

Research Article

A New Record of *Henckelia* *infundibuliformis* for India From Arunachal Pradesh

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Henckelia infundibuliformis (W. T. Wang) D. J. Middleton & Mich. Möller is recorded as new record for the Flora of India from Arunachal Pradesh, India. Extended taxonomic description is provided for the species accompanied by photographs and ecology.

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Introduction

The genus *Henckelia* Spreng. with 79 species, is distributed in Sri Lanka, South and Northeast India, Nepal, Bhutan, S China, N Vietnam, N Laos and N Thailand (*vide* Gesneriaceae Resource Centre, Royal Botanic Gardens, Edinburgh). In India, there are basically two groups of species in *Henckelia*, corresponding to species previously belonging to *Chirita* sect. *Chirita* in the northeast and those of *Henckelia* sect. *Henckelia* in South India. The species of Northeast India along with the others found in Sri Lanka formerly attributed to *Chirita* sect. *Chirita* (Moller et al. 2017) are characterized by caulescent habit, leaves in whorls of 2 or 3, and orthocarpic capsules dehiscing along both the upper and lower sutures (Wood 1974; Moller et al. 2017). *Henckelia* Spreng. is the largest genus of Gesneriaceae in India, so far it is represented by 41 species (*Vide* GRC RBGE), of which, 25 species occurs in Northeast India (Sinha and Dutta 2016; Krishna and Lakshminarasimhan 2018; Borah et al. 2019; Kanthraj et al. 2020, 2023; Taram et al. 2020, 2021, 2022) and 16 species in South India (Janeesha and Nampy 2020; Mathew et al. 2022).

Materials and methods

While conducting routine botanical explorations for collections of Gesneriaceae in different parts of Northeast India we encountered several interesting specimen of *Henckelia* in flowers. After comparison with all the species found in India and neighboring regions using relevant literature (Wood 1974; Wang et al. 1998; Ranasinghe et al. 2016; Sinha and Datta 2016; Sirimongkol 2020), one of them are identified as new records for India and are reported here. Herbarium specimens were prepared following standard methods (Jain and Rao 1977) and deposited in the herbarium of the Rajiv Gandhi University, Arunachal Pradesh. Morphological observation and measurement of floral parts were carried out from fresh samples using a Stereo microscope (Stemi 508, Carl Zeiss) and photographed using a digital camera (Nikon D3300).

Taxonomic treatment

Henckelia infundibuliformis (W. T. Wang) D. J. Middleton & Mich. Möller, Taxon 60: 775. 2011. Type: Tibet, 1700 m a.s.l., 20th August 1974, Qinghai-Xizang expedition, collection no. 4437 (holo, E [E00265053])

Basionym: *Chirita infundibuliformis* W.T.Wang, Acta Phytotax. Sin. 17(1): 111 (1979).

Perennial caulescent herb. Stems erect or decumbent 20–60 cm long, rooting at base, internodes 5–9 × 0.5–0.8 cm, densely pubescent. Leaves opposite; petioles 1–6 × 1–3 mm, pubescent; lamina ovate to elliptic-oblong, 8–14 × 4–8 cm, apex acute, margins serrate, base cordate to oblique or round, pubescent both sides; lateral veins 9–13 pairs, sub-opposite. Inflorescence axillary, 1 or mostly 2-flowered cyme; peduncles 4–7 cm long, stout, terete, densely hairy; bracts 2, free, enclosing the flower buds, orbicular to broadly ovate, 1.5–2 × 2–3 cm, seemingly connate due to overlapping margins; apex acute, margin serrate, purplish pink, pubescent outside, glabrous inside, veins prominent, parallel convergent; pedicels 0.3–0.7 cm long, pubescent. Calyx campanulate, 2–3 cm long, 5-lobed, fused almost up to middle, purplish-pink or greenish-white; lobes lanceolate to triangular, apex acuminate, reflexed, margin entire, pubescent outside, glabrous inside. Corolla purple-red, 4.5–5.2 cm long, outside sparsely puberulent, inside glabrous or glandular hairy; tube nearly tubular, c. 4 × 1 cm, distinctly 2-lipped; throat with yellow and maroon stripes; lobes purple; adaxial lip c. 6 mm; abaxial lip c. 8 mm. Stamens strongly geniculate; filaments c. 1.1 cm, glanduliferous apically; knee distinct maroon; anthers fused by entire adaxial surfaces, c. 6 mm,

glabrous; staminodes 3, lateral staminodes c. 6 mm, central c. 1mm. Disk creamy white, c. 2mm high, margin irregular. Pistil 4–5 cm; ovary 1–1.5 cm, glabrous. Style puberulent; stigma deeply bilobed, c. 4 mm.

Phenology

July–September

Habitat and ecology

Grows on moist shaded areas at an elevation from 400–900 m asl in associations with *Viola* sp. (Violaceae), *Boeica filiformis* C.B.Clarke (Gesneriaceae), *Begonia handelii* Irmsch. (Begoniaceae), *Impatiens drepanophora* Hook.f. (Balsaminaceae), *Pilea umbrosa* Blume (Urticaceae), *Elatostemma* sp. (Urticaceae), ferns, liverworts and mosses.

Distribution

SE–Tibet, India (Arunachal Pradesh)

Specimen examined

India, Arunachal Pradesh, Upper Siang, Geku to Katan road, 550 m amsl, 5.08. 2022, Momang Taram–9725, Rajiv Gandhi University Herbarium

Notes

Chirita infundibuliformis was described by W. T. Wang (1979), based on specimens from the Tibet Autonomous Region. Later, Krishna and Lakshminarayan (2018) described *Henckelia pathakii* (2018: 397) based on specimens collected from Tuting, Arunachal Pradesh. While describing *H. pathakii*, the authors diagnosed it with *H. grandifolia* and *H. adenocalyx* as allied taxa. However they were not aware of *H. infundibuliformis* so far known from China. *H. pathakii* differed from all Indian species of *Henckelia* by cupular (infundibuliform) bracts forming a funnelform involucre, glabrous calyx divided up to middle, which are also shared by *H. infundibuliformis*. The difference observed from the protologue of *H.pathakii* and *H.infundibuliformis* are glabrous corolla in *H.pathakii* (which is erroneous as white pubescence can be observed in the photo plate provided in the protologue as well as

specimens collected from Siang by the present authors). But on observation in the field, we found the bracts are overlapping at margin, appearing connate in *H. infundibuliformis*, whereas in *H. pathakii* it is completely connate. Apart from *H. pathakii*, *H. infundibuliformis* is also similar to *H. urticifolia* in calyx texture, strongly reflexed calyx, corolla shape and colour however can easily separated by the shape of its bracts. This collection represents its first record from India.

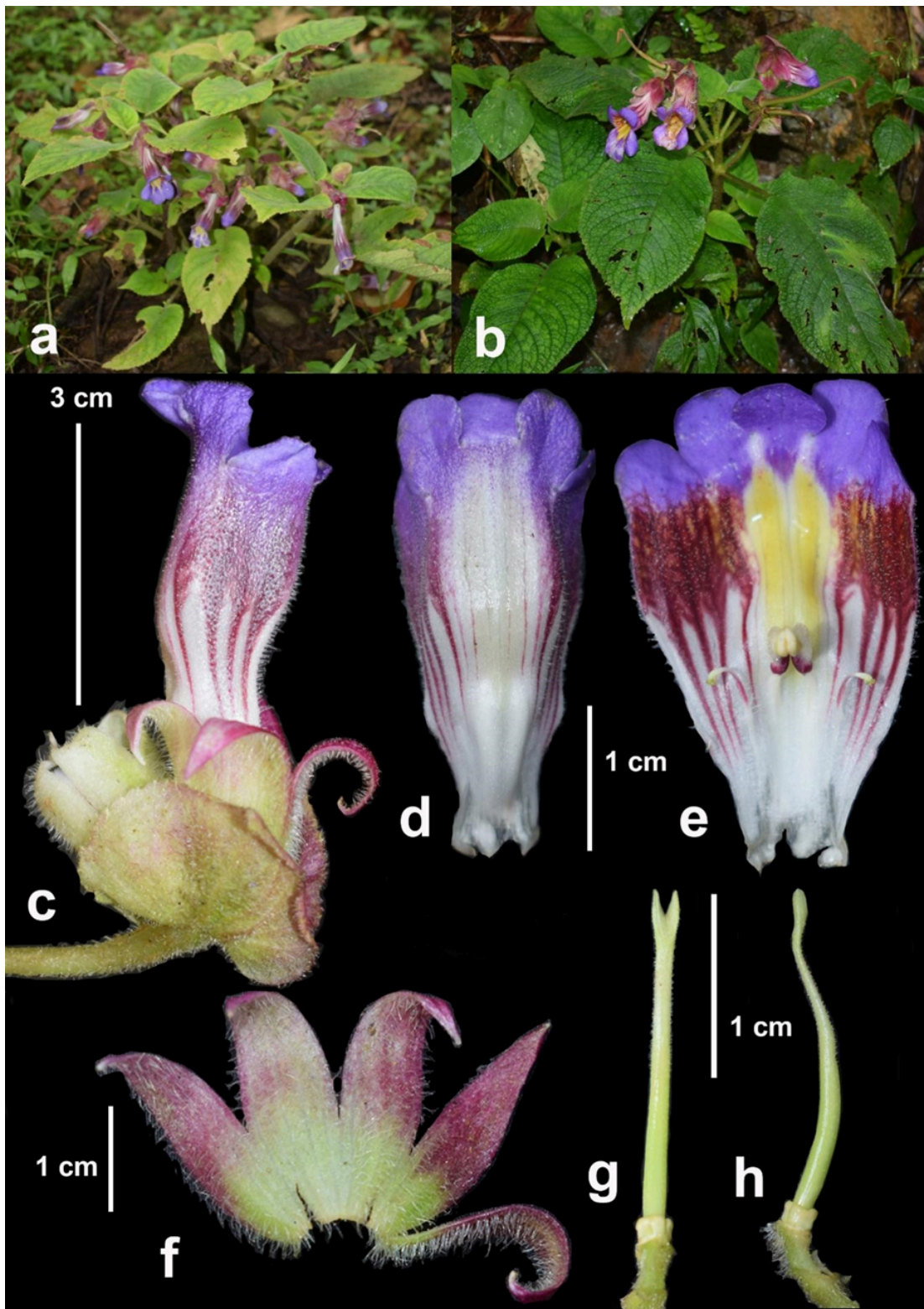


Figure 1. *Henckelia infundibuliformis* (W. T. Wang) D. J. Middleton & Mich. Möllera-b Habitat and habit. c Inflorescence with orbicular bracts. d-e corolla. f calyx. g-h pistil.

Statements and Declarations

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Data availability

Data will be made available to only on personal request.

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Conflict of interest

The authors declare that they have no conflict of interest.

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Declarations

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