

## Notes on the Flora of Taiwan (33)—Revision on the genus *Clinopodium* L. in Taiwan

Tsung-Hsin Hsieh<sup>(1)</sup> and Tseng-Chieng Huang<sup>(2,3)</sup>

(Manuscript received 1 April 1998; accepted 2 May 1998)

**ABSTRACT:** The genus *Clinopodium* of Taiwan is revised on the basis of morphological and anatomical characters, and the chromosome numbers. Three species and one new variety are recognized, i.e. *C. gracile* (Benth.) O. Kuntze, *C. chinense* (Benth.) O. Kuntze, *C. laxiflorum* (Hayata) Mori, and *C. laxiflorum* (Hayata) Mori var. *taiwanianum* Hsieh & Huang, var. nov. The species, *C. gracile* differs conspicuously from the others in having one vascular bundle in petiole; minute bract is shorter than the pedicel; the nutlet containing discoid surface; and the chromosome number being  $2n=18$ ; while the others have two vascular bundles in petiole; the bract is longer than the pedicel; the nutlet surface is ornamented with shallow and well defined ridges; and the chromosome number is  $2n=38$ .

**KEY WORDS:** Revision, *Clinopodium*, Taiwan.

### INTRODUCTION

The genus *Clinopodium* L. comprises about 20 species distributed in Asia and Europe (Li and Hedge, 1994). According to Huang and Cheng (1978) in the Flora of Taiwan, there are three species, i. e. *Clinopodium gracile*, *C. umbrosa*, and *C. laxiflora*, but some literatures such as *C. kudoii* (Hosokawa, 1932), *C. laxiflora* var. *parviflorum* (Shimizu, 1963) were missed. On the other hand, owing to the wide range of geographical distribution and morphological variation, the identification of the species of this genus in Taiwan is difficult, and a taxonomical revision is desirable. In this study, three species and one new variety are recognized based on chromosome number, isozyme diversity, morphological, anatomical, ecological, geographical and pollen characters (Hsieh, 1996).

### TAXONOMIC TREATMENT

***Clinopodium* L.**, Sp. Pl. ed. 1: 587. 1753; O. Kuntze, Revis. Gen. Pl. 2: 515. 1891; Hsuan, Fl. Reip. Popularis Sin. 66: 222. 1977; Li and Hedge, Fl. China 17: 228. 1994.

- 
1. Department of Mathematics & Science Education, National Tainan Teachers College, Tainan 700, Taiwan, Republic of China.
  2. Department of Botany, National Taiwan University, Taipei 106, Taiwan, Republic of China.
  3. Corresponding author.

Herbs, covered with septate hairs; stems erect or procumbent at base, or tufted, square, glabrous, puberulent or pilose. Leaves opposite, the upper ones often bract-like. Flowers in verticillate cyme, axillary or terminal. Calyx tubular, 13-nerved, upper lip 3-toothed, lower lip 2-toothed, subulate; throat villous or naked. Corolla tubular, the limb 2-lipped, upper lip erect, flat; lower lip spreading, 3-lobed. Stamens 4, didynamous; anthers 2-loculate. Nutlets small, subglobose. Species about 20, distributed in temperate region of Eurasia; three species and one variety in Taiwan.

### Key to the taxa of *Clinopodium* in Taiwan

1. Bracts ca. 1mm long, shorter than the pedicel; petiole with one vascular bundle ..... 2. *C. gracile*
1. Bracts 3.5-6mm long, longer than the pedicel; petiole with two vascular bundles.
  2. Plants 30-50cm tall; leaves 2-4 x 1.4-3.0 cm, pilose on both surfaces ..... 1. *C. chinense*
  2. Plants 10-20cm tall; leaves small, 0.5-1.2 x 0.3-0.9 cm, glabrous or scattering hairs on both surfaces.
    3. Flowers 8-15 mm long; pedicels 1.5- 2mm long; leaves glabrous ..... 3. *C. laxiflorum*
    3. Flowers 7-8 mm long; pedicels 3 mm long; leaves with scattering short hair on both surfaces  
..... 4. *C. laxiflorum* var. *taiwanianum*

1. ***Clinopodium chinense*** (Benth.) O. Kuntze, Revis. Gen. Pl. 2: 515. 1891; Hsuan, Fl. Reip. Popularis Sin. 66: 226. 1977; Murata & Yamazaki in Iwatsuki *et al.*, Fl. Japan 3a: 283. 1993.

*Calamintha chinensis* Benth. in DC., Prodr. 12: 233. 1848.

*Satureia chinensis* (Benth.) Briq. in Engler & Prantl, Pfl.-fam. IV, 3a: 302. 1897.

*Satureia kudoii* Hosokawa in Trans. Nat. Hist. Soc. Formos. 22: 225. 1932.

*Clinopodium kudoii* (Hosokawa) Mori in Masamune, Short Fl. Formos. 182. 1936.

*Clinopodium umbrosum* auct. non (Bieb.) C. Koch: Huang et Cheng in Fl. Taiwan 4: 456. 1978.

*Melissa umbrosa* (Bieb.) Benth. in DC., Prodr. 12: 233. 1848; Hayata, Gen. Ind. Fl. Form. 56. 1917.

Perennial herbs, profusely branched. Stems 30-55cm high, pubescent. Leaves chartaceous; petioles 5-10mm long, with spreading hairs, vascular bundles 2; blades ovate to broadly ovate, 2-4cm long, 1.4-3.0cm wide, apex acute, base widely cuneate to rounded, margins serrate, both surfaces pilose and densely so on nerves. Flowers in dense verticillate cyme, terminal and in axils of upper leaves. Bracts setaceous, 4-6mm long, with spreading long hairs on margin; pedicels 2mm long, pubescent. Calyx tubular, bilabiate, 6-7mm long, spreading long pilose on nerves; upper lip *ca.* 1.5mm long, 3-lobed, lobes triangular, spreading-pilose on margin; lower lip *ca.* 2mm long, deeply bilobed, narrowly triangular, spreading-pilose on margin. Corolla 8-10mm long, bilabiate, upper lip *ca.* 2mm long, elliptic; lower lip 3-4mm long, 3-lobed, broadly ovate; stamens 4, didynamous. Nutlets subglobular, 8-9mm long, surface shallow, with well-defined ridges. Chromosome number  $2n = 38$ .

Distribution: Japan, China, Taiwan, Malesia and India.

**Specimens examined:** Taipei Hsien: Neihu, T.-C. Huang 1542; Yangmingshan, T.-C. Huang 9323; Shihmen, C. Hsu 3851, S.-H. Lin 709; Shihlin, S. Sasaki s. n. Jan 1, 1936; Pali, C. Hsu 4405, Hsieh 1454; Tali, S.-H. Lin 781; Kueishan, G. Masamune et S. Suzuki s. n. Jul 3, 1932; Keelung, G. Masamune 112, S. Suzuki 4483; Hopingtao, Hsieh 1509; Pengchiayu, T.-C. Huang et al. 15788; Paisawan, T.-C. Huang 4719, 5000, Hsieh 1453, W.-T. Cheng 725, C. M. Kuo 8910; Fulong, Hsieh 1452; Yienliao, J.-C. Wang 3147, T.-Y. Yang



1878; Sanchu, *C. Hsu* 4597; Tanshui, *C.-L. Huang* 224; Nankan, *W.-T. Cheng* 699; Chihshanyen, *Nonaka et Mori s. n.* May 15, 1932; Chihshingshan, *Shimizu* 635; Fukueichiao, *S. Suzuki* 4773; Pitouchiao, *Hsieh* 1451; Hsiaokotou, *T.-C. Huang* 10831, *Hsieh* 1385; Kwaninshan, *W.-T. Cheng* 756; Wantang, *W.-T. Cheng* 738. **Ilan Hsien:** Nanao, *Suzuki* 7052; Schitsun, *Suzuki* 4987; Nanshan, *Hsieh* 1460; Taipingshan, *M.-T. Kao* 6747, *Suzuki* 660; Suyuanyako, *Ipsse* 2389 (Type of *Satureia kudoii* Hosokawa, TAI!), *Hsieh* 1462. **Taoyuan Hsien:** Tayuan, *Hsieh* 1455; Jenmei, *C.-M. Kuo* 6176; Nankan, *Kudo et Suzuki* 636. **Hsinchu Hsien:** Hsiangshan, *Peng* 3179; Hsienchiushih, *Hsieh* 1456. **Miaoli Hsien:** Tahu, *Cheng* 42, *T.-C. Huang* 5591. **Taichung Hsien:** Songmao, *Hsieh* 1465; Anmashan, *C.-M. Kuo* 8559; Chiayangshanchuang, *Yang s. n.* Nov. 16, 1990; Wuling, *Wang* 3949; Chika, *T.-C. Huang* 7061; Sheishantungfong, *Hsieh* 1480; Lishan, *T.-C. Huang* 4815, *Hsieh* 1466. **Nantou Hsien:** Musha, *Masamune* 2298; Sonyen, *T.-C. Huang* 4630; Meyfong, *Hsien* 1471; Haitien Temple, *Hsieh* 1485; Chitaihu, *Hsieh* 1486. **Chiayi Hsien:** Alishan, *T.-C. Huang* 5012, *Tamara* 22244. **Kaohsiung Hsien:** Meyshankou, *Hsieh* 1487; Likwan, *Hsieh* 1488; Kuaikou, *Hsieh* 1489; Tienchu to Yiako, *T.-C. Huang* 8927; Takwanshan, *Hsieh* 1492. **Pingtung Hsien:** Tawushan, *T.-C. Huang* 13627. **Hualien Hsien:** Hualien, *Hsieh* 1450; Tienhsiang, *T. Shimizu & M. T. Kao* 10559, *C.-C. Chuang* 4416; Chilaishannanfong, *Sasaki s. n.* Aug 24, 1929; Tayuling, *Hsieh* 1467; Hohuanshan to Tayuling, *T.-C. Huang* 4652, 4660, *Hsieh* 1468; Houhuanshan, *Hsieh* 1469; Chinshuishan, *T.-C. Huang* 12919; Luanshan, *T.-C. Huang* 4196, *C. Hsu* 3596. **Taitung Hsien:** Lidao, *Hsieh* 1494.

**2. *Clinopodium gracile* (Benth.) O. Kuntze, Rev. Gen. Pl. 2: 515.1891; Huang & Cheng, in Fl. Taiwan 4: 453. 1978**

*Calamintha gracilis* Benth. in DC., Prodr. 12: 232. 1848; Matsum. et Hayata in J. Coll. Sci. Univ. Tokyo 30: 311. 1911.

*Clinopodium gracile* (Benth.) Matsum., Ind. Pl. Jap. 2: 538.1912.

Small perennial herbs. Stems tufted, pubescent, rooting on the lower nodes, 10–30cm long. Leaves membranaceous; petioles 5–10mm long, pubescent, vascular bundle 1; blades broadly ovate, 1–2.5cm long, 0.8–1.6cm wide, apex subacute, base rounded or broadly truncate, margins crenate-serrate, glabrous on both sides except on the nerves, with glandular dots on lower surface. Cymes terminal and in upper leaf axils, opposite in loosely flowered verticillasters. Bracts linear, acute, ca. 1mm long, puberulous; pedicels 3–4mm long, pubescent. Calyx tubular, bilabiate, 3–4mm long, puberulent on nerves, upper teeth recurved, lower 2-lobed teeth subulate, ciliate. Corolla bilabiate, straight, 4–5mm long, barely exerted; upper lip 1mm long, 2-lobed elliptic; lower lip 2mm long, 3-lobed, broadly ovate. Stamens 4, didynamous; anthers 2-celled, divergent. Nutlets rounded, surface discoid with some radiating ridges. Chromosome number  $2n = 18$ .

Distribution: Japan, Korea, China, Taiwan, Malesia, Burma and India.

**Species examined:** **Taipei Hsien:** Wantang, *W.-T. Cheng* 739; Tsunankon, *W.-T. Cheng* 704; Hsintien, *Shimizu* 2075, *C.-M. Kuo* 4518; Tatongshan, *C. M. Kuo* 5570; Yinghoton, *M.-T. Kao* 7619; Huangdidan, *Tang* 303; Ulai, *T.-C. Huang* 3415; Chienkou, *T. Shimizu et M.-T. Kao* 12329; Hsiaokotou, *S.-F. Huang* 289; Pianchiou, *Hsieh* 1491; Keelung, *S. Suzuki s. n.* Mar 14, 1929. **Taipei city:** NTU campus, *C. Hsu* 3123, *T.-H. Hsieh* 1441; Suigenchi, *Suzuki s. n.* May 12, 1929; Muchishan, *J.-C. Wang* 3024; Shihlin, *Matsuda* 1616, *S. Suzuki* 10274; Yangmingshan, *W.-T. Cheng* 1031; No precise locality: *T. Suzuki* 4482, *Tanaka* 17775. **Ilan Hsien:** Nanshan, *T. C. Huang* 7681; Nanaoling, *T. Suzuki* 7331; Liunmaoan, *Hsieh* 1461; Tuchang, *S. Suzuki* 3730; Wutatsan, *T. Suzuki* 7528. Suyuanyako, *Hsieh* 1463; Yuanyan lake, *Hsieh* 1497. **Taoyuan Hsien:** Fusing, *S.-H. Lin* 768; Fushan Botanical Garden, *Peng* 13886 (HAST); Yangmei, *C.-M. Kuo* 6265; Pushin, *T.-C. Huang* 4034. **Hsinchu Hsien:** Chutung, *Shimada* 3998; Tuchang Kwangwu, *Peng* 14873 (HAST). **Taichung Hsien:** Wushihken, *Hsieh* 1498; Lishan, *J.-C. Wang* 3057; Anmashan, *C.-E. Chang* 15298 (PPI); Tataka, *Chiu* 1822 (HAST). **Nantou Hsien:** Meyfong, *Hsieh* 1475. **Chiayi Hsien:** Rwanpien, *S.-F. Huang*

2551; Alishan, *M. T. Kao* 6841, *C.-E. Chang* 17252 (PPI). **Nantou Hsien:** Sanlinchi, *S.-F. Huang* 72. **Kaohsiung Hsien:** Tengchih, *S.-Z. Yang* 7093 (PPI). **Pingtung Hsien:** Jishueiying, *S.-Z. Yang et C.-G. Lin* 22423 (PPI). **Hualien Hsieh:** Juisui forest road, *Wang* 660 (HAST).

NOTE: *C. gracile* differs conspicuously from the others in having one vascular bundle in petiole; the minute bract which is shorter than the pedicel; the nutlet with discoid surface; and the chromosome number being  $2n = 18$ ; while the others have two vascular bundles in petiole; bract is longer than the pedicel; the nutlet surface is ornamented with shallow and well defined ridges; and the chromosome number is  $2n = 38$ .

### 3. *Clinopodium laxiflorum* (Hayata) Mori in Masamune, Short Fl. Formos. 183. 1936. (as *laxiflora*)

*Calamintha laxiflora* Hayata in J. Coll. Sci. Univ. Tokyo 30: 228. 1911; Matsum. et Hayata in Bot. Mag. Tokyo 26: 299. 1912; Kudo in Mem. Fac. Sci. Agr. Taihoku Univ. 2: 105. 1929.

*Clinopodium laxiflorum* (Hayata) C. Y. Wu et Hsuan ex H. W. Li. in Acta Phytotax. Sin. 12(2): 204. 1974; Hsuan in Fl. Reip. Popu. Sin. 66: 234. 1977.

*Clinopodium laxiflorum* (Hayata) T. Shimizu var. *parvifolium* T. Shimizu, J. Fac. Textile Sci & Technol., Shinshu Univ., 36, ser. A., Biol. 12: 56. 1963.

Perennial prostrate herbs, profusely branched. Stems 8–20cm long, often tufted, pubescent. Leaves thick chartaceous; petioles 1–3mm long, pubescent, vascular bundles 2; blades ovate to broadly ovate, 5–12mm long, 3–9mm wide, apex acute, base obtuse to truncate, margins serrate, upper surface glabrous, lower surface glabrous except nerves with scabret hairs, glandularly dotted on lower surface. Flowers in terminal or axillary verticillate cymes. Bracts setaceous, 4–5mm long, with spreading long hairs on margin; pedicels 1.5–2mm long, pubescent. Calyx tubular, bilabiate, 6.5–7.5mm long, with spreading long hairs on nerves and short dense hairs on the others; upper lip ca. 1.5mm long, 3-lobed, the lobes triangular, spreading pilose on margin; lower lip ca. 2.5mm long, deeply bilobed, narrowly triangular, spreading-pilose on margin. Corolla 0.7–1.5cm long, bilabiate. Stamens 4, didynamous. Nutlets subglobular, 0.8–1.2mm long, surface with shallow, well-defined ridges. Chromosome number  $2n = 38$ .

Distribution : Endemic.

Habitat: growing on the 2000–3500 meters.

**Specimens examined:** **Ilan Hsien:** Nanhutashan, *S.-F. Huang* 775, *Yamazaki et al. s. n.* Aug 22, 1969; **Hualien Hsien:** Hohuanshan, *S. Sasaki s. n.* Jul 7, 1936, *C. Hsu* 6043; Luanshan, *T.-C. Huang* 4227, *C. Hsu* 3624, *C. S. Kuo* 6949, *C.-E. Chang* 833 (PPI); Chingsheishan, *Nakamura* 3750; Tienchang, *S. Suzuki* 1084, *S. Sasaki s. n.* Aug 21, 1929; Hoping, *S.-F. Huang et al.* 5146; Nengkao, *S. Suzuki* 2030, Nengkao to Weishang, *S. Suzuki s. n.* Aug 25, 1929; Chilaishan, *S. Sasaki s. n.* Aug 24, 1929; *J.-C. Wang* 1825; Chungyangchienshan, *T. Suzuki* 15070, *Fukuyama et T. Suzuki* 15154; Tayuling, *M.-T. Kao* 7812; Tayuling to Hohuanshan, *C. Hsu* 3823, *C.-S. Kuo* 7061; Hohuanshan, *Hsieh* 1474; Tsuen, *C.-C. Chuang et M.-T. Kao* 4392, *Hsieh* 1472. **Nantou Hsien:** Tientsu to Nengkao, *T.-C. Huang* 5795; Yunghai to Tienchiu, *S.-F. Huang* 1193, *M.-T. Kao* 5809; Yuanfong, *Hsieh* 1473; Baiko to Wushe, *Masamune* 1357; Tsueifong to Hohuanshan, *S. Hsu et C.-S. Kuo* 11075; Kwankao, *T. Suzuki* 13301. **Taichung Hsien:** Nengkaoshan, *Matzda s. n.* Aug 6, 1919. **Chiayi Hsien:** Tungpu to Paiyunshanchuang, *T.-C. Huang* 4588, *C.-E. Chang* 16397 (PPI); Tatachia to Paiyun, *C. Hsu* 6233, 6264. **Kaohsiang Hsien:** Kwanshan, *C.-E. Chang* 7578 (PPI); Kuaikou, *Hsieh* 1490; Yako to Takwanshan, *K.-C. Yang s. n.* Dec 5, 1992. **Taitung Hsien:** Takuanshan, *Peng* 11816, 11716 (HAST); Tsuyun, *Yamamoto* 381; Tientsu to Yako, *T.-C. Huang* 8952; Yako, *Hsieh* 1495, 1496.

Note: Huang and Cheng (1978) in Flora of Taiwan used the name *C. laxiflorum* (Hayata) Matsum. in 1912, but Matsumura never made this treatment. So, the first valid name is Mori in 1936. The corolla length of this species is variable from 1.1 cm (Hayata, 1911), 0.7–0.8 cm in limestone area (Shimizu, 1963), and 1.3–1.5 cm in soil, but this feature is unable to distinguish easily. Although Hsu (1968) reported that the chromosome number of this species is  $n = 20$ , our results show that it should be  $2n = 38$ .

4. ***Clinopodium laxiflorum*** (Hayata) Mori var. ***taiwanianum*** T.-H. Hsieh & T.-C. Huang, var. nov. Fig. 1.

*Arcte affinis Clinopodio laxifloro, sed a varietate laxifloro folio chartaceo-membranceo, pedicellis c. 3mm longis, calycibus 4.5-5mm longis et corollis c. 7mm longis differt.*

Holotypus: Sheishantungfong, Hsieh 1481 (TAI).

Perennial prostrate herbs, profusely branched. Stem 10–20cm long, pubescent. Leaves chartaceous; petioles 3–5mm long, pubescent; vascular bundles 2; blades ovate to broadly ovate, 0.8–2.2cm long, 0.6–1.5cm wide, apex acute or broadly acute, blades obtuse to truncate, margins serrate, both surfaces with scabret hairs, glandular-dotted on lower surface. Flowers in terminal or axillary verticillate cymes, 6–14 flowers. Bracts setaceous, 3.5–5.5mm long, with spreading long hairs on margin; pedicels 3 mm long, pubescent. Calyx tubular, bilabiate, 4.5–5mm long, with spreading long hairs on nerves near bases and short hairs on the others; upper lip ca. 1mm long, 3-lobed, lobes triangular; lower lip ca. 2mm long, deeply bilobed, narrowly triangular, with spreading long hairs on margin. Corolla ca. 7mm long, bilabiate. Stamens 4, didynamous. Nutlet subglobular, 1.0 mm long, surface with shallow, well-defined ridges. Chromosome number  $2n = 38$ .

Distribution: Endemic.

**Specimens examined:** **Ilan Hsien:** Nanhushanchuang, C. Hsu 5991; Chiliting, Masamune et K. Mori s. n. Jul 14, 1931; Nanhutashan, G. Masamune 3037. Hohuanshan, Hsieh 1470. **Hsinchu Hsien:** Tapachienshan, C.-F. Hsieh 1326. **Taichung Hsien:** Chika, T.-C. Huang 7151; Shenmachen, T. Hosokawa 2240; Sheishan, Y. Shimada 2493, Hsieh 1480. **Nantou Hsien:** Kwankao to Tungpu, T.-C. Huang 8600; Nengkao, S. Suzuki s. n. Aug 4, 1926. **Chiayi Hsien:** Yushan, S. Sasaki s. n. Oct 27, 1929; Alishan, Nakamune 3037.

Note: This new variety differs from *C. laxiflora* in having thinner leaves and hairs scattering on lower surface, pedicels 3 mm long and shorter calyx and corolla. This variety usually grows on the edge of *Abies* forests.

#### ACKNOWLEDGEMENT

This study was supported by a grant of the National Science Council (NSC84-2321-B002-019) to T.-C. Huang.





Fig. 1. Plant of *Clinopodium laxiflorum* (Hayata) Mori var. *taiwanianum* T.-H. Hsieh & T.-C. Huang growing on eastern peak of Mt. Sylvia at altitude of 3100 m.

### LITERATURE CITED

- Hayata, B. 1911. Materials for a flora of Formosa. J. Coll. Sci. Univ. Tokyo **30**: 224-229.
- Hayata, B. 1917. General index to the flora of Formosa. Supplement to Icones Plantarum Formosanarum VI: 56-58.
- Henry, A. 1896. A list of plant from Formosa. Trans. Asiat. Soc. Jap. 24. Suppl. **1**: 1-118.
- Hosokawa, T. 1932. Revisio ad Floram Formosanam. (I). Trans. Nat. Hist. Soc. Formosa **22**: 225-230.
- Hsieh, T.-H. 1996. Study on Taxonomy and Isozyme Diversity of the genus *Clinopodium* L. in Taiwan. Institute of Botany, Nat. Taiwan Univ. 154pp. Ph. D. dissertation (In Chinese).

- Huang, T.-C. and W.-T. Cheng. 1978. Labiatae. In: Li, H.-L., T.-S. Liu, T.-C. Huang, T. Koyama and C. E. DeVol, (eds.), *Flora of Taiwan*, Vol. IV. Epoch Publ. Co., Taipei, pp. 439-529.
- Kudo, Y. 1929. *Labiatarum Sino-Japonicarum Prodrromus*. Mem. Fac. Sci. Agr. Taihoku Univ. **2**: 37-332.
- Li, H.-W. and I.-C. Hedge. 1994. Lamiaceae. In: Wu, Z. and P. H. Raven (eds.), *Flora of China* **17**: 50-299.
- Matsumura, T. and B. Hayata. 1906. *Enumeratio plantanom Flora*. J. Coll. Sci. Univ. Tokyo **22**: 305-320.
- Mori, K. 1936. Labiatae. In: Masamune, G. (ed.), *Short Flora of Formosa*. pp. 182-187.
- Murata, G. and T. Yamazaki. 1993. Labiatae. In: Iwatsuki, K., T. Yamazaki, D. E. Boufford and H. Ohba (eds.), *Flora of Japan*, Vol. 3a. Kodansha Co., Japan, pp. 272-321.
- Shimizu, T. 1963. *Studies on the limestone Flora of Japan and Taiwan*. Part II. J. Fac. Textile Sci. & Technol. Shinshui Univ., No. 36, ser. A., Biol. **12**: 1-88.

## 台灣植物誌之觀察(33)－臺灣產風輪菜屬(唇形花科)訂正

謝宗欣<sup>(1)</sup>、黃增泉<sup>(2,3)</sup>

(收稿日期：1998年4月1日；接受日期：1998年5月2日)

### 摘 要

採用外部形態、解剖、花粉、染色體、地理分布、生態條件及同功酶等特徵研究省產風輪菜屬植物後，可將省產本屬植物分為4個分類群，包括3種1變種。分別為光風輪 (*Clinopodium gracile* (Benth.) O. Kuntze)、風輪菜 (*C. chinense* (Benth.) O. Kuntze)、疏花風輪菜 (*C. laxiflorum* (Hayata) Mori) 和台灣風輪菜 (*C. laxiflorum* (Hayata) Mori var. *taiwanianum* Hsieh & Huang, var. nov.)。光風輪和其他種類有明顯的不同，前者葉柄具1條維管束，苞片遠短於花梗，小堅果表面具盤狀突起，染色體數目  $2n=18$ ；而後者葉柄具2條維管束，苞片長於花梗，小堅果表面具方格狀突起，染色體數目  $2n=38$ 。顯示兩大植物群的差異非常大。

關鍵字：訂正，風輪菜屬，臺灣。

1. 國立台南師範學院數理教育學系，台南市700，台灣，中華民國。

2. 國立台灣大學植物系，台北市106，台灣，中華民國。

3. 通信聯絡員。