



Osbeckia zubeengargiana (Melastomataceae), a new species from Assam, Northeast India

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Abstract

A new species of *Osbeckia*, *O. zubeengargiana*, from the family Melastomataceae, is described based on collections made from Assam, India. The new species is related to *O. rostrata* because of its tetramerous flowers, but can be distinguished by its habit, foliar morphology, bract shape and size, morphology of the intersepal emergences, ciliated style base, and seed size. Detailed taxonomic descriptions, photographs showing diagnostic features, and comparison with the related species are provided here.

Key words: Assam, India, Melastomataceae, new species, *Osbeckia*, taxonomy

Introduction

The genus *Osbeckia* Linnaeus (1753:345) comprises of 43 accepted species worldwide (POWO, 2025) mostly distributed in the South East Asiatic regions. The eastern Himalayas and the Western Ghats are considered to be the main endemism centers for *Osbeckia* as mentioned by Prashob & Thomas (2019). According to a recent phylogenetic study of Veranso-Libalah *et al.* (2017), it is assigned to the tribe Melastomateae Bartl. *Osbeckia* is distinguishable by the presence of flowers with isomorphic stamens, emergences over the hypanthium and 4–5 ribbed capsules (Prashob *et al.* 2018).

According to Prashob & Thomas (2019), the genus is represented by 23 species and 4 varieties in India. Later, Saravanan and Kaliamoorthy (2023) had reported a new species *O. yercaudensis* from the Eastern Ghats of India. In ‘Flora of Assam’, Kanjilal *et al.* (1938) documented 7 species and 1 variety under the genus *Osbeckia*. The variety *O. rostrata* var. *pulchella* (Bentham ex Naudin) Triana (1873:54) is a synonym of already documented *O. rostrata* D. Don (1825:221). Another species *O. septeminervia* Buchanan-Hamilton ex Craib (1917:55) is a synonym of *O. stellata* var. *crinita* (Bentham ex Naudin) C. Hansen (1977: 31); bringing the count to 6 species and 1 variety. In the recent floristic literature ‘Plantes Assam’ by Chowdhury (2021), a total of 6 species have been recognized. Recently, *O. nayarii* G.S. Giri (1983: 609) was reported from Goalpara District, Assam after a gap of 108 years by Das and Saikia (2023). Till date 5 species and 3 varieties of the genus *Osbeckia* are found in Assam.

As the part of ongoing PhD work on the family Melastomataceae in Assam, the authors came across one interesting specimen growing in the grasslands of Manas National Park, Assam. The specimen shows some similarities to *O. rostrata*. Besides having tetramerous flowers and isomerous stamens, the arrangement pattern of the hypanthium covering emergences is almost similar in both the species. A detailed morphological analysis and examination of relevant taxonomic literature revealed it to be a new taxon. This new taxon is described here as a new species, *Osbeckia zubeengargiana* Barnali Das & N. Nath with photographs.

Materials and methods

During the routine floristic explorations from 2021 to 2025, the specimen was collected as one of the *Osbeckia* species. The specimen was compared with similar species of neighbouring countries as well as of India. Voucher specimens were prepared by following the standard protocol by Jain & Rao (1977). The specimens were deposited at GUBH (abbreviations follow Thiers 2025). Voucher specimens of ASSAM and GUBH (abbreviations follow Thiers 2025) were examined. Measurements of morphological features were taken on fresh samples. For micro-observations, a Labomed CZM4 stereozoom microscope was used. Photographs were taken using digital camera. A map indicating the collection site of the specimen has been constructed using Quantum GIS 3.32.1 (QGIS Development Team 2023) (Figure 1). For determination of the systematic position of the newly described taxon, APG IV (2016) has been followed.

Results

Osbeckia zubeengargiana, Barnali Das & N. Nath *sp. nov.*, Figures 2–3

LSID:—urn:lsid:ipni.org:names: 77373167-1

Type:—INDIA, Assam, Baksa District, Manas National Park, 26°39'30.2" N, 91°02'08.6" E, 98–105 m, 1 October 2025, *Barnali Das BD055* (holotype GUBH [GUBH020994!]; isotype GUBH [GUBH020995!])

Diagnosis:—*O. zubeengargiana* differs from *O. rostrata* in leaf lamina with 3 nerves, linear-lanceolate, base cuneate, both adaxial and abaxial surfaces covered with sparse appressed hairs (*vs.* leaf lamina with 5 nerves, ovate to lanceolate, base obtuse, both adaxial and abaxial surfaces covered with dense patent hairs); 10–25 flowers per inflorescence (*vs.* 6–12 flowers per inflorescence); hypanthium campanulate (*vs.* hypanthium urceolate); intersepal emergences with lateral hairs, stellate head and broad flattened base (*vs.* intersepal emergences linear without lateral hairs and stellate head); ciliated base of style (*vs.* style completely glabrous); seed 0.7–0.8 mm long (*vs.* seed 0.1–0.2 mm long). (Table 1)

Description:—Perennial, erect shrub, branched from the middle portion of the main stem; 2.5–3.5 m tall. Stems quadrangular when young, hexagonal when mature, covered with rigid appressed hairs. Leaves opposite, petiolate, petioles 0.5–1 cm long; lamina 3-nerved, linear-lanceolate, 12–20 × 1.5–2.3 cm; apex acute-acuminate; base cuneate; fine, tiny appressed hairs sparsely present on both surfaces, upper (adaxial) surface glossy, dark green when fresh; lower (abaxial) surface pale green when fresh. Inflorescence a terminal compound panicle of cymes, each 10–25 flowered; subtended by 1 pair of smaller leaves. Flowers tetramerous, 2.5–3 cm in length; bracteate, bract broadly ovate with ciliated margins, slightly ciliated outside, glabrous inside, 4–5 × 8–9 mm; sub-sessile, pedicels 1 mm long. Hypanthia campanulate, 9–12 × 4–5 mm, covered with caducous emergences all over the surface; intersepal emergences 2–3 mm long, stalked, with a stellate head and base broad-flattened; other emergences with fewer lateral hairs, 1 mm long. Sepals 4, deltoid, i.e., broad at the base, pointed at the apex, margin with short, dense ciliated hairs, 4–5 × 3 mm, caducous. Petals 4, pink, glabrous, ovate to broadly obovate, ciliate at the apex, 1.8–2 × 1.5–1.7 cm. Stamens 8, isomorphic, filaments 1 cm long, anthers 1–1.1 cm long, S-shaped with narrow long beak, yellow, connectives slightly prolonged upto 0.7–0.9 mm forming undulating collar with 2 dorsal lobes. Ovary fused to hypanthium for two thirds of its length, ovary crown with 0.5–0.8 mm long bristle-like hairs; style 1.6–1.8 cm long, ciliated at the base, glabrous distally; stigma capitate. Capsule urceolate, 1.2 cm long; seeds numerous, 0.7–0.8 mm, curved, testa muricate.

Etymology:—The species is named after the heartthrob of Assam, the late legendary singer, lyricist, film maker, actor, poet, nature lover Zubeen Garg, Hon. D. Litt., for his outstanding contribution to the Assamese culture as well for the conservation of nature.

Phenology:—Flowering and fruiting from mid-September to January

Ecology:—The species is found in the grasslands in association with *Chrysopogon zizanioides* (Linnaeus) Roberty (1960:106), *Alpinia* sp., *Maesa indica* (Roxburgh) Sweet (1826: 268), *Bombax ceiba* Linnaeus (1753:511), *Dillenia pentagyna* Roxburgh (1795:21). During the survey, a large population of *O. zubeengargiana* was observed from Manas National Park of Assam. The species was found to grow and be distributed throughout the grasslands.

Additional specimens examined (paratype):—INDIA, Assam, Baksa District, Manas National Park, 26°43'46.8" N, 91°00'50.8" E, 98–105 m, 24 October 2025, *Barnali Das & N. Nath BD064* (GUBH [GUBH020996!]).

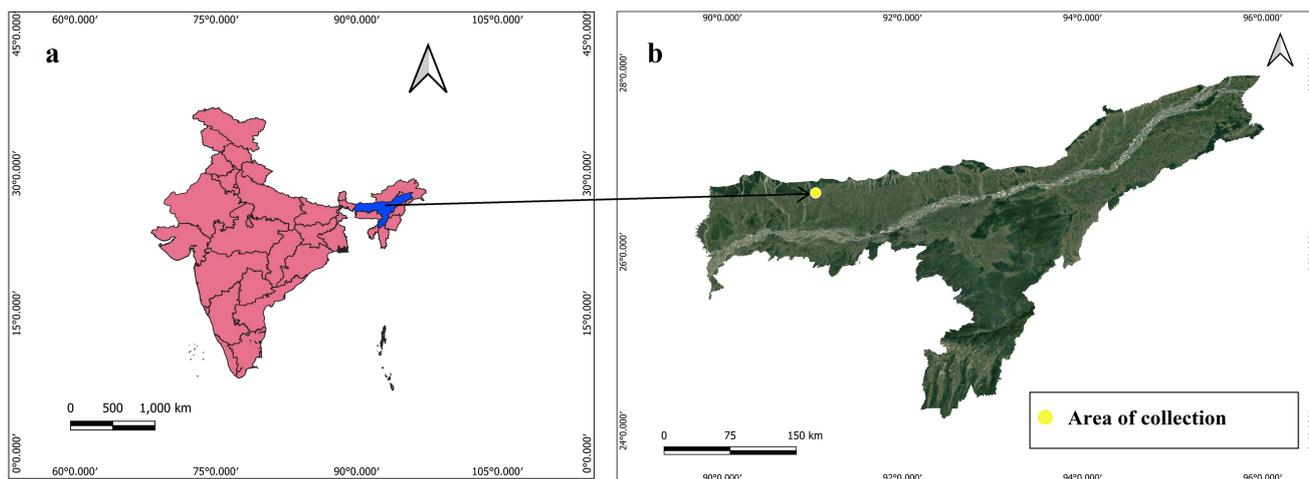


FIGURE 1. a–b: Map showing the collection site, prepared using QGIS 3.32.1 software.



FIGURE 2. *Osbeckia zubeengargiana* Barnali Das & N. Nath—a. Habit; b–c: In bloom. Photos by Barnali Das.

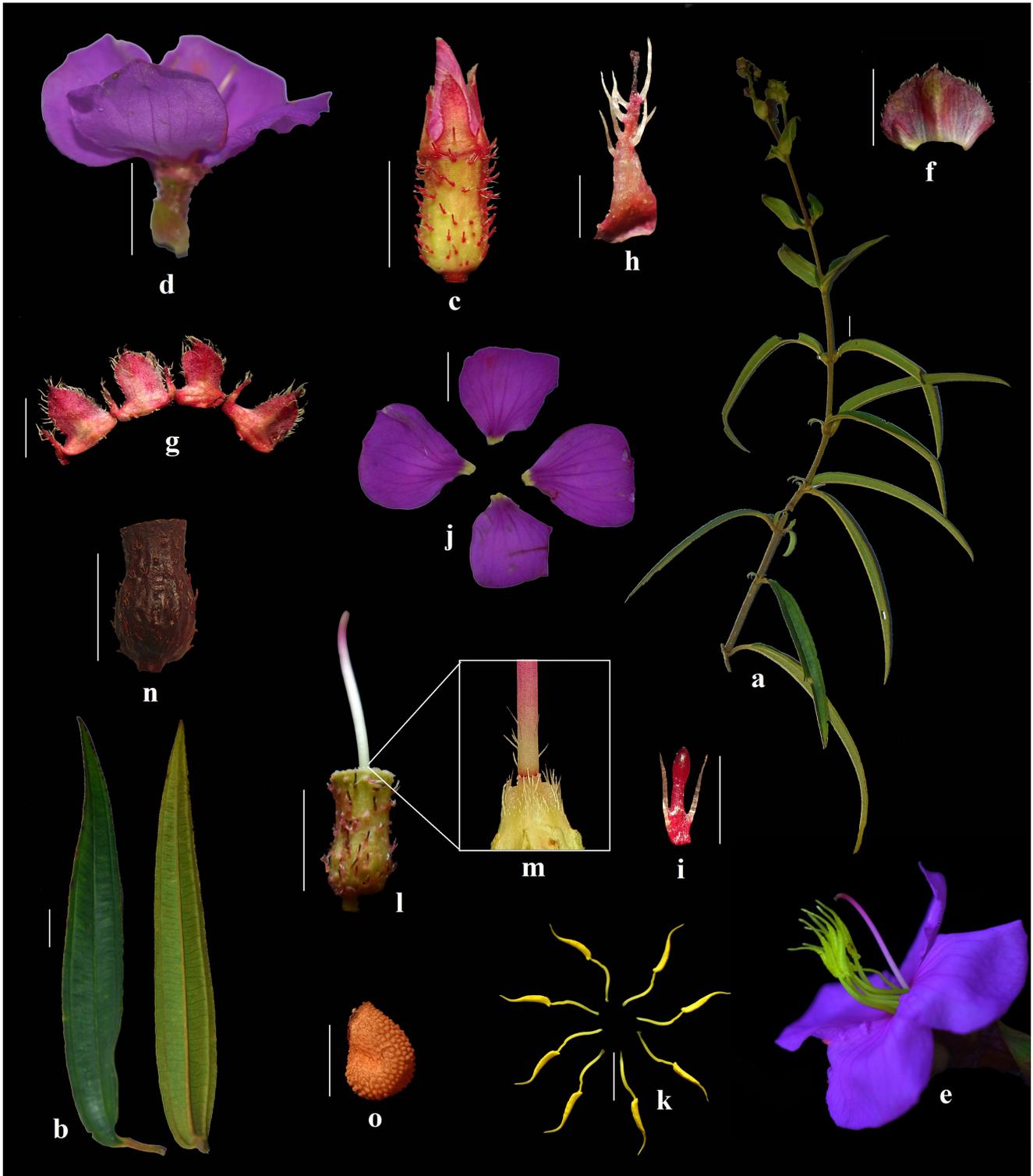


FIGURE 3. *Osbeckia zubeengargiana* Barnali Das & N. Nath (GUBH020994). **a:** Branch with developing inflorescence; **b:** Leaf [adaxial (left) and abaxial (right) surfaces]; **c:** A flower bud; **d:** Complete flower (profile view); **e:** Flower at anthesis showing stamens and style (profile view); **f:** Bract; **g:** Calyx lobes with alternating intersepal emergences; **h:** Close-up of an intersepal emergence; **i:** Close-up of other emergence; **j:** Petals; **k:** Stamens; **l:** Hypanthium with style; **m:** Pubescent base of style; **n:** Fruiting hypanthium; **o:** Seed. Scale bars: **a–d** & **j–l**= 10 mm, **f–g**= 5 mm, **h–i**= 1 mm, **o**= 0.5 mm.

Conservation status:—*Osbeckia zubeengargiana* is known only from the type locality. According to IUCN criteria, the species falls under the category Data Deficient (DD).

TABLE 1. Morphological comparison between *O. zubeengargiana* and *O. rostrata*.

Species	<i>O. zubeengargiana</i>	<i>O. rostrata</i>
Habit	2.5–3.5 m tall; branching from the middle portion of the main stem	0.5–2 m tall; branching starts from near the base of the main stem
Leaf	Lamina linear-lanceolate, 12–20 × 1.5–2.3 cm; 3-nerved, apex acute-acuminate, base cuneate; both surfaces with sparse appressed hairs	Lamina ovate to lanceolate, 5–17 × 2–6 cm; 5-nerved, green, apex acute to attenuate, base obtuse; both surfaces with dense patent hairs
Petiole	5–10 mm long	3–8 mm long
Inflorescence	Terminal compound panicle of cymes; each cyme 10–25-flowered	Terminal panicle, 6–12-flowered
Bract	Broadly ovate, 4–5 × 8–9 mm	Ovate to broadly ovate, 4–8 × 3–6 mm
Flower	2.5–3 cm in length; sub-sessile, pedicels 1 mm long	3–3.5 cm in length; pedicellate, pedicels 0.5–3 mm long
Calyx	Sepals deltoid in shape, i.e., broad at base, pointed at apex, 4–5 × 3 mm; calyx lobe margins with dense short ciliated hairs	Sepals lanceolate, 6–12 × 1.5–3 mm; calyx lobe margins with sparse short ciliated hairs
Intersepal emergences	Intersepal emergences with lateral hairs, stellate head and broad flattened base, 2–3 mm; other emergences with fewer lateral hairs and smaller in size, 1 mm long	Intersepal emergences without lateral hairs and stellate head, 4–5 mm long; other emergences similar
Style	Base of the style pubescent, upper portion glabrous	Style completely glabrous
Hypanthium	Campanulate, 9–12 × 4–5 mm	Urceolate, 7–13 × 2.5–4 mm
Seed size	0.7–0.8 mm long	0.1–0.2 mm long

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Author's contribution

BD collected the data; BD, NN and PP developed the concept of new species. BD, NN analyzed and wrote the manuscript. NN supervised the work and approved the final manuscript.

Conflict of interest

Authors have no conflict of interests.

Ethical issues

None.

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