
Hoya daimenglongensis (Apocynaceae, Asclepiadoideae), a New Species from Yunnan, China

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ABSTRACT. *Hoya daimenglongensis* Shao Y. He & P. T. Li (Apocynaceae, Asclepiadoideae) from Yunnan Province, China, is described and illustrated. This new species and *H. linearis* Wall. ex D. Don are similar in their linear leaves and terminal inflorescences. *Hoya daimenglongensis*, however, differs from *H. linearis* by the internal surface of the corolla, which is minutely tomentose and not papillose (vs. glabrous or papillose), and the corona lobes, which are white tinged with red (vs. pure white).

Key words: Apocynaceae, Asclepiadoideae, China, *Hoya*, IUCN Red List, Yunnan.

Among the Asclepiadoideae (Apocynaceae), *Hoya caronsa* (L. f.) R. Br. was established as the type of *Hoya* R. Br. by Brown in 1810 (Brown, 1810) and was collected from China (Linnaeus, 1782; Tsaing & Li, 1977). China is a significant center of diversification among *Hoya*, which has a worldwide distribution. Tsiang and Li (1977) recognized 22 species, three varieties, and two forms for *Hoya* in China. Later, Li et al. (1995) described 32 species and one variety in China, of which 17 *Hoya* species were endemic (Gilbert et al., 1995). Three species have since been recently described from Hainan Island, south of China, by He et al. (2009a, 2009b, 2009c), increasing the number of species of *Hoya* in China to 35. India and Malaysia remain major areas of species diversity for *Hoya* in the world, with as many as 74 estimated for New Guinea (Rintz, 1978; Jagtap & Singh, 1999; Forster, 2006). Although the majority of *Hoya* species twine, there are a small number that are pendent, or erect and non-twining, e.g., *H. linearis* Wall. ex D. Don.

Yunnan Province is particularly diverse for Chinese species of *Hoya* (He et al., 2009a). The first author made an interesting collection of a flowering

Hoya that exhibited a striking pendent habit during a 2009 botanical trip to Damenglong in Yunnan. Based on the field observations, comparison with specimens at CANT, HITBC, IBSC, K, KUN, MO, P, and PE, and literature survey (Hooker, 1885; Costantin, 1912; Tsiang & Li, 1974, 1977; Rintz, 1978; Li, 1994; Gilbert et al., 1995; Li et al., 1995; Forster & Liddle, 1996; Jagtap & Singh, 1999), the collection appears to be a new species of *Hoya*, which is described herein. This new species appears to be allied to the pendent species *H. linearis* that is widely distributed in China, Nepal, India, and Myanmar (Don, 1825; Hooker, 1885; Li et al., 1995; Jagtap & Singh, 1999). The holotype of *H. linearis* was collected from Nepal (Don, 1825), and the linear blades of this species are among the smallest in *Hoya*, no more than 5 cm long and 0.5 cm wide.

Hoya daimenglongensis Shao Y. He & P. T. Li, sp. nov. TYPE: China. Yunnan: Daimenglong, on trees in montane tropical rainforest, 1200 m, 21 Aug. 2009, S. Y. He 09080216 (holotype, CANT, CANT photo at MO; isotype, CANT). Figure 1.

Haec species *Hoyae lineari* Wall. ex D. Don foliis linearibus ac inflorescentia terminali similis, sed ab ea corollis intrinsecus tomentellis epapillatis atque coronarum lobis albis rubrotinctis ad angulum externum rotundatis differt.

Epiphytic plants, with milky latex; stems pendent to 1 m, green, villose, slender, 0.2–0.3 cm diam.; internodes 2–3 cm. Leaves decussate, fleshy; leaf blades linear, adpressed, 4.5–6 × 0.2–0.5 cm, 0.2–0.3 cm thick; base cuneate, ± acute or mucronate at apex; blades adpressed to stem, villose, green, with the margin revolute, white; blade midrib abaxially

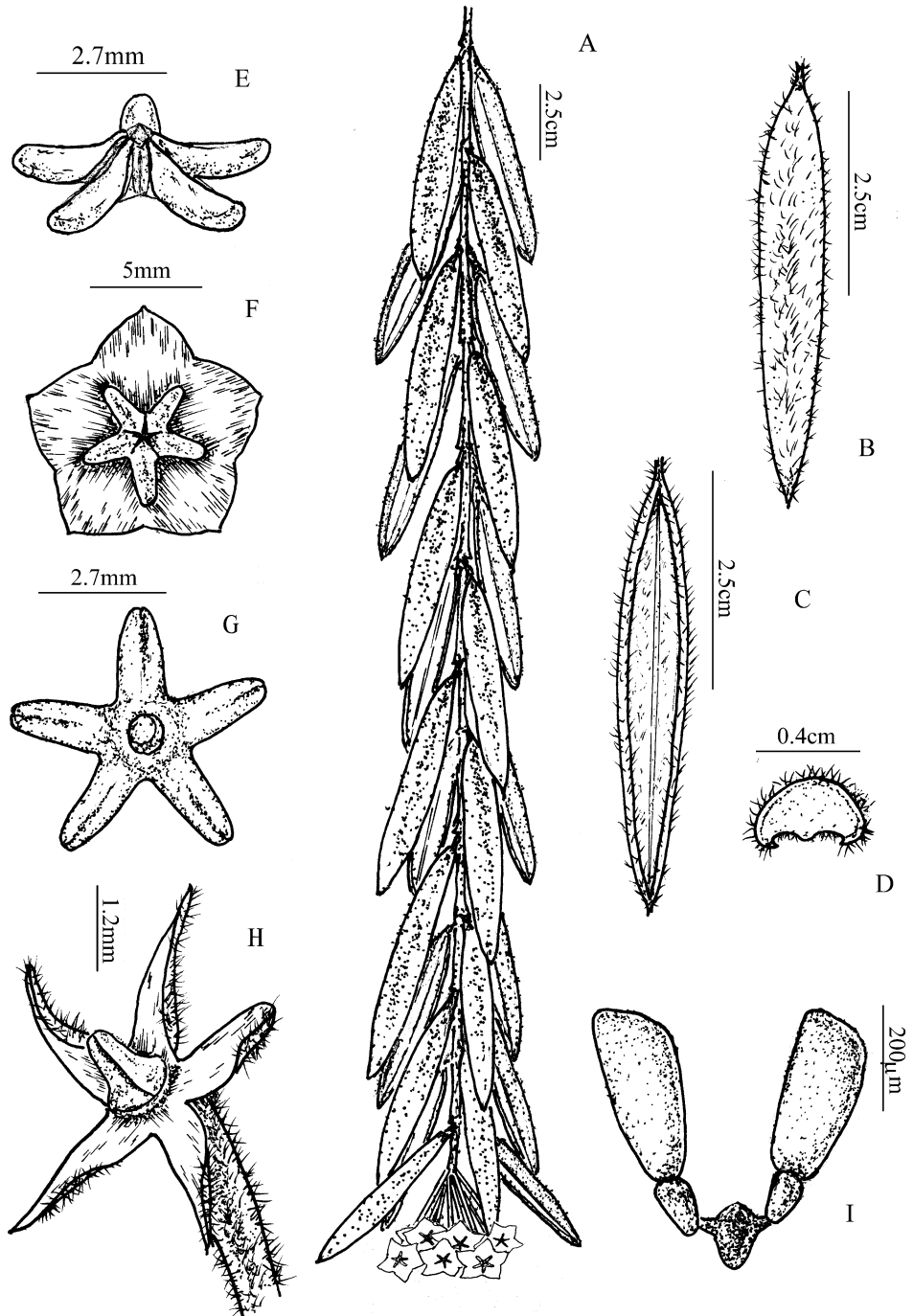


Figure 1. *Hoya daimenglongensis* Shao Y. He & P. T. Li. —A. Fertile, pendent habit. —B. Adaxial leaf blade, showing the pubescent, green, rounded surface. —C. Abaxial leaf blade, showing the white, recurved margins and midrib. —D. Cross section of leaf blade. —E. Side view of corona. —F. Intact flower seen from above. —G. Outer corona. —H. Pedicel, calyx, and ovaries. —I. Pollinarium. A–I drawn from the holotype *S. Y. He 09080216* (CANT) by Shao-yun He.

evident, green; blade adaxially rounded; lateral veins not visible; petiole deep green, villose, brief, only to 0.2–0.3 cm. Inflorescences terminal, pendent, convex pseudumbels, ca. 9-flowered; peduncle green, villose, ca. 0.4 cm; pedicels yellowish white, villose, 1.5–2 cm. Flowers with the sepals light yellow, externally villose; narrowly triangular, 2.2×0.6 mm, apex acuminate; corolla white, externally glabrous, internally minutely tomentose and not papillate, slightly deflexed, ca. 1.2–1.5 cm diam., lobes ca. 2.6–3.2 mm, margins recurved, apex cuspidate; corona with 5 white lobes, but lobes are red-tinged on outer angles and alternate with the lower corolla lobes; lobes resembling rice grains, somewhat cylindrical, ca. 2.5×1.1 mm, inner angles erect, subacute, prominent on upper surface, lobe outer angle rounded; stamens 5, adnate to gynostegium, anthers obliquely positioned below the upper corona lobes, with a stigmatic head; pollinium broad, caudicle ca. 75 μ m wide, 90 μ m high; corpusculum similar, fusiform, dark brown; ovaries paired, superior, 1.3 mm high, 1 mm diam. Fruit and seeds unknown.

Distribution and habitat. *Hoya daimenglongensis* is found in Damenglong, Jinghong City, in southern Yunnan Province, China. The new taxon was observed to grow in tropical montane forest at 1200 m elevation. Associated species include *Horsfieldia tetratapa* C. Y. Wu & W. T. Wang (Myristicaceae); *Wendlandia uvariifolia* Hance (Rubiaceae); *Ficus pumila* L. (Moraceae); *Mallotus nepalensis* Müll. Arg., *Croton tigilium* L., *Mallotus paniculatus* (Lam.) Müll. Arg., and *Glochidion arborescens* Blume (all Euphorbiaceae); *Hicriopteris chinensis* (Rosenst.) Ching (Gleicheniaceae); *Alsophila podophylla* Hook. (Cyatheaceae); *Murdannia triquetra* G. Brückn. (Commelinaceae); *Monstera deliciosa* Liebm. (Araceae); and *Buddleja lindleyana* Fortune (Loganiaceae). Two other species of *Hoya* are recorded from the same area: *H. chinghungensis* (Tsiang & P. T. Li) M. G. Gilbert, P. T. Li & W. D. Stevens and *H. lyi* H. Lévl.

IUCN Red List category. *Hoya daimenglongensis* is currently known only from the type locality; beyond this, there is lack of additional information. For now, the species should be classified as Data Deficient (DD), according to IUCN Red List criteria (IUCN, 2001).

Phenology. *Hoya daimenglongensis* was collected with flowers in August. The fresh flowers have a noticeable fragrance.

Etymology. The new species' epithet refers to the type locality in Damenglong, Yunnan Province, China.

Discussion. *Hoya daimenglongensis* is characterized by the internal surface of the corolla being minutely tomentose and lacking papillae, and by the white corona lobes rounded and tinged with red at the outer angles. This species could be most confused with the morphologically similar *H. linearis*, with both taxa having linear and pubescent leaf blades of similar size (slightly shorter in *H. linearis*, $2.5\text{--}5 \times 0.5$ cm), with the entire abaxial surface whitened, but the adaxial surface otherwise green. The two species also share a pendent habit and terminal inflorescences. Petioles are brief, no more than 3 mm, in both species, but villose in *H. tsiangyingiana* and hirsute in *H. linearis*. *Hoya linearis*, however, is easily distinguished by its glabrous or internally papillose corolla, by the corona lobes that are completely white, and by its broader distribution beyond China, ranging into Nepal, India, and Myanmar.

Three species, *Hoya linearis*, *H. chinghungensis*, and *H. lyi*, are sympatric in Yunnan Province with *H. daimenglongensis*. The following key should aid in the identification of the four species.

KEY TO FOUR SPECIES OF *HOYA* IN YUNNAN PROVINCE, CHINA

- 1a. Pseudumbels terminal 2
- 2a. Leaf blades linear 3
- 3a. Corolla internal surface glabrous or papillose; outer angles of corona lobes acute, white *H. linearis*
- 3b. Corolla internal surface tomentose, nonpapillose; outer angles of corona lobes round, tinged red *H. daimenglongensis*
- 2b. Leaf blade broadly ovate, 1–1.5 cm, lateral veins obsolete *H. chinghungensis*
- 1b. Pseudumbels extra-axillary; leaf blades elliptic, oblong, or elliptic-lanceolate, rarely suborbicular, (3–)5.5–19 cm, lateral veins in 4 to 7 pairs *H. lyi*

Paratype. CHINA. **Yunan:** Daimenglong, on trees in montane tropical rainforest, 1200 m, 21 Aug. 2009, S. Y. He 09080217 (CANT).

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