

## *Hoya baishaensis* (Apocynaceae), a new species from Hainan, China

Shao-Yun He, Xue-Ying Zhuang\*, Ping-Tao Li, Jia-Yi Lin & Min Li

South China Agricultural University, Guangzhou 510642, P. R. China (\*corresponding author's email: xyzhuang@scau.edu.cn)

Received 20 Mar. 2007, revised version received 14 Jan. 2008, accepted 25 Jan. 2008

He, S. Y., Zhuang, X. Y., Li, P. T., Lin, J. Y. & Li, M. 2009: *Hoya baishaensis* (Apocynaceae), a new species from Hainan, China. — *Ann. Bot. Fennici* 46: 155–158.

*Hoya baishaensis* S.Y. He & P.T. Li *sp. nova* (Apocynaceae) from Hainan, China is described and illustrated. The morphological characteristics of *H. baishaensis* and the fairly similar *H. griffithii* and *H. radicalis* are compared. *Hoya baishaensis* differs in its leaf shape, pedicel, calyx and corolla color.

Key words: Apocynaceae, *Hoya*, new species, taxonomy

*Hoya* has at least 100 and perhaps 200 to 300 species, and is mainly distributed in the Malayan region, particularly in the Philippines, New Guinea, the western Pacific Islands, and southern Asia, including the Indian subcontinent (Tsiang & Li 1977, Li *et al.* 1995, Forster & Liddle 1996). There were only 22 species, 3 varieties and 2 forms recorded in *Flora Reipublicae Popularis Sinicae* (Tsiang & Li 1977). However, a number of additional species have been named in the past decades. The recent English version of *Flora of China* recorded 32 species and one variety, including two widely cultivated ornamental plants, *H. kerrii* and *H. lacunosa* (Li *et al.* 1995).

Yunnan and Guangxi are the main distribution area of *Hoya* in China, with 22 and 14 species respectively (Table 1). Ten species have been recorded from Hainan, including two endemics, *H. dasyantha* and *H. lasiogynostegia*. During an expedition to Baisha County, Hainan Province, China, two unknown specimens of *Hoya* were collected in a slightly disturbed montane rainforest in August 2006. After examining

the flowers and checking the relevant literature (Hooker 1885, Merrill 1932, Tsiang & Li 1974, 1977, Hill 1998, Gilbert *et al.* 1995, Li *et al.* 1995, Forster & Liddle 1990, 1996, Jagtap & Singh 1999), we found them to be most similar to *H. griffithii* and *H. radicalis*. However, the present specimens differ from *H. griffithii* in the shorter pedicel and green corolla with purple spots; and they differ from *H. radicalis* in having obscure lateral veins, glands at the base of the leaf blade, and a green corolla with purple spots, as well as being glabrous throughout.

***Hoya baishaensis* S.Y. He & P.T. Li, *sp. nova* (Fig. 1)**

*Hoya griffithii* affinis, sed a qua plantae omnino glabris, foliis angusto-ellipticis apice acuminatis basi attenuatis, flore parvus, 1.5–2(2.8) cm diametro, pedicellis, calycibus et corollis extra viridulis et purpureis maculis, corollis intra viridulis differt.

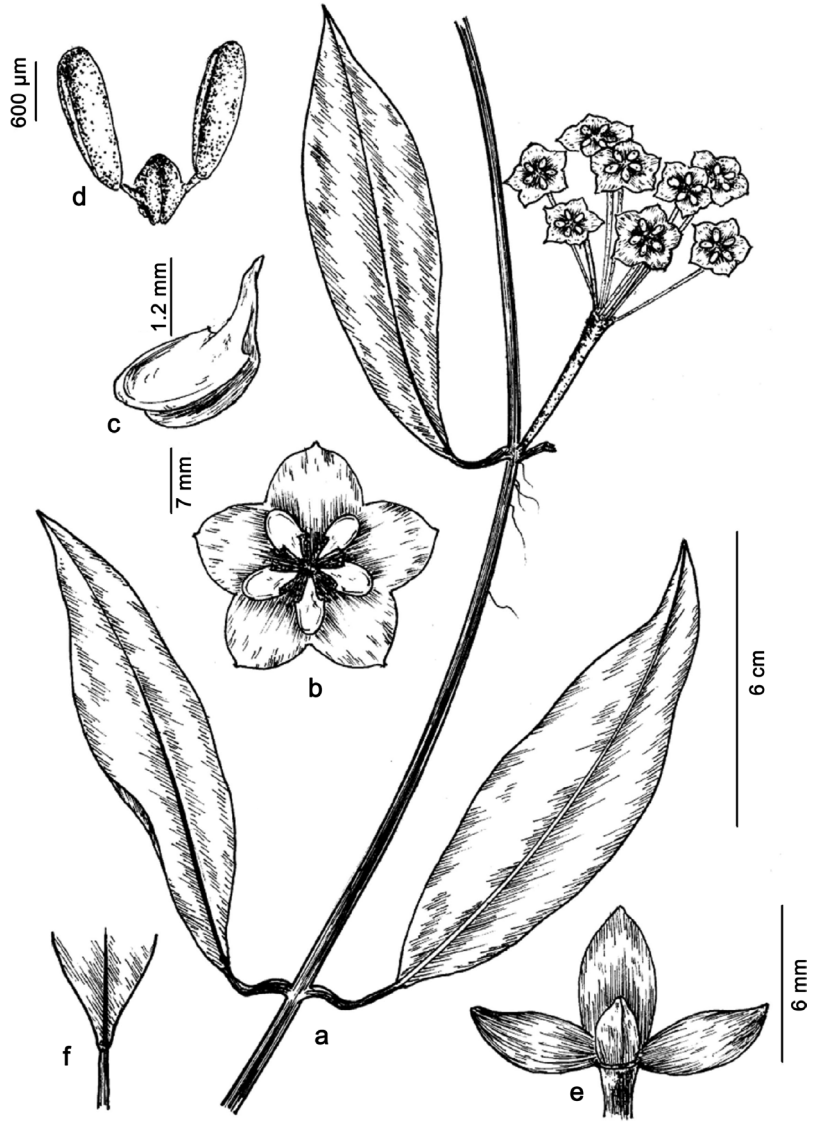
TYPE: China. Hainan Province, Baisha County, alt. 786 m, 19°11'N, 109°19'E, on exposed rock surfaces in an undisturbed montane rainforest, 1.VIII.2006 *Shao-yun He, Ping-tao Li & Jia-yi Lin 608011* (holotype CANT), 608012 (paratype CANT).

Shrubs, epiphytic, glabrous throughout. Stems stout, climbing to 3 m. Leaf blade narrowly elliptic, 7–21 cm long, 3.5–5 cm wide, base attenuate, apex acuminate; midrib prominent on both surfaces, lateral veins obscure, lower surface greenish, upper surface green. Petiole 1.5–4 cm long. Inflorescences extra-axillary, umbelliform, ca. 8 flowered; peduncle 3–4

cm long. Pedicels 2–3.5 cm long, with purple or purplish brown spots in an irregular mosaic pattern. Calyx lobes 5, inner lobes without basal glands, sepals ovate, ca. 1 mm long, apex acute, outside with purple or purplish brown spots. Corolla fleshy, inner surfaces green, outer surfaces greenish with purple spots, ca. 1.5–2(2.8) cm in diam., lobes ovate-triangular, 7 mm long, 5 mm wide, valvate, stellate-spreading. Corona lobes fleshy, white, outside angle rounded, inner angle acute. Stamens shortly connate, apical membrane of anthers appressed against stigma head; pollinia 2 per pollinarium, oblong, erect,

**Table 1.** Species of *Hoya* in China and their distribution. + = present, – = absent, # = also in other countries in southeast Asia.

	Yunnan	Guangxi	Hainan	Guangdong	Guizhou	Xizang	Taiwan	Sichuan	Fujian	Outside China
<i>Hoya carnosa</i>										
var. <i>carnosa</i>	+	+	+	+	–	–	+	–	+	#
<i>H. carnosa</i>										
var. <i>gushanica</i>	–	–	–	–	–	–	–	–	+	–
<i>H. chinghungensis</i>	+	–	–	–	–	–	–	–	–	–
<i>H. commutata</i>	–	+	–	–	–	–	–	–	–	#
<i>H. cordata</i>	–	+	–	–	–	–	–	–	–	–
<i>H. dasyantha</i>	–	–	+	–	–	–	–	–	–	–
<i>H. fungii</i>	+	+	+	+	–	–	–	–	–	–
<i>H. fusca</i>	+	+	+	–	+	+	–	–	–	#
<i>H. griffithii</i>	+	+	+	+	+	–	–	–	–	#
<i>H. lasiogynostegia</i>	–	–	+	–	–	–	–	–	–	–
<i>H. liangii</i>	–	–	+	–	–	–	–	–	–	–
<i>H. lii</i>	+	–	–	–	–	–	–	–	–	–
<i>H. linearis</i>	+	–	–	–	–	–	–	–	–	#
<i>H. lipoensis</i>	–	–	–	–	+	–	–	–	–	–
<i>H. longifolia</i>	+	–	–	–	–	–	–	–	–	#
<i>H. lyi</i>	+	+	–	–	+	–	–	+	–	–
<i>H. mekongensis</i>	+	–	–	–	–	+	–	–	–	–
<i>H. mengtzeensis</i>	+	+	–	–	–	–	–	–	–	–
<i>H. multiflora</i>	+	+	–	–	–	–	–	–	–	#
<i>H. nervosa</i>	+	+	–	–	–	–	–	–	–	–
<i>H. ovalifolia</i>	–	–	+	–	–	–	–	–	–	#
<i>H. pandurata</i>	+	–	–	–	–	–	–	–	–	–
<i>H. polyneura</i>	+	–	–	–	–	–	–	–	–	–
<i>H. pottsii</i>	+	+	+	+	–	–	+	–	–	–
<i>H. radicalis</i>	+	+	–	+	–	–	–	–	–	–
<i>H. revolubilis</i>	+	+	–	–	–	–	–	–	–	–
<i>H. salweenica</i>	+	–	–	–	–	–	–	–	–	–
<i>H. siamica</i>	+	–	–	–	–	–	–	–	–	#
<i>H. silvatica</i>	+	–	–	–	–	+	–	–	–	–
<i>H. thomsonii</i>	–	–	–	–	–	+	–	–	–	#
<i>H. villosa</i>	+	+	+	–	+	–	–	–	–	#
Total	22	14	10	5	5	4	2	1	2	11



**Fig. 1.** *Hoya baishaensis* (from the holotype). — **a**: Flowering stem. — **b**: Flower close-up. — **c**: Side view of stamen and corona. — **d**: Pollinarium. — **e**: Calyx and ovary. — **f**: Glandule at the base of leaf blade.

with raised translucent margin. Stigma short, subapiculate. Ovaries 2, free, superior. Fruit not seen. Flowering July–September.

A comparison of *H. baishaensis* with *H. griffithii* and *H. radicalis* is in Table 2.

REPRESENTATIVE SPECIMENS EXAMINED. — *Hoya griffithii*. **China**. Hainan Province. Hung Mo Shan, 23.VIII.1929 *Ip Yuk Shing* 1861 (IBSC!); Ya County, dense forest, 6.VIII.1933 *H. Y. Liang* 62726 (IBSC!). Guangdong Province. Dongkeng, Dinghushan, mountain valley, rock-dwelling, 24.IX.1980 *G. L. Shi* 463678 (IBSC!). Guangxi Province. Tiane, alt. 300 m, 1958 *C. T. Li* 601224 (IBSC!). — *Hoya radicalis*: **China**. Guangdong Province. Maomi, 1956 *L. Tang* 1859 (holotype

IBSC!). Guangxi Province. Tiane, 1958 *C. T. Li* 601507 (IBSC!); Shangsi, 1951 *W. C. Ko* 995 (IBSC!).

### Acknowledgements

The study was financially supported by the Science and Technology Fund of Guangdong Province, China (grant number: 2003c201020). We are grateful to the Hainan Province Forestry Bureau and Baisha County Forestry Bureau of Hainan Province, China. We also thank Mr. Lin Guoyang of the Pennsylvania State University of U.S.A. and our colleague Miss Wu Xiao-ying for their help. We especially thank Dr. David E. Boufford of Harvard University Herbaria for his helpful revision of the manuscript.

**Table 2.** A morphological comparison of *Hoya baishaensis*, *H. griffithii* and *H. radicalis*.

Characters	<i>H. baishaensis</i>	<i>H. griffithii</i>	<i>H. radicalis</i>
<b>Leaves</b>			
Shape	narrowly elliptic	lanceolate or oblong-lanceolate	spatulate or oblanceolate
Apex	acuminate	caudate or acuminate	acute or short acuminate
Base	attenuate	attenuate	cuneate
Lateral veins	obscure	obscure	10 more pairs, conspicuous
Length (cm)	7–21	11–14	10–21
Width (cm)	3.5–5	2.5–4.5	3–4
Glandule	at base of blade	at base of blade	lacking
<b>Flower</b>			
Pediceal color	purple or purplish brown spots	unknown	unknown
Calyx color	purple spots	unknown	unknown
Corolla diam. (cm)	1.5–2(2.8)	2–3	1.2
Corolla inner color	green	white	white with purple spots
Corolla outside color	purple spots	unknown	unknown
<b>Indumentum</b>	whole plant glabrous	whole plant glabrous	young parts pubescent
<b>Distribution</b>	Hainan	Guangdong, Guangxi, Guizhou, Hainan, Yunnan; also in India	Guangdong, Guangxi

## References

- Forster, P. I. & Liddle, D. J. 1990: *Hoya* R. Br. (Asclepiadaceae) in Australia — an alternative classification. — *Austrobaileya* 3: 217–234.
- Forster, P. I. & Liddle, D. J. 1996: *Flora of Australia*, 28. — CSIRO, Canberra.
- Gilbert, M. G., Stevens, W. D. & Li, P. T. 1995: Notes on the Asclepiadaceae of China. — *Novon* 5: 1–16.
- Hill, K. D. 1988: A revision of *Hoya* (Asclepiadaceae) in Australia. — *Telopea* 3: 241–255.
- Hooker, J. D. 1885: *Flora of British India*, 4. — Reeve & Co., London.
- Jagtap, A. P. & Singh, N. P. 1999: *Fascicles of Flora of India*, vol. 24. — Bot. Survey India, Calcutta.
- Li, P. T., Gilbert, M. G. & Stevens, W. D. 1995: Asclepiadaceae. — In: *Flora of China* 16: 228–236. Sci. Press, Beijing & Missouri Bot. Garden Press, St. Louis.
- Merrill, E. D. 1932: A fourth supplementary list of Hainan plants. — *Lingnan Sci. J.* 11(1): 37–62.
- Tsiang, Y. & Li, P. T. 1974: Praecursores Florae Asclepiadacearum Sinensium. — *Acta Phytotaxon. Sinica* 12: 120–127. [In Chinese].
- Tsiang, Y. & Li, P. T. 1977: Asclepiadaceae. — In: *Flora Reipublicae Popularis Sinicae* 63: 475–492. Sci. Press, Beijing. [In Chinese].