Turczaninowia 28, 3: 51–59 (2025)
https://www.doi.org/10.14258/turczaninowia.28.3.5
http://turczaninowia.asu.ru

ISSN 1560–7259 (print edition)
TURCZANINOWIA
ISSN 1560–7267 (online edition)

УДК 582.927:581.92+57.06(540)

Nomenclatural notes on two Indian endemic *Symplocos* (Symplocaceae)

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Keywords: endemic, lectotype, southern Western Ghats, *Symplocos anamallayana*, *Symplocos foliosa*.

Summary. *Symplocos anamallayana* and *S. foliosa* are endemic and threatened tree species of southern Western Ghats, India. In this paper, we clarify the typification of names of these two species to fix the identity and to avoid misapplication of names, because no original material was cited in the protologues of these taxa. Detailed taxonomic description of the two species with coloured photoplates is provided for easy identification. The recently described *S. sisparensis* is treated as a new synonym of *S. foliosa*.

Номенклатурные примечания к двум индийским эндемикам из рода *Symplocos* (Symplocaceae)

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Ключевые слова: лектотип, эндемик, юг Западных Гатов, *Symplocos anamallayana, Symplocos foliosa*.

Аннотация. *Symplocos anamallayana* и *S. foliosa* – эндемичные и находящиеся под угрозой исчезновения виды деревьев с юга Западных Гат, Индия. Уточняется типификация названий этих двух видов, чтобы чётко зафиксировать их понимание и избежать неправильного использования данных названий, поскольку в протологах этих таксонов оригинальный материал не цитировался. Для облегчения идентификации представлено подробное таксономическое описание обоих видов с цветными фотографиями. Недавно описанный *S. sisparensis* рассматривается как новый синоним *S. foliosa*.

Поступило в редакцию 14.02.2024
Принято к публикации 29.07.2025

Submitted 14.02.2024
Accepted 29.07.2025

Introduction

The genus *Symplocos* Jacq. consists of about 410 species distributed in tropical to warm-temperate regions of Asia to Pacific and the Americas (Turner, 2022; POWO, 2025). In India, the genus is represented by 41 species and 5 subspecies (Hore, Mastakar, 2020), of which *S. abrahamiana* R. Jagad. et al., *S. anamallayana* Bedd., *S. authilingomii* A. N. Henry et Gopalan, *S. complanata* Brand, *S. foliosa* Wight, *S. huegeliana* Brand, *S. kothayarensis* Sundaresan et al., *S. macrocarpa* Wight ex C. B. Clarke subsp. *macrocarpa*, *S. macrocarpa* subsp. *kanarana* (Talbot) Noot., *S. macrophylla* Wall. ex DC. subsp. *rosea* (Bedd.) Noot., *S. mohananii* J. Stephan et al., *S. monantha* Wight, *S. nairii* A.N.Henry, Gopalan et Swamin., *S. namboodiriana* (Sivad. et N. Mohanan) J. Stephan et al., *S. nicolsonii* R. Jagad. et al., *S. oligandra* Bedd., *S. parvibracteata* J. Stephan et al., *S. pulchra* Wight subsp. *pulchra*, *S. pulchra* subsp. *coriacea* Gopalan et A. N. Henry, *S. pulchra* subsp. *villosa* (Brand) Noot., and *S. wynadense* (Kuntze) Noot. are endemic to southern Western Ghats.

While conducting research on the endemic and threatened shrubs and trees found in peninsular India (Singh, Arigela, 2019, 2020, 2023; Arigela, Singh, 2020; Singh et al., 2020; Singh, 2022; Arigela et al., 2023), two species of *Symplocos* were collected and photographed from the Shola forests, Kodaikanal Wildlife Sanctuary in Western Ghats area of Tamil Nadu, India. Upon an extensive taxonomic examination, the two species were identified as *S. anamallayana* (Fig. 1) and *S. foliosa* (Fig. 2), endemic and threatened trees of southern Western Ghats, India (Hore, 1990; Singh et al., 2015; Narasimhan, Irwin, 2021). Further, working on the taxonomy of these two taxa, we came across uncertainties in typification of these two names. To ensure accuracy and prevent any misapplication of the two names, it has become essential to clarify their types, as no original material was referenced in the protologue. For both names, types were cited two times by the different authors. Here, we corrected these type citations as lectotype for *S. anamallayana* and *S. foliosa* following the guidelines and recommendations of Article 9 in Turland et al. (2018). The taxonomic description of *S. anamallayana* is meagre in preceding works including protologue. Here, detailed description and first photographs of the live plants are provided to facilitate easy identification. Recently, Karthik et al. (2023) described a new species, *S. sisparensis* B. Karthik et al. from the Nilgiris District, Tamil Nadu, India. After a study of the description, illustration and coloured images provided in the protologue, we found that *S. sisparensis* is conspecific with *S. foliosa*. All the taxonomic characters given in protologue of *S. sisparensis* comes within the range of *S. foliosa*. Therefore, *S. sisparensis* is treated as a synonym of *S. foliosa*.

Materials and Methods

The specimens of *S. anamallayana* and *S. foliosa* were collected from Shola forests, Kodaikanal Wildlife Sanctuary in Western Ghats area of Tamil Nadu, and field photographs were taken by Panasonic Lumix DMC-FZ28 camera. Herbarium specimens were made according to the standard herbarium techniques and deposited at MH. Dissected floral parts were examined in Olympus SZ61TR stereo-zoom microscope. The identity of the two species was confirmed by using relevant literature, studying herbarium specimens deposited at CAL and MH, and also with the digital images of type specimens housed at BM, K, L, M, MH, P, and S. The earlier type citations for the names *S. anamallayana* and *S. foliosa* are corrected and clarified here according to the guidelines and recommendations of Article 9 in the "International Code of Nomenclature for algae, fungi, and plants" (Turland et al., 2018).

Taxonomic treatment

Symplocos anamallayana Bedd., 1870, Icon. Pl. Ind. Or. 24, t. 116.

≡ *Symplocos uniflora* Bedd., 1864, Madras J. Lit. Sci., ser. 3, 1: 51, nom. illeg., non (Pohl) Benth. (1839).

≡ *Eugenioides anamalayanum* (Bedd.) Kuntze, 1891, Revis. Gen. Pl. 2: 975.

Type citation in protologue: "Anaimalais, a small tree, 5,000 feet".

Lectotype (inadvertently designated by Hore, 1990): "India, Anamallay Hills (Anamalai), 6000 ft., s. d., Beddome 4930" (BM000997494 [digital image!] (Fig. 3); isolecto – K000704956 [digital image!], MH00002318!).

Remaining original element: "India, Anamallay Hills (Anamalai), 7000–8000 ft., s. d., Beddome s. n." (MH00002317!).

Fig. 1. *Symplocos anamallayana* Bedd.: A – habit; B – branchlets; C – adaxial surface of leaves; D – abaxial surface of leaves; E – close-up of fruit.

Fig. 2. *Symplocos foliosa* Wight: A – habit; B – close-up of leaves; C – branches with inflorescence; D – close-up of flower buds; E – close-up of flowers; F – close-up of fruit.

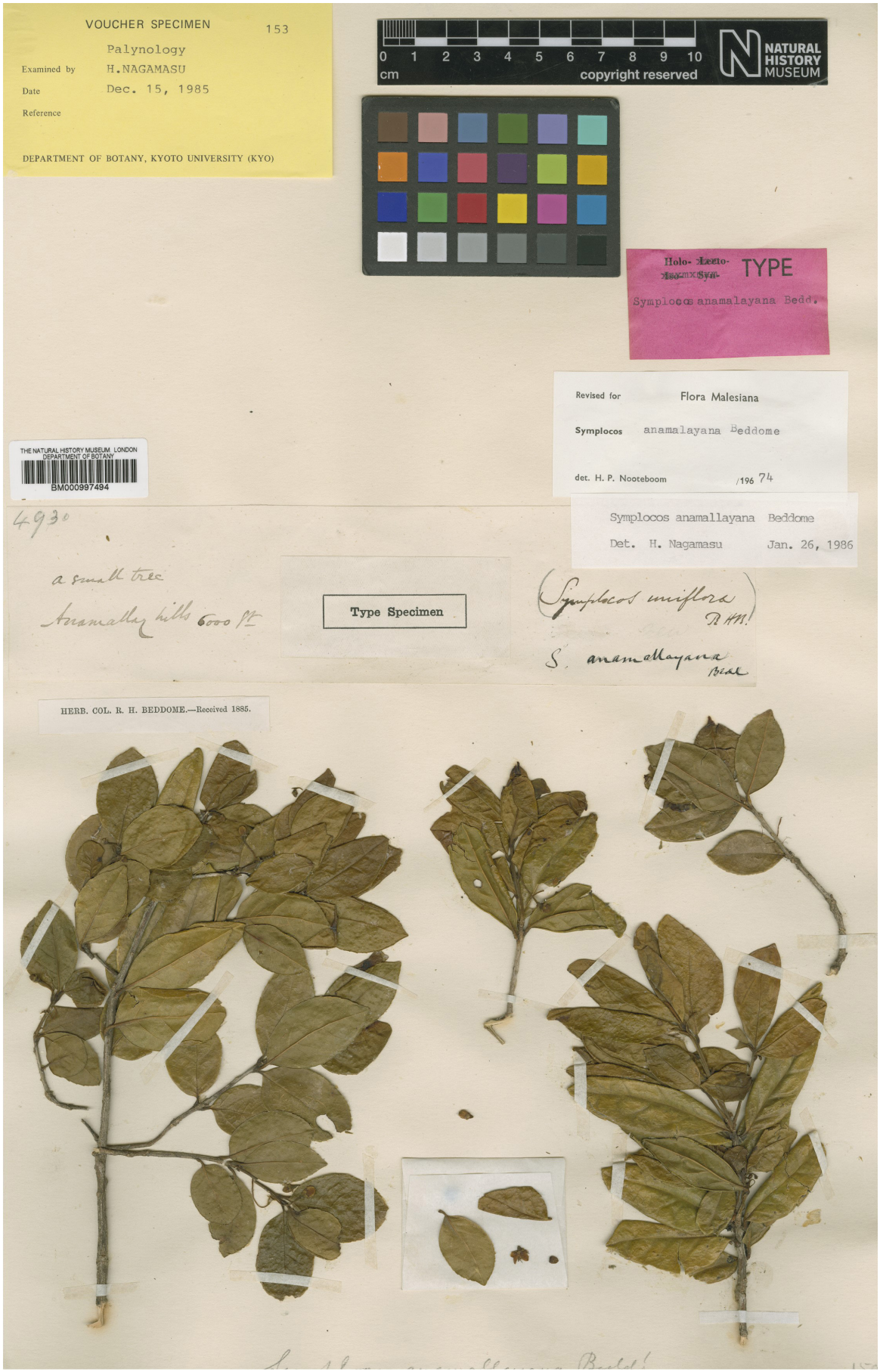

Fig. 3. Lectotype of *Symplocos uniflora* Bedd. (BM000997494, © The Natural History Museum, London).

Small trees, 4–7 m high, densely branched; branchlets many, terete, glabrous; bark light brown, with longitudinal striations. Leaves simple, alternate, coriaceous, elliptic-obovate or ovate or broadly elliptic, 2.5–5.5 × 1.5–3 cm, glabrous, glaucous beneath, apex acute-obtuse, base attenuate-cuneate or obtuse-rounded, margins crenulate or denticulate-serrulate, recurved-revolute, midrib depressed, canaliculate adaxially, prominent abaxially; lateral nerves 4–7 pairs, depressed adaxially, prominent abaxially; intercostal nerves reticulate, coarse, prominent abaxially; petioles 1.5–6 mm long, glabrous. Flowers actinomorphic, bisexual, axillary, solitary; pedicels 7–14 mm long, glabrous, elongated in fruits; bracts absent; bracteoles 2, ovate, 2–3 mm long, glabrous, light green, caducous. Calyx 5-lobed, glabrous, light green; tube 1–1.5 mm long; lobes ovate, 0.8–1.2 mm long. Corolla 5-lobed, white, ovate, 4.5–6.5 × 2.5–3.5 mm, glabrous, connate at base. Stamens 40–55, in 4 or 5 irregular series, adnate to the base of corolla tube; filaments unequal, 2.5–7 mm long, white, glabrous; anthers oblong, 0.1–0.2 mm long, basifixed, bilocular, yellow, dehiscing longitudinally. Disk flat, inconspicuous, glabrous. Ovary cylindrical, inferior, trilocular, 0.8–1.1 mm long, glabrous; style filiform, 2.5–3.5 mm long, white, glabrous; stigma flat, 0.2–0.3 mm long. Drupes cylindrical-oblong, 12–15 × 4–5 mm, glabrous, green at young, bluish when ripe, calyx persistent at apex; mesocarp fleshy, shrivelled and thin when dry; endocarp obovoid, *c* 1 mm thick, faintly ribbed, woody; seeds 1–3, oblong, 8–10 mm long.

Phenology. Flowers in December – February; fruits in February – March.

Habitat and Ecology. Found in Shola forests (tropical montane) of southern Western Ghats at an elevation of 1750–2400 m.

Distribution. India, southern Western Ghats (Kerala and Tamil Nadu), endemic (Hore, Mastakar, 2020). Reported from Idukki district of Kerala and Coimbatore and Dindigul districts of Tamil Nadu.

Specimens examined. "India, Tamil Nadu, Kodaikanal Wildlife Sanctuary, Berijam Range, Jamindar Shola forest, 2310 m. 16 XII 2016. K. A. A. Kabeer, R. K. Arigela. 135499" (MH).

Typification notes. In the protologue of *Symplocos uniflora*, Beddome (1864) gave a short description, name of the locality and altitude, but no type was indicated nor stated the date of collection, number and name of herbarium where the specimens are housed. Later, Beddome (1870) came to know that the name *S. uniflora* was preoccupied and not available for the species described by him in the year 1864, because Bentham (1839) already used this name, therefore he published a replacement name *S. anamallayana* to his *S. uniflora*. Beddome's types are known to be at BM, CAL, K (Stafleu, Cowan, 1976) and also at DD and MH (Singh, 2016). We traced four specimens collected by Beddome from Anamalai hills, one each at BM (BM000997494) and K (K000704956), and two at MH (MH00002317 and MH00002318). Nooteboom (1975) cited the type of *S. uniflora* Bedd. as "Type: Beddome 4930 (BM, K), India, Anamallay Hills, 6000 ft.". Hore (1990) cited the type for *S. uniflora* Beddome as "Type: India, Anamallay Hills, Beddome 4930" (BM, Photo!). Nooteboom cited two specimens in different herbaria as type for the name *S. uniflora* and therefore, his type citation cannot be considered as an effective lectotypification. However, Hore's type citation must be regarded as effective lectotypification according to Article 9 in Turland et al. (2018). The herbarium number 4930 written on specimen BM000997494 by pencil is not the collection number given by Beddome, it was added later during herbarium curation. The correct date of publication for the name *S. anamallayana* is given by Turner (2012).

Symplocos foliosa Wight, 1848, Icon. Pl. Ind. Orient. 4: t. 1234.

≡ *Lodhra foliosa* (Wight) Miers, 1879, J. Linn. Soc., Bot. 17: 300.

≡ *Eugenioides foliosum* (Wight) Kuntze, 1891, Revis. Gen. Pl. 2: 975.

Type citation in protologue: "Neilgherries, rare, flowering during the dry season. This species resembles *S. gardneriana*, but appears quite distinct. I am not well acquainted with the tree, the specimens having been procured by a native collector".

Lectotype (inadvertently designated by Hore, 1990): "India, Nilgiris, Pykara, s. d., Wight 1695" (K001328484 [digital image!] (Fig. 4); isolecto – CAL0000017724!, L2267901 [digital image!], M0152561 [digital image!], P04489608 [digital image!], S09-34493 [digital image!]).

Remaining original elements: "India, Peninsular India: Without locality, s. d., Wight 1689" (L226790 [digital image!], M0152560 [digital image!], P04489607 [digital image!]).

= *Symplocos sisparensis* B. Karthik, Murug., Anusuba, Premk. et Tharani, 2023, Phytotaxa 589(1): 84, **syn. nov.**

Fig. 4. Lectotype of *Symplocos foliosa* Wight (K001328484, © The Trustees of the Royal Botanic Gardens, Kew).

Holotype: "India, Tamil Nadu, The Nilgiris district, way to Nadugani-Mukurthi National Park, 11°15'13.94"N, 76°29'13.50"E, 2223 m. 29 XI 2022. M. Murugesan & B. Karthik 148115" (MH!; iso – MH!).

Trees, up to 30 m high; branchlets terete, glabrous or pubescent-tomentose or villous, glabrous by age, covered with pulvinate leaf scars. Leaves simple, alternate, coriaceous, elliptic-oblong, 5–15 × 2–5 cm, glabrous or pubescent on midrib abaxially, apex acute-acuminate, base cuneate-rounded, margins crenate-serrulate, midrib impressed adaxially prominent abaxially; lateral nerves 4–12 pairs, impressed adaxially, prominent abaxially; intercostal nerves reticulate, coarse, prominent abaxially; petioles 5–20 mm long, glabrous or sparsely pubescent when young, glabrous by age. Inflorescence in axillary spikes on young and mature branchlets; peduncles 1–6 cm long, pubescent up to flowering, later glabrescent at fruiting. Flowers 3–15 on a spike, in cluster, subsessile; pedicels 0.5–1.5 mm long; bracts elliptic-ovate, boat-shaped or cymbiform, 4–8 × 2–3.5 mm, apex acute, appressed sericeous, margins ciliate, caducous when flower matures; bracteoles ovate, 1.5–3.5 × 1–2 mm, apex acute, appressed sericeous, margins ciliate, caducous when flower matures. Calyx 5-lobed, light green; tube 1.5–2 mm long, glabrous; lobes ovate, 1–1.5 mm long, sparsely appressed pubescent or glabrous. Corolla 5-lobed, white, elliptic, 3–6 × 2–3.5 mm, apex obtuse or subobtuse, connate at base, glabrous. Stamens 50–80, 4 or 5 irregular series; filaments unequal, 1.5–6 mm long, white, glabrous; anthers 0.1–0.2 mm long, basifixed, bilocular, yellow, dehiscing longitudinally. Ovary cylindrical, inferior, trilocular, 1.5–2.5 mm long, sparsely hairy or glabrous; style 2–4 mm long, white, glabrous or sparsely hairy; stigma capitate, 0.3–0.4 mm long, light yellow. Drupes cylindrical-oblong or ellipsoid, 12–18 × 7–10 mm, glabrous, green at young, purplish blue when ripe; seeds 1–3, oblong, 7–12 mm long.

Phenology. Flowers in November – January; fruits in December – March.

Habitat and Ecology. Found in Shola forests (tropical montane) of southern Western Ghats at an elevation of 1400–2500 m.

Distribution. India, southern Western Ghats (Kerala and Tamil Nadu), endemic (Hore, Mastakar, 2020). Reported from Idukki, Palakkad, Kannur, Thiruvananthapuram and Wayanad Districts of Kerala, and Dindigul and Nilgiris Districts of Tamil Nadu.

Specimens examined. "India, Tamil Nadu, Kodaikanal Wildlife Sanctuary, Gundar Shola, 2310 m. 12 XII 2015. K. A. A. Kabeer, R. K. Arigela. 133102" (MH); "Kodai-Berijam slopes, 2325 m. 23 XI 2017. K. A. A. Kabeer, R. K. Arigela. 139665" (MH).

Typification notes. For the taxon name *Symplocos foliosa*, we traced nine original specimens which belongs to two collection numbers. The collection number Wight 1689 contains three specimens (L226790, M0152560, and P04489607), and of Wight 1695 contains 6 specimens (CAL0000017724, K001328484, L2267901, M0152561, P04489608, and S09-34493). Nooteboom (1975) cited the type for *S. foliosa* Wight as "Type: Wight s. n. (K, Kew Distr. 1695; L, P), India, Neilgherries, Pycarrah" and Hore (1990) as "Type: India, Nilgiris, Pykara, Wight s. n. (K, Photo!)". Nooteboom cited three specimens of Wight collection number 1695 as type for the name *S. foliosa* Wight and therefore, his type citation cannot be considered as an effective lectotypification. However, according to Article 9 in Turland et al. (2018), Hore's type citation will be regarded as effective lectotypification.

Acknowledgments

The authors are thankful to the Director, Botanical Survey of India, Kolkata for facilities. We are also grateful to the Forest officials of the Kodaikanal Wildlife Sanctuary, Tamil Nadu for all the help during field explorations and the curators of BM, CAL, K, L, M, P, and S for the images and information of type specimens.

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