

## *Rubus amphidasys* Focke (Rosaceae): A Newly Recorded Plant in Taiwan

Tsai-Wen Hsu<sup>(1,2)</sup>, Tzen-Yuh Chiang<sup>(2)</sup>, Ching-I Peng<sup>(3,4)</sup>

(Manuscript received 28 October, 2006; accepted 4 January, 2007)

**ABSTRACT:** *Rubus*, comprising about 700 species in the world, is a large genus of the family Rosaceae. Thirty-five species and four additional varieties were recorded in the 2nd edition of Flora of Taiwan. In the course of our botanical inventory, *Rubus amphidasys* Focke, heretofore unknown in Taiwan, was collected from northern part of the island. *Rubus amphidasys* is easily distinguished from other congeners by having a mixture of densely bristly hairs and glandular hairs on branches and calyx. In addition, small prickles are rarely found on its stems. In this report we provide a description, line drawings, and colored photographs taken from the wild to aid in identification.

**KEY WORDS:** New record, Rosaceae, *Rubus*, *Rubus amphidasys*, Taiwan, Taxonomy.

### INTRODUCTION

The genus *Rubus* (Rosaceae) consists of about 250 (Hsieh and Ohashi, 1993) or 700 species (Robertson, 1974; Liu, 1994; Lu et al., 2003) in the world, depending on species concepts. Plants of *Rubus* are classified into 12 subgenera by Focke (1910, 1911, 1914). Taiwan is rich in species of *Rubus*, with 37 taxa known from this island of only 36,000 km<sup>2</sup>, which were grouped under subgenera *Chamaebatus* (1 species), *Malachobatus* (16 species) and *Idaeobatus* (20 species) (Naruhashi et al., 2002). Despite that Taiwanese *Rubus* has been studied by Liu and Yang (1969), Chang (1979), Hsieh (1989), Ying (1985), and Hsieh and Ohashi (1993), many taxonomic problems remain for this difficult genus (Naruhashi et al., 2002).

*Rubus amphidasys* Focke (subgenus *Dalibardastrum* Focke) was recently found in northern Taiwan. In this study we provide a taxonomic description, line drawings, and colored photographs taken from the wild to aid in identification of this new record.

### TAXONOMIC TREATMENT

*Rubus amphidasys* Focke in Engler, Bot. Jahrb. 29:396. 1900; Focke, Bibl. Bot. 72(1): 108. 1910.

周毛懸鈎子 Figs. 1 & 2

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, Sec. 2, Academia Rd, Nangang, Taipei 115, Taiwan.
4. Corresponding author. Tel: 886-2-2789-3821; Email: bopeng@sinica.edu.tw

A scandent shrub, branchlets with dense reddish brown long glandular hairs, soft bristles, and long hairs, usually unarmed. Leaves alternate, simple, subcoriaceous, cordate to broadly ovate, 5-9 cm long, 5-10 cm wide, both surfaces villous, base cordate, margin 3-5-lobed, apex shortly acuminate or acute, lateral lobes obtuse, serrate; petioles 3-5 cm, villous, with long reddish-brown, glandular hairs and soft bristles; stipules free, lacinate, 3-4 deeply-lobed, lobes linear, villous and with long glandular hairs. Inflorescences terminal or axillary, in racemes with 5-12-flowered cymes; rachis, pedicels, and abaxial surface of calyx densely covered by long glandular hairs, soft bristles, and yellowish long hairs; bracts lobed, lobes linear, villous, stipitate glandular; pedicel 5-15 mm long. Flowers 1-1.5 cm in diameter; calyx tube ca. 5 mm, with dense reddish brown long glandular hairs, 2-3 mm long; calyx lobes 5, lanceolate-triangular, 5-7 mm long, 2-3 mm wide, apex caudate, erect in fruit; petals 5, white, broadly ovate to oblong, 4-6 mm long, 3-4 mm wide, margin serrulate; stamens numerous, ca. 60, white, filaments 2-3 mm long; pistils longer than stamens; ovaries glabrous, with long hairs at base. Aggregate fruits dark red, compressed globose, ca. 1 cm in diameter, glabrous, enclosed in persistent calyx and filaments; pyrenes rugose.

Distribution: China (Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Zhejiang) (Lu et al., 2003). In Taiwan, found at low elevations in the northern part. On slopes, along roadsides, and among shrubby thickets.

Specimen examined: TAIWAN. Taipei Co.: Hsichih Town: Hsiwan road, 500 m, 14 Oct 2000, Chen et al. 445 (HAST), fl, bud; Shinshanmenghu, 26 Jul 2001, Hsu10328 (TESRI).

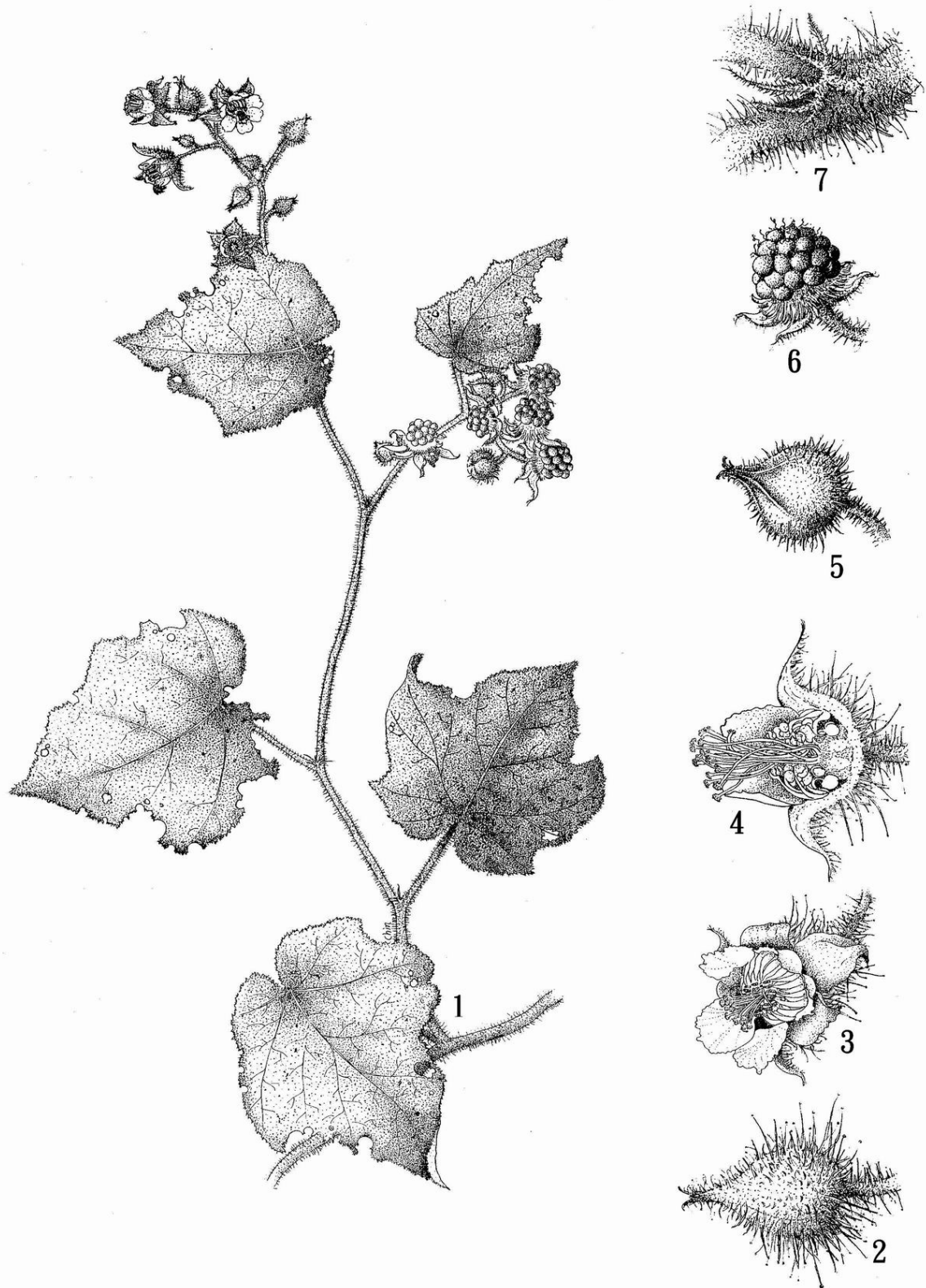


Fig. 1. *Rubus amphidasys* Focke. 1: Habit. 2: Flower bud. 3: Flower. 4: Longitudinal section of flower. 5: Flower bud. 6: Aggregate fruits. 7: Branch with stipule.

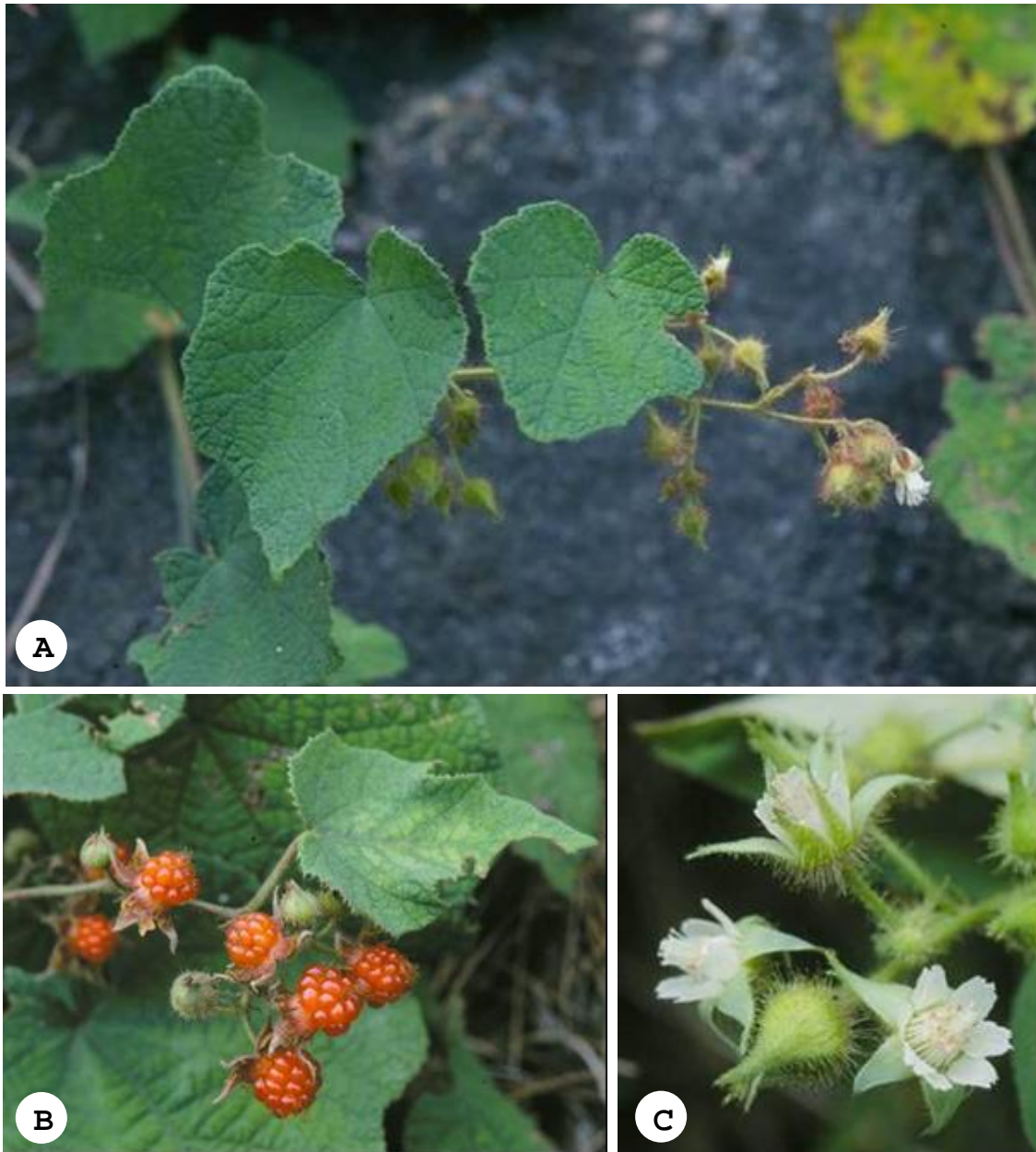


Fig. 2. *Rubus amphidasys* Focke. A: Habit. B: Fruits. C: Flower buds and flowers.

Taipei city: Waishuanghsi, abandoned Tsuishan Shooting Range, 350m, 14 Oct 2000, *Chen et al.* 448 (HAST), fl, fr; Neishuangchi, 16 Oct 1993, *S. Y. Lu* 24152 (TAIF), fl, fr; Taluntoushan, 18 Jul 1997, *H. L. Chiang* 468 (TAIF), fl, fr; Neihu, 21 Sep 1983, *S. Y. Lu* 12968 (TAIF), fl, fr; Wuchihshan, 4 Jun 1984, *S. Y. Lu* 14826 (TAIF).

Notes: Naruhashi et al. (2002) reported chromosome numbers for all 37 species of *Rubus* in Taiwan then known. An examination of their voucher specimen for *Rubus rufus* Focke [ $2n = 28$ ; *Chen et al.*

445 (HAST)] revealed that it represents *Rubus amphidasys* Focke, which resembles *R. rufus* but is easily distinguishable from the latter by the usually unarmed branchlets with dense reddish brown, long glandular hairs, soft bristles, long yellowish hairs, and persistent stipules. *Rubus rufus* has prickly branchlets and caducous stipules. The occurrence of *R. amphidasys* in Taiwan is here documented for the first time.

## ACKNOWLEDGMENTS

This work was supported by research grants from Council of Agriculture, Taiwan.

## LITERATURE CITED

- Chang, C.-E. 1979. Unrecorded Plant from Taiwan X. For. J. Taiwan Prov. Pingtung Inst. Agric. **21**: 1.
- Focke, W. O. 1910. Species Ruborum, part I. Bibl. Bot. **17**: 1-120.
- Focke, W. O. 1911. Species Ruborum, part II. Bibl. Bot. **17**: 121-223.
- Focke, W. O. 1914. Species Ruborum, part III. Bibl. Bot. **19**: 224-498.
- Hsieh, C.-F. 1989. The genus *Rubus* in Taiwan. J. Taiwan Mus. **42**: 101-121.
- Hsieh, C.-F. and H. Ohashi. 1993. *Rubus*. In: Huang, T.-C. et al. (eds.), Flora of Taiwan, 2nd edition. **3**: 119-146. Editorial Committee, Dept. Bot., NTU, Taipei, Taiwan.
- Liu, S.-C. 1994. Taxonomic studies on the *Rubus* in Taiwan. Ph.D. thesis, National Chunghsing University, Taichung, Taiwan. 120pp.
- Liu, T.-S. and T.-Y. Yang. 1969. The genus *Rubus* of Taiwan. Ann. Bull. Taiwan Mus. **12**: 1-23.
- Lu, L.-D., C.-Z. Gu, C.-L. Li, C. Alexander, B. Bartholomew, A. R. Brach, D. E. Boufford, H. Ikeda, H. Ohba, K. R. Robertson and S. A. Spongberg. 2003. Rosaceae. In: Wu, Z.-Y. and P. H. Raven (eds.), Flora of China **9**: 46-434. Science Press, Beijing and Missouri Botanical Garden Press, St. Louis, USA.
- Naruhashi, N., Y. Iwatsubo and C.-I Peng. 2002. Chromosome numbers in *Rubus* (Rosaceae) of Taiwan. Bot. Bull. Acad. Sin. **43**: 193-201.
- Robertson, K. R. 1974. The genera of Rosaceae in the Southeastern United States. J. Arnold Arbor. **55**: 303-332, 344-401, 611-662.
- Ying, S.-S. 1985. A revision of the family Rosaceae in Taiwan. Techn. Bull. Exp. Forest Natl. Taiwan Univ. **160**: 1-67.

## 臺灣新紀錄薔薇科的植物：周毛懸鈎子

許再文<sup>(1,2)</sup>、蔣鎮宇<sup>(2)</sup>、彭鏡毅<sup>(3,4)</sup>

(收稿日期：2006年10月28日；接受日期：2007年1月4日)

## 摘 要

懸鈎子屬為薔薇科植物，臺灣植物誌第二版紀錄有 35 種 4 變種，最近我們在北部植物調查時發現另一新紀錄植物一周毛懸鈎子；該植物以其枝條密生毛與長腺毛，枝條幾近於無刺等特徵而明顯不同於臺灣所產的該屬植物。本文章提供該種的形態描述、繪圖與彩色圖片。

關鍵詞：新紀錄、薔薇科、懸鈎子屬、周毛懸鈎子、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: 886-2-2789-3821; Email: bopeng@sinica.edu.tw