



## Six new species of *Saussurea* (Asteraceae) from eastern Himalaya

YOU-SHENG CHEN

State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, 20 Nanxincun, Xiangshan, Beijing 100093, China; e-mail: [maple@ibcas.ac.cn](mailto:maple@ibcas.ac.cn)

### Abstract

Six new species of *Saussurea* (Asteraceae, Cardueae) from eastern Himalaya, namely *S. austrotibetica*, *S. bhutanensis*, *S. langpoensis*, *S. lhozhaensis*, *S. lhunzensis*, and *S. pagriensis* are described and illustrated.

**Keywords:** Cardueae, China, Compositae, new species, Tibet

### Introduction

*Saussurea* Candolle (1810: 156) is one of the largest genera in the tribe *Cardueae* of Asteraceae, including over 400 species (Lipschitz 1979; Shih & Raab-Straube 2011). It is the largest genus of the family in China, with 289 species recorded as native to the country (Shih & Raab-Straube 2011). In recent years, new *Saussurea* species from East Asia were continuously described (Chen 2010, 2011, 2014; Chen & Gan 2011; Raab-Straube 2011; Kadota 2013; Xu *et al.* 2013; Wang *et al.* 2014).

In the course of preparing an account of *Saussurea* for the *Flora of Pan-Himalayas* (FLPH), we examined rich materials of the genus in the major herbaria in China, the United Kingdom of Britain, the United States of America and Russia, and made several botanical expeditions to Xizang (Tibet), China. During the FLPH Tibet Expedition led by You-sheng Chen in 2013, we collected many specimens from the Tibetan border with Bhutan and India. After studying these specimens, six species of *Saussurea* were found to be new. Among them, four species belong to *S.* subgen. *Saussurea* sect. *Strictae* Clarke (1876: 221), one species belongs to *S.* subgen. *Saussurea* sect. *Lagurostemon* (Cassini 1828: 466) Candolle (1838: 532), and one species belongs to *S.* subgen. *Eriocoryne* (Wallich ex Candolle 1838: 376) Hooker (1881: 376). They are described and illustrated below.

### 1. *Saussurea austrotibetica* Y. S. Chen, *sp. nov.* (Fig. 1, 7A & 7B)

Type:—CHINA. Xizang: Cona, Langpo, sandy grassy slope, 27°53' N, 92°0' E, 4020 m, 11 August 2013, *FLPH Tibet Exped. 13-0894* (holotype PE; isotypes PE).

Herbs up to 40 cm tall, perennial, caespitose. Caudex usually branched, apically covered with remains of petioles. Stems usually numerous, simple, whitish, erect, sparsely tomentose. Rosette leaves long petiolate, chartaceous; petiole to 5 cm long; lower leaves lanceolate, 10–15 × 1–1.5 cm, margin sinuate-dentate to shallowly pinnately lobed, lobe margin usually entire, rarely with 3–4 small teeth, adaxially greyish green and white tomentose, abaxially densely white tomentose, base attenuate, apex acuminate. Capitula solitary, terminal on stem. Involucre campanulate, 1.5–2.5 cm in diameter. Phyllaries in 4–5 rows, purplish brown, pubescent, apex acuminate, usually reflexed; outer phyllaries triangular-lanceolate, 13–14 × 3–4 mm; middle phyllaries ovate-elliptic, 13–15 × 2.5–3.5 mm; inner phyllaries linear, 15–16 × 1.2–1.5 mm. Receptacle bristles subulate, 4–8 mm, greyish white. Corolla blue purplish, 1.7–1.9 cm long, tube 8–9 mm long, limb ca. 7 mm long, lobes ca. 4 mm long. Anther ca. 7 mm long, tails lanate, ca. 1.5 mm long. Achene brown, cylindric, 5–5.3 mm long, ribbed, glabrous, apex shortly crowned. Pappus pale brown; outer bristles 4–6 mm long, scabrid; inner bristles 1.2–1.3 cm long, plumose.

## References

- Bureau, E. & Franchet, A. (1891) Plantes nouvelles du Thibet et de la Chine occidentale. *Journal de Botanique* 5: 69–77.
- Candolle, A.P. de (1810) Observations sur les plantes composées ou syngénèses (I). *Annales du Muséum National d'Histoire Naturelle* 16: 135–208.
- Candolle, A.P. de (1838) *Prodromus systematis naturalis regni vegetabilis*, vol. 6. Treuttel & Würtz, Paris, 687 pp.
- Chen, Y.L., Liang, S.Y. & Pan, K.Y. (1981) Taxa nova compositarum e flora Xizangensi (Tibetica). *Acta Phytotaxonomica Sinica* 19(1): 85–106.
- Chen, Y.S. & Gan, Q.L. (2011) New species and nomenclatural action in *Saussurea* DC. (Asteraceae). *Journal of Systematics and Evolution* 49: 160–161.  
[http://dx.doi.org/10.1111/j.1759-6831.2011.00121\\_1.x](http://dx.doi.org/10.1111/j.1759-6831.2011.00121_1.x)
- Chen, Y.S. (2010) *Saussurea baoxingensis* sp. nov. (Compositae, Cardueae) from Sichuan, China. *Nordic Journal of Botany* 28: 761–763.  
<http://dx.doi.org/10.1111/j.1756-1051.2010.00938.x>
- Chen, Y.S. (2011) *Saussurea megacephala* (Asteraceae), a new species from Xizang, China. *Annales Botanici Fennici* 48: 142–144.  
<http://dx.doi.org/10.5735/085.048.0206>
- Chen, Y.S. (2014) Five new species of *Saussurea* (Asteraceae, Cardueae) from the Hengduan Mountains region, southwestern China. *Phytotaxa* 170(3): 141–154.  
<http://dx.doi.org/10.11646/phytotaxa.170.3.1>
- Cassini, H. (1828) Théodorée, *Theodorea*. In: Cuvier, F. (Ed.) *Dictionnaire des sciences naturelles* (second edition), vol. 53. F.G. Levrault, Strasbourg & Paris, & Le Normant, Paris, pp. 463–469.
- Clarke, C.B. (1876) *Compositae Indicae*. Thacker, Spink and Co., Calcutta, 347 pp.
- Franchet, A. (1894) Plantes nouvelles de la Chine Occidentale. *Journal de Botanique* (Morot) 8: 354.
- Fujikawa, K. (2010) Taxonomic Study of the Genus *Saussurea* section *Eriocoryne* (Asteraceae) in the Himalayas. *Makinoa* n.s. 8: 25–80.
- Grierson, A.J.C. & Springate, L.S. (2001) Compositae (Asteraceae). In: Grierson, A.J.C. & Long, D.G. (Eds.) *Flora of Bhutan*, vol. 2(3). Royal Botanic Garden Edinburgh & Royal Government of Bhutan, pp. 1397–1632.
- Handel-Mazzetti, H. (1937) Neue und bemerkenswerte chinesische Compositen, besonders aus dem Berliner Herbar. *Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem* 13: 607–661.  
<http://dx.doi.org/10.2307/3994954>
- Hooker, J.D. (1881) Compositae. In: Hooker, J.D. (Ed.) *The Flora of British India*, vol. 3. L. Reeve & Co., London, pp. 219–419.
- Jeffrey, C. & Srivastava, R.C. (1997) A new species of *Saussurea* DC. (Asteraceae) from eastern Himalaya. *Proceedings of the National Academy of Sciences, India, Section B: Biological Sciences* 67(3–4): 235–238.
- Kadota, Y. (2013) Systematic studies of Asian *Saussurea* (Asteraceae) VI. A new species and a new combination from Hokkaido and three new species from Honshu, Japan. *The Journal of Japanese Botany* 88: 267–285.
- Kitamura, S. (1969) Compositae of southeast Asia and Himalayas IV. *Acta Phytotaxonomica et Geobotanica* 24(1–2): 1–27.
- Lipschitz, S. (1968) Revisio critica specierum sectionis *Taraxacifoliae* Lipsch. generis *Saussurea* DC. *Novosti Sistematiki Vysshikh Rastenii* 5: 194–229.
- Lipschitz, S. (1979) *Genus Saussurea DC. (Asteraceae)*. Nauka, Leningrad, 281 pp. [In Russian and Latin]
- Liu, S.W. (1984) New taxa of Compositae from Xizang (Tibet). *Acta Biologica Plateau Sinica* 3: 55–71.
- Raab-Straube, E. von (2011) The genus *Saussurea* (Compositae, Cardueae) in China: taxonomic and nomenclatural notes. *Willdenowia* 41: 83–94.  
<http://dx.doi.org/10.3372/wi.41.41109>
- Royle, J.F. (1835) Illustrations of the Botany and other Branches of the Natural History of the Himalayan Mountains, and the Flora of Cashmere, vol. 1. Wm. H. Allen and Co., London, 472 pp.
- Shih, C. & Raab-Straube, E. von (2011) *Saussurea* Candolle. In: Wu, Z.Y. & Raven, P.H. (Eds.) *Flora of China*, vol. 20–21. Science Press, Beijing & Missouri Botanical Garden Press, St. Louis, pp. 56–149.
- Wang, Y.F., Li, Q.J., Du, G.Z. & Lian, Y.S. (2014) *Saussurea pseudograminea* sp. nov. (Asteraceae) from the Qinghai-Tibetan plateau, China. *Nordic Journal of Botany* 31: 1–5.
- Xu, B.Q., Hao, G. & Xia, N.H. (2013) *Saussurea wenchengiae* (Asteraceae), a new species from Qinghai, China. *Annales Botanici Fennici* 50: 83–86.  
<http://dx.doi.org/10.5735/085.050.0115>