



RESEARCH ARTICLE

# *Coleus monostachyus* (P. Beauv.) A. J. Paton (Lamiaceae): A new addition to the flora of India

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## Abstract

*Coleus monostachyus* (P. Beauv.) A. J. Paton is reported here as a new addition to the flora of India. It seems the seeds of this plant might have come along with the timbers imported from the SE Asian countries. A detailed morphological description based on the Indian plants and photographs are provided to facilitate easy and correct identification.

## Keywords

Kasaragod, Kerala, India, *Coleus monostachyus*, Lamiaceae, new record

## Introduction

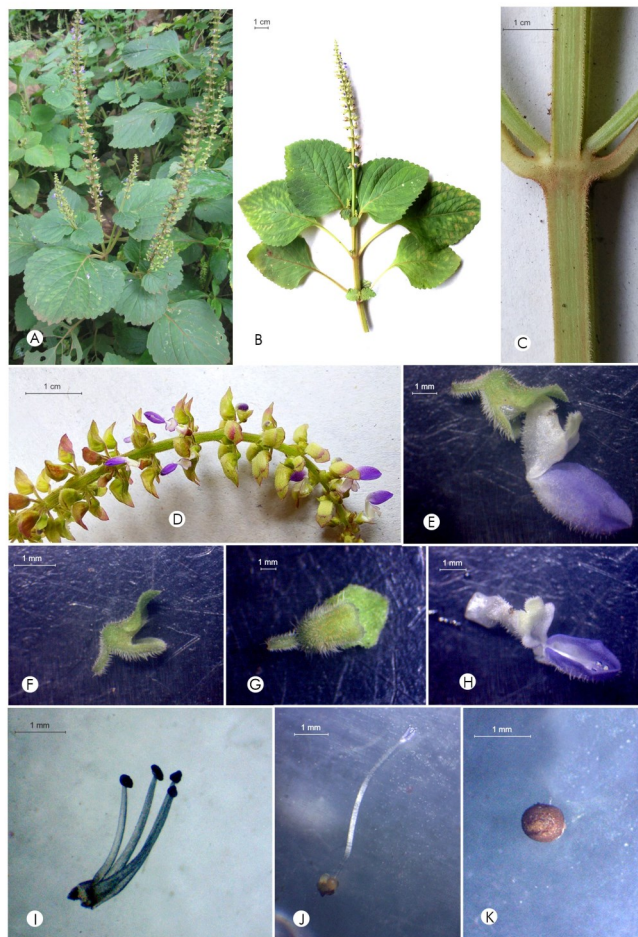
*Coleus* Lour. with about 300 species is one of the largest genera in the family Lamiaceae (1). It is distributed mainly in tropical and southern parts of Africa, Madagascar, Asia and Australia (2). Different researchers used their own generic delimitation keys for the sub-tribe Plectranthinae. This resulted in placing species under major generic names like *Plectranthus* L'Her., *Coleus* Lour. and *Solenostemon* Thonn. (3). Later, morphological studies conducted by different workers synonymized all these names under *Plectranthus* (2, 4). Phylogenetic analysis suggested the need for generic delimitation in Plectranthinae and recognition of *Coleus*, *Plectranthus* and *Equilabium* as separate genera (5). As per this suggestion, in 2019, the generic status of *Coleus* has been reinstated with 294 species (1).

During the recent floristic explorations in the Kasaragod District of Kerala, the authors collected an interesting species of *Coleus*. A perusal of relevant literature (6–8) and consulting authentic herbarium specimens deposited at Kew Herbarium (K) [available at [apps.kew.org/herbcat/navigator.do](https://apps.kew.org/herbcat/navigator.do)], National Museum of Natural History, Paris (P) [available at <https://science.mnhn.fr/institution/mnhn/search>], Global Plants on JSTOR (available at <https://plants.jstor.org>), REFLORE – Plants of Brazil (available at [reflora.jbrj.gov.br](https://reflora.jbrj.gov.br)), the specimens were identified as *Coleus monostachyus* (P. Beauv.) A. J. Paton. This species is a native of tropical Africa, where it occurs as an annual weed in human habitats and rocky savannahs. Later, this plant became naturalized in Singapore (8), Malaysia (9) and Java Islands (10). Analysis of recent literature on Indian Plectranthinae (11–14) revealed that this species has not been reported from India. Hence, *Coleus monostachyus* is reported here as a new addition to the Indian flora with detailed description, photographic illustrations and ecological notes.

## Taxonomic treatment

### *Coleus monostachyus*

(P. Beauv.) A. J. Paton, *Phytokeys* 129: 76. 2019; *Ocimum monostachyum* P. Beauv., *Fl. Oware* 2: 60. 1818; *Plectranthus palisotii* Benth., *Labiatae Gen. Spec.*: 39. 1832., *nom. illeg.*; *Solenostemon monostachyus* (P. Beauv.) Briq. in Engler & Prantl, *Nat. Pflanzenfam.* 4(3a): 359. 1897; *Solenostemonocymoides* var. *monostachyus* (P. Beauv.) Baker in *Fl. Trop. Afr.* 5: 421. 1900; *Plectranthus monostachyus* (P. Beauv.) B. J. Pollard, *Kew Bull.* 56: 980. 2001. Fig. 1.



**Fig. 1.** *Coleus monostachyus* (P. Beauv.) A. J. Paton : **A.** Habit; **B.** Twig; **C.** A portion of stem; **D.** Inflorescence; **E.** Flower; **F.** Flowering calyx; **G.** Fruiting calyx; **H.** Corolla; **I.** Stamens; **J.** Gynoecium; **K.** Nutlet.

Erect or ascending or decumbent annual herb, up to 1 m high. Stems succulent, branched, quadrangular, aromatic, shortly pubescent along angles with simple hairs; internodes 5–7.5 cm long, 2–8 mm wide. Roots adventitious, 5–17 cm long. Leaves opposite, decussate, simple, slightly fleshy; stipules absent; petioles 2–9.5 cm long, pubescent along the angles; lamina broadly ovate, 2.4–13 × 1.8–10.5 cm, glabrous above, puberulous and gland-dotted below; base cuneate; apex obtuse to acute; margins crenate; lateral veins 5–6 pairs, projected and distinct below; venation eucamptodromous. Inflorescence of terminal, false spike, up to 40 cm long, consisting of sessile dichasia or verticillasters, simple or sometimes branched at inflorescence base; axis slender, pubescent; floral nodes distant, 5–13 mm apart; each verticillaster composed of 2 opposite cymes; cymes sessile, lax, 6–8-flowered; pedun-

cles 2–5 cm long; bracts persistent, elliptic, 2.8–3 × 1.3–1.5 mm, apex acuminate, margins ciliate; bracteole absent. Flowers bisexual, zygomorphic, 7.5–9 mm long, 4–4.5 mm in diameter; pedicels slender, 2.5–3 mm long, pubescent, inserted opposite to the posterior lip of calyx. Calyx greenish, campanulate, 2-lipped, somewhat scabrous with white patent hairs and yellowish glands on outer surface, 2–2.2 × 0.8–1 mm at anthesis, enlarging to 4.8–5 × 2.6–3 mm in fruit; upper tooth or posterior lip ovate; 2 lateral teeth shorter, linear and converge under the posterior lip; 2 lower teeth almost completely fused (anterior lip) leaving 2 minute projections, anterior lip curves upwards at maturity to close off calyx throat. Corolla bluish purple, with white base, 6–6.5 mm long, 2-lipped, pubescent outside, glabrous inside; tube conspicuously sigmoid; posterior lip erect, short, 4-lobed, white, lobes rounded at apex, median lobes (2–2.2 mm) larger than lateral lobes (1.6–1.8 mm); anterior lip boat shaped, 3.8–4 × 1.6–1.8 mm, concave, pubescent with sessile yellowish glands outside. Stamens 4, didynamous, attached at base, appendage absent, included within anterior lip of corolla; filaments of posterior pair 2–2.3 mm long, anterior pair 2.5–2.8 mm long; anthers yellowish, bilobed, dorsifixed, 0.1–0.15 mm long, dehiscing longitudinally. Disc white, 0.1–0.2 mm long, smaller and not exceeding ovary. Ovary superior, 4-celled, 0.3–0.4 mm high; style sigmoid, 4.8–5 mm long, glabrous; stigma bifid with equal lobes (0.2–0.4 mm). Nutlets brownish, orbicular, ca 0.8 × 0.8 mm, sculptured with very fine hairs, producing mucilage when moistened.

### Phenology

August–October.

### Habitat and Ecology

About 100 mature plants were found growing at moist shady place near road side on the sides of a lateritic hill along with herbaceous species such as *Achyranthes aspera* L., *Hyptis suaveolens* (L.) Poit., *Justicia procumbens* L., *Ipomoea triloba* L., *Sida rhombifolia* L. and *Synedrella nodiflora* (L.) Gaertn.

### Specimens Examined

India, Kerala, Kasaragod district, Seethangoli, 12°36'02" N, 75°0'22" E, 102 m a.s.l, 02.09.2021, *K.S. Prasad 06418* (CALI).

### Notes

*Coleus monostachyus*, commonly known as monkey's potato is a plant having both economic and ecological significance. In tropical Africa, it is used as a vegetable, employed in rituals related to pregnancy and leaf extract is recommended as a remedy for health conditions like fever, cough, headache, colic and convulsions (15–19). It is generally considered as a weed (8). Present collection location is situated near a saw mill which imports timbers from Malaysia. It is presumed that the seeds of this species might have reached the territory of India through imported wood. Introduction of this weedy species into a new territory needs constant monitoring and further studies on its ecological impacts.

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## Authors contributions

KSP collected the specimens and identified it based on the morphological characters. PB, KAT and EJJ helped in taking the photographs, arranging the colour plate and preparation of the manuscript. All authors read and approved the final manuscript.

## Compliance with ethical standards

**Conflict of interest:** Authors do not have any conflict of interests to declare.

**Ethical issues:** None.

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