

稻城千里光(菊科-千里光族)的名实订正

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摘要: 通过标本(包括模式标本)检查, 发现稻城千里光(*Senecio daochengensis* Y. L. Chen)与黑褐千里光(*S. atrofuscus* Grierson)属于同一种植物, 故将前者处理为后者的异名。提供了黑褐千里光的地理分布图及其与近缘种的检索表。

关键词: 菊科; 千里光族; 千里光属; 分类学

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The Identity of *Senecio daochengensis* (Asteraceae-Senecioneae)

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Abstract: Examination of specimens (including the types) has shown that *Senecio daochengensis* Y. L. Chen is conspecific with *S. atrofuscus* Grierson and thus is placed in synonymy under the latter. A distribution map and a key to *S. atrofuscus* and its related species are provided.

Key words: Asteraceae; Senecioneae; *Senecio* L.; Taxonomy

Senecio daochengensis Y. L. Chen (Asteraceae-Senecioneae) was described on the basis of two collections, Sichuan Veget. Exped. 3877 (PE) (Fig. 1: A) and 3884 (CDBI) (Fig. 1: B), from Daocheng County, Sichuan Province, China, with the former being designated as the holotype^[1]. In the protologue, the author compared the species with *S. drukensis* Marq. & Shaw, a species occurring in southeastern Xizang (Tibet), China, stating that *S. daochengensis* is very similar to *S. drukensis* in habit, but differs in the leaves glabrous on both surfaces, margin subentire, revolute when dry, petioles wingless, capitula often 3–4 borne in the upper part of stem, involucre broader, 5–8 mm in diameter, phyllaries glabrous, fimbriate, and ray florets 8–11 with the tube pubescent

outside.

When describing *Senecio daochengensis*, Chen^[1] obviously ignored or neglected another Chinese species also closely related to *S. drukensis*, i.e. *S. atrofuscus* Grierson (Fig. 1: C–D), which Grierson^[2] described on the basis of some Xizang and Yunnan specimens, namely Ludlow, Sherriff and Elliot 14324 (BM, E) from Xizang and Forrest 30006 (BM, E) from Yunnan. The type locality of *S. daochengensis*, Daocheng, Sichuan, is closely adjacent to Zhongdian, Yunnan, where *S. atrofuscus* has been recorded to occur^[3–4]. In addition, the latter species has always been described as having glabrous membranous leaves^[2–7], which is also an important diagnostic character for *S. daochengensis* as emphasized by Chen^[1]. These

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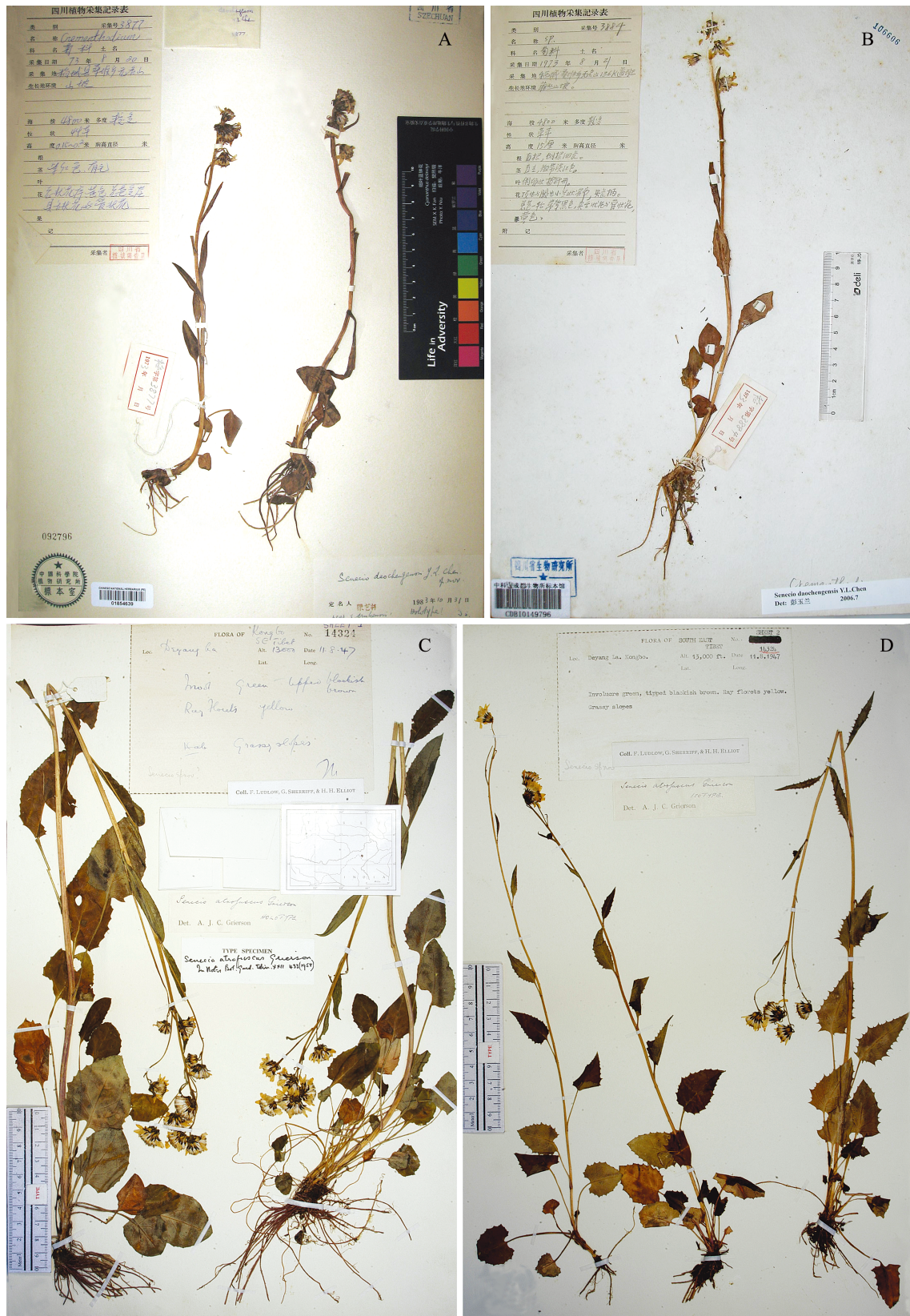


Fig. 1. Specimens of *Senecio atrofasciatus*. A. China, Sichuan, Daocheng, Sichuan Veget. Exped. 3877 (PE, holotype of *S. daochengensis*); B. China, Sichuan, Daocheng, Sichuan Veget. Exped. 3884 (CDBI, isoparatype of *S. daochengensis*); C. China, Xizang, Kongbo, Deyang La, Ludlow, Sherriff and Elliot 14324 (BM, holotype of *S. atrofasciatus*); D. China, Xizang, Kongbo, Deyang La, Ludlow, Sherriff and Elliot 14324 (BM, isotype of *S. atrofasciatus*).



Fig. 2 Specimens (A–C) and capitula (D–F) of *Senecio atrofascus*. A. China, Yunnan, Zhongdian, T. T. Yu 12745 (KUN); B. China, Yunnan, Zhongdian, K. M. Feng 23330 (KUN); C. China, Yunnan, without precise locality, Forrest 30006 (E, paratype of *S. atrofascus*); D. China, Sichuan, Daocheng, Sichuan Veget. Exped. 3877 (PE) (phyllaries 14–17, blackish on the veins and upper margins); E. China, Xizang, Kongbo, Deyang La, Ludlow, Sherriff and Elliot 14324 (BM) (phyllaries 14–17, blackish on the veins and upper margins); F. China, Yunnan, without precise locality, Forrest 30006 (E) (phyllaries 15–18, blackish on the veins and upper margins). Scale bars = 1 cm

facts prompted us to compare the specimens of *S. atrofuscus* (including the types) with the type material of *S. daochengensis*.

Our examination has shown that *Senecio daochengensis* is not essentially different from *S. atrofuscus* in any important characters, such as the habit of rather small erect herbs with leafy stems, the glabrous membranous (thus easily rolled when dry) leaves, and the few capitula borne in the upper part of stem (Figs. 1–2). In particular, the Sichuan specimens (Fig. 1: A–B) perfectly match with the Yunnan ones (Fig. 2: A–C), although the Xizang specimens appear to be somewhat different in habit and leaf shape as noted by Grierson^[2] when he described *S. atrofuscus*. The Sichuan and Yunnan specimens, apart from the capitula, are more slender than the Xizang ones. The lower leaves are elliptic-ovate occasionally truncate at the base but not cordate. In size and detail the capitula from different areas are similar. We therefore agree with Grierson^[2], Jeffrey and Chen^[3], Liu^[4], and Chen et al.^[7] to treat the Xizang and Yunnan specimens as belonging to the same taxonomic entity, i.e. *S.*

atrofuscus. As the type specimens of *S. daochengensis* are perfectly consistent with the Yunnan specimens of *S. atrofuscus*, we will have no choice but to place *S. daochengensis* in synonymy under *S. atrofuscus*.

Senecio atrofuscus Grierson in Notes Roy. Bot. Gard. Edinb. **22**: 433. 1958; K. Y. Pan in Fl. Xizang. **4**: 821. 1985; Jeffrey & Chen in Kew Bull. **39**: 380. 1984; Y. L. Chen in Fl. Reipubl. Popularis Sin. **77**(1): 252. 1999; S. W. Liu in Fl. Yunnan. **13**: 433. 2004; Chen et al. in Fl. China **20–21**: 520. 2011. Type: China. Xizang (Tibet): Kongbo, Deyang La, grassy slopes, 13000 ft. (= 3962 m) a.s.l., 11 Aug. 1947, Ludlow, Sherriff and Elliot 14324 (holotype: BM!; isotypes: BM!, E!).

Senecio daochengensis Y. L. Chen in Acta Phytotax. Sin. **26**: 56. 1988; et in Vas. Pl. Hengduan Mount. **2**: 2098. 1994; et in Fl. Reipubl. Popularis Sin. **77**(1): 255. 1999; Chen et al. in Fl. China **20–21**: 521. 2011. syn. nov. Type: China. Sichuan: Daocheng, Sangduixiang, Wumingshan, mountain slopes, 4800 m a.s.l., 20 Aug. 1973, Sichuan Veget. Exped. 3877 (holotype: PE!;

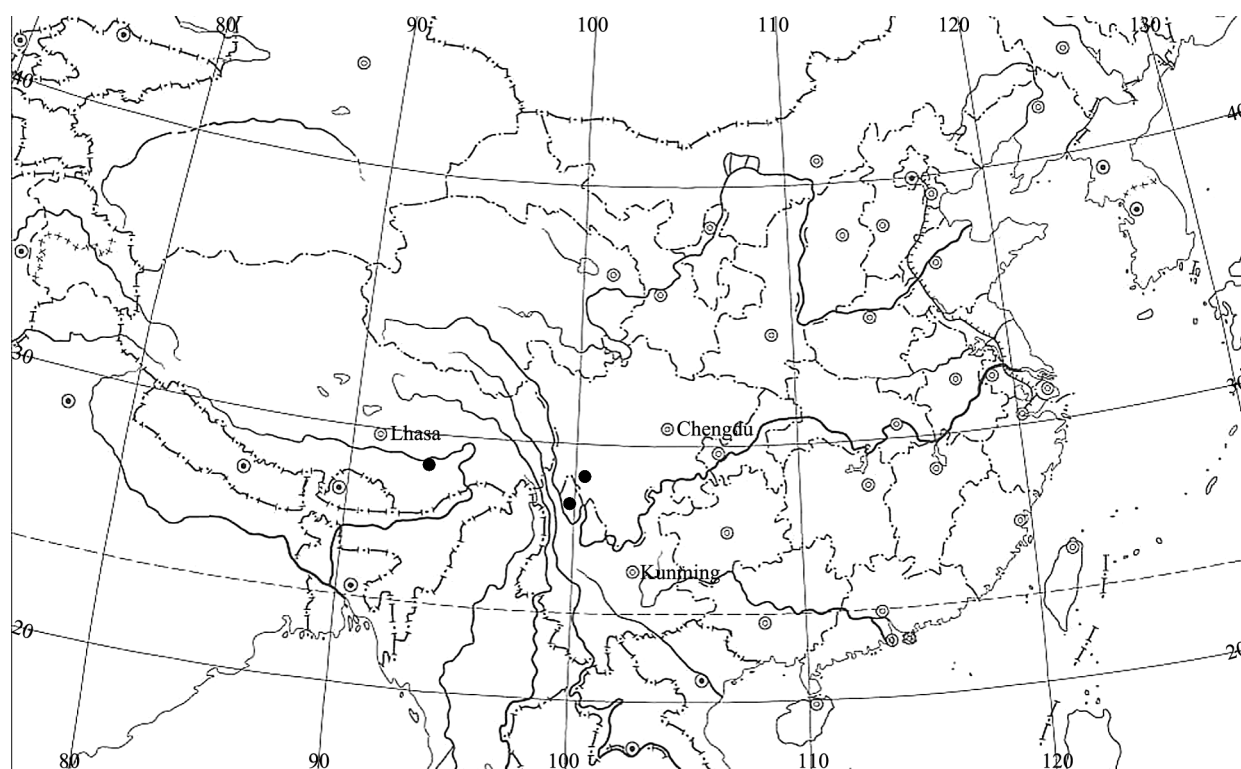


Fig. 3 Distribution of *Senecio atrofuscus*

isotypes: CDBI!).

Additional specimens examined. **China. Sichuan:** Daocheng, Sichuan Veget. Exped. 3884 (CDBI, PE). **Yunnan:** Without precise locality, Forrest 30006 (BM, E), Zhongdian, K. M. Feng 23330 (KUN, PE), T. T. Yu 12745 (KUN, PE).

Distribution and habitat. *Senecio atrofusculus* is currently known from western Sichuan, southeastern Xizang, and northwestern Yunnan (Fig. 3). All these areas belong to the Hengduan Mountains region, which is at the end of the eastern Himalayan range in southwest China. Steep gorges and high peaks dominate this region, which is recognized as a biodiversity ‘hot spot’^[8–11], and harbours the richest temperate flora of seed plants in the world^[12–13]. Floristically, it is also a highly natural region and is one of the areas of the world with a high concentration of endemic

species^[12–14]. *Senecio atrofusculus* usually grows on gravelly grassy slopes at altitudes of 3400–4800 m.

Notes. As pointed out by Grierson^[2], *Senecio atrofusculus* is allied to *S. nodiflorus* C. C. Chang, a species endemic to southeastern Xizang and northwestern Yunnan (Deqen), but differs in having glabrous membranous leaves and smaller capitula. It is also allied to *S. drukensis* which has smaller capitula and leaves which are tomentose especially beneath, as are those of *S. nodiflorus*, but narrower than in this species. All three species are closely similar in respect of the blackish phyllaries, in the radiate, nodding capitula, and in the black-toothed disc flowers (Fig. 2: D–F). Jeffrey and Chen^[3] also considered the three species to be closely related, and established a new series, *Senecio* ser. *Cernui* C. Jeffrey & Y. L. Chen, to accommodate them. The three species are keyed out as follows:

Key to species in *Senecio* ser. *Cernui*

1. Leaves glabrous on both surfaces, green beneath *S. atrofusculus*
1. Leaves white-tomentose beneath.
2. Involucres 5–6 mm long, 4–5 mm broad; ray florets 6–8 *S. drukensis*
2. Involucres 7–8 mm long, 10–15 mm broad; ray florets 18–21 *S. nodiflorus*

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References

- [1] Chen Y L. Eight new species of the tribe Senecioneae (Compositae) from China [J]. Acta Phytotax Sin, 1988, 26(1): 50–57. (in Chinese)
- [2] Grierson A J C. Three new Sino-Himalayan Compositae [J]. Notes Roy Bot Gard Edinb, 1958, 22(4): 431–434.
- [3] Jeffrey C, Chen Y L. Taxonomic studies on the tribe Senecioneae (Compositae) of Eastern Asia [J]. Kew Bull, 1984, 39(2): 205–446.
- [4] Liu S W. *Senecio* L. [M]// Flora Yunnanica, Tomus 13. Beijing: Science Press, 2004: 418–436. (in Chinese)
- [5] Pan K Y. *Senecio* L. [M]// Flora Xizangica, Tomus 4. Beijing: Science Press, 1985: 807–827. (in Chinese)
- [6] Chen Y L. *Senecio* L. [M]// Flora Reipublicae Popularis Sinicae, Tomus 77(1). Beijing: Science Press, 1999: 225–304. (in Chinese)
- [7] Chen Y L, Nordenstam B, Jeffrey C, et al. *Senecio* L. [M]// Flora of China, Vol. 20–21. Beijing: Science Press; St. Louis: Missouri Botanical Garden Press, 2011: 508–536.
- [8] Boufford D E, Dijk P P V. South-central China [M]// Hotspots: Earth’s Biologically Richest and Most Endangered Terrestrial Ecoregions. Mexico: Cemex, 2000: 338–351.
- [9] Myers N, Mittermeier R, Mittermeier G C, et al. Biodiversity hotspots for conservation priorities [J]. Nature, 2000, 403(6772): 853–858.
- [10] Boufford D E, Dijk P P V, Zhi L. Mountains of southwest China [M]// Hotspots Revisited: Earth’s Biologically Richest and Most Endangered Terrestrial Ecoregions. Mexico: Cemex, 2004: 159–164.
- [11] Zhang D C, Boufford D E, Richard H R, et al. The 29° N latitudinal line, an important division in the Hengduan Mountains, a biodiversity hotspot in southwest China [J]. Nord J Bot, 2009, 27(5): 405–412.
- [12] Wu Z Y. Hengduan Mountain flora and her significance [J]. J Jpn Bot, 1988, 63(9): 1–15.
- [13] Li X W, Li J. A preliminary floristic study on the seed plants from the region of Hengduan Mountain [J]. Acta Bot Yunnan, 1993, 15(3): 217–231. (in Chinese)
- [14] Li X W. Two big biodiversity centres of Chinese endemic genera of seed plants and their characteristics in Yunnan Province [J]. Acta Bot Yunnan, 1994, 16(3): 221–227. (in Chinese)