Senecio kuanshanensis (Asteraceae), a new species from southern Taiwan

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Abstract. A new species of Asteraceae from Taiwan, Senecio kuanshanensis C.-I Peng & S.W. Chung, a distinct member of sect. Crociseris (Reichenb.) Hall. & Wohlf. ser. Nemorenses Gagnidze, is described and illustrated. Senecio kuanshanensis is apparently rare, presently known only from mountain ridges of Kuanshan, at (2,500-)3,000-3,300 m elevation in the southern part of the Central Mountain Range of Taiwan. In habit the new species somewhat resembles S. morrisonensis Hayata, an endemic congener from Taiwan, but it is clearly distinct in having longer peduncles (3-7 cm vs. 0.5-2[-3] cm), longer involucres (8-10 mm vs. 4.5-6 mm), longer corolla tube in the disc florets (4-5 mm vs. 3-3.5 mm), longer rays (9-14 mm vs. 5.5-7.2 mm) in the ray florets, and median cauline leaves that are deeply bipinnatipartite to tripinnatipartite (vs. serrate to coarsely dentate or deeply pinnately lobed).

Keywords: Asteraceae; Compositae; New species; Rare species; Senecio kuanshanensis; Senecioneae; Taiwan; Taxonomy.

Senecio is a cosmopolitan genus of ca. 1,250-3,000 species, depending on circumscription (Diggs et al., 1999). New information and new taxonomic concepts indicate that the genus should be divided into various segregates (Barkley et al., 1996). Based on the generic concepts adopted in recent taxonomic studies on the tribe Senecioneae of eastern Asia (Jeffrey and Chen, 1984; Chen, 1999), seven species and one additional variety of Senecio were recognized in the recently revised Flora of Taiwan (Peng and Chung, 1998). With the exception of S. vulgaris L., which is naturalized around villages at 2,000-2,500 m in Taiwan, all members of the genus are indigenous and five are endemic.

Subsequent to our recent description of a new species of Senecio from eastern Taiwan, S. tarokoensis C.-I Peng (Peng and Leu, 1999), another unique species was discovered on Kuanshan at ca. 3,000-3,300 m in the southern part of the Central Mountain Range. It is not referable to any species heretofore known in eastern Asia (Koyama, 1968, 1969; Jeffrey and Chen, 1984; Iwatsuki et al., 1995; Peng et al., 1998; Peng and Leu, 1999; Chen, 1999) and is here described as new.

Senecio kuanshanensis C.-I Peng & S.W. Chung, sp. nov.—TYPE: TAIWAN. Kaohsiung Hsien, Taoyuan Hsiang, Yushan National Park, from ‘3026 Lodge’ to Kuanshan, 120° 54’ 22” E, 23° 14’ 45” N, elev. ca. 3,300 m, in Abies forest on mountain ridges, frequent on forest floor, at peak anthesis, 20 Aug 1998, Kuo-Fang Chung 1022, accompanied by Yoko Kita, Chien-Chih Chen, and S. J. Moore (holotype: HAST; isotypes: E, GH, K, KUN, MO, NCUF, PE, TAIF, TNM).
Figure 1. Senecio kuanshanensis C.-I Peng & S.W. Chung. A, Habit; B, Apical portion of a leaf; C, D. Capitulum; E. Bracteole; F. Involucral bract, abaxial surface; G, Apex of involucral bract, much magnified; H. Involucral bract, adaxial surface; I, Ray floret; J, Portion of ray floret; K, Style branches; L, Disc floret; M, Disc floret, achene and pappus removed; N, Stamens, expanded; O, Achene; P, Q. Pappus; R, Achene, pappus removed. (All from S. W. Chung 101, HAST)
glabrous. Ray florets 5 (-6), tube yellow, ca. 8.5 mm long, rays yellow, 9-14 mm long, ca. 3.5 mm broad, 3-denticulate at apex, 4-veined; disc florets ca. 14-15, corolla yellow, 7-8 mm long, tube 4-5 mm long, limb infundibuliform, lobes oblong-lanceolate, 1-1.5 mm long, acute, papillose at apex. Anthers ca. 2.5 mm long, shortly obtusely auriculate at the base, apical appendages ovate-lanceolate. Achenes cylindrical, 2-3 mm long, sparsely hirtellous on ribs. Flowering Aug-Oct.


Figure 2. Senecio kuanshanensis, showing habit and habitat.

Figure 3. Senecio kuanshanensis, upper part of a plant, showing leaves and capitula.

Distribution and notes. Endemic and apparently rare in Taiwan; presently known only along semishaded trails in Tsuga-Abies forests and in Yusania bamboo grasslands near the mountain ridge of Kuanshan, at (2,500-)3,000-3,300 m elevation (Figure 4). Mt. Kuanshan and its neighboring area are noted for harboring a number of endemic and/or rare species of Asteraceae, e.g. Senecio taitungensis S. S. Ying (endemic; Ying, 1990), Saussurea kanzanensis Kitam. (endemic and vulnerable; Peng, 2000), Parasenecio monantha (Diels) C.-I Peng & S.W. Chung (rare and vulnerable; Peng, 2000) and Parasenecio nokoenensis (Masam. & Suzuki) C.-I Peng & S.W. Chung (endemic and rare; Peng and Chung, 1998). Other plants such as Sarcococca saligna (D. Don) Muell.-Arg. [Buxaceae; endangered; Lu, 1996], Listera kuanshanensis H.J. Su [Orchidaceae; endemic and rare; Su, 1999], Ponerochis tominagai (Hayata) H.J. Su & J.C. Chen [Orchidaceae; endemic; Su and Chen, 2000], Woodsia okamotoi Tagawa [Athyriaceae; endemic and critically endangered; Moore, 1999], Polybium xiphophyllum (Baker) Diels [Dryopteridaceae; critically endangered; Moore, 2000], Epilobium nankotaizanese Yamam. [Onagraceae; rare, alpine endemic; Hsu and Lu, 1984] are found also on Mt. Kuanshan.
Senecio kuanshanensis is a distinct member of sect. Crociseris (Reichenb.) Hall. et Wohlf. ser. Nemorenses Gagnidze (cf. Chen, 1999). Although in habit it is somewhat similar to S. morrisonensis Hayata, it is clearly distinct in having the middle cauline leaves deeply bipinnatipartite to tripinnatipartite (vs. serrate to coarsely dentate or deeply pinnately lobed), longer peduncles (3-7 cm vs. 0.5-2[-3] cm), longer involucres (8-10 mm vs. 4.5-6 mm), and larger floral parts, such as the narrow tube of the disc florets 4-5 mm long (vs. 3-3.5 mm long), and the rays of the ray florets 9-14 mm long (vs. 5.5-7.2 mm long).

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Literature Cited


台灣特產之菊科新種植物：關山千里光

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本文發表一種特產台灣之菊科新種植物：關山千里光（Senecio kuanshanensis C.-I Peng & S. W. Chung, sp. nov.），並提供植物照片、照片及分布圖以資辨識。關山千里光為台灣稀有植物，目前僅知分布於關山海拔2,500-3,300 公尺之鐵杉、冷杉林或玉山箭竹叢的半遮蔭山徑上。關山千里光為千里光屬番紅菊組（Sect. Crociseris）林蔭系（Ser. Nemorenses）植物，習性類似台灣特產之玉山黃菀（S. morrisonensis），但葉生葉二回至三回羽狀深裂，並裂至中肋及側脈處（非鋸齒或粗齒緣，或羽狀分裂）；總花梗可達3-7 公分（非0.5-2[-3]公分）；總苞較長，8-10 公厘（非僅4.5-6 公厘）；管狀花之管部較長，達4.5公厘（非僅3.5公厘）；舌狀花花瓣長9-14 公厘（非僅5.5-7.2 公厘）等特徵，明顯可與玉山黃菀區別。

關鍵詞：菊科；新種；稀有植物；關山千里光；台灣；分類。