

A new species of *Tylophora* from coral reef areas in Hengchun Peninsula, Taiwan, China

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Tylophora sui Y. H. Tseng & C. T. Chao, sp. nov.

苏氏欧蔓 (S3-3. Fig. 1, S3-4. Fig. 2)

Type: **China. Taiwan:** Pintung County, Hengchun Town, Longpan, coral reef areas near seashore, 21°55'20.6"N, 120°51'14.25"E, ca. 76 m, 2009-05-25, *Yen-Hsueh Tseng 4668* (holotype, TCF).

Latin diagnosis: Species *Tylophora ovatae* affinis, a qua planta repente, caule villosa, foliis orbicularibus, supra glabris, subtus margineque villosis, venis prominentibus differt.

Morphological description: Plants creeping. Stems villous. Leaves simple, opposite, entire, fleshy; petiole 0.5–1.3 cm long, villous, grooved; blade 2–3 by 1.5–2.5 cm, orbicular, adaxial surface glabrous, veins prominent, lateral veins 3–4 pairs, margin and abaxial surface villous; apex mucronate; base cordate; cymes axillary, simple or 2; peduncles sparsely pubescent to glabrescent, 2–2.5 cm long, rachis 1–8 mm long, branched zigzag; bracteoles 1 at the base of each flower, lanceolate, hirsute; pedicels glabrous, 5–12 mm; calyx glabrous but sparsely hirsute at apex, 5-lobed, lobes broadly triangular; corolla rotate, 5-lobed, glabrous on both surfaces, ovate, fleshy; corona 5-lobed, lobes with fleshy tumor-like appendages outside; gynostegium cylindrical, pollinarium 5, pollinia 2 per pollinarium, candicule horizontal, retinaculum elliptic and apically obtuse; stigma disciform, style cylindraceous, ovaries glabrous. Follicles 2 per pedicel, spindle lanceolate, obtuse at apex, 3–4.5 cm long, 0.7–1.0 cm broad. Seed teapot-like, circular winged, glabrous, 0.4–0.6 cm long, 0.1–0.2 cm broad.

Tylophora sui resembles *T. ovata*, but it is distinct for having creeping stems and villous indumentum on stems (vs. twining stems and velutinous indumentum on stems) (S3-5. Fig. 3). *Tylophora sui* is also similar to *T. rotundifolia*, but it is distinguishable by having creeping stems; pedicel 0.5–1.3 cm (vs. twining stems; pedicel 0.2–0.5 cm) (S3-2. Table 1).

Distribution: *Tylophora sui* is only found in the typical locality, Longpan, Hengchun Town, Pintung County, Taiwan, China (S3-8. Fig. 6). This plant grows on open coral reef areas near seashore. In Taiwan many narrow endemic species are confined to this area of Hengchun Peninsula, including *Cassia garambiensis* Hosok., *Clematis terniflora* DC. var. *robusta* (Carr.) Tamura, *Crotalaria similes* Hemsl., *Chamaesyce garanbiensis* (Hayata) Hara, *Kalanchoe garambiensis* Kudo, *Millettia pulchra* (Benth.) Kurz. var. *microphylla* Dunn, *Alpinia koshunensis* Hayata, and *Premna hengchunensis* Lu & Yang. This peninsula is conceived as a phytogeographical island

across which a demarcation line between the Boreal and the Palearctic floristic kingdom has been proposed (Takhtajan, 1986; Su, 1992).

Etymology: The specific epithet commemorates Prof. Horng-Jye Su, the mentor of the senior author, School of Forestry and Resource Conservation, National Taiwan University, for his contributions to plant taxonomy and vegetation ecology of Taiwan.

IUCN Red List category: According to the IUCN Red List Categories and Criteria (IUCN, 2001), this species is treated as vulnerable (VU) because its habitats are easily disturbed by human activity, and is so far known only from southern Taiwan, China.

Additional specimens examined:

China. Taiwan: Pingtung County, Hengchun Town, Longpan, coral reef areas near seashore, ca. 60 m, 2009-09-10, *Yen-Hsueh Tseng 4803* (paratype, TCF).

Online supplementary data:

S3-1. Material and methods of chromosome observation

S3-2. Table 1 Comparison of *Tylophora sui*, *T. ovata*, and *T. rotundifolia*

S3-3. Fig. 1. *Tylophora sui* Y. H. Tseng & C. T. Chao. A, Habit. B, Leaf adaxial surface. B', Leaf abaxial surface. C, Inflorescence. D, Corolla lobe inner surface. D', Corolla lobe outer surface. E, Calyx lobe. F, Flower front side. F', Flower back side. G, Flower. H, Gynostegium. I, Pollinarium outer surface. I', Pollinarium inner surface. J, Fruit. K, Seed.

S3-4. Fig. 2. *Tylophora sui* Y. H. Tseng & C. T. Chao. A–F, Photos by digital camera. A, Habitat. B, Habit. C, Leaves. D, Inflorescence. E, Flower. F, Fruits. G–J, Photos by scanning electron microscope. G, Pollinarium. H, Retinaculum. I, Pollinium. J, Sculptural of pollinium surface.

S3-5. Fig. 3. Indumentum of genus *Tylophora* in Taiwan, China. A, *T. sui* Y. H. Tseng & C. T. Chao. B, *T. ovata* (Lindl.) Hook. ex Steud.

S3-6. Fig. 4. Somatic chromosome of *Tylophora sui* Y. H. Tseng & C. T. Chao.

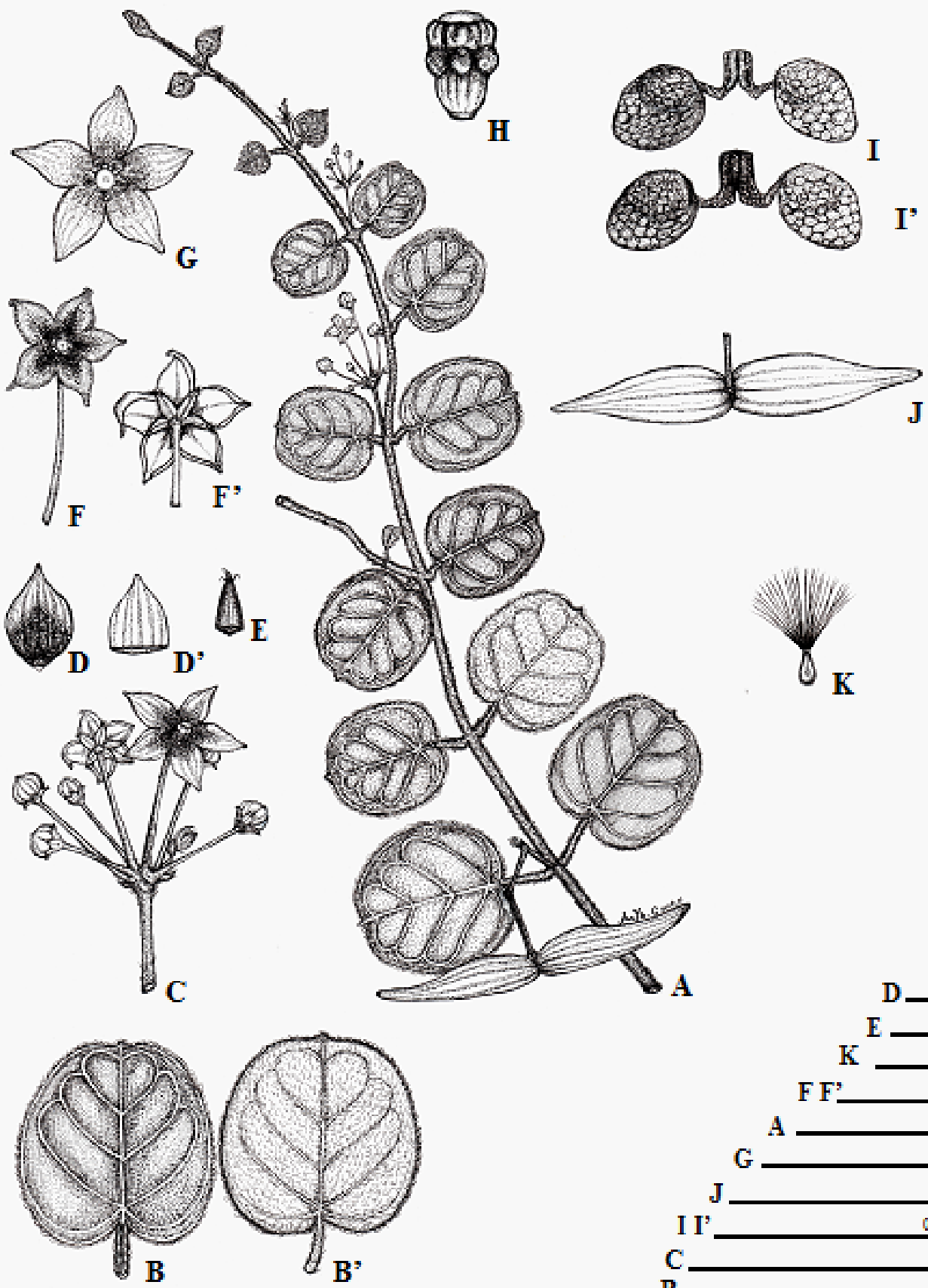
S3-7. Fig. 5. Somatic chromosome of *Tylophora ovata* (Lindl.) Hook. ex Steud.

S3-8. Fig. 6. Distribution map of *Tylophora sui* Y. H. Tseng & C. T. Chao.

S3-9. References

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D 5 mm
 E 5 mm
 K 1 cm
 F F' 5 mm
 A 5 cm
 G 5 mm
 J 5 cm
 I I' 0.3 mm
 C 5 cm
 B 5 cm

