

***Synotis managensis* (Senecioneae: Asteraceae) – a new species from Manang, Central Nepal**

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Abstract

A new species, *Synotis managensis* (Senecioneae: Asteraceae), from Manang, Central Nepal is described and illustrated. The species is characterized by its small dwarf shrubby habit, sessile leaves, lamina white tomentose below, fewer radiate terminal capitula with long peduncles and caudate anther base.

Key words: *Synotis managensis* sp. nov., Senecioneae: Asteraceae, Nepal flora .

INTRODUCTION

Synotis (C.B. Clarke) C. Jeffrey & Y. L. Chen is an important genus of Tribe Senecioneae Cassini of Asteraceae Berchtold & J. Presl (Compositae Giseke *nom. cons.*), which had been delimited from *Senecio* Linnaeus as a new taxon. The genus *Synotis* is confined to the Sino-Himalayan region and consists of erect or weakly scandent herbs or sub-shrubs characterized by woody rhizome, absence of radical leaves at the time of anthesis, calyculate involucre, flat receptacle, phyllaries not exceeding 15 and caudate anther base. Out of the 24 species of *Senecio* Linnaeus (Press *et al* 2000 & Hara *et al* 1982) from Nepal Himalaya, 11 species under the subgenus *Synotis* C.B. Clarke, lies under the genus *Synotis* (C.B. Clarke) C. Jeffrey & Y.L. Chen. Most of the species of the genus are being confined to the temperate and subalpine regions of the Central and Eastern Nepal, predominantly inhabiting the moist and shady places with the altitudinal gradients from 1300 m – 4440 m.

A plant with sessile leaves having few terminal capitula was discovered during the field visit at Manang in Central Nepal, a remote Trans-Himalayan range, the area that is yet to be explored. The plant was critically studied and verified with the probable species perceived from the literature (De Candolle 1838; Hooker 1882; Jeffrey & Chen 1984; Hajra *et al* 1995; Grierson & Long 2001; Chen *et al* 2011) and online available specimens (apps.kew.org,herbcat; www.linnean-online.org; www.cvh.org.cn) and based on morphological characters, revealed it hitherto as undescribed species with close relationship with *Synotis kunthiana* (Wallich *ex* DC.) C. Jeffrey & Y. L. Chen [Basionym: *Senecio kunthianus* Wallich *ex* DC.] from Kamaon, India. Hence, the species herein is confirmed

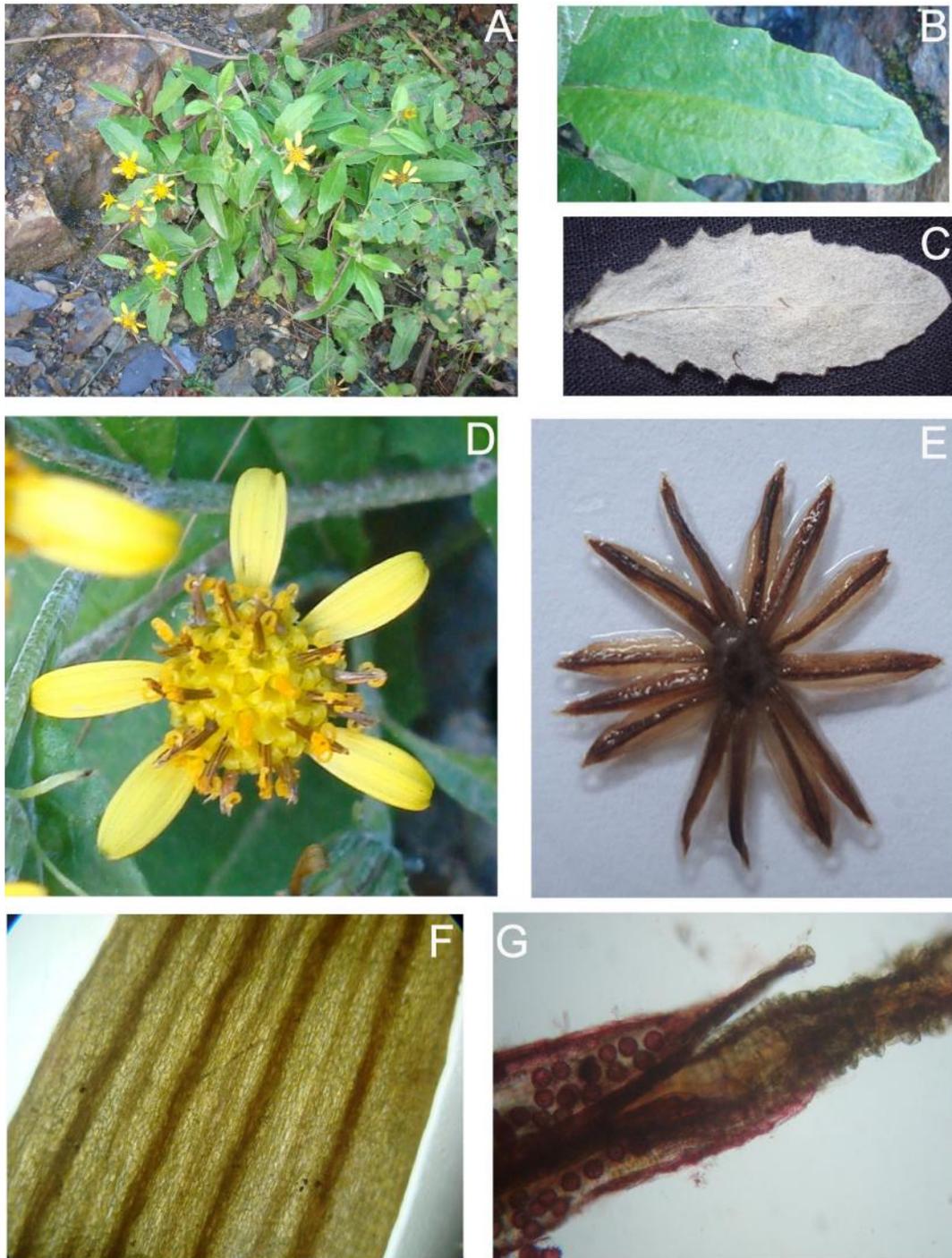


PLATE – I. *Synotis managensis* S. Joshi, K. Shrestha & D. Bajracharya. A. Habit and Habitat B. Adaxial leaf surface; C. Abaxial leaf surface; D. Capitulum; E. Involucre (opened); F. Portion of ray floret corolla with nerves; G. Anther base

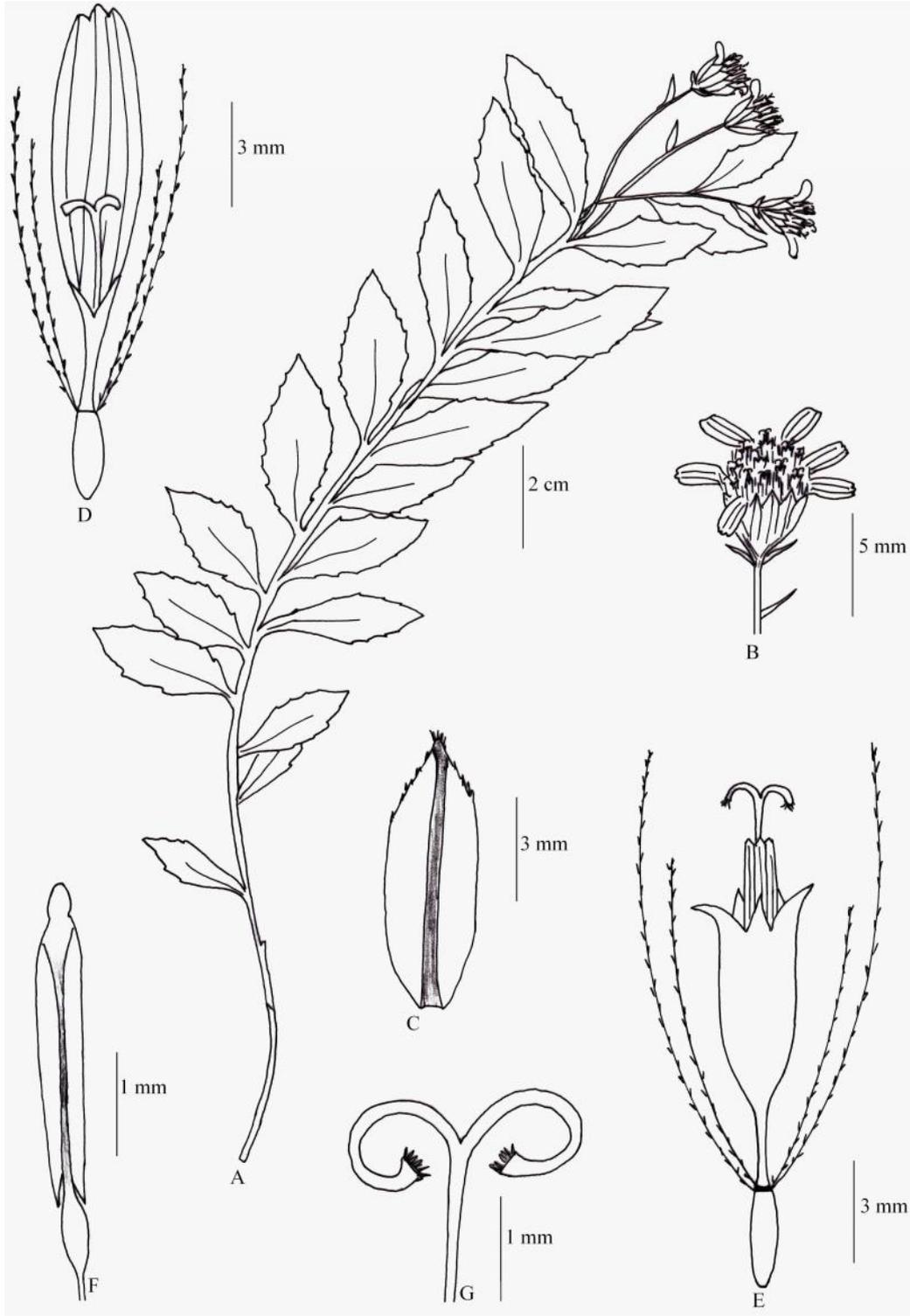


PLATE - II. *Synotis managensis* S. Joshi, K. Shrestha & D. Bajracharya. A. Flowering branch; B. Capitulum; C. Phyllary; D. Ray floret; E. Disc floret; F. Anther; G. Style branches.

542 *Synotis managensis* sp. nov. from Manang, Central Nepal as new species of *Synotis* (C.B. Clarke) C. Jeffrey & Y. L. Chen from Himalayan region and is described and illustrated.

Taxonomic Treatment

Synotis managensis S. Joshi, K. Shrestha & D. Bajracharya. sp. nov.

TYPE: Manang, Central Nepal, 28°38'15.6" N, 84°05'29.6" E, 3432 m, September 22, 2012, Sudha Joshi SJ1010 (Holotype, KATH; Isotype, TUCH). **Plates I & II.**

Undershrub to 15.0–20.0 cm high, stem unbranched or with few branched, corymbose, sparsely tomentose, cylindrical and finely striated. Leaves alternate, simple, sessile; lamina elliptic, 2.0–4.7 cm × 0.6–1.4 cm, adaxially green, abaxially densely white tomentose, irregularly dentate-mucronate, acuminate, base rounded-cuneate. Capitulescence lax, solitary or with 2 or 3 branches terminating in capitula from uppermost nodes, peduncle 1.5–3.0 cm long, arachnoid white tomentose, peduncular bracts 1–3, ca. 0.5 cm long, underside arachnoid tomentose. Capitula radiate, calyculate; calycular bracts ca. 4, spatulate, ca. 0.7 cm long, underside sparsely tomentose, tip papillate; involucre campanulate; phyllaries 13, uniseriate, subequal, linear to subulate, ca. 8.04 × 9.0–5.2 mm, free, adaxially smooth, abaxially sparsely tomentose, stereom distinct, margins scarious or some non-scarious, tip acute, papillate; ray florets 5 to 7, but usually 5, pistillate, well exerted from involucre; corolla yellow, ligulate, tube linear, ca. 2.9 mm long, glabrous, limb oblong, ca. 2.4 × 8.6 mm, flat, glabrous, 4-nerved, apex tridentate, style branches recurved, minutely papillate all over, ovary cylindrical, smooth, ca. 0.7 × 2.7 mm, pappus copious, barbed, unequal, white; disc florets 16–22, bisexual, corolla yellow, tubular, ca. 11.5 mm long, tube ca. 2.3 mm long; limb ca. 6.2 mm, campanulate, apically 5-dentate, teeth triangular, apex acute; anthers ca. 3.0 mm long overall, anther base caudate, tail ca. 0.3 mm long, shorter than filament collar, filament collar balusterform with slightly swollen basal part, ca. 0.7 mm, apex appendaged, tip ovate obtuse, ca. 0.4 mm; ovary oblong, glabrous, ca. 0.7 × 3.0 mm, style branches recurved, papillate, apex truncated, anthemoid; pappus copious, barbellate, unequal, white. Achenes oblong to cylindrical, glabrous; pappus copious, persistent, white.

Etymology: The new species is named after its type locality Manang in Central Nepal, a remote Trans-Himalayan range of Nepal adjacent to Tibetan border.

Distribution and Ecology: *Synotis managensis* is now known only from the type locality, Manang in Central Nepal, on the way to Khansar at North facing slope on moist shady habitat in the crevices of stones and around the Ganga Purna Lake, Manang, on the gravels. The population at the moment seems to be healthy and reproducing well. Though the locality is under the Annapurna Coservation Area, an protected area, the population on the way to Khansar is less frequent occurring in few patches only and the construction works around the Ganga Purna lake may likely to destroy the species in the area.

DISCUSSION

Synotis managensis is found to be closely related to *Synotis kunthiana* (Wallich ex DC.) C. Jeffrey & Y. L. Chen from Kamaon, India. Both the species are undershrub with underside of leaves white tomentose, branching if present corymbose, more or less equal number of ligules and caudate anther bases. However the new taxon is more dwarf in habit and has sessile leaves, leaves smaller in size, solitary capitula from the axile of uppermost leaves or 2–3 from uppermost leaves, long peduncles, more number of sparsely tomentose phyllaries, more number of disc florets and pure white pappus in contrast to short petiolated leaves,

larger sized leaves, dense corymbose inflorescence, shorter peduncles, less number of glabrescent phyllaries, less number of disc florets and yellowish-white pappus of *S. kunthiana* (Wallich *ex* DC.) C. Jeffrey & Y.L. Chen. These two species has been compared in Table 1 for better understanding.

Table 1. Comparisons between *S. managensis* and *S. kunthiana*

Character	Taxon	
	<i>S. managensis</i>	<i>S. kunthiana</i>
Habit	Dwarf under shrub	Under shrub
Leaf stalk	Sessile	Short petioled (0.5 – 1.0 cm)
Leaf size	2.0 – 4.7 × 0.6 – 1.4 cm	1.0 – 7.0 cm × 1.0 – 3.0 cm
Inflorescence	Lax, solitary or 2 – 3	Densely corymbose
Peduncles	15.0 – 30.0 mm	3.5 – 5.0 mm
Phyllaries	13	5 – 8
Phyllaries surface	Sparsely tomentose	Glabrescent
Disc floret	16 – 22	7
Achenes	Glabrous	Glabrous to minutely pubescent
Pappus	Pure white	Yellowish white

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