

# *Hoya hanhiae* sp. nov. (Apocynaceae, Asclepiadoideae) from central Vietnam

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A new species, *Hoya hanhiae* V. T. Pham et Aver. discovered in central Vietnam is described, illustrated and compared with the related species *H. macrophylla* Bl. and *H. verticillata* (Vahl) G. D. on.

*Hoya* R. Br. (Apocynaceae, Asclepiadoideae) consists of over 200 species that occur in tropical southeast Asia, tropical islands of Pacific Ocean, and Queensland (Li et al. 1995, Forster and Liddle 1996, Forster 2006, Liddle 2009). Twenty four species have been reported from Vietnam up to now (Costantin 1912, Pham 2003, Tran et al. 2011, Pham and Averyanov 2012a, 2012b, Rodda et al. 2013). During a recent field trip, an unknown species of *Hoya* was found in Quang Tri and Khanh Hoa provinces, central Vietnam. After studies of collections stored in Vietnamese herbaria (HN, HNU, HNIP, VNM) and the herbarium of Komarov Botanical Institute (LE), we propose and describe of our plant as a new species.

## *Hoya hanhiae* V. T. Pham et Aver. sp. nov. (Fig. 1–2)

**Type:** Quang Tri province, Hai Lang district, Hai Duong commune, around point 16°43′32″N, 107°20′10″E, 10–50 m a.s.l., secondary tropical evergreen seasonal broad-leaved lowland swamp forest on sandy soil, near sea shore, 5 Aug 2013, T. A. Le PVT 589 (holotype: HNU, isotypes: HN, LE).

### Etymology

The species is named after the plant discoverer Mrs Nguyen Thuy Hanh.

### Description

Epiphytic semiwoody vine with white latex. Young stems, petioles and peduncles pubescent, becoming glabrous when old. Stems twisted, 3–5 m long, rooting at nodes and internodes, green when young, turning brown green, white-gray when old, terete, 2.5–4.0 mm in diameter, with

swollen nodes; internodes to 12 cm long. Leaves decussate, fleshy; petiole twisted, hairy when young, 1.5–3.5(5.0) cm long, 3–4(6) mm in diameter, terete, dark green with dirty purple marks; leaf blade ovate to broadly ovate, glabrous, 6–17 cm long, 4–10 cm wide, rounded to cuneate at the base, shortly acuminate at apex, with entire, slightly revolute margin, 3–5-veined from the base with the 2 veins nearest the margins usually indistinct, visible adaxially, obscure abaxially; secondary veinlets anastomosing-reticulate, glossy green adaxially, dull white–grey, uneven abaxially, with concave veins in old marcescent leaves. Inflorescences extra-axillary, semi-globose, many-flowered and umbel-like; peduncle terete, 2.5–9.0 cm long, 2–4 mm in diameter, swollen at apex, green to dull green. Flowers 25–43; pedicels light yellow to pink, tinged with purple, slender, glabrous, 1.5 cm long, about 0.75 mm in diameter; calyx of 5 sepals, light yellow or light pink, sometimes tinged with dirty purple, triangular, acute, glabrous, about 1.5 mm long and 1 mm wide. Corolla 5-lobed, fleshy, pale yellow to pink-purple, about 1 cm in diameter; lobes broadly ovate, outside glabrous with obscure veins, inside pubescent, about 4 mm long, 3 mm wide, spreading, their apex subacute and margins slightly recurved. Corona of 5 segments, 3.0–3.5 mm in diameter, concave at center; corona segments more or less erect, pink to pink–purple, glossy, grooved outside, 1.8–2.0 mm tall, 0.9–1.1 mm wide, oblong in side view, ovate from above, their outer angle subacute, light pink, inner angle acute, red–pink. Pollinarium with two oblong, golden yellow pollinia about 0.6 mm long, 0.2 mm wide; corpusculum chestnut, about 0.15 mm long and wide. Ovaries 2, free, superior, light green, bottle shaped, about 1.2–1.5 mm tall, 0.9–1.1 mm wide. Follicles narrowly ensiform, about 10 cm long, 0.6–0.8 cm in diameter, light green with many

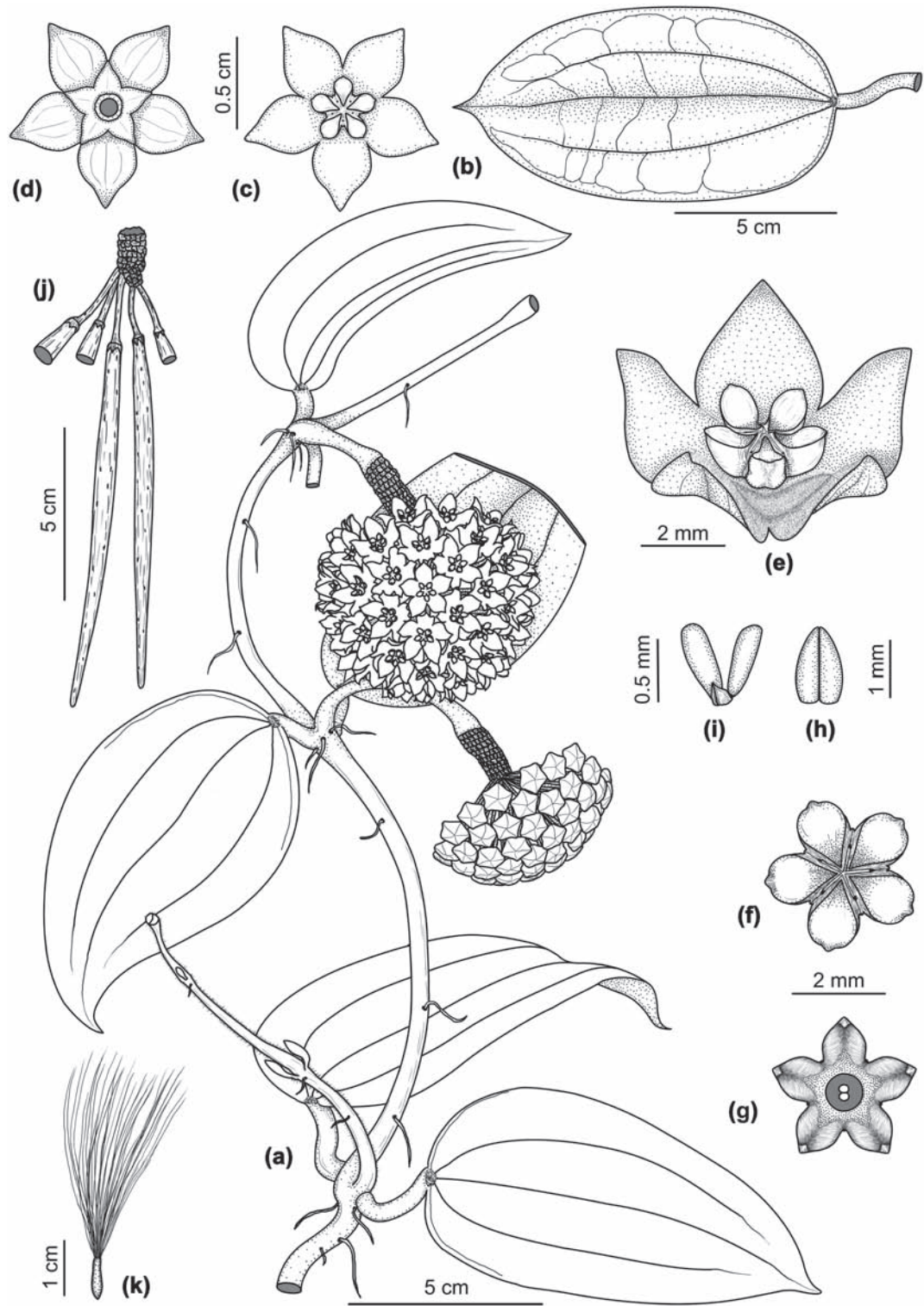


Figure 1. *Hoya hanbiae* sp. nov. (a) flowering plant, (b) leaf, (c) flower, view from above, (d) flower, view from below, (e) flower, view from side, (f) corona, views from above, (g) corona, views from below, (h) ovaries, (i) pollinarium, (j) follicles, (k) seed. Drawn from T. A. Le PVT 588 and T. H. Nguyen PVT 589 by T. H. Nguyen and V. T. Pham.

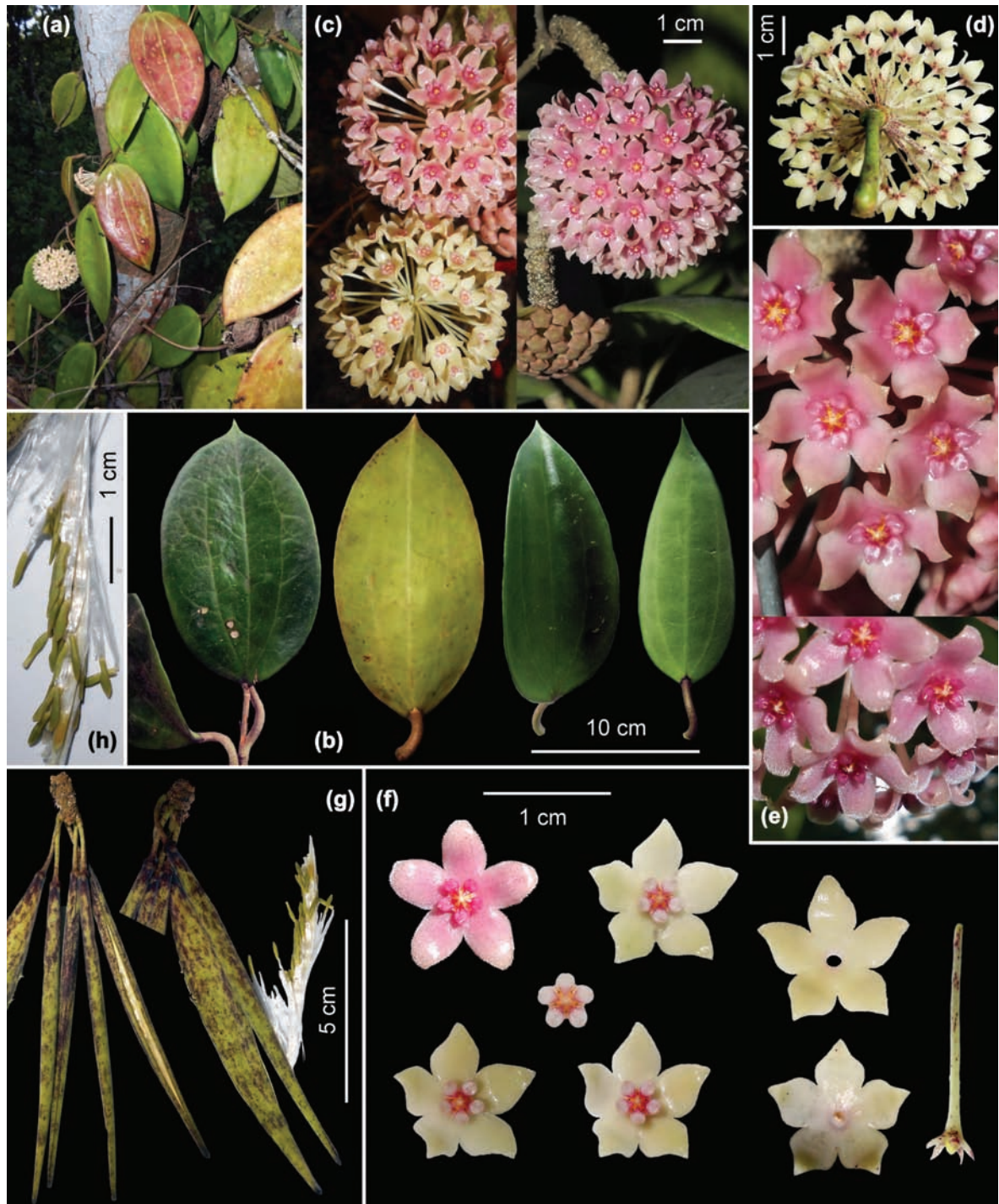


Figure 2. *Hoya hanbiae* sp. nov. (a) flowering plant in natural habitat, (b) leaves, (c) inflorescences with flowers of various coloration, (d) inflorescence, view from below, (e) flowers, frontal and half-side views, (f) flowers and their parts, (g) fruits, (h) seeds. Photographs by T. A. Le and T. H. Nguyen. Design and image correction by L. Averyanov.

dirty purple marks. Seeds numerous, spindle shaped, about 6 mm long and 1 mm wide, apically with a white silky coma, 3cm long.

#### **Distribution**

Lowland coastal areas of Quang Tri (Hai Lang distr.) and Khanh Hoa (vicinities of Nha Trang city) provinces in central Vietnam.

#### **Ecology and phenology**

*Hoya hanbiae* was observed as an epiphytic creeping vine on large old trees in secondary tropical evergreen seasonal broad-leaved lowland swamp forest on sandy soil at elevation 10–50 m a.s.l., near sea shore. The dominating trees and shrubs in habitats of *H. hanbiae* were *Uvaria cordata*, *Cereus repandus*, *Tetracera sarmentosa*, *Barringtonia acutangula*, *Sterculia lanceolata*, *Salacia wrightii*, *Syzygium bullockii*,

Table 1. Comparison of morphological characters of *Hoya hanhiae* sp. nov. and related taxa.

Characters	<i>H. hanhiae</i>	<i>H. macrophylla</i>	<i>H. verticillata</i>
Leaf blade (cm)	6–17 × 4–10	4.5–18.0 × 2.5–8.8	7.0–14.0 × 3.5–6.5
Petiole (cm)	1.5–3.5(5.0)	1.5–3.0	0.5–2.5
Primary vein	visible above, obscure below	distinct on both sides	obscure on both sides
Inflorescence	extra-axillary	axillary	extra-axillary
Peduncle (cm)	2.5–9.0	2–5	3–7
Pedicele (cm)	1.5	1–2	2.5–3.0
Flower color	light pale yellow or pink–purple	white tinged with pink at tip of lobes	white
Calyx segment tip	acute	acute	obtuse
Corolla diameter (cm)	1.0	1.8	1.5
Corolla lobe	inside pubescent	inside pubescent	inside glabrous or weakly pubescent
Corolla lobe shape	broadly ovate, subacute	ovate, acute	ovate, acute
Corona lobe	subacute	triangular	lanceolate

*Memecylon umbellatum*, *Carallia brachiata*, *Gluta wrayi*, *Acronychia pedunculata*, *Fagraea fragrans*, *Garcinia* sp. and *Lithocarpus* sp. Flowering was sporadically observed from June to August. Flowers open late afternoon and close in the morning the following day, caducous in 3–4 days. Fruits were seen in August.

#### Similar species

*Hoya hanhiae* is similar to *H. macrophylla* Bl. and *H. verticillata* (Vahl) G. Don found in Vietnam (Blume 1826, 1847, Costantin 1912, Don 1838, Hoffmann et al. 2002, Pham 2003), but can be morphologically distinguished as summarized in Table 1.

#### Additional specimens examined (paratypes)

Vietnam, Khanh Hoa province, Nha Trang city, Vinh Trung commune, 12°14'26"N, 109°07'55"E, 10–50 m a.s.l., secondary tropical evergreen seasonal broad-leaved lowland forest on sandy soil, near sea shore, 5 Aug 2013, T. H. Nguyen PVT 588 (SGN = Southern Institute of Ecology).

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