

Rediscovery of *Saussurea andryaloides* (Asteraceae: Cardueae) from Uttarakhand, India

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Abstract: *Saussurea andryaloides* (DC.) Sch.Bip. is rediscovered after a gap of 125 years from Uttarakhand. A brief description and illustration is provided here for easy identification.

Keywords: India, Rare, Recollection, *Saussurea andryaloides*, Uttarakhand.

Introduction

Saussurea DC., one of the species rich genera of the tribe Cardueae (Asteraceae), is represented by c. 498 species in the world (Raab–Straube, 2017). The genus includes c. 62 species in India (Hajra, 1998; Butola & Samant, 2011), however, the diversity is insufficiently inventoried.

During a botanical exploration to the high elevation region of Chopta–Tungnath, Uttarakhand in the Central Himalaya in 2017, the authors came across an interesting specimen of the genus *Saussurea*. After critical examination by consulting protologue (de Candolle, 1838), type specimen and literature (Clarke, 1876; Hooker, 1881; Hajra, 1998; Shi & Raab–Straube, 2011), it was identified as *S. andryaloides* belonging to the sect. *Strictae* C.B. Clarke. The plant was originally described by de Candolle (1838) as *Aplotaxis andryaloides* DC. based on Royle’s collection from northwest India. It was later transferred to the genus *Saussurea* by Schultz (1846). A thorough survey of literature and herbarium consultation at BSD, DD and KASH, it was found that the taxon has not been collected since 1893 in India despite various surveys conducted in the regions by a number of botanists. Also the recent records of this taxon in the region by various workers (Dhar & Kachroo, 1983; Chowdhery & Wadhwa, 1984; Sharma & Jamwal, 1998; Uniyal *et al.*, 2007; Karthikeyan *et*

al., 2009; Pusalkar & Singh, 2012; Rai *et al.*, 2017) are not supported by recent collections.

Hajra (1998) in his revisionary work mentioned Duthie’s collection from Jammu and Kashmir and Kumaun (deposited at DD), which is now more than 125 years old. Hence the present collection marks a rediscovery of *S. andryaloides* after being unrecorded for more than a century. A brief description and illustration is provided here for easy identification of this taxon.

Saussurea andryaloides (DC.) Sch.Bip., *Linnaea* 19: 331. 1846. *Aplotaxis andryaloides* DC., *Prodr.* 6: 542. 1838. *Lectotype* (designated by Lipschitz 1979): NW INDIA, *s.loc.*, *s.d.*, J.F. Royle *s.n.* (G00204471 image!).

Saussurea andryaloides (DC.) Hook.f. & Thomson ex C.B. Clarke, *Compos. Ind.* 227. 1876, *nom. illeg.* Figs. 1 & 2

Perennial, acaulescent herbs, up to 3 cm tall. Caudex simple, covered with scars of old leaves. Leaves in rosette, shortly-petioled; lamina linear,



Fig. 1. *Saussurea andryaloides* (DC.) Sch. Bip.: In bloom (Photo: S. Kasana).

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runcinate, lobes recurved with spiny apex, adaxially green, pubescent, abaxially densely tomentose. Capitula solitary in rosette of leaves, 1.5–2.0 cm in diam., 2–2.5 cm tall. Phyllaries tri-seriate, purplish-red, tomentose, outer ones acuminate at apex, middle ones ovate, acuminate at apex, inner ones lanceolate, acute at apex. Pappus *c.* 1 cm long, uni- or bi-seriate, pale brown, connate at base into a ring, caducous as a whole. Florets numerous, corolla 1.3 cm long, tube *c.* 7 mm long, limb (including lobes) *c.* 5 mm long, purplish-red, glabrous. Anthers *c.* 7.5 mm long, tails woolly, fimbriate. Achene 3.5 mm long, cylindrical, brownish, glabrous, distinctly ribbed, with a short crown at apex.

Flowering & fruiting: August–October.

Ecology & habitat: Grows in alpine Himalaya, at an elevation ranging from 3200 to 5400 m. The species was found to be sparsely distributed and only few individuals were recorded.

Distribution: China, India (Himachal Pradesh, Jammu & Kashmir, Sikkim, Uttarakhand) and Pakistan. In all relevant literature, the species was reported only from northwest Himalaya in India. However, during the present investigation it was found that it has also been collected from Sikkim by Hooker (P00258217), which forms a new addition to the Flora of Sikkim.

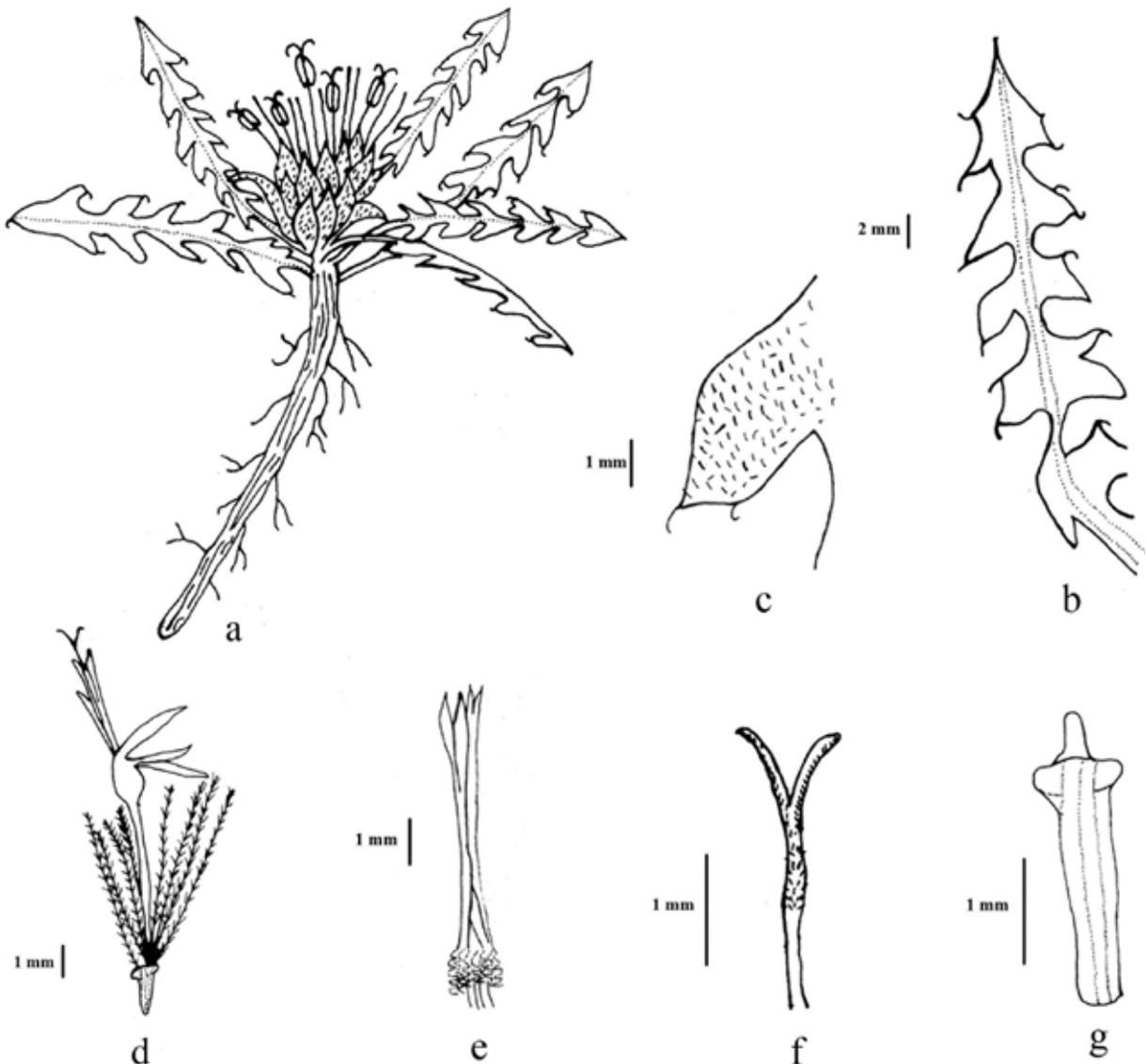


Fig 2. *Saussurea andryaloides*: a. Habit, b. Leaf, c. Enlarged portion of leaf with tomentose adaxial surface, d. Floret, e. Androecium, f. Stigma, g. Cypsela. (S. Kasana 1731, DUH).

Specimens examined: INDIA, **Uttarakhand**, Rudraprayag district, Tungnath, 3421 m, 30°29'24.83"N, 79°13'1.89"E, 03.10.2017, *S. Kasana 1716, 1717* (DUH); Tungnath, 3425 m, 30°29'25.87"N, 79°13'3.71"E, 03.10.2017, *S. Kasana 1731* (DUH).

Conservation status: *Saussurea andryaloides* is widely distributed in China but is reported to be Rare in India and Pakistan (Butola & Samant, 2011). The narrow blooming period and small size of the plant might be the reason why botanists have overlooked or misidentified the species.

Note: Detailed study of live and herbarium specimens showed that degree of hairiness on leaves varies considerably. Plants with woolly and pubescent to tomentose leaves are observed.

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