



A new species of *Rhododendron* (Ericaceae) from Baili *Rhododendron* nature reserve, NW Guizhou, China

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Introduction

Rhododendron Linnaeus (1753: 392) is one of the largest genera in the family of Ericaceae, which is subject to much ongoing taxonomic debate. About 1,025 species are recognized; these are distributed from the northern temperate zone, throughout tropical Southeast Asia, to northeastern Australia (Chamberlain *et al.* 1996). In China, there are 571 species classified in 6 subgenera, of which 405 species are endemic (Fang *et al.* 2005). Apart from Xinjiang and Ningxia, *Rhododendrons* have been documented in all other provinces (Ma *et al.* 2014; Wu *et al.* 2005).

The Baili *Rhododendron* Nature Reserve is located in a highland region in NW Guizhou that extends over an area of approx. 130 km², and is characterized by the dominance of *Rhododendrons*. Previous field investigations regarding *Rhododendrons* had reported about 35 species belonging to six subgenera, six sections and seven subsections, respectively (Chen *et al.*, 2010). However, this conclusion remains unclear, as some of newly described species were actually hybrids between sympatrically dominant species there (e.g. *Rhododendron delevayi*, *R. irroratum* and *R. decorum*).

In 2013, a joint project was launched via the staff from the Baili *Rhododendron* Nature Reserve, involving plant taxonomists from the Royal Botanic Garden Edinburgh and Kunming Institute of Botany from Chinese Academy of Sciences, to clarify the *Rhododendrons* in that area. During field work on Baili *Rhododendron* Nature Reserve, a *Rhododendron* species with distinct leaves was brought to our attention and collected for further study. After careful examination of specimens and relevant literature, its status as a distinct new species was confirmed. This species shows strong affinities with *R. auriculatum* and *R. chihsinianum*, two species that have been traditionally placed in Subsection Auriculata in Subgenus Hymenanthes. This subsection is now considered to be synonymous with Subsection Fortunea.

Taxonomic treatment

Rhododendron bailiense Y.P. Ma, C.Q. Zhang and D.F.Chamb., *sp. nov.* (Fig. 2)

Rhododendron bailiense resembles *R. chihsinianum* Chun et Fang., but differs from *R. chihsinianum* in the oblong-ovate shape of the mature leaf, cordate leaf base, the 3–6 flowered inflorescence and 14–16 stamens per flower..

Type:—CHINA. Guizhou: Baili *Rhododendron* Nature Reserve, Dafang, ca. 1800 m, 5 April 2013 (fl), Y. P. Ma, C.Q. Zhang and D.F. Chamberlain, M13-002 (holotype: KUN!; isotype: KUN!).

Small trees, evergreen, 3–4 m tall; bark brown, rough; young shoots tomentose and glandular-setulose, glabrescent. Leaf buds ovate. Petiole stout, 20–40 mm, densely glandular-setulose; leaf blade leathery, oblong-ovate, 7–18 × 4–9 cm; base auriculate; margin revolute; apex rounded, apiculate; abaxial surface evanescent pubescent; adaxial surface green, brown-setulose toward base of midrib, glabrescent; midrib grooved adaxially; lateral veins 17–22-paired, slightly raised on both surfaces. Inflorescence 3–8-flowered; rachis ca. 15 mm, rufous-villous. Pedicel ca. 3 cm, brownish pilose, eglandular; calyx saucer-shaped, ca. 2 mm; margin undulate, ciliate; corolla funnel-campanulate, pale violet, ca. 4 cm; lobes 7, obovate, ca. 1 cm; stamens 14–16, unequal, 2.5–3 cm, filaments glabrous; ovary ca. 6 mm, densely glandular; style glandular to tip. Capsule terete, rough. Fr. Sep–Nov.

Distribution and ecology:—To date, *Rhododendron bailsense* has only been found from two localities in the region of Baili Rhododendron Nature Reserve (27°14'24"N; 105°52'42"E), NW Guizhou and in Pan County (26°02' N; 104°55' E), W Guizhou, China. The species has been found in rock outcrops on Karst Limestone at an elevation of 1800–2100 m (Figure 1).



FIGURE 1. Geographical distribution of *Rhododendron bailsense* and *R. chihnsinianum* (detailed distribution information of *R. chihnsinianum* was obtained from Chinese Virtual Herbarium, <http://www.cvh.org.cn>).

TABLE 1. Geographical and morphological comparisons among *Rhododendron bailsense* and *R. chihnsinianum* (n=20 for the measurements of leaf length and width).

| Characters | <i>R. bailsense</i> | <i>R. chihnsinianum</i> |
|--------------------------|-----------------------|-------------------------|
| Distribution range | NW Guizhou | N Guangxi |
| Leaf shape | oblong-ovate | oblong-oblancheolate |
| Leaf base auriculate | Cordate | obtuse |
| Leaf length (mm) | 12.44±1.11 (7.5–18.2) | 13.85±0.97 (8–21) |
| Leaf width (mm) | 6.71±0.56 (4–9.3) | 5.39±0.4 (3–8.5) |
| Ratio of length to width | 1.84±0.03 (1.55–2) | 2.59±0.06 (2.27–3.15) |
| Stamen number | 14–16 | 15 |

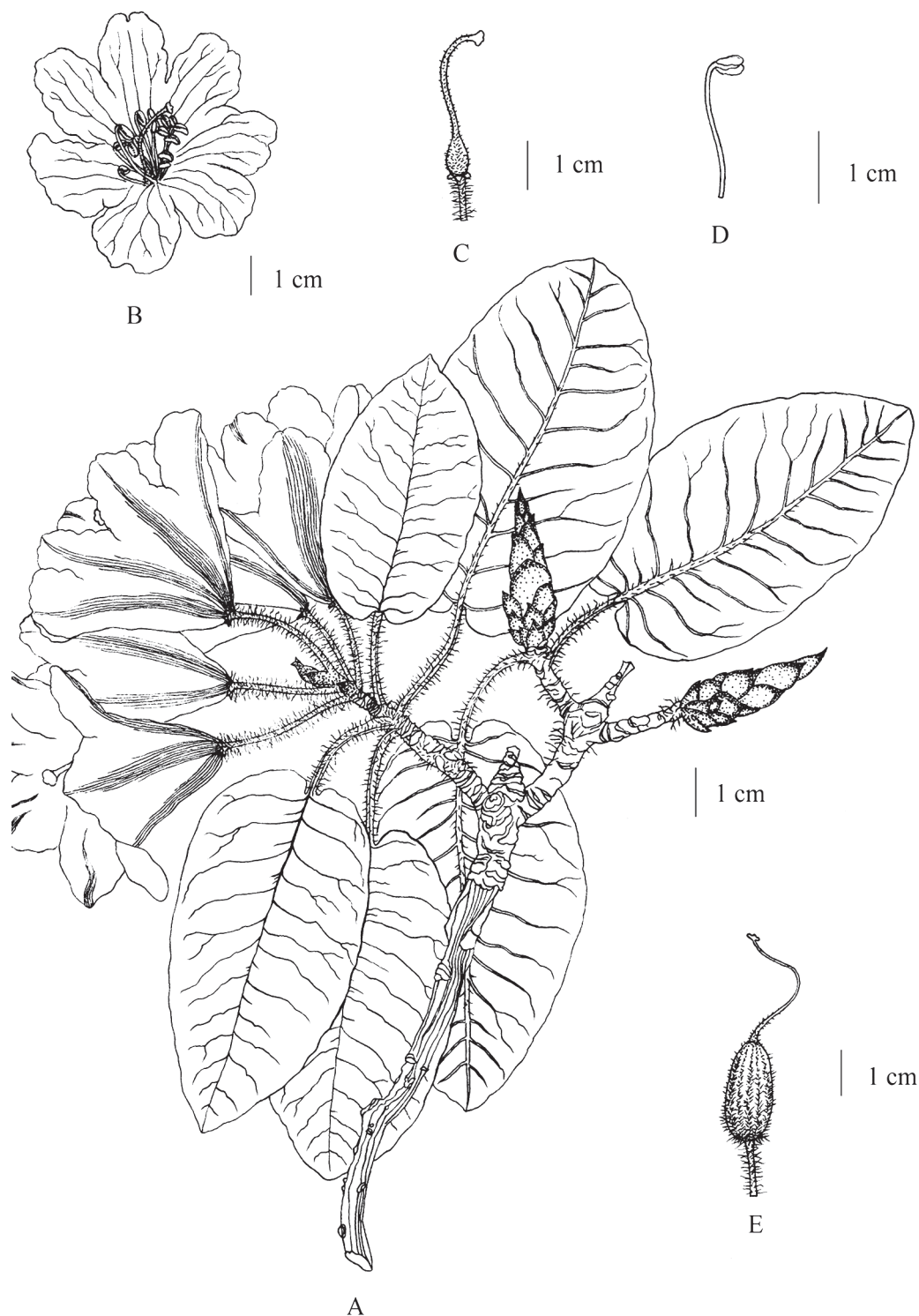


FIGURE 2. *Rhododendron bailiense*. A, Inflorescence and leaf. B, Flower. C, Pistil and calyx. D, Stamen. E, Fruit.

Phenology:—*Rhododendron bailiense* flowers from March to April.

Etymology:—The specific epithet refers to the site (Baili Rhododendron Nature Reserve) where the new species was firstly discovered and collected.

Conservation status:—We have examined the literature available for *Rhododendrons* collected from The Baili Rhododendron Nature Reserve and adjacent regions, and we are only aware of one additional locality of the new *Rhododendron* species described here. Whilst we are only aware of two apparently small populations of the new species

(the Baili population consists of no more than 50 plants, over an area of 50 x 50 m²), we only have limited information regarding the distribution etc. of *R. bailiense*. Thus we tentatively assess the conservation status of the new species to be Endangered, and suggest that further field studies are urgently required to elucidate its true status in the wild.

Additional specimens examined:—China. Guizhou: Bali *Rhododendron natural reserve*, Dafang County, 16 April 2013, Ma, Zhang and Chamberlain, M13-001 (*KUN!*); *ibid.*, 10 April 2012, C. H. Yang, Yang 12-001(*KUN!*).

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