778991, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew)

7. *Actinodaphne salicina* Meisn. in A.P. De Candolle, Prodr. 15(1): 212 (1864)

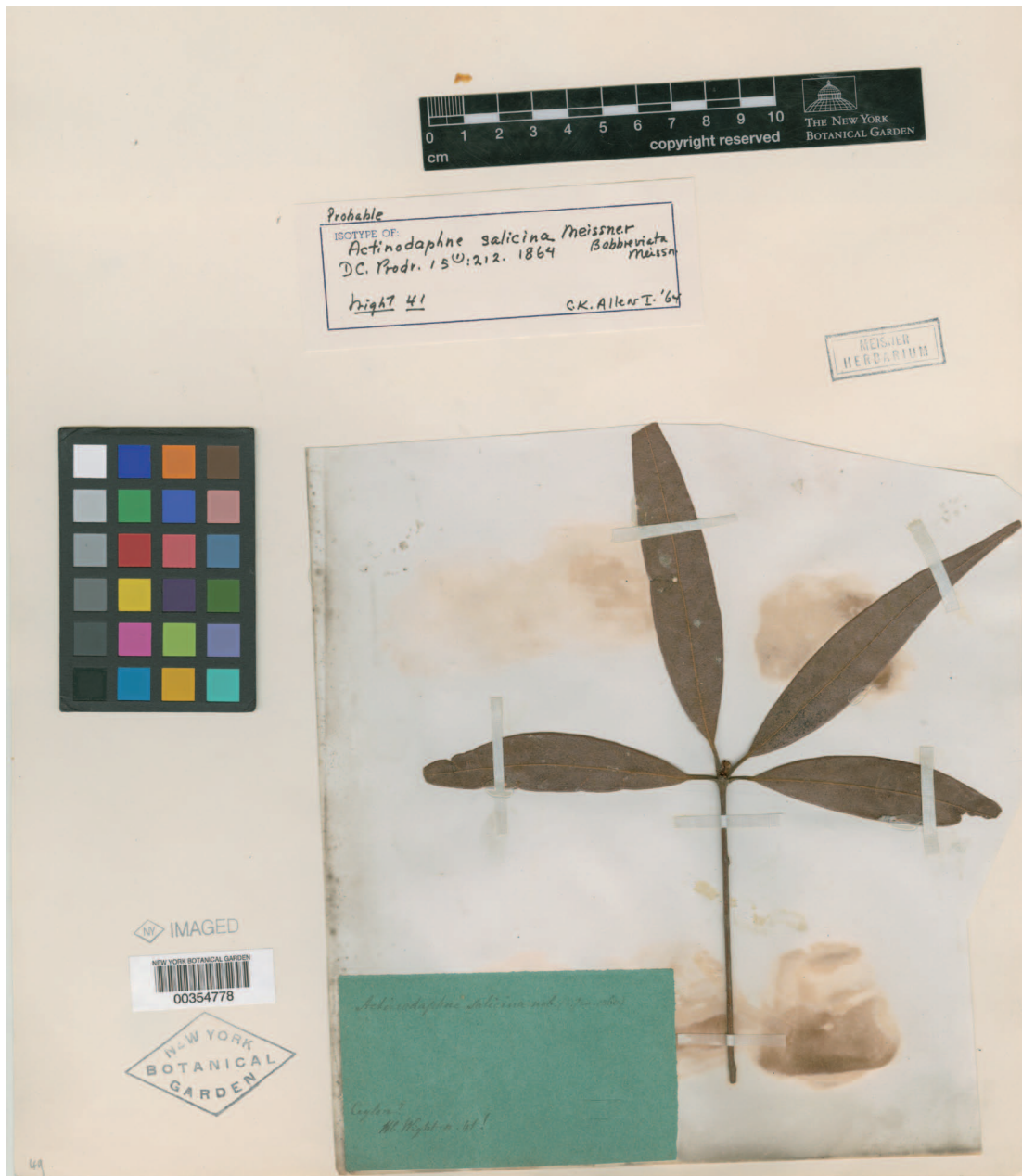
**Type citation:** “In Ceylon (hb. Wight)”.

**Lectotype** (designated here): 6 January 1860, *Hb. Wight* 41 (NY00354778!) **Fig. 9.**

**Distribution:** South India (Kerala & Tamil Nadu).

**Notes:** *Actinodaphne salicina* was originally described by Meisner (1864) from a specimen of Robert Wight from Ceylon. However, the stated locality is incorrect, as is evident from Hooker’s statement: “The supposed Ceylon specimens mentioned by Meisner are not so; they have no collector’s name nor locality, and are no doubt Peninsular”. At NY there is a vegetative specimen (NY00354778) that closely matches the description of *A. salicina*. We infer from the protologue that its fruits were undescribed. Later, Hooker (1886) described the

fruits of it, based on the collections of Gardner (CAL!) from Nilgiris. We designate *Robert Wight 41* here as the lectotype of the *A. salicina*.



**Fig. 9.** Lectotype of *Actinodaphne salicina* (NY00354778, The C. V. Starr Virtual Herbarium of The New York Botanical Garden (<http://sweetgum.nybg.org/science/vh/>)).

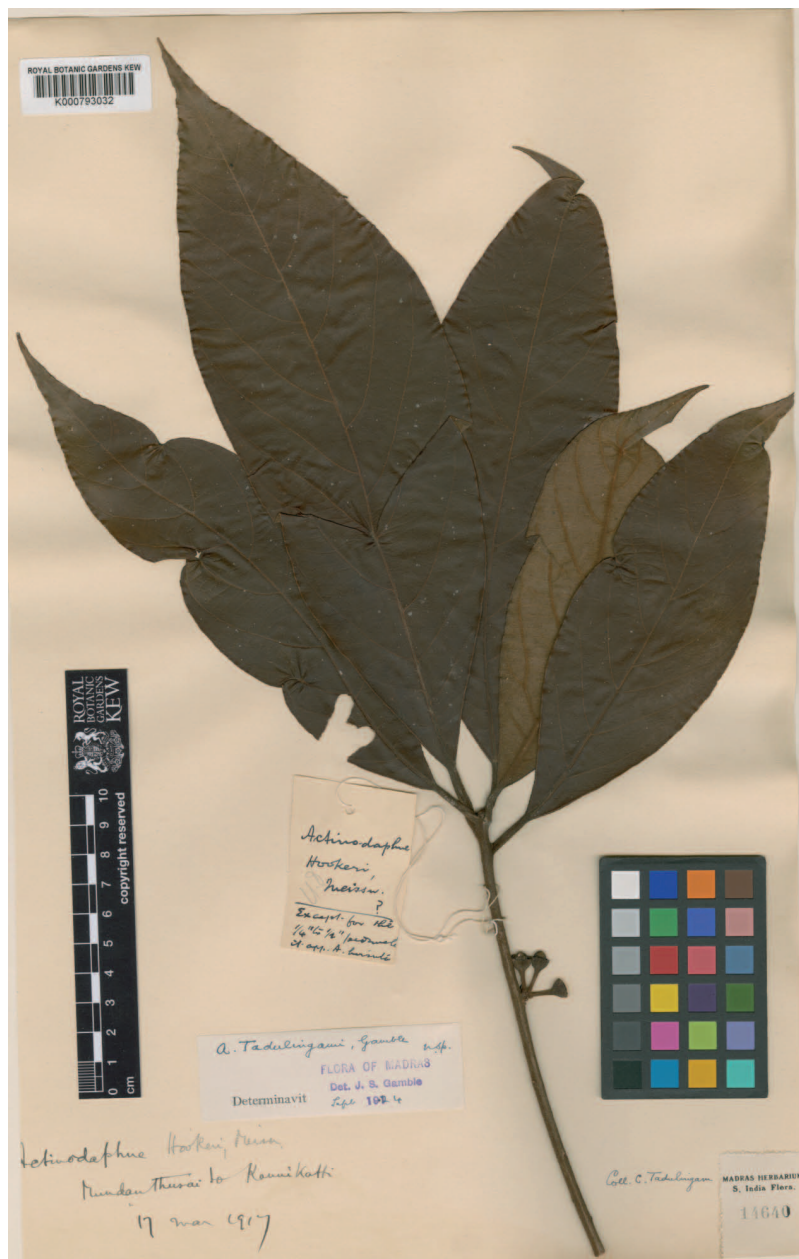
8. *Actinodaphne tadulingamii* Gamble, Bull. Misc. Inform. Kew 1925 (pt. 3): 130 (17 Apr 1925) & Gamble, Fl. Madras 2(pt. 7): 1231 (Nov–Dec 1925).

**Type citation:** “S. India. Tinnevely District, Mundanthorai to Kannikatti, March 1917, *C. Tadulingam* 14640; Anamalai Hills, *Beddome*; Murchison Estate, Travancore, 700 m. alt., *M.A. Lawson* Dec. 1893.”

**Lectotype** (designated here): Tamil Nadu, Tinnevely dist.: Mundanthurai to Kanikkatti, 17 March 1917, *C. Tadulingam* 14640 (K000793032!). **Fig. 10.**

**Distribution:** South India (Karnataka, Kerala & Tamil Nadu).

**Notes:** Gamble (1925) described *A. tadulingamii* based on the collections by C. Tadulingam from Kannikatti, R.H. Beddome from Anamalais (K000793033!) and M.A. Lawson (CAL!) from Merchiston Estate, Travancore. Of the three collections, *Tadulingam* 14640 agrees well with the original description and is selected here as lectotype.



**Fig. 10.** Lectotype of *Actinodaphne tadulingamii* (K000793032, © the Board of Trustees of the Royal Botanic Gardens, Kew. Reproduced with the consent of the Royal Botanic Gardens, Kew).

### Acknowledgments

The authors are thankful to curators of BM, CAL, MH, NY, K and P; we are indebted to Dr Peter G. Wilson, National Herbarium of N.S.W., and anonymous reviewers for their help in locating potential type specimens and fruitful suggestions regarding the manuscript. We are also grateful to Dr N. Sasidharan, Kerala Forest Research Institute (KFRI), Thrissur, and Dr A. K. Pradeep, University of Calicut, for their help. Thanks also to Department of Science & Technology (DST), Government of India, New Delhi, for the financial support; Dr Indira Balachandran, Centre for Medicinal Plants Research, Arya Vaidya Sala Kottakkal (CMPR) and authorities of Arya Vaidya Sala, Kottakkal, for the facilities and support provided.



## References

- Beddome RH (1873) *The flora sylvatica for Southern India*. Part 25, t.296. Gantz Brothers, Madras.
- Gamble JS (1925) New Lauraceae of Southern India. *Bulletin of Miscellaneous Information, Kew* 1925: 126–132  
<http://dx.doi.org/10.2307/4118657>
- Hooker JD (1886) Laurineae. In: Hooker JD (ed.), *The Flora of British India*. Vol. 5. Chenopodiaceae to Orchideae, Pp. 116–189. Reeve & Co, London.
- McNeill J, Barrie FR, Buck WR, Demoulin V, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Marhold K, Prado J, Proud'homme van Reine WF, Smith GF, Wiersema JH, Turland NJ (Eds) (2012) International Code of Nomenclature for algae, fungi and plants (Melbourne Code): Adopted by the Eighteenth International Botanical Congress, Melbourne, Australia, July 2011. *Regnum Vegetabile* 154: 1–274.
- Meisner CF (1864) Lauraceae pp. 1–260. In: A. de Candolle (ed.), *Prodromus systematis naturalis regni vegetabilis* Vol. 15, Part 1. Masson, Paris.
- Robi AJ (2014) *A Taxonomic revision of the family Lauraceae from South India*. Unpublished PhD thesis: Kannur University.
- Van der Werff H (2001) An annotated key to the genera of Lauraceae in the Flora Malesiana Region. *Blumea* 46: 152–140.

Manuscript received 11 February 2016, accepted 29 August 2016