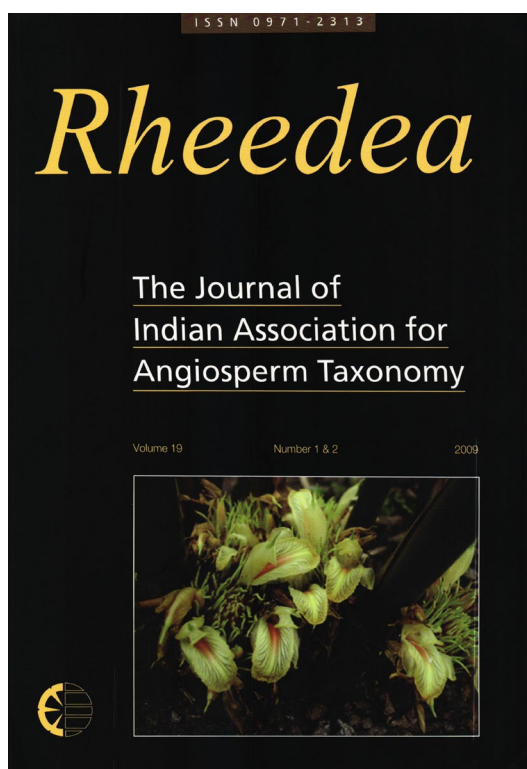




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How to cite:

**Pusalkar P.K. & D.K. Singh 2009.** *Saussurea forrestii* (Asteraceae) – A New Record for Indian Flora. *Rheedeia* 19(1&2): 61-63.

<https://dx.doi.org/10.22244/rheedeia.2009.19.01.15>

Received: 10.06.2008

Revised and accepted: 08.06.2009

Published in print: 30.12.2009

Published Online: 30.12.2009

# *Saussurea forrestii* (Asteraceae) – A New Record for Indian Flora

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## Abstract

*Saussurea forrestii* Diels (Asteraceae) is reported as a new record for Indian flora from the Western (Uttarakhand) Himalaya. A detailed description, illustration and relevant notes are provided for easy identification.

**Keywords:** *Saussurea*, Asteraceae, Western Himalaya, Uttarakhand, India

## Introduction

The Genus *Saussurea* DC. (Asteraceae) is represented by c. 400 species, distributed in Europe and Asia with maximum diversity exhibited in Sino-Himalayan region (Mabberley, 2008). In India, the genus is represented by 61 species, restricted mostly to Himalaya, with nine species and one variety, viz., *S. andersonii* C. B. Clarke, *S. atkinsonii* C. B. Clarke, *S. clarkei* Hook.f., *S. laneana* W. W. Sm., *S. nagensis* C. E. C. Fisch., *S. nimborum* W. W. Sm., *S. obscura* Lipsch., *S. pantlingiana* W. W. Sm., *S. sudhansui* Hajra and *S. gossipiphora* D. Don var. *lilliputa* Lipsch., endemic to the country (Hajra, 1988, 1995).

During a recent floristic survey in Garhwal (Western) Himalaya and study on herbarium specimens of Western Himalayan *Saussurea* housed in the Herbarium of the Botanical Survey of India, Northern Regional Centre, Dehra Dun (BSD) and Forest Research Institute, Dehra Dun (DD), authors found that in Indian herbaria specimens identified as *S. fastuosa* (Decne.) Sch.Bip. comprised two distinct taxa differing in many morphological characters. Some of the specimens were with robust herbaceous habit with leaf lamina 5 – 10 cm across, leaf apex acute, margins minutely or often inconspicuously and distantly denticulate [often teeth are distinguishable due to cusps on the margins], peduncle prominently tumid, woolly and oblong-ovate median phyllaries. Whereas, rest of the specimens were with small to medium-sized, perennial herbaceous habit, leaf lamina 2 – 4 cm across, apex usually shortly acuminate, leaf margins serrate, peduncle not tumid, glabrous to sparsely pubes-

cent (non-woolly) and oblong to lanceolate median phyllaries. Literature study (Clarke, 1876; Hooker, 1881; Lipschitz, 1979; Hajra, 1988, 1995) revealed that while former group of specimens represent true *S. fastuosa*, the latter group represents *S. forrestii* Diels, a species so far known from China and Nepal, thus a new record for Indian flora. The same has been described and illustrated to facilitate its easy identification. These two allied species can be easily keyed out as follows:

1. Robust herbs; leaf lamina 5 – 10 cm across, apex acute, margins minutely or often inconspicuously and distantly denticulate [often teeth are represented by cusps on the margins]; peduncle prominently tumid and woolly below involucre; median phyllaries oblong-ovate ..... ***S. fastuosa***

1. Small to medium-sized herbs; leaf lamina 2 – 4 cm across, apex shortly acuminate, margins serrate; peduncle neither tumid nor woolly below involucre; median phyllaries oblong to lanceolate ..... ***S. forrestii***

***Saussurea forrestii*** Diels in Notes Roy. Bot. Gard. Edinburgh 5: 198. 1912; Lipsch., Genus *Saussurea* 103, t. XV. 1979.

**Fig. 1**

Erect, perennial herb, 0.3 – 1.5 m high; stem green or purplish, ribbed, glabrous to puberulous. Leaves alternate, petioled below, sessile above; petiole up to 2 cm long, glabrous to puberulous; lamina lanceolate to elliptic, 8 – 17 × 2 – 4 cm, apex acuminate to sub-acuminate, base cuneate to sub-rounded, margins serrate-cuspidate, upper surface

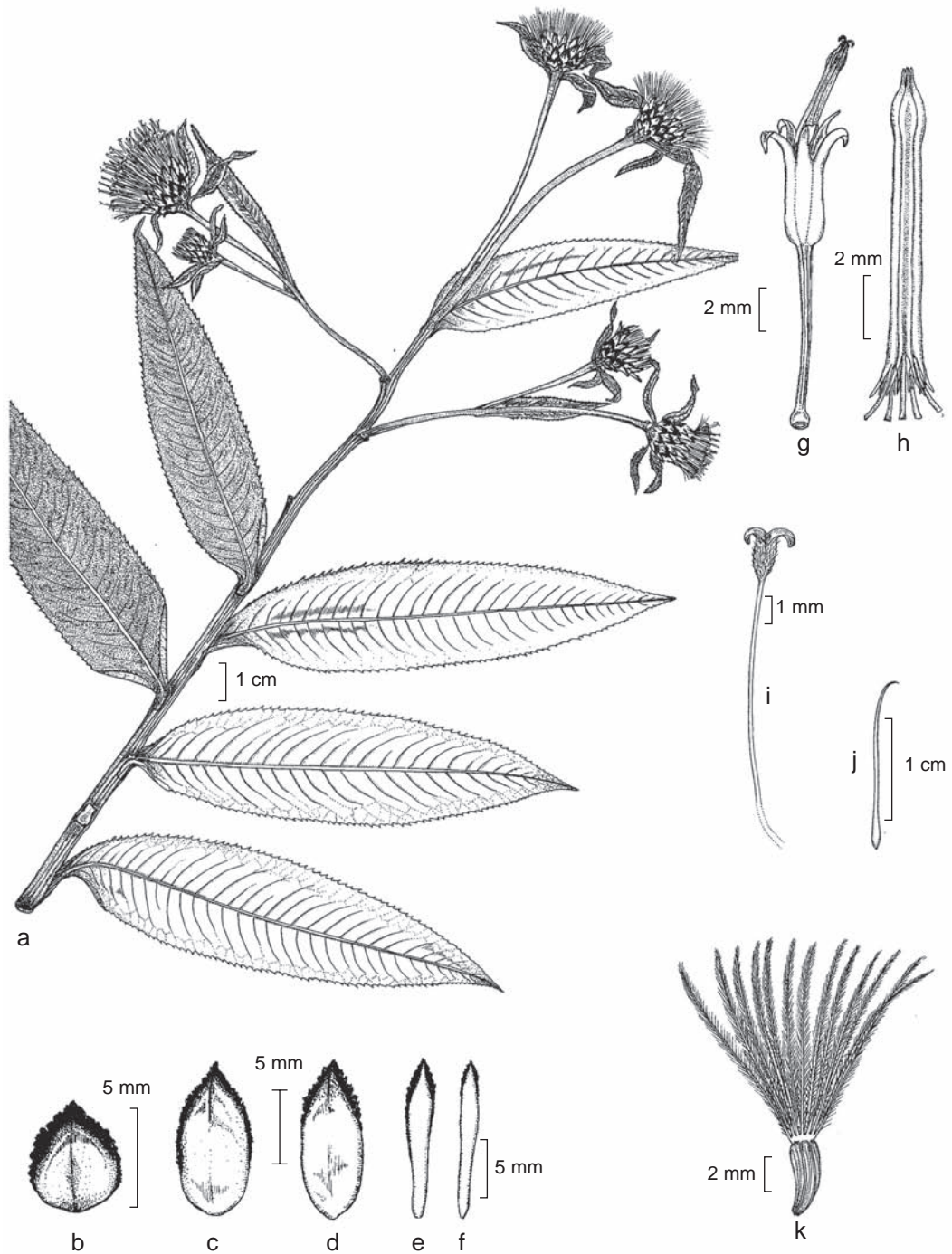


Figure 1. *Saussurea forrestii* Diels: a. Flowering twig; b. Outer phyllary; c, d. Median phyllaries (variation); e, f. Inner phyllaries (variation); g. Floret; h. Stamens; i. Style and stigma; j. Receptacle palea; k. Cypselum with pappus (Drawn by Prashant K. Pusalkar from *Hajra* 87584 (BSD)).

glabrous, darker, lower surface matted with white wool. Capitula solitary on terminal and axillary branches, peduncled, 1.5 – 2.5 × 2 – 3.2 cm, homogamous, discoid; peduncle up to 8 cm long, glabrous to puberulous (not woolly), slightly broadened below capitula (not tumid). Involucre cylindrical-conical when young, broadly conic-campanulate at cypselas dispersal. Phyllaries 6 – 8-seriate, yellow, margins narrowly to broadly puckered, purplish to black, often torn, wavy, surfaces glabrous, glossy to sparsely puberulous; outer phyllaries smaller, progressively longer inward; outer phyllaries ovate to oblong-ovate, 5 – 8 × 3.8 – 5 mm, acute, often pointed; median phyllaries oblong to lanceolate, rarely oblong-oblancheolate, 8 – 13 × 3 – 5 mm, acute, pointed; inner phyllaries broadly to narrowly oblancheolate or linear-oblancheolate, 12 – 17 × 2 – 3.2 mm, pointed. Receptacle paleate; palea linear to linear-subulate, 10 – 20 mm long, exceeding involucre, glabrous, white. Florets hermaphrodite, 12 – 17 mm long, glabrous, white, creamy, yellowish or dirty white to light brownish; basal narrow part of tube 6 – 9.2 mm long, upper broader part 3.5 – 4.5 mm long; lobes linear, 2.4 – 3.3 mm long, shorter than upper broader part of corolla tube. Anther-tube exerted, white or creamy, 4.5 – 5.2 mm long, white; anther appendages apically acuminate; anther tails entire, 0.5 – 1 mm long. Style linear, 13 – 22 mm long. Cypselas conical, 3.4 – 5.2 mm long, glabrous, 5-angled, ribbed. Pappus biseriate, white or dirty white, feathery, 10 – 15 mm long.

*Flowering & Fruiting:* July – October.

*Habitat:* Common, on open and partly shaded slopes in forests, between 2400 and 3200 m.

*Distribution:* China (Yunnan, Szechwan), Nepal, India (Western Himalaya – Uttarakhand).

*Specimens Examined:* **INDIA:** Western Himalaya, **Uttarakhand**, Garhwal, Uttarkashi, Jamna valley, above Kasali, Duthie 242; Darbita Gad, 2420 – 2720 m, 7.7.1883, Duthie 4141 (DD); Chamoli, Malari South-east, + 3000 m, 1.9.1975, B. D. Naithani 55954; Malari, Hajra 87584 (BSD); Uttarkashi, on way to Yamnotri, 4.10.1993, S. C. Majumdar & S. Singh 8801; Kumaon, Pithoragarh, Ralam valley, Saba

Oodier (udiyar) environs, 2500 m, 21.9.1969, Pant & Naithani 39767; Pithoragarh, Baling-Nagling, 17.8.1998, B. P. Uniyal 94248 (BSD).

*Note:* Description given under the name *S. fastuosa* [= *S. denticulata* (DC.) C. B. Clarke, non Ledeb., 1829] by various workers (Clarke, 1975; Hooker, 1881; Hajra, 1988, 1995) is undoubtedly mixture of *S. fastuosa* and the species now considered (*S. forrestii*), which are correctly distinguished by Lipschitz (1979).

#### Acknowledgements

We are grateful to the Director, Botanical Survey of India (BSI), Kolkata, for providing facilities. One of us (PKP) is also thankful to the Additional Director, BSI, Northern Regional Centre, Dehra Dun, for the encouragement.

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Received: 10.6.2008

Revised and Accepted: 8.6.2009