

Raphiocarpus maguanensis (Gesneriaceae), a new species from China

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Received 20 May 2008, revised version received 22 Jan. 2009, accepted 22 Jan. 2009

Zhang, M. D., Shui, Y. M., Chen, W. H., Zhang, R. M. & Li, G. Y. 2010: *Raphiocarpus maguanensis* (Gesneriaceae), a new species from China. — *Ann. Bot. Fennici* 47: 71–75.

Raphiocarpus maguanensis Y.M. Shui & W.H. Chen, a new species of Gesneriaceae from Yunnan Province, China, is described and illustrated. The new species is compared to the fairly similar *R. longipedunculatus*.

Key words: Gesneriaceae, new species, *Raphiocarpus*, taxonomy

The genus *Raphiocarpus* (Gesneriaceae), including about ten species, mainly occurs in China and Vietnam. Six species occur in the south and southwest of China (Li & Wang 2004).

In October 2002, during a botanical expedition to tropical limestone mountains in Maguan County, Yunnan Province, China, we collected a specimen of *Raphiocarpus*. This plant has slender and glabrescent stems, papyraceous leaves, and villose pistils. These characters are very similar to *R. longipedunculatus*, but our specimen has purple flowers and is densely setose on the adaxial surface of leaves. After careful comparison with *R. longipedunculatus* and other *Raphiocarpus* species in China (Wang 1990, Li 1991, Wang *et al.* 1998) and Vietnam (Thúy ng(tiên 2000), we concluded that it represents a new species of *Raphiocarpus*.

***Raphiocarpus maguanensis* Y.M. Shui & W.H. Chen, sp. nova (Fig. 1)**

Species R. longipedunculatis affinis, sed foliis supra dense breviterque setosis setis 1–3-cellularibus ca. 0.7 mm longis (in illa sparsim longioreque strigosis strigis 3–6-cellularibus 1–2 mm longis) margine sparsim serratis (in illa integris vel serrulatis); corollis purpureis (in illa flavis) differt.

TYPE: China. Yunnan Province, Maguan County, in evergreen broad-leaved forest of limestone hills, 22°46'49"N, 103°57'53"E, alt. 1600 m, 11.X.2002 Y. M. Shui *et al.* 31120 (holotype KUN!, 0872826).

Herbs perennial, ca. 60 cm tall. Stems erect or prostrate at base, branched, originally appressed-pubescent, glabrescent, angular. Leaves opposite, often crowded at stem apex, unequal in

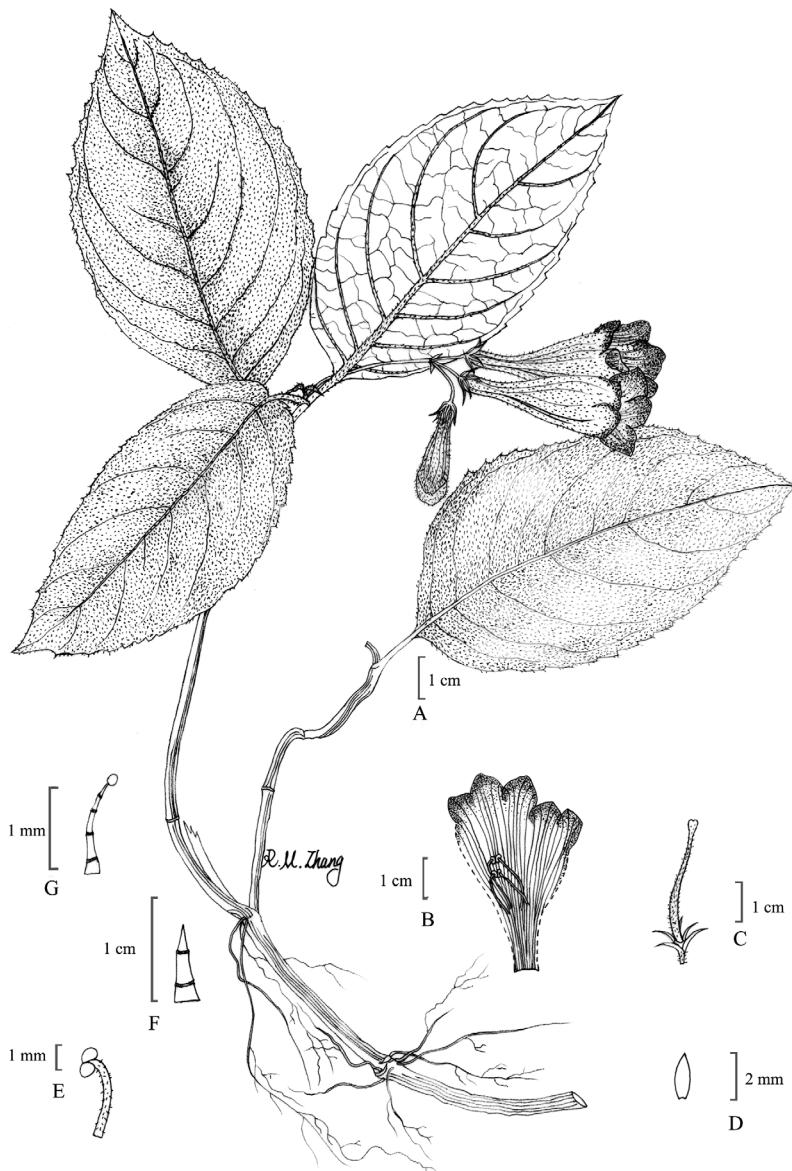
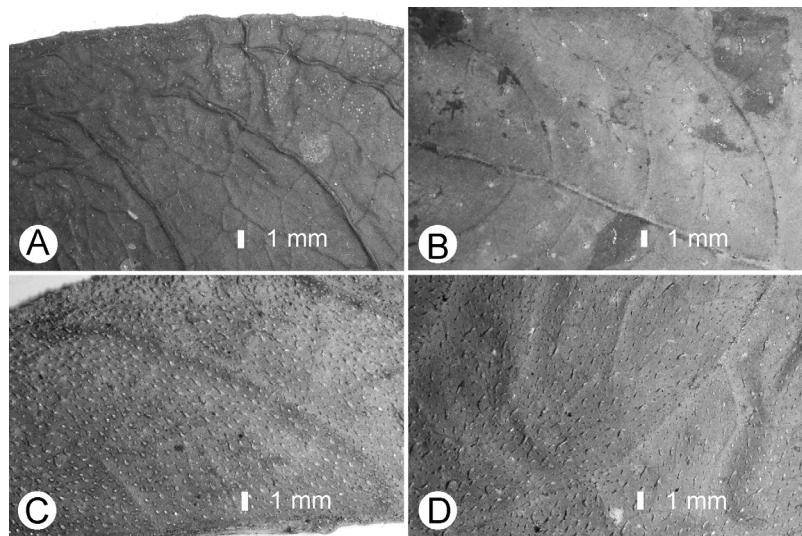


Fig. 1. *Raphiocarpus maguanensis* (from the holotype, drawn by Rong-Mei Zhang). — **A:** Habit. — **B:** Flower opened, showing stamens. — **C:** Pistil. — **D:** Bract. — **E:** Stamen. — **F:** Setae on adaxial surface of leaves, 1–3-celled. — **G:** Glands on abaxial surface of leaves, 3–5-celled.

a pair, papyraceous, elliptic or ovate, 9–12 × 5–6.3 cm; adaxial surface densely and shortly setose, setae 1–3-celled, ca. 0.7 mm long; abaxial surface sparsely glandular along veins, glands 3–5-celled, ca. 1 mm long, other parts glabrous; base slightly oblique, broadly cuneate or rotund, margin sparsely serrate, apex short-acuminate; midrib depressed adaxially, protuberant abaxially, lateral veins 5–7 pairs, obscure adaxially, distinct abaxially; petiole 1–2 cm long, appressed-hispid. Cymes 3–5-flowered, axillary, peduncle ca. 3 cm

long, sparsely glandular villose; bracts 2, ovate, ca. 2 × 1 mm, margin entire, appressed-pubescent; pedicel ca. 1 cm long, sparsely glandular villose. Calyx divided to base, lobes narrowly ovate to ovate, 4–5 × 1.5–3 mm, apex acuminate, margin entire, outside densely glandular villose. Corolla purple, zygomorphic, ca. 5 cm long, outside densely glandular villose; tube ca. 3.5 cm long, enlarged from middle, glabrous inside; limb 2-lipped; adaxial lip 2-lobed, 6–9 mm long, lobes broadly ovate, 8 × 7 mm, puberulent inside;

Fig. 2. Hairs on the adaxial surface of leaves in *Raphiocarpus maguanensis* and *R. longipedunculatus*. — A: Leaf margin of *R. longipedunculatus*. — B: Middle part of leaf of *R. longipedunculatus*. — C: Leaf margin of *R. maguanensis*. — D: Middle part of leaf of *R. maguanensis*. — A and B from the holotype of *R. longipedunculatus* (KUN), and C and D from the holotype of *R. maguanensis* (KUN).



abaxial lip 3-lobed, ca. 8–12 mm long, lobes nearly round, ca. 10 × 8 mm long, puberulent inside. Stamens 4, adnate to corolla tube near middle, coherent in pairs, anthers glabrous, filaments sparsely puberulent; adaxial stamens ca. 1.1 cm long, abaxial ones ca. 1.3 cm long; staminode absent. Disc ringlike, ca. 1.5 mm high. Pistil densely glandular villose, ca. 3.3 cm long; ovary linear, ca. 1.5 cm long; style linear, ca. 1.6 cm long; stigmas 2, oblong, ca. 2 mm long.

HABITAT ECOLOGY AND PHENOLOGY. Growing in evergreen broad-leaved forest on limestone

hills, alt. ca. 1600 m. Flowering from September to October.

DISTRIBUTION. China, Yunnan Province, Maguan County.

Raphiocarpus maguanensis resembles *R. longipedunculatus* in having glabrescent stems, papyraceous leaves, and glandular villose pistils. A morphological comparison between *R. maguanensis* and *R. longipedunculatus* is given in Table 1 (see also Figs. 2 and 3). A key to the new species and the six other species of *Raphiocarpus* in China is given below.

Table 1. Comparison of *Raphiocarpus maguanensis* and *R. longipedunculatus*.

	<i>R. maguanensis</i>	<i>R. longipedunculatus</i>
Habit	herbs perennial, ca. 60 cm tall, stems erect or prostrate at base	herbs to subshrubs, ca. 1 m tall, stems erect
Hairs of all plant parts	leaf adaxial densely setose, setae ca. 0.7 mm long, 1–3-celled, abaxial glandular along nerves, glands ca. 1 mm long, 3–5-celled; petiole densely appressed-hispid; peduncle, pedicel, calyx, corolla and pistil outside densely glandular villose	leaf adaxial sparsely setose, setae 1–2 mm long, 3–6-celled, abaxial pubescent along nerves, pubes ca. 2 mm long, 5–7-celled; petiole densely pubescent; peduncle, pedicel, calyx, corolla and pistil outside sparsely glandular villose
Leaf margin	sparse serrate	entire or serrulate
Lateral vein	5–7 on each side of midrib	7–9 on each side of midrib
Bract	ovate, ca. 2 × 1 mm	lanceolate to ovate, 3–6 × 1–3 mm
Calyx lobe	narrowly ovate to ovate, 4–5 × 1.5–3 mm	lanceolate, ca. 4 × 1 mm
Corolla	purple, ca. 5 cm long, tube ca. 3.5 cm long	yellow, ca. 3.5–4.9 cm long, tube 3–3.5 cm long

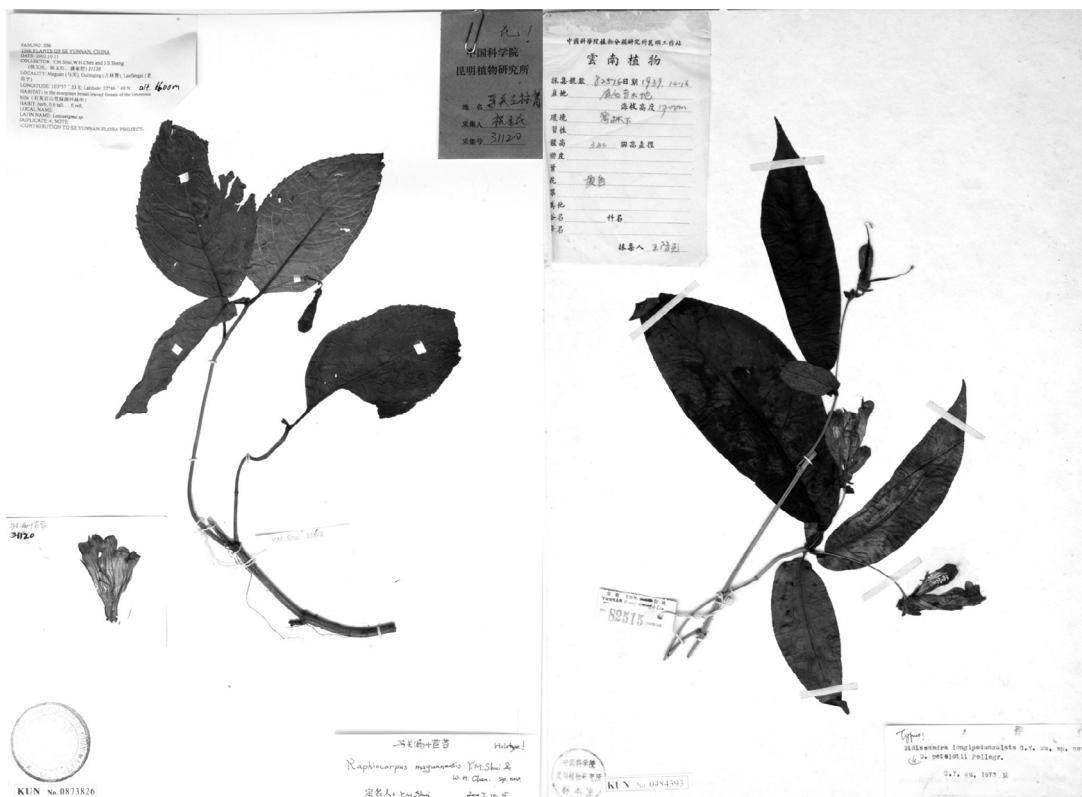


Fig. 3. Holotype specimens of *Raphiocarpus maguanensis* (left side, KUN) and *R. longipedunculatus* (right side, KUN).

Key to the species of *Raphiocarpus* in China

- Leaves 1 pair, strongly unequal; petiole absent to 0.3 cm *R. sesquifolius*
- Leaves 2 or more pairs, equal to slightly unequal in each pair; petiole 0.3–6 cm 2
- Calyx 5-lobed from above middle *R. petelotii*
- Calyx 5-divided from base or near base 3
- Stem and peduncle villous to woolly, sometimes also puberulent or glabrescent; calyx 6–15 mm 4
- Stem and peduncle glabrous to pubescent, glabrescent; calyx 2.5–6 mm 5
- Cymes 5–10-flowered; peduncle 3–10(–12) cm; bracts deciduous, broadly ovate to orbicular, 15–25 × 15–30 mm, margin irregularly dentate to subentire; corolla pale-purple or rusty lilac to purple; ovary pubescent, style glandular puberulent *R. begoniifolius*
- Cymes 1–3-flowered; peduncle 1.5–4.3 cm; bracts persistent, lanceolate to oblong or oblanceolate, 2–4 × ca. 1 mm, margin entire; corolla orange-red to yellow; ovary and style glabrous *R. macrosiphon*
- Corolla white, often flushed purple, 1.2–1.5 cm *R. sinicus*
- Corolla yellow or purple, 3.5–5 cm 6
- Corolla yellow; leaf adaxial surface glabrous or sparsely

- long setose, setae 1–2 mm long, 3–6-celled; leaf margin entire or serrulate; bracts lanceolate to ovate, 3–6 × 1–3 mm *R. longipedunculatus*
- Corolla purple; leaf adaxial surface densely shortly setose, setae ca. 0.7 mm long, 1–3-celled; leaf margin sparsely serrate; bracts ovate, ca. 2 × 1 mm *R. maguanensis*

Acknowledgments

This work was supported by the Committee for Research and Exploration of the National Geographic Society (grant no. 8288-07), the National Natural Science Foundation of China (30270109), the Natural Science Foundation of Yunnan Province, China (grant no. 2001C0022Q), the Taxonomy and Flora Special Foundation, the Chinese Academy of Sciences (CAS) and the West Glory Project of CAS for Y. M. Shui in China.

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