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A new species of *Billolivia* (Gesneriaceae) from Central Vietnam

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Abstract

Billolivia middletonii, a new species from Cà Đam Mountains, Quảng Ngãi Province, Central Vietnam, is described and illustrated. A morphological description, a colour plate, the distribution, ecological information, the conservation status, and notes to species of *Billolivia* in Vietnam are given.

Introduction

The genus *Billolivia* Middleton *et al.* (2014a: 255) was recently described by Middleton *et al.* (2014a). It comprises at least eight species of small perennial caulescent herbs growing mostly on sandstone substrates in lowland to montane evergreen closed forest in Southern Vietnam (Middleton *et al.* 2014a, 2014b, Luu *et al.* 2015, Vũ *et al.* 2015). During botanical investigations in Central Vietnam in 2016, a new lithophytic species of *Billolivia* was discovered and collected from Cà Đam Mountains, Tây Trà district, Quảng Ngãi Province, Vietnam. The plant is a small caulescent herb with a long pubescent petiole, obovate to elliptic leaves, a 5-lobed calyx almost divided to base, and a flower-shape which is very similar to other species in the genus (see Middleton *et al.* 2014a, Luu *et al.* 2015, Vũ *et al.* 2015). After careful examination of the material from E, P, SING, VNM, VNMN, SING herbaria and comparison to *Billolivia* species in southern Vietnam, it was confirmed that the plant is new to science and is here described as *Billolivia middletonii*. All measurements and characters in the description were made from mature, living plants and herbarium specimens. The terminology in general follows Beentje (2010) and Middleton *et al.* (2014a, 2014b). The IUCN assessment uses the criteria given in IUCN version 3.1 (2012).

Taxonomic treatment

Billolivia middletonii N.S. Lý, *sp. nov.*

Similar to *B. kyi* in the long pubescent petioles, the shape of the lamina, and the 5-lobed ovate calyx almost divided to base, but differing in the glabrous stems (*vs.* densely pubescent), the lamina being glabrous adaxially (*vs.* sparsely pubescent adaxially), much longer bracts, 25–52 mm long (*vs.* shorter, up to 15 mm long), the oblong-obovate corolla lobes with violet lines (*vs.* orbicular, dark to red-purple), the white corolla throats having two yellow patches at base of lower lip, with violet lines (*vs.* dark red with a yellow patch), the longer and pale greenish filaments, 8–10 mm long (*vs.* white with long red patch, 5–6 mm long), fruit 20–25 mm long, ovoid to oblong-ovoid (*vs.* 14–16 mm long, ellipsoid).

TYPE:—VIETNAM. Quảng Ngãi Province, Tây Trà District, Trà Trung Commune, Cà Đam Mountains, Bà Noong stream, 1009 elev., 25 September 2016, Lý Ngọc Sâm, Lý-817 (holotype VNM!, isotypes P!, VNM!). Fig.1 & 2.

Lithophytic, caulescent, perennial herbs with short decumbent stems, robust, to 30 cm long, 1.8–2.2 cm in diam., light brown, with numerous strongly prominent leaf scars, glabrous, except for sparse hairs to 2 mm long at apex in young plants (Fig.1A, C). *Leaves* alternate, crowded near stem apex, internodes 0.8–1.8 cm long, with roots at the nodes near base; *petioles* fleshy, 9.2–18.5 cm long, 0.5–0.7 cm in diam. at the middle, pale greenish, densely covered in a mixture of long brown hairs to 4.5 mm long and shorter appressed brown hairs toward apex, hairs sparse at base;