



Acmella radicans var. *debilis* (Asteraceae): A new varietal record for Asia

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Abstract

Acmella radicans var. *debilis* (H.B.K.) Jansen, is reported first time for Asia from the Western Ghats of Maharashtra and Karnataka State, India. Detailed description, photo plates and illustrations of the variety are provided here.

Keywords: *Acmella radicans* var. *debilis*, India, Karnataka, Maharashtra, new record

Introduction

The genus *Spilanthes* Jacq. (Asteraceae–Heliantheae) has been divided into two sections, *Spilanthes* Jacq. and *Acmella* Rich. by Cassini (1822). Later, he improved the characterization of section *Acmella* Rich. and concluded that *Acmella* differs from *Spilanthes* only in having radiate heads and transferred many radiate species of *Spilanthes* into *Acmella* (Cassini, 1834). DeCandolle (1836) followed these suggestions and also described many new species in both sections *Spilanthes* and *Acmella*. Moore (1907) followed DeCandolle by assigning sectional status to *Acmella*. Recent studies (Jansen & Stuessy, 1980; Jansen, 1981) provided convincing morphological and chromosomal evidences for the recognition of *Acmella* and *Spilanthes* as distinct genera. Jansen (1981) has sought to resurrect *Acmella* Rich. as a distinct genus and to exclude *Spilanthes* Jacq. from most of the Old World areas including India.

Key to genera

- 1a. Pappus of stiff awns; achenes monomorphic, rhombic in cross-section, with a massive, stramineous, cork-like margin at maturity; leaves sessile; heads discoid **Spilanthes**
- 1b. Pappus of soft bristles or lacking; achenes dimorphic with the outer series 3-angled and inner series 2-angled in cross-section, without massive, stramineous, cork-like margin at maturity, leaves petiolate; heads radiate **Acmella**

In this paper, we preferred to follow Jansen (1985), to keep *Acmella* as more inclusive genus. During the course of floristic studies in Western Ghats, the authors have collected interesting specimens of *Acmella* from two localities in Karnataka and Maharashtra. Critical studies revealed the distinctness of the taxa (variety) from all other known members of Indian specimens of *Acmella* (Hooker, 1882; Chowdhery, 1995; Jagtap *et al.*, 2009; Soosairaj *et al.*, 2013; Das, 2013) and members of Asian *Acmella* (Chung *et al.*, 2008). Further examination with published literature (Jansen, 1985), matching with online images of herbarium specimens from GH, MO, NY, US and based on the expert opinion from Prof. Harold Robinson, from Smithsonian Institution, Washington, USA, the specimen is ultimately determined as *A. radicans* var. *debilis* (H.B.K.) Jansen. This taxon is hitherto unknown to Asia and is reported here as new varietal record for Asian flora. The specimens examined were deposited in the Herbarium, Department of Botany, Shivaji University, Kolhapur.

Key to the varieties of *Acmella radicans*

- 1a. Heads discoid; achenes lack corky margin at maturity; erect to ascending annuals var. **radicans**.
- 1b. Heads radiate; achenes with an evident cork-like margin; erect annuals var. **debilis**.

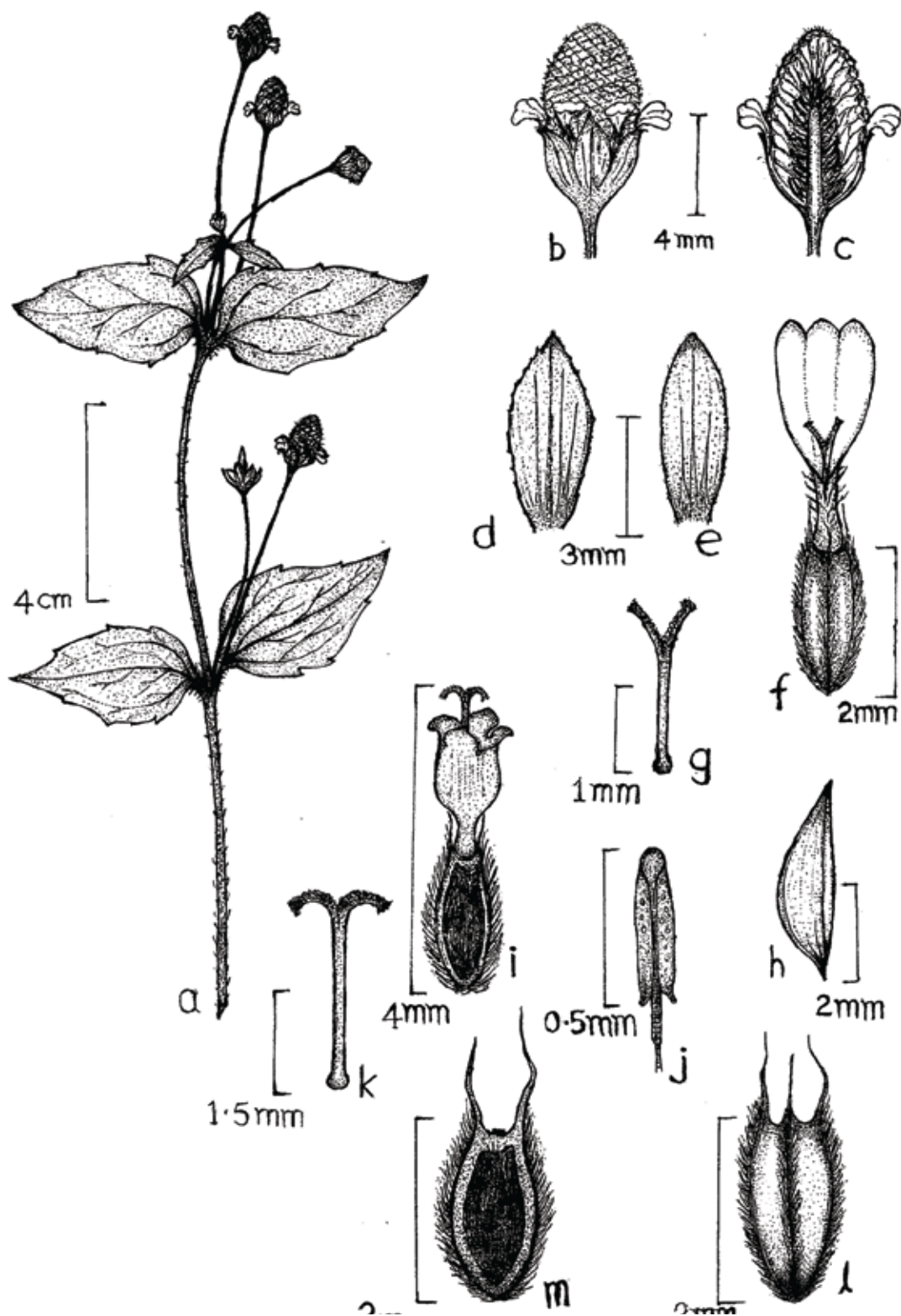


Fig. 1. *Acmella radicans* var. *debilis* (H.B.K.) Jansen: **a.** A portion of twig; **b.** Single head; **c.** V.S. of head; **d.** Outer involucre bract; **e.** Inner involucre bract; **f.** Ray floret; **g.** Carpel of ray floret; **h.** Palea; **i.** Disc floret; **j.** Anther; **k.** Carpel of disc floret; **l.** Achenes of ray floret; **m.** Achenes of disc floret.

Note: Intermediate forms between ray and disc corollas are known in *A. radicans* var. *radicans*. This suggests that the ray corollas of *A. radicans* var. *debilis* may have been secondarily derived from the outer series of disc corollas of var. *radicans* (Jansen, 1985)

Syst. Bot. Monogr. 8:72. 1985. *Spilanthus debilis* Humboldt, Bonpland & Kunth, nov. gen. sp. Ed. Fol. 4: 165. 1820. *Acmella debilis* (Humboldt, Bonpland & Kunth) Cassini, Dict. Sci. Nat. 24: 331. 1822. *Ceratocephalus debilis* (Humboldt, Bonpland & Kunth) Kuntz, Revis. Gen. pl. 1: 326. **Figs. 1, 2**

Acmella radicans var. *debilis* (H.B.K.) Jansen, Type: Not traceable.

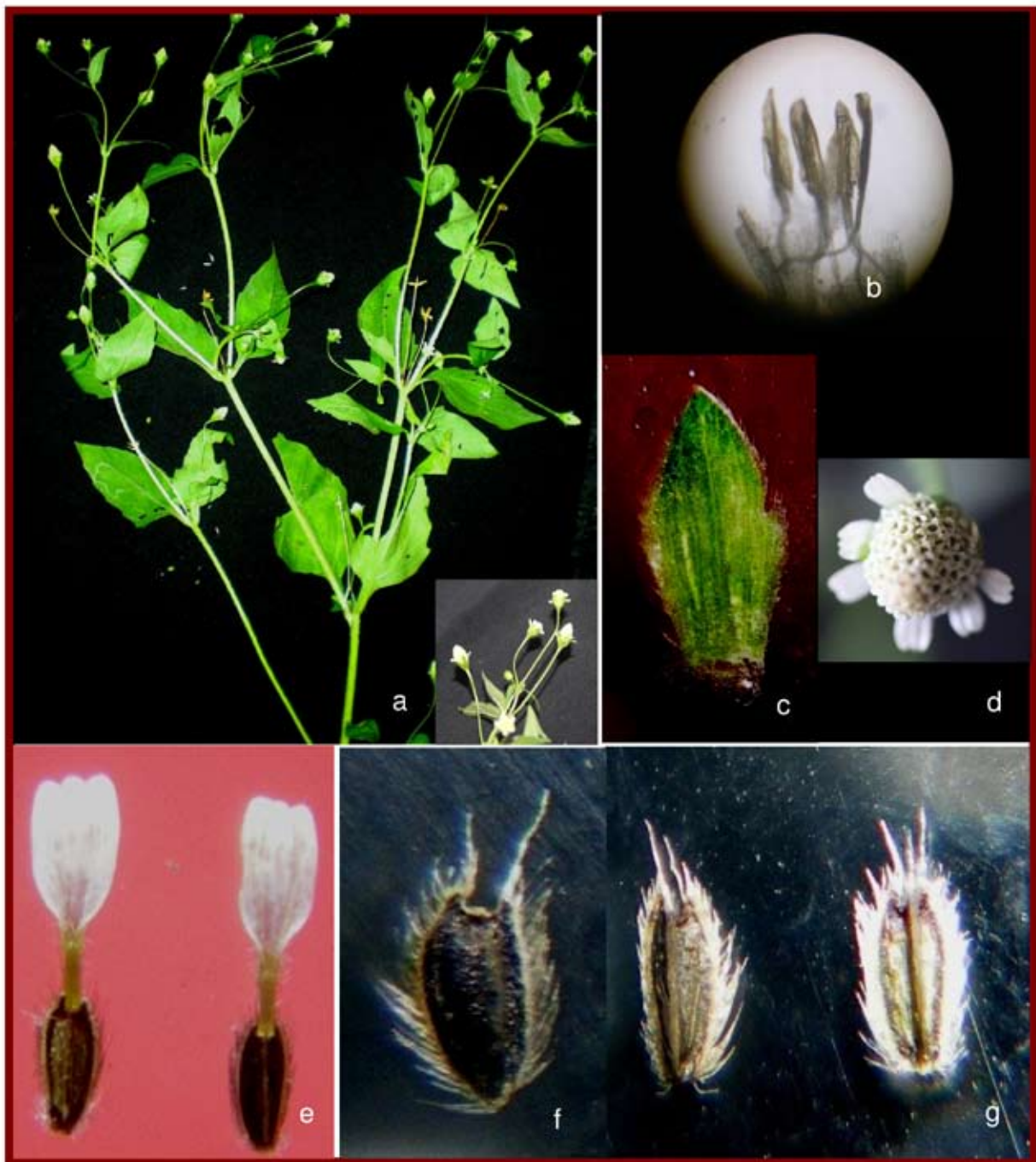


Fig. 2. *Acmella radicans* var. *debilis* (H.B.K.) Jansen: **a.** Habit; **b.** Stamens; **c.** Outer involucre bract; **d.** Single head; **e.** Ray florets; **f.** Achene of disc floret; **g.** Achenes of ray floret.

Annual herbs, c. 30 to 90 cm tall; stems terete, minutely pubescent. Leaves simple, opposite, triangular-ovate, acute, base obtuse, dentate or serrate, minutely ciliate, 2–7 × 0.5–3.5 cm, 3-nerved, sparsely pubescent on both surface; petiole c. 1 cm long, densely hairy. Heads white, radiate, subglobose, 4–5 × 8–9 mm, turning elongate-ovoid at maturity, axillary or terminal, borne on c. 5.5 cm long peduncles. Receptacles columnar, c. 5.5 mm long, paleaceous; palea conduplicate, embracing the florets, 4 mm long, glabrous, slightly ciliate at the apex. Involucral bracts 2-seriate; 6 outer broadly ovate, 4–5 mm long, 4–5 nerved, ciliate at margins; 4–5 inner linear, 3–4 mm long, 3-nerved, scabrid, ciliate at margins. Ray florets 5–6, female, usually shorter or only slightly exceeding the bracts; corollas 2.5–3 mm long, white to greenish white; corolla limb with 3-rounded lobes at apex, 2–2.5 mm long; corolla tube 1–1.5 mm long, densely hairy. Style arms short, truncate. Disc florets many, bisexual; corollas funnel-shaped, 1.5–2 mm long, white to greenish white; distinctly 4-lobed, lobes papillose, base bulbous. Anthers 4, lobes 0.5 mm long, sagittate, with a terminal appendage. Style arms short, densely, papillose c. 2 mm long. Achenes black 1.5–2 × 0.7–1 mm, dimorphic; achenes of rayed florets trigonous, 1.5–2 mm long, densely ciliate with straight-tipped hairs, with an evident cork-like margin; pappus with 2–3 subequal awns; achenes of disc florets flattened, ellipsoid, obcordate, 1.5–2 mm long, extensively ciliate with an evident cork-like margin; pappus of 2 subequal awns.

Flowering & Fruiting: September – January.

Habitat: In moist habitats along streams, roadside, in open and shady conditions.

Distribution: Hispaniola, the Lesser Antilles, Trinidad, throughout Venezuela (especially common in the Federal District), Colombia, Peru, and southwestern Bolivia, India (Maharashtra & Karnataka).

Specimens Examined: INDIA, Maharashtra, Kolhapur District, Amba, 26.10.2013, Jagtap 4545. Karnataka, Belghum District, Chorla Ghat, 15.12.2013, Bachulkar 4555 (SUK).

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