

Notes on the Flora of Taiwan (23) — Three Taiwan *Salix* L. (Salicaceae) Transferred

Kuoh-Cheng Yang^(1,2,3) and Tseng-Chieng Huang⁽²⁾

(Manuscript received 15 November 1995; accepted 14 December 1995)

ABSTRACT: The state of three species of Taiwan *Salix* have been transferred to variety level in this treatment.

KEY WORDS: *Salix*, Taiwan, Transferred, Taxonomy.

This paper transfers three species of Taiwan *Salix* L. to varieties, for there are many intermediate individuals when they are growing on a sympatric area (Yang, 1988).

1. *Salix fulvopubescens* Hayata var. *doii* (Hayata) Yang & Huang, *stat. nov.* 薄葉柳 Fig. 1

Salix doii Hayata, Icon. Pl. Form. 5: 201. 1915.

Salix eriostroma Hayata, Icon. Pl. Form. 6: 65. 1916.

Salix morii Hayata, Icon. Pl. Form. 5: 203. 1915; Kanehira, Form. Trees rev. ed. 76. 1936. (excl. *f.* 31); Li in Fl. Taiwan 2: 36. 1976 (excl. *pl.* 201).

Salix transarisanensis Hayata, Icon. Pl. Form. 5: 203. *f.* 14. 1915 (*pro male parte*).

Large shrubs, up to 4 m tall. Branches brown, branchlets puberulous, later glabrate. Leaves oblong-lanceolate, 6-11 cm long, 1.8-2.6 cm wide, apex acute to obtuse, base obtuse-rounded, entire, lateral veins 11-14 pairs; immature leaves sparsely villose above, densely so beneath with white hairs sometimes intermixed with brown hairs; mature leaves glabrate above, thinly villose beneath, veinlets homogenous; petioles 1.0-1.4 cm long; stipules ovate, 0.8-1.2 mm long, margin glandular. Aments coetaneous, peduncles with 2-5 green leafy bracts; male ament slender, 2.4-3.0(3.6) cm long, 0.5-0.7 cm wide, long villose, later glabrate; stamens 2, filaments 2-4 mm long, base pubescent, to 1/3-1/2 length, anthers elliptic to globose; nectaries 2, one adaxial, large, square, the other small, slender bat-like; bract oblong, 1.3-1.9 mm long, 0.8-1 mm wide, glabrous on adaxial side, long villose on abaxial side, becoming glabrate, margin loosely villose; female aments slender 2.4-3.5 cm long, 4-6 mm wide; pistil pubescent, pyriform, style as long as stigma, stigma double bifid, stipe ca. 1-1.5 mm long; nectary 1, adaxial, square, sometimes pube-pubescent; bract the same as the male flowers; ovules 6-10 per ovary. Capsule long pyriform, 5-6 mm long. Seed green, short bat-like 1-2 mm long, comal.

1. Division of Forest Biology, Taiwan Forestry Research Institute, 53 Nanhai Road, Taipei 100, Taiwan, Republic of China.

2. Department of Botany, National Taiwan University, Taipei 106, Taiwan, Republic of China.

3. Corresponding author.

Endemic. In open areas, at altitudes 1,600-2,700 m throughout the island, not common except in Alishan region.

ILAN: Taipingshan-Tsuifeng Lake, *Yang 3085*. TAICHUNG: Hsueshan-tungfong, *Yang 3402*. NANTOU: Kuankao, *Yang 2992*; Chushan, *Doi s. n. 1912* (Type of *S. doii*, TAIF!). CHIAYI: Alishan-Menyueh, *Yang 2823**; Alishan-Chuoshan, *Yang 2807*; Alishan-Tzuchung, *Yang 2809*; Hsiukuluanchi, *Mori s. n. 1910* (Type of *S. Morii*, TAIF!). KAOHSIUNG: Takuanshan, *Yang 2908**.

This variety differs from type variety by its pubescent ovary, thin leaves and veinlets homogenous.

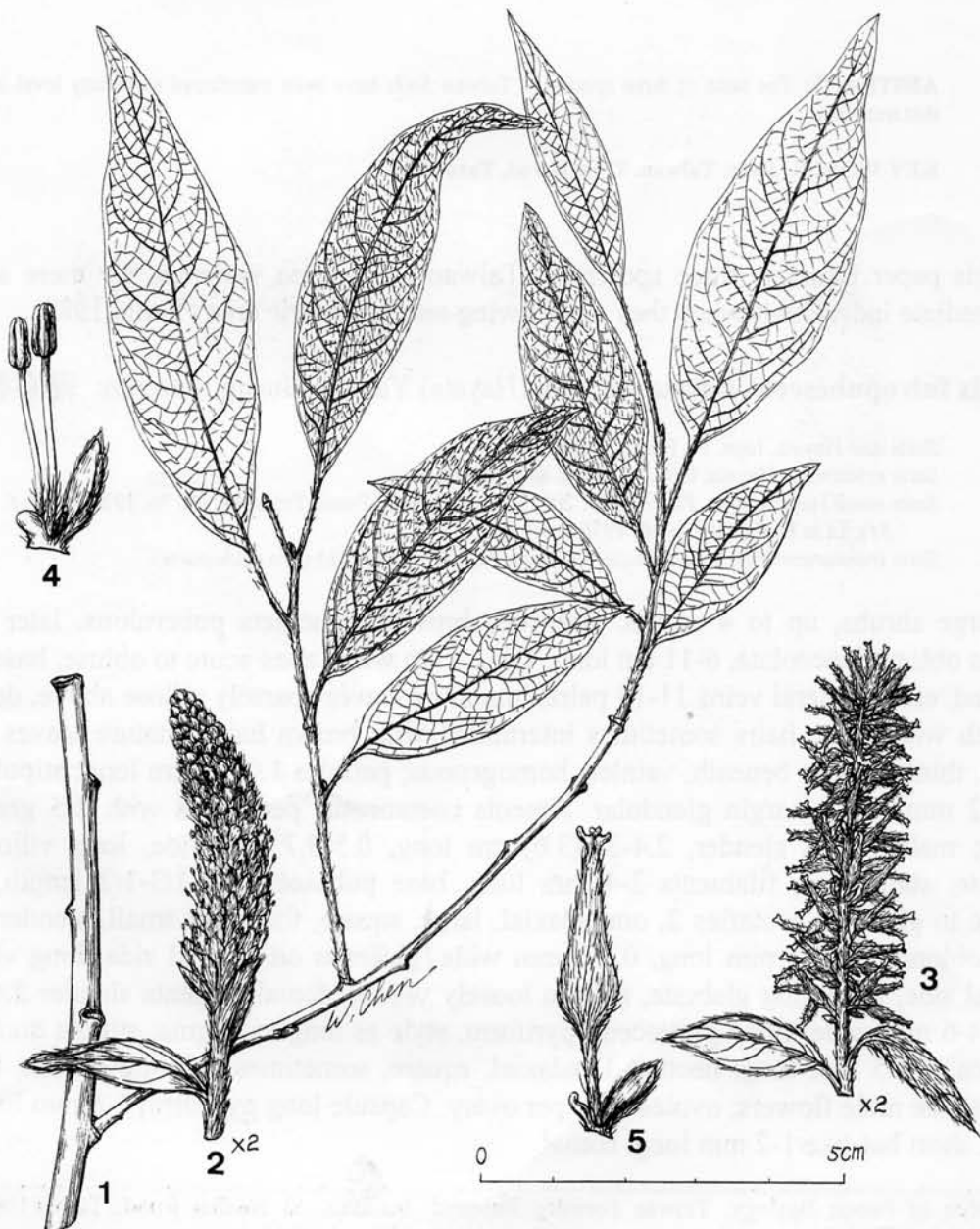


Fig. 1. *Salix fulvopubescens* Hayata var. *doii* (Hayata) Yang & Huang. 1. vegetative branchlet; 2. staminate catkin; 3. pistillate catkin; 4. staminate flower; 5. pistillate flower.

2. *Salix fulvopubescens* Hayata var. *tagawana* (Koidz.) Yang & Huang, *stat. nov.*

白毛柳 Fig. 2

Salix tagawana Koidz. in Acta Phytotax. Geobot. 9: 25. 1940; Li in Fl. Taiwan 2: 38. 1976.

Large shrubs. Branches yellowish to dark brown, hirsute, branchlets thick, densely silky-pubescent. Leaves oblong, 7-9 (12) cm long, 3-4 cm wide, apex acute to obtuse, base broadly obtuse, rounded or subcordate, margin entire, lateral veins 9-13 pairs, veinlets branching; immature leaves densely silky pubescent with white hairs; mature leaves villose along the veins above, densely tomentose with white hairs beneath; petioles 10-15 mm long, densely pubescent; stipules oblique ovate 1-2 mm long, margins glandular-dentate. Aments



Fig. 2. *Salix fulvopubescens* Hayata var. *tagawana* (Koidz.) Yang & Huang. 1. vegetative branchlet; 2. staminate catkin; 3. pistillate catkin; 4. staminate flower; 5. pistillate flower.

precocious, densely long villose, subsessile, deciduous leafy bracts of peduncle 2-3 at base; male aments cylindric, ca. 3 cm long, with dense flowers; stamens 2, filaments 3-6 mm long, pilose at base; stamens 2, filaments 3-6 mm long, pilose as 1/2 way from base, anthers 1 mm long, 0.9-1.1 mm wide, brown at tip same time, densely long villose, hair half as long as bract; pistillate aments ca. 3 cm long, to 6 cm in fruit; pistils glabrous, long pyriform, 2-3 mm long, stipes pubescent, as long as bract; nectary and bract as in staminate flowers; ovules 6-10 per ovary.

Endemic. In open areas in central and northern mountain range at altitudes of 1,600-2,600 m, common in Hohuanshan region (such as Tsuifeng).

ILAN: Chiliting to Nanshan, *Hsu 6091*; Nanhutashan, *Kuo 5193*; Szuyuanyakou, *Yang 2125**, *2755**, *2782**. TAICHUNG: Chihchiayangtashan, *Mori s. n.* 1936; Lishan, *Kao 4597*; Chihyuanshanchuang, *Tang 445*; Piluchi, *Huang 13042*; Wuling Farm-Chika shelter, *Wang et al. s. n.* 1987. NANTOU: Tsuifeng-Meifeng, *Tang 653*; Tsuifeng, *Ou 5354*; Sonyuan, *Fukuyama 4686*; Yunghai-Tienchie, *Huang 1176*; Nengkaoshan, *Kanehira & Sasaki s. n.* 1918; Tonbara, *Kanehira & Sasaki s. n.* 1918; Wushe, *Chuang s. n.* 1985.

The glabrous ovary and thick leaves of this variety are common to type variety but it differs from type variety by elliptic leaves, long white villose hairs beneath, and precocious aments with sericeous hairs.

3. *Salix taiwanalpina* Kimura var. *morrisonicola* (Kimura) Yang & Huang, *stat. nov.*

玉山柳 Fig. 3

Salix morrisonicola Kimura in Sci. Rep. Tohoku Univ. 4. Biol. **10**(3): 557. f. 3, 4. 1935; Li in Fl. Taiwan **2**: 36. pl. 202. 1976.

Low shrubs, decumbent to repent, to 40 cm tall, much branched. Branches yellowish to dark brown; branchlets sparsely pubescent becoming glabrate. Buds yellowish to reddish brown, glabrous, beaked, splitting open on adaxial face. Leaves elliptic, obovate-elliptic, or oblong, 1.8-3(-3.8) cm long, 0.8-1.8(-2.2) cm wide, apex acute to obtuse, base broadly acute to rounded, margins entire to glandular, deciduous. Aments subsessile, subprecocious, base with 2-3 leaves; staminate aments 1-2 cm long, 3.5-5.5 mm broad with stamens; stamens 2, filaments 3-4.2 mm long, base pubescent, sometimes fused, anthers oblong, nectary 1, short clavate, adaxial, bracts tawny, reddish or not at tip, linear-oblong, 1.5-2.6 mm long, puberulous on both surfaces or glabrous, margin ciliate; pistillate aments 1.3-1.9 cm long, elongating in fruit; pistil pyriform, glabrous, 2-3 mm long, tip elongated in fruit becoming slender, style longer than stigma, stigmas double bifid or bifid, stipe puberulous, 0.5-1 mm long, 1.1-1.8 times as long as nectary, bracts as in staminate flowers; ovules 6-10 per ovary.

Endemic. On high mountain cliffs, 2,400-3,900 m in central Taiwan.

NANTOU: Patungkuan cliff, *Yang 2285**, *2286**; Yushan, *Yang 3030*, *Hsu 5351*; Patungkuanshan, *Yang 2279*.

This variety differs from type variety by leaves glabrous beneath and stipules shorter than bracts. This variety also differs from var. *takasagoalpina* (Koidz.) Ying (1987) by glabrous ovary.

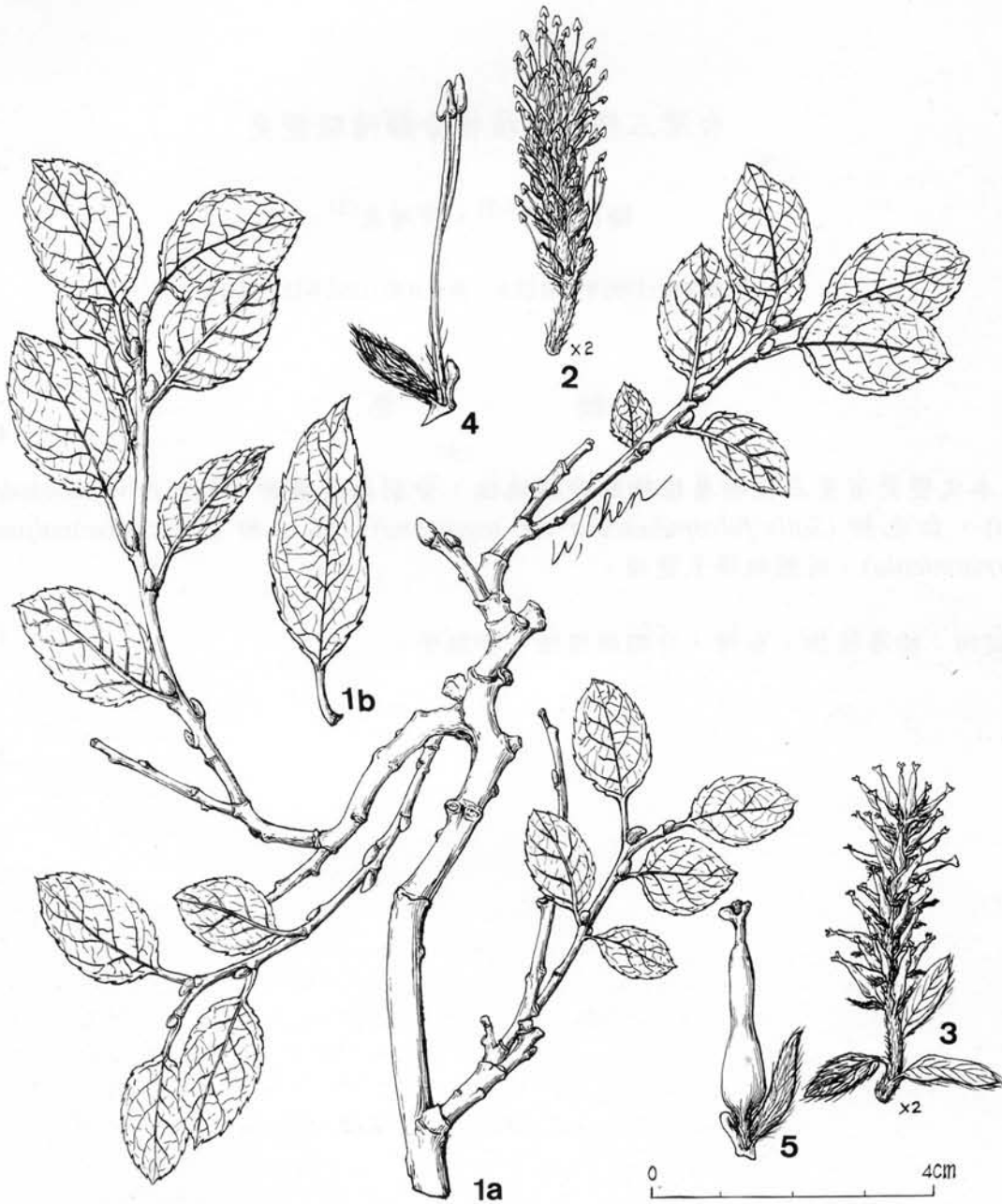


Fig. 3. *Salix taiwanalpina* Kimura var. *morrisonicola* (Kimura) Yang & Huang. 1a. vegetative branch, 1b. leaf; 2. staminate catkin; 3. pistillate catkin; 4. staminate flower; 5. pistillate flower.

LITERATURE CITED

- Ying, S. S. 1987. A revision to the Salicaceae in Taiwan, in Mem. Coll. Agric. Nat. Taiwan Univ. 27(2): 29-50.
- Yang, K. C. 1988. A Revision of *Salix* (Salicaceae) of Taiwan. MS thesis, Dept. Bot. Nat. Taiwan Univ. p. 1-107 in Chinese.

台灣三種柳屬植物分類階級變更

楊國禎^(1,2,3)、黃增泉⁽²⁾

(收稿日期:1995年11月15日;接受日期:1995年12月14日)

摘 要

本文變更省產三種柳屬植物的分類地位，分別為薄葉柳 (*Salix fulvopubescens* var. *doi*)、白毛柳 (*Salix fulvopubescens* var. *tagawana*)、玉山柳 (*Salix taiwanalpina* var. *morrisonicola*)，從種級降至變種。

關鍵詞：柳屬植物，台灣，分類級降位，分類學。

1. 台灣省林業試驗所森林生物系。台北市中正區100南海路53號，台灣，中華民國。
2. 國立台灣大學植物學系。台北市大安區106羅斯福路四段1號，台灣，中華民國。
3. 通信聯絡員。