Taiwania, **52**(2): 190-193, 2007

Confirmation of the Distribution of *Solanum miyakojimense* Yamazaki & Takushi (Solanaceae) in Taiwan

Tsai-Wen Hsu[1,2], Ching-I Peng[3], Jen-Jye Peng [1] and Tzen-Yuh Chiang[2,4]

(Manuscript received 16 November, 2006; accepted 16 March, 2007)

ABSTRACT: *Solanum* is a large and morphologically diverse genus comprising almost 75% of the species in the family Solanaceae. Twenty species were recorded in Taiwan. *Solanum miyakojimense* Yamazaki & Takushi was published in 1991 as an endemic species in Miyako Islands, Ryukyu. A careful examination of herbarium collections supplemented by field studies confirmed the occurrence of this species in Lanyu, Taiwan. In this report we provide the description, line drawings, and colored photographs taken from the natural habitat to aid in identification of this species.

KEY WORDS: New record, Solanaceae, *Solanum* , *Solanum miyakojimense*, Taiwan, Taxonomy.

INTRODUCTION

Solanum L., with approximately 1,400 species, is the largest and most diverse genus in the Solanaceae (Bohs, 2005). It is best developed in the Southern Hemisphere, particularly in South America, with other centers of speciation in Australia and Africa (Symon, 1981). Eighteen species were previously recorded in the revised Flora of Taiwan; more than half were introduced from elsewhere (D'Arcy and Peng, 1998). Recently, *Solanum elaeagnifolium* Cav. was found naturalized in southern Taiwan and Penghu Islands (Hsu and Tseng, 2003), and *Solanum mauritianum* Scop. was found naturalized in central Taiwan (Wang, 2003). In the course of our botanical inventory, *Solanum miyakojimense* Yamazaki & Takushi was found in eastern Taiwan, representing a new record for this island.

Solanum miyakojimense belongs to the subgenus *Leptostemonum* (Dunal) Bitter, which comprises almost a third of the species (ca. 350-450) in the genus (Levin et al., 2006). Subgenus *Leptostemonum* is distributed worldwide in the tropics and subtropics with a few in temperate regions. The greatest diversity is distributed in South America with about 180 species, followed by Australia and East Indies with about 100 species (Hunziker, 2001).

1. Endemic Species Research Institute, 1, Ming-Sheng E. Road, Chi-Chi, Nantou 552, Taiwan.
2. Department of Life Sciences, Cheng-Kung University, 1, Ta-Hsueh Road, Tainan 701, Taiwan.
3. Research Center for Biodiversity, Academia Sinica, 128, Sect. 2, Academia Rd, Nangang, Taipei 115, Taiwan.
4. Corresponding author. Tel: 886-6-2757575 ext 65525; Email: tychiang@mail.ncku.edu.tw

TAXONOMIC TREATMENT

Solanum miyakojimense Yamazaki & Takushi, J. Jap. Bot. 66(1): 46. *f.1,2* 1991; Yamazaki, Fl. Jap. 3a: 189. 1993. 宮古茄 (新擬) Figs. 1 & 2

Shrubs, much branched, stems terete, green, prostrate, with dense appressed stellate hairs, sparsely prickly, spines 2-7 mm. Leaves alternate, thick chartaceous, petiole terete, 0.5-2 cm long, dense appressed stellate hairy and sparsely prickly; stipules absent; leaf blade ovate to elliptical, 3-7 cm long, 2.5-5 cm wide, densely clothed with stellate hairs on both surfaces, apex obtuse, base obtuse, margin with1-3 pairs of large obtuse deltoid dentate teeth; lateral nerves 2-3 pairs. Inflorescences extra-axillary, in scorpioid racemes with 1-4 flowers; pedicel 0.5-1 cm long, densely stellate hairy; calyx 5-lobes, lobes deltoid, about 2 mm long, 2 mm wide, densely stellate hairy, apex acute; corolla ca. 1.2 cm across, rotate, white, sometimes light blue purple, lobes 5, lanceolate , ca. 6 mm long, 2 mm wide, abaxially densely stellate hairy, apex acute, reflexed; stamens 5, filaments short; anthers yellow, linear-lanceolate, 4-5 mm long, 1 mm wide, with small apical pores. Style filiform, at base inflorescences 1-2 flowers, style exceeding stamens, ca. 7 mm long; other flowers style shorter than stamens, ca. 3 mm long; sparsely stellate hairy. Fruit a berry, ovate, ca. 1 cm in diameter, smooth, immature fruits light green with dark green stripe, mature fruits red. Seeds compressed, orbiculate, ca. 1.5 mm long, 2.5 mm wide, whitish yellow, smooth to slightly rugose, about 25 per berry.

臺灣大學學術期刊資料庫

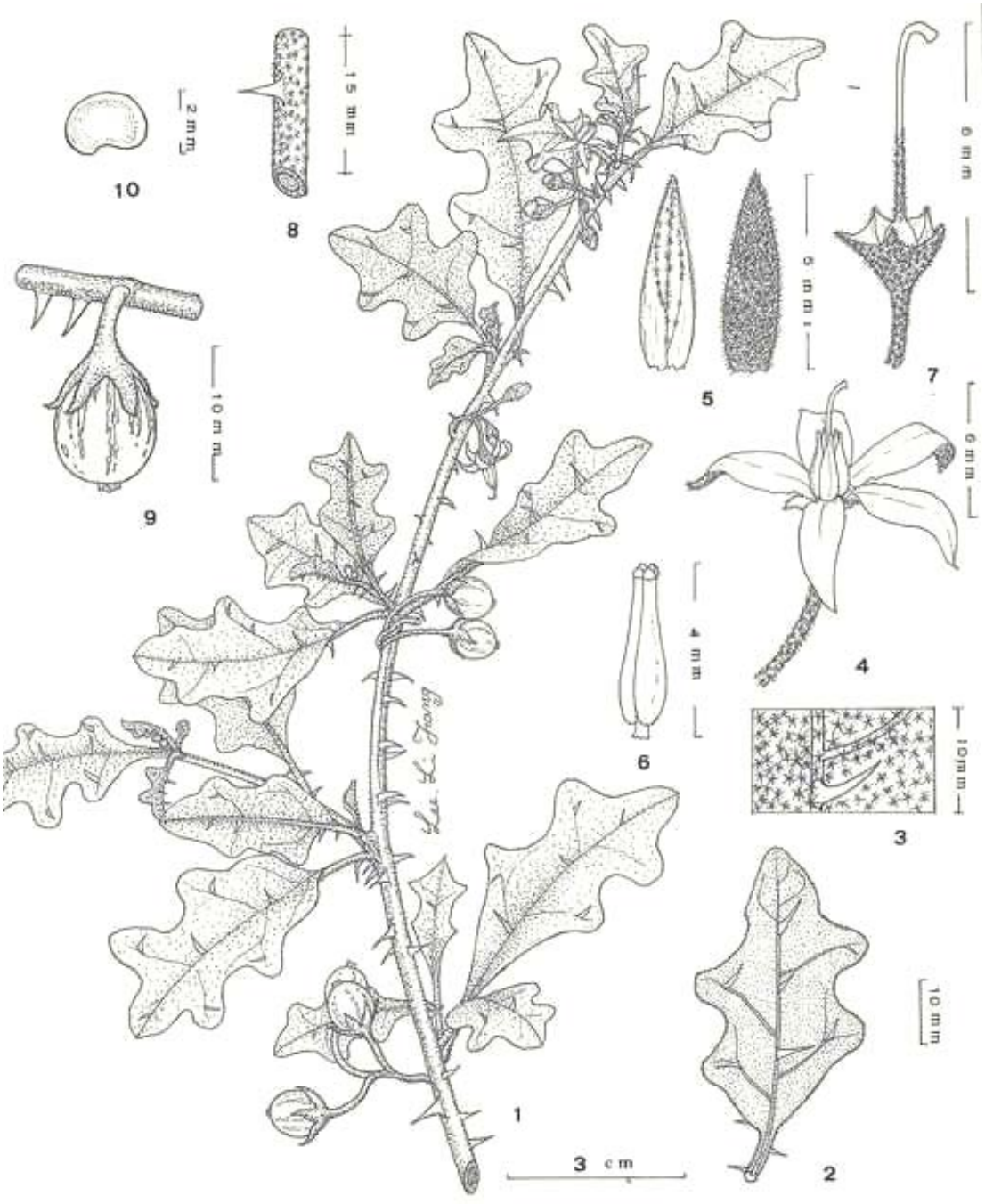


Fig. 1. *Solanum miyakojimense* Yamazaki *et* Takushi. 1: Habit. 2: Leaf, adaxial surface. 3: Portion of a leaf, abaxial surface. 4: Flower. 5: Corolla lobes, adaxial (left) and abaxial (right) surface. 6: Stamen. 7: Flower, corolla and stamens removed. 8: Portion of a branch. 9: Fruit with a branch. 10: Seed.

Distribution: Southern Japan (Islands Irabu and Ryukyus), and Taiwan, on rocky coral bluffs along seashores.

Specimen examined: TAIWAN. Taitung Co.: Botel Tobago, 30 May 1976, *C. E. Chang 99063* (MO); Lanyu Hsiang, Tungching, 10 Oct 1998, *Yang et al. 11473* (TNM) and 19 Jun 2002, *T. Y. A. Yang et al. 15044* (TNM), Haung-tou to Ye-inh, 4 Apr 1988, *H. M. Song & S. Y. Jaw 93* (TNM), Near Long-tou-yen, 4 Apr 1988, *T. Y. Yang et al 3932* (TNM), Hsiangpiyen, 11 Jul 1997, *T. Y. A. Yang et al. 8701* (TNM), Longmen to Yunghsing Farm, 15 Feb 1995, *W. P. Leu 2164* (HAST, TNM).

臺灣大學學術期刊資料庫

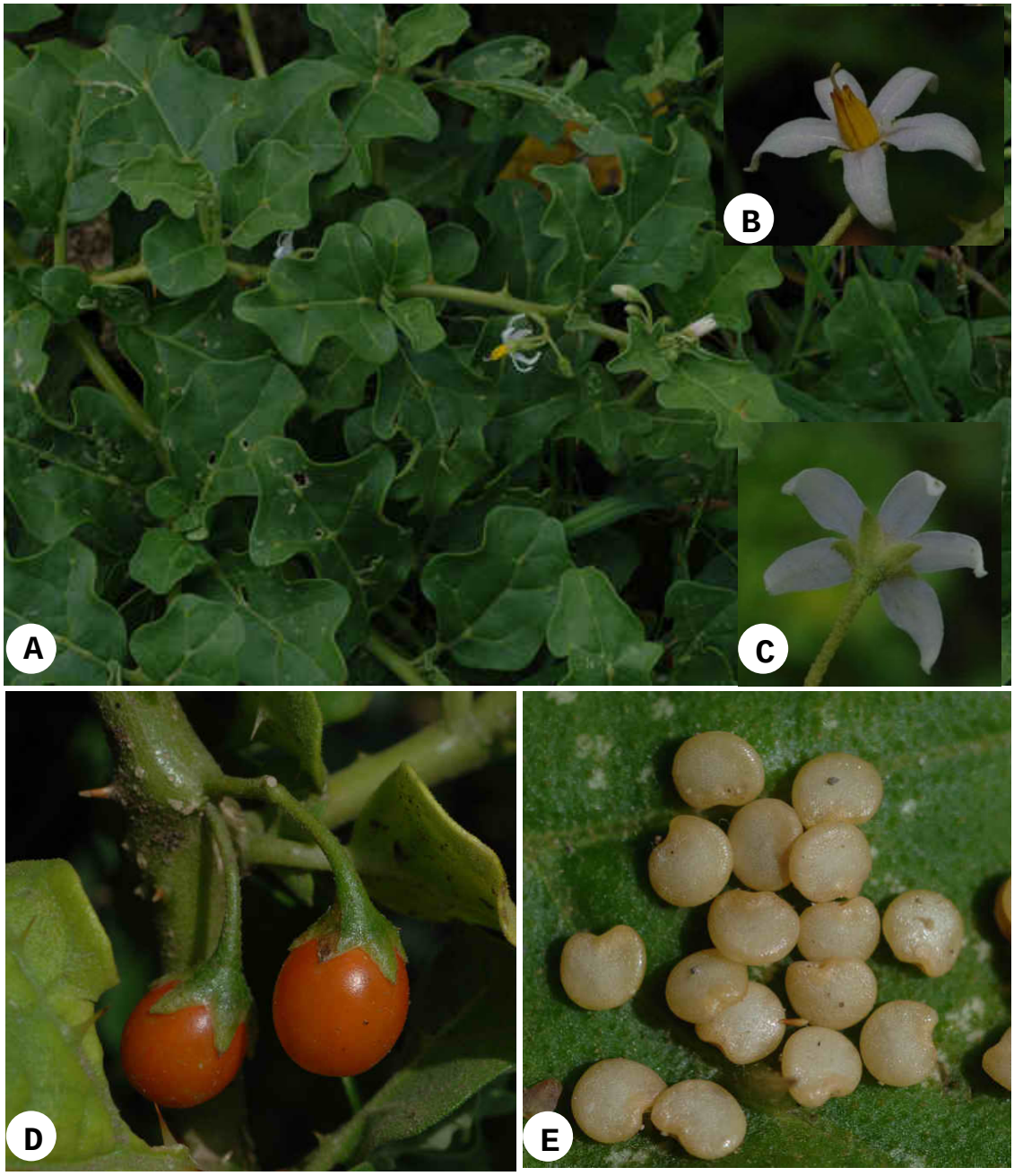


Fig. 2. *Solanum miyakojimense* Yamazaki *et* Takushi. A: Habit. B & C: Adaxial and abaxial view of the flower. D: Fruits. E: Seeds.

Yamazaki and Takushi (1991) initially described *Solanum miyakojimense* as an endemic species of Islands Irabu, Ryukyu. Yamazaki (1993), without citing voucher specimens, considered this species to be distributed also in Taiwan (Lanyu Isl.), Shimabuku (1997) was uncertain of the occurrence of this species on Lanyu, Taiwan. Our report confirms the distribution of this species in Lanyu, a small tropical island off the southeastern shore of Taiwan.

In the field, *Solanum miyakojimense* was associated with plants such as *Abutilon indicum* (L.) Sweet subsp. *guineense* (Schumach.) Borss., *Boerhavia diffusa* L., *Centella asiatica* (L.) Urban, *Coleus formosanus* Hayata, *Eclipta prostrata* (L.) L., *Hedyotis coreana* Lev., *Portulaca pilosa* L., *Justicia procumbens* L. var. *hayatae* (Yamamoto) Ohwi, and *Sedum formosanum* N. E. Br.

臺灣大學學術期刊資料庫

Solanum miyakojimense is often confused with *S. violaceum* Ortega, to which it is sharply distinct in the smaller and thicker leaves, unarmed inflorescence with fewer than five flowers, deeply-lobed corolla, and lanceolate lobes.

ACKNOWLEDGMENTS

We are thankful to Mr. H. M. Chang, M. Y. Shen, T. C. Lin, and C. F. Liao for their assistance in field work. This work was supported in part by research grants from Council of Agriculture, Taiwan.

LITERATURE CITED

Bohs L. 2005. Major clades in *Solanum* based on *ndh*F sequence data. In: Keating, R. C., V. C. Hollowell and T. B. Croat (eds.), A festschrift for William G. D'Arcy: the legacy of a taxonomist. Monographs in Systematic Botany from the Missouri Botanical Garden, **104**: 27-49. Missouri Botanical Garden Press, St. Louis, Missouri, USA.

D'Arcy, W. G. and C.-I Peng. 1998. Solanaceae. In: Huang, T.-C. et al. (eds.), Flora of Taiwan, 2nd ed. **4**: 549-581. Editorial Committee, Dept. Bot., NTU, Taipei, Taiwan.

Hsu, T.-W. and Y.-H. Tseng. 2003. *Solanum elaeagnifolium* Cav. (Solanaceae): a noxious weed newly naturalized to Taiwan. Endemic Species Res. **5**: 49-51.

Hunziker, A. T. 2001. The Genera of Solanaceae. A. R. G. Gantner Verlag K. G., Ruggell, Liechtenstein. XVI+500pp.

Levin, R. A., N. R. Myers and L. Bohs. 2006. Phylogenetic relationships among the "spiny solanums" (*Solanum* subgenus *Leptostemonum*, Solanaceae). Amer. J. Bot. **93**: 157-169.

Shimabuku, K. 1997. Check list vascular flora of the Ryukyu Islands. Revised edition. Kyusyu Univ. Press, Kyusyu, Japan. 855pp.

Symon, D. E. 1981. A revision of the genus *Solanum* in Australia. J. Adelaide Bot. Gard. **4**: 1-367.

Wang, C.-M. 2003. *Solanum mauritianum* Scop. (Solanaceae), a newly naturalized weed plant in Taiwan. Coll. & Res. **16**: 67-70.

Yamazaki, T. 1993. Solanaceae. In: Iwatsuki, K., T. Yamazaki, D. E. Boufford and H. Ohba (eds.), Flora of Japan, Vol. IIIa. Angiospermae, Dicotyledoneae, Sympetalae (a)., Kodansha Ltd., Tokyo, Japan. pp. 183-194.

Yamazaki, T. and A. Takushi. 1991. A new species of *Solanum* from Ryukyu. J. Jap. Bot. **66**: 46-48.

茄科植物宮古茄在臺灣分布的再確定

許再文[1,2]、彭鏡毅[3]、彭仁傑[1]、蔣鎮宇[2,4]

(收搞日期：2006 年 11 月 16 日; 接受日期：2007 年 3 月 16 日)

摘　　要

茄屬為一種類多且形態多變的大屬，包含了近 75% 的茄科植物，臺灣已紀錄的有 20 種，最近我們在東部蘭嶼進行植物調查時發現另一新紀錄植物－宮古茄 (*Solanum miyakojimense* Yamazaki & Takushi)，該種原為琉球宮古島之特有種，發表於 1991 年。本文提供該種的形態描述、描繪圖與彩色圖片。

關鍵詞：新紀錄、茄科、茄屬、宮古茄、臺灣、分類。

1. 農委會特有生物研究保育中心，552 南投縣集集鎮民生東路 1 號，臺灣。
2. 國立成功大學生命科學系，701 台南市大學路 1 號，臺灣。
3. 中央研究院生物多樣性研究中心，115 台北市南港區研究院路 2 段 128 號，臺灣。
4. 通信作者。Tel: 886-6-2757575 ext 65525; Email: tychiang@mail.ncku.edu.tw

臺灣大學學術期刊資料庫