The genus Saussurea (Compositae, Cardueae) in China: taxonomic and nomenclatural notes

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Source: Willdenowia, 41(1) : 83-95

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: https://doi.org/10.3372/wi.41.41109
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The genus *Saussurea* (*Compositae, Cardueae*) in China: taxonomic and nomenclatural notes

Abstract
doi:10.3372/wi.41.41109 (available via http://dx.doi.org/)

Investigation of type material of Chinese taxa of *Saussurea* revealed that the names *S. erubescens*, *S. globosa*, *S. hypsipeta* and *S. polyclea* var. *acutisquama* are frequently misapplied in the literature. As a consequence, *S. acutisquama* is described here as a species new to science, *S. obvallata* var. *gymnocephala* is lectotypified and raised to specific rank as *S. gymnocephala*, *S. sorocephala* var. *glabrata* is lectotypified and raised to specific rank as *S. inversa* and the concept of *S. erubescens* is amended. All four species are described and illustrated. *S. nigrescens* var. *acutisquama*, *S. hypsipeta* and *S. quercifolia* var. *major* are lectotypified. Earlier neotypifications of *S. hypsipeta* and *S. paxiana* are superseded by the rediscovery of original material.

Additional key words: *Asteraceae*, Hengduan Shan, Flora of China, Qinghai-Tibetan Plateau, *Saussurea* subgenus *Amphilaena*

Introduction
*Saussurea*, with approximately 289 species in China, is one of the largest genera of *Compositae* in the Chinese flora. The taxonomic knowledge on this widespread genus is still increasing and in recent years, a number of new species have been described from China (Chen 2010, 2011; Liu & Ho 2010; Raab-Straube 2009). Some taxonomic problems in *Saussurea* are the result of unavailability of type material to previous workers. In particular, Lipschitz (1979), in spite of his tremendous efforts to see all the type material of the genus, could only check a part of the material in Chinese herbaria and in a few cases overlooked material thought to be lost during the Second World War in Europe. On the other hand, authors of Chinese floras largely relied on Lipschitz’ monograph and did not have the opportunity to check all the type material distributed in western herbaria. During preparation of the new treatment of the genus for the forthcoming Flora of China (Shih & Raab-Straube 2011), a very large amount of herbarium material, including types, was revised and an extensive literature research was carried out for all the taxa involved. This work has led to some taxonomic rearrangements and a number of necessary nomenclatural changes, some of which are published here.

*Saussurea acutisquama* Raab-Straube, sp. nov.
Holotype: [China, Qinghai], “Ekspedicija P. K. Kozlova v Centralnuju Aziju, 1899–1901. K No. ? cv.[etki] grjazno sinie; na gline v archevom’ lezy. [= flowers grey-blue, on clay in open Juniperus forest] Kam’ (Tibet’); Basse-jn’ Jan’-Czy-Czjan’a (r. Goluboj), po r.[ekte] I-chyu’; 12.500 ft, 28.7.1900, V. F. Ladygin s.n. (LE!) – Fig. 1.


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Fig. 1. *Saussurea acutisquama* – holotype Ladygin s.n. at LE.
Saussureae nigrescentis Maxim. similis, sed phyllariis acutis vel acuminatis bene differat.

**Ic. — Fig. 1 (illustrated here for the first time).**

Perennial herb, 5–45 cm tall. Caudex thin, 1.5–2 mm in diam., vertical or ascending, simple or few-branched, covered with withered remains of leaf sheaths, with adventitious roots. Flowering stems c. 2 mm in diam. near base, solitary or several, simple or apically few-branched, erect, straw-coloured to brown, apically sometimes purplish, basally glabrous, with straw-coloured, basally widened midvein, abaxially pale green, sparsely villous; apex acute and mucronate; margin denticulate and ciliate; base narrowly cuneate to attenuate. Rosette, basal and lower stem leaves petiolate; leaf blade narrowly obovate, narrowly oblong or narrowly elliptic, 2–13×0.5–1.5 cm, base tapering into a straw-coloured petiole. Middle stem leaves sessile, smaller; narrowly elliptic to linear, base semi-amplexicaul. Upper stem leaves small, linear. Peduncles straw-coloured or purplish, 4–6 mm, sparsely retrorse-villous. Involucral bracts spirally arranged in 4 or 5 rows, imbricate, blackish purple, glabrous or subglabrous, apex acute to acuminate; outer involucral bracts narrowly ovate-triangular, blackish brown, 10–13×2–3 mm; middle involucral bracts narrowly triangular, basally straw-coloured, apically blackish brown or purplish, 13–17×2–2.5 mm; inner involucral bracts subulate, basally straw-coloured, apically purplish black, 17–20×1–2 mm. Receptacle flat or slightly convex, densely bristly; bristles dirty white, subulate, 5–7 mm. Corolla blackish or bluish purple, 1.4–1.5 cm in diam., tube 6–7×0.5–0.6 mm, throat 3.5–4×1.5–2 mm, lobes 3.5–4×0.3–0.4 mm. Stamina 10–11 mm; filaments 3–4 mm; anthertube 8–9 mm including appendages, fertile part 6–6.5 mm, apical appendages 1.5–2 mm, basal appendages woolly, 2.5–3 mm. Style 15–18 mm; style branches diverging, c. 2 mm. Achenes brown or grey with black spots and five lines, glabrous, laterally compressed, ellipsoid, 3–3.5×1.2–1.5 mm, apex truncate. Pappus heteromorphous, biseriate; outer bristles more numerous than the inner ones, white, scabrid, caducous, 3–5 mm long; inner bristles c. 15, apically snow-white, basally straw-coloured to pale brown, plumose, persistent, 13–15 mm long. Flowering July to September; fruiting September to October.

**Distribution. — Saussurea acutisquama** has been frequently collected in the northern part of the Hengduan Mountain region in SE Qinghai, NW Sichuan and adjacent S Gansu. It was only rarely found in E Xizang and NW Yunnan, where monsoon influence is stronger. The species is mostly found at high altitudes between 3400 and 4900 m, and seems to be widespread in the NE part of the Qinghai-Tibetan Plateau.

**Habitat. —** The species lives in a variety of alpine habitats from stabilised scree to alpine shrublands with Sibiraea, Artemisia and Potentilla or open forests of Picea crassifolia. It is mostly found in herb-rich, moist alpine meadows or grasslands, in closed Kobresia turf and also in disturbed and heavily grazed situations, often in river valleys or terraces.

**Taxonomic remarks. —** The plants understood by Lipschitz (1967, 1979) and subsequent collectors and researchers following his concept (Liu 1996: 451; Shih & Jin 1999: 34) as Saussurea polycolea var. acutisquama (Y. Ling) Lipsch. represent a new taxon, which is quite different from the plants to which the basionym of this combination actually refers. The type of S. nigrescens var. acutisquama represents in fact S. erubescent (see below), so that a new name, description and type are needed for the present taxon. I deem it useful to maintain the very instructive epithet “acutisquama” (referring to the acute involucral bracts), bearing in mind that it is a new species and not a new combination. The epithet can be kept in accordance with Art. 11.2 (no priority of a name outside the rank in which it is published; McNeill & al. 2006). As the holotype, a specimen with three annotation labels by Lipschitz (Fig. 1) in LE is chosen, so that the new name evidently is in accordance with Lipschitz’ concept of this taxon. S. acutisquama differs from S. nigrescens by the triangular-subulate, acute to acuminate involucral bracts, and from S. polycolea and S. erubescent by the herbaceous, green (not purple) uppermost leaves and bracts.

**Additional specimens seen. —** **CHINA: XIZANG: BAQEN (BAQING) XIAN: Ya’anduo Qu, 4200 m, [c. 31°58’N, 94°01’E], 22.8.1976, Qinghai-Xizang Expedition Team, Na Qu Division, Tao De-ding 11068 (KUN 729369, 729371, PE 1176685); ibid., 4100–4300 m, 27.8.1976, Qinghai-Xizang Expedition Team, Na Qu Division, Tao De-ding 11088 (KUN 729370, 729372, PE 1163459). — Rwoqê (Leiwuqê) XIAN: 4450 m, [c. 31°52’N, 96°23’E], 29.7.1991, Yang Jing-sheng 91-721 (KUN 730576), 91-722 (KUN 730575). — QINGHAI: ZADOI (ZADUO) XIAN: Sulu Xiang, Yatong, 4100 m, [c. 32°56’N, 95°18’E], 11.8.1965, Liu Shang-wu 391 (PE). — YUSHU XIAN: Road between Yushu and Gyairong, 3850–3950 m, 33°3’N, 96°51’E, 19.8.1996, T. N. Ho & al. 2101 (BM 554759). — CHINDU (CHENGDUO) XIAN: NE of Xiewu (Xiwiu), on S side of the pass between Zhubgyügoin (Zhuijesi) and Xiewu (Xiwiu), on road between Madoi (Maduo) and Yushu, 4020 m, 33°12’N, 97°26’E, 14.8.1996, T. N. Ho & al. 1767 (BM 573192, CAS 938639, MO 5331463); Xiewu (Xiwiu) Xiang, Shang Saiba, E of chumda (Zhiduandu), 4000 m, 32°59’N, 97°21’E, 15.8.1996, T. N. Ho & al. 1846 (BM 558994, CAS 939966). — DARLAG (DARI) XIAN: Nari, Jianshe Xiang, along the Dar Qu (Dari Valley)


Perennial herb, 10–30 cm tall, with single or rarely two stems in the centre of the leaf rosette, arising from a woody caudex. Caudex short, slender, simple or rarely 2-branched, to 3 cm long and 0.5–1 cm in diam., covered with dark brown, sometimes fibrous remains of withered leaf sheaths. Flowering stems 1–3 mm in diam. near base, erect or ascending, straight or somewhat flexuose, simple, shallowly sulcate, straw-coloured to light brown, ± tinged with purple or purple throughout, basally glabrescent or sparsely covered with reflexed, long, flagellate hairs and with short, glandular hairs, apically sparsely to densely reflexed-pilose, below capitula densely villous. Rosette and basal leaves petiolate, subconcolorous, adaxially light green, scabrid, densely glandular-hairy and pilose to glabrescent, abaxially slightly paler, glandular-hairy, narrowly elliptic or narrowly ovate, basally yellowish, narrowly elliptic or narrowly ovate, 8–10.5 × 2.5–5.5 mm, margin ciliate, apex acute.

Ic. — Fig. 2 (illustrated here for the first time).
Fig. 2. *Saussurea erubescens* – specimen Raab-Straube & al. 1257 at B (B 100254761).
coloured, subulate, 3–5.5 mm long. *Corolla* purple, glabrous, 11–17 mm, tube 5.5–7×0.3–0.5 mm, throat cylindrical, 2.5–3.5×1–1.5 mm, lobes 3–5×0.4–0.6 mm. *Stamina* 7.5–10.5 mm; filaments 2.5–3.5 mm; anther tube dark purple, 6–10 mm including appendages, fertile part 3.5–6 mm, apical appendages 1.6–2 mm, basal appendages woolly, 2–2.8 mm. Style 13–17 mm, style branches diverging, 2.2–3.3 mm. *Achenes* straw-coloured to blackish purple, obovoid or cylindric, 3–4×1–1.5 mm, smooth, indistinctly ribbed, apex truncate with a dentate crown. *Pappus* heteromorphic, biseriate, dirty white; outer bristles 1–4.5 mm, scabrid, falling off individually; inner bristles 8.5–10 mm, plumose, connate at base to a ring, falling off as a whole. *Flowering* July to August; *fruiting* August to October.

**Distribution.** — *Saussurea erubescens* is distributed in the northeastern part of the Qinghai-Tibetan Plateau and adjacent mountain systems. It is a common species in the high mountain grasslands of Xizang, Qinghai, NW Sichuan and Gansu at altitudes between 2400 and 4900 m.

**Habitat.** — *Saussurea erubescens* inhabits consolidated scree slopes, Kobresia grasslands with closed turf and shrublands with *Salix*, *Rhododendron* and *Potentilla*. It is also frequent in alpine pastures and herb-rich alpine meadows.

**Taxonomic remarks.** — The name *Saussurea globosa* F. H. Chen has been applied for a wide morphological spectrum of plants, ranging from quite large herbs with many capitula and a strong aromatic scent of the leaves (mainly found in western Sichuan) to small plants with one to few capitula and no aromatic scent (mainly found in drier climatic conditions in Qinghai and Gansu). This broad species concept was introduced by Handel-Mazzetti (1938) and was followed by Liu (1996) and, at least in part, also by Lipschitz (1967, 1979). However, it was noted by Fujikawa & al. (2007: 20), that “there are two forms” of *S. globosa*.

*Saussurea erubescens* was based on material collected by Przewalski and described as *S. uniflora* var. *pumila* Maxim., in the text of the description of *S. phaeantha*, Maximowicz (1881: 489) cited no specimen, but clearly based his description on original material collected by Przewalski in 1880. Plants collected by the same in 1884 based his description on original material collected by Maximowicz (1881: 489) cited no specimen, but clearly understood since its original description by Ling (1949: 95). The syntypes at PE are clearly conspecific with *S. erubescens* as well. Lipschitz (1967: 663), who published the new combination *S. polycolea* var. *acutisquama* (Y. Ling) Lipsch., never examined the type, but only material at LE, which seemed to match Ling’s rather imprecise description. The original description by Ling notes the similarity with *S. nigrescens* and with *S. globosa*, quoting Handel-Mazzetti (1938: 342) “weniger behüllte, schlanker Exemplare [of *S. globosa*] werden der *S. nigrescens* ähnlich” [slender specimens with fewer involucral bracts of *S. globosa* are approaching *S. nigrescens*], who treated these plants under *S. globosa* in a broad sense.

Liu (1996: 449) also followed this broad circumscription of *S. globosa*. His “*S. globosa*” is in fact *S. erubescens*, whereas his “*S. erubescens*” is in fact *S. gymnocephala*. *S. globosa* s.str., occurring in W Sichuan and N Yunnan, is absent from Qinghai.

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[36°57'N, 102°30'E], 11.8.1971, Guo Ben-zhao 9399 (KUN 730007, PE); — XIAHE XIAN: [= Siaho Hsien], 3800 m, [c. 35°14'N, 102°28'E], 15.8.1936, Wang Tsao-ping 5732 (PE); Sangke, 3500 m, [c. 35°09'N, 102°24'E], 17.8.1937, Fu Kun-tsun 1465 (PE); inter Tsamousche, Schhsa et Labrung, 2800–3800 m, 8–11.1935, G. Fenzel 2545 (W) — LUOQI XIAN: Shuanchha, Shengou, 3500 m, [c. 34°30'N, 102°30'E], 8.8.1991, Tao He Expedition Team 308 (KUN 730762); ibid., 3500 m, Tao He Expedition Team 332 (KUN 730759). — JONÉ (ZHIQUAN) XIAN: Upper Téboo [= Téboo] country, below Shimen, 11000 ft, [c. 34°20'N, 103°12'E], 7–8.1925, J. F. Rock 13067 (E 47879, GH, K, LE [fragm.], NY 163195, W). — TÉWO (DIEBU) XIAN: Lazikou Xiang, 2900 m, [c. 34°05'N 103°14'E], 6.8.1993, Xu Lang-run & Zhang Jih-min 2200 (MO 4442358) — ZHUGU (ZHOUQU) XIAN: Gora Chagola (c. 33°30'N, 104°20'E), 11.7.1885, G. N. Potanin s.n. (LE). — LOCALITY NOT FOUND: Ta-ka-chang, Zaluk, 23.7.1930, D. Hummel 4327 (S); Drakana, 27.7.1930, D. Hummel 4602 (S); Bandchuka, 1.8.1930, D. Hummel 4686 (S); Min Shan, Yanshi CARDE [?], 3700 m, 18.8.1937, Wang Tsao-ping 7545 (PE). — WITHOUT PRECISE LOCALITY: 25.8.1890, J. Martin 10 (LE [3×]); Minshan, 4000 m, 22.8.1937, Wang Tsao-ping 7602 (PE). — SICHUAN: SÉRÚ (SHIU) XIAN: C. 90 km NW Maniganggo, near road to Sérú, 4400 m, 32°29'40"N, 98°27'22"E, 1.10.2000, E. v. Raab-Straube & al. 1257 (B, KUN, MO). — DÉGÉ (DÉGE) XIAN: Pass 21 km NW Maniganggo on road to Sérú, 4520 m, 32°03'07"N, 99°00'37"E, 28.9.2000, E. v. Raab-Straube & al. 1250 (B, KUN, MO); between Dége and Chola Shan, 4000 m, [c. 31°57’N, 98°52'E], 27.9.1965, Lang Kai-yong & Zhang Yong-tian 2831 (PE 890991). — SONGPAN XIAN: Típu La, 4000 m, [32°43'N, 102°41'E], 5.8.1922, H. Smith 4176 (BM 535147, MO 1625545, UPS (V-108377) 200045, W). — PINGWU XIAN: Dujuan Shan, Picea-forest, 3150 m, [c. 32°26'N, 104°31'E], 21.9.1896, Wu Zheng-yi 55 (KUN 730733, 730734).


**ic. — Fig. 3;** Fujikawa & al. 2007: fig. 11 (as *S. erubescent*).
Fig. 3. Saussurea gymnocephala – lectotype K. S. Hao 991 at PE.
densely golden gland-dotted, narrowly elliptic or elliptic, 4–18(–27) × 0.9–2.5(–3.8) cm, apex acute to acuminate, margin subentire, minutely denticate, base cuneate, tapering into a short, straw-coloured or purple, basally widened petiole. Middle stem leaves sessile, gradually smaller, narrowly elliptic, 4–10 × 0.8–1.5 cm. Upper stem leaves and bracts half-enclosing the synflorescence, purple, adaxially glabrous, abaxially sparsely pilose, narrowly elliptic or elliptic, widened petiole, tapering into a short, straw-coloured or purple, basally widened petiole. Middle stem leaves sessile, gradually smaller, narrowly elliptic, 4–10 × 0.8–1.5 cm, margin entire. Peduncles straw-coloured or purple, shallowly sulcate, villous, 0.5–3 cm. Capitula solitary or 2–4, arranged in a clustered corymbiform synflorescence. Involucrally broadly campanulate or obconic, 1.5–2.5 cm in diam. Involucral bracts in 4–5 rows, imbricate, straw-coloured or purplish with dark margin, sparsely pilose, apex acute and long-attenuate; outer involucral bracts triangular-ovate, 8–10 × 3–4 mm; middle involucral bracts narrowly ovate-cuneate, 10–14 × 1.5–2.5 mm; inner involucral bracts linear, 13–15 × 1–1.5 mm. Receptacle convex, densely bristly; bristles shiny white, subulate, 5–7 mm. Corolla purple, (5–)8–9 mm, throat 3.5–4 mm, lobes 3–4 mm. Style 17–18 mm; style branches diverging, c. 2 mm. Achenes brown, cylindrical, 3–3.5 mm, smooth. Pappus dirty yellowish white, outer bristles 2–4 mm, inner bristles 11–12 mm. Flowering July to September; fruiting September to October.

Distribution. — Saussurea gymnocephala is distributed in northern and eastern parts of the Qinghai-Tibetan Plateau and has been collected at altitudes between 3400 and 4300 m in large parts of Qinghai, W Sichuan and E Xizang.

Habitat. — Saussurea gymnocephala grows preferably in wet meadows near rivers in almost closed turf, but it has also been found in drier situations. Its ecological preference is quite different from that of other Saussurea species from the area, which are usually found in much drier habitats.

Taxonomic remarks. — Synonymisation of Saussurea obvallata var. gymnocephala with S. erubescens was done by Lipschitz (1967: 663, 1979: 63) without consultation of the type at PE, and was indicated as doubtful by use of a question mark. However, subsequent workers accepted S. obvallata var. gymnocephala as a synonym of S. erubescens and accordingly misidentified material of this distinct species. The type of S. obvallata var. gymnocephala differs from S. erubescens by its scabrid, densely glandular, rather large and entire stem leaves, purple or purplish tinged bracts which enclose the basal part of the synflorescence, by its straw-coloured to purplish involucral bracts with a narrow dark margin and by the very densely leafy upper part of the stem. S. gymnocephala is a member of S. subg. Amphilaena, but rather different from and certainly not closely related to S. obvallata, which is characterised by large, cream or yellowish, semi-transparent and membranous bracts.

There are three sheets of the original collection at PE. The specimen with two mounted plants, one of them with the original field label "991" still attached to it, is chosen here as the lectotype (Fig. 3). It has a type-written label with the indications “Saussurea obvallata Wall. var. gymnocephala Ling var. nov. / (S. tanguica Maxim var. g. Ling) / Kokonor: Tsigeqang, alt. 3400 m, 24.8.1930, K. S. Hao 991. / Det. Ling Yong” on it, while the other two sheets at PE have not been annotated by Ling Yong.

Additional specimens seen. — CHINA: XIZANG: NANG (LANG) XIAN: DUOQUN, 4000 m, [c. 29°02'N, 93°08'E], 22.8.1972, Xizang Drug Plants Expedition Team 4502 (HNWP 33569, 74318, PE 963379). — TINGRI (DINGRI, XêGAR) XIAN: East part of Pingyuan, 4300 m, [c. 28°39'N, 87°45'E], Xizang Expedition Team 1707 (PE 724501). — QINGHAI: CHINDU (CHENGDUO) XIAN: Zadoi (Zaduo), Jinjinglang, 4100 m, [c. 33°22'N, 97°06'E], 17.8.1983, Liu Cao-yi 83-295 (HNWP 105537). — XIWU (XIWU) to SHIHUIYAO, 3900 m, [c. 33°20'N, 97°20'E], 12.9.1983, Liu Cao-yi 83-466 (HNWP 106608). — XIWU (XIWU) to SERXÜ (SHIQU) [SICHUAN], 4000 m, [c. 33°10'N, 97°25'E], 31.8.1983, Liu Cao-yi 83-349 (HNWP 106551). — MADAO (MADAO) XIAN: Xia Dawo, riverbank, 3980 m, [c. 35°N, 99°15'E], 5.8.1974, Maqên Expedition Team 468 (HNWP 42021). — MAQEN (NANGQIAN) XIAN: Dawu Xiang, along the Gequ He, N of Maqên (Maqin) on road to Jiangrang hydroelectric plant, 3600 m, 34°38'8''N, 97°25'E, 31.8.1983, Liu Cao-yi 83-466 (HNWP 106551). — NANGQEN (NANGQIAN) XIAN: BECA (Baiza) Xiang, along the Ba Qu towards the Xizang border from Beca Forest Station, SE of BECaka, 3790 m, 31°53'N, 96°31'E, 8.9.1996, T. N. Ho & al. 2988 (BM 573528, CAS 914528, E 47901, MO 4648487). — XINGHAI XIAN: WENQUN XUAN, along the Qulong He, just N of WENQUN on the road to Daheba, 4010 m, 35°25'15''N, 99°28'1''E, 18.8.1993, (XIWU) to SERXÜ (SHIQU) [SICHUAN], 4100 m, [c. 33°10'N, 97°25'E]. — QUMARLÈB (QUMALAI) XIAN: QIUZHI [Qizhe], Baiyu, 4200 m, [c. 34°30'N, 95°51'E], 14.8.1966, Liu Shang-wu & Huang Rong-fu 777 (HNWP 17434). — XINGHAI XIAN: WENQUN XUAN, along the Qulong He, just NE of WENQUN on the road to Daheba, 4010 m, 35°25'15''N, 99°28'1''E, 18.8.1993, T. N. Ho & al. 1410 (BM 535050, CAS 919661, E 47902, MO 4648745). — YUSHU XIAN: JIANGXI GOU, 3700 m, 19.8.1980, WEI ZHENG-FENG 22036 (HNWP 97569, 97569); LONGBAO XUAN, KA'AI GUO, 4200 m, [c. 33°02'N, 96°59'E], 17.8.1964, Liu Shang-wu 644 (HNWP 3136, PE); near Shang Baitang, in the Baitang He basin, SSE of Yushu, 3750 m, 32°51'N, 97°03'E, 20.8.1996, T. N. Ho & al. 2113 (BM, CAS 941504, MO 5205772). — ZADOI (ZADUO) XIAN: SULU XIAN, YATONG, 4100 m, [c. 35°13'N, 101°48'E], 23.8.1970, Liu Shang-wu & Luo Da-shun 1590 (HNWP 91Willdenowia 41 – 2011

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Distribution. — Saussurea inversa is found throughout the Qinghai-Xizang plateau, as well as in the Kunlun (S Xinjiang) and in the Karakorum (Kashmir).

Habitat. — Saussurea inversa inhabits the alpine and subnival zone, mainly on scree slopes, on semi-consolidated scree, rocky slopes and alpine meadows with a thin layer of turf, at altitudes from 3700 to 5400 m.

Taxonomic remarks. — The type material of Saussurea hypsipeta Diels, which is still extant at WRSL and partly at WU, was not taken into account by Lipschitz, who assumed that all original material had been lost at B, which, however, was not the case. The main collection of W. Limpricht from China has always been housed at the Herbarium of the Botanic Garden in Wroclaw (WRSL), Poland (then Breslau, Germany), where a considerable amount of specimens survived the Second World War. Lipschitz’ choice of a neotype (Lipschitz 1966: 226, 1979: 51) is therefore superseded (Code, Art. 9.17; McNeill et al. 2006). Unfortunately, the type material of S. hypsipeta differs taxonomically from the neotype and is heterogeneous in itself. Therefore, a new name is needed for the plants named “S. hypsipeta” by Lipschitz and now widely known under this name in China. They are in fact identical with S. sorocophala var. glabrata, described from Kashmir. Because the epithet of that variety is not available at species level, I propose here a new name and status for this taxon.


Etymology. — The specific epithet refers to the outer pappus bristles, which are consistently reflexed and appressed to the achene. This is a character state very seldom found in the genus Saussurea. A similar character state is known from the closely related S. gnaphalodes (Royle ex DC.) Sch. Bip., where some but not all outer pappus bristles can be reflexed; this is also the case in S. katochaete Maxim., which is also distributed widely on the Qinghai–Tibetan Plateau.

Fig. 4. Saussurea inversa – lectotype Strachey 15 at K (K000372731), the two plants on the top left. – By kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.
Taxonomic remarks. — The neotype designation by Lipschitz (1966: 227, 1979: 51) is superseded here by the original material. The holotype is a rather poor specimen, but it clearly coincides taxonomically with the neotype, so that application of the name does not change.

Acknowledgements

Thanks are due to the herbarium curators of A/GH, B, BM, CAS, CDBI, E, HNWP, K, KUN, LE, M, MO, NY, P, PE, UPS, W, WRSL and WU for the loan of specimens and/or their assistance during my visits to these herbaria. I also wish to thank Sabine and Georg Miehe (Marburg) and Bernhard Dickoré (München), who have provided me with additional specimens from their personal herbaria, Mariam Aghababyan (Fontainebleau) for help with transliteration of labels with Russian handwriting, and Jutta Meine for taking the specimen pictures. A grant for the field work in 2000 by the National Geographic Society (grant no 6851-00) is gratefully acknowledged. A visit to the Harvard University Herbaria (Cambridge, Massachusetts) was funded through the Flora of China project, St Louis, Missouri.

References


Chen Y. S. 2010: Saussurea baoxingensis sp. nov. (Compositae, Cardueae) from Sichuan, China. — Nordic J. Bot. 28: 761–763.


S. quercifolia belongs to a different taxon of Saussurea hypsipeta, and larger leaves, typical variety by other characters than larger overall size. While Forrest in Yunnan and preserved at Edinburgh (E), this material is taxonomically heterogeneous. While Forrest 13300 and 13555 do indeed represent a large form of S. quercifolia, which cannot be clearly separated from the typical variety by other characters than larger overall size and larger leaves, Forrest 20072 belongs to a different taxon, which has been described as S. paxiana Diels. The lectotypification made here fixes the usage of S. quercifolia var. major as a synonym of S. quercifolia. S. paxiana has not been recorded yet from Yunnan; Forrest 20072 is the first and only record of this species from that province.

The original material of Saussurea quercifolia var. major consists of three specimens, all collected by George Forrest in Yunnan and preserved at Edinburgh (E). This material is taxonomically heterogeneous. While Forrest 13300 and 13555 do indeed represent a large form of S. quercifolia, which cannot be clearly separated from the typical variety by other characters than larger overall size and larger leaves, Forrest 20072 belongs to a different taxon, which has been described as S. paxiana Diels. The lectotypification made here fixes the usage of S. quercifolia var. major as a synonym of S. quercifolia. S. paxiana has not been recorded yet from Yunnan; Forrest 20072 is the first and only record of this species from that province.

The original material of Saussurea hypsipeta is heterogeneous as well. There are three sheets of S. hypsipeta preserved in the WRSL herbarium. Whereas Limpricht 2151 and Limpricht 2214 match the widespread and variable S. gnaphalodes (Royle ex DC.) Sch. Bip., S. quercifolia var. major and a smaller caespitose plant with erect leaves. A duplicate specimen of the larger plants had been sent to Handel-Mazzetti in Vienna, who identified it correctly as synonymy with S. quercifolia W. W. Sm. Handel-Mazzetti (1938: 344) also recognised that this plant was different from S. gnaphalodes var. glabrata Hook. f., later erroneously synonymised by Lipschitz with S. hypsipeta. To maintain the use of the name S. hypsipeta as a synonym of S. quercifolia, the plant at the bottom of the left hand side of Limpricht 2237 (WRSL) is chosen here as the lectotype.