

Hoya sapaensis (Apocynaceae, Asclepiadoideae), a new species from Vietnam

The Bach Tran¹, Michele Rodda^{2,*}, Joo-Hwan Kim³, Joongku Lee⁴,
Dong-Kap Kim³ & Bui Thu Ha⁵

¹ Department of Botany, Institute of Ecology and Biological Resources, Vietnam Academy of Science and Technology, 18 Hoang Quoc Viet, Cau Giay, Hanoi, Vietnam

² The Herbarium, Singapore Botanic Gardens, 1 Cluny Road, 259569 Singapore (*corresponding author's e-mail: rodma.michele@gmail.com)

³ Department of Life Science, Kyungwon University, 65 Bokjeong-dong, Seongnam, Gyeonggi-do 461-701, Korea

⁴ Korea Research Institute of Bioscience and Biotechnology, 125 Gwahak-ro, Yuseong-gu, Daejeon 305-806, Korea

⁵ Hanoi National University of Education, 136, Xuan Thuy Street-Cau Giay District, Hanoi, Vietnam

Received 16 Sep. 2010, revised version received 25 Dec. 2010, accepted 27 Dec. 2010

Tran, T. B., Rodda, M., Kim, J. H., Lee, J., Kim, D. K. & Ha, B. T. 2011: *Hoya sapaensis* (Apocynaceae, Asclepiadoideae), a new species from Vietnam. — *Ann. Bot. Fennici* 48: 511–514.

Hoya sapaensis T.B. Tran & Rodda *sp. nova* (Apocynaceae) from Vietnam is described, illustrated and compared with the morphologically similar *H. carnosae* and *H. bonii*. *Hoya sapaensis* distinctly differs in the length of the pollinium and corpusculum, number of flowers per inflorescence, and the shape of the corolla.

The genus *Hoya* comprises approximately 200 species (Kleijn & Donkelaar 2001) mainly distributed in the SE Asian region, particularly in the Philippines, New Guinea, Western Pacific Islands and southern Asia including the Indian subcontinent (Tsiang & Li 1977, Li *et al.* 1995, Forster & Liddle 1996). They are commonly used for ornamental purpose since they have beautiful and often fragrant flowers.

In Vietnam, 19 species of *Hoya* have been recorded so far (Costantin 1912, Ho 1993, Li *et al.* 1995, Tran 2005). The study of herbarium specimens from the Sapa area in Vietnam allowed us to identify a new *Hoya* species. It appears to be related to *Hoya carnosae* and *H. bonii* but differs mainly by the length of the pol-

linium and corpusculum, and by having fewer flowers per inflorescence.

Hoya sapaensis* T.B. Tran & Rodda, *sp. nova (Figs. 1 and 2)

Species nova affinis Hoyae carnosae, sed inflorescentia cum 3–5 flores, pollinium 0.95 mm altum, corpusculum circa 0.76 mm altum.

TYPE: Vietnam. Lao Cai province: Sapa district, on the way to Fanxifan peak from Ton station to Sapa pass, 13 Sep. 2005 Vu Xuan Phuong, Duong Duc Huyen, Nguyen Van Du, Nguyen Quoc Bihn, Do Thi Xuyen, Rogier de Kok, Gemma Bramley, Gill Challen, Maria Vorontsova HNK 239 (holotype HN; isotype K).

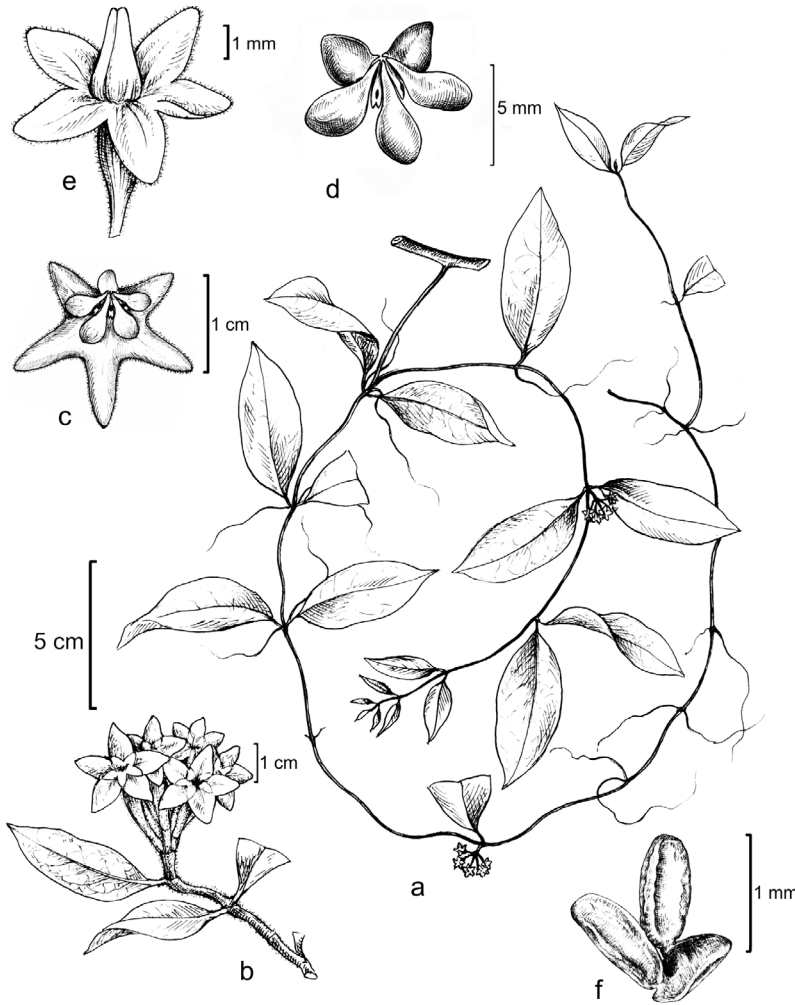


Fig. 1. *Hoya sapaensis* (from the holotype, drawn by Le Kim Chi). — **a:** Flowering branch. — **b:** Inflorescence. — **c:** Flower. — **d:** Corona. — **e:** Calyx, ovary. — **f:** Pollinarium.

Epiphytic non-twining climber growing appressed to host tree trunk but also producing scandent stems, adventitious roots at nodes; stem longitudinally grooved, pubescent; internodes 1.5–6 cm long. Petiole 7–10 mm long, 1 mm diam., pubescent; leaves opposite, fleshy, leaf blade oblong, 3.8–7.5 cm long, 1.3–3 cm wide, pubescent on both surfaces, margins ciliate and revolute; base and apex acuminate; lateral veins 3–5 pairs, retinerved. Inflorescences extra-axillary, 3–7-flowered; peduncle ca. 1 cm long, pubescent; flowers 17–20 mm diam.; pedicel pubescent, 2–2.5 cm long, 1 mm diam.; sepals ovate, 3 mm long, 1.5 mm wide, inside glabrous, outside pubescent, margin ciliate, apex and base round; corolla fleshy, rotate, pinkish-yellowish, inside pubescent, outside glabrous; corolla lobes

triangular-shaped, reflexed, forming a 45°–60° angle with the pedicel, 6–7 mm long, 4 mm wide; corona ca. 8.5 mm diam., fleshy, glabrous; corona lobes 5, ovoid, outer process rounded, pinkish-yellowish; inner process acuminate, straight, extending above anther appendages, pinkish; pollinia erect, lanceolate-oblong, 0.95 mm long, 0.41 mm wide, margin translucent; corpusculum 0.76 mm long, 0.36 mm wide; caudicle 0.2 mm long, attached in center of corpusculum; ovary bi-carpellate, 2 mm high, glabrous. Flowering in September. Fruits and seeds not seen.

Hoya sapaensis is closely similar to *H. carnosa* and *H. bonii*, sharing their not-twining epiphytic habit, the leaf shape, the flower size and the acuminate inner process of the corona



Fig. 2. *Hoya sapaensis*. — **A:** Flowering branch. — **B:** Inflorescence. — **C** and **D:** Pollinarium. **A** and **B** (from type specimen) were taken *in situ* by Nguyen Van Du, **C** and **D** (from the holotype) were taken at the Department of Life Science, Kyungwon University, Korea.

lobes. A morphological comparison among *H. sapaensis*, *H. carnosa* and *H. bonii* is presented in Table 1. *Hoya sapaensis* thrives in montane evergreen primary forest at ca. 2000 m. It is apparently endemic to Vietnam.

REPRESENTATIVE SPECIMENS EXAMINED. — *Hoya sapaensis* (paratype): **Vietnam**. Lao Cai prov., Sapa distr., on the track to Fansipan peak from Ton station, 2000 m altitude, 13 Sep. 2005 Vu Xuan Phuong *et al.* HNK 285 (K). — *Hoya bonii*: **Vietnam**. Tonkin, Mt. Vo-xa (Bon) 19 June 1884, without collector (P-00645999, type).

Table 1. Morphological comparison of *Hoya sapaensis*, *H. carnosa* and *H. bonii*.

Characters	<i>H. sapaensis</i>	<i>H. carnosa</i>	<i>H. bonii</i>
Leaf			
Length (cm)	3.8–7.5	3.5–13	10
Width (cm)	1.3–3	3–5	7
Flower			
Shape of inflorescence	flat	globular	globular
Number of flowers per inflorescence	3–7-flowered	ca. 30-flowered	more than 17-flowered
Diameter (mm)	17–20	15–20	12–20
Corolla	reflexed	flat	flat
Corona lobe shape	ovoid	deltoid, flattened	deltoid, flattened
Corona lobe outer process	rounded	acute to slightly rounded	acute to slightly rounded
Pollinium length (mm)	0.95	0.75	0.75
Corpusculum length (mm)	0.76	0.2	0.125

Acknowledgments

We thank the directors and curators of HN, HNU, HNPM, IBK, K, KUN, KYO, P, SING, TI, TO, TUT, and VNM for the use of specimens, and Prof. Dr. Tran Dinh Ly for the Latin description. It is a great pleasure to thank the artist Le Kim Chi for the figures. We are grateful to Dr. Nguyen Van Du and the botanists of the Institute of Ecology and Biological Resources, Vietnam Academy of Science and Technology for collecting specimens of *Hoya*, and to two anonymous reviewers for their valuable comments on the manuscript. Funding for this research was provided by KOSEF programmes, Korea Research Institute of Bioscience and Biotechnology, NAFOSTED grant no. 106.11.41.09 and project "Bioprospecting on Biological Materials of Vietnam". It was also partially funded by the National Parks Board, Singapore and Synthesys grant no GB-TAF-5657, DE-TAF-675 and NL-TAF-676 to M. Rodda.

References

- Costantin, J. 1912: Asclépiadacées. — *Flore Générale de L' Indo-Chine* 4(1): 1–154. Masson et Cie, Paris.
- Forster, P. I. & Liddle, D. J. 1996: *Flora of Australia*, vol. 28: 231–237. — CSIRO, Canberra.
- Ho, P. H. 1993: *Cay co Viet Nam: An illustrated flora of Vietnam*, vol. 2(2): 910–949. Mekong Printing, Montreal.
- Kleijn, D. & Donkelaar, R. 2001: Notes on the taxonomy and ecology of the genus *Hoya* (Asclepiadaceae) in central Sulawesi. — *Blumea* 46: 457–483.
- Li, P. T., Gilbert, M. G. & Stevens, W. D. 1995: Asclepiadaceae. — In: Wu, Z. Y. & Raven, P. H. (eds.) *Flora of China*, vol. 16: 189–270. Sci. Press, Beijing & Missouri Bot. Garden Press, St. Louis.
- Tran, T. B. 2005: Asclepiadaceae. — In: Ban, N. T., Khoi, N. K. & Phuong, V. X. (eds.), *Checklist of plant species of Vietnam* 3: 58–75. Vietnamese Acad. Sci. Technol., Missouri Bot. Garden & Hanoi Nat. Univ., Agric. Publ. House, Hanoi.
- Tsiang, Y. & Li, P. T. 1977: Asclepiadaceae. — In: Tsiang, Y. & Li, P. T. (eds.), *Flora Reipublicae Popularis Sinicae*, vol. 63: 475–492. Sci. Press, Beijing. [In Chinese].