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Cover: A gravid praying mantis just before she laid her ootheca—digital art on procreate. © Aakanksha Komanduri.



Uniyala multibracteata (Gamble) H. Rob. & Skvarla (Asteraceae: Vernoniae): notes on its identity and rediscovery

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The genus *Vernonia* Scherb. was first described by Johann Christian Daniel Von Schreber in 1791. It comprises c. 335 accepted taxa in the world (POWO 2023). The genus *Uniyala* was segregated from the broad genus *Vernonia* (Robinson & Skvarla 2009) and the genus *Uniyala* consists of 11 species (Senniappan & Kumar 2022), which are endemic to India and Sri Lanka. Nine species of *Uniyala* are strictly endemic to the southern Western Ghats. The genus *Uniyala* is characterized by long sweeping hairs on style branches, squamiform outer series of the pappus, 3–5-costate achenes, capillary bristles of the inner pappus and suboblate pollen grains (Robinson & Skvarla 2009). On the other hand, some botanists do not follow Robinson's concept and still follow the broad generic concept of *Vernonia* (Bhattacharjee 2020).

During the explorations in the southern Western Ghats, an interesting specimen of *Vernonia* was collected from Odamala, Idukki District, Kerala (15 March 1998), which was identified by Augustine (2022) and deposited at CALI (Coll. No. 17785) as *V. multibracteata* Gamble. Recently, as part of the systematic study of genus *Uniyala*, we collected specimens of five reported species from the

Western Ghats. While confirming the identity of these, we found that all the previously labelled specimens as *V. multibracteata* at Jawaharlal Nehru Tropical Botanical Garden and Research Institute (JNTBGRI) were misidentified specimens of *V. ramaswamii* (Hutch.) Rob. & Skvarla, *V. bourdillonii* (Gamble) H. Rob. & Skvarla and *V. comorinensis* (W.W. Smith) H. Rob. & Skvarla. Kumar et al. (2012) reported the rediscovery of *Uniyala multibracteata* (= *V. multibracteata*) based on the collection from Agasthyamala. But the critical study on the voucher materials confirmed that these were also *U. comorinensis* (= *V. comorinensis*). Therefore, the previous collection by one of the authors from Odamala and the recent recollections of this species from Memala, Vagamon are reported here as the rediscovery of *U. multibracteata* (= *V. multibracteata*) after its type collection.

Taxonomy

Uniyala multibracteata (Gamble) H. Rob. & Skvarla. *Proc. Biol. Soc. Washington* 122(2): 153.2009. *Vernonia multibracteata* Gamble, *Bull. Misc. Inform. Kew* 1920: 340.1920.

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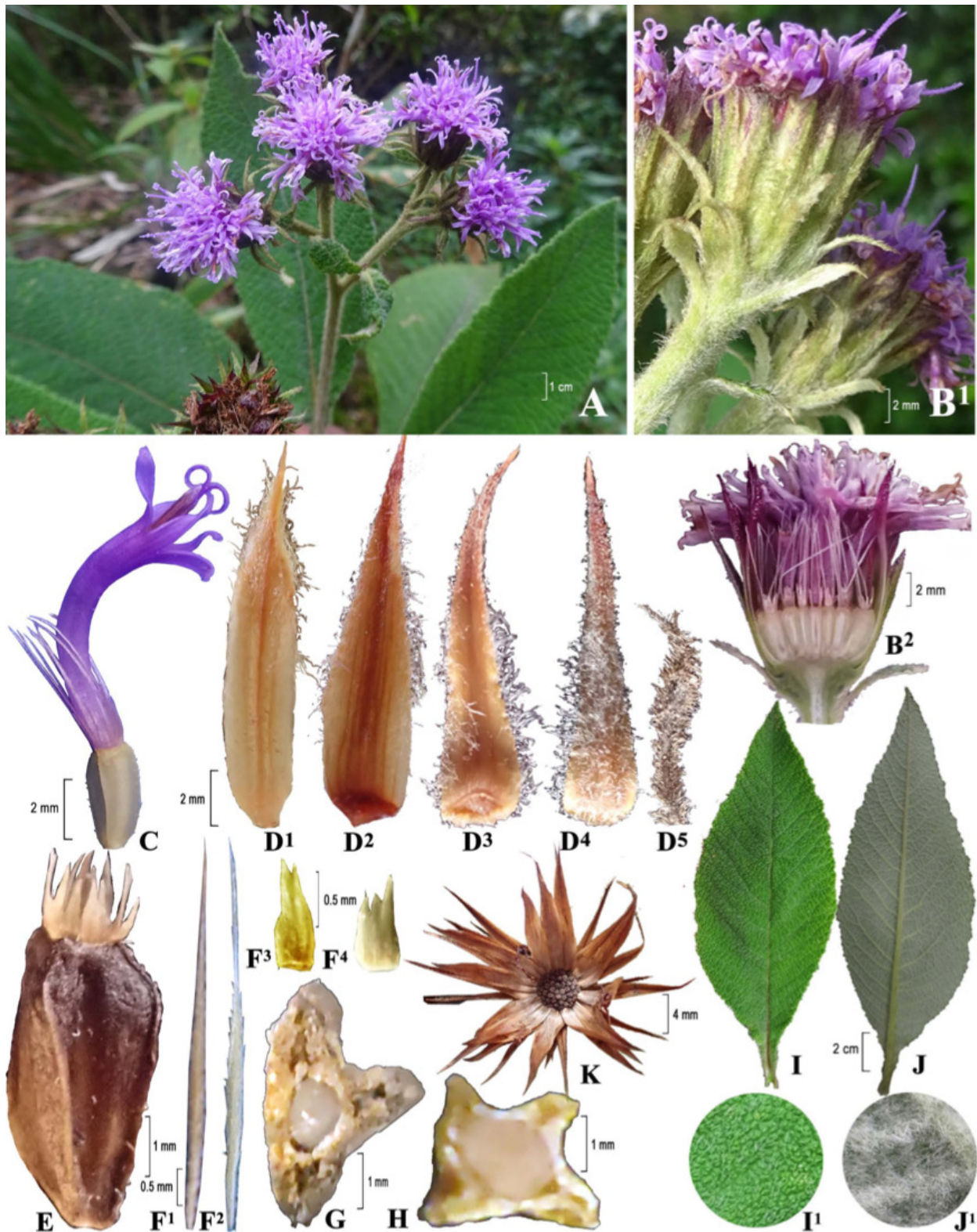


Image 1. *Uniyala multibracteata* (Gamble) H. Rob. & Skvarla: A—Habit | B¹—Single head | B²—Single head L.S. | C—Single flower | D¹ to D⁵—Involucral bracts | E—Cypsella with paleaceous pappus | F¹ & F²—Setaceous pappus | F³ & F⁴—Paleaceous pappus | G—Cross section of outer achenes | H—Cross section of inner achenes | I & I¹—Leaf upper surface | J & J¹—Leaf lower surface | K—Head after dispersal of the fruits.
© Jomy Augustine.

Lectotype: Southern India, Travancore, Peerumedu, 12.1880, R.H. Beddome n. (K, barcode K000372520! & CAL, barcode CAL0000016750!)

Shrubs, erect, 2–3 m high; stems branched; branchlets thick, 12–20 mm across, white woolly; internode 5–30 mm long; leaf scars present, lunar. Leaves spirally alternate; petiole 1–2.5 cm long, woolly, compressed; lamina 7–20 × 3–7 cm, elliptic to lanceolate, acute to acutely acuminate at apex, attenuate at base, shortly decurrent; margins crenulate, irregular, wavy; adaxially coarsely rugose with hairs of 0.781 × 0.071 mm, multicellular, white; abaxially white woolly, webbed, 0.85–1.13 × 0.014–0.028 mm; tender leaves more woolly; lateral nerves 15–20 pairs, parallel, reticulate, dichotomously branching near margin; nerves depressed above. Inflorescence terminal corymbose cyme, 8–15 cm broad; peduncles elongate, 3–14 cm long, white woolly. Heads 2–4 together, 2–3.5 cm broad, secondary peduncle 2.5 cm long, stout, tomentose. Flowers similar, tubular, violet to purple, 30–42 per head; receptacle flat, 7–8 mm across; involucre bracts multi-layered, four types, elliptic to lanceolate; outer most 12 × 1.5 mm, lanceolate, sharply acuminate at apex, aristate – mucronate, white woolly, glabrous inside; intermediate one elliptic to lanceolate, 12–15 × 2 mm, sparsely pubescent, glabrous inside, acuminate at apex, aristate-mucronate; inner one elliptic-subulate 11 mm long, narrower towards apex, white woolly; inner most bract 8–10 × 3 mm, elliptic to lanceolate, pubescent on apex, glabrous inside, apex acuminate, mucronate; corolla violet, glabrous, tube cylindrical, 6–8 × 0.56–0.85 mm; corolla lobes 5, linear-oblong, recurved, apex acute, 3–4 mm long, violet to purple, valvate; stamens 5, anther tube 2.5–3 mm long, 0.639–0.78 mm broad, cylindrical, yellowish-brown; anthers sagittate at base; pollen spherical, 0.0284–0.042 mm, spinate, spines 0.004–0.006 mm long; staminal filaments 1.7–2 mm long, attached near half of the corolla tube; style 7–9 mm long, with sweeping hairs on upper part; stigma bifid, 2–2.8 mm long, puberulent, hairs 0.04–0.09 × 0.0142–0.028 mm; ovary 2–3 mm long, 3-angled, glabrous, white with scattered glands on angles. Achene 3–4.5 mm long, inner tetragonous, and outer trigonous (Figure 1 G&H); peripheral achenes broader, 2.5–4 mm broad; tending to trigonous; inner ones relatively narrow, 1–1.5 mm broad, tetragonous; straw coloured, smooth, angles winged; wings 0.4–1 mm broad, glabrous; pappus white-creamy, biseriate; outer ones paleaceous, linear-lanceolate to oblong with fimbriate to serrate, 0.5–1 mm long, 5–8 in number, subequal; inner pappus deciduous, setaceous, 8–12 in number, 4–6 mm long; hairs on

pappus 0.071–0.127 × 0.007–0.0142 mm (Image 1).

Flowering & Fruiting: October–March.

Distribution: Endemic to Idukki district of Kerala State; less than 500 individuals.

Ecology: The habitat of this endemic species is open rocky grasslands and margins of small patches of evergreen forests in rocky cuttings. The canopy height is of 10–20 m. Associated species of trees are *Litsea wightiana* (Nees) Wall. ex Hook.f., *Cinnamomum sulphuratum* Nees, *Vernonia arborea* Buch.-Ham., *Bhesa indica* (Bedd.) DingHou, *Hydnocarpus alpina* Wight, *Actinodaphne bourdillonii* Gamble, *Nothopaegia colebrookiana* (Wight) Blume, *Dimocarpus longan* Lour., *Gomphandra coriacea* Wight, *Croton caudatus* Geis., and associated herbs are *Cymbopogon flexuosus* (Nees ex Steud.) W.Watson, *Themeda cymbaria* Hack., *Chrysopogon hackellii* (Hook.f.) C.E.C.Fischer, *Arundinella purpurea* Hochst. ex Steud.

Notes: Only one collection (R.H. Beddome's collection from Peerumedu in 1880) has been cited in the protologue of *Vernonia multibracteata* Gamble (Gamble 1920, 1921). Uniyal (1995) categorized it as possibly extinct since it is not recollected after the type collection. Sasidharan (2004) assessed the species as endangered. The detailed analysis of specimens with identification label as *V. multibracteata* (= *U. multibracteata*) at TBGT confirmed that all are misidentifications. The species identification in this genus is based on narrow differences only, which might have been the reason for such misidentifications. From our study we noted that characters of involucre bracts, degree of variations in the leaf margin and pubescence on various plant parts are considerably stable traits to delimit the taxa within, but the terms ribbed, ridged and winged nature of achenes are confusing. Two specimens of *U. bourdillonii* (Coll. No. 15166, 58025), one specimen of *U. ramaswamii* (Coll. No. 20284), and six specimens of *U. comorinensis* (Coll. No. 39230, 72908, 69206 (2 specimens), 67942 (2 specimens) are at TBGT with misidentified label as *V. multibracteata* (= *U. multibracteata*). We studied the voucher specimens cited by Kumar (2012). All the specimens cited in this publication (Kumar et al. 2012) are specimens of *U. comorinensis* only. Interestingly, Kumar et al. (2012) cited a collection of N. Mohanan from Athirumala (Coll. No. 10462) housed at TBGT. One of its duplicates was found at CALI, in which the collector has rightly identified specimen as *V. comorinensis*. Since the rediscovery report of *U. multibracteata* has not yet been made properly. We report it here based on the collections from Memala, Urumbikkara, Vagomon and Odamala of Idukki district, Kerala. Both *Uniyala multibracteata* and

U. comorinensis are closely similar in their morphology. But the shape, apex and pubescence of bracts are stable and fit to the protologue and type specimens. The bract characters are enough to distinguish both the taxa.

The type locality of *U. comorinensis* is from Tinnevely (presently Tirunelveli of Tamil Nadu), and all the recorded collection are from Tirunelveli and Agasthyamala and this species is narrow endemic. Similarly, *U. multibracteata* is narrow endemic to Peerumedu (type locality) and surrounding hills (Memala, Odamala, Vagamon, and Urumbikkara).

Specimens examined: *Uniyala multibracteata* - Peerumedu, Idukki district, India, coll. R.H.Beddomes. n. (K, K000372520 [image!]; CAL, CAL0000016750 [image!]), xii. 1880 (Lectotypified, Kumar & Senniappan 2021); Odamala, Idukki District, coll. Jomy Augustine 17785 (CALI), 15.iii.1997.

Key

1a. Leaves 7–20 x 3–7 cm; heads 8–15 mm broad, 32–45-flowered; bracts 35–48, outer one 12 mm long, lanceolate, mucronate *U. multibracteata*

1b. Leaves 5–10 x 1–2.5 cm; heads 3.5–7 mm broad, 20–30-flowered; bracts 25–35 outer most bract up to 7.5 mm long, oblong, obtuse at apex *U. comorinensis*

References

- Augustine, J. (2022). *Flowering Plants of Periyar Tiger Reserve*. Kerala Forest and Wildlife Department, Trivandrum, 154 pp.
- Bhattacharjee, B., P. Lakshminarasimhan, S.K. Mukherjee, S. Kaliamoorthy & A. Bhattacharjee (2020). Notes on the identity of *Vernonia shevaroyensis* (Asteraceae) and its neotypification. *Nelumbo* 62(2): 48–153.
- Gamble, J.S. (1920). Decades Kewenses. *Plantarum Novarum Herbario Horti Regii Conservatarum. Bulletin of Miscellaneous Information* 1920: 340.
- Gamble, J.S. (1921). *Flora of the Presidency of Madras*. Allard & Son and West Newman Ltd, London, 475 pp.
- Kumar, E.S.S., P.E. Roy, S.M. Shareef & S.S. Usha (2012). Rediscovery of *Uniyala multibracteata* (Gamble) H. Rob. & Skvarla (Asteraceae) from Southern Western Ghats, India. *Journal of Threatened Taxa* 4(5): 2587–2589. <https://doi.org/10.11609/JoTT.o2968.2587-9>
- POWO (2023). Plants of the World Online. <https://powo.science.kew.org>. Accessed on 10 December 2023
- Robinson, H. & J.J. Skvarla (2009). A new genus, *Uniyala* from peninsular India and Sri Lanka (Vernonieae: Asteraceae). *Proceedings of the Biological Society of Washington* 122: 150–154.
- Sasidharan, N. (2004). *Biodiversity Documentation of Kerala-Part 6: Flowering Plants*. Kerala Forest Research Institute, Peechi, Kerala, 702 pp.
- Senniappan A. & K.S. Kumar (2022). New Combinations in the Indo-Sri Lankan Genus *Uniyala* (Asteraceae). *Annales Botanici Fennici* 59(1): 9–104.
- Kumar, K.S. & A. Senniappan (2021). Lectotypifications in the Indo-Sri Lankan genus *Uniyala* (Asteraceae) with critical notes. *Indian Journal of Forestry* 44(3): 128–132.
- Uniyal, B.P. (1995). Asteraceae: Vernonieae, pp. 330–394. In: Hajra P.K., R.R. Rao & D.K. Singh (eds.). *Flora of India* (Vol. 12). Botanical Survey of India, Calcutta, 451 pp.

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