

NOTES ON THE FLORA OF TAIWAN (3)—

The miscellaneous plants⁽¹⁾

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Abstract: Five interesting plants are described. *Desmanthus virgatus* (L.) Willdenow represents a new generic record to the Flora of Taiwan, and *Epithema brunonis* Decne. var. *fasciculata* C.B. Clarke and *Theligonum formosanum* (Ohwi) Ohwi & Liu are the first time collected by Chinese botanists. *Rotala wallichii* (Hook. f.) Kohne was recorded in 1979 year without description by Chinese botanist. A new name, *Paris fargesii* Franch. var. *brevipetalata* (Huang & Yang) Huang & Yang is transferred.

INTRODUCTION

During the past years' field works, several new interesting plants were collected. Four of them are selected for this time to prove our rich flora which needs further exploitation. The herbarium specimens on which illustrations are based are marked with an asterisk(*). The skillful drawings prepared by Mr. Ching-Lin Wang and Miss Yung-Cheng Lin, the valuable specimens supplied by Prof. Ching-Hsia Chen of Biology Department, Fujen University, a helpful guide by Dr. Chang-Sheng Kuoh of the Biology Department, Chengkung University, the valuable literature supplied by Dr. Chih-Lin Huang of the University of Washington and the xerox copy of Henry's collection supplied by Mr. B.L. Burtt of the Royal Botanic Garden at Edinburgh are greatly appreciated.

TAXONOMIC TREATMENT

1. *Epithema brunonis* Decne. var. *fasciculata* C.B. Clarke in DC., Monogr. Phan. 5: 179. 1883; Merrill, Enum. Phil. Pl. 2: 456. 1923. 密花苣苔 Figs. 1-2.

Epithema sp. Henry in Trans. As. Soc. Japan 24. Suppl. 68. no. 738. 1898.

A dwarf fleshy herb, about 7 cm high; stem hairy, usually with 2 nodes; the lower node with 1 leaf, the upper node with opposite leaves. The lower leaf wide-ovate, 3-5 cm long, 2-4 cm wide, obscurely serrate at the margin, the upper leaf wide-ovate, 1.8-1 cm long, 0.7-1.5 cm wide, obscurely serrate at the margin, hairy at the both surfaces. Helicoid cyme terminal or axillary; peduncle about 1 cm long, hairy; pedicel short and stout, hairy; calyx 5 mm long, hairy, with 5 lobes, the lobes triangular lanceolate; corolla pinkish white, 2-lips, about 4 mm long, with a ring of hair within; stamens 4, 2 fertile, 2 sterile; ovary globose,

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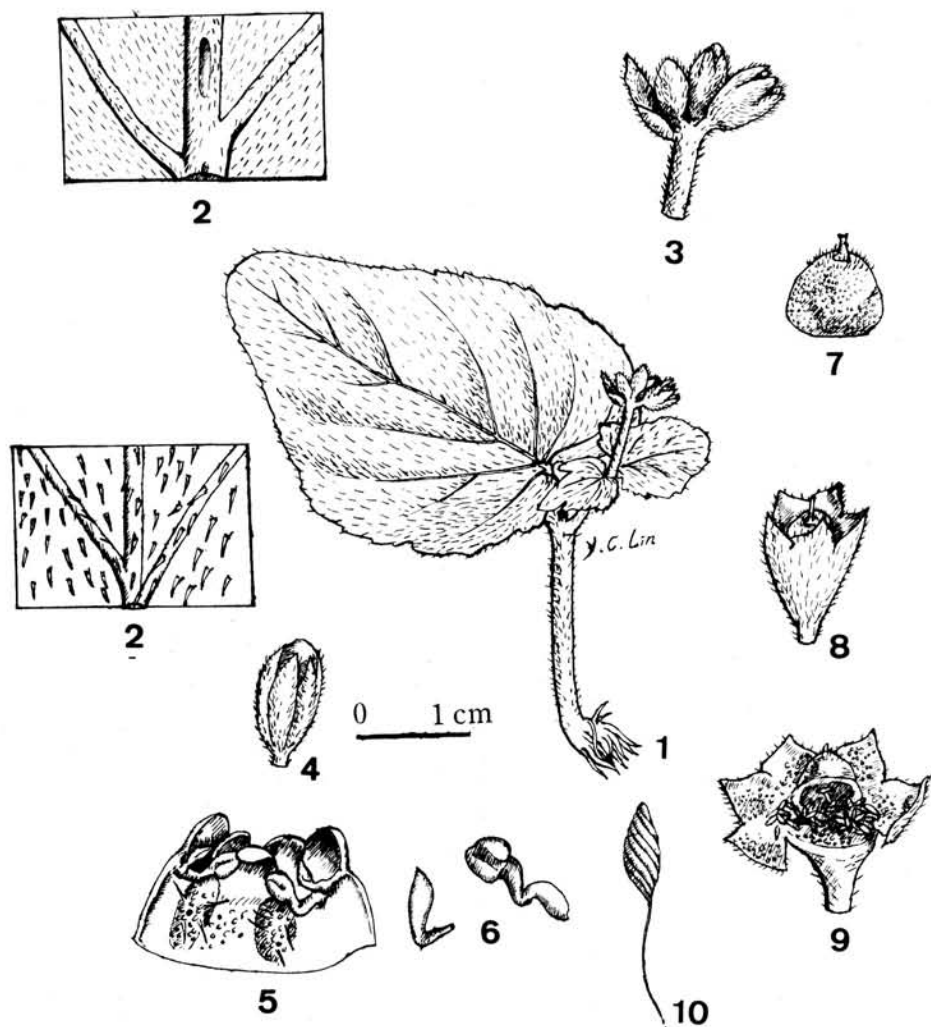


Fig. 1. *Epithema brunonis* Decne. var. *fasciculata* C.B. Clarke 1. Habit. 2. Portion of blade, upper (below) and lower (up) surfaces of blade. 3. Inflorescence. 4. Flower bud. 5. Open flower. with straight hairs. 6. Sterile (left) and fertile (right) stamens. 7. Pistil. with straight hairs on the top of ovary. 8. Capsule with persistent calyx. 9. Open pyxis. 10. Seed with striate ornamentation.

with straight hairs on the top. Pyxis enclosed by the persistent calyx; seeds numerous, elliptic, obliquely striate.

The Philippines and Taiwan. Taiwan, in the southern part on a semishaded and moist coral rock at the elevation of 200 m high.

Kaohsiung: Ape's Hiii, A. Henry 1916 (seen by photo, Fig. 2); Takanshan, T. C. Huang, S. F. Huang & C. S. Kuoh 13750* (TAI), K. C. Yang 3465 (TAI).

The genus *Epithema* is a member of the family Gesneriaceae, distributed in the tropical Asia and westward to the Africa. Owing to the wide range of geographical variation, the number of species in this genus is differently accepted (Clarke, 1883-1887, 1885; Willis, 1985). A systematic study of this genus is necessary.

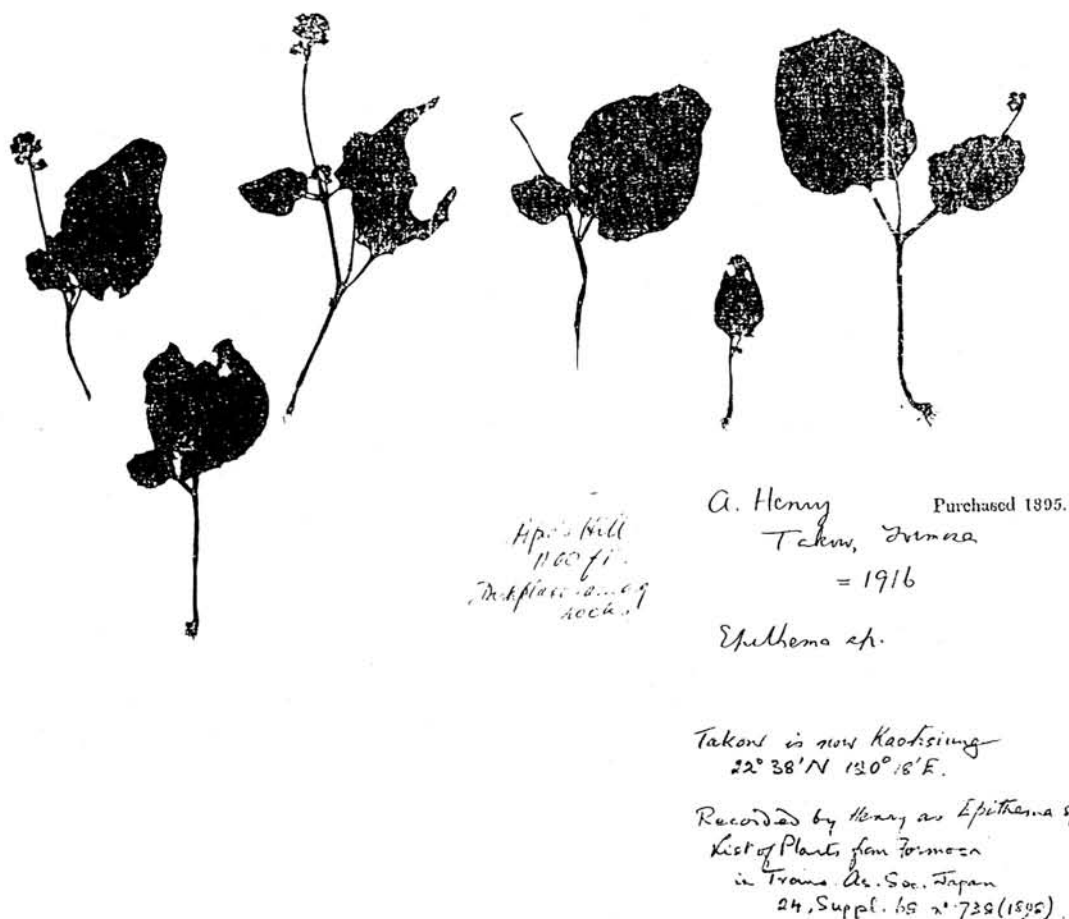


Fig. 2. *Epithema brunonis* Decne. var. *fasciculata* C. B. Clarke

Originally we treated this genus as a new record to the Flora of Taiwan until Dr. B. L. Burtt who supplied us the photo of Henry's collection (no. 1916, Fig. 2) to reconfirm our rediscovery of the genus for Taiwan.

2. *Theligonum formosanum* (Ohwi) Ohwi & Liu, Fl. Taiwan 3: 904-905. 1977.

臺灣纖花草 Fig. 3.

Cynocrambe formosanum Ohwi in Acta Phytotax. Geobot. 2(3): 157. 1933.

A low annual herb, up to 15 cm high, becoming black when dry; stem branched at base, creeping below, ascending above, hairy. Leaves petiolate, the upper alternate, the lower opposite; blade up to 10 mm long, deltoid to ovate, acute, subtruncate or obtuse at base, entire, 12-23 mm long, 10-16 mm wide, pilose above and along veins beneath; stipules opposite, adnate to petioles, membranaceous, reflexed, ovate-deltoid, acuminate, slightly fimbriate-ciliate at margin. Flowers white, monoecious, axillary, sessile, both staminate and pistillate arranged at the same nodes; perianth of staminate flowers deeply 3-lobed, the segments oblanceolate, reflexed and obtuse at apex, 3 mm long, 1-nerved; stamens 3-8;

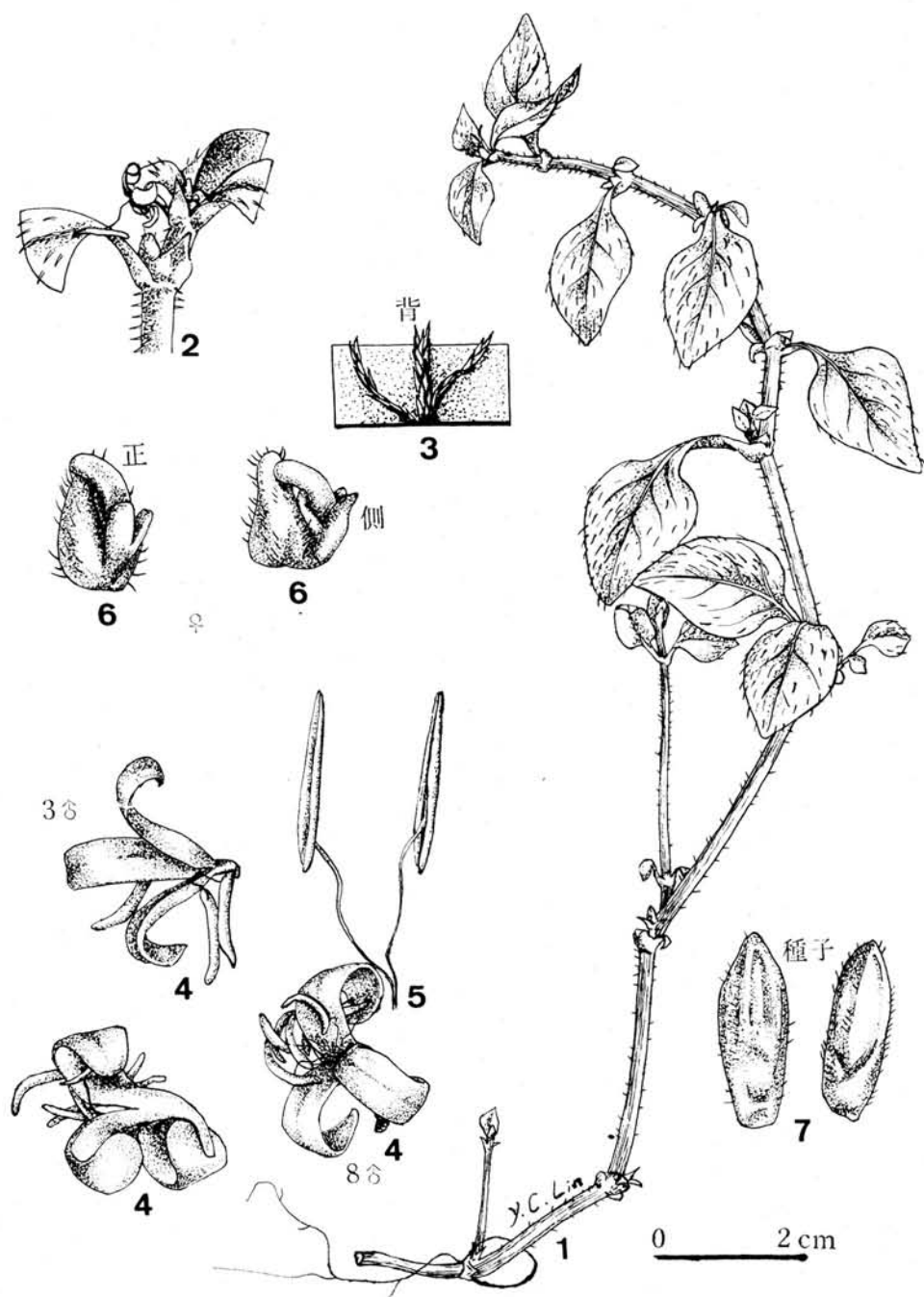


Fig. 3. *Theligonum formosanum* (Ohwi) Ohwi & Liu. 1. Habit. 2. Portion of a stem with a cyme. 3. Portion of lower surface of leaves. 4. Male flowers with 3 (upper-left) or 8 (lower) stamens. 5. Stamens of different view. 6. Pistillate flower, showing the basal style which are reflexed and adnate to the top of ovary, optical view (left), lateral view (right). 7. Fruits with both surfaces pubescent and sunken.

anthers linear, opening longitudinally, the filaments slender; pistillate flowers subsessile, with 3-lobed perianth, the lobes small, obtuse; ovary of one carpel, style simple, recurved, ovule basal, solitary. Fruits a subglobose nut, included in the thin membranaceous calyx, obliquely obovate, appressed pubescent; seeds solitary, sessile, hairy, with fleshy endosperm.

Endemic. This species belongs to the family of Theligonaceae. It grows on the wet forest floor along mountain trail, usually near running water at about 2700 m in elevation.

Pingtung: Pei-Tawushan, *Ohwi* 1849 (holotype, KYO!), *T. C. Huang*, *S. F. Huang* & *K. C. Yang et al.* 13679* (Topotype, TAI).

This species differs from *T. japonicum* mainly by the number of stamens and the shape of pistillate flowers. This species is known from only one locality and has been collected twice only.

3. *Rotala wallichii* (Hook. f.) Kohn in Engler, Bot. Jahrb. 1: 154. 1880; Cook in Boissiera 29: 29. 1979; Huang, Fl. Taiwan 6: 99. 1979; Yang in Bot. Bull. Academia Sinica 28: 203. 1987. 瓦氏水猪母乳 Fig. 4.

Hydrolithrum wallichii Hook. f. in Bentham & Hook. f., Gen. Pl. 777. 1867; in Hook. f., Icon. Pl. pl. 11 (ser. 3, vol. 1), 5. 1867.

Ammania wallichii (Hook. f.) Kunze in Journ. As. Soc. Beng. 46, 46: 2, 84. 1877.

Elatine triandra *sense* Huang, Fl. Taiwan 3: 789. pl. 819. 1977, *non* Schkuhr.

A soft aquatic annual herb, 5–15 cm high. Leaves 3-verticillate, narrowly lanceolate to ovate, 3–8 mm long, 1–2 mm wide, obtuse at apex, narrowed at base. Flowers axillary, sessile; bracteoles linear, shorter than the campanulate tube; petals 4, elliptic; stamens 4, inserted on the basal part of calyx tube, opposite with the sepals; ovary superior, 4-loculed, with axillary placentation, stigma capitate. Capsules globose.

Distributed in tropical and subtropical Asia. In Taiwan, growing in shallow water, ponds and wet place or on paddy field in low lands of Mt. Nanrenshan.

Pingtung: Nanrenshan, *K. S. Hsu* 3278 (TAI), *C. H. Chen* 3357* (TAI), *C. C. Huang s.n.* July 15, 1984* (TAI), *T. C. Huang* 8420 (TAI).

This species belongs to the family of Lythraceae. The leaf of this species is extremely variable due to its habitats. The leaf is ovate and 4 mm long when the plant grows on the wet soil, while the leaf shows linear-lanceolate and up to 8 mm long when the plant grows in the water.

4. *Desmanthus virgatus* (L.) Willd., Sp. Pl. 4: 1047. 1806; Oliver, Fl. Trop. Africa 2: 334. 1871; Baker in Hook. f., Fl. Br. Ind. 2: 290. 1878; Trimen, Handb. Fl. Ceylon 2: 122. 1894; Schery in Ann. Miss. Bot. Gard. 37: 300. 1950; Hatusima, Fl. Ryukyu 845. 1971; Kostermans in Dassanayake & Fosberg (eds.), Fl. Ceylon 1: 474. 1980. 多枝草合歡 Fig. 5 & 6

Mimosa virgata L., Sp. Pl. 519. 1753.

An erect shrub, about 2 m high; stem glabrous, angulate. Leaves bipinnate; pinnae usually 6 pairs; petiole-glands on the lowest pair of pinnae; leaflets about 20 pairs in each pinnae, oblong, 7 mm long, the apex acute, the base obliquely truncate, the margin ciliate; stipules subulate. Flowers white, in axillary head-like inflorescence, the upper hermaphroditic, the lower male; bracts subulate; calyx 2.5 mm long, 5-lobed, the lobes 0.5 mm long; petals 5, oblanceolate, about

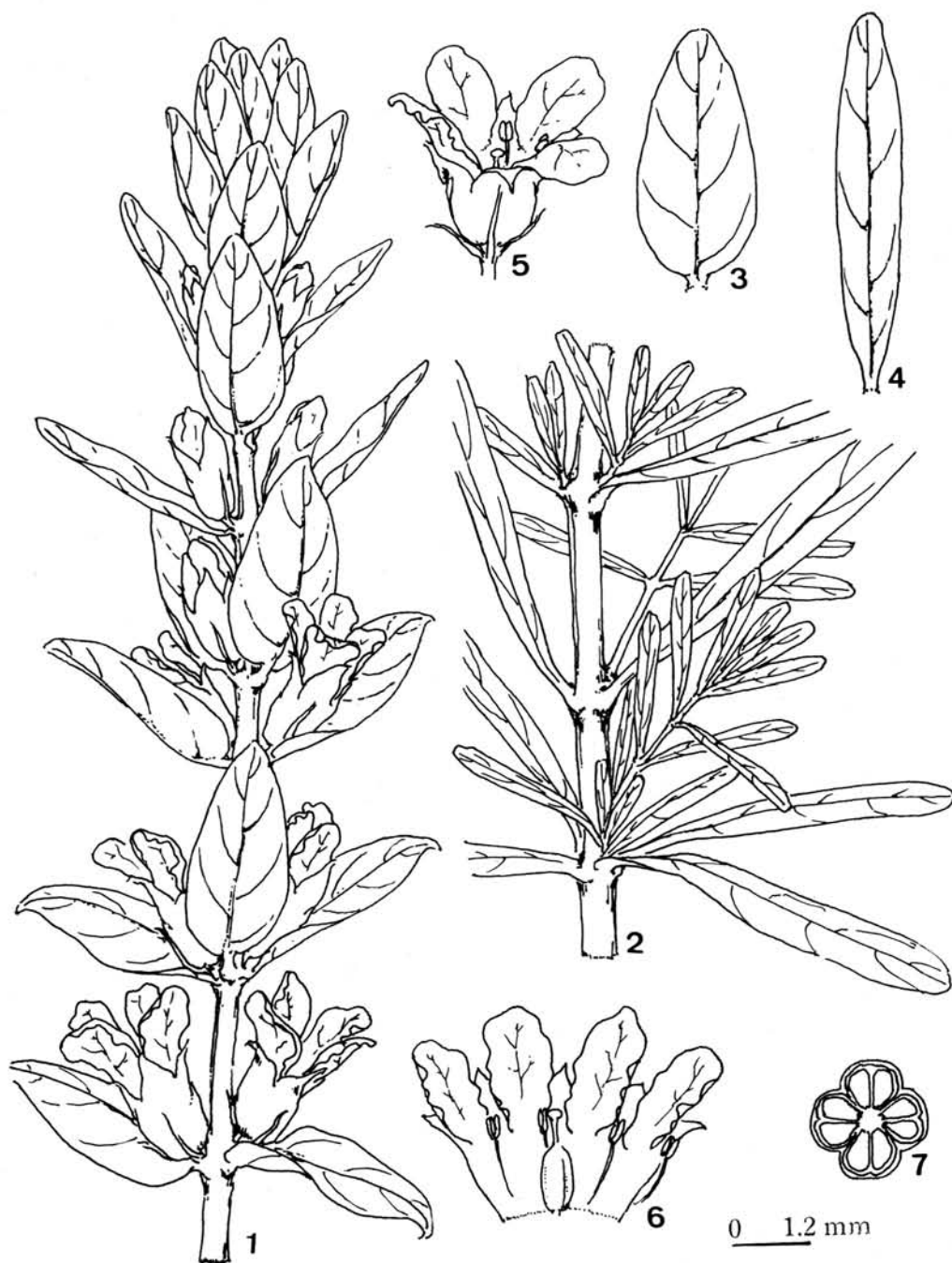


Fig. 4. *Rotala wallichii* (Hook. f.) Kohne. 1. Flowering branch of terrestrial part. 2. Leafy branch in water. 3. Terrestrial leaf. 4. Aquatic leaf. 5. Flower. 6. Longitudinal section of flower. 7. Cross section of ovary. (2, 4 after Huang s. n. 1984; 1, 3, 5, 6 after Chen 3358)



Fig. 5. *Desmanthus virgatus* (L.) Willdenow, flowering branches.



Fig. 6. *Desmanthus virgatus* (L.) Willdenow, fruiting branches.

4 mm long; stamens 10, free; anthers dorsifixed; pistils glabrous, ovary oblong, slightly curved, 2 mm long, stigma tubular. Pods linear, 7-9 cm long; seeds rectangular, dark brown, 3 mm long, with U-shaped scar on both surfaces.

Distributed in tropical and subtropical New World. In Taiwan, it was found naturalized in the disturbed soil of the dry river bank in the southern area.

Kaohsiung: Meilung, K. C. Yang 3460 (TAI).

The genus, *Desmanthus*, a member of the family Leguminosae, containing about 25 species which distribute in tropical and subtropical America (Lewis & Elias, 1981), is a new record to the Flora of Taiwan. Therefore, a key to the Taiwan's genera of Mimosoideae is revised.

Key to the genera of Mimosoideae of Taiwan

1. Stamens more than 10
 2. Stamens free.....*Acacia*
 2. Stamens monadelphous
 3. Pods flat, thin, indehiscent.....*Albizia*
 3. Pods circinate, dehiscent*Pithecelobium* (s.l.)
1. Stamens 10
 4. Rachis ended with tendril; pods woody, up to 1 m long.....*Entada*
 4. Rachis ended without tendril; pods not as above
 5. Stem armed; stamens red.....*Mimosa*
 5. Stem unarmed; stamens white
 6. Stem terete; pods flat.....*Leucaena*
 6. Stem angulate; pods linear.....*Desmanthus*
5. *Paris fargesii* Franch. var. *brevipetalata* (Huang & Yang) Huang & Yang, *transf. nov.* 短瓣球藥隔七葉一枝花
Daiswa fargesii (Franch.) Takht. var. *brevipetalata* Huang & Yang in *Taiwania* 33: 123. f. 1. 1988.
- * *Trillium taiwanense* Ying in Journ. Jap. Bot. 64(5): 154, f. 5. 1989 (Holotype; Ying s.n. June 1988, NTUF!)

We were happy to receive a kind letter of Dr. Victor G. Soukup, University of Cincinnati to inform us his opinion about the Takhtajan's treatment of *Daiswa* plants. We accept his suggestion and transfer the new variety to the genus *Paris* as we originally favour to use the broad generic concept.

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* We add this new synonymy when our *Taiwania* is in print.

臺灣植物誌之觀察 (3)

植物雜記

黃增泉 黃星凡 楊國禎

摘 要

本文描述四種植物——密花苣苔(*Epithema brunonis* var. *fasciculata*)、臺灣纖花草(*Theligonum formosanum*)、瓦氏水豬母乳(*Rotala wallichii*)及多枝草合歡(*Desmanthus virgatus*); 並更改短瓣球藥隔七葉一枝花(*Paris fargesii* var. *brevipetalata*)之學名。其中多枝草合歡是臺灣新紀錄種也是新紀錄屬。密花苣苔及臺灣纖花草首次由中國人採到。瓦氏水豬母乳從無在臺灣文獻上描述其特徵, 本文特加追述。