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NOTE

Sedum sarmentosum Bunge (Crassulaceae), a Newly Naturalized Herb in Taiwan

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ABSTRACT: *Sedum sarmentosum* Bunge (Crassulaceae), a newly naturalized fleshy herb in Taiwan, is reported here. The taxonomic description, line drawing, and photographs are provided. The population is colonized on Mt. Tatun, Yangmingshan National Park, north Taiwan. Since this species was reported being invasive, its impacts on the local ecosystem should be concerned.

KEY WORDS: Crassulaceae, *Sedum sarmentosum*, naturalized plant, Taiwan.

INTRODUCTION

Sedum L., the largest genus of Crassulaceae, contains ca. 470 species in the world (Fu and Ohba, 2001). In the publication of Flora of Taiwan, second edition, 14 species of *Sedum* were recognized in Taiwan (Tang and Huang, 1993).

In 2007, the second author found an unknown species of *Sedum* when performing a plant inventory on Mt. Tatun, Taipei City, north Taiwan. This unknown herb is characterized by a ternately whorled phyllotaxis and flat leaf blades, which is quite different from other congener. After careful examination of literature (Fu and Ohba, 2001) and herbarium material (from PE, TAIF, and MO), it is determined to be *Sedum sarmentosum* Bunge. The description, line drawing and photos are provided in the followings.

TAXONOMIC TREATMENT

Sedum sarmentosum Bunge, Enum. Pl. China Bor. 30. 1833; Fu & Ohba in Fl. China 8: 250. 2001. Type: China, locality and date unknown, *Bunge 183* (holotype: LE; isotype: PE).

垂盆草　Figs. 1 & 2

Perennial fleshy herb. Stems glabrous, slender, creeping, rooting at nodes. Leaves ternately whorled, sessile; blades glabrous, oblanceolate to rhombic-obovoid, 1.3–3.0 cm long, 0.5–1.0 cm wide, apex subacute, base abruptly narrowed. Cyme short, 1–few flowered; flowers sessile; sepals 5, green, lanceolate, 3–5 mm long; petals 5, yellow, lanceolate, 5–8 mm long; stamens 10, slightly shorter than petals; pistils about equal to stamens; carpels 5, free, oblong, ca. 5 mm long. Fruits not seen.

Native to China, widely distributed in rocky places below 1600 m of Anhui, Fujian, Gansu, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Zhejiang provinces. Widely cultivated in the world for an ornamental purpose and naturalized in America, Japan, Korea, north Thailand, and numerous European countries.

Notes: *Sedum sarmentosum* in a broad sense contains two morphological types of leaves. The narrow-leaved type was published as another species named *S. angustifolium* Z.B. Hu & X.L. Huang (Hu et al., 1981). The plant naturalized in Taiwan belongs to the broad-leaved type. Therefore, we determine it to be *S. sarmentosum*. *Sedum sarmentosum* is used for ornamental, medicinal, and sometimes vegetable purposes. Nowadays it has been cultivated widely in Europe, America, and Japan (Sîrbu et al., 2011). However, due to its vegetative reproduction and environmental tolerance, it has become an invasive plant in Japan, North America and numerous European countries, such as Spain, Montenegro, Slovenia, Czech, Switzerland, Belgium, Hungary, Croatia, and Austria (Miyawaki and Washitani, 2004; Sîrbu et al., 2011).

In Taiwan, *Sedum sarmentosum* was not documented in Flora of Taiwan (Tang and Huang, 1993), neither in the reports for the plant inventory of Mt. Tatun (Simozawa, 1941; Huang et al., 1986; Wang, 1995), where we first discovered this plant on 2007. However, the newly found population was just beside the road and dominant. Therefore, we proposed it to be

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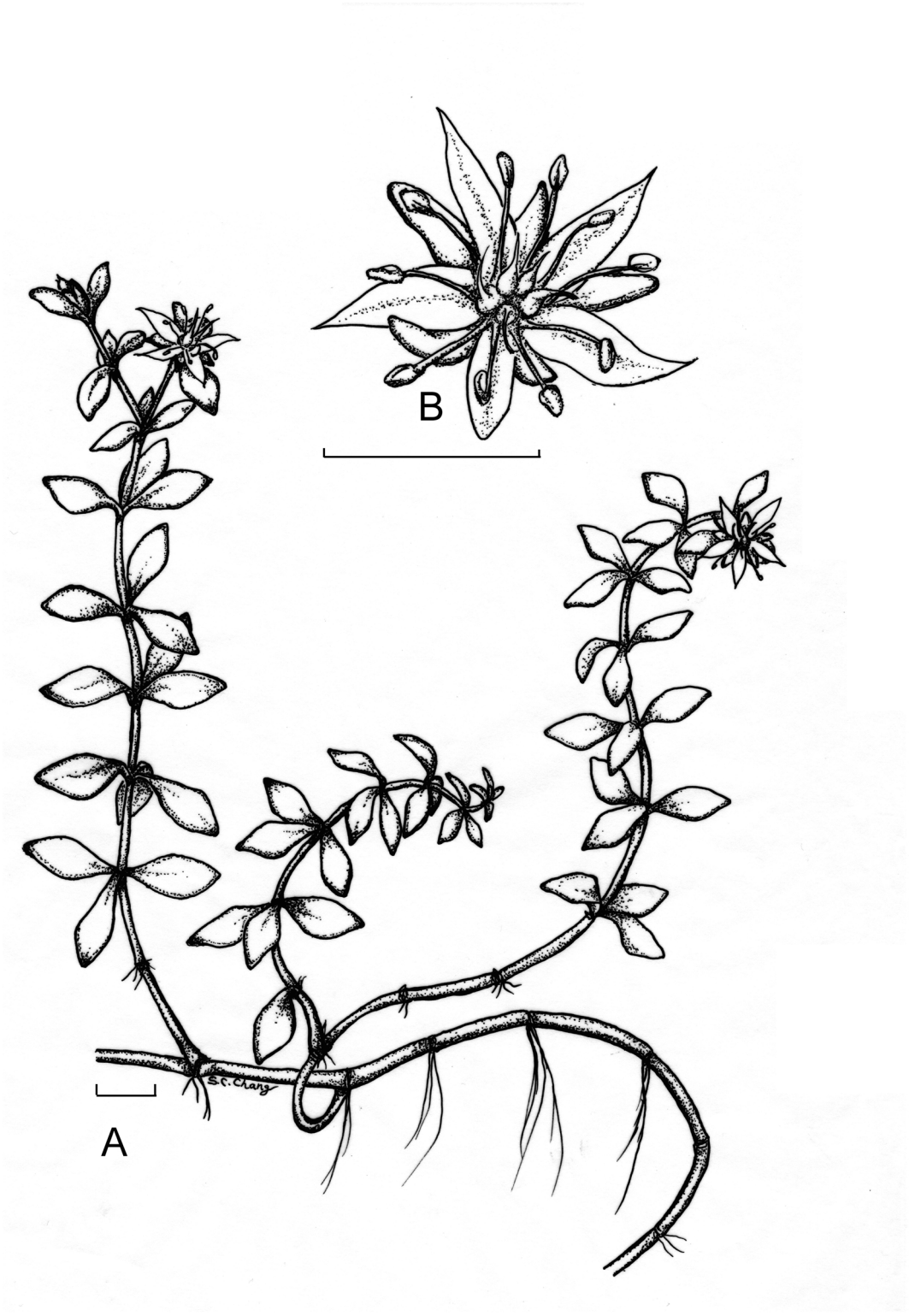


Fig. 1. Illustration of *Sedum sarmentosum* Bunge. A: Flowering body. B: Flower. Scale bar: A, B = 1 cm.

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Fig. 2. Photos of *Sedum sarmentosum* Bunge. A: Habit. B: Flowering branches. C: Flower.

a naturalized plant of Taiwan. During a six-year monitoring, the flowers were observed but no fruit produced. However, the population seems to be stable and shows no sign of being reduced. A previous study revealed *Sedum sarmentosum* was able to propagate rapidly by cuttings (Lin et al., 2009), thus we inferred that it might reproduce asexually in the wild of Taiwan. So far, the population is estimated to occupy an area about 100 m × 10 m along the Tatun Mountain Road. Since *S. sarmentosum* was reported being invasive, its impacts on the local ecosystem should be highly concerned.

Specimen examined: **CHINA:** Hubei Prov., Hefeng County, Yanzi Township, Jun. 28, 2010, *J. B. Zhang et al. 20100628084B* (TAIF); Xuanen County, Hubei Mt. Qijiemei National Nature Reserve, Jun. 29, 2010, *J. B. Zhang et al. 20100629060B* (TAIF). Jiangxi Prov., Jiujiang City, Lushan, May 4, 2003, *C. M. Tan 03080* (TAIF); Jiujiang

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County, Shimen, May 12, 2000, *C. M. Tan 00235* (TAIF). Shandong Prov., Sishui County, Shengshuiyu Township, May 24, 2005, *C. Y. Guo 054161-7* (TAIF); Zoucheng City, Dashu Town, May 21, 2005, *C. Y. Guo 052148-7* (TAIF). Sichuan Prov., Dujiangyan City, Heping Village, May 28, 2002, *D. H. Zhu et al. 367* (TAIF); Nanchuan County, Shimengou, May 23, 1996, *Z. Y. Liu 17228* (TAIF). Zhejiang Prov., Xihu District, Huangniling, Jun. 3, 2003, *Q. G Zhu & Q. W. Liu 626* (TAIF). **JAPAN:** Tokyo, Jun. 6, 1905, *T. Makino s. n.* (TAIF); same loc., May 1, 1909, *T. Makino s. n.* (TAIF). **TAIWAN:** Hsinchu County, Chupei, cultivated, Sep.15, 2008, *C. W. Lin 125* (TAIF). Taipei County, Mt. Tatun, Jul. 2, 2008, *M. J. Jung 3026* (TAIF); same loc., May 22, 2011, *T. C. Hsu* (TAIF). **U.S.A.:** Alabama State, St. Clair County, Atop Chandler Mountain, May 9, 2008, *B. R. Keener 4416* (TROY); Florida State, Levy County, Apr. 23, 1981, *D. S. Correll & H. B. Correll 51563* (USF). Missouri State, Pettis County, Bothwell Lodge State Park, Jun. 14, 1983, *P. DeLozier 1174* (MO); St. Louis County, Castlewood State Park, May 5, 2012, *G. Yatskievych 12-043* (MO). Vermont State, Chittenden County, Burlington, Jun. 18, 1998, *B. Pfeiffer & G. Bless 109-98-10* (TAIF).

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台灣新歸化植物－垂盆草（景天科）

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摘要：本文報導1種台灣新歸化的景天科植物—垂盆草，並提供分類描述、手繪圖與生態照片。目前該種類在陽明山國家公園之大屯山區歸化。因為本種在國外被認為具入侵性，因此應該留意其對周遭生態系統之影響。

關鍵詞：景天科、垂盆草、歸化植物、台灣。

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