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Taxonomic Notes on Chinese *Saussurea* (Asteraceae, Cardueae)

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ABSTRACT. Some names in Chinese *Saussurea* DC. (Asteraceae, Cardueae) are reviewed. *Saussurea tunglingensis* F. H. Chen is accepted as the taxonomically correct name, having priority over *S. sclerolepis* Nakai & Kitagawa. *Saussurea haoi* Y. Ling ex Y. L. Chen & S. Yun Liang shares the same type with *S. bella* Y. Ling, so *S. haoi* is an illegitimate name. *Saussurea hopeiensis* F. H. Chen described from Hopei [Hebei] is subsumed as a synonym of the more widely distributed *S. mongolica* (Franchet) Franchet. *Saussurea chowana* F. H. Chen known only from its type locality in Hopei [Hebei] is treated as a synonym of the broadly distributed *S. parviflora* (Poiret) DC. *Saussurea lanatocephala* F. H. Chen known only from Jilin is synonymized to *S. triangulata* Trautvetter & C. A. Meyer. The names *S. nematolepis* Y. Ling and *S. cochleariifolia* Y. L. Chen & S. Yun Liang are lectotypified.

Key words: Asteraceae, China, Compositae, *Saussurea*.

Saussurea DC. is one of the largest genera in the tribe *Cardueae* Cassini (Asteraceae); it includes approximately 400 species (Lipschitz, 1979) and represents the largest genus of Asteraceae in China. There were 264 species recorded as native to China in *Flora Reipublicae Popularis Sinicae* (Shih & Jin, 1999).

During study of the genus *Saussurea* from China, the author found some taxonomic discrepancies. Because *Flora of China* (Asteraceae) will be published in the near future, I wish to correct these problems herein. Species with new synonymies are given in the first section, whereas notes on typifications follow.

NEW SYNONYMIES

1. *Saussurea bella* Y. Ling, Contr. Inst. Bot. Natl. Acad. Peiping 6(2): 87. 1949, non *Saussurea bella* Lipschitz, 1954. *Saussurea haoi* Y. Ling ex Y. L. Chen & S. Yun Liang, Acta Phytotax. Sin. 19: 103. 1981, nom. illeg. TYPE: China. Qinghai: Tsigeganpa, Temple Tasu, 3600 m, 16 Aug. 1930, K. S. Hao 1019 (holotype, PE; isotype, PE).

Liu (1996) treated *Saussurea haoi* as a synonym of *S. bella*, but he did not explain the reason, and he did not realize that the two taxa shared the same type. The holotype specimen of *S. bella* corresponds to the isotype for *S. haoi*, while the isotype of *S. bella* is the holotype of *S. haoi*. Accordingly, the name *S. haoi* is superfluous and therefore illegitimate by Article 52.1 of the *International Code of Botanical Nomenclature* (ICBN; McNeill et al., 2006).

2. *Saussurea mongolica* (Franchet) Franchet, Bull. Herb. Boissier 5(7): 539. 1897. Basionym: *Saussurea ussuriensis* var. *mongolica* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 6: 60. 1883. TYPE: China. Hebei: Gehol [Chengde Co.], Aug. 1864, A. David 2141 (holotype, P; isotype, LE).

Saussurea hopeiensis F. H. Chen, Bull. Fan Mem. Inst. Biol. Bot. 8: 120. 1938, syn. nov. TYPE: China. Hopei [Hebei]: Tungling, Hung-Sung-ken, July 1933, H. F. Chow 40616 (holotype, LBG, photo, PE).

Chen (1938) regarded *Saussurea hopeiensis* as related to *S. sinuata* Komarov, but *S. hopeiensis* differs from *S. sinuata* by its larger and more scabrous leaves, numerous and smaller heads, and foliaceous bracts. Unable to see the type, Lipschitz (1979) treated *S. hopeiensis* as an uncertain species related to *S. sinuata*. *Saussurea hopeiensis* was overlooked by Shih and Jin (1999) in the *Flora Reipublicae Popularis Sinicae*. After examining the type specimens for both names, I found the name *S. hopeiensis* to represent the same taxon as the earlier name *S. mongolica*.

3. *Saussurea parviflora* (Poiret) DC., Ann. Mus. Natl. Hist. Nat. 16: 200. 1810. Basionym: *Serratula parviflora* Poiret, Encycl. (Lamarck) 6: 554. 1804. TYPE: Siberia, *Gmelin s.n.* (holotype, P not seen).

Saussurea chowana F. H. Chen, Bull. Fan Mem. Inst. Biol. Bot. 8: 119. 1938, syn. nov. TYPE: China. Hopei [Hebei]: Tungling, Wu-ling-shan, July 1933, H. F. Chow 40867 (holotype, LBG, photo PE).

Saussurea chowana has until now only been recorded from its type locality. Chen (1938: 119) originally thought it was related to "*S. alata* Turcz." (most likely referring to *S. alata* DC.). However, S.

chowana differs from *S. alata* by its smaller and undivided leaves, glabrous heads, and dark, non-recurved involucre bracts. This misled Lipschitz (1979) to place this taxon incorrectly in *Saussurea* subgen. *Theodorea* (Cassini) Lipschitz, a disposition later adopted by Shih and Jin (1999). After examining the type of *S. chowana*, I found this taxon is in fact synonymous with *S. parviflora*, which belongs to the subgenus *Saussurea* and is common in high mountains in northern China.

4. ***Saussurea triangulata*** Trautvetter & C. A. Meyer, Fl. Ochot. Phaenog. 58, tab. 29. 1856. TYPE: "In insula Aesae," 3 Aug. 1844, A. Middendorff 965 (lectotype, LE, photo PE).

Saussurea lanatocephala F. H. Chen, Bull. Fan Mem. Inst. Biol. Bot. 8: 121. 1938, syn. nov. TYPE: China. Jilin: s. loc., s.d., *Coll. ignot.* 1242 (holotype, designated by Chen, 1938: 121, LBG, photo PE).

Chen (1938) regarded the name *Saussurea lanatocephala* as related to *S. sinuata* and *S. sinuata* var. *cordata* F. H. Chen [= *S. hwangshanensis* Y. Ling] by its larger heads, but *S. lanatocephala* differs from both *S. sinuata* and *S. sinuata* var. *cordata* by its leaves without sinuous margins and with truncate leaf bases, and by the yellow wooly involucre bracts. After comparing the type with other species from Jilin Province, I found that *S. lanatocephala* should be reduced to the synonymy of *S. triangulata*, which occurs in Changbaishan in China, as well as in Korea and the Russian Far East.

5. ***Saussurea tunglingensis*** F. H. Chen, Bull. Fan Mem. Inst. Biol. Bot. 5(2): 85. 1934. TYPE: China. Hopei [Hebei]: Eastern Tomb, Feng-sung-ken, Ertou Bridge, rock cliff, s.d., *H. F. Chow* 40772 (holotype, PE).

Saussurea sclerolepis Nakai & Kitagawa, Rep. Exped. Manchoukuo, Sect. IV, Pt. 1, Pl. Nov. Jehol.: 64, tab. 19. 1934, syn. nov. TYPE: China. Hebei: "in monte prope Hsing-lung," 31 Aug. 1933, *T. Nakai, Honda & Kitagawa s.n.* (holotype, TI, photo PE).

Saussurea sclerolepis f. *pinnatipartita* Nakai & Kitagawa, Rep. Exped. Manchoukuo, Sect. IV, Pt. 1, Pl. Nov. Jehol.: 65. 1934, syn. nov. TYPE: China. Liaoning: "in rupibus montis Feng-huang-shan prope Chao-yang," 9 Aug. 1933, *T. Nakai, Honda, Kitagawa s.n.* (holotype, TI not seen).

When Chen (1934) described *Saussurea tunglingensis*, he considered it related to *S. gracilis* Maximowicz, *S. saxatilis* Komarov [= *S. komaroviana* Lipschitz], and *S. umbrosa* Komarov. These taxa occur in Korea, Russia, and Japan, as well as extending into northeastern China, and are not taken here as close congeners. *Saussurea tunglingensis* occurs widely in

Hebei, Nei Mongol, Liaoning, Heilongjiang, and Shanxi provinces of China.

Interestingly, the name *Saussurea tunglingensis* has never been adopted by the taxonomic community since its original publication in May 1934. Without seeing the type, Lipschitz (1979) placed the Chinese species *S. tunglingensis* close to *S. gracilis*, which occurs only in Japan, and treated this as an uncertain species. *Saussurea tunglingensis* was later overlooked by Shih and Jin (1999) in the *Flora Reipublicae Popularis Sinicae*. After examining the type of *S. tunglingensis* and comparing it to types for other *Saussurea* species from Hebei Province, I found it is conspecific with the taxon currently known as *S. sclerolepis* Nakai & Kitagawa, which was described from a very close locality in Hebei. The protologues of *S. tunglingensis* and *S. sclerolepis* were published in the same year, with the former on 1 May 1934 and the latter in November of 1934. According to Article 11.4 of the ICBN (McNeill et al., 2006), the nomenclaturally correct name should be *S. tunglingensis*.

Saussurea sclerolepis f. *pinnatipartita* Nakai & Kitagawa differs from the type for the parent species by its pinnatipartite leaves, but I have found these two kinds of forms growing together in the wild. *Saussurea sclerolepis* f. *pinnatipartita* is therefore treated as a synonym of *S. tunglingensis*.

NOTES ON TYPIFICATIONS

1. ***Saussurea cochleariifolia*** Y. L. Chen & S. Yun Liang, Acta. Phytotax. Sin. 19(1): 104. 1981, as "*cochlearifolia*." TYPE: China. Xizang: Yadong Co., Mangdangshan Pass, 2 Sep. 1975, *Qingzang Compl. Veg. Exped.* 7690A (lectotype, designated here, PE).

When Chen et al. (1981) published the name *Saussurea cochleariifolia* based on *Qingzang Compl. Veg. Exped.* 7690 (PE), they neglected that the type specimen sheet contained two different taxa. The right-hand plant corresponds most closely with the original description and diagnosis for *S. cochleariifolia*. After careful study, this author concluded that the left-hand plant is not a *Saussurea* at all, but in fact *Youngia simulatrix* (Babcock) Babcock & Stebbins. According to Article 9.9 and Article 9.12 of the ICBN (McNeill et al., 2006), I designate the right-hand plant on the sheet for *Qingzang Compl. Veg. Exped.* 7690A as the explicit lectotype for *S. cochleariifolia*.

2. ***Saussurea nematolepis*** Y. Ling, Contr. Inst. Bot. Natl. Acad. Peiping 6(2): 67. 1949. TYPE: China. Sichuan: Nanping [Jiuzhaigou Co.], 1500 m, 24 Oct. 1937, *K. T. Fu* 2235 (lectotype, designated here, PE).

When Ling (1949) published this species, he cited three collections: *K. T. Fu 2235*, *K. T. Fu 7941*, and *W. Y. Hsia 7026*, without designating an unambiguous holotype. All three specimens are found in PE; *K. T. Fu 2235* is selected here as the lectotype because it is the most ample specimen.

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