

NOTES ON THE FLORA OF TAIWAN (12)

The *Caesalpinia* L. (Leguminosae-Caesalpinioideae)⁽¹⁾

SHING-FAN HUANG⁽²⁾ and TSENG-CHIENG HUANG⁽³⁾

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Abstract: Four native *Caesalpinia* species of Taiwan are revised, namely, *C. bonduc* (L.) Roxb., *C. crista* L., *C. decapetala* (Roth) Alst., *C. minax* Hanse. Among them *C. minax*, previously accepted as *C. globulorum* Bakh. f. & Van Koyen (=*C. major* (Madik.) Dandy & Exell) in Taiwan, is a new corrected name to the Flora of Taiwan.

INTRODUCTION

Caesalpinia L. contains about 100 pantropical species (Polhill & Vidal, 1981). For the *Caesalpinia* species of Taiwan, Henry (1896) listed two coastal species and Hayata (1911) added another inland species. Since then, three native species were adopted till Hsu (1980) added the fourth native one, though the fourth is considered cultivated by Ying (1985). By examining specimens, comparing species description, and judging from field experiences, we confirm that there are four native species in Taiwan, and the previously accepted pantropical species, *C. globulorum* (=*C. major*), is actually *C. minax*, distributed in southern China and Thailand.

KEY TO THE SPECIES

1. Leaflets apiculate at apex; pods densely prickled.....2
1. Leaflets eapiculate at apex; pods not prickled.....3
2. Stipule leafy-like, orbicular; bracts lanceolate, 6-8 mm long; pods elliptic; stipe 3 mm long, stalk 6 mm long.....1. *C. bonduc*
2. Stipule subulate, divided; bracts ovate, 20 mm long; pods rectangular; stipe sessile, stalk 25-30 mm long4. *C. minax*
3. Leaves with pinnae 2-4 pairs, each pinna with leaflets 2-4 pairs, leaflets ovate or elliptic; pods elliptic; stipe 3 mm long; stalk 8 mm long.....2. *C. crista*
3. Leaves with pinnae 4-9 pairs, each pinna with leaflets 7-12 pairs, leaflets rectangular or obovate; pods linear; stipe sessile; stalk 25-30 mm long.....3. *C. decapetala*

TAXONOMIC TREATMENT

1. ***Caesalpinia bonduc* (L.) Roxb., Fl. Ind. ed. 2. 2: 362. 1832; Dandy & Exell in Journ. Bot. 76: 179. 1938; Huang & Ohashi, Fl. Taiwan 3: 185. pl. 526. 1977; Ying in Techn. Bull. Exp. For. National Taiwan Univ. 165: 15. 1985.** 老虎心

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(2) 黃星凡, Junior specialist, Department of Botany, National Taiwan University, Taipei, Taiwan 10764, Republic of China.

(3) 黃增泉, Professor, Department of Botany, National Taiwan University, Taipei, Taiwan 10764, Republic of China.

Guilandia bonduc L., Sp. Pl. 381. 1953.

Caesalpinia bonducella Fleming in As. Res. 11: 159. 1810; Henry, List Pl. Form. 38. 1896; Hayata, Icon. Pl. Formos. 1: 208. 1911.

C. crista auct. non L.: Kanehira, Form. Trees ed. 2. 291. f. 248. 1936; Li, Woody Fl. Taiwan 339. f. 119. 1963.

Distribution: Pantropical; Taiwan in the southern part and Isl. Lanyu.

Flowering: Feb. Apr. Oct.

Fruiting: July

Altitude: 0-350 m.

Habitat: In thickets or open place near seaside.

KAOHSIUNG: Takao, Nakahara s.n. Feb. 1906 (TAI), E. Matuda 711 (TAI); Takaowan, Y. Kudo & S. Suzuki 46 (TAI); Linpien, Y. Yamamoto & S. Suzuki 1658 (TAI); Takao-Taito, S. Sasaki s.n. Oct. 1934 (TAI). PINGTUNG: Oluanpi (South Cape, Garambi), Y. Kudo & S. Suzuki 15791 (TAI), Kudo & Mori 977 (TAI); TAITUNG: Lanyu, Y. Tateishi et al. 15252 (TAI), T. C. Huang, S.F. Huang et al. 10621 (TAI).

2. *Caesalpinia crista* L., Sp. Pl. 380. 1753; Huang & Ohashi, Fl. Taiwan 3: 185. 1977; Ying in Techn. Bull. Exp. For. National Taiwan Univ. 165: 16. 1985. 搭肉刺

C. nuga (L.) Ait., Hort. Kow. ed. 2. 3: 32. 1811; Henry, List Pl. Form. 38. 1896; Kanehira, Form. Trees ed. 2. 293; Li, Woody Fl. Taiwan 339. 1963.

Distribution: Pantropical; Taiwan, throughout the island.

Flowering: Nov-May

Fruiting: Mar-Aug.

Altitude 0-300 m.

Habitat: Roadside along river, forest margin near seaside.

ILAN: Kueshantao, G. Masamune & S. Suzuki s.n. July 1932 (TAI). TAIPEI: Suigenchi, S. Suzuki s.n. May 1929 (TAI), Nov. 1930 (TAI); Yuantungshih, Liu & Kuo s.n. Apr. 1957 (TAI); Shihlin, Tanaka s.n. Jan. 1931 (TAI). HSINCHU: Chupei-village, H. Ohashi & T. Nemoto 17297 (TAI); Komo, Y. Kudo & S. Suzuki 137 (TAI); Hsienjiaoshih, T. C. Huang & S.F. Huang 12699 (TAI). TAINAN: Tsenwen Dam, S.F. Huang & K.C. Yang 4402 (TAI). KAOHSIUNG: Takao, T. Hosokawa s.n. Dec. 1930 (TAI); Takaowan, Y. Kudo & S. Suzuki 57 (TAI); Kigo, T. Sata s.n. Apr. 1932 (TAI). PINGTUNG: Kenting, S.F. Huang 2618 (TAI), T. C. Huang & M.T. Kao 6462A (TAI), C.C. Chuang 2200 (TAI), M.T. Kao 10379 (TAI); Oluanpi, M.T. Kao 7103 (TAI), S. Suzuki s.n. March 1932 (TAI), S. Suzuki s.n. Aug. 1922 (TAI), Y. Kudo & S. Suzuki 15792 (TAI); Chuanfanshih-Oluanpi, T. Suzuki 6024 (TAI); Chuanfanshih, W.S. Tang 1026 (TAI), J.C. Kang 2884 (TAI); Kenting-Oluanpi, H. Keng et al. K2895 (TAI); Hengchun-Fengkang, T. Y. Yang 1276 (TAI); Tzushe, M.T. Kao 9706 (TAI).

3. *Caesalpinia decapetala* (Roth.) Alston in Trimen, Handb. Fl. Ceyl. Suppl. 6: 89, 1931; Hsu, Rare Threat. Pl. Taiwan 48. 1980; Ying in Techn. Bull. Exp. For. National Taiwan Univ. 165: 16. 1985; Chen, Fl. Reip. Pop. Sinicae. 39: 107, pl. 35, f. 1-4. 1988. 雪實

Reichardia decapetala Roth, Nov. Pl. Sp. 212. 1821.

Distribution: China, Korea, Japan; Taiwan, spreading in low altitude.

Flowering: Jun, Sep.

Fruiting: Mar-Apr.

Altitude: 0-800 m.

Habitat: River bank, always cultivated as fence plants.

TAOYUAN: Lalashan, T.C. Huang 7676 (TAI). CHIAYI: Chiayi City, M.T. Kao 10470 (TAI). TAITUNG: Hsinwulu, S.F. Huang 3222 (TAI), S.F. Huang et al. 3691 (TAI), S. Sasaki s.n. Oct. 1933 (TAI).

4. **Caesalpinia minax** Hance in Journ. Bot. 33: 365. 1884; Smitinand et al., Fl. Thailand 4(1): 74, f. 18, 13-19. 1984. Chen. Fl. Reip. Pop. Sinicae 39: 98. pl. 32, f. 9-17. 1988.

喙莢雪實

C. globulorum sensu auct. Taiwan: Huang & Ohashi, Fl. Taiwan 3: 189, 1977; Ying in Techn. Bull. Exp. For. National Taiwan Univ. 165: 15. 1985.

C. jayabo sensu auct. Taiwan: Kanehira, Form. Trees ed. 2. 291. f. 249. 1936; Li, Woody Fl. Taiwan 339. 1963.

C. bonduc auct. non Roxb.: Hayata, Icon. Pl. Formos. 1: 208. 1911.

Scandent shrub, densely covered with prickles, tomentose. Leaves compound 2-pinnate, with pinnae 7-8 pairs, each pinna with leaflets 8-11 pairs; leaflets opposite or subopposite, rectangular-oblong, acuminate, apiculate at apex, truncate or rarely rounded at base, 2.5-5 cm long, 1-1.7 cm broad; stipules subulate, divided; Flowers in terminal racemes; bracts ovate, acuminate, about 20 mm long; calyx 5-lobed, tube about 5 mm long, lobes tomentose, oblong to elliptic, 15-16 mm long, rounded at apex; petals 5, the upper one red, orbicular, 18 mm long, with claw about equal length to the blade, ciliate at margin, the other 4 petals yellowish white, obovate-triangular, spreading hairy at inner surface, ciliate at margins, with comparative short claw at base, 19-21 mm long, 12-13 mm broad; stamens 10, free; filaments dilated at base, densely hairy; anthers dorsal fixed, split longitudinally; pistil estipitate; ovary oblong, densely hairy; style short, hairy at base; stigma terminal, tubular, hairy. Pods green when young, becoming brown when mature, rectangular-oblong, densely prickled, 9.5-10 cm long, 4-4.5 cm broad, beaked at apex, about 6-seeded. Seeds cylindric, smooth, 15 mm long, 9 mm in diameter.

Distribution: Southern China, Thailand; Taiwan, in central and southern part.

Flowering: Apr.

Fruiting: Apr. Aug.

Altitude: ca. 250 m.

Habitat: In open secondary forest.

CHINA: Kwangtung, Yun-Fon, C. Wang 36956 (TAI); TAIWAN: NANTOU, Mingjien-Ershui, S.F. Huang 4493 (TAI); Chushan, S.M. Li s.n. Aug. 1988 (TAI).

Our recently collected specimens (Huang 4493; Li s.n. 1988) match the description of *C. minax* rather well and are just the same as the specimen collected from Kwangtung Province (cf. C. Wang 36956). This species was previously accepted as *C. globulorum* (=*C. major*) which is not occurred in Taiwan. The difference between *C. minax* and *C. major* is given in Table 1.

Huang and Ohashi (1977) cited no specimens under *C. globulorum* when they treated Taiwan's *Caesalpinia*. Latter on, Ying (1985) claimed that a specimen (S. Sasaki s.n. 1930) referred to this species, but it actually referred to *C. decapetala* as it was originally determined to be *C. japonica*, a synonym of *C. decapetala*.

Table 1. Main characters of *Caesalpinia bonduc* (L.) Roxb., *C. crista* L., *C. decapetala* (Roth) Alist., *C. major* (Medik.) Dandy & Exell and *C. minax* Hance

Character	<i>C. bonduc</i>	<i>C. crista</i>	<i>C. decapetala</i>	<i>C. major</i> *	<i>C. minax</i>
Branchlets	tomentose	glaborus	tomentose	tomentose	tomentose
Pinnae (pairs)	5-11	2-4	4-9	3-6	7-8
Leaflets	opposite subopposite	opposite	opposite	alternate opposite	opposite subopposite
pairs	6-11	2-4	7-12	4-7	8-11
apiculate	present	absent	absent	present	present
shape	oblong	ovate elliptic	rectangular obovate	ovate elliptic	rectangular oblong
apex	obtuse	obtuse	rounded truncated	acute acuminate	acute acuminate
Base	truncate rounded	rounded	rounded truncate obtuse	obtuse rounded	truncate rounded
size (cm)	2.2-4× 1.2-2.2	2-5.6× 1-2.5	1.2.5× 0.5-1	3.5-8× 2.2-3.6	2.5-5.5× 1-1-1.7
Stipule	orbicular	unknown	lanceolate	subulate	subulate
Bracts	lanceolate 6-8 mm	unknown	unknown	unknown	ovate 20 mm
Pods	prickled	glabrous	glabrous	prickled	prickled
shape	elliptic	elliptic	linear	elliptic	oblong
stipe	3 mm	3 mm	sessile	5-10 mm	sessile
stalk	6 mm	8-10 mm	25-30 mm	10-20 mm	25-30 mm
Seeds	ovoid	unknown	unknown	ovoid	cylindric

* Characters modified from Wagner *et al.* (1990), and specimens examined listed as follows:
 MICRONESIA: Palau: Isl. Babedaob, T. Hosokawa 7217 (TAI); Saipan: Tappolyoyama, T. Hosokawa 9309 (TAI). THE RYUKYUS: Isl. Iriomote Jima, H. Ohashi & Y. Tateishi 1682 (TAI).

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臺灣植物誌之觀察 (12)

蘇木屬 (豆科—蘇木亞科)

黃星凡 黃增泉

摘要

本文處理四種臺灣自生蘇木屬 (*Caesalpinia*) 植物，依序為老虎心 (*C. bonuc.* (L.) Roxb.)，搭肉刺 (*C. crista* L.)，雲實 (*C. decapetala* (Roth.) Alst.)，喙莢雲實 (*C. minax* Hance)。其中喙莢雲實被以前臺灣之分類學者鑑定為連實藤 (*C. major* (Medik.) Dandy & Exell)，經比對文獻及標本，改正為本種。