

A new variety of *Acmella uliginosa* (Asteraceae) from Kerala, India

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Abstract

A new variety *Acmella uliginosa* Sw. var. *pentamera* Reshmi & Rajalakshmi is described and illustrated from Kerala, India. Compare this species with available species of *Acmella* and cross checked with previous literature for authentication of this taxa, and its morphological features are compared with the currently recognized species *A. uliginosa*. The current paper provides a detailed description of the new taxa, photographs and illustrations are provided for the easy identification of the variety. The present study concluded that this taxa is new to science from Kerala, India.

Keywords: Asteraceae, *Acmella uliginosa* Sw. *pentamera*, Kerala, new variety

Introduction

The genus *Spilanthes* was first described by Jacquin in 1760^[4]. It has been divided into two sections *Spilanthes* Jacq. and *Acmella* Rich^[1]. Later improved the description of section *Acmella* Rich. and suggested that *Acmella* differs from *Spilanthes* merely in having radiate heads and moved many radiate species of *Spilanthes* into *Acmella*^[1]. De Candolle and Moore also followed this classification^[3, 6]. Moore in his revision of *Spilanthes*; described section *Spilanthes* with of 13 species with six varieties and forms; section *Acmella*, with 26 species and 18 varieties and forms^[6]. Jansen provided significant morphological and chromosomal evidences for the recognition of *Acmella* and *Spilanthes* as distinct genera^[4, 5]. The genus represented by 9 species and one variety in India^[7, 2].

Materials and methods

During the course of taxonomic investigation of genus *Acmella* the senior author have collected species of *Acmella* Rich. first from Bhudhanur of Alappuzha district and later from Panavila of Thiruvananthapuram. The critical examination on the collected specimen and with the perusal of relevant literature^[4, 8, 9, 10] proved this to be a species hitherto unknown, and is allied to *Acmella uliginosa* Sw. which is described and illustrated here as a new variety of *Acmella uliginosa*.

Taxonomy

Acmella uliginosa Sw. var. *pentamera* Reshmi & Rajalakshmi var. nov. (Fig. 1&2)

Type: India, Kerala, Alappuzha district, Bhudhanur 8.157 m, 20/07/2014, G R Reshmi 7130 (Holo-: KUBH!)

A. uliginosa var. *pentamera* is similar to *A. uliginosa* Sw. in flower colour and shape but dissimilar other distinguished characters such as habit, pentamerous disk floret, margin of leaves, height of plant, and flower size. The new variety is further distinguished by several other respects which are tabulated below (Table-1).

Erect; stem terete, puberulous, reddish brown; Leaves simple, opposite decussate, dark green, lanceolate, 14.5-15x 4.5-5.4

cm, acute at apex and broadly attenuate at base, deeply serrate margin, glabrous; petioles 2.9-3.6 cm, pubescent; Heads rayed, axillary, solitary, rarely 2-3 in each axil, 3.5-4.5mm across, conical; florets yellow; peduncle having 2.1-4.6 cm. Receptacle cup-shaped, 3-5 mm length, puberulous; Involucre bracts 1- seriate, pubescent, involucre 3.5-4.5x1.1-1.5mm, 5-7 in number, oblong, hairs along margins, subentire, obtuse at apex, pubescent; paleaceous, palea 2.5-3 mm, oblong, boat-shaped, concave, apex acute-subacute, puberulous. Flowers pungent when chewed, outer rayed and inner tubular. Ray florets: 6-7, female, 2-3 lobed ray florets, corolla-tube 1-1.2mm, tubular, limb 1-1.3 mm, yellow. Ovary 0.5-1.2mm long, trigonous, white; style 0.5-0.8 mm long, pale yellow; stigma bifid, curved; achenes 1.5-2 x 0.5-1.2 mm, brownish black, trigonous, truncate at the apex and obtuse at base, moderately ciliate with straight-0.1 mm long hairs, two unequal pappus bristle present, 0.3- 0.5mm. Disk florets: many, bisexual; corolla- tube 0.2-0.5 mm, limb 0.3-0.5mm, dilated above; lobes 5, much shorter than tube, papillose. Stamens 5, exserted; filaments 0.25-0.3 mm long; anthers brownish, connective prominent; Achenes brownish black, 2.11- 2.5x1.1-1.5 mm, laterally compressed, truncate at the apex and obtuse at base, moderately ciliate on both sides, cilia 0.25-0.35mm, two unequal pappus bristles present, 0.35-0.5mm. Under SEM achenes have rectangular cellular striations. Hairs present on the surface; pollen surface granulate irregular with ridges and furrows, spine tips acute, spine length ranges from 1.36-0.35 μ m. column short, basal cushion not prominent, sparsely punctuate.

Etymology

The specific epithet "pentamera" indicates the pentamerous disk florets.

Distribution, habitat, and phenology

Acmella uliginosa var. *pentamera* so far known from the type localities, Bhudhanur of Alappuzha district and Panavila of Thiruvananthapuram. This species grows in wet moisture land. Flowering from April- December, and occasionally at other seasons.

Comparison

Allied to *A. uliginosa* in having erect habit, lanceolate leaves, and black achenes, moderately to densely ciliate with straight-tipped hairs; pappus of 2 subequal or unequal bristles, but

mainly differs from it having yellow rayed head with pentamerous disk florets and having deeply serrate large leaves.

Table 1: Comparison of *A. uliginosa* var. *pentamera* with its allied species *A. uliginosa*

Sl. No	Characters	<i>A. uliginosa</i> var. <i>pentamera</i>	<i>A. uliginosa</i>
1.	Habit	Erect herb, more than 1m long	Erect herb with 15-60 cm high
2.	Stem	Reddish green coloured, puberulous	Reddish brown, puberulous
3.	Appearance of Lamina	Dark green	Pale green
4.	Lamina	14.5-15x 4.5-5.4 cm	5.5-7.5x 4.5-6cm
5.	Leaf margin	Deeply serrate	Slightly serrate
6.	Head	3.5-4.5mm diameter	2.5-3.4 mm diameter
7.	Disc floret	Pentamerous	Tetramerous

A. uliginosa var. *pentamera* Reshmi and Rajalakshmi var. *nov.* (Figures 1& 2)



Fig 1: (A) Habit of *A. uliginosa* var. *pentamera*; (B) Leaf of *A. uliginosa* and *A. uliginosa* var. *pentamera*

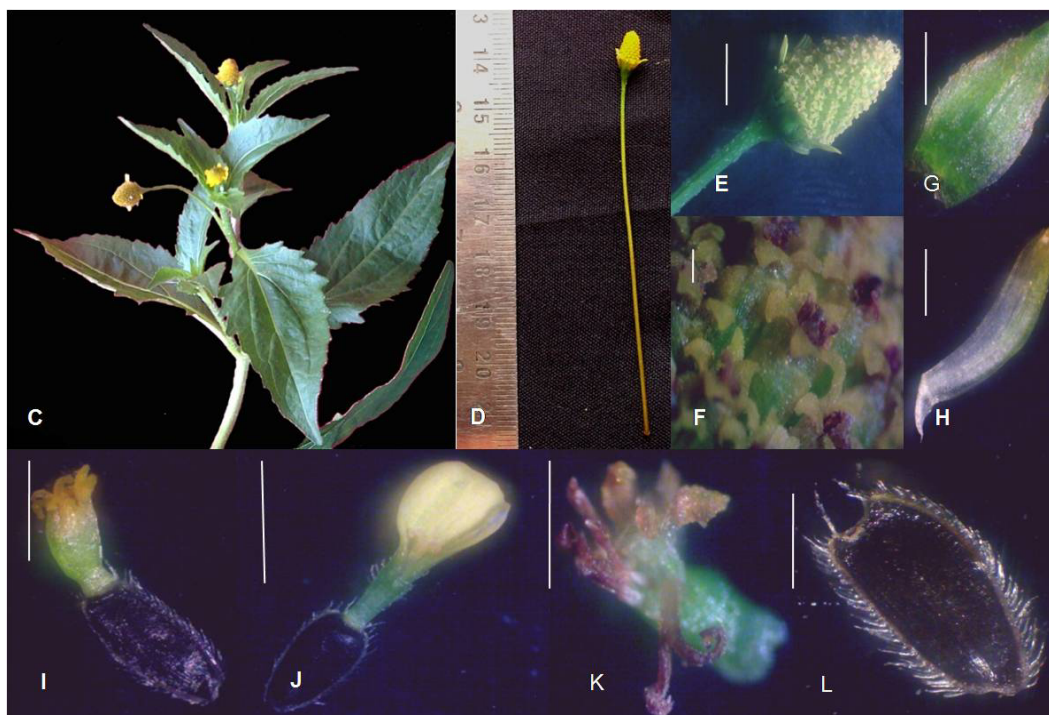


Fig 2: (C) *A. uliginosa* var. *pentamera* Reshmi and Rajalakshmi var. *nov.* Twig; (D) Inflorescence; (E) Head; (F) Pentamerous disk florets; (G) Involucre; (H) Palea; (I) Disk floret; (J) Ray floret; (K) Disk floret with both anther and stigma; (L) Cypsela (Scale bar 1mm)

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