

A Revision on *Callicarpa* (Verbenaceae) of Taiwan

Tien-Tsai Chen⁽¹⁾, Shu-Miaw Chaw⁽²⁾ and Yuen-Po Yang^(3, 4)

(Manuscript received 5 November, 1998; accepted 23 November, 1998)

ABSTRACT: *Callicarpa* (Verbenaceae) of Taiwan is revised. Ten species and two varieties are included. A new variety *Callicarpa formosana* Rolfe var. *glabrata* Chen, Chaw & Yang is described. *Callicarpa tikusikensis* Masamune, a species neglected or insufficiently known by many authors, is recovered. *Callicarpa remotiflora* Lin & Wang is a distinct species from *Callicarpa remotiserrulata* Hayata; previously they were treated as identical. *Callicarpa dichotoma* (Lour.) K. Koch is treated as a doubtful species. *Callicarpa japonica* Thunb. var. *japonica* is regarded not occurring in Taiwan.

KEY WORDS: Revision, *Callicarpa*, Taiwan.

INTRODUCTION

The latest taxonomic treatment to *Callicarpa* of Taiwan was made by Hsiao in 1978. He treated the genus including 11 species and one variety. In the past 20 years, Fang (1982) and Chen and Gilbert (1994) treated some species of the genus of Taiwan, while they were revising Verbenaceae of China. Therefore, a revision of the genus of Taiwan is necessary.

In the revisionary work we examined the specimens loaned from the herbaria: HAST, K, NTUF, NY, PPI, TAI, TAIF, TCF and TI. In addition, the first author made many collections in the field. The results are given as follows.

DESCRIPTION OF THE GENUS

CALLICARPA L. 紫珠屬

Shrubs or trees, rarely climbing, evergreen or deciduous; branchlets hairy. Leaves petiolate, hairy. Inflorescence cyme, axillary or slightly above axils, pedunculate. Calyx campanulate to tubular, persistent, truncate or lobed, hairy. Corolla campanulate or tubular, mostly 4-lobed. Stamens mostly 4, inserted at base of corolla tube and alternate with

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

2. Institute of Botany, Academia Sinica, Taipei 115, Taiwan, Republic of China.

3. Department of Biological Sciences, National Sun Yat-Sen University, Kaohsiung 80424, Taiwan, Republic of China;

4. Corresponding author.

corolla lobes, nearly equal or slightly didynamous; anthers dehiscing by longitudinal slits or terminal pores. Ovary with glandular dots and strigose or stellate hairs or only glandular, imperfectly 2-locular; ovules 2 per locule; stigma usually dilated, capitate or peltate. Fruit a drupe, with 4 pyrenes, mostly glandular-dotted, purple or white when ripe. Seeds fleshy.

About 140 species; mostly in tropical and subtropical Asia, few in tropical Africa and America; 10 species and 2 varieties in Taiwan.

Key to Species and Varieties

1. Branchlets and peduncles extremely densely long dendritic hairy; calyx lobes narrowly triangular to linear 4. *C. kochiana*
1. Branchlets and peduncles subglabrous to densely stellate and dendritic or pilose hairy; calyx lobes shallowly triangular.
 2. Plants with brownish red glandular dots; branchlets subglabrous, with hairs in a ring on node; leaves glabrous abaxially 5. *C. longissima*
 2. Plants with yellow to yellowish glandular dots; branchlets hairy, with hairs not in a ring on node; leaves hairy abaxially.
 3. Branchlets, inflorescence and petioles densely glandular and pilose hairy 6. *C. pilosissima*
 3. Branchlets, inflorescence and petioles stellate and dendritic hairy.
 4. Leaves subglabrous except the lower part of midrib, sparsely yellow glandular-dotted abaxially when mature; ovary with or without few yellow glandular dots..... 9. *C. remotiserrulata*
 4. Leaves hairy abaxially or on both surfaces, subdensely yellow glandular-dotted when mature; ovary with many yellow glandular dots and hairs or only glandular.
 5. Leaves subdensely yellow glandular dotted adaxially; filaments subequalling petals; fruit loosely stellate hairy 8. *C. remotiflora*
 5. Leaves sparsely to loosely yellow glandular-dotted or not adaxially; filaments distinctly longer than petals; fruit glabrous or rarely sparsely hairy at top.
 6. Ovary yellow glandular-dotted and stellate hairy; corolla lobes distinctly hairy abaxially.
 7. Leaves mostly lanceolate, apex long to caudate and with tails subentire, extremely densely stellate hairy abaxially 2. *C. hypoleucophylla*
 7. Leaves mostly narrowly oblong-obovate or obovate, apex acute to acuminate and serrate, loosely to densely stellate hairy abaxially 10. *C. tikusikensis*
 6. Ovary yellow glandular-dotted only, and rarely strigose hairy; corolla lobes obscurely hairy abaxially or not.
 8. Ovary yellow glandular dotted all over; fruit 4-7 mm across; inflorescence mostly 1-6-branched.
 9. Leaves narrowly elliptic, narrowly lanceolate or narrowly oblanceolate, base narrowly cuneate to attenuate; calyx distinctly lobed; inflorescence 1-4-branched..... 7. *C. randaiensis*
 9. Leaves elliptic, obovate or ovate, cuneate, obtuse base, rounded or sometimes cordate; calyx very shallowly triangulate to subtruncate; inflorescence 4-6(-8)-branched..... 3. *C. japonica* var. *luxurians*
 8. Ovary yellow glandular dotted at top; fruit 2-4 mm across; inflorescence mostly 5-10-branched.
 10. Leaf apex acuminate to caudate and the tails subentire, extremely densely white or grayish stellate hairy abaxially 2. *C. hypoleucophylla*
 10. Leaf apex mostly acute to acuminate and the tails (if present) serrulate, subglabrous to densely brownish or yellowish hairy abaxially.
 11. Leaves narrowly elliptic to narrowly oblong-lanceolate, narrowly cuneate to attenuate at base, loosely to subdensely yellow glandular-dotted adaxially.
 1c. *C. formosana* var. *longifolia*

11. Leaves mostly elliptic, ovate, oblong or obovate, mostly cuneate, obtuse or rounded at base, few yellow glandular-dotted or not adaxially.
12. Branchlets and leaves red-brown when young; leaves subglabrous to sparsely hairy except the midrib adaxially and sparsely to subdensely stellate hairy only along prominent veins abaxially when mature 1b. *C. formosana* var. *glabrata*
12. Branchlets and leaves green to brownish when young; leaves loosely to densely stellate hairy adaxially and densely so abaxially when mature. 1a. *C. formosana*

TAXONOMIC TREATMENT

- 1. *Callicarpa formosana*** Rolfe in J. Bot. **20**: 358. 1882; Forbes & Hemsl. in J. Linn. Soc. Bot. **26**: 252. 1890; Henry in Trans. Asiat. Soc. Jap. **24**(suppl.): 70. 1896; Matsumura in Bot. Mag. **13**: 114. 1899; Merr., Enum. Philip. Fl. Pl. **3**: 385. 1923, *excl. syn. C. blancoi*; Kanehira, Form. Trees rev. ed. 643, *f. 599*. 1936, *excl. syn.*; Li, Woody Fl. Taiwan **821. f. 330**. 1963, *excl. syn.*; Hsiao, Fl. Taiwan **4**: 413. 1978, *excl. syn.*; Fang, Fl. Reipubl. Popul. Sin. **65**(1): 43. 1982; Chen & Gilbert, Fl. China **17**: 8. 1994.

Callicarpa blancoi auct. non Rolfe: Kanehira, Form. Trees 394. 1917.

1a. var. *formosana*

杜虹花(台灣紫珠)

Evergreen or deciduous shrubs, ca. 4 m tall; branchlets terete, densely brownish to gray stellate and dendritic hairy. Leaves mostly elliptic, ovate, oblong, obovate or rhomboid, usually 7-18 cm long, 3-11 cm wide, apex acute to acuminate, base cuneate, obtuse or rounded, margin serrulate to serrate or denticulate to dentate, loosely cup-shaped glandular at base and sparsely so along midrib, few yellow glandular-dotted or not adaxially and densely so abaxially, loosely to subdensely stellate and dendritic hairy mixing with setulose hairs adaxially, lateral veins 6-10(-13) pairs; petioles 1-2 cm long, densely dendritic hairy. Inflorescence densely dendritic hairy, 6-10-branched; peduncles usually 1-2 cm long; bracts linear to lanceolate. Pedicels usually less than 1 mm long; calyx ca. 1 mm long, teeth shallowly triangular, tube densely stellate hairy and loosely yellow glandular-dotted outside; corolla lobes obtuse to rounded or sometimes emarginate at apex, purple to pinkish or rarely white and glabrous adaxially, white to pinkish and glabrous or few hairy and sparsely yellow glandular-dotted abaxially, tube about 2 mm long, glabrous; stamens 5-8 mm long, filaments glabrous or rarely few glandular hairy near base; ovary yellow glandular-dotted and rarely few hairy at top. Fruit globose to ellipsoid, up to 4 mm across, glabrous and yellow glandular-dotted at apex, purple when ripe. Seeds oblong, ca. 1.2 mm long.

Distributed from southeastern to southern China, the Philippines(?), Japan (Okinawa). Taiwan, very common in thicket or roadside throughout the island, low to 2,300 m elevations.

The species is flowering mostly from March to June in the southern part and April to July in the northern. It can flower extending to August at higher altitudes. The fruit is ripening mostly from July to October in the southern and August to December in the northern.

The diagnostic character of the typical variety is the glabrous ovary except some yellowish glands at top of the ovary and surrounding the base of the style.

Specimens examined: **SW. of Formosa:** *Wilford 493* (Kew, photo of Syntype). **Formosa:** *Swinhoe s. n.* in 1862 (Kew, photo of Syntype), *U. Faurie, 8019* (TAI). **Ilan:** *Chilan, T. T. Chen 8044*; *Nanao, T. T. Chen 7803*. **Keelung:** *Keelung, T. T. Chen 7816*. **Taipei:** *Tamsui, Oldham 388, 389* (Kew, photo of Syntype), *Watters 23* (Kew, photo of Syntype). **Taoyuan:** *Hsiayunku, T. T. Chen 7242*; *Hutoushan, T. T. Chen 8056*. **Hsinchu:** *Hengshan, Wang 769, 1456* (HAST). **Miaoli:** *Chuolan, T. C. Huang et al. 15604* (TAI); *Kuantaoshan, T. T. Chen 7750*. **Taichung:** *Chingshan, T. T. Chen 8253*; *Hsinshe, T. T. Chen 7741*. **Nantou:** *Hohuanchih, T. T. Chen 7394*; *Hsinyi Hsiang, Chiang 107* (HAST). **Chiayi:** *Alishan to Hsitou, T. T. Chen 7685*; *Chiayi Farm, T. T. Chen 7931*. **Kaohsiung:** *Shoushan, T. T. Chen 7592*; *Tienchih, T. T. Chen 7618*. **Pingtung:** *Kaoshihfo, T. T. Chen 7463*; *Laofoshan, T. T. Chen 7487*. **Taitung:** *Anshuo, T. T. Chen 7783*; *Chulu, T. T. Chen 7716*. **Hualien:** *Chimeitsun, T. T. Chen 7550*; *Chipen, T. T. Chen 7372*.

Note: Those specimens without indicating where they are deposited are at the herbarium of National Sun-yat Sen University.

1b. var. *glabrata* Chen, Chaw & Yang, *var. nov.*

Fig. 1 六龜粗棘樹

Callicarpa pedunculata auct. non R. Br.: Liu & Liao, *Dendr.* 854. 1982.

A typo differt, ramulis foliisque juvenilis rubiginosis, glabris.

Holotype: *T. T. Chen 7599* (Herbarium of NSYSU); Isotypes (NSYSU, TAI, TAIF, HAST).

Locality: Pingtung (Tahan logging trail).

Evergreen shrubs, ca. 4 m tall; branchlets subdensely stellate and dendritic hairy, glabrate, with spinule-like protuberance and red-brown when young. Leave elliptic to narrowly elliptic, oblong-obovate or ovate-lanceolate, 9-23 cm long, 3-9 cm wide, apex mostly acuminate to long acuminate, base cuneate to rounded, margin serrulate to denticulate, distinctly cup-shaped glandular near the base and along midrib, few yellow glandular-dotted or not adaxially and densely so abaxially, sparsely to loosely stellate hairy intermixed with setulose hairs along veins adaxially, sparsely to subdensely stellate hairy along prominent veins abaxially, distinctly glabrate when mature, lateral veins 7-12 pairs; petioles about 1 cm long, subdensely stellate hairy. Inflorescence densely red-brown stellate hairy, 6-8-branched; peduncles ca. 2 cm long; bracts linear to lanceolate. Flowers pedicellate; calyx teeth shallowly triangular, tube sparsely to loosely yellow glandular-dotted and stellate hairy outside; corolla lobes obtuse to rounded or sometimes emarginate at apex, glabrous and purple to pink adaxially, sparsely yellow glandular-dotted and pinkish to whitish abaxially, tube about 2 mm long, glabrous; stamens 5-8 mm long, filaments glabrous; ovary yellow glandular-dotted at apex. Fruit globose, ca. 4 mm across, yellow glandular-dotted at apex, purple when ripe. Seeds oblong, ca. 1.2 mm long.

Endemic. Thickets or roadsides at low elevations (up to ca. 1000 m) in the southern part of Taiwan.

The variety is flowering around April at low altitudes and May at higher altitudes. The fruit is ripening from October to December.

The variety differs from the typical variety in having reddish brown young branchlets and leaves, many white spinule-like protuberance on young branchlets and inflorescence, and sparsely stellate hairy along veins or subglabrous at lower surface. While in the typical variety, young branchlets and leaves are green to light brown, the white spinule-protuberance on young branchlets and inflorescence are fewer, and stellate hairs are densely at lower surface of leaves.

Specimens examined: **Kaohsiung:** Meishan, *T. T. Chen* 9213; Shanping, *T. T. Chen* 8016; Taoyuan, *T. T. Chen* 9214; Taoyuan, *T. T. Chen* 9214; Tengchih (Peinanchushan along Laonungchi), *T. Yamazaki*, *T. Namba* & *F. Yamazaki* 1208 (TAI). **Pingtung:** Haocha, *T. T. Chen* 7322; Laiyi, *B. L. Hsiao* s. n. in 1987 (PPI); Shachi logging trail, *T. T. Chen* 8079; Chachayalaishan, *S. Z. Yang* 24989 (PPI); Chiapingtsun, *T. T. Chen* 8092; Taiwu, *T. T. Chen* 8093; Tanlu, *T. T. Chen* 7308; Peililungshan, *T. T. Chen* 7298; Wanan, *C. J. Li* s. n. in 1991 (PPI); Wutai, *L. C. Chang* 107 (PPI); Tahanshan logging trail, *T. T. Chen* 7599 (*Holotypus!* in NSYSU, *Isotypus* in TAI, TAIF, HAST).

1c. var. longifolia Suzuki in *J. Trans. Nat. Hist. Soc. Form.* **25**: 131. 1935; Fang, *Fl. Reipubl. Popul. Sin.* **65**(1): 44. 1982; Chen & Gilbert, *Fl. China* **17**: 9. 1994.

長葉杜虹花

Callicarpa taiwaniana Suzuki in *J. Trans. Nat. Hist. Soc. Form.* **25**: 130. 1935.
Callicarpa formosana Rolfe f. *angustata* Moldenke in *Phytologia* **4**: 125. 1952.

Deciduous shrubs, ca. 3 m tall; branchlets subdensely yellow glandular-dotted and brownish stellate and dendritic hairy, glabrate. Leaves oblong-lanceolate, oblong, narrowly elliptic or narrowly rhombic, 10-18 cm long, 1.5-4 cm wide, apex long acuminate to caudate, base cuneate to attenuate, margin serrulate, cup-shaped glandular near the base of blade, loosely yellow glandular-dotted adaxially and subdensely so abaxially, with loosely to subdensely setulose and stellate hairs adaxially, sparsely to densely stellate hairy along midrib, primary and secondary veins abaxially, lateral veins 7-11 pairs; petioles mostly less than 1 cm long, densely dendritic hairy. Inflorescence loosely yellow glandular-dotted and densely dendritic hairy, 6-8-branched; peduncles 1-2 cm long; bracts linear. Pedicels about 1 mm long; calyx teeth shallowly triangular, tube loosely yellow glandular-dotted and stellate hairy outside; corolla lobes obtuse to rounded or sometimes emarginate at apex, pink and glabrous adaxially, pinkish to whitish and loosely yellow glandular-dotted abaxially, tube about 2 mm long, glabrous; filaments glabrous; ovary with yellow glandular dots at top, glabrous. Fruit about 3 mm across, glabrous and few yellow glandular-dotted at apex, purple when ripe.

Endemic. Margins of forests or roadside at low to medium elevation in northern part of the island.

The variety is flowering from June to August. The fruit is ripening from October to December.

Specimens examined: **Ilan:** Taipingshan, *H. H. Bartlett*, no. 6082. in 1926! (NY, photo of Type of *C. formosana* f. *angustata* Moldenke); Tuchang, *S. Suzuki* 1105 (TAI, Type of *C. formosana* var. *longifolia* Suzuki); Nanhutashan, *S. Suzuki* s. n. in 1922 (TAI); Chilanshan, *C. E. Chang* 8189 (PPI); Happen, *S. Y. Yang* 27645 (PPI); Tayenshan, *T. S. Liu et al.* K3138 (NTUF); C. C. Kou 143 (NTUF); Yuanyang logging trail, *T. T. Chen* 7257. **Taoyuan:** Lalashan to Fushan, *T. T. Chen* 9033; Mingchih, *T. T. Chen* 7254.



Fig. 1. *Callicarpa formosana* Rolfe var. *glabrata* Chen & Yang 1. habit; 2. embryo; 3. ovary; 4. seed; 5. corolla dissection with two stamens removed; 6. flower; 7. fruit.

2. **Callicarpa hypoleucophylla** Lin & Wang in Bot. Bull. Acad. Sin. **8**: 185. 1967; Hsiao, Fl. Taiwan **4**: 414. 1978; Chen & Gilbert, Fl. China **17**: 8. 1994.

灰背葉紫珠(裡白杜虹花)

Evergreen shrubs, ca. 4 m tall. Branchlets white to grayish stellate-tomentose. Leaves lanceolate to oblong-lanceolate, 7-20 cm long, 1-4 cm wide, apex long acuminate to caudate and subentire at tails, base narrowly cuneate to attenuate, margin minutely serrulate, entire near the base of blade, cup-shaped glandular mostly at base, sparsely yellow glandular dotted adaxially, densely so abaxially, densely stellate hairy adaxially when young and glabrate, densely to extremely densely white to grayish stellate hairy abaxially, lateral veins 8-14 pairs; petioles ca. 1 cm long, extremely densely stellate hairy. Inflorescence white to grayish stellate-tomentose, 6-9-branched; peduncles ca. 1 cm long; bracts minute, linear. Flowers pedicellate or subsessile; pedicels usually less than 0.5 mm long; calyx ca. 1 mm long, tube densely stellate hairy and sparsely yellow glandular dotted outside; corolla lobes obtuse to rounded or sometimes irregular at apex, white or rarely pinkish and glabrous adaxially, sparsely yellow glandular-dotted and hairy abaxially, tube ca. 2 mm long, glabrous; stamens ca. 6 mm long, filaments glabrous; ovary with strigose to stellate hairs and yellow glandular dots at upper parts or only glandular dotted. Fruit globose to ellipsoid, 2-3 mm across, glabrous, purple or sometimes white when ripe. Seeds ellipsoid to oblong, ca. 1 mm long.

Endemic. Southern part of the island, between 600-1500 m elevation.

The species is flowering from June to August. The fruit is ripening from November to the coming January.

The diagnostic character of the species is the lower surface of leaves densely covered with white to pale stellate hairs.

Specimens examined: **Kaohsiung:** Nanfengshan, *J. L. Wang 5403* (TAIF, Type); Sanpin to Nanfonshan, *Kao 7465* (TAI); Tengchih, *Huang et al. 15868*; Peinanchushan along Laonungchi, *T. Yamazaki et al. 1207* (TAI). **Pingtung:** Chachayalaishan, *S. Z. Yang 30486* (PPI); Laiyi, *Lin 3891*. **Taitung:** Lichia logging trail, *T. T. Chen 7698*; Taiwu Hsiang, *T. T. Chen 8471*; Tahan logging trail, *T. T. Chen 7639*; Kuaikushanchuang, *S. Z. Yang & C. G. Lin 11957* (PPI).

3. **Callicarpa japonica** Thunb. var. **luxurians** Rehd. in Sarg., Pl. Wils. **3**: 369. 1916; Hsiao, Fl. Taiwan **4**: 414. 1978; Chen & Gilbert in Fl. China **17**: 15. 1994. 朝鮮紫珠

Callicarpa antaoensis Hayata, Icon. Pl. Formos. **6**: 35. 1916.

Callicarpa japonica auct. non Thunb.: Hayata, Gen. Ind. Fl. Form. **55**. 1917; Hsiao in Fl. Taiwan **4**: 414. 1978.

Callicarpa japonica Thunb. var. *kotoensis* (Hayata) Masamune in Trans. Nat. Hist. Soc. Form. **30**: 63. 1940.

Callicarpa japonica Thunb. f. *kiiruninsularis* Masamune in Trans. Nat. Hist. Soc. Form. **30**: 64. 1940; Fang in Fl. Reipubl. Popul. Sin. **65**(1): 74. 1982.

Callicarpa kotoensis Hayata in J. Coll. Sci. Imp. Univ. Tokyo **30**(1): 219. 1911; Fang in Fl. Reipubl. Popul. Sin. **65**(1): 56. 1982; Chen & Gilbert in Fl. China **17**: 11. 1994.

Callicarpa longifolia auct. non Lam.: Li, Woody Fl. Taiwan **821**. 1963.

Shrubs, up to 3 m tall; branchlets loosely to densely stellate hairy and glabrate, usually red-purple when young. Leaves elliptic, ovate to widely ovate or obovate, 5-20 cm long, 3-10 cm wide, apex acute to acuminate or sometimes acuminate-caudate, base cuneate, obtuse, rounded or sometimes subcordate, margin crenate to crenulate or denticulate to denticulate, entire near the base of blade, loosely peltate-glandular at base and sparsely so along midrib, sparsely yellow glandular dotted adaxially and loosely to subdensely so abaxially, sparsely to subdensely stellate and dendritic hairy along prominent veins when young, nearly glabrous, lateral veins 6-10 pairs; petioles less than 2 cm long, densely dendritic hairy when young and glabrate. Inflorescence densely stellate and dendritic hairy at anthesis, nearly glabrous at fruiting, (4-)5-7(-8)-branched; peduncles less than 2 cm long, rather stout in fruit; bracts lanceolate to linear. Pedicels 1-2 mm long; calyx about 2 mm long, truncate to very shallowly triangular lobed, sparsely to loosely yellow glandular dotted and stellate hairy apically outside at anthesis; corolla lobes rounded or sometimes emarginate at apex, distinctly imbricate, glabrous adaxially, sparsely yellow glandular dotted and strigose to stellate hairy abaxially, purplish to pinkish adaxially and pinkish to whitish abaxially, tube ca. 4 mm long, glabrous inside, sparsely yellow glandular dotted outside; stamens 6-10 mm long, filaments glabrous or rarely with few glandular hairs at base; ovary loosely to subdensely yellow glandular dotted all over, style glabrous. Fruit globose, slightly concave or truncate at apex to 8 mm across, sparsely to loosely yellow glandular dotted apically, purple when ripe. Seeds oblong, ca. 2.2 mm long.

China, Korea, Japan and the Ryukyus. Taiwan, only found on the islands Lanyu, Lutaο, Kueishantao, Keelungyu and Pengchiayu.

The variety is flowering from June to November. The fruit is ripening from September to the coming February.

The variety can be characterized by: sparsely to densely yellowish glandular dotted on the whole surface of ovary; truncate or obscurely triangular at apex of calyx; larger anthers (2-3 mm long) dehiscent with pores; larger fruit (8 mm across); nearly glabrous surfaces and crenate margin of mature leaves. It is similar to *C. randaiensis* Hayata., but can be distinguished by the latter having densely yellowish glandular dotted on the surface of ovary, triangular calyx-lobes and fewer branched inflorescence.

Without indicating any voucher specimens, Kawakami (1910) recorded *C. japonica* Thunb. for the flora of Taiwan. Many authors then followed his opinion, such as Hayata (1917), Sasaki (1928), Masamune (1940), Li (1963), Hsiao (1978) and Liu *et al.* (1994). Because no specimens were collected in the field and the voucher specimens given by these authors, if cited, belong to the variety, we conclude that *C. japonica* is not occurring in Taiwan.

Specimens examined: **Ilan:** Kueishan Islet, C. C. Hsu 7215 (TAI). **Keelung:** Pengchia Islet, T. T. Chen 7859. **Taitung:** Lutaο Islet, T. T. Chen 8717; Lanyu, C. H. Ou 8 (TCF), C. E. Chang 2213 (PPI); K. Miyake s. n. in 1899 (TI, type of *C. kotoensis* Hayata).

4. **Callicarpa kochiana** Makino in Bot. Mag. Tokyo **28**: 181. 1914; Hsiao, Fl. Taiwan **4**: 416. 1978; Fang in Fl. Reipubl. Popul. Sin. **65**(1): 30. 1982; Chen & Gilbert Fl. China **17**: 6. 1994. 鬼紫珠(枇杷葉紫珠)

Callicarpa longiloba Merr. in Philip. J. Sci. Bot. **13**: 156. 1918.

Callicarpa loureiri Hook. & Arn. Bot. Beechey Voy. 205. 1836, in nota.

Callicarpa tomentosa Willd., Enum. Hort. Berol. 158. 1809, *non* (L.) Murr.

Evergreen shrubs, ca. 3 m tall; branchlets extremely densely long dendritic hairy. Leaves narrowly elliptic to elliptic, or obovate to oblanceolate, 15-35 cm long, 6-10 cm wide, apex acuminate to caudate, base cuneate to attenuate, margin denticulate, base with few cup-shaped glandular, both surfaces densely yellow glandular dotted, densely dendritic hairy when young and distinctly glabrate except midrib when mature adaxially, densely dendritic hairy abaxially; petioles mostly 3-4 cm long, extremely densely long dendritic hairy. Inflorescence extremely densely long dendritic hairy, ca. 7-branched; peduncles 1-3 cm long; bracts linear or sometimes leaf-like on rachis of first branches. Flowers sessile, compact; calyx tubular, ca. 4 mm long, lobes narrowly triangular to linear, subglabrous adaxially, extremely densely dendritic hairy and loosely yellow glandular dotted abaxially and on tube outside; corolla lobes obtuse to rounded, purple adaxially, whitish and densely appressed hairy abaxially, throat densely appressed hairy outside, tube ca. 3 mm long, glabrous except the throat outside; stamens usually 7-10 mm long, filaments glabrous; ovary densely yellow glandular-dotted, apex loosely to densely long hairy. Fruit globose, up to 3 mm across, loosely yellow glandular dotted, sparsely hairy at top, white when ripe. Seeds oblong, ca. 1.1 mm long.

Southeastern China, Vietnam and Japan. Taiwan, scattered from the central to northern part, usually in thickets or edges of forests at low elevations.

The species is flowering from June to September. The fruit is ripening from December to the coming March.

The species is characterized by: deeply lobed calyx-tube with linear triangular or linear lobes which enclose corolla and fruit; outside of corolla lobes and corolla tube densely covered with dendric hairs; sessile flowers; deep purple anthers; and, white fruit distinctly covered with dendric hairs.

Specimens examined: **Han:** Fushan Botanical Garden, *J. J. Li* 346. **Keelung:** Tawulunshan, *T. T. Chen* 7819. **Taipei:** Hsichih, *Lin* 266 (HAST); Pinglin, *Liao* 515 (HAST). **Miaoli:** Takoshan, *Lin* 3204. **Nanyou:** Lienhuachih, *T. T. Chen* 7769; Meiyuan, *S. Sasaki s. n.* in 1926 (TAI); Shuichangliu, *Chiou & Hsu s. n.* in 1969 (PPI).

5. **Callicarpa longissima** (Hemsl.) Merr. in Philip. J. Sci. Bot. **12**: 108. 1917; Hsiao, Fl. Taiwan **4**: 416. 1978, *excl. syn. C. taiwaniana*; Fang, Fl. Reipubl. Popul. Sin. **65**(1): 52; Chen & Gilbert, Fl. China **17**: 10. 1994. 長葉紫珠

Callicarpa longifolia Lam. var. *longissima* Hemsl., J. Linn. Soc. Bot. **26**: 253. 1890.

Shrubs or small trees, 1-3(-7) m tall; branchlets 4-angled, densely red-brown glandular dotted, nodes with a ring of multicellular hairs, glabrate in age. Leaves chartaceous, lanceolate, elliptic or oblong-lanceolate, usually 17-23 cm long, 3-6 cm wide, apex acute to long acuminate, base cuneate, margin obscurely serrulate to subentire, base sparsely cup-shaped glandular, subdensely to densely red-brown glandular dotted on both surfaces, subglabrous except densely multicellular hairy along prominent veins adaxially, glabrous abaxially, lateral veins 12-20 pairs; petioles 1-2 cm long, densely multicellular hairy adaxially, glabrous abaxially. Inflorescence 6-8-branched; peduncles 1-2.5 cm long; bracts linear to lanceolate. Flowers pedicellate; calyx teeth shallowly triangular, tube scabrid outside; corolla lobes glabrous on both surfaces, purplish, tube glabrous; filaments glabrous; ovary with brownish glandular dots. Fruit globose, concave at top, ca 2.5 mm across, brownish glandular dotted.

Southeastern to southern China, Japan, Vietnam. Taiwan, rarely, at low elevations in central and northern parts of the island.

The species is flowering at about August. The fruit is ripening at about December..

Specimens examined: **Taipei:** Wulai, *J. L. Wang* s. n. in 1965 (TAI), *Kuoh 1217* (TAI); Tatungshan, *C. M. Kuo 5586* (TCF); Nankangchi, *G. Nakahara 231* (TI). **Nantou:** Lienhuachih, *Yu et al.* s. n. in 1955 (TAI); Meiyuan, *S. Sasaki* s. n. in 1935. **Chiayi:** Alishan, *Kanehira & Suzuki* s. n. in 1916 (TI).

6. ***Callicarpa pilosissima*** Maxim. in Bull. Acad. Sci. St. Pétersbourg **31**: 76. 1886; Forbes & Hemsl. in J. Linn. Soc. Bot. **26**: 254. 1890; Henry in Trans. Asiat. Soc. Jap. **24** (suppl.) 70. 1896; Matsumura in Bot. Mag. **13**: 114. 1899; Matsumura & Hayata, Enum. Pl. Form. 298. 1906; Kanehira, Form. Trees rev. ed. 645. *f. 602*. 1936; Li, Woody Fl. Taiwan 819. 1963; Hsiao Fl. Taiwan **4**: 417. 1978; Fang in Fl. Reipubl. Popul. Sin. **65**(1): 57. 1982; Chen & Gilbert in Fl. China **17**: 11. 1994. 細葉紫珠 (紅面將軍)

Callicarpa pilosissima Maxim. var. *henryi* Yamamoto in J. Soc. Trop. Agr. **6**: 554. 1934.

Evergreen shrubs, ca. 4 m tall; branchlets densely glandular and pilose. Leaves chartaceous, lanceolate or narrowly oblong-lanceolate, 9-20 cm long, 1-5 cm wide, apex long acuminate to caudate, base obtuse, rounded to subcordate, margin serrulate, sparsely cup-shaped glandular on both surfaces, sparsely yellowish glandular dotted adaxially, densely so abaxially, densely glandular and pilose adaxially, densely pilose and dendric hairy intermixed with glandular hairs abaxially, lateral veins 10-15(-18) pairs; petioles less than 1 cm long, densely pilose hairy. Inflorescence densely glandular and pilose hairy, up to 20 pairs in one year's growth on main branches, ca. 6-branched; peduncles 1-4 cm long; bracts linear. Pedicel usually less than 1 mm long; calyx 1-2 mm long, loosely to densely glandular and pilose hairy outside, teeth usually with cup-shaped glands abaxially; corolla lobes obtuse to rounded and sometimes slightly emarginate at apex, purplish to pink adaxially, sparsely yellowish glandular dotted and whitish abaxially, tube ca. 2.5 mm long, glabrous; stamens usually 5-8 mm long, filaments glabrous or rarely few glandular-hairy at base; ovary densely yellow glandular dotted except at base. Fruit globose, to 4 mm across, loosely yellow

glandular dotted, purplish turning white when ripe. Seeds ellipsoid to oblong, ca. 1 mm long.

Endemic. Scattered at low to medium elevations throughout the island, usually on roadside or open place.

The species is flowering mainly from July to October, sometimes extending to December at higher altitudes. The fruit is ripening from November to next March, sometimes extending to April.

The species can be characterized by the multicellular and glandular hairs on branchlets, leaves, inflorescence and calyx. The dendric hairs can be found at lower surface of leaves.

Specimens examined: **Ilan:** Nanao, *T. T. Chen* 7802. **Taipei:** Hsinhsien, *T. T. Chen* 7849; Tatungshan, *T. T. Chen* 7852. **Taoyuan:** Junghua, *T. T. Chen* 7251; Tahman, *T. T. Chen* 8015. **Hsinchu:** Chenchiaoshih, *S. Suzuki s. n.* in 1937 (TAI). **Taichung:** Pahsienshan, *S. Suzuki s. n.* in 1929 (TAI). **Nantou:** Chingshuikou Tract, *T. C. Huang* 1922 (TAI); Jen-ai-hsiang, *M. H. Chen* 67 (HAST); Tungpu, *Shih* 3423. **Kaohsiung:** Shanping, *T. C. Huang* 15964 (TAI); Tengchih, *T. C. Huang et al.* 13826 (TAI); Liukuei, *J. M. Chao* 743 (TAI); Meishan, *Shih s. n.* in 1997; Shyrshan logging trail, *J. C. Wang et al.* 7573 (HAST). **Pingtung:** Tona, *J. C. Wang et al.* 4176 (TAIF); Tanlu, *T. T. Chen* 7305; Fangshanchi, *T. T. Chen* 7424; Kaoshifushan, *T. T. Chen* 7468; Payao, *T. T. Chen* 7287; Nanjenlu, *T. T. Chen* 9174; Tahanshan logging trail, *T. T. Chen* 7526; Wutai, *C. E. Chang* 10061 (PPI); Wanchin (Bankinsing), *Henry* 120 (NY, photo of the type of *C. pilossisima* var. *henryi* Yamamoto). **Taitung:** Taiyuan, *T. T. Chen* 7358; Wulu, *T. T. Chen* 7612; Kueitien, *T. T. Chen* 7584. **Hualien:** Taroko National Park, *C. H. Wang* 918 (HAST); Hojun, *T. T. Chen* 7798; Lushui, *T. T. Chen* 7374; Nan-an, *T. T. Chen* 7792.

7. ***Callicarpa randaiensis*** Hayata in *J. Coll. Sci. Univ. Tokyo* **30**(1): 222. 1911; Hayata, *l.c.* *Pl. Form.* **2**: 126. *pl.* 38. 1912; Hayata, *Gen. Ind. Fl. Form.* 55. 1917; Kanehira, *Form. Trees rev. ed.* 646. *f.* 603. 1936; Hsiao, *Fl. Taiwan* **4**: 417 1963, *excl. syn. C. formosana f. angustata*; Fang, *Fl. Reipubl. Popul. Sin.* **65**(1): 69. 1982; Chen & Gilbert, *Fl. China* **17**: 14. 1994.

巒大紫珠

Callicarpa japonica Thunb. var. *angustata* auct. non Rehd.: Li, *Woody Fl. Taiwan* 822. 1963.

Callicarpa parvifolia Hayata in *J. Coll. Sci. Univ. Tokyo* **30**(1): 222. 1911.

Callicarpa randaiensis Hayata f. *parvifolia* (Hayata) Liu & Liao, *Dendr.* 855. 1981.

Deciduous shrubs, ca. 3 m tall; branchlets loosely to densely yellow glandular-dotted and stellate hairy, glabrate, usually purple-brown when young. Leaves thin chartaceous, narrowly elliptic to elliptic, lanceolate or oblanceolate, usually 4-15 cm long and 1-4 cm wide, apex acuminate to caudate, base narrowly cuneate to attenuate, margin serrulate, loosely yellow glandular dotted adaxially and subdensely so abaxially, sparsely to loosely strigose hairy adaxially, sparsely to subdensely stellate hairy along veins especially on midrib and cup-shaped to peltate glandular especially at base abaxially; petioles less than 1 cm long, stellate hairy. Inflorescence sparsely yellow glandular dotted and stellate hairy, (1-)2-4-branched; peduncles ca. 1 cm long; bracts linear. Pedicels 0.5-1 mm long; calyx, 1-2 mm long, teeth shallowly triangular, acute to obtuse at apex, glabrous adaxially, sparsely to loosely strigose hairy abaxially, tube loosely yellow glandular dotted outside; corolla lobes obtuse to rounded

at apex, glabrous adaxially, sparsely to loosely yellow glandular dotted and glabrous or hairy abaxially, purple to pink adaxially, purple to whitish abaxially, tube ca. 4 mm long, sparsely yellow glandular dotted outside; stamens 5-9 mm long, filaments glabrous; ovary densely yellow glandular dotted. Fruit globose, to 6 mm across, loosely glandular dotted all over the surface, purple when ripe. Seeds oblong, ca. 1.7 mm long.

Endemic. In or at margins of the forests; 1300-2500 m.

The species is flowering from June to August. The fruit is ripening from September to November.

Specimens examined: **Ilan:** Chilansan, *C. M. Kuo* 8687 (TAI); Tungshan, *T. T. Chen* 7914; Yuanyanghu logging trail, *T. T. Chen* 7255; Taipingshan, *T. T. Chen* 8710. **Taipei:** Chatianshan, *T. Suzuki* 4704 (TAI); Chulushan, *T. T. Chen* 7893. **Taoyuan:** Lalashan, *H. L. Chiang* 6 (TAIF). **Hsinchu:** Kuanwu, *Chung* 183 (PPI); Wufeng, *C. L. Huang et al.* 76 (HAST); Chiuchiushanchuang, *C. F. Hsieh* 1282 (TAI). **Miaoli:** Shukuang, *Wang et al. s. n.* in 1996 (TCF); Taian, *C. M. Wang* 1764 (HAST). **Taichung:** Pahsienshan, *Liu et al.* 448 (TAI); Tashuehshan logging trail, *S. Y. Lu* 16444 (TAIF); Ssuyuan, *T. T. Chen* 8713 (TAI). **Nantou:** Luantashan (Randaizan), *U. Mori* 7023 (TI & TAIF, Type); Mayfong, *M. T. Kao* 9466 (TAI); Loloku-Kuankao, *S. F. Huang* 5268 (TAI); Piluchi, *C. H. Ou* 5261 (TCF); Peitungyenshan, *Yen s. n.* in 1995; Tsuifeng, *C. E. Chang* 17697 (PPI). **Chiayi:** Alishan, *T. T. Chen* 7669. **Kaohsiung:** Taoyuan, *C. I. Peng et al.* 14793 (HAST). **Pingtung:** Chachayalai, *S. Z. Yang* 25244 (PPI)Mt. Daibu, *S. Suzuki* 6950 (TAIF); Tahanshan, *T. T. Chen* 7641. **Taitung:** Taimali, *T. Kawakami & U. Mori* 2879 (TI & TAIF, type of *C. parvifolia* Hayata). **Hualien:** Chingshuishan, *T. C. Huang* 12943 (TAI); Mt. Muhkua, *M. T. Kao* 4176 (TAI).

8. *Callicarpa remotiflora* Lin & Wang in Bot. Bull. Acad. Sin. 8: 185. 1967. 疏花紫珠

Small evergreen shrubs, ca. 2 m tall; branchlets loosely yellow glandular dotted and densely stellate hairy. Members of leaf pairs occasionally unequal in size, narrowly obovate to oblanceolate or narrowly elliptic to elliptic, 6-13 cm long, 2-4 cm wide, apex acute to acuminate, base attenuate and entire, margin dentate to denticulate, with cup-shaped glands mainly at base, subdensely yellow glandular dotted except in age ones adaxially and densely so abaxially, subdensely stellate hairy near the base of midrib except in age adaxially subdensely to densely so along midrib and primary veins abaxially, lateral veins 7-9 pairs; petioles mostly less than 1 cm long, densely yellow glandular dotted and stellate hairy. Inflorescence densely yellow glandular dotted and stellate hairy, 1-3-branched; peduncles ca. 1 cm long; bracts minute, linear. Pedicels ca. 1 mm long; calyx ca. 2.5 mm long, slightly angulate, subtruncate or 4-dentate, teeth very shallowly triangular, tube subdensely yellow glandular dotted and short stellate hairy outside; corolla whitish to yellowish, lobes obtuse to rounded or emarginate at apex, glabrous adaxially, subdensely yellow glandular dotted and sparsely hairy abaxially, tube ca. 3 mm long, subdensely yellow glandular dotted and sparsely hairy outside; stamens usually 4-6 mm long, filaments glabrous; ovary densely yellow glandular dotted and loosely to subdensely short stellate hairy all over the surface. Fruit depressed globose, slightly concave at apex to 6 mm across, loosely yellow glandular dotted and stellate hairy all over the surface, purple when ripe. Seeds oblong to ellipsoid, laterally depressed, ca. 2.2 mm long

Endemic. In forests from low elevations to 1,000 m on the south cape of Taiwan.

The species is flowering mainly from April to the end of June. The fruit is ripening from November to the end of December.

Hsiao (1978) and Chen and Gilbert (1994) treated the species identical to *C. remotiserrulata* Hayata. However, the two species are distinctly different because the species has chartaceous leaves which are obovate to oblanceolate in shape, coarsely dentate at margin, densely yellowish glandular at both surfaces, while the latter has coriaceous leaves which are oblong in shape, remotely serrate at margin and very sparsely yellowish glandular at both surfaces. In addition, the species has white flowers, large and pore dehiscent anthers, and densely yellowish glandular ovary with some stellate hairs. In contrast, the latter has pinkish flowers, smaller and longitudinally dehiscent anthers, and very sparsely yellowish glandular ovary without stellate hairs. Moreover, the species has 2-3 branched inflorescence and compressed globose fruit, while the latter has 5-6 branched inflorescence and globose to ellipsoid fruit.

Specimens examined: **Pingtung:** Chachayalaishan, *S. Z. Yang* 23699 (HAST), 23604, 23816 (PPI); Lilungshan, *T. T. Chen* 7664; Neiwun, *T. T. Chen* 2048; Shuangliu, *J. L. Wang* 5041 (TAI, Isotype); Nanjenshan, *T. T. Chen* 7274. **Taitung:** Chinshuiying, *S. Z. Yang* 23699 (HAST); Kueitien, *T. T. Chen* 7582; Hsinhua, *C. E. Chang* 5341.

9. ***Callicarpa remotiserrulata*** Hayata in *J. Coll. Sci. Univ. Tokyo* **30**(1): 223. 1911; Hayata, *Gen. Ind. Fl. Form.* 55. 1917; Kanehira, *Form. Trees rev. ed.* 647. F. 604. 1936; Li, *Woody Fl. Taiwan* 823. 1963; Hsiao, *Fl. Taiwan* **4**: 418. 1978, *excl. syn.*; Fang, *Fl. Reipubl. Popul. Sin.* 65(1): 71. 1982; Chen & Gilbert, *Fl. China* **17**: 14. 1994, *excl. syn.*

疏齒紫珠

Evergreen shrubs, ca. 4 m tall; branchlets loosely yellow glandular dotted and subdensely stellate hairy, glabrate, usually purple-brown when young. Leaves oblong, oblanceolate or narrowly elliptic, 6-12 cm long, 2-4 cm wide, both ends acute to acuminate, margin remotely denticulate to serrulate, cup-shaped (peltate when dry) glandular at base and sparsely yellow glandular dotted when mature on both surfaces, loosely to subdensely stellate hairy along midrib when young, subglabrous when mature, usually red-brown when young, lateral veins 7-10 pairs; petioles mostly less than 1 cm long, extremely densely brownish stellate hairy. Inflorescence loosely yellow glandular dotted and loosely to densely stellate hairy, 5-7-branched; peduncles 1-2 cm long, usually dark purple; bracts linear and rarely leafy at rachis of first branches. Pedicels ca. 1 mm long; calyx ca. 1.5 mm long, teeth shallowly triangular, glabrous adaxially, sparsely yellow glandular dotted and stellate hairy abaxially, tube sparsely yellow glandular dotted outside; corolla lobes obtuse to rounded and sometimes emarginate at apex, glabrous adaxially, sparsely yellow glandular dotted abaxially, whitish to pinkish adaxially, whitish abaxially, tube about 2.5 mm long, glabrous; filaments glabrous; ovary naked or sparsely yellow glandular dotted on upper part. Fruit globose to ellipsoid, up to 4 mm across, glabrous, purple when ripe.

Endemic. Margins of forests from low elevations to 1,000 m on the south cape of Taiwan.

The species is flowering from March to the middle of April. The fruit is ripening at about December.

Specimens examined: **Pingtung:** Chialoshui, *Chang s. n.* in 1998 (PPI); Lafoshan, *T. T. Chen 479*; Lilungshan, *T. T. Chen 1400*; Mutan, *C. E. Chang 5146* (PPI); Nanjenshan, *T. T. Chen 7275*; Shuchia, *J. L. Wang s. n.* in 1965 (TAIF); Sulinkeshan, *T. T. Chen 7494*; Tanlu, *G. Nakahara 919* (TI & TAIF, Type); Wanliteshan, *T. T. Chen 7286*. **Taitung:** Kueitien, *T. T. Chen 7587*.

10. *Callicarpa tikusikensis* Masamune in Trans. Nat. Hist. Soc. Form. **30**: 64. 1940.

銳葉紫珠

Callicarpa acuminatissima Liu & Tseng in Quart. J. Taiwan Mus. **10**: 56. 1957, *non* Teijsm. & Binn.

Deciduous shrubs, ca. 4 m tall; branchlets loosely yellow glandular dotted and densely dendritic hairy, glabrate. Leaves chartaceous to subcoriaceous, narrowly rhombic-elliptic, obovate or oblong-obovate, 6-15 cm long, 1-4 cm wide, apex acuminate, base cuneate, obtuse, rounded or subcordate, margin serrate, with cup-shaped glandular mainly at base, sparsely yellow glandular dotted adaxially and subdensely so abaxially, loosely to densely stellate and dendritic hairy on both surfaces of flowering branches and usually distinctly glabrate at fruiting ones, lateral veins 5-10 pairs; petioles less than 1 cm long, densely brownish dendritic hairy. Inflorescence densely stellate and dendritic hairy, 5-7-branched; peduncles usually 1-2 cm long; bracts linear. Pedicels 0.5-1 mm long; calyx ca. 2 mm long, teeth shallowly triangular, acute to obtuse at apex, tube loosely yellow glandular-dotted and subdensely stellate hairy outside; corolla lobes obtuse to rounded, glabrous and purple adaxially, loosely yellow glandular dotted and stellate hairy abaxially, tube ca. 2.5 mm long; stamens 6-9 mm long, filaments glabrous or rarely few glandular hairy at base; ovary loosely yellow glandular dotted and stellate hairy on upper part. Fruit globose, to 4 mm across, glabrous or sparsely yellow glandular dotted and stellate hairy at apex, purple when ripe. Seeds oblong, ca. 1.3 mm long.

Endemic. Margins of forests or thicket at 500-1,000 m in northern part of the island.

The species is flowering from April to May. The fruit is ripening from September to October.

Li (1963), Hsiao (1978) and Liu *et al.* (1994) treated the species as identical to *C. pilosissima* Maxim. In fact, the species can be distinguished in having only dendric hairs on plants, deciduous leaves and purple fruit. The latter has multicellular simple hairs on plants (except dendric stellate hairs at lower surface of leaves), evergreen leaves and white fruit.

Specimens examined: **Ilan:** Fushan Botanical Garden, *T. T. Chen s. n.* in 1983; Tachi, *K. C. Yang et W. L. Chiou 5181* (TAI). **Taipei:** Chutzehu (Tikusiko), *T. Nakamura 3968* (TAI, Type); Panpingshan, *C. K. Liou et al. 280* (TAIF); Shihpai, *T. T. Chen 7837*; Tatunshan, *T. T. Chen 7756*; Wantan, *T. T. Chen 7833*. **Taoyuan:** Mingchih to Chilan, *S. Y. Lu 16427* (TAIF). **Hualien:** Hoping logging trail, *S. Y. Lu 16304* (TAIF).

DOUBTFUL SPECIES

1. ***Callicarpa dichotoma*** (Lour.) K. Koch, Dendr. 2: 336. 1872; Kanehira, Form. Trees rev. ed. 642. 1936; Li, Woody Fl. Taiwan 822. 1963; Hsiao, Fl. Taiwan 4: 413. 1978; Liu *et al.*, Trees Taiwan rev. ed. 666. 1994.

Callicarpa purpurea Juss. In Ann. Mus. Nat. Hist. Paris 7: 67. 1806; Sasaki, List Pl. Form. 350. 1928; Mori in Masamune, Shot Fl. Form. 180. 1936.

Previous attribution of this species on Taiwan were based on specimens collected at Taipei, Taoyuan, and Taichung. The three specimens were probably collected from cultivated plants. No plants have been found in the field, as well as at the above three locations, and the species is here treated as doubtful on Taiwan.

A specimen (*Henry 435*, collected at Bankinsing) which was examined as *C. dichotoma* and cited by Li in 1963 is actually identical to *C. formosana* Rolfe var. *glabrata* Chen, Chaw & Yang.

LITERATURE CITED

- Chen, S. L. and M. G. Gilbert. 1994. *Callicarpa*. In: Wu, Z.-Y. and P. H. Raven (eds.), Flora of China, vol. 17. Science Press, Beijing and Missouri Botanical Garden, St. Louis, pp. 4-16.
- Fang, W. Z. 1982. *Callicarpa*. In: P'ei C. and S. L. Chen. Flora Reipublicae Popularis Sinicae vol. 65(1). Science Press, Beijing, pp. 24-79.
- Hayata, B. 1917. General Index to the Flora of Formosa. Bureau of Productive Industries, Taihoku, pp. 1-155.
- Hsiao, J. Y. 1978. *Callicarpa*. In: Li, H.-L., T.-S. Liu, T.-C. Huang, T. Koyama, and C. E. DeVol (eds.), Flora of Taiwan, vol. IV. Epoch Publishing Co., Ltd., Taiwan, pp. 411-418.
- Kawakami, T. 1910. A List of Plants of Formosa. Bureau of Productive Industry Government of Formosa, Taihoku, pp. 83-84.
- Li, H.-L. 1963. Woody Flora of Taiwan. Livingston Publishing Co., Narberth, Pennsylvania, pp. 818-824.
- Liu, Y.-C., F.-Y. Lu, and C.-H. Ou. 1994. Trees of Taiwan, rev. ed. Coll. Agr., Nat. Chung-Shing Univ. Taichung, pp. 666-669.
- Masamune, G. 1940. Miscellaneous notes on the flora of Eastern Asia XVII. Trans. Nat. Hist. Soc. Form. 30: 63-65.
- Sasaki, S. 1928. List of Plants of Formosa. Nat. Hist. Soc. Form. Taihoku, Japan. pp. 349-350.

台灣馬鞭草科紫珠屬之訂正

陳添財⁽¹⁾、趙淑妙⁽²⁾、楊遠波^(3,4)

(收稿日期: 1998 年 11 月 5 日; 接受日期: 1998 年 11 月 23 日)

摘 要

本文訂正台灣馬鞭草科紫珠屬，共計 10 種及 2 變種。其中描述 1 新變種，即六龜粗糠樹(*Callicarpa formosana* Rolfe var. *glabrata* Chen, Chaw & Yang)；確認銳葉紫珠(*Callicarpa tikusikensis* Masamune)之存在；證實以前被認為同種的疏花紫珠(*Callicarpa remotiflora* Lin & Wang)與疏齒紫珠(*Callicarpa remotiserrulata* Hayata)是完全不同的種；紫珠(*Callicarpa dichotoma* (Lour.) K. Koch)列為疑問種；台灣不產女兒茶(*Callicarpa japonica* Thunb. var. *japonica*)。

關鍵詞：訂正，紫珠屬，台灣。

1. 台灣省林業試驗所生物系標本館，台北市 100，台灣，中華民國。
2. 中央研究院植物研究所，台北市 115，台灣，中華民國。
3. 國立中山大學生物科學系，高雄市 80424，台灣，中華民國。
4. 通信聯絡員。