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Research Article

Occurrence of *Lepidagathis clavata* Dalzell (Acanthaceae) an endemic species of the Western Ghats, in the lateritic plateau of Northern Kerala

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Abstract: *Lepidagathis clavata* Dalzell is not so far reported from Kerala. Studies in the lateritic plateau of Northern Kerala showed the occurrence of this Western Ghats endemic species.

Key words: *Lepidagathis clavata,* Laterite, Acanthaceae.

Introduction

The genus *Lepidagathis* Willd. is mainly distributed in the tropical and warmer parts of the world [7]. In India, it is represented by 24 species and 8 varieties [4, 5] and 18 species and 5 varieties in the Western Ghats [4, 9]. Among them 8 species including *Lepidagathis benojiana* and 3 varieties occur in Kerala [4,10]. *Lepidagathis clavata* Dalzell was originally described by Dalzell based on a collection from the Chorla Ghat ('Ghaut') in the Sahyadri Mountains in Karnataka (Belgavi District, then part of Bombay Presidency) [3]. Kolte *et al.* rediscovered the species after a lapse of 166 years from Chorla Ghat, the type locality, Chaukul plateau in Maharashtra and lectotypified [6] the name.

During an exploratory survey conducted in the slopes of a lateritic hillock of northern Kerala found a small population of *Lepidagathis clavata* Dalzell. The present finding assumes significance, as it testifies the occurrence of the species in Kerala, particularly in the lowland lateritic/ferricretes, one of the threatened ecosystems. The locality is in the proximity of Ananthapura Lake Temple, Kumble in Kasaragod district of Kerala State at the geographical coordinates of 12° 35.027' N and 74° 59.175' E.

The nomenclature, description, illustration and other details are given below to facilitate easy identification.

Nomenclature

Lepidagathis clavata Dalzell in Hooker's Kew J. Bot. 2: 340.1850; C. B. Clarke in Hook. f., Fl. Brit. India 4: 518. 1885; T. Cooke, Fl. Bombay Pres. 2: 472. 1958 (Repr. ed.); Santapau, Univ. Bombay Bot. Mem. 2:73. 1952; Moorthy in Singh *et al.,* Fl Maharash. 2:645. 2001; Kolte *et al.*, Phytotaxa 265(3): 297-300. 2016.

Lectotype: India, Karnataka: Chorla Ghat [as 'Ghaut'], s. dat., Dalzell *s.n.* (K000950054, image!).

Erect, decumbent or prostrate perennial subshrub, 30-50 cm tall with woody root stock. Stems 4 - angled, woody, pubescent, branches zig-zag, terete towards base with prominent leaf scars, inter node 2.0–2.5 cm long. Leaves sessile, opposite, decussate, rigid- plicate, oblong-lanceolate, 2.0–2.5 x 0.6–0.8 cm, truncate at base, margin entire, c.5 mm long, sharply pointed spine at apex, sparsely bulbous, base hairy on upper surface and densely on lower surface especially on nerves; nerves 4–5 pairs, prominent.

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Figure 1. *Lepidagathis clavata* Dalzell: a. & b. Habitat & Habit; c. & d. Inflorescence & single flower; e. Woody root stock; f. Branch showing zig-zag stem; g. Leaf base - dorsal view; h. Spinescent leaf tip; i. Bract; j. Bracteole; k. Bracteole showing gland tipped hairs; l. Calyx; m. Corolla tube; n. Corolla tube split open; o. Stamen; p. Pistil; q. Style with hairs and stalked glands; r. Fruit; s. Young seed with retinacula.

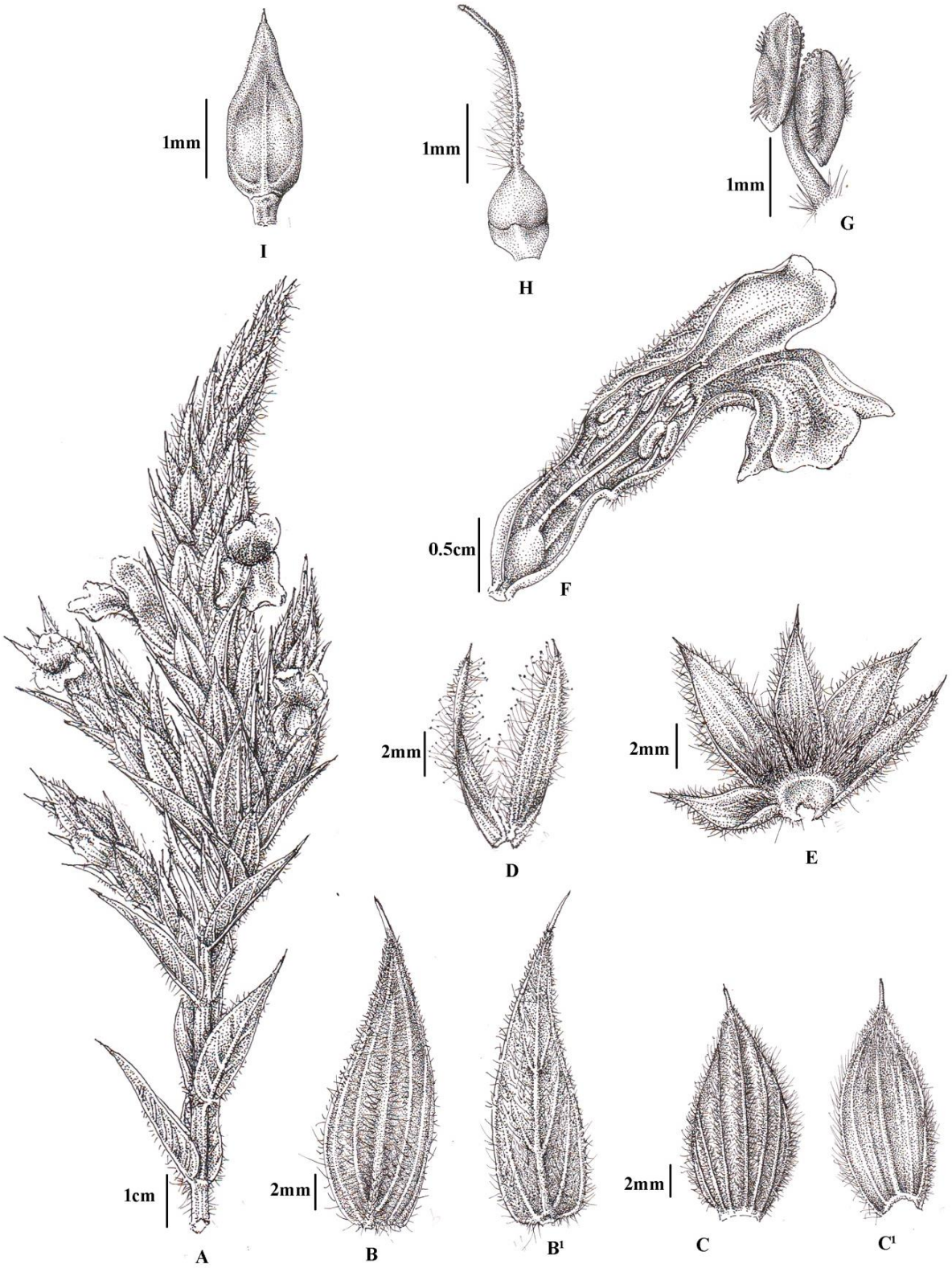

Figure 2. *Lepidagathis clavata* Dalzell: A. Inflorescence; B. & B1. Leaves; C.& C1. Bract; D. Bracteole; E. Calyx; F. Flower split open; G. Stamen; H. Pistil; I. Fruit. (Drawn by T. Shaju)

Spike terminal, solitary or branched, 5–9 cm long, oblong, pubescent. Bracts ovate, 1.3–1.5 x 0.6–0.7 cm, obtuse at base, c. 0.8 mm long spine at apex, 6–7 nerved, densely pubescent on veins at tips, long silky hairs at base inside. Bracteoles linear lanceolate, c. 1 x 0.25 cm, 5 - veined, glabrous outside, silky glandular hairy inside, spine scent at apex. Calyx 5- lobed, spinescent at apex, pubescent, with a tuft of long hairs at base. Corolla 1.3–1.6 cm long, deep pink, tube globular below, c. 0.5 cm long, glabrous outside, throat of corolla tube densely pubescent, abruptly expanded and 2-lipped; upper lip 2 - lobed, erect, reflexed, lobes broadly ovate; lower lip distinctly 3- lobed, sub equal, ovate- oblong, glabrous inside, pubescent outside. Stamens 4, didynamous, filaments glabrous, stout; anther 2-celled, cells oblong, opposite or one above the other, glandular hairy, dehiscing longitudinally. Ovary superior, bicarpellary, disc cup-shaped; style slender, long silky hairs intermixed with stalked glands at the lower half, puberulous above; stigma entire. Capsule compressed, conoid or oblong, c. 5 mm long, pointed, glabrous, 2 - seeded. Seeds 2, flat, greyish black, covered with golden yellowish hygroscopic hairs.

Flowering & fruiting: September–November.

Distribution & Habitat: The species is growing in small populations in open grassy slopes of the lateritic hillocks. These grasslands are highly seasonal and interspersed with other herbaceous plants and scrub jungles. Plants associated with *L. clavata* are *Fimbristylis ovata* (Burn. f.) J. Kern, *Eragrostis* sp., *Glyphochloa acuminata* (Hack.) W.D. Clayton, *Rhynchospora wightiana* (Nees) Steud., *Pogostemon quadrifolius* (Benth.) F. Muell., *Canscora diffusa* (Vahl) R. Br. ex Roem. & Schult., *Heteropogon contortus* (L.) P. Beauv. ex Roem. & Schult., *Arundinella mesophylla* Nees ex Steud., *Chrysopogon* sp. and *Ischaemum* sp. *etc.*

Specimens examined: India, Kerala: Kasaragod District, Ananthapura lateritic plateau, 12^0 35.027′ N, 74^0 59.175′ E, ± 103m, September 2018, *Shaju & Rijuraj*, *77528* (TBGT). India, Karnataka: Chorla Ghat [as 'Ghaut'], s. dat., Dalzell *s.n.* (K000950054, image!).

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References

1. Clarke CB, Acanthaceae, in Hooker JD, The Flora of British India, Volume 4, Reeve & Co. Ltd., London, 1885, 387-558.

2. Cooke T, The Flora of the Presidency of Bombay, Volume 2, Tailor & Francis, London, 1908, 391-398.

3. Dalzell NA, Contributions to the Botany of Western India Hooker's Journal of Botany and Kew Garden Miscellany, 1850, 2, 336-344.

4. Jithin KV, Jose PA, *Lepidagathis benojiana* sp. nov. (Acanthaceae) from the Western Ghats, Kerala, India Nordic Journal of Botany, 2017, 000, 001-004.

5. Karthikeyan S, Sanjappa M, Moorthy S, Flowering Plants of India-Dicotyledons, (Acanthaceae - Avicenniaceae), Volume 1, Botanical survey of India, Kolkatha, 2009, 1-62.

6. Kolte RR, Kambale SS, Ganansekaran G, Janarthanam MK, Rediscovery and lectotypification of *Lepidagathis clavata* (Acanthaceae), a steno- endemic species from the northern Western Ghats, India Phytotaxa, 2016, 265(3), 297-300.

7. Mabberley DJ, The Plant book, a portable dictionary of the vascular plants, Cambridge University Press, Cambridge, 1997, 402.

8. Moorthy S Acanthaceae, in Singh NP, Lakshminarasimhan P, Prasanna PV, Flora of Maharashtra state, Dicotyledones, Volume 2, Botanical Survey of IndiaCalcutta, 2001, 643-651.

9. Nayar TS, Rasiya Beegam A, Sibi M, Flowering Plants of the Western Ghats, India, Jawaharlal Nehru Tropical Botanic Garden & Research Institute, Thiruvananthapuram, Kerala, India, 2014, 933.

10. Santapau H, The Acanthaceae of Bombay Botanical Memoirs, 1952, 2, 71-75.

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