

## NOTES ON THE FLORA OF TAIWAN (15)-THE *VERONICA* L. (*SCROPHULARIACEAE*)

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**Abstract:** Based on dry specimens, the genus *Veronica* of Taiwan is revised. Ten species are recognized in this study. *V. arevensis* and *V. peregrina* are newly described and naturalized species in Taiwan. *V. taiwanalpina* and *V. yushanchienshanica* are treated as synonymes of *V. morrisonicola*. *V. galacties* is considered as conspecific with *V. linariaefolia*. A key, line drawings and the taxonomic notes for the species are given.

### INTRODUCTION

The genus *Veronica* contains about 300 species which disributes mostly in the Temperate zone of North Hemisphere (Willis, 1966). For the *Veronica* species of Taiwan, Forbes and Hemsley (1889) listed two species, i.e. *V. murorum* Maxim. and *V. angalis* L.. Latter on, Hayata (1908, 1915), Masamune (1931), Ohwi (1934), Yamazai (1956), Ying (1989a, 1989b), described new species separately. Li(1950) was the first Chinese author to revise this genus in Taiwan while Yamazaki (1957) revised the eastern Asian genus including Taiwan. In totality, Li(1978) recorded 9 species while Huang (1979) recorded 11 species occurred in Taiwan by adding one naturalized species, *V. peregrina* var. *xalapensis*, and one cultivated species, *V. arvensis*. Since both species become naturalized in Taiwan now, an attempt, therefore, is made to describe them and present a convenient key for all species.

The data of habitat, altitude, phenology are all excerpted from the specimens of TAI Herbarium. The specimens marked with asterisk (\*) are voucher specimens for line drawings.

### KEY TO THE SPECIES

- |                                                                                                                                                                 |                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| 1. Leaves in the upper part of plant alternate; flowers in crowded terminal raceme or axillarily solitary forming lax terminal raceme in outer appearance ----- | 2                          |
| 1. Leaves in the upper part of plant opposite; flowers in axillary raceme -----                                                                                 | 6                          |
| 2. Flowers in crowded terminal raceme -----                                                                                                                     | 4. <i>V. linariaefolia</i> |
| 2. Flowers axillarily solitary and forming lax terminal racemes in outer appearance -----                                                                       | 3                          |
| 3. Pedicel less than 2 mm long -----                                                                                                                            | 3                          |
| 3. Pedicel more than 5 mm long -----                                                                                                                            | 4                          |
| 4. Stem densely hirsute; leaves broadly ovate -----                                                                                                             | 1. <i>V. arvensis</i>      |

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4. Stem glabrous; leaves linear, oblanceolate or oblong ----- 6. *V. peregrina*  
 5. Pedicel 8-25 mm long in fruiting, always exceeding its bearing leaf; pedicel and calyx mingled with long hairs; capsules with long hairs at margin, veins distinct -- 7. *V. persica*  
 5. Pedicel 5-10 mm long in fruiting, not exceeding its bearing leaf; pedicel and calyx only with short hairs; capsule villose, veins obscure ----- 2. *V. didyma*  
 6. Stem erect, never rooting at node ----- 7  
 6. Stem creeping or stolon, rooting at node ----- 8  
 7. Stem hirsute; leaves broadly ovate, shallowly cordate at base, strongly serrate at margin ----- 3. *V. javanica*  
 7. Stem glabrous; leaves linear, oblong, oblanceolate, obtuse or attenuate at base, entire or finely serrate at margin ----- 10. *V. undulata*  
 8. Leaves oblanceolate or elliptic; capsule obovate, rounded at apex, the length longer than the width ----- 5 *V. morrisonicola*  
 8. Leaves broadly ovate or ovate; capsule rectangular, angles at apex, the length shorter than the width ----- 9  
 9. Leaves with 2-3 serrations at one side of margin; pedicels longer than the bracts in fruiting ----- 8. *V. oligosperma*  
 9. Leaves with more than 5 serrations at one side of margin; pedicels not longer than the bracts in fruiting ----- 9. *V. taiwanica*

### TAXONOMIC TREATMENT

1. *Veronica arvensis* L., Sp. Pl. 13. 1753.; 1753.; Schelechtendal, Langenthal & Schenk, Fl. Deutschland 17: 154. pl. 1653. 1884; Ohwi, Fl. Japan rev. ed. 1200. 1965; Tsoong & Hong in Fl. Reip. Pop. Sinicae 67(2): 282. pl. 33, 13-18. 1979. Fig. 1 直立婆婆納

Erect or ascending herb, to 30 cm high. Stem villose, solitary or 2-3 branched. Leaves opposite, broadly ovate, with 2-3 teeth at one side of margin, rounded at apex, truncate rounded at base 7-10 long, 5-7 mm broad, hairy on both surfaces, becoming smaller and alternate when bearing a flower; petiole short or sessile. Flower bluish purple, axillary, smaller than calyx, forming terminal raceme in the outer appearance; calyx cleft nearly to the base, 4-lobed, lobes lanceolate or oblong, villose, 2-2.5 mm long; corolla 4-lobed, obovate, glabrous, 2 mm long, shorter than the calyx; stamens 2, glabrous, inserted and included in corolla; pistil glabrous, ovary oval, style dilated at the upper part, stigma terminal, capitate. Capsules obcordate, with stiff hair, not exceeding the calyx, 2 mm long. Seeds oval, flat, rough at surface, 1 mm long.

**Distribution:** Europe, Africa and Asia; Taiwan naturalized.

**Habitat:** Open wasteland.

**Altitude:** 1900m.

**Flowering:** May

**Fruiting:** May

SPECIMEN EXAMINED:

ILAN: Taipingshan, S. F. Huang 4761\*.

2. *Veronica didyma* Tenore, Fl. Nepal. 6: 1811; Li in Quart. Journ. Taiwan Mus. 3: 70. 1960, in Fl. Taiwan 3: 608. 1978; Tsoong & Huang in Fl. Reip. Pop. Sinicae 67(2): 280. 1979. Fig. 2. 婆婆納

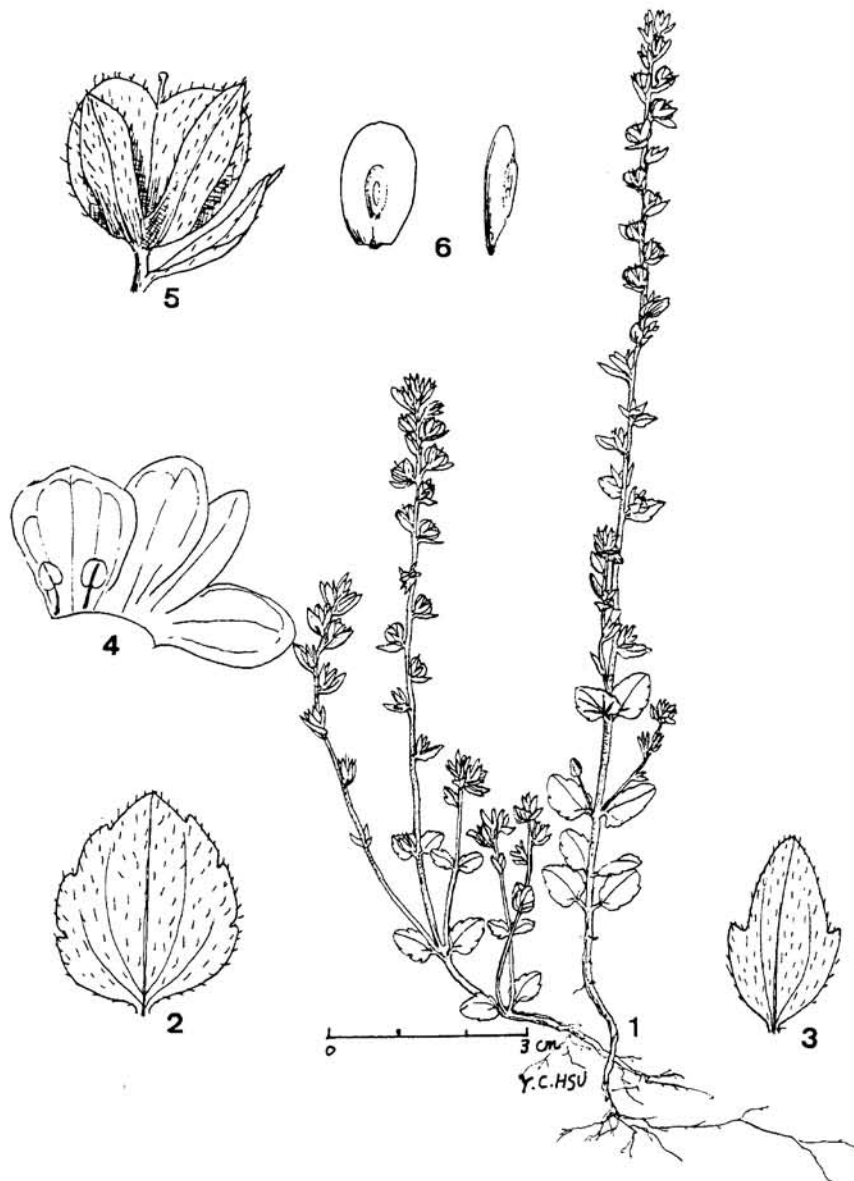


Fig. 1: *Veronica arvensis* L.

1. Habit;                                    2. leaf of lower part of plant;            3. leaf of upper part of plant;  
 4. corolla and stamens;            5. fruit within calyx;                    6. different views of seed.

*V. didyma* var. *ililacina* Yamamzaki in Journ. Fac. Sci. Univ. Tokyo ser. 3. Bot. 7: 150. 1957.

*V. polita* Novit., Fl. Suec. 63. 1819; Hayata, Icon. Pl. Form. 9; 81. 1920.

*V. agrestis* auct. non L.: Mori in Mamsamune, Short Fl. Form. 193. 1936.

**Distribution:** Europe, China, Japan, Korea, Ryukyu, Taiwan.

**Habitat:** Sunny field.

**Altitude:** 0-50m.

**Flowering:** March.

**Fruiting:** March.

SPECIMEN EXAMINED:

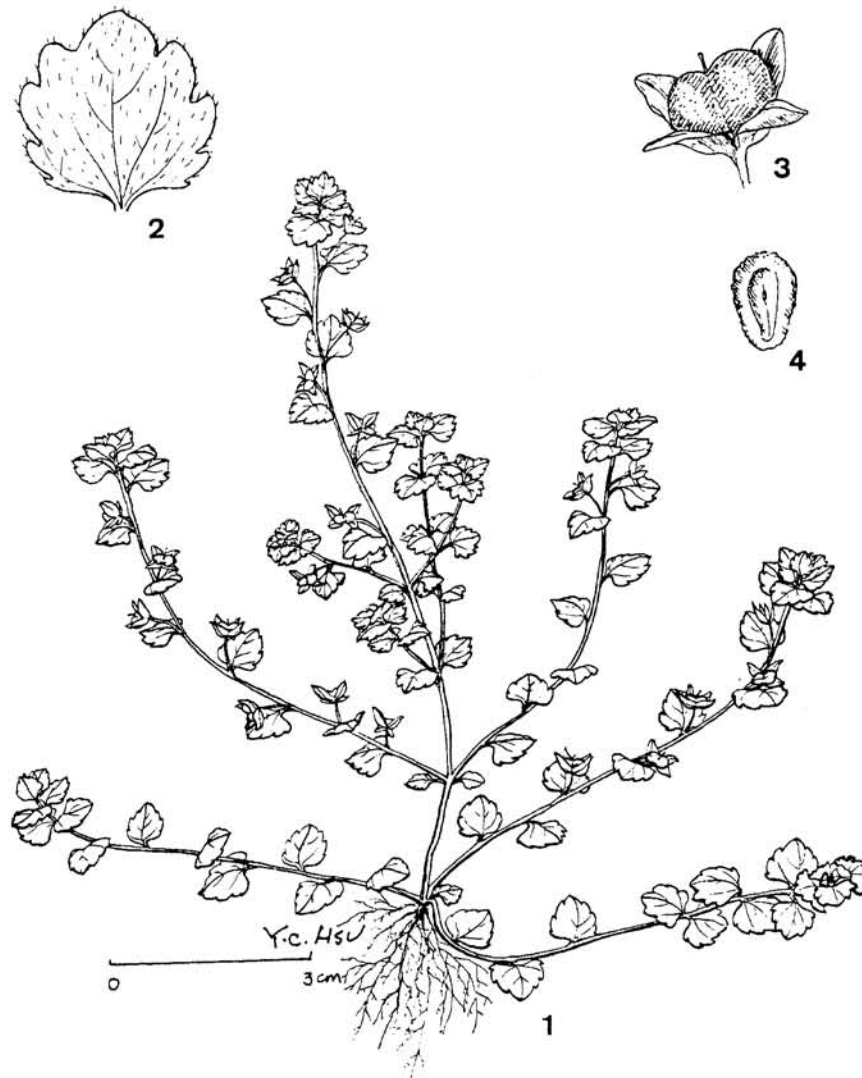


Fig. 2: *Veronica didyma* Tenore

1. Habit; 2. leaf; 3. fruit within calyx; 4. seed.

HSINCHU: Sintiku. *Y. Simada 911B\**.

**Note:** Li(1977) cited three specimens, i.e. *Suzuki 3282, 4875, Shimizu 2030*, under this species. After carefully examined these specimens, they should be refer red to *V. persica* Poir. Though this species is very similar to *V. persica*, the main distinctive characters shown in the key is very stable in Chinese and Japanese specimens.

3. *Veronica javanica* Blume, Bijdr. Fl. Ned. Ind. 742. 1826; Li in Quart. Journ. Taiwan Mus. 3: 71. 1950; Yamazaki in Journ. Fac. Sci. Univ. Tokyo ser. 3. Bot. 7: 154.f. XXV 1-4. 1957; Li in Fl. Taiwan 4: 609. 1978; Tsoong & Hong in Fl. Reip. Pop. Sunicae(2): 301. 1979. Fig. 3. 爪哇水苦賈

*V. murorum* Maxim. in Bull. Acad. Sci. Petersb. 27: 508. 1881, p.p.; Forbes & Hemsley in Journ. Linn. Soc. Bot. 26: 199. 1890.

**Distribution:** Africa, India, Java, Malay, Indo-china, southern China, Ryukyu, Taiwan, Japan.

**Habitat:** Open field, wasteland.

**Altitude:** 0-1600m

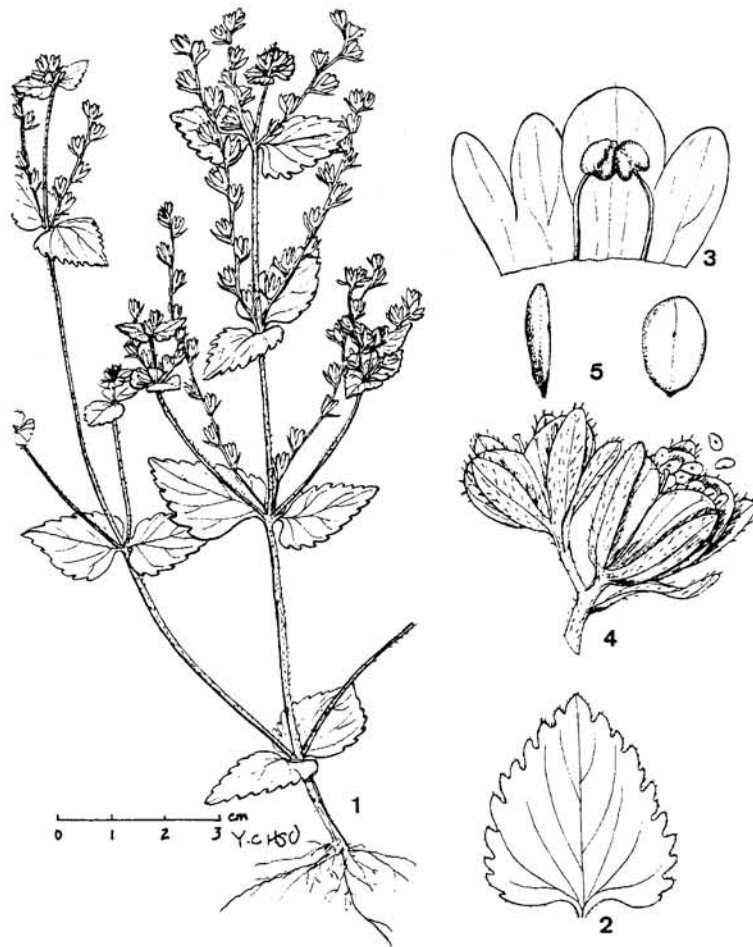


Fig. 3: *Veronica javanica* Blume

1. Habit; 2. leaf; 3. corolla and stamens; 4. fruit within calyx; 5. different views of seed.

**Flowering:** January-May, December.

**Fruiting:** February-May, December.

**SPECIMENS EXAMINED:**

TAIPEI: Sozan, *S. Suzuki s.n.* Mar. 1929; Sirin, *K. Odashima s.n.* Mar. 1934; Taipei, *S. Sasali s.n.* Dec. 1926; Suigenti, *S. Suzuki s.n.* May 1929; Yenliao, *T. Y. Chiang 346. 351*; Hsiaokuanyinshan, *H. Simizu s.n.* Apr. 1937; Tatunshan, *T. Nakamura 4293*. Keelung, Syaryoto, *G. Masamune 1906*. ILAN; Taipingshan, *S. Suzuki 3720*. HSINCHU: Chutung, *H. Shimada 3986B*; Komokwan, *Y. Simada 913C*. NATOU: Meifeng, *M. C. Tsai 33*. CHIAYI: Kuantsuling, *Morimoto 485*; Alishan, Erwanping, *T. Soma s.n.* Jan. 1915. PINGTUNG: Kuwarususya, *E. Matuda s.n.* May 1920. TAITUNG: Litao-Tienlung Bridge, *S. F. Huang et al. 3679\**.

4. *Veronica linariaefolia* Pallas ex Link, *Jahrb.* 1: 35. 1820; Yamazaki in *Journ. Fac. Sci. Univ. Tokyo ser. 3. Bot.* 7: 139. 1957; Li in *Fl. Taiwan* 4: 609. *pl. 1125*. 1978; Tsoong & Hong in *Fl. Reip. Pop. Sinicae* 67(2). *f. 71*, 1979. 追風草



*V. galactites* Hance in Ann. Sci. Nat. V. 5: 232. 1866; Li in Fl. Taiwan 4: 608. 1978.  
*V. spuria* auct. non L.: Hayata in Journ. Fac. Sci. Univ. Tokyo 25(19): 175. 1908; Li in Quart. Journ. Taiwan Mus. 3: 70. 1950.

**Distribution:** Siberia, Korea, Mangolia, Japan, China, Taiwan.

**Habitat:** Open field, grassland.

**Altitude:** 1900-2300m.

**Flowering:** June-August October.

**Fruiting:** July-August, October. November.

SPECIMENS EXAMINED:

ILAN: Nanhutashan, S. Suzuki s.n. Jul. 1922; TAICHUNG: Wuling Farm- Hsinta Campus, J. C. Wang et al. 4000; Taoshan-Wuling Farm, J. C. Wang et al. 4094; Hsueshan, C. M. Kuo 3948; Chika, T. C. Huang 7065. NATOU: Tsuefeng-Sungkang, Y. C. Jeng 1880; Tsuefeng, C. C. Hsu 11587, 11607; Tunyuan, W. S. Tang 1824; Ogami, S. Sasaki s.n. Aug. 1929; Yunhai, T. C. Huang et al. 5693; Baibra, S. Suzuki s.n. Jul. 1926; Tungpu-Patungkuan, M. Tamura et al. 21857, H. Simada 926; Nengkaoshan, S. Sasaki s.n. Aug. 1919. Weishang, S. Suzuki s.n. Nov. 1926; Weishang-Tunyuan, S. Suzuki 2637; Tunyuan-Yunhai, M. T. Kao 5732. CHIAYI: Yushan, S. Sasaki s.n. Jul. 1926, Oct. 1927;

**Note:** According to Tsoong and Hong(1979), leaves of this species varied from linear and mostly alternate in the northern area to ovate and mostly opposite in the southern area. Thus they treated them as two subspecies, though Yamazaki(1957) only treated them as two forma. Li(1978) distinguished *V. galactites* from *V. linariaefolia* also mainly by broader leaves. Since intermediate forms between these two groups can be found and there is no congruent with distribution in Taiwan, it is better not to separate them.

5. *Veronica morrisonicola* Hayata in Journ. Coll. Sci Univ. Tokyo 25: 174. pl. 29. 1908; Li in Quart. Journ. Taiwan Mus. 3: 71. 1950; Yamamzaki in Journ. Fac. Sci. Univ. Tokyo ser. 3. Bot. 7: 155. 1957; Li in Fl. Taiwan 4: 509. 1978; Tsoong & Hong in Fl. Reip. Pop. Sinicae 67(2): 305. 1979. 玉山水苦蕒

*V. morrisonicola* Hayata var. *kojima*e in Rep. Sp. Nov. 36: 55. 1934.

*V. morrisonicola* Hayata var. *kojima*e Ohwi in Rep. Sp. Nov. 36: 55. 1934.

*V. morrisonicola* Hayata form. *kojiemae* (Ohwi) Yamamzaki in Journ. Fac. sci. Univ. Tokyo ser. 3. Bot. 7: 155. 1957.

*V. morrisonicala* Hayata var. *tsugitakaensis* (Masamune) Li in Quart. Journ. Taiwan Mus. 3: 72. 1950.

*V. kojiemae* Ohwi l.c. *pro syn.*

*V. tsugitakensis* Masamune in Journ. Soc. Trop. Agr. 3: 21. 1933.

*V. taiwanalpina* Ying in Mem. Coll. Agr., NTU 29(1): 78, pl. 2, 1989. *syn. nov.* (Holotype: Hsueshan, S. S. Ying s.n. Aug. 13, 1988. NTUF!)

*V. yushanchienshanica* Ying in Mem. Coll. Agr., NTU 29(2): 60. pl. 7. 1989. *syn. nov.* (Holotype: Yushanchienshan, S. S. Ying s.n. May 21, 1989. NTUF!)

**Distribution:** Endemic.

**Habitat:** Under forest, forest margin, grassland, mountain slope, open place.

**Altitude:** 2300-3997m.

**Flowering:** May-September, December.

**Fruiting:** June-December, January, March.

SPECIMENS EXAMINED:

ILAN: Nanhutashan, S. Sasaki s.n. Jul. 1922, Jul. 1932, G. Masamune et al. 2900, 3243, T. Suzuki et al. 17615, 18061, M. T. Kao 5196, 5244, 8581, S. Suzuki s.n. Jul. 1937,

*J. C. Wang et al.* 3673; Chiliting-Nanhushanchung, *C. C. Hsu* 5197, 5963, *T. Yamazaki et al.* s.n. Aug. 1969. HSINCHU: Tapachienshan, *Fukuyama* s.n. Jul. 1932, *S. Sasaki* s.n. Aug. 1927, Jul. 1932, *J. T. Wu* 1314, *T. Hosokawa* 2463, *M.T.Kao* 8523, *C. S. Kuoh* 3288; Hsiaopachienshan, *Y. Hasioka & H. Simada* 303; Kuanwu, *T. C. Huang* 6696. MOAOLI: Hsiaoshueshan, *T. S. Liu* 310, Hsiaoshueshan-Anmashan, *T. Y. Yang* 455. TAICHUNG: Chikashanchuang-Chiuchiushanchuang, *C. C. Hsu* 14637, *J. C. Wang et al.* 4487, *T. C. Huang & C. F. Hsieh* 7181; Wuling-Chika, *J. C. Wang et al.* 4385; Chihchiayangtashan, *G. Masamune* 1230, *S. Suzuki* 5260; Hsueshan, *Mori* s.n. Oct. 1936, *C. M. Kuo* 3977, *Y. C. Jeng* 1489, *J. C. Wang et al.* 4626; Wuling-Farm-Hsinta Campus, *J. C. Wang* 3956; Hsinta Campus-Taoshan, *J. C. Wang* 405. NANTOU: Syiukulanshan-Tashikushan, *T. Suzuki* 13546, Nenkaoshan, *Y. Kudo & K. Mori* 51, *S. Suzuki* 2093, 2156, *S. Sasaki* s.n. Aug. 1926; Chilashan, *S. Suzuki* 2441, s.n. Sep. 1926, *S. Sasaki* s.n. Aug. 1929; Tunyuan, *S. F. Huang* 1173, Yunhai-Tienchih, *M. T. Kao* 5771, *T. C. Huang et al.* 5751; Tayuling, *C. C. Hsu & R. Hsu* 3795, *C. C. Chuang & M. T. Kao* 4467, *C. S. Kuoh* 2855; Chienchin-Juefen, *I. Simozawa* s.n. Jul. 1935; Tayuling-Hohuanshan, *M. T. Kao* 7780, *Y. C. Jeng* 1716, *C. M. Kuo* 7175; Hohuanshan, *S. Saskai* s.n. Jun. 1936, *C. S. Kuo et al.* 7049, *C. M. Kuo* 6855, *M. T. Kao* 9776; Wushe, *C. C. Chuang & M. T. Kao* 4245. CHIAYI: Yushan, *S. Sasaki* s.n. Oct. 1909, Oct. 1927, Aug. 1935, Jul. 1926, *S. Suzuki* 13298, *Jan & Kao* s.n. Jul. 1957, *H. Simada* 876, *C. C. Hsu* s.n. Nov. 1967, *M. Tamura et al.* 22286, *C.C. Chuang* 2894, *M. T. Kao* 5617, 6285, 9224, 9237, *T. C. Tsann* 28, *T. C. Huang* 4568; Tatachia-Yushan, *H. Simada* 844, *C. S. Kuoh* 1257. Kaohsiung; Kuanshan, *Fuyama* s.n. Jul. 1935, *S. F. Huang et al.* 3571; Tienchih-Yiako, *T. C. Huang et al.* 8904. PINGTUNG; Tawushan, *G. Masamune* 1497, *T. C. Huang et al.* 13659. TAITUNG: Hsiangyangshan, *Y. C. Jeng* 2676. HUALIEN: ChungYangchienshan, *T. Suzuki & N. Fukuyama* 15176.

**Note:** *V. taiwanalpina* is the same as *V. tsukitakensis* which should be considered as an alpine form of *V. morrisonicola* as Li(1950) pointed out. *V. yushanchienshanica*, characterized by linear or linear-oblongate leaves, is within the variation range of the present species. Though some specimens indeed bear longer pedicels and mainly locates around Nenkaoshan which was treated as forma *kojiema* by *Yamazaki*(1957), a forma state is not warrant since all the characters are continuous.

6. *Veronica oligosperma* Hayata, Icon. Pl. Form. 5: 128. f 47, a-i 1915; Li in Quart. Journ. Taiwan. 3: 73. 1950; *Yamazaki* in Journ. Fac. Sci. Univ. Tokyo. ser. 3. Bot. 7: 150.f. 27, 15-16. 1957; Li in Fl. Taiwan 4: 611. 1978; Tsoong & Hong in Fl. Reip. Pop. Sinicae 67(2): 318. 1979. Fig. 4. 貧子水苦賣

**Distribution:** Endemic.

**Habitat:** Under forest, in grassland.

**Altitude:** 2700-3500m.

**Flowering:** May-August, October.

**Fruiting:** July-August, October.

SPECIMENS EXAMINED:

HSINCHU: Tapachienshan, *S. Sasaki* s.n. July 1931. MIAOLI: Sishuishan, *C. M. Kuo* 8553. TAICHUNG: Hsueshan, *Morimoto* s.n. Oct. 1936, *S. Suzuki* 5335, 5394, *G. Masamune* 1266. *T. C. Huang & C. F. Hsieh* 7185, *J. C. Wang et al.* 4493\*; Mt. Sikayautai, *S. Suzuki* 5450, *G. Masamune* 1231; Hsinta campus to Pintienshan, *J. C. Wang et al.* 4033; Nankotaizan, *T. Suzuki et al.* 17598, *T. Yamazaki et al.* 331. NANTOU: Ogami, Nenkaoshan, *S. Sasaki* s.n. Aug. 1929. CHAIYI: En route to Yushan, *T. C. Huang et al.* 14267, 15291; Yushan, *S. Sasaki* s.n. July 1926, *S. Suzuki* 13341. KAOHSIUNG:

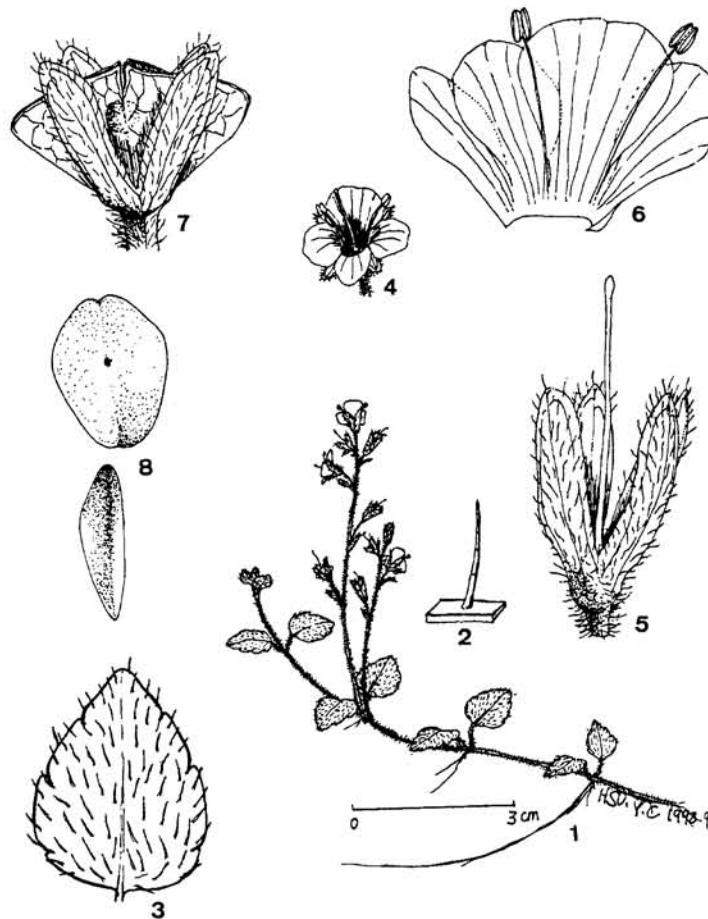


Fig. 4: *Veronica oligosperma* Hay.

1. Habit; 2. multiple cellular hair in stem; 3. leaf; 4. flower; 5. calyx and pistil; 6. corolla and stamens; 7. fruit within calyx; 7. different views of seed.

Kuanshan. *Fukuyama s.n.* July 1935. PINGTUNG: En route to Tawushan, *T. C. Huang et al.* 13656. Hualien: Tungnengkao, *S. Sasaki s.n.* Aug. 1929.

7. *Veronica pergerina* L., Sp. Pl. 14, 1753; Bentham in DC., Prodr. 10; 482. 1846; Tsoong & Hong in Fl. Reip. Pop. Sinicae 67(2); 280. *pl.* 33, 7-12. 1979. Fig. 5. 毛虫婆婆納  
*V. peregrina* L. var. *xalapensis* (H. B. K.) Penn. in Torreyea 19; 167. 1919; Huang in Fl. Taiwan 6: 128. 1978.

Erect herbs. Stem quadrate, glabrous, solitary or branched. Leaves opposite, linear, oblong, oblanceolate, or rarely lanceolate, entire or with few serrations at margin, rounded or obtused at apex, attenuate at base, sessile or petiolate at the lower part of leaves, 7-19 mm long, 3-7 mm broad, becoming smaller and alternate when bearing a flower. Flowers axillary, solitary; pedicels less than 2 mm long; calyx cleft nearly to the Base, 4-lobed, lobes ovate to oblong, glabrous; corolla blue, 4-lobed, glabrous, included in calyx; stamens 2, glabrous; pistil glabrous, ovary globose, style very short, stigma terminal, capitate. Capsule obcordate, persistent style short, not exceeding the emarginate notch.



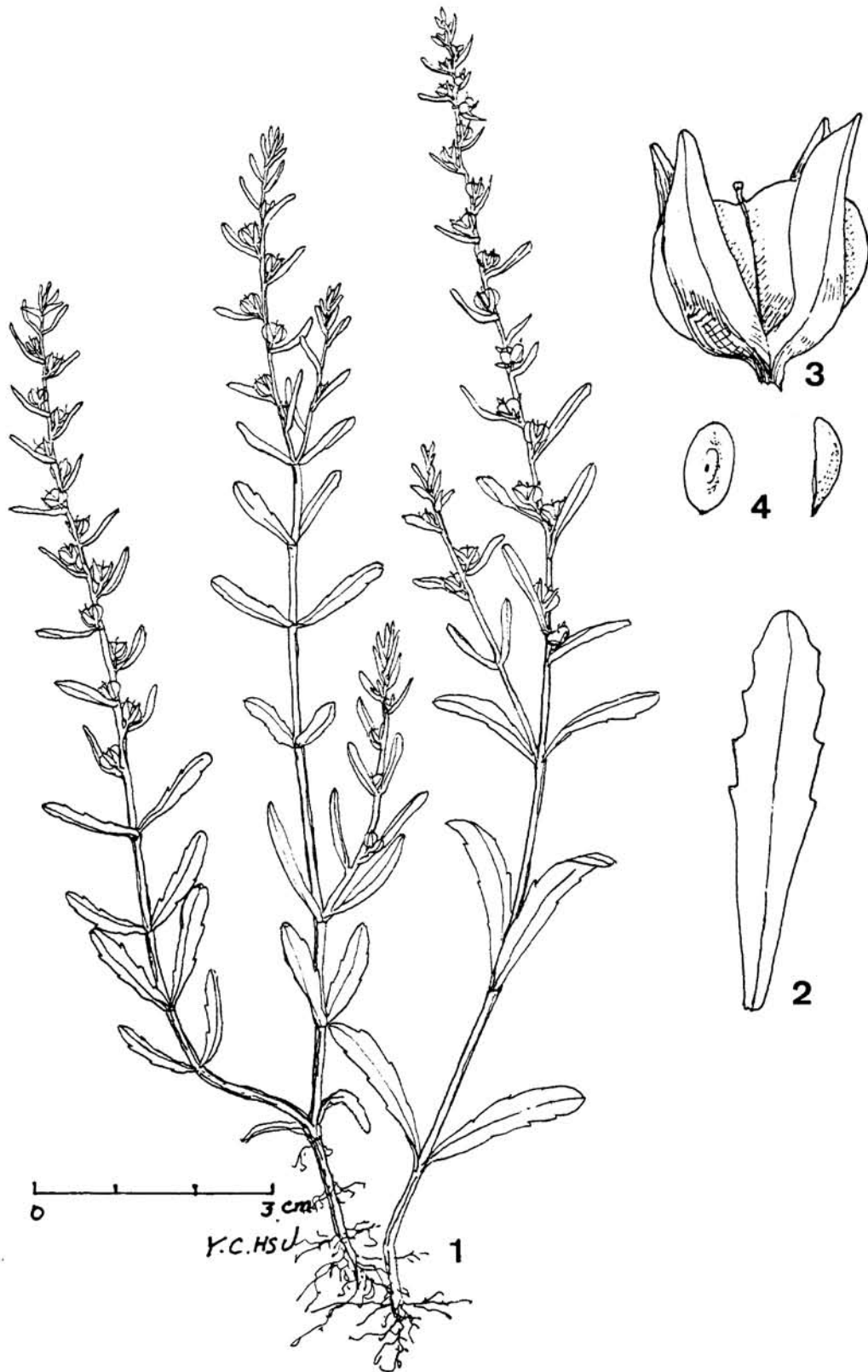


Fig. 5: *Veronica peregrina* L.

1. Habit; 2. leaf; 3. fruit within calyx; 4. different views of seed.

**Distribution:** American, Siberia, Korea, China, Japan; Taiwan naturalized.

**Habitat:** Open wasteland, paddy field.

**Altitude:** 0-1900m.

**Flowering:** April.

**Fruiting:** April-May

SPECIMENS EXAMINED:

TAIPEI: Taipei City, *T. C. Huang* 13492; Campus of National Taiwan University, *C. S. Kuo* 6964, *M. T. Kao* 7872\*, *J. M. Hsu* & *K. C. Yang* 761, *C. K. Kuo* 4851; Yinhotung, *C. C. Hsu* & *Khou* 10819. HIALIEM: Tsuen, *S. F. Huang* & *T. H. Hsieh* 4826.

8. *Veronica persica* Poir., Ency. Meth. Bot. 542. 1808; Li in Quart. Journ. Taiwan Mus. 3: 70. 1950, in Fl. Taiwan 3: 611. 1977; Tsoong & Hong in Fl. Reip. Pop. Sinicae 67(2); 285. 1979. Fig. 6. 阿拉伯婆婆納

*V. tournefortii* auct. non C. C. Gmel.: Mori in Masamune, Short Fl. Formosa 193. 1936.

**Distribution:** Native of Europe and W. Asia; Taiwan naturalized.

**Habitat:** Roadside, seaside, wasteland.

**Altitude:** 0-2200m.

**Flowering:** Jan.-May Aug. Nov.

**Fruiting:** Jan.-May Aug.

SPECIMENS EXAMINED:

TAIPEI: Opposite side of Tansui, *J. H. Huang* 4354; Tansui, *Y. Shimada* 10958, 10959, *H. Keng* K1079, *H. Simizu* 2030, *S. Sasaki* s.n. March 1924, *C. M. Kuo* 6572; Keelung, *S. Sasaki* s.n. April 1911; Tatunshan, *T. Suzuki* 8282, *C. M. Kuo* 4482; Hinghuatien, *C. C. Hsu* 4420; Sanchih, *T. Y. Yang* & *C. C. Wang* 4468; Yangminshan, *S. F. Huang* 1663; Shihmen, *S. H. Lin* 690, *H. M. Yang* 2536, *C. M. Kuo* 10940; Laomei *H. N. Yang* 2527. ILAN: Taipngshan, *T. C. Huang et al.* 10782, *M. T. Kao* 10673\*, *S. F. Huang* 4976. TAICHUNG: Lishan, *C. S. Kuo* 6977, *W. S. Tang* 449, *Y. C. Jeng* 1691; Pilushi, *J. C. Wang* 2621; Chinshan, *C. C. Hsu* & *C. S. Kuoh* 13314; NATOU: Nengkao, *M. T. Kao* 5713; Wushe, *Feung* & *Kao* 4514, *S. F. Huang* 3454. CHIAYI: Alishan, *W. S. Tang* 534.

9. *Veronica taiwanica* Yamazaki in Journ. Jap. Bot. 31; 297. 1956, in Journ. Fac. Sci. Univ. Tokyo ser. 3. Bot. 7: 157. f. 27. 8-9. 1957; Li in Fl. Taiwan 4: 612. 1978; Tsoong & Hong in Fl. Reip. Pop. Sinicae 312. 1979. Fig. 7. 台灣水苦蕒

*V. cana* auct. non Wall.: Li in Quart. Journ. Taiwan Mus. 3: 72. 1950.

**Distribution:** Endemic.

**Habitat:** Under forest.

**Altitude:** 1500m. ca.

**Flowering:** April.

**Fruiting:** April.

SPECIMENS EXAMINED:

ILAN: Yappitu-Dozan, *T. Suzuki* 8715\*.

**Note:** The present species is closely related to *V. Henryi*, distributing in southern China, and differs from it, according to Yamazaki (1957), only by the smaller leaves, less serrations at leaf margin, shorter flowers, capsules and style. The specimen examined here is very similar to the figure published by Tsoong and Hong (1979). They seem to be conspecific.



Fig. 6: *Veronica persica* Poir.

1. Habit; 2. leaf; 3. flower; 4. fruit within calyx; 5. different views of seed.

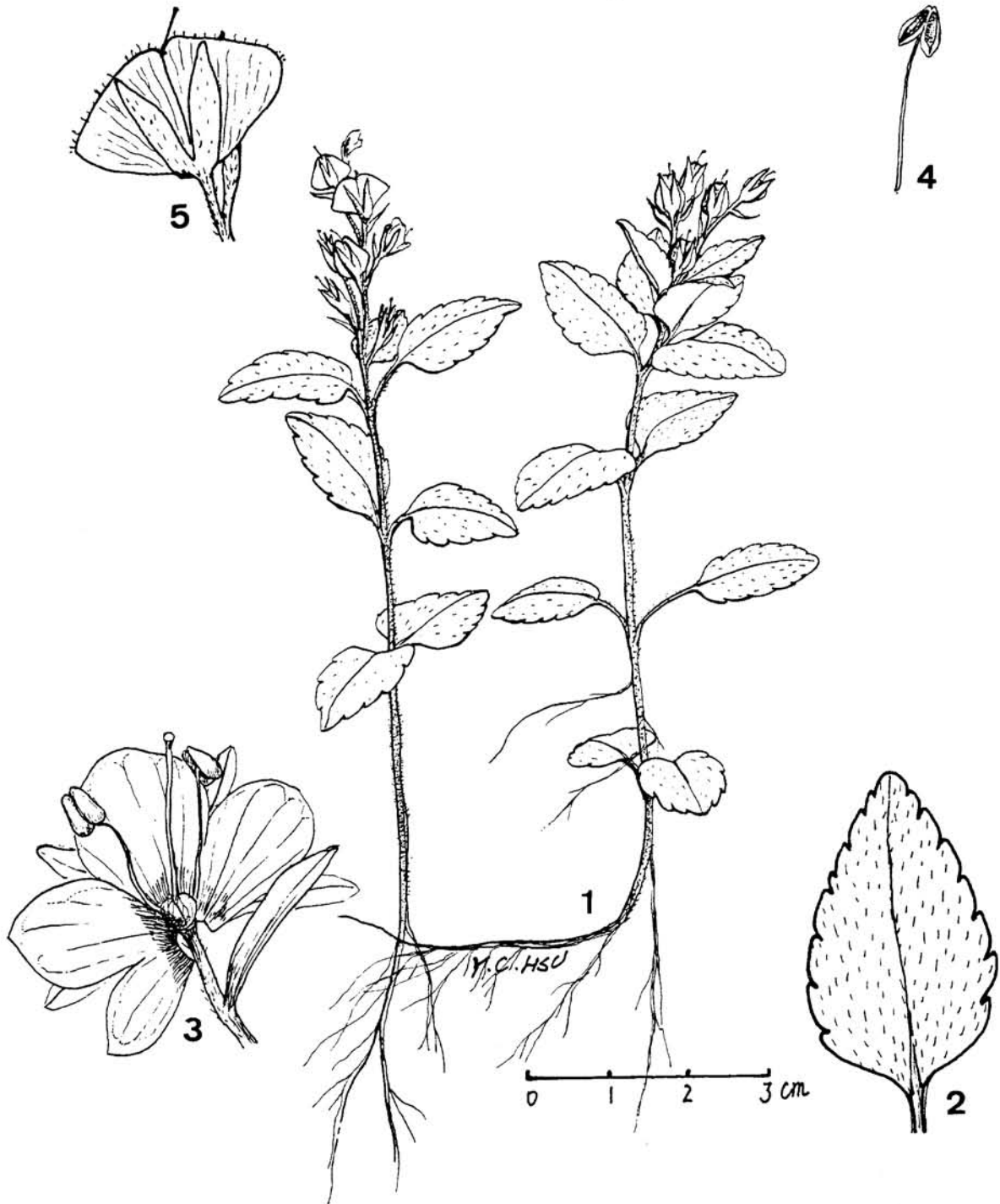


Fig. 7: *Veronica taiwanica* Yamazaki  
1. Habit; 2. leaf; 3. dissected flower; 4. stamen; 5. fruit within calyx.

10. *Veronica undulata* L. Wall., List no. 406. 1829; Li in Quart. Journ. Taiwan Mus. 3: 73. 1950.; Yamazaki in Journ. Fac. Sci. Univ. Tokyo ser. 3. Bot. 7: 159. 1957; Li in Fl. Taiwan 4: 612. 1978; Tsoong & Hong in Fl. Reip. Pop. Sinicae 67(2): 321 水苦蕒  
*V. anagalis* auct. non L.: Forbes & Hemsley in Journ. Linn. Soc. Bot. 26: 198. 1889.  
**Distribution:** N. America, Europe, Eastern Asia.  
**Habitat:** Swampy waste land, river bed, paddy field.  
**Altitude:** 0-100m.  
**Flowering:** February-May, December.  
**Fruiting:** February-May, December.  
 SPECIMENS EXAMINED:  
 TAIPEI: Keelung, *Tanaka & Shimada 11021*; Fulung, *T. C. Huang 8306*; Shihmen, *C. M. Kuo 10945*, *H. N. Yang 2546*, *S. H. Lin 702*, *T. C. Huang 8264*; Opposite side of Tanshui, *D. Ko 4368*; Tanshui, *H. Keng K1090*; Shihlin, *C. T. Wang 900*; Tali, *S. H. Lin 807*, *C. M. Kuo 11084*. ILAN: Nanao, *T. C. Huang & S. F. Huang 13370*; Sanhsing, *M. T. Kao 9568*. HSINCHU: Hungmao, *Y. Kudo & S. Suzuki s.n.* April 1929; Hsinchu, *H. Simada 3979B*. MIAOLI: Yuanli, *C. C. Hsu 5263*. TAICHUNG: Tatushan, *C. C. Hsu & Kuoh 10770*; Tachiachi, *M. T. Kao 10067*; Fengyuan, *Lin s.n.* Dec. 1982. CHANGHUA: Changhua, *C. I. Peng 990*. CHIAYI: Liuchiaio, *Morimoto 484*.

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# 台灣植物誌之觀察 (15) — 婆婆納屬 (玄蔘科)

黃星凡 黃增泉

## 摘要

本文共處理10種台灣婆婆納屬 (*Veronica*) 植物。直立婆婆納 (*V. arvensis*) 及毛虫婆婆納 (*V. peregrina*) 爲新近歸化植物，本文描述此兩種形態特徵。高山婆婆納 (*V. galactites*) 處理爲追風草 (*V. linariaefolia*) 之異名。台灣高山水苦蕒 (*V. taiwanalpina*) 及玉山前山水苦蕒 (*V. yushanchienshanica*) 處理爲玉山水苦蕒 (*V. morrisonicola*) 之異名。文中除附種之解剖圖及檢索表，有爭議之種亦有分類註解。