

Heptapleurum chandrasekharanii (Araliaceae) revisited: notes on geographic range extension, leaf characters, and conservation status

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Abstract. Within the context of a floristic study of the endemic plants of South Western Ghats, *Heptapleurum chandrasekharanii* has been revisited. Here we revise its distribution, taxonomic description, and conservation status in light of this inventory. Our results suggest that the species should be classified as endangered. Colour photographs of the taxon are presented for easy identification in the field.

Key words: endangered, Kerala, *Heptapleurum*, *Schefflera*, South Western Ghats, taxonomy

1. Introduction

Heptapleurum Gaertn. is the largest genus in the family Araliaceae, comprising c. 325 species distributed chiefly in the tropical and subtropical regions of Asia (Lowry & Plunkett 2024; POWO 2024; GBIF 2024). This genus was recently reinstated in the article entitled “Resurrection of the genus *Heptapleurum* for the Asian clade of species previously included in *Schefflera* (Araliaceae)” (Lowry & Plunkett 2020). Sasidharan (2013) reported 13 species of the genus *Heptapleurum* in the Kerala part of South Western Ghats. Among them, *H. chandrasekharanii* (Ramam. & Rajan) Lowry & G.M. Plunkett is a little-known endemic species from the evergreen forests of Idukki District. This species was first described by Ramamurthy and Rajan (1982) as *Schefflera chandrasekharanii*, based on the materials collected from dense evergreen forest along Munnar-Kumali Road. Later, Khan and Kumar (1995) described the fruit morphology of the taxon in detail.

Botanical explorations in the evergreen forests of Idukki District (Mangaladevi Hills of Periyar Tiger Reserve) in 2022-2023 yielded some interesting specimens of *Heptapleurum*. Critical analysis of the literature as well as of herbarium specimens revealed that they be-

long to *H. chandrasekharanii*. This is the first record of the species outside the type locality. During this study, we observed different characters of the leaves from those mentioned in the protologue.

2. Taxonomic description

Heptapleurum chandrasekharanii (Ramam. & Rajan) Lowry & G. M. Plunkett, Novon 28(3): 149 (2020).
Homotypic synonym: *Schefflera chandrasekharanii* Ramam. & Rajan, J. Bombay Nat. Hist. Soc. 79(1): 163 (1982).

Type: India, Kerala, Idukki District, Munnar – Kumily Road, dense evergreen forest, 2000 m, 26 March 1980, Ramamurthy 66388 (holotype CAL; isotype MH).
Description: Small trees, up to 4 m; branchlets terete, lenticellate, pale, shiny; bark papery when dry; scars of fallen leaves prominent. Leaves alternate, at ends of branchlets, palmately compound; leaflets 1, (2) or 3; 5-11 cm × 3-4 cm, obovate, coriaceous, glabrous, tapering equally or unequally at a cuneate or oblique base, apex apiculate, margin crenate, wavy; lateral veins 5-7 pairs, pinnate, prominent; intercostae reticulate; curved and united at margins on both sides; petiole 5-15 mm long, terete, base sheathing; stipules adnate



Fig. 1. *Heptapleurum chandrasekharanii* (Ramam. & Rajan) Lowry & G.M.Plunkett

Explanations: A – mature plant in habitat, B – leaves, showing also abaxial surface, C – inflorescence, D – flowers in closeup, showing both flower buds and flowers at anthesis

within petiole. Flowers bisexual, in terminal, umbellate panicles; each umbel 10-15-flowered, peduncle 3 cm long, pedicel 1-2 mm long, white tomentose. Calyx 1 mm long, cup-shaped, not lobed, adnate to ovary. Petals 5, free, 1 mm long, ovate, acuminate, inflexed, glabrous. Stamens 5, alternating with petals, inserted around disc; filaments incurved, 2 mm long; anthers oblong, dorsifixed, dehiscing longitudinally. Ovary 5-celled, ovule 1 per cell, style short, connate. Fruit a drupe, 4 mm × 3 mm, globose, apically with 5 short styles, fleshy, 5-ribbed when dry, indehiscent; pyrenes 5, c. 3 mm long, broadly triangular; embryo small, endosperm more or less ruminant (Figs. 1-2).

Distribution: India; *H. chandrasekharanii* is endemic to the South Western Ghats and currently known only from 2 localities (Fig. 3) in evergreen forests in Idukki District at an altitude range of 1500-2000 m. The second site (Mangaladevi Hills in Periyar Tiger Reserve), representing a new record of the taxon, is located 98 km south-west of the type locality (09.34.56 N, 77.13.57 E).

Habitat and ecology: Found in the montane evergreen forest at c. 1500 m asl, where annual precipitation is between 2000 and 3000 mm. The species grows there in association with *Zanthoxylum asiaticum* (L.) Appelhans, *Coleus paniculatus* Benth., *Persicaria chinensis* (L.) Gross., and *Gonostegia pentandra* (Roxb.) Miq. var. *wightii* (Benn.) Pull. & Karupp. A population of 17 mature plants was observed at this new locality.

Flowering and fruiting: March-May.

Materials examined: India: Kerala: South Western Ghats, Idukki District, Mangaladevi Hills, near Brandippara, ± 1500 m asl, 14 April 2023, *Jose Mathew 4120; 4121* (MH!: Madras Herbarium).

Note on leaf morphology: The protologue states that the leaves are alternate and digitate, with 1-2 leaflets. In the new accession, however, 3-foliolate leaves seem to prevail (Fig. 2), so the range for the leaflet count is extended in the updated description.

Threats and conservation status: *H. chandrasekharanii* is known from only 2 sites, representing 2 subpopulations in Idukki District of Kerala State. They are separated by a distance of 98 km and the Area of Occupancy (AOO) is 8 km². Less than 40 mature individuals were found in each of these subpopulations. An absence of seed germination and high juvenile mortality were observed. The main threats affecting the persistence of the populations are related to human activities, including pilgrimages and tourism. Other threats are: the fast spread of invasive alien species (e.g. *Hultholia mimosoides* (Lam.) Gagnon & G.P. Lewis and *Lantana camara* L.), road construction, and fire line making. Thus *H. chandrasekharanii* can be classified as endangered [EN B2ab (iii,v)] (IUCN 2012), based on its small AOO, highly fragmented distribution with only 2 locations, deteriorating habitat quality (iii), and declining number of mature plants (v). Stringent conservation measures should be adopted to conserve

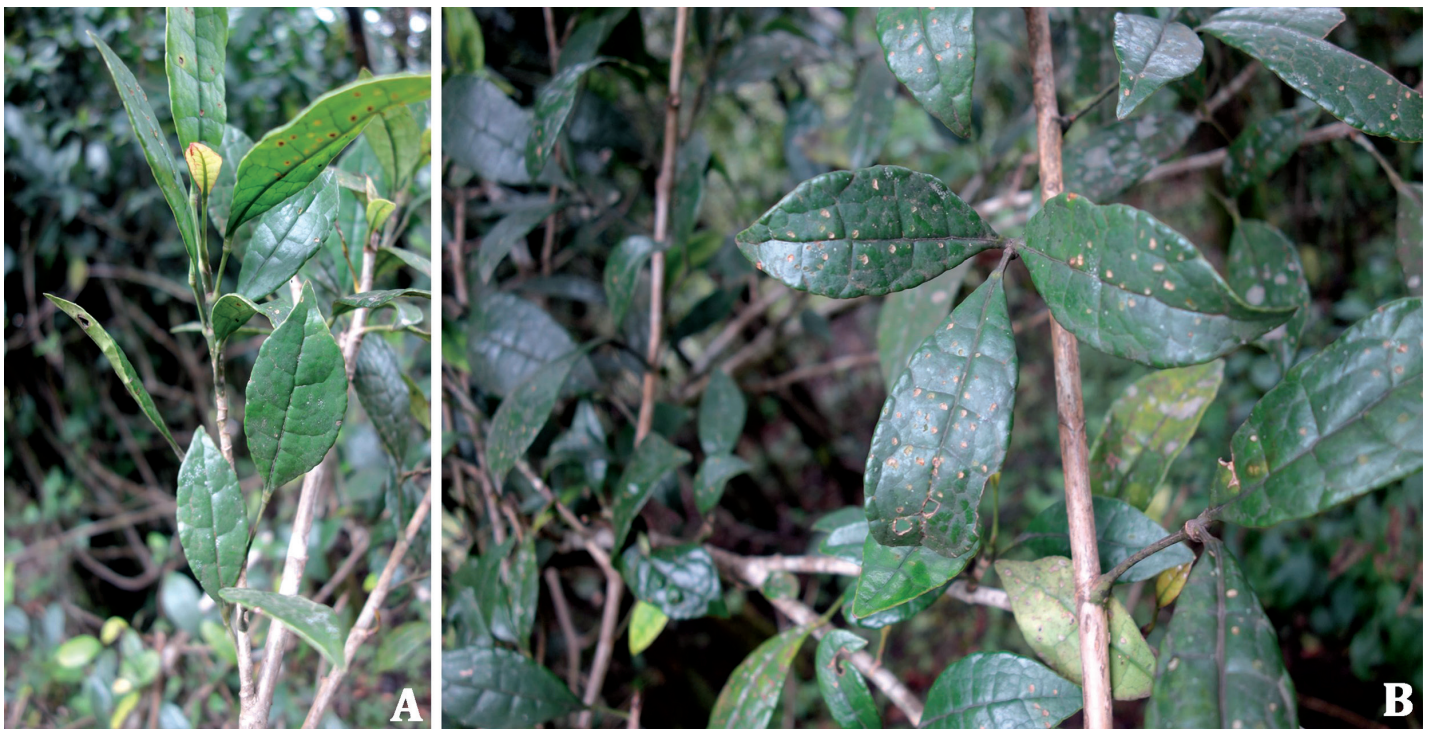


Fig. 2. Variation in number of leaflets in the leaves of *Heptapleurum chandrasekharanii* (Ramam. & Rajan) Lowry & G.M.Plunkett in its new locality

Explanations: A – a leaf with a single leaflet, B – leaves with 2 and 3 leaflets

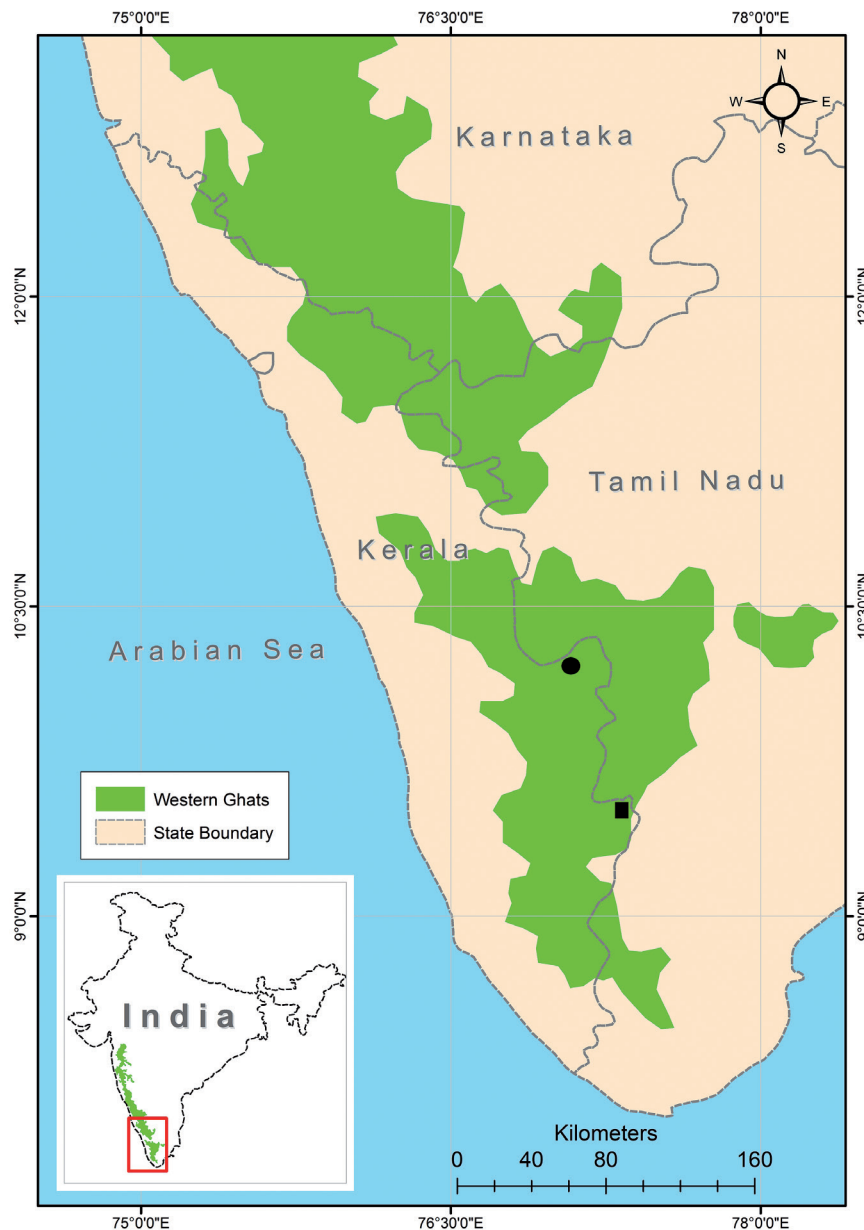


Fig. 3. Distribution of *Heptapleurum chandrasekharanii*: the type locality (black dot) and the recently discovered locality (black square)

this rare endemic plant species through *in-situ* and *ex-situ* methods.

Etymology: The specific epithet *chandrasekharanii* was given in honour of Dr. N. Chandrasekharan Nair, D.Sc., Former Joint Director, Botanical Survey of India, Southern Circle, Coimbatore (MH), for his valuable contributions to Indian botany.

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Critical revision of the article: J. Mathew, S. M. Pichan
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