

Rhododendron yaoshanense (Ericaceae), a new species from NE Yunnan, China

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A new species of *Rhododendron* subsection *Taliensia* (Tagg) Sleumer, *R. yaoshanense* L.M. Gao & S.D. Zhang from NE Yunnan, China, is described and illustrated. It is compared with the morphologically similar *R. pronomum*.

Key words: Ericaceae, new species, *Rhododendron*, taxonomy

The Yaoshan Mountain National Nature Reserve is located in Qiaojia county, Yunnan province, 27°11'54''–27°25'31''N, 102°57'35''–103°10'13'' (Peng *et al.* 2006). It lies in the border area between northeastern Yunnan and southern Sichuan. Jiading Shan is the highest peak of the Yaoshan Mountains, and in the whole NE Yunnan, with the elevation of 4042 m. Because of the geographical location and complex physiognomy, the biodiversity and plant resources in the reserve are very rich. Many endangered and endemic species occur there, such as *Pinus squamata*, *Cycas panzhihuaensis* and *Davidia involucreata*, etc. (Peng *et al.* 2006).

Rhododendron is the largest genus of the family Ericaceae (Yang *et al.* 1999, Wu *et al.* 2003), with about 1000 species representing eight subgenera, and widely distributed in the northern hemisphere (Chamberlain *et al.* 1996, Fang *et al.* 2005). Based on the *RPB2* gene sequence data, three subgenera in *Rhododendron* were suggested recently (Goetsch *et al.* 2005). A

total of 571 species of *Rhododendron* occur in China, and 409 of them are endemic there (Fang *et al.* 2005). The eastern Himalaya and Hengduan Mountain region in southwestern China is recognized as a center of diversity and endemism for the genus (Yang *et al.* 1999).

During an expedition to the reserve in September 2004, we collected one specimen of *Rhododendron* that we were not able to identify. In May 2005, we went to the same locality again to collect flowering specimens of the species. A careful study revealed that it was an hitherto undescribed species of *Rhododendron*, subgenus *Hymenanthes*, subsection *Taliensia*.

***Rhododendron yaoshanense* L.M. Gao & S.D. Zhang, sp. nova** (Fig. 1)

Species nova affinis R. pronomo, sed laminis a quo differt foliis oblongis vel obovatis, subtus appressus indumentis unistratis, umvella flori-

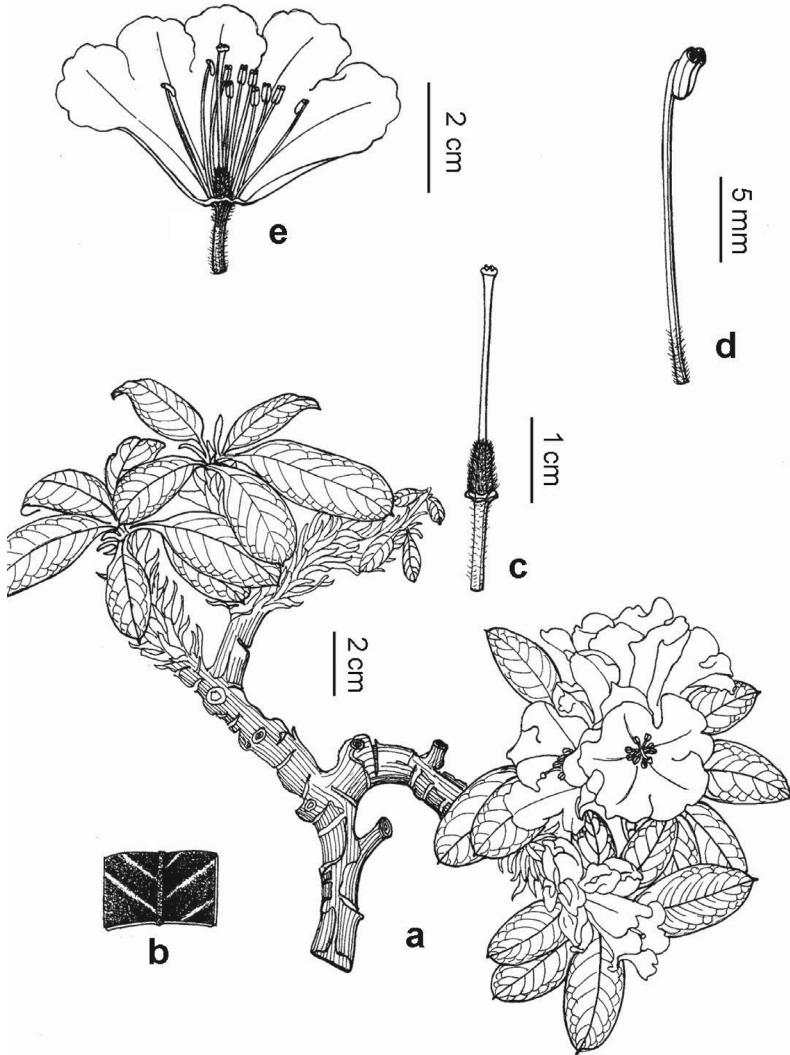


Fig. 1. *Rhododendron yaoshanense* (from the holotype, drawn by Ling Wang). — **a:** Flowering branches with leaves. — **b:** Indumentum on abaxial leaf. — **c:** Pistil. — **d:** Stamen. — **e:** Flower with stamens and pistil.

bus 4–7 praedita, corollis funnel-campanulatis, ovario dense tomentoso.

TYPE: China. Yunnan Province, Qiaojia County, Yaoshan Mountain, Jiaoding Shan, 27°11'24"N, 103°04'34"E, 3700 m to 3900 m, 25.V.2005 L. M. Gao, S. D. Zhang & N.N. Lin 03-1647 (holotype KUN; isotype KUN). — **PARATYPE:** China. Yunnan Province, Qiaojia County, Yaoshan Mountain, Jiucaipingzhi, 3700 m, 8.XI.2005 S. D. Zhang et al. 03-1552 (KUN).

Evergreen dwarf creeping shrubs, 0.2–0.5 m tall; branches robust, yellow brown, glabrous; bud scales persistent, oblong obovate or obovate, glabrous. 4–6 leaves clustered at end of branches, pseudo-verticillate; petiole 8–15 mm

long, semi-cylindrical, grooved above, glabrous; leaf blade thickly leathery, oblong to obovate, 3–6 × 1.5–3 cm; base cuneate or narrow cuneate; margin revolute; apex blunt, rounded, mucronate; abaxial surface with a thin, 1-layered indumentum, pale woolly, appressed, deterrent when mature, hairs branched; adaxial surface deep green, slightly shiny, glabrous; midrib, lateral and net veins distinct adaxially, lateral veins in 8–10-pairs, prominent. Bud scales ovate, apex acute, outside densely pubescent or tomentose; inflorescence compact, umbellate, 4–7-flowered; rachis very short, ca. 5 mm. Pedicel 1–1.5 cm, glandular-hairy and pubescent; calyx small, lobes 5, ca. 1 mm, margin pubescent; corolla

campanulate, white, with crimson spots on upper lobes inside, 3–3.5 cm, diameter 3–3.5, lobes 5, ovate, apex rounded or undulate; stamens 10, 1.5–2 cm long, unequal, filaments pubescent at base, anthers oblong-elliptic, 2–2.5 mm long, yellow brown; ovary cylindric, 5 locular, ca. 5×2.5 –3 mm, densely yellow-brown woolly-tomentose; style ca. 2–2.5 cm, glabrous, slightly shorter than corolla; stigma capitate, small, dark purple. Capsule cylindric, ca. 9×4 mm, umber villous. Flowering in May–June, fruiting in September–October.

Rhododendron yaoshanense is a decumbent shrub, growing on mountain cliffs, and on rocky slopes in open alpine meadows, at an elevation of 3700 m to 3900 m. It thrives near the top of the mountain, where low temperatures and heavy winds are common, which may account for the decumbent habit. *Rhododendron yaoshanense* usually forms a single-species shrub layer on cliffs, or occurs with *R. sphaeroblastum*, *R. impeditum*, *Salix luctuosa*, etc. It is known only from the type locality.

Rhododendron yaoshanense resembles *R. pronum* in the habit and growth form, persistent bud scales, leathery leaf blades, small calyx and white corolla. It differs from *R. pronum* by the oblong to obovate leaves, 1-layered thin-appressed indumentum on their abaxial surface, 4–7-flowers per inflorescence, and densely hairy ovary.

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References

- Chamberlain, D. F., Hyam, R., Argent G., Fairweather, G. & Walter, K. S. 1996: *The genus Rhododendron, its classification and synonymy*. — Royal Botanic Gardens, Edinburgh.
- Fang, M. Y., Fang, R. C., He, M. Y., Hu, L. Z., Yang, H. B. & Chamberlain, D. F. 2005: Ericaceae. — In: Wu, Z. Y., Raven, P. H. & Hong, D. Y. (eds.), *Flora of China* 14: 260–455. Science Press, Beijing & Missouri Botanical Garden, St. Louis.
- Goetsch, L., Beckert, J. A. & Hall, D. B. 2005: The molecular systematics of *Rhododendron* (Ericaceae): a phylogeny based upon *RPB2* gene sequences. — *Systematic Botany* 30: 616–626.
- Peng, M. C., Wang, C. Y. & Dang, C. L. 2006: *Biodiversity and conservation in Yaoshan Nature Reserve, Yunnan*. — Science Press, Beijing.
- Wu, Z. Y., Lu, A. M., Tang, Y. C., Chen, Z. D. & Li, D. Z. 2003: *The families and genera of angiosperms in China*. — Science Press, Beijing.
- Yang, H. B., Fang, R. C. & Jin, C. L. 1999: Ericaceae. — In: Fang, R. C. (ed.), *Flora Reipublicae Popularis Sinicae* 57: 1–213. Science Press, Beijing.