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Henckelia collegii-sancti-thomasii: a new species of *Henckelia* (Gesneriaceae) from Northeastern India

DIPANKAR BORAH[1], MOMANG TARAM[1], ALFRED JOE[2]* & SANDHYA VINCENT NEELAMKAVIL[3]
[1]*Department of Botany, Rajiv Gandhi University, Rono Hills, Doimukh 791112, Arunachal Pradesh, India. Email: dipankarborah085@gmail.com*
[2]*Department of Botany, St. Joseph's College (Autonomous), Irinjalakuda, Kerala, India- 680 121.*
[3]*Department of Botany, St. Thomas' College (Autonomous), Thrissur, Kerala, India- 680 001.*
**Corresponding authors. Email: thomas.alfredjoe@yahoo.in*

Abstract

Henckelia collegii-sancti-thomasii, a new species of *Henckelia* is described here from Nirijuli, Papum Pare district of Arunachal Pradesh, northeastern India. Detailed description, its habitat and ecology along with color photographs are provided.

Keywords: Arunachal Pradesh, Gesneriaceae, India, *Henckelia*, new species

Introduction

The genus *Henckelia* (1817: 402) was described by Sprengle and consists of about 65 species distributed in Sri Lanka, southern and northeastern India, Nepal, Bhutan, southern China, northern Vietnam, northern Laos and northern Thailand (Middleton *et al*., 2013; Möller *et al*., 2017; Sirimongkol *et al*., 2019). Earlier it was considered as a synonym of *Didymocarpus* and was resurrected from synonymy by Weber and Burtt (1998) and it was remolded to include *Chirita* sect. *Chirita Henckelia* sect. *Henckelia* (Webber *et al*., 2011). Presently, about 34 species present in India and 16 species are reported from the northeastern region (Möller *et al*., 2017; Krishna & Lakshminarasimhan, 2018). Recent field surveys and the examination of herbarium materials have revealed and described several new taxa of family Gesneriaceae from northeastern India, *viz*. *Boeica clarkei* Hareesh *et al*. (2018), *Didymocarpus moellerii* A.Joe *et al.* (2016: 57), *Lysionotus bijantiae* D.Borah & A.Joe (2018: 232) and *L. gamosepalus* W.T.Wang (1983) var. *biflorus* A.Joe *et al.* (2017: 337). In this paper, a new species of *Henckelia* from Arunachal Pradesh, northeastern India is described and illustrated with color plates. With this new species described herein, there are currently 17 species of *Henckelia* recorded from northeastern India.

Detailed studies including relevant literature (Clarke, 1874; Hooker, 1885; Wang *et al*., 1998; Sinha & Datta, 2016; Möller *et al*., 2017) and live and herbarium specimens at ASSAM, CAL, E and K (INDIA. Arunachal Pradesh: Manipur, 6000 ft, February 1906, *A. Meebold 5220* (CAL!); Assam: 1893, *G.Mann s.n.* (CAL!); Meghalaya: Khasi Hills, Griffith 3828 (K, image!, K0000858357); Nagaland: Naga Hills, 1936, *N.L.Bor 19819* (ASSAM!); CHINA. Yunnan: hills south of Tengyueh, 25ºN, 6000–7000ft, June 1912, *G,Forrest 8124* (K, image!, K000858358), W.Yunan, 25º30′N98º25′E, 7000ft, May 1931, *G,Forrest 29599* (E, image!, E00087433), W.Yunan, 25º30′, 6000ft, July 1919, *G,Forrest 18428* (E, image!, E00087434), W.Yunan, 25º30′, 7000ft, June 1925, *G,Forrest 26748* (E, image!, E00096811), Yunnan: hills south of Tengyueh, 25ºN, 6000–7000ft, June 1912, *G,Forrest 8124* (E, image!, E00135086), Yunnan: Shweli-Salwin divide, 25º40′, 9000ft, August 1919, *G,Forrest 18365* (E, image!, E00096814),) revealed that the population is similar to *H. speciosa* (Kurz, 1873: 195) D.J.Middleton & Mich.Moeller (Weber *et al*., 2011: 777), but differs in many attributes (Table 1). Hence, we describe it here as a new species.

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TABLE 1. Comparison of *Henckelia collegii-sancti-thomasii* and *H. speciosa*

Sl. No.	Characters	*H. collegii-sancti-thomasii*	*H. speciosa*
1.	Stem	8–12 cm long; white pubescent	Absent or upto 5 cm long; rust-brown pilose
2.	Laminae base	Cuneate	Cordate
3.	Laminae color	Green (full)	Purplish, mainly along the veins
4.	Peduncle	White pubescent	rust-brown pubescent
5.	Bracts	Ovate	Lanceolate
6.	Pedicel	Glabrous	Tomentose
7.	Calyx	5-lobed near the base or below the middle	Above to near middle
8.	Filaments	Puberulent	Glabrous
9.	Anthers	Glabrous	Pubescent
10.	Ovary	Glabrous	Puberulent

Taxonomy

Henckelia collegii-sancti-thomasii A.Joe, D.Borah, M.Taram & Sandhya ***sp. nov.***

Henckelia collegii-sancti-thomasii is morphologically similar to *H. speciosa* but can be easily distinguished by a combination of characters such as plants caulescent with 8–20 cm long stem (vs stems absent or sub-acaulis), laminae base cuneate (vs cordate), laminae color green (vs purplish, mainly along the veins), peduncle white pubescent (vs rust-brown pubescent), bracts ovate (vs lanceolate), pedicel glabrous (vs tomentose), calyx divided below the middle or near to middle (vs above the middle), filaments puberulent (vs glabrous), anthers glabrous (vs puberulent), ovary glabrous (vs puberulent) (Table 1.).

Type:—INDIA. Arunachal Pradesh: Papum Pare District. Nirijuli. 27º33′88.75″N 93º79′79.64″E, 22 October 2017, *Dipankar Borah 121991* (holotype, CALI!; isotypes, CALI!, ARUN!)

Terrestrial erect herb, stems 8–20 cm long, terete, pubescent, green. Leaves 11–26 cm long, opposite decussate, petioles 3–6 cm long, pubescent, green. Laminae 10–23 × 4.2–12 cm, ovate-lanceolate, oblique, apex acute to acuminate, base asymmetric and oblique, cuneate, margin crenate, dark green above and pale beneath, lateral veins 8–12 on each side, lamina pubescent on both sides. Inflorescences axillary or pseudo-terminal, 1–10 flowers from each axil. Peduncle 1.8–2.5 cm long, terete, cream or pale green, pubescent. Bracts 2, 0.5–0.6 × 0.3–0.4 cm, ovate, apex acute, margin entire, green, pubescent, persistent or not. Pedicel 1.7–3.3 cm long, terete, pale green, glabrous. Calyx 2.3–2.7 × 1.3–1.5 cm, 5-lobed, divided near to base or divided from below the middle, 1.6–1.9 × 0.3–0.4 cm, linear lanceolate, apex acute, pale green, wooly outside and glabrous within. Corolla 5–5.5 cm long, funnel-shaped, white, deep violet-purple towards apex with yellow-orange throat, pubescent outside and glandular hairy inside; corolla bi-lipped, upper lip 2, lower lip 3, deep violet-purple, lower lip bases with yellow color and two orange yellow lines with purple streaky margins towards the throat, lobes ovate with rounded apex, pubescent outside and glandular hairy within; corolla tube 3.3–3.8 cm, white with orange-yellow towards throat, pubescent outside and glandular hairy within. Stamens 2, 1–1.3 cm long, filament 0.8–1× 0.1 cm, cream towards apex, glandular hairy, base purple, dilated at the point of attachment or bulged out or globose at the point of attachment which appears like two extra globose structure just behind the lower lip in the front view of flower, anthers cream flat, with connective appendage, glabrous; staminodes 2, with anther-like apex, 0.5–0.7 cm long, white with purple stripe, curved. Disc annular, pale green. Pistil 2.9–3.1 cm long, pale green, ovary glabrous, style puberulent, stigma bilamellate. Capsule 6.3–7 cm long, linear.

Affinities:— The habit of *Henckelia collegii-sancti-thomasii* is similar to *H. speciosa*. However it is distinguished from it by the presence of a caulescent stem, laminae base cuneate, pedicel glabrous, bracts ovate, filaments puberulent, ovary glabrous and style puberulent.

Flowering and fruiting:—Flowering starts from August and fruiting ends in December.

Etymology:—This species is named after the prestigious St. Thomas' College (Autonomous), Thrissur, Kerala, India, which is one of the premier and oldest educational institutions in Kerala.

Distribution and Ecology:—Endemic to Arunachal Pradesh. *Henckelia collegii-sancti-thomasii* is known only from the type locality. The plant was found growing in the wet shady areas on sandy loamy soil, mixed with gravels. The

area of occurrence is estimated to be less than 3 km^2 and the population is thought to be less than 100. It was growing in association with *Steudnera assamica* Hooker (1893: 520), *Impatiens laevigata* Wallich (1831: 4753), *Boeica filiformis* C.B.Clarke (1874: 118), *Stacyphrynium placentarium* (Loureiro, 1790: 13) Clausager & Borchs. (2003: 672), etc.

Additional specimens examined (Paratypes):— INDIA. Arunachal Pradesh: Papum Pare, 8 km from Chimpoo, 300 m, 26 July 1994, *G.D. Pal 1763* (ASSAM!).

FIGURE 1. *Henckelia collegii-sancti-thomasii*: A. Habitat. B. Habit.

FIGURE 2. *Henckelia collegii-sancti-thomasii*: A. Flowering twig. B. Flower-front view. C. Bract. D. single flower – side view. E. Calyx. F. dissected corolla with stamens and staminodes. G. calyx with style and stigma. H. Pistil.

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