NOTE

Chrysosplenium japonicum (Saxifragaceae), Newly Recorded from Taiwan

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ABSTRACT: *Chrysosplenium japonicum* (Maxim.) Makino (Saxifragaceae) is newly recorded from northeastern Taiwan. Description, color photos and a key to the *Chrysosplenium* species in Taiwan are provided.

KEY WORDS: *Chrysosplenium japonicum*, new record, Saxifragaceae, Taiwan.

INTRODUCTION

Chrysosplenium (Saxifragaceae) is a genus of about 57-65 herbaceous species widely distributed in Asia, Europe and America with the highest species diversity in eastern Asia (Soltis et al., 2001; Pan and Ohba, 2001). In Taiwan, three *Chrysosplenium* species have been recorded (Kao, 1993; Pan & Ohba, 2001), including one endemic species (*C. hebetatum* Ohwi) and one endemic variety (*C. lanuginosum* Hook.f. & Thomson var. *formosanum* (Hayata) H. Hara). During a field trip in the Shihyuenyakou area, Ilan County in March 2011, the third author recognized a *Chrysosplenium* species with different morphological characters from all known species from Taiwan. After a careful examination of specimens and literature (Ohwi, 1965; Ohba, 1982; Pan and Ohba, 2001), we concluded that this unknown *Chrysosplenium* species is *C. japonicum* (Maxim.) Makino, a newly recorded species in Taiwan. In this paper, we provide a description and illustrations of *Chrysosplenium japonicum* and also a key to the *Chrysosplenium* species in Taiwan.

Key to the *Chrysosplenium* species in Taiwan:

1a. Cauline leaves opposite; seeds glabrous, striate ……..…….. 2
1b. Cauline leaves alternate; seeds papillose, not striate ……... 3
2a. Stems and leaves glabrous; sepals greenish, spreading ……..…….……..…….…….. *C. delavayi*
2b. Stems and leaves sparsely pilose; sepals whitish, erect .... *C. hebetatum*
3a. Stems creeping at base; bulbils absent; leaves elliptic to sub-orbicular; flowers greenish; sepals spreading ……..…..…… …..... *C. lanuginosum* var. *formosanum*
3b. Stems erect, cespitose at base; bulbils present; leaves reniform; flowers yellowish green; sepals erect ..... *C. japonicum*

TAXONOMIC TREATMENT

Chrysosplenium japonicum (Maxim.) Makino, Bot. Mag. (Tokyo). 23: 71. 1909; Ohwi, Fl. Japan: 506. 1965; Pan & Ohba, Fl. China 8: 352. f. 241(8-12). 2001. 日本貓兒眼睛草 Fig. 1.

Basionym: *Chrysosplenium alternifolium* L. var. *japonicum* Maxim., Bull. Acad. Imp. Sci. Saint-Petersbourg 23(2): 343. 1877. ― Type from JAPAN (LE?, not view).
Chrysosplenium alternifolium (L.) var. *papillosum* Franch. & Sav., Enum. Pl. Jap. 2: 355. 1878. ― Type: JAPAN. Yokoska, *Savatier 462* (syntypes P, color photos!).
Chrysosplenium japonicum (Maxim.) Makino form. *tetrandrum* H. Hara, In Nakai & Honda, Nova fl. Jap. 3: 91. 1939. ― Type: JAPAN. Honshu, Osaka, Prov. Settsu, Minomo, *H. Hara 3376c* (holotype TI, color photo!).

Herbs perennial, 8-16 cm tall. Bulbils present near stem base, globose to fusiform, densely pilose. Stems cespitose, sparsely pilose. Leaves reniform, 6-15 mm long, 9-20 mm wide, subglabrous to pilose, margin shallowly 8-15-dentate, teeth obtuse or retuse at apex; petioles 1-5 cm long. Cymes 1.5-4 cm high, densely flowered, sparsely pilose. Bracteal leaves ovate to subflabellate, 5-12 mm long, 5-14 mm wide, glabrous to sparsely pilose, base broadly cuneate, margin 3-9-dentate. Flowers subsessile, yellowish green, ca. 3 mm in diam. Sepals erect, ovate to broadly ovate, 0.6-1.4 mm long, 1-1.4 mm wide, glabrous, apex obtuse or acute. Stamens (2 or) 4 or 8, 0.3-0.4 mm long. Ovary subinferior; styles 0.2-0.3 mm long. Disc usually 4-lobed. Capsule erect, 4-5 mm long, apex retuse; carpels subequal; rostrums ca. 0.2 mm. Seeds dark brown, ellipsoid, 0.5-0.7 mm long, papillose.

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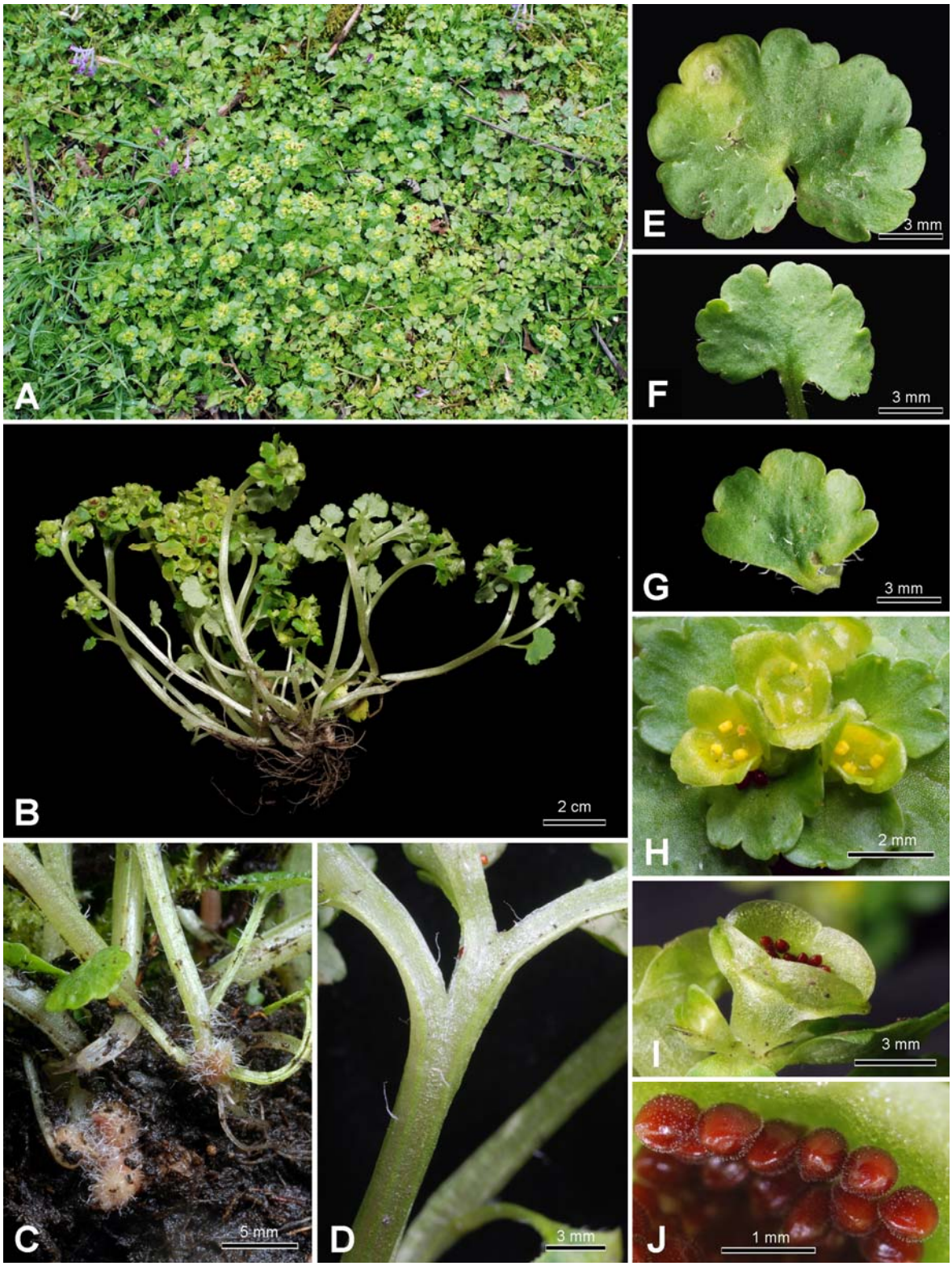


Fig. 1. ***Chrysosplenium japonicum*** **(Maxim.) Makino. A: Habitat and habits. B: Habit. C: Bulbils. D: Stem. E: Basal leaf. F: Cauline leaf. G: Bracteal leaf. H: Flowers. I: Capsule. J: Seeds.**

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Additional specimens examined: TAIWAN. Ilan County: Datong Township, Shihyuenyakou, roadside between 43-45k of highway 7A, ca. 1900 m alt., 12 Apr 2011, *T.-C. Hsu 3868*; *Chung 10295* (TAIF). JAPAN. *Siebold s. n.* (MAK, color photos).

Distribution: China (Anhui, Jiangxi, Jilin, Liaoning, Zhejiang), Japan, Korea and Taiwan (Ilan).

Phenology: Flowering and fruiting from March to May.

Notes: *Chrysosplenium japonicum* clearly differs from all other *Chrysosplenium* species known in Taiwan by the tufted stems, the presence of bulbils near stem base, the yellowish green flowers, and flowers with varied stamen numbers between 2, 4 and 8. Our observations in the Shihyuenyakou area revealed that most flowers bear 4 stamens. Flowers with 8 and 2 stamens appear only in the very early and very late periods of flowering season respectively.

Two varieties of *Chrysosplenium japonicum* differentiated by the presence of bulbils and leaf shape were recognized by some authors (Zhang and Kuo, 1998; Pan and Ohba, 2001). According to their keys and descriptions, the plants found in Taiwan still belong to the typical variety (*C. japonicum* var. *japonicum*).

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日本貓兒眼睛草：臺灣虎耳草科新紀錄植物

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摘要：日本貓兒眼睛草（虎耳草科）為近期於臺灣東北部發現的新紀錄植物。本文提供形態描述、彩色照片及臺灣產貓兒眼睛草屬植物之檢索表。

關鍵詞：日本貓兒眼睛草、新紀錄、虎耳草科、臺灣。

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