

# A new species of *Tricholepis* (Asteraceae: Cardueae) from India

**Lal Babu CHAUDHARY**

Taxonomy & Biodiversity Division, National Botanical Research Institute,  
Lucknow – 226 001, India.  
dr\_lbchaudhary@rediffmail.com

**Arvind SAKLANI**

Quest Institute of Life Sciences, Nicholas Piramal India Limited,  
L.B.S. Marg, Muland (W), Mumbai – 400 080, India.  
asaklani@nicholaspiramal.co.in

## ABSTRACT

A new species, *Tricholepis raghavendrae* Saklani & Chaudhary (Asteraceae), is described and illustrated from Himachal Pradesh, India. It differs from other species in the genus in having petioled lower leaves and pinnatifid upper leaves, ciliate outer phyllaries, puberulous inner phyllaries, purple florets and free and scabrid pappus bristles.

## KEY WORDS

*Tricholepis*,  
Asteraceae: Cardueae,  
India.

## RÉSUMÉ

*Une nouvelle espèce de Tricholepis (Asteraceae: Cardueae) de l'Inde.*

Une nouvelle espèce d'Asteraceae, *Tricholepis raghavendrae* Saklani & Chaudhary, de Himachal Pradesh (Inde), est décrite et illustrée. Elle diffère des autres espèces du genre par les feuilles inférieures pétiolées et les feuilles supérieures pinnatifides, les bractées ciliées, les écailles pubérolentes, les fleurons pourpres et les aigrettes libres et scabres.

## MOTS CLÉS

*Tricholepis*,  
Asteraceae: Cardueae,  
Inde.

During the course of conducting botanical field work one of us (AS) collected some interesting material of *Tricholepis* DC. (Asteraceae: Cardueae) near Palampur in Himachal Pradesh, India. Careful analysis using the available litera-

ture (HOOKER 1881; RECHINGER 1980; HAJRA 1995 and CHAUDHARY & PANDEY 2001) showed that these specimens could not be assigned to any existing species within the genus and therefore represents a new species, which we describe here.

***Tricholepis raghavendreae* Saklani & Chaudhary,  
sp. nov.**

*Herbae erectae, 49-65 cm altae, caulis terminans in capitulo solitario. Folia infera aggregata ad basin caulis et longipetiolata, folia supera sparsa et sessilia, omnia pinnatifida. Phyllaria 4-6-seriata, marginibus pilosis, exteriora 2-2.5 × 2 mm, ovata, mediana 8 × 3 mm, interiora 13-15 × 1-2 mm, oblonga ad oblongo-lanceolata, extus minute puberula, intus sparsim puberula tantum ad medium. Flosculi purpurei, filamenta staminalia papillosa; achenium 3-4 × 1.5-2 mm, anguste obovatum, apice truncatum, areola basalis lateralis, pappus cum seta libera non decidua, barbellata.*

TYPUS. — *A. Saklani* 281, India, Himachal Pradesh, Palampur, Holta, 1310 m, 7 May 2001 (holo-, LWG!; iso-, BSD! and Herbarium Quest Institute of Life Sciences, Mumbai!).

Erect herbs, 49-65 cm high. Stem simple or with a few branches, almost terete, striate, terminating in a solitary inflorescence, pubescent comprised of hair unequal in size, oriented in different directions. Leaves crowded at the base of stem, sparse and alternate above; basal (radical) leaves up to 15.5 cm long (including petiole), lamina 9-14 × 2-2.7 cm, lanceolate or oblanceolate, base cuneate and generally pinnatifid, margins dentate, densely pubescent with spreading hairs, apex acute or acuminate, upper surface glabrescent to sparsely pubescent, lower surface pubescent; petiole variable in length depending upon lobing of leaves, 1.5-5.5 cm long, flat, grooved, densely pubescent beneath, glabrescent above, clasping the stem at base; cauline leaves up to 11.5 cm long, reduced towards apex, sessile, lamina lanceolate with acuminate apex, pinnatifid in basal part, segments 5-12 × 1-3 mm, linear to narrowly triangular, midrib and lateral veins pubescent and prominent on both surfaces. Capitula 1.5-2 × 3-4 cm after anthesis, solitary, terminal, homogamous, broadly campanulate; peduncle bracteate or ebracteate, up to 29 cm long, bracts when present only a few, minute to linear; receptacle setose; setae 2-4 mm long, linear, flat, glabrous. Phyllaries 4-6-seriate, imbricate, increasing in length and reduced in width inwards, outer ones 2-2.5 × 2 mm, ovate, blackish-brown, margins entire, thin, glabrous or finely pubescent in lower part, tomentose

towards the acuminate apex; middle phyllaries c. 8 × 3 mm, narrowly ovate, margins tomentose in upper part, apex acute or subacuminate; inner phyllaries 13-15 × 1-2 mm, oblong to oblong-lanceolate, outer surface minutely puberulous (except lower portion), inner surface sparsely puberulous (only in middle region), apex subacuminate, slightly crumpled. Florets purple, c. 21 mm long; corolla c. 19 mm long, tubular, with very narrow lower half, glabrous, with 5 lobes each 5-5.2 mm long, subequal, almost oblong, thickened along margins, acute at apex. Stamens c. 8.5 mm long, filaments 2-2.5 mm long, flat, papillose; anthers c. 6.5 mm long, sagittate at base, tail 0.5 mm long, reaching up to filament-collar joint. Style c. 20 mm long, narrowed below, hairy in upper portion, bifid at tip, branches ± flat, c. 1 mm long, stigmatic area slightly broader, faintly hairy. Achenes 3-4.2 × 1.5-2 mm, pale brown, narrowly obovate, faintly striate, glabrous, truncate at apex, apical rim dentate and with a pappus crown, basal areole lateral. Pappus bristles white, flat, barbellate, minute to 7 mm long, unequal in size, 4-5-seriate, shorter in outermost and longer in innermost rows, persistent, free, spreading. — Fig. 1.

DISTRIBUTION. — India (known only from the type collection from Himachal Pradesh). The new species is thus known from only 3 specimens representing a single gathering.

HABITAT. — Open, dry places in the Himalayan mountains; 1310 m.

FLOWERING TIME. — May.

ETYMOLOGY. — The new species is named in honour of Dr. R. RAGHAVENDRA RAO, National Botanical Research Institute, Lucknow in recognition of his significant contribution to our knowledge of taxonomy of the family Asteraceae.

The genus *Tricholepis* was revised recently by CHAUDHARY & PANDEY (2001), who recognised 10 species and one variety from the Indian region. The new species described here, presently known only from Palampur (India), was compared with all available materials at CAL, DD, BSD, BSI and LWG of the previously described taxa and also checked with the works of CLARKE (1876), HOOKER (1881), LINCZEWSKI (1954), RECHINGER

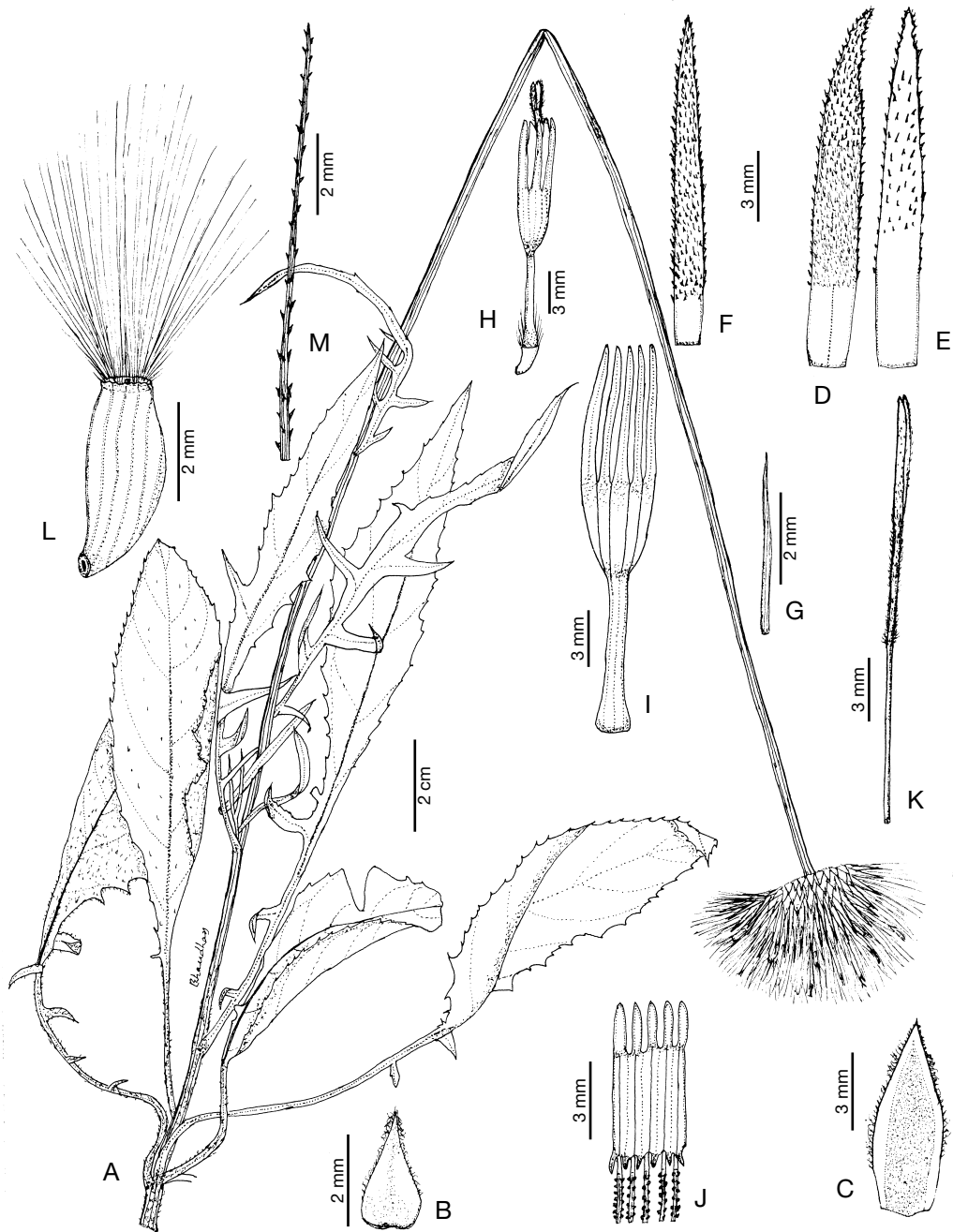


Fig. 1. — *Tricholepis raghavendrae* Saklani & Chaudhary: **A**, habit; **B**, outer phyllaries; **C**, middle phyllaries; **D-F**, inner phyllaries; **G**, receptacular seta; **H**, floret; **I**, corolla; **J**, stamens; **K**, style; **L**, achene with pappus; **M**, pappus bristle. Drawn by L.B. CHAUDHARY from Saklani 281 (LWG).

Table 1. — Comparison of *Tricholepis raghavendrae* with *T. elongata* and *T. stictophyllum*.

Characters	<i>T. elongata</i>	<i>T. stictophyllum</i>	<i>T. raghavendrae</i>
Habit	Erect, 50-150 cm long, branched, stem terete, striate, sparsely to densely puberulous.	Erect, 4-35 cm long, simple or branched from the base, stem up to 21 cm long, terminating in a solitary inflorescence, angular, grooved, glabrous to glabrescent.	Erect, 49-65 cm long, simple or with a few branches, stem 20 cm long, terminating in a solitary inflorescence, almost terete, striate, pubescent.
Leaf	2-8.5 × 0.2-1.8 cm, cauline, subsessile, lanceolate or linear in upper portion, dentate to serrate or pinnatifid along margins, acute with a spiny structure at apex, glabrous to minutely puberulous above, tomentose below.	2-11 × 0.4-1.3 cm, crowded at base of stem, sparse above, sessile, linear to linear oblong, entire or irregularly wavy along margins, acute to acuminate at apex, glabrous.	11.5-15.5 × 2-2.7 cm, crowded at base of stem, sparse above, distinctly petioled below (petioles 1.5-5.5 cm long), sessile above, lanceolate or oblanceolate, pinnatifid at base and dentate along margins, acute or acuminate at apex, glabrous to sparsely pubescent above, pubescent below.
Capitulum	Almost sessile.	With 3-12.5 cm long peduncle.	With c. 29 cm long peduncle.
Phyllary	Outer ones c. 5 mm long, narrowly ovate with more acuminate apex, glabrous; inner ones c. 13 × 1 mm, linear oblong with acuminate apex, pubescent towards apex on outer surface. Glabrous on inner surface.	Outer ones c. 4.5 × 2 mm, ovate with acuminate apex, thick, glabrous or very minutely pubescent along margins near apex; inner ones c. 11 × 4 mm, linear oblong with narrow and flexuous apex, pubescent towards apex on outer surface, glabrous on inner surface.	Outer ones 2-2.5 × 2 mm, ovate with acuminate apex, hairy along margins and apex; inner ones 13-15 × 1-2 mm, oblong or oblong-lanceolate with subacuminate and slightly crumpled apex, minutely puberulous on outer surface, sparsely puberulous on inner surface only in middle region.
Corolla	Pale yellow, c. 22 mm long.	Purple, 15-16 mm long.	Purple, c. 19 mm long.
Achene	c. 4 × 1.5 mm, oblong, truncate at apex, smooth.	c. 5.5 × 1.5 mm, oblong, truncate at apex, distinctly many-ribbed.	3-4.2 × 1.5-2 mm, narrowly obovate, truncate at apex, faintly striate.
Pappus	4-20 mm long, shorter in outer whorls, connate at base, deciduous, barbellate.	Up to 14 mm long, shorter in outer whorls, free, persistent, feathery.	Minute to 7 mm long, shorter in outer whorls, free, persistent, barbellate.

(1980), DITTRICH (1993), PANDEY & CHAUDHARY (1994), HAJRA (1995) and CHAUDHARY & PANDEY (1995, 2001). Our comparison showed that the collection from Palampur could not be assigned to any of the recognised species and thus represented a new taxon.

In gross morphology, the new species described here resembles *T. stictophyllum* Clarke and *T. elongata* DC. but distinctly differs from the former in its leaves, phyllaries and pappus, and from the latter in its phyllaries, pappus and flower colour (Table 1). It belongs to sect. *Ochanopappus* which is distinguished by having pappus hairs that are scabrid and free rather than connate at base, and by florets that are purple.

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