Phytotaxa 286 (3): 198–202
http://www.mapress.com/j/pt/

Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

http://dx.doi.org/10.11646/phytotaxa.286.3.8

Cremanthodium nobile var. *yanyuanense* (Asteraceae, Senecioneae), a new epappose taxon from southwestern Sichuan, China

LONG WANG [1, 2], CHEN REN[1] & QIN-ER YANG[1*]
[1]*Key Laboratory of Plant Resources Conservation and Sustainable Utilization, South China Botanical Garden, Chinese Academy of Sciences, Guangzhou 510650, China*
[2]*University of Chinese Academy of Sciences, Beijing 100049, China*
**Author for correspondence: e-mail: qeyang@scib.ac.cn*

Abstract

A new variety, *Cremanthodium nobile* var. *yanyuanense* (Asteraceae, Senecioneae), is described and illustrated. It is readily distinguished from the type variety, var. *nobile*, by the absence of the pappus.

Key words: Compositae, new variety, taxonomy

Introduction

In the course of checking specimens for the preparation of an account of the genus *Cremanthodium* Bentham (1873: 38) for the *Flora of Pan-Himalaya* (<www.flph.prg/index>), three collections, *Anonymous 080154* (HITBC), *Anonymous 080155* (HITBC) and *Qinghai-Xizang Exped. 12180* (KUN, PE), all from Yanyuan, southwestern Sichuan, China, caught our attention. These specimens had been previously identified as *C. nobile* (Franchet 1892: 287) Diels ex Léveillé (1916: 43). Upon careful examination, however, we found that their florets have no pappus bristles, a character which at once distinguishes them from *C. nobile*. In July 2016, we made a botanical trip to Yanyuan and successfully discovered a large population of the plants in question. The absence of the pappus was confirmed to be a constant character within the population. As we have been unable to find any other morphological differences between these plants and *C. nobile*, we consider it justifiable to describe them as a new variety of this species.

Cremanthodium nobile* var. *yanyuanense L. Wang, C. Ren & Q. E. Yang, **var. nov.** (Figs. 1−2)

Type:—CHINA. Sichuan, Yanyuan, Huolu Shan, 27°51′54.04″ N, 101°34′26.78″ E, in alpine scrub, 3945 m, 16 July 2016, *L. Wang & Y.P. Zeng 845* (holotype IBSC; isotypes CDBI, IBSC, PE).

Perennial herbs. Stems 1–4, erect, 15−30 cm tall, 2−4 mm in diam. at base, slightly purplish black pilose or glabrous proximally, densely purplish black pilose and white arachnoid distally. Basal leaves sessile or shortly petiolate; petiole to 3 cm long, glabrous, more or less winged; leaf blade thick, obovate, elliptic or oblong, 2−8 cm long, 2−5 cm wide, bright-green adaxially, pale-green abaxially, glabrous on both surfaces, base cuneate, narrowed into petiole, apex obtuse or rounded, margin entire or shallowly crenate; pinnate veins slightly sunken adaxially, prominent abaxially. Stem leaves 2−5, sessile, ca. 1 cm long, lanceolate to linear, base not amplexicaul. Capitula solitary, nodding. Involucre hemispheric, 1−1.5 cm high, ca. 2 cm in diam., outside purplish black pilose and slightly white arachnoid; phyllaries 13−15, in 2 rows; outer phyllaries lanceolate or narrowly oblong, 3−4 mm wide, apex acuminate; inner phyllaries oblong, 4−8 mm wide, margin membranous, shortly white ciliate on upper edges, apex acute. Ray florets 12−15, yellow; lamina narrowly lanceolate, 2−4 cm long, 0.4−0.7 cm wide, apex acuminate, shallowly 3-dentate; tube ca. 1 mm long. Tubular florets numerous, yellow; limb ca. 4 mm long, Tube ca. 1 mm long. Achenes obovoid, ca. 2 mm long, conspicuously ribbed. Pappus absent.

 Accepted by Alexander Sennikov: 14 Nov. 2016; published: 30 Nov. 2016

FIGURE 1. Holotype sheet of *Cremanthodium nobile* var. *yanyuanense*.

Distribution and Habitat:—*Cremanthodium nobile* var. *yanyuanense* is currently known only from the type locality, i.e. Huolu Shan in Yanyuan, southwestern Sichuan, China (Fig. 3). It grows in alpine meadows or alpine scrub at elevations of 3600−4000 m above sea level.

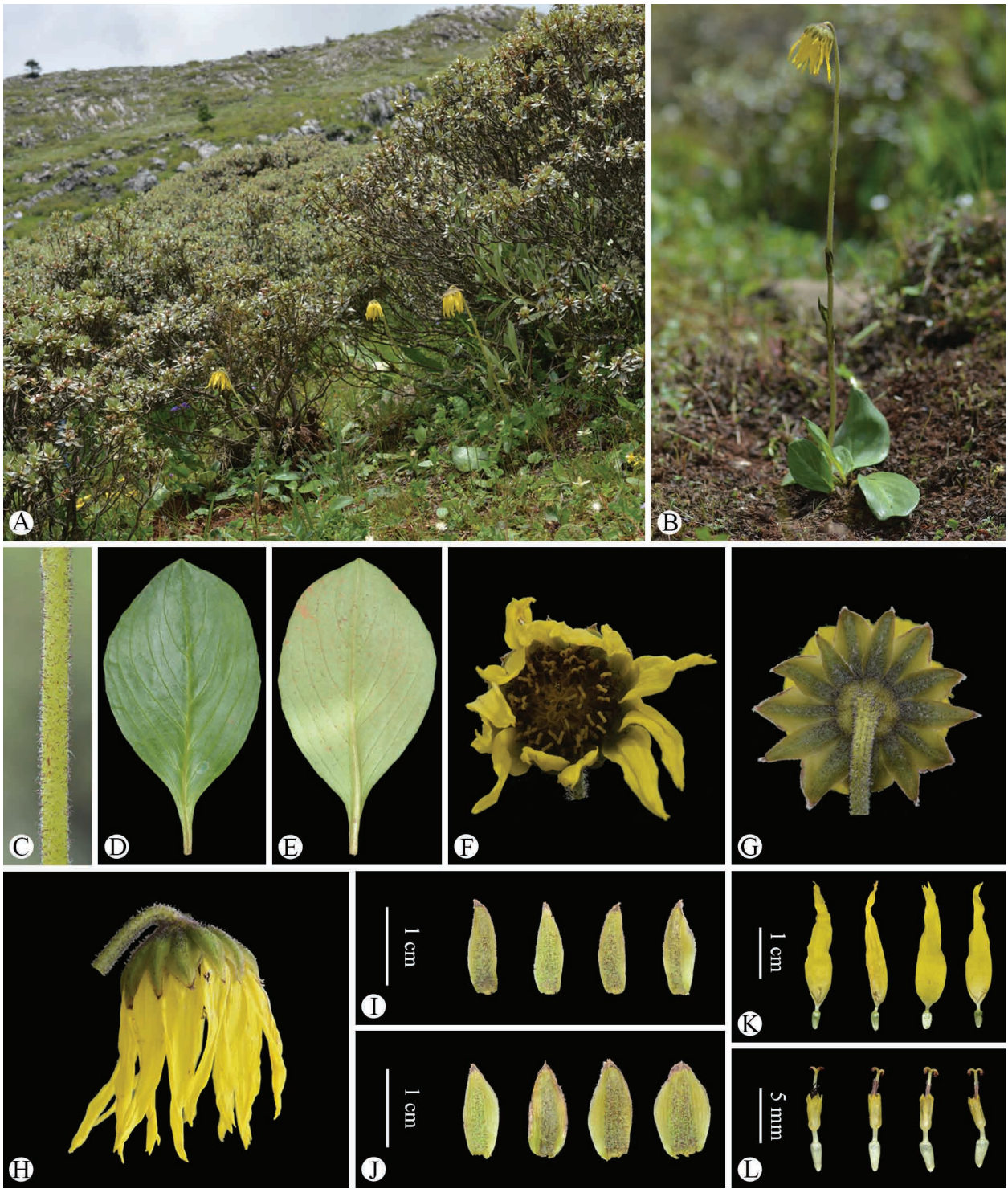

FIGURE 2. *Cremanthodium nobile* var. *yanyuanense* in the wild (Yanyuan, Sichuan, China). **A**. Habitat. **B**. Habit. **C**. Portion of stem, showing the pubescence. **D**. Leaf (adaxial surface). **E**. Leaf (abaxial surface). **F**. Capitulum (top view). **G**. Capitulum (back view). **H**. Capitulum (side view). **I**. Outer phyllaries (abaxial surface). **J**. Inner phyllaries (abaxial surface). **K**. Ray florets. **L**. Tubular florets.

Phenology:—Flowering late June to July; fruiting late July to August.

Etymology:—The varietal epithet is derived from Yanyuan, southwestern Sichuan, China, the type locality of this variety.

Additional specimens examined:—CHINA. Sichuan, Yanyuan, Huolu Shan, alpine meadows, 3950 m, 21 July 1983, *Anonymous 080154* (HITBC); same locality, alpine scrub, 3700−4000 m, 22 July 1983, *Anonymous 080155* (HITBC); same locality, alpine scrub, 3600−3800 m, 21 July 1983, *Qinghai-Xizang Exped. 12180* (KUN, PE).

Discussion:—*Cremanthodium nobile* var. *yanyuanense* is at once distinguishable from the type variety, *C. nobile*

var. *nobile*, by the absence of the pappus. In the type variety, the pappus is always present and is as long as the tubular corolla. We have been unable to find any other essential difference between the two taxa in morphological characters (Table 1).

TABLE 1. Comparison between *Cremanthodium nobile* var. *nobile* and *C. nobile* var. *yanyuanense*.

	C. nobile var. *nobile*	*C. nobile* var. *yanyuanense*
Stem	to 40 cm high, slightly purplish black pilose or glabrous proximally, densely purplish black pilose and white arachnoid elsewhere	to 30 cm high, slightly purplish black pilose proximally, densely purplish black pilose and white arachnoid elsewhere
Basal leaf	2−5, obovate, broadly elliptic or suborbicular, 2–10 cm long, 1–5.5 cm wide	3−5, obovate, elliptic or oblong, 2−8 cm long, 2−5 cm wide
Stem leaf	2−7, oblong to linear	2−5, lanceolate to linear
Involucre	hemispheric, 1−1.7 cm high, 2−3 cm in diam.	hemispheric, 1−1.5 cm high, ca. 2 cm in diam.
Phyllary	10−15, purplish black pilose and slightly white arachnoid dorsally	13−15, purplish black pilose and slightly white arachnoid dorsally
Ray lamina	narrowly lanceolate or narrowly elliptic, 2−4 cm long, 0.4−1 cm wide	narrowly lanceolate, 2−4 cm long, 0.4−0.7 cm wide
Pappus	white, as long as tubular corolla	absent
Distribution	southwestern Sichuan (Daocheng, Jiulong, Litang, Mianning, Muli), northwestern Yunnan (Eryuan, Heqing, Lijiang, Ninglang, Zhongdian) (Fig. 3)	southwestern Sichuan (Yanyuan) (Fig. 3)

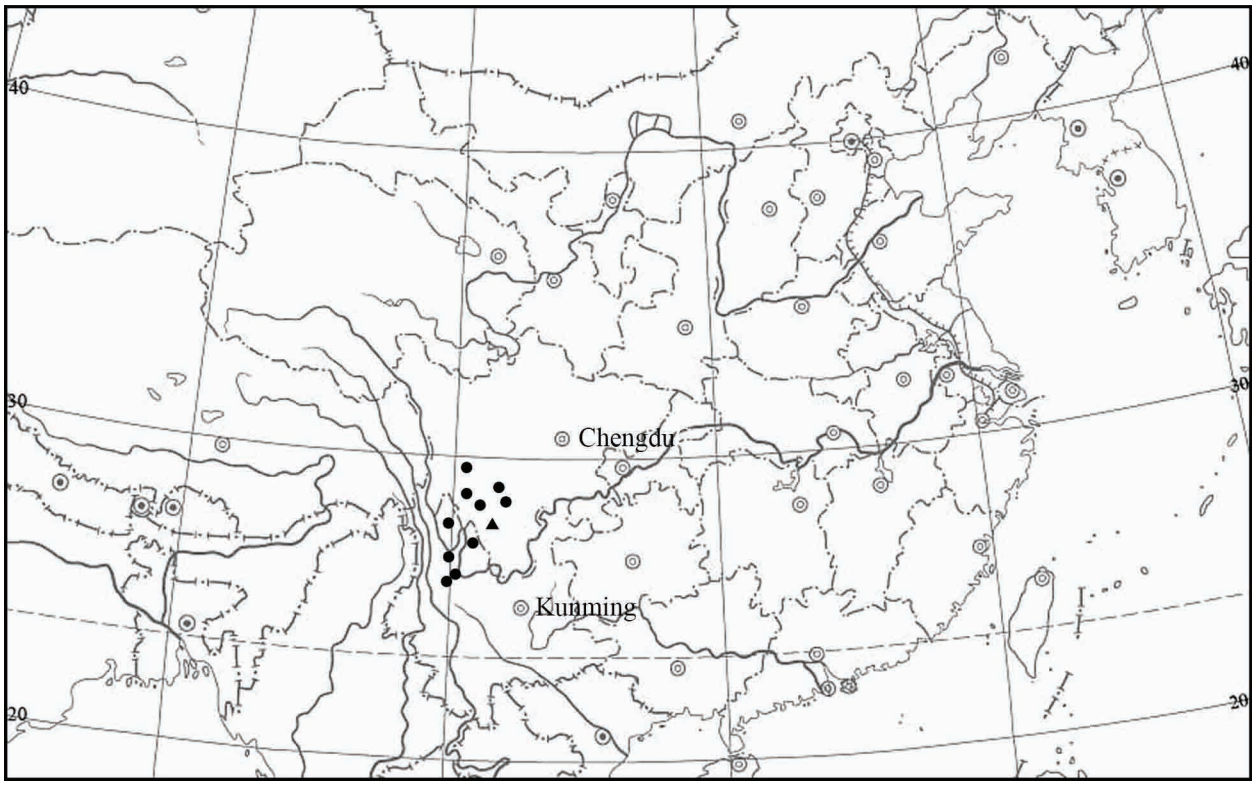

FIGURE 3. Distribution of *Cremanthodium nobile* var. *nobile* (●) and *C. nobile* var. *yanyuanense* (▲).

In the genus *Cremanthodium*, *C. nobile* var. *yanyuanense* is the second known epappose taxon. The first taxon reported to have this feature in the genus is *C. bupleurifolium* Smith (1913: 112), which occurs in Dêqên in northwestern Yunnan, China (previous records of its occurrence in southwestern Sichuan and southeastern Xizang are wrong due to misidentification of specimens or misinterpretation of their locality information). *Cremanthodium bupleurifolium*

is most closely similar to *C. brachychaetum* Chang (1951: 322) from Weixi (a county closely contiguous to Dêqên) in northwestern Yunnan, but in the latter the pappus, albeit very short (1−2 mm long, much shorter than the tubular corolla which is ca. 5 mm long), is constantly present. Just as the case with *C. nobile* var. *nobile* and var. *yanyuanense* which differ from each other only in the presence or absence of the pappus, it seems that there are also no other essential differences between *C. bupleurifolium* and *C. brachychaetum*. The taxonomic status of *C. brachychaetum* needs to be reconsidered. We put this problem aside for future study.

From a morphological perspective *Cremanthodium nobile* var. *yanyuanense* seems not to be closely related to *C. bupleurifolium.* According to the infrageneric classification of *Cremanthodium* by Liu (1982, 1989) which is purely morphology-based, *C. nobile* var. *yanyuanense* should be placed in *C.* ser. *Oblongata* Ling & Liu in Liu (1989: 145) under *C.* sect. *Pinnatinervia* Ling & Liu in Liu (1982: 51, "*Pinnatinervus*"), whereas *C. bupleurifolium* belongs to *C.* ser. *Glauca* Ling & Liu in Liu (1989: 140) under the same section. The independent disappearance of the pappus in *Cremanthodium* is an interesting phenomenon and its significance needs to be assessed further.

Acknowledgements

We are grateful to an anonymous reviewer for valuable comments on the manuscript. We thank the curators of HITBC, KUN and PE for allowing us to examine specimens or use their images of specimens. This work was supported by the National Natural Science Foundation of China (grant no. 31370232, 31670195).

References

Bentham, G. (1873) *Hooker's Icones Plantarum*, vol. 12. Longman, Rees, Orme, Brown, Green, & Longman, etc., London, pp. 36−39. http://dx.doi.org/10.5962/bhl.title.16059

Chang, C.C. (1951) New species of *Senecio* and its allied genera. *Acta Phytotaxonomica Sinica* 1: 313−323.

Franchet, A. (1892) Les genres *Ligularia*, *Senecillis*, *Cremanthodium* et leurs espèces dans l'Asie centrale et orientale [part]. *Bulletin de la Société Botanique de France* 39: 279–288. http://dx.doi.org/10.1080/00378941.1892.10828665

Léveillé, H. (1916) *Catalogue des Plantes du Yun-Nan*. Le Mans, 299 pp. http://dx.doi.org/10.5962/bhl.title.601

Liu, S.W. (1982) A taxonomic study on the genus *Cremanthodium* Benth. *Acta Biologica Plateau Sinica* 1: 49−59. [In Chinese]

Liu, S.W. (1989) *Cremanthodium* Benth. *In:* Ling, Y. & Liu, S.W. (Eds.) *Flora Reipublicae Popularis Sinicae*, vol. 77 (2). Science Press, Beijing, pp. 115−171. [In Chinese]

Smith, W.W. (1913) Diagnoses specierum novarum chinensium in herbario Horti Regii Botanici Edinburgensis cognitarum. I−L. *Notes from the Royal Botanic Garden, Edinburgh* 8: 105–136.