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Pogostemon rajendranii - Lamiaceae, a new species from Nilgiri Biosphere Reserve in the Southern Western Ghats, India

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ABSTRACT

Pogostemon rajendranii is described and illustrated as a new species from the Nilgiri Biosphere Reserve, India.

Keywords: Biodiversity, Lithophytic, Moniliform hairs, Nilgiris, India.

INTRODUCTION

Pogostemon Desf. is a well defined genus, globally represented by 96 species (Mabberely, 2005). The presence of exerted stamens bearing moniliform hairs marks it out from the Labiatae (Steran, 1992). A taxonomic review of the genus *Pogostemon* Desf. and related genera was carried out by Bhatti and Ingrouilie (1997). It is represented 79 taxa in South and Southeast Asia. India has the highest number of *Pogostemonous* species in the world, is represented by 56 taxa (53 species and 3 varieties). Of which 22 taxa (19 species and 3 varieties) are endemic. During an assessement of biodiversity of the Nilgiris, a distinct population of a *Pogostemon* was collected at Thalai Kundha areas of Nilgiris. On critical study, it turned out to be a hitherto undescribed species, which described and illustrated here.

Out of 13 species under the subsection *Racemosus*, 6 species are distributed *viz.*, *P. nilagiricus*, *P. mollis*, *P. vestitus*, *P. petiolaris*, *P. rotundatus* and *P. paludosus* are distributed in the Southern Western Ghats. India except *P. rupestris* and *P. rogersii* are distributed in Sri Lanka and South Africa respectively. Remaining 5 species *P. philippinensis*, *P. velatus*, *P. williamsii*, *P. membranaceus*, *P. elatispicatus* are distributed in Phillippines of East India. The new species belongs to subgenus *Allopogostemon* under the section *Racemosus* and is certainly most closely related to *P. vestitus* of the same locality.

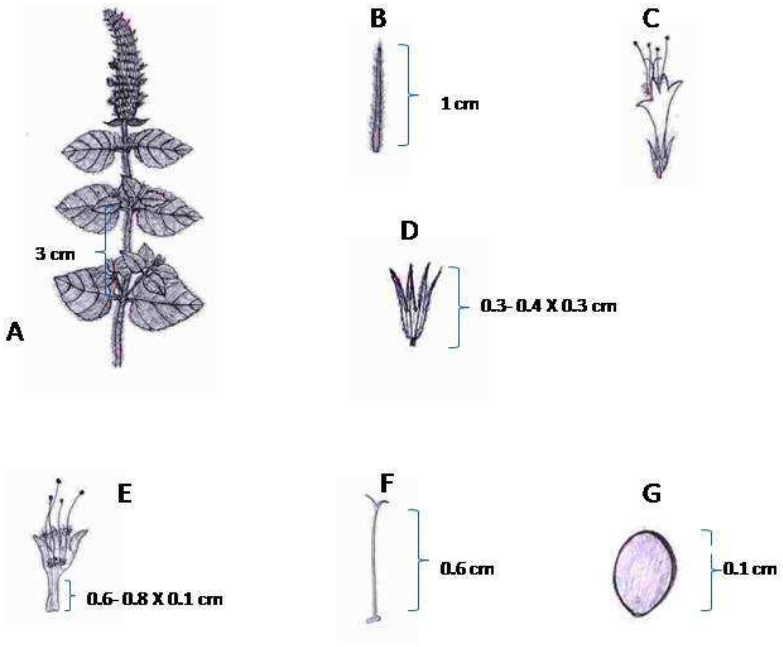
It differs from allied species *P. vestitus* in the herbaceous nature with very short petiole, 6- 9 celled hairs. The fruits are quite distinct by its elliptic shaped nutlets (Table. 1).

***Pogostemon rajendranii* R. Sasi and R. Sivalingam *sp. nov*.**
Herbs, 10- 15 cm high, puberulous; Stems solid, terete, very hairy especially at the base, hairs pinkish, it turns golden yellow when dry, hairs 6- 10 celled. Leaves opposite, ovate, charactaceous, 1.6- 2.5 X 1-2 cm, dark green, densely hairy above, pale and sparsely hairy beneath, rounded at base, dentate along margin, lateral nerves 3- 4 pairs, acute at apex, raised and prominent beneath, subsessile or petiolate; Petiole *c.* 0.2 cm long, hairs 6- 9 celled. Infloresence unbranched, a single terminal spike, reflexed, verticillasters, uninterrupted, upto 3. 5 cm long; Flowers dense, white, bracteates. Bracts linear, *c.*0.5X 0.1 cm; puberulous with 3- 4 celled glandular trichomes. Calyx infundibular, shorter than the corolla, texture thick, equally 5- lobed, lobes lanceolate, acuminate, ciliate along margins, tube *c.*0.4 X 0.3, upper part of the tube and teeth hairy within, hairy throughout outside, tubular inflated but

symmetrical, with 5 ribs and 5 sinus untermediate veins; Corolla 2- lipped, tube *c.* 0.8 X 0.1 cm, exerted, lower lip *c.* 0.2X 0.1 cm; upper lip *c.*0.2 cm across; central tube *c.* 0.1 X 0.1 cm, glabrous. Stamens 4, subequal, exerted, purplish; filaments all inserted at a height of 2 mm in the tube, lowest *c.* 0. 5 cm; highest *c.* 0.7 cm long, bearded at the middle with pinkish moniliform hairs and tomentose at the throat. Style exerted, purplish, glabrous, *c.* 0.6 cm long; stigma bifid, lobes *c.* 0.2 cm long. Nutlets 3- 4 *c.* 0.1 cm, elliptic, reticulate surface, black when mature (Fig.1). **Type:** India, Tamil Nadu, Nilgiri Hills, Thalai Kundha, 2600 - 2876 m, Dec. 2011, R. Sasi, 006159 (MH Holotype; BUH - Isotype).

Table. 1. The distinguishing features between *P. rajendranii* and *P. vestitus*

P. rajendranii sp. nov.	***P. vestitus***
Herb; Stem terete, hairs, pinkish when fresh, it turns golden yellow when dry.	Undershrub; Stem terete, hairs woolly tomentum.
Leaves ovate, *c.* 2.5 X 2 cm, base round, apex acute, margin dentate, hairs more beneath, sparse below, haris 6- 8 celled.	Leaves ovate, *c.*4 X 3 cm, soft felted, base rounded, apex acute, margin dentate, , hairs 5- celled.
Petiole 0.2 cm long, hairs 6- 9 celled.	Petiole 2.5 cm long, hairs 5- celled.
Infloresence single terminal spike upto 3.5 cm long, hairs 6- celled.	Infloresence single terminal spike upto 3 cm long, hairs 5- celled.
Calyx tubular, 10- veined, glabrous inside, densely hairy outside, *c.* 0.4 X 0.3 cm, teeth glabrous inside, hairs 4- 5 celled.	Calyx tubular, 10- veined, densely hairy outside, *c.* 0.58 X 0.48 cm, teeth hairy within, hairs 5- celled.
Corolla upto 0.8 cm long, upper lip, *c.* 0.2 cm, glabrous, lower lip 0.2 X 0.1 cm, central lobe, 0.1 X 0.1 cm.	Corolla upto 0.86cm long, upper lip hairy, 0.25 cm, lower lip *c.* 0.3 X 0.2 cm, central lobe, 0.14 X 0.11 cm.
Filaments at different heights, lowest *c.* 0.5 cm and highest 0.7 cm long, tomentose at base.	Filaments at different height, lowest 0.45 cm and highest *c.* 0.7- 0.85 cm long, tomentose at base.
Style *c.* 0.6 cm long, stigma *c.* 0.2 cm.	Style *c.* 0.12 cm long, stigma *c.* 0.12 cm.
Nutlets elliptic.	Nutlets oblong.



Pogostemon rajendranii **R. Sasi & R. Shivalingam Sp. nov. : A. Flowering Twig, B. Bract, C. Entire Flower, D. Calyx, E. L.S. of Flower, F: Style, G. Nutlet.**

Flr: Dec.- Apr.; **Fru:** Mar.

Ecology and Habitat: Lithophytic on exposed dry rock crevices in tropical evergreen forests at an altitude between 2600 - 2876 m.

Distribution: INDIA: Tamil Nadu. Endemic.

Status: Rare.

Etymology: This new species is named after Professor Dr. A Rajendran, who has greatly contributed to the Indian Verbenaceae.

Conservation measures: This species is extremely rare and known only from type locality with limited population density. More localities with analogous habitat condition have to be surveyed for this species. This should be included in the Red Data Book of Indian plants. The known localities have already covered by Nilgiri Biosphere Reserve. However, the new plant should be propagated by using biotechnology method and also to conserve under *ex- situ* conditions.

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