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Hoya rostellata (Apocynaceae: Asclepiadoideae), a New Species from Thailand

Manit Kidyoo [(1*)]

1. Department of Botany, Faculty of Science, Chulalongkorn University, Pathumwan, Bangkok 10330, Thailand.
** Corresponding author. Email: kidyoo_m@yahoo.co.th*

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ABSTRACT: The new species *Hoya rostellata* Kidyoo (Apocynaceae: Asclepiadoideae) is described and illustrated. This plant is distributed in the western and northern parts of Thailand, usually grows on limestone rock and climbs up on tree in the forest edge. It is distinguished from the closest relative, *H. siamica* Kerr by leaf shape, leaf base, leaf apex, presence of vein and habitats.

KEY WORDS: Apocynaceae, Asclepiadoideae, *Hoya rostellata*, limestone rock, new species, Thailand

INTRODUCTION

There are over 200 species of *Hoya* R. Br. widely distributed from China, Southeast Asia to Oceania (Li *et al.* 1995, Wanntorp *et al.* 2006). They are members of milkweed family characterized by white or clear latex in all plant parts and the unusual floral morphology, i.e. star-shaped corona and pollinarium with 2 pollinia attached to a corpusculum. Until now, approximately 45 species are reported in Thailand (Kerr 1951, Thaithong 1995, Rodda and Juhonewe 2011, Kidyoo and Watthana 2012, Kidyoo 2013). At present, another species collected from different localities: Kanchanaburi province in western Thailand, Mae Hong Son province and Chiang Mai province in northern Thailand, was found to be an unknown species. It is a climbing epiphyte, usually grows on limestone rock and climbs up on trees. After rigorous studies of herbarium specimens deposited at K, BM, P, L and BKF, no comparable specimens were found, Moreover, its morphological characters did not conform with any reported species. This plant was therefore described as a new species and compared with its closely related species, *H. siamica* Kerr.

TAXONOMIC TREATMENT

Hoya rostellata Kidyoo***, sp. nov.*** Fig. 1&2

Hoya rostellata differs from *H. siamica* mostly in leaf morphology. Its leaves are obovate or oblanceolate with recurved acuminate apex and obtuse or rounded base. Its leaf blade is succulent and rigid with inconspicuous nerves on both sides.

Type:— THAILAND. Chiang Mai province, Chai Prakan district, 1,050 m a.s.l., 1 June 2013, *M. Kidyoo 1590* (holotype BCU, isotype BKF).

Climbing epiphyte with white latex in all parts. Stem and branches cylindrical, 3–4 mm in diam., green or greenish brown to reddish brown with age, glabrous, internodes 10–22 cm long. Leaves opposite; petiole cylindrical, stout, glabrous, 0.8–1.5 cm long, 3–4 mm in diam.; blade thick, rigid, coriaceous, obovate or oblanceolate, slightly v-shape in cross section, 5–11 × 2.5–3.5 cm; margins entire; adaxial surface green, glabrous; abaxial surface pale green, glabrous; apex aristate-acuminate, recurved; base obtuse to rounded; midrib and nerves inconspicuous on both sides, lateral veins 4–5 pairs, acute angles to the midrib. Inflorescences extra-axillary, umbel, 8–21–flowered, peduncle perennial, 0.5–2.50 cm long, 1.5–2.5 mm in diam., glabrous; bracts pink, ovate, apex acute, ca. 0.5 mm long; pedicel glabrous, 1.7–1.9 cm long, 1.4–1.6 mm in diam., pinkish or greenish white with scattered reddish purple spots, glabrous. Calyx greenish to reddish brown, lobes 5, nearly divided to the base, ovate, 1.2–1.4 × 1.1–1.3 mm, apex acute, abaxial surface sparsely pubescent, adaxial with a small basal gland between lobes. Corolla rotate, white or creamy white, ca. 1.5–1.7 cm in diam., adaxial surface densely puberulent except the apex of corolla lobe, abaxial surface glabrous; corolla tube, 3.0–3.2 mm long; corolla lobes triangular-ovate, 4.5–4.7 × 5.0–6.0 mm; margin reflexed, revolute; apex acute, revolute. Corona 6.6–6.8 mm in diam.; coronal scales creamy or pinkish white, fleshy, obovate, 3.2–3.3 × 3.2–3.4 mm, upper surface slightly concave, lower surface sulcate, outer angle slightly raised with obtuse to rounded apex; inner angle raised up higher than outer angle, apiculus of inner angle acute with pink to dark purple color; anther appendages yellow. Pollinaria 5, pollinia obliquely oblong, yellow, 0.82–0.84 × 0.27–0.29 mm, apex truncate, margins pellucid extending over the dorsal margins of the pollinia; caudicles stout, hyaline, ca. 0.1 mm long; corpusculum dark brown, obovate, 0.30–0.33 × 0.16–0.17 mm. Pistil with 2-ovaries, ovoid, glabrous, ca.

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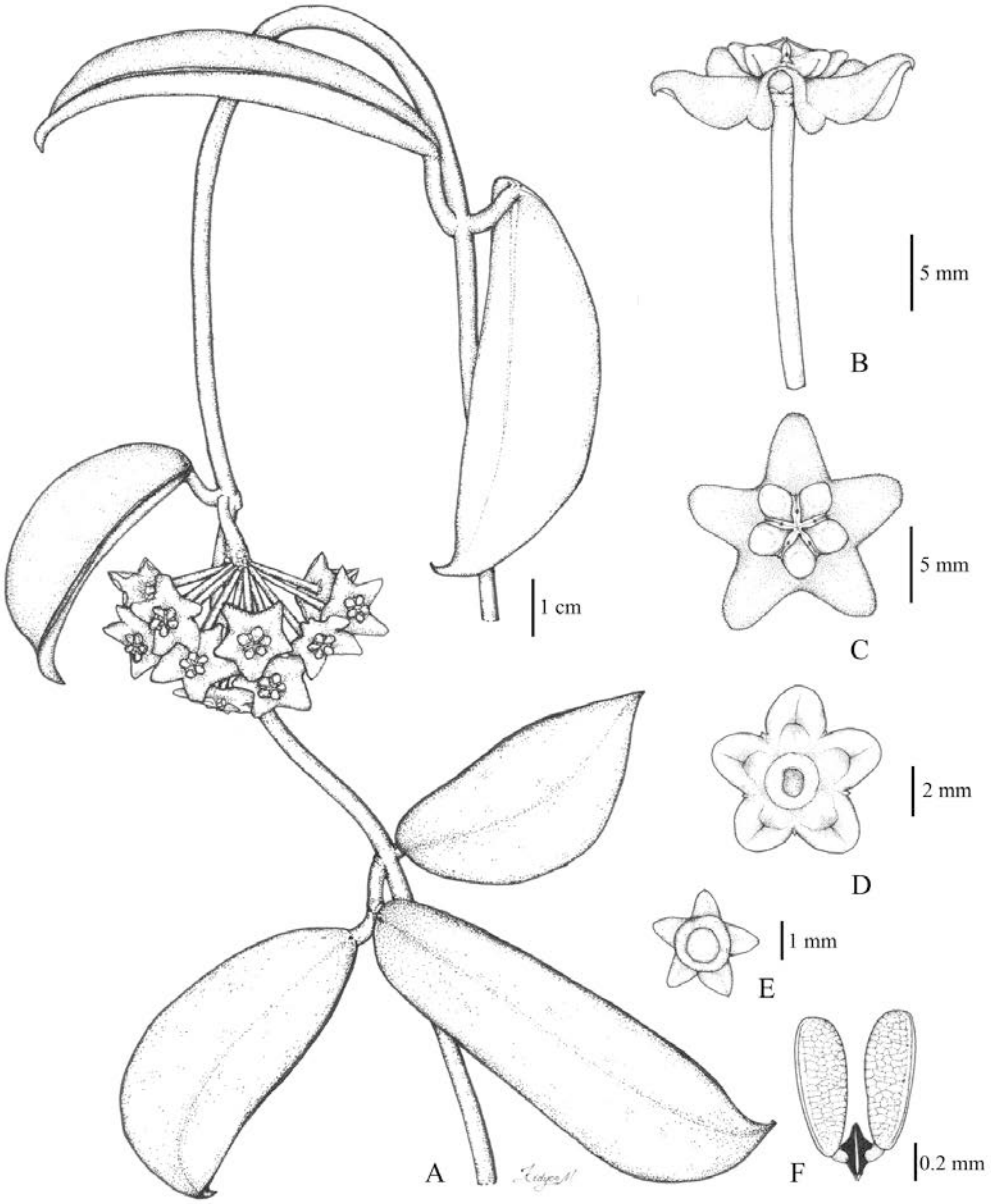


Fig. 1. Illustrations of *Hoya rostellata* Kidyoo. A: Flowering branch. B: Blooming flower, side view. C: Blooming flower, top view. D: Corona, bottom view. E: Calyx. F: Pollinarium. Drawn by Manit Kidyoo from *M. Kidyoo 1590*.

2 mm long, ca. 1 mm in diam.; stigma head conical, subquadrangular. Fruit not seen.

Ecology and distribution: This plant usually grows on limestone rock and climbs up on trees in open or shady areas. It is frequently found in the edge of evergreen forest from about 400 to 1,050m a.s.l.

Etymology: The species is named as '*rostellata*' owing to its leaves with beak-like apex.

Additional specimens examined (paratypes)
Thailand: *Boonkerd et al. 2011-128*, Khao Nan Ya, Kanchanaburi Province, 800m a.s.l., 11 May 2011 (BCU). Thailand: *M. Kidyoo 1020*, Pha Sua Waterfall, Mae Hong Son Province, 400m a.s.l., 27 May 2008 (BCU).

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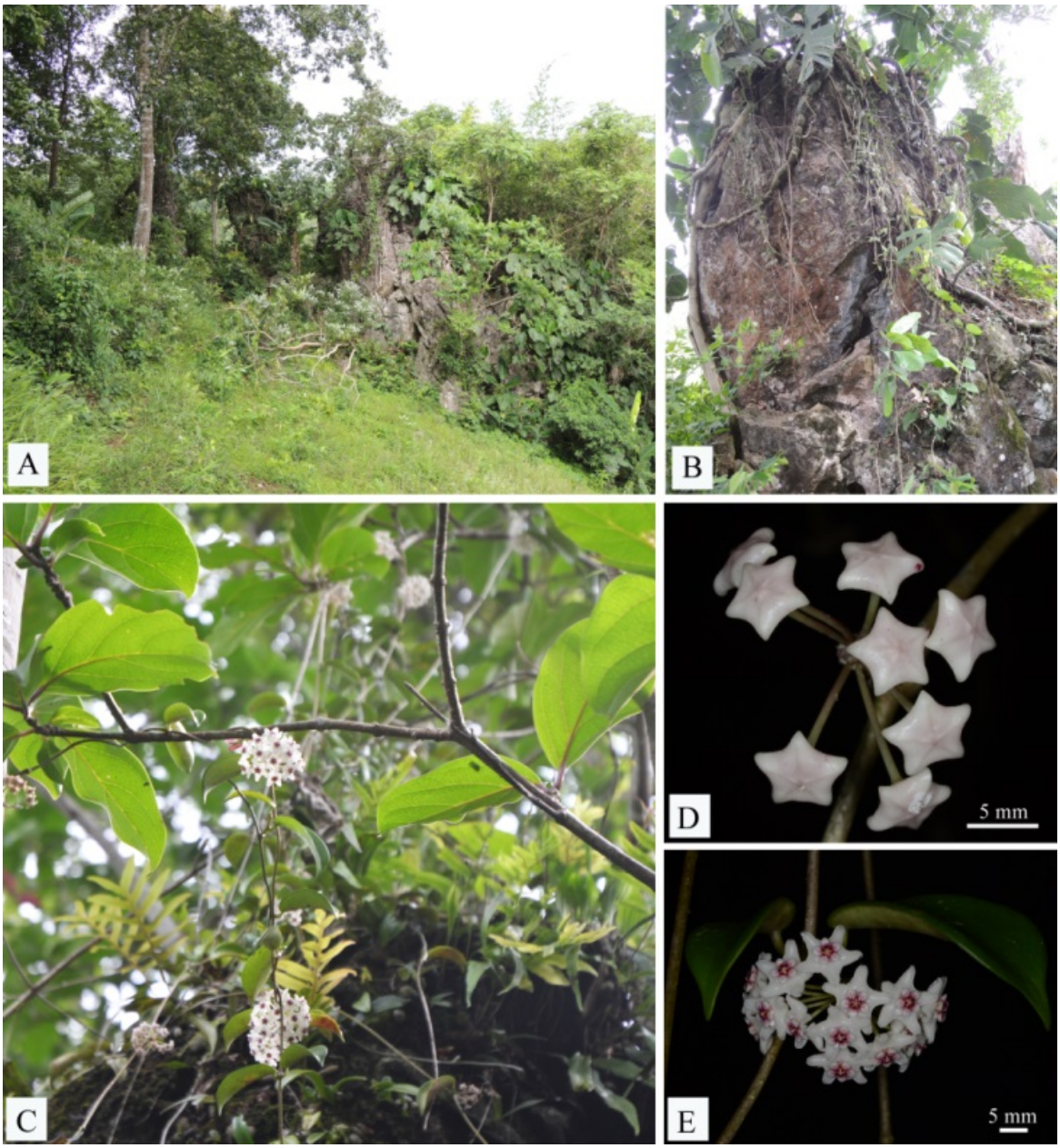


Fig. 2. Photographs of *Hoya rostellata* Kidyoo. A-B: Habitat. C: Flowering branch. D: Inflorescence with flower buds. E: Inflorescence with blooming flowers.

DISCUSSION

Hoya rostellata is morphologically most similar to *H. siamica* Craib. These two species have many floral characteristics in common: flat or slightly erect corona scales, rotate corolla, corolla lobes being ovate, elliptic or obovate with acute or obtuse apex and reflexed or revolute margin as well as presence of dense hairs on adaxial surface of corolla lobes. Moreover, both species are climbing epiphyte with twinning glabrous stem and coriaceous glabrous leaves. They also exude milky latex from all parts. However, *H. rostellata* have many distinct leaf characters so that it can be clearly separated from *H. siamica*. Leaf shape of *H. rostellata* is obovate to oblanceolate with obtuse to rounded base. Its leaf blade is rigid and succulent with obscure veins on both sides. Its leaf apex is rigid, aristate-acuminate and strongly recurved. On the other hand, *H. siamica* has ovate, lanceolate or elliptic leaves with cuneate or attenuate base and acute or acuminate apex which is not rigid and recurved. Its leaf veins are grooved and clearly visible on the adaxial surface of the blade (Fig. 3).

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In addition, *H. rostellata* differs further from *H. siamica* by its habitats. *H. rostellata*, found in western and northern Thailand, usually grows on limestone rock and climbs up on tree in open or shady areas of the edge of evergreen forest from about 400 to 1,050m a.s.l. where the weather is usually dry in hot season. On the other hand, *H. siamica* has a wider range of distribution. It occurs in northern, northeastern, western and southern parts of Thailand (Tungmunnithum *et al.* 2011), usually in hill evergreen forest at more than 1,000m a.s.l. where there is cold weather and high humidity throughout the year.

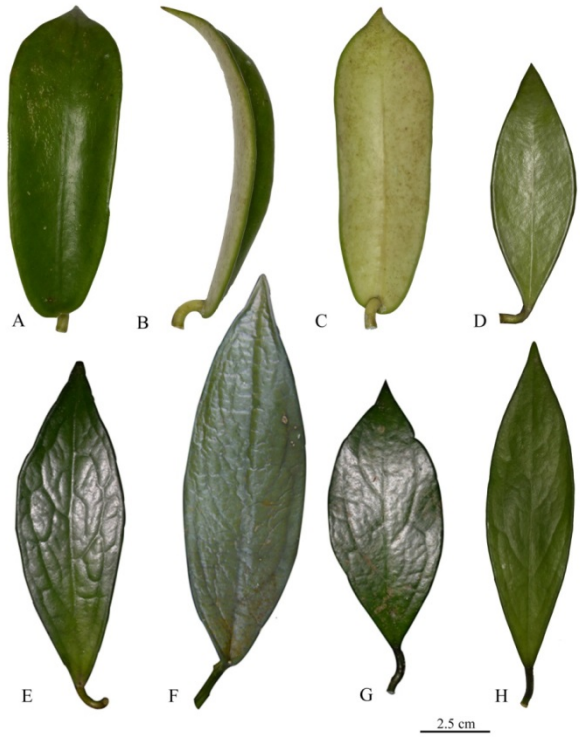


Fig 3. Leaves of *H. rostellata* and *H. siamica*. A-C: *H. rostellata*, A: top view. B: side view. C: bottom view. D-H: *H. siamica*, D: specimen from Khao Yai National Park (D. Tungmunnithum 7). E: specimen from Phu Luang Wildlife Sanctuary (D. Tungmunnithum 16). F: specimen from Doi Inthanon National Park (D. Tungmunnithum 52). G: specimen from Doi Inthanon National Park (D. Tungmunnithum 41). H: specimen from Doi Suthep Pui National Park (M. Kidyoo1595).

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