
A New Species of *Hoya* (Apocynaceae, Asclepiadoideae) from Hainan, China

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ABSTRACT. A new species, *Hoya bawanglingensis* S. Y. He & P. T. Li (Apocynaceae, Asclepiadoideae), is described and illustrated from Hainan, China. The morphological characters of *H. bawanglingensis* and the related species *H. pottsii* Trill are compared. *Hoya bawanglingensis* differs in the pubescence of its young stems, both leaf surfaces, petioles, peduncles, pedicels, outer calyx lobes, and follicles. The corolla lobes are white with purple spots, and the corona is white with a purplish center.

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

Hoya R. Brown (Apocynaceae, Asclepiadoideae) is a genus with at least 100 species distributed from Southeast Asia and Oceania. Thirty-two species are known from China (Li et al., 1995), most of which are found in Hainan, Yunnan, Guangdong, and Guangxi provinces. The genus is primarily distributed in Malaysia, where over 300 species are known, particularly from the Philippines, New Guinea, the western Pacific Islands, and Asia, including the Indian subcontinent. In Australia, there are six native species, among which are one endemic and one naturalized species (Forster & Liddle, 1996).

During our fieldwork on *Hoya* in Hainan Province, China, some unknown specimens of *Hoya* were collected that could not be placed in any of the previously described taxa from China (Tsiang & Li, 1974, 1977; Li et al., 1995) and Australia (Forster & Liddle, 1996), and this taxon is herein established as a new species.

Hoya bawanglingensis S. Y. He & P. T. Li, sp. nov.

TYPE: China. Hainan Province: Bawangling, 19°07'N, 109°06'E, on tree in montane rainforest, 423 m, 8 Aug. 2007, S. Y. He & J. Y. Lin 0708081 (holotype, CANT, photo MO). Figure 1.

Species *Hoyae pottsii* Trill affinis, sed caulibus juvenibus petiolis foliis utrinque pedunculis pedicellis calyce extra et folliculis pubescentibus, lobis corollinis albis purpureo-maculatis atque corona alba mediano purpurea differt.

Plants epiphytic, scandent; stems and branches filiform, elongated, flexuose, terete, with purple maculae on young pubescent stems, aged stems glabrous. Leaves opposite, fleshy and leathery when dry, leaf blades ovate or elliptic, 7.5–10.5 × 3–4.5 cm, pubescent on both surfaces, green adaxially with some purple maculae, green abaxially with many purple maculae, apex acuminate or acute, base rounded or cordate, margin ciliate, 3-veined from base; petiole curved or twisted, terete, pubescent, dark purple or grayish green, ca. 1.2 cm long. Cymes subumbel-shaped with many flowers, ca. 12 to 25; rachis cylindrical; peduncle 7–10.5 cm, pubescent green with dark purple spots; pedicels filiform, slender, 2–2.2 cm, pubescent, white with purple spots. Calyx lobes overlapping at base, apex triangular, acuminate, outside scabrous; corolla rotate, reflexed, ca. 1 cm diam., lobes ovate, 4–7 × 4–5 mm, spreading, outside and inside white with purple spots, inside white pilose; corona raised in the center, lobes rhomboid, 3.5–4 × 2–2.5 mm, with side protrusions higher than inner, inner angles touching in center, white with purplish center, mucronate, outer angle acuminate, canaliculate on lower surface from base to apex; pollinia golden yellow, ca. 600 × 300 μm, germinating crest pellucid, extended to caudicle; caudicle wider toward pollinium, ca. 75 μm long; ovaries purplish white. Follicles fusiform, 8–10.5 × ca. 0.8 cm, dark purple; seeds linear-oblong, ca. 4 × 1 mm, brown or dark brown when dry, with white silky coma, ca. 3.5 cm.

Habitat. *Hoya bawanglingensis* was collected from mountain rainforest at 270–430 m altitude, on various species of trees, i.e., *Cleistocalyx operculatus* (Roxburgh) Merrill & L. M. Perry, *Ficus subpisocarpa* Gagnepain, *Machilus salicina* Hance, *Symplocos chunii* Merrill, *Schima superba* Gardner & Champion, *Cyclobalanopsis patelliformis* (Chun) Y. C. Hsu & H. W. Jen, *Vatica mangachapoi* Blanco, *Syzygium buxifolium* Hooker & Arnott, *Semiarundinaria shapoensis* McClure, *Licuala fordiana* Beccari, and *Ardisia densilepidotula* Merrill.

Distribution. *Hoya bawanglingensis* is only known from the type collection, which was found in a small

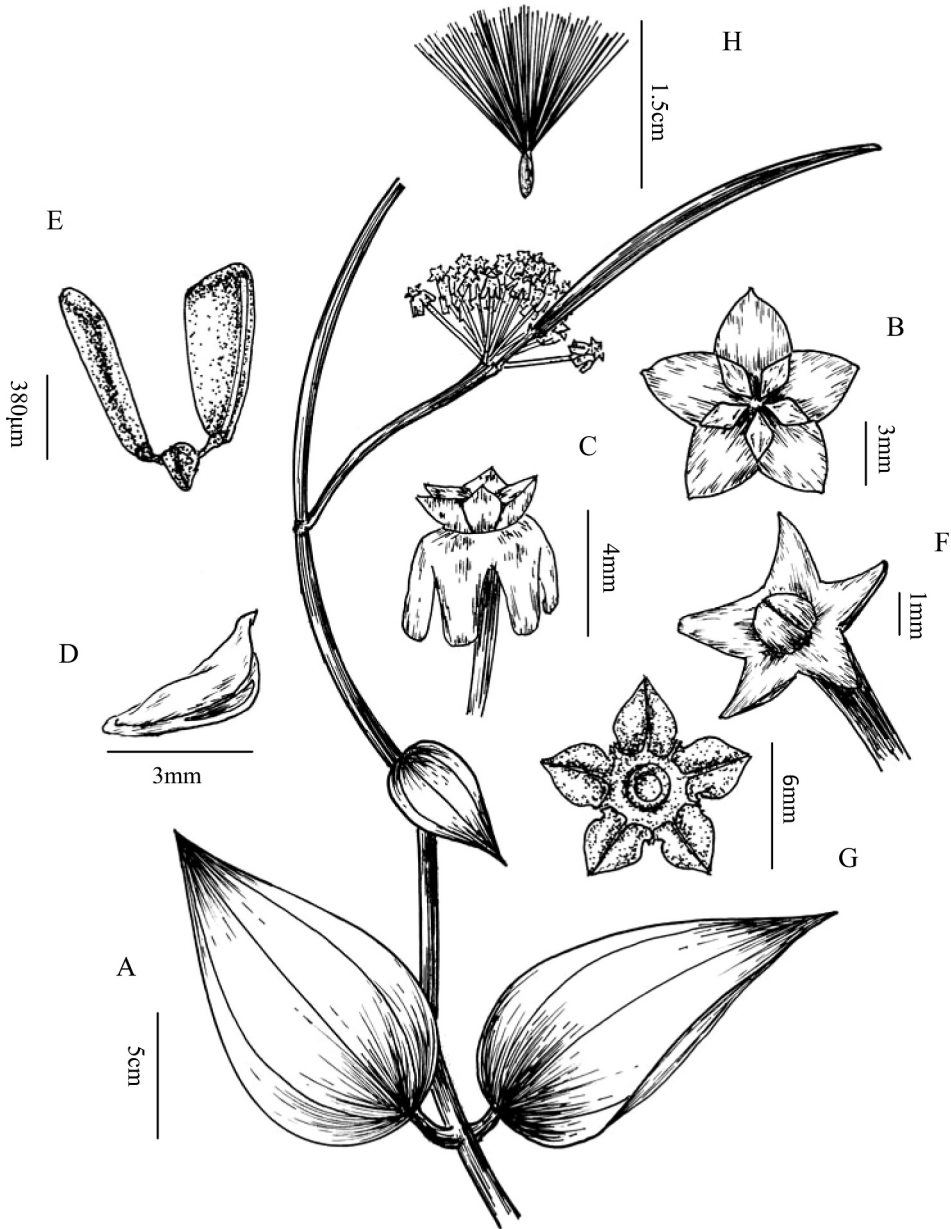


Figure 1. *Hoya bawanglingensis* S. Y. He & P. T. Li. —A. Flowering stem. —B. Flower. —C. Flower, side view. —D. Corona, side view. —E. Pollinarium. —F. Calyx and ovary. —G. Outer corona. —H. Seed and coma. Drawn from the holotype He & Lin 0708081 (CANT).

area in Bawangling, Hainan Province, China. Other species of *Hoya* are found in the Bawangling area at altitudes from 270–1000 m.

IUCN Red List category. *Hoya bawanglingensis* is known only from Hainan. Despite its location in the Bawangling National Nature Reserve, its habitat has been degraded by deforestation resulting from human activities before the area was established as a nature

reserve. The species is apparently rare and restricted in distribution, and is known only from one population with about 150 mature individuals. In addition to possible threats from unforeseen factors, *Hoya* has ornamental, medical, and economic value and is destructively collected in Hainan, which increases the risk of extinction. We therefore recommend that *H. bawanglingensis* be considered Vulnerable (VU C2b) according to IUCN Red List criteria (IUCN, 2001).

Table 1. Diagnostic characters of *Hoya bawanglingensis* and *H. pottsii*, two morphologically similar species.

Characters	<i>H. bawanglingensis</i>	<i>H. pottsii</i>
Young stem		
Indumentum	pubescent	glabrous
Color	purple spots	not described
Leaves		
Shape	ovate or elliptic	ovate-oblong to oblong-lanceolate
Apex	acuminate or acute	acute
Base	rounded or cordate	rounded or subcordate
Length (cm)	7.5–10.5	6–12
Width (cm)	3–4.5	3–6
Indumentum	pubescent on both surfaces, base margin pilose	glabrous on both surfaces, base margin glabrous
Color	green with purple maculae	not described
Basal veins	3	3
Petiole		
Indumentum	pubescent	glabrous
Color	dark purple or grayish green	not described
Flower		
Peduncle	pubescent	glabrous
Pedicels	pubescent	glabrous
Calyx outside	outside scabrous	outside glabrous
Corolla lobe color	white with purple spots	white
Corolla diameter (cm)	1	1
Corolla inside	white pilose	white pilose
Corolla lobe color	white with purplish center	white with reddish center
Ovaries	purplish white	not described
Habitat	mountain forests, on trees, alt. 270–430 m	mountain forests, on trees, alt. below 500 m
Distribution	China: Bawangling, Hainan	China: Guangdong, Guangxi, Hainan, Yunnan

Phenology. The new species was observed to flower from mid-April to August, with fruiting from August to September.

Etymology. The specific epithet refers to Bawangling, Hainan Province, China, the area in which the holotype specimen was collected.

Discussion. *Hoya bawanglingensis* closely resembles *H. pottsii* Traill, which was described in 1830, and is also distributed in China. The two species are similar in the shape and size of the leaves and in the three basal leaf veins. However, the new species differs from *H. pottsii* in the pubescence of its stems, leaf blades on both surfaces, petiole, peduncles, pedicels, outer calyx lobes, and follicles. The stems are slender, and purple spots distinguish the stems, leaf blades, petioles, outer calyx lobes, corolla lobes, and ovaries. Morphological characters of the two species are compared in Table 1.

Paratypes. CHINA. **Hainan:** Bawangling, 19°07'N, 109°06'E, on tree in montane rainforest, 423 m, 8 Aug. 2007, S. Y. He & J. Y. Lin 0708082, 0708083 (CANT).

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