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四花球兰，云南球兰属(夹竹桃科萝藦亚科)一新种

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摘要: 描述了产自云南的球兰属一新种四花球兰(*Hoya tetrantha* J. F. Zhang, Y. H. Tong & N. H. Xia)。该种为附生灌木, 具有一年生的顶生花序和小型叶片, 而与产自缅甸的狄克森球兰(*H. dickasoniana* P. T. Li)相似, 但该种叶片卵形至阔卵形, 先端锐尖, 具短尖头, 花序通常具4朵花, 萼片线形且较长而与后者区别。

关键词: 披针叶球兰复合体; 花序位置; 新种; 云南

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Hoya tetrantha (Apocynaceae, Asclepiadoideae), A New Species from Yunnan, China

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Abstract: *Hoya tetrantha* J. F. Zhang, Y. H. Tong & N. H. Xia (Apocynaceae, Asclepiadoideae), a new species from Yunnan Province, China, is described and illustrated. This species is similar to *H. dickasoniana* P. T. Li in being an epiphytic shrub with annual terminal inflorescences and small leaves, but can be different from the latter by its ovate to broadly ovate leaf blades with an acute and mucronate apex, usually 4-flowered inflorescences and flowers with longer linear sepals.

Key words: *Hoya lanceolata* complex; Inflorescence position; New species; Yunnan

The species of *Hoya* R. Br. are generally climbers with a few species being epiphytic danglers, which do not have twining stems or adventitious roots^[1-2]. There are about 11 dangler species of *Hoya* mainly distributed in eastern India, Nepal, Bangladesh, Bhutan, Myanmar, northern Thailand and southwest China^[3-10]. These species, informally defined as *H. lanceolata* complex^[9], have some characters in common, such as pendulous stems, small leaves closely set along the stems, flat or concave inflorescence with annual

deciduous peduncles, flowers with white corollas and translucent purple or yellow coronas, and so on^[9].

In a field trip to Yingjiang County, Yunnan Province near the border of China and Myanmar, a special dangler species of *Hoya* with small ovate leaves and terminal umbel-like inflorescences was found by the first author. The general characters of this species fit well within the circumscription of the *H. lanceolata* complex. After referring to the related floras and literature^[3-12], and carefully examining the

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herbarium specimens or photos of type specimens, we finally drew the conclusion that this unknown species is new to the science, which is described and illustrated below.

Hoya tetrantha J. F. Zhang, Y. H. Tong & N. H.

Xia, sp. nov. (Fig. 1)

This new species is similar to *H. dickasoniana* P. T. Li, but is distinguished from the latter by having ovate to broadly ovate leaf blade with an acute and mucronate apex, four-flowered inflorescence and linear sepals.

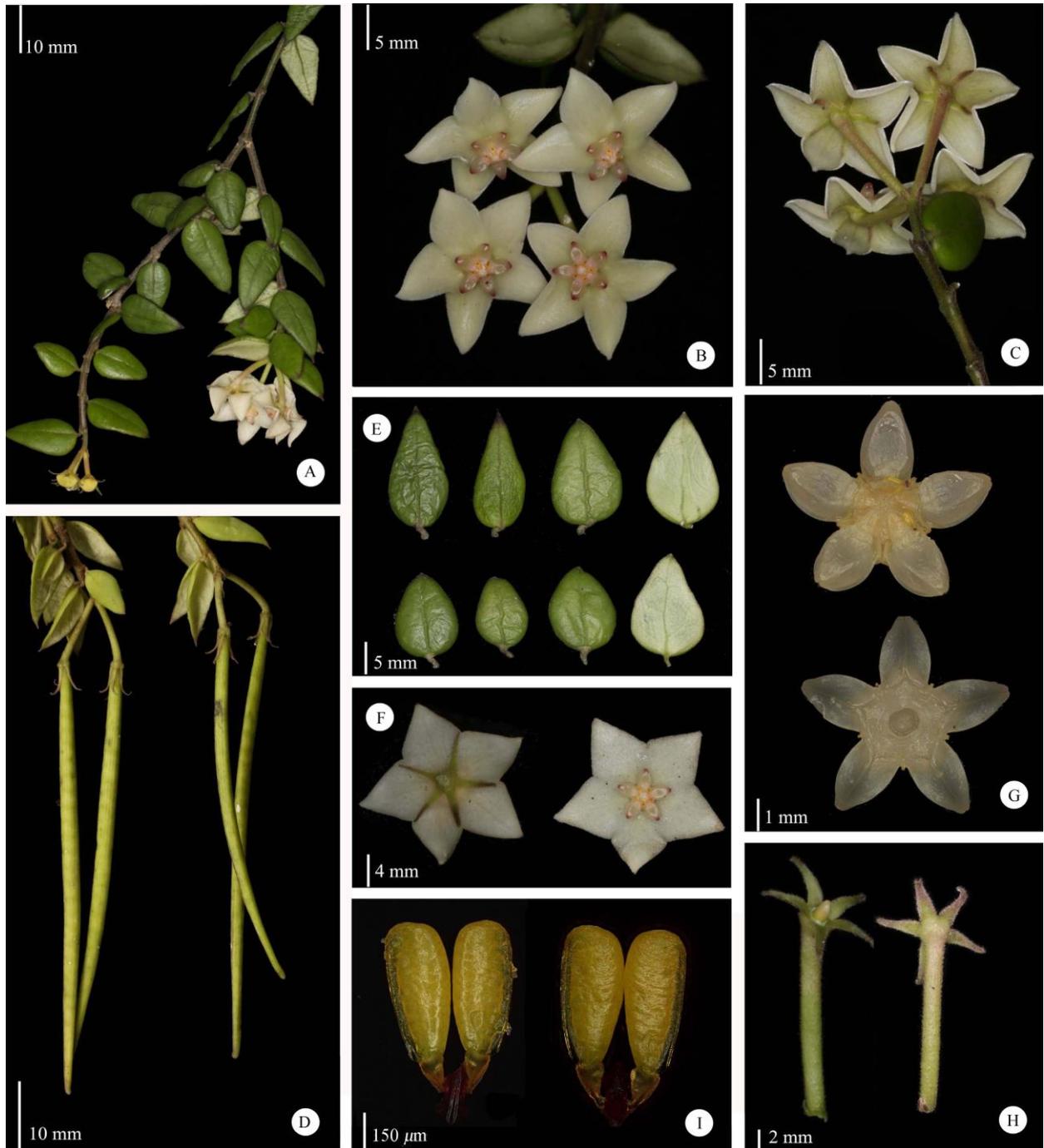


Fig. 1 *Hoya tetrantha* J. F. Zhang, Y. H. Tong & N. H. Xia. A: Flowering branches; B: Inflorescence, top view; C: Inflorescence, back view; D: Infructescences; E: Leaves; F: Flower, abaxial (left) and adaxial (rightmost) view; G: Corona, adaxial (up) and abaxial (below) view; H: Calyx and ovary, abaxial (left) and adaxial (right) view; I: Pollinaria, abaxial (left) and adaxial (right) view.

Type: China, Yunnan, Yingjiang County, Lianhua-shan Xiang, in forests, epiphytic on trees, alt. 1 148 m, 22 April 2017, C. H. Chen & J. F. Zhang SCBG-20170340 (holotype IBSC!, isotype KUN!).

Epiphytic shrubs with milky-white sap in all vegetative parts. Stems much branched, sturdy, hirsute, 50–80 cm long, 3–6 mm in diam.; internodes 5–20 mm long, dark green to nut brown; adventitious roots rare. Leaves opposite, seldom whorled of 3; leaf blade fleshy, ovate to broadly ovate, 8–25 mm×4–10 mm, widest at base, base subrounded or rounded, apex acute and mucronate, adaxially green, slightly convex, glabrous or more or less pubescent, basal colleters absent, abaxially greyish green and sparsely pubescent; lateral veins inconspicuous on both sides, mid-vein and leaf margin ordinarily with purple spots adaxially; petiole slender, 1–3 mm×ca. 0.5 mm, cylindrical, green, pubescent. Inflorescence terminal, umbel-like, concave, (3–) 4-flowered. Bracteoles triangular-lanceolate, 1.8–2.2 mm long, 2.5–3.2 mm long when in fruit, pubescent, apex acute, margin ciliate. Peduncle positively geotropic, annual deciduous, 4–6 mm×ca. 2 mm, green, hirsute. Pedicels filiform, 1.5–1.8 cm long, light green with purple spots, hirsute. Sepals linear, 6–7 mm×0.8–1 mm, 7–8.5 mm long when in fruit, light green with purple spots, pubescent, apex acute, margin ciliate. Corolla flattened to slightly convex, pale yellowish green, 2.1–2.3 cm in diam., tube ca. 1.2 cm diam., campanulate, pubescent adaxially; lobes ovate-triangular ca. 5 mm×6 mm, apex obtuse. Corona stellately spreading, fleshy, white with purple spots, ca. 7 mm diam., ca. 2.5 mm high; lobes ovoid, ca. 3 mm×1 mm×1 mm, apex tinged with purple, outer angles obtuse to rounded, inner angles acute and produced into a recurved simple spine. Pollinia obliquely elongate, ca. 0.5 mm×0.2 mm, margins pellucid. Ovary bi-carpellate, conical, ca. 2 mm tall, carpel ca. 0.6 mm wide at base, light green. Follicles double, 9–10 cm×ca. 0.4 cm, linear, with purple-red spots, hirsute. Seeds linear, flattened, with a tuft of white hairs. All description details come from living material.

Phenology: The species blooms in April to May and fruits in December to January next year.

Etymology: The specific epithet refers to its four-flowered inflorescence.

Habitat and distribution: *Hoya tetrantha* is epiphytic on tree trunks in evergreen broad-leaved forest at altitudes of 1 100–1 200 m. It is so far only known from the type locality, i.e. Yingjiang County, Yunnan Province of China.

Additional specimen examined (paratype): China, Yunnan, *ibid.*, 16 September 2016, C. H. Chen & J. F. Zhang SCBG-20160705 (IBSC).

Notes: There are two inflorescence types in the 11 species of *H. lanceolata* complex: seven species have both terminal and axillary inflorescences at the same time, such as *H. lanceolata* Wall. ex Don (the description of the inflorescence of this species in the protologue writes terminal, but the type specimen (*Wallich 8164A*) of this species obviously bears axillary inflorescences), *H. bella* Hook., *H. paxtonii* Nich., *H. vaccinioides* Hook. f., *H. chinghungensis* Gilbert *et al.*, *H. weebella* Kloppenb. and *H. kingdonwardii* P. T. Li, while the other four species, i.e. *H. dickasoniana*, *H. engleriana* Hoss., *H. linearis* Wall. ex Don and *H. daimenglongensis* Shao Y. He & P. T. Li bear terminal inflorescences only. According to our observation, this character is very stable in the species of *H. lanceolata* complex, but seems to be overlooked in many previous studies^[9,15–16]. For now, including our new species, a total of five *Hoya* species are known to only have terminal inflorescences. Among them, *H. daimenglongensis*, *H. linearis* and *H. engleriana* all have linear leaves, which can be easily distinguished from *H. dickasoniana* and this new species. *Hoya dickasoniana*, published by Li (1994) based on only one collection (*F. Kingdon-Ward 21152*), was described as having 3–6-flowered inflorescences. However, after our careful examination of the holotype, it was found that there are two terminal inflorescences with 5 and 7 flowers on the specimen, respectively. So, the accurate number of flowers in one inflorescence of *H. dickasoniana* should be 5–7. *Hoya tetrantha* is different from *H. dickasoniana* in its ovate or broadly ovate (vs. elliptic to ovate) leaf blade with an acute and mucronate (vs. obtuse) apex, (3–)4-flowered

inflorescence (vs. 5–7) and flowers with linear (vs. oblong) sepals 6–7 mm long (vs. 2–2.5 mm). A

detailed comparison between the two species was shown in Table 1.

Table 1 Morphological comparison of *Hoya tetrantha* and *H. dickasoniana*

Character	<i>H. tetrantha</i>	<i>H. dickasoniana</i>
Stem length (cm)	50–80	20–35
Leaf blade shape	Ovate to broadly ovate, widest at base	Elliptic to ovate, widest at the middle
Leaf blade apex	Acute and mucronate	Obtuse
Leaf blade base	Subrounded or rounded	Broadly cuneate or rounded
Number of flowers per inflorescence	(3–)4	5–7
Sepal shape	Linear	Oblong
Sepal size (mm)	6–7×0.8–1	2–2.5×ca. 1

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