

Putoria calabrica (Rubiaceae), a new species in the flora of Bosnia and Herzegovina

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Abstract. *Putoria calabrica*, a Mediterranean plant species, has been recorded for the first time in Bosnia and Herzegovina, southwest of the town of Trebinje. This study reports the newly discovered locality and presents a short morphological description and photographs of the species.

Key words: distribution, Herzegovina, morphology, new records, *Putoria*.

Introduction

The genus *Putoria* Pers. (Rubiaceae) includes two species occurring only in the Mediterranean region: the widespread *Putoria calabrica* (L. f.) DC. and the North African *Putoria brevifolia* Coss. & Durieu. Both species were recently included in the genus *Plocama* L. (Backlund & Thulin 2007). *P. calabrica* grows in lands around the Mediterranean Sea, but the absence of the species in France and Egypt is noticeable (Backlund & Thulin 2007). Outside the Mediterranean area, the species is recorded only in Iraq (Ehrendorfer 1982 b). In the European region, *P. calabrica* is known from Spain (Devesa 1987), Italy (Ehrendorfer 1982a), Malta (Haslam & al. 1977), Croatia (Nikolić 2000), Montenegro (Rohlina 1942), Albania (Krendl 2014), North Macedonia (Turrill 1932), Greece (Strid 1991), and Cyprus (Meikle 1977). No species of the genus have been so far recorded on the territory of Bosnia and Herzegovina (Beck & al. 1974).

Material and methods

Fieldwork was undertaken in the spring of 2019. Digital photographs and GPS coordinates were tak-

en in the field. Identification of the specimens was done according to Ball (1976) and Devesa (2007). The nomenclature follows Marhold (2011). The voucher specimen is deposited in the Herbarium of the National Museum of Bosnia and Herzegovina (SARA 51982).

Results and discussion

Putoria calabrica (L. f.) DC., in Prodr. 4: 577. 1830. (syn.: *Plocama calabrica* (L.f.) M.Backlund & Thulin; *Asperula calabrica* L. f.).

P. calabrica (Fig. 1) is prostrate-ascending, many-branched evergreen dwarf shrub with a fetid smell, forming mats up to 1 m in diameter. Stems are bluntly 4-angled, pale-brown, with flaking bark, pubescent, at least when young. Leaves are opposite, short-stalked, lanceolate, 10–20 mm long and 2–6 mm wide, linear-lanceolate to oblong, with recurved margins, somewhat leathery-succulent, shining, turning blackish on drying. Inflorescence has 3–13 long-tubed pink flowers in terminal clusters. Calyx persistent, 3–5 mm long, tubular and slightly funnel-shaped; lobes 4, subequal, bluntly deltoid. Corolla pink to red, occasionally white; tube narrowly

funnel-shaped, 5–15 mm long, with 4 reflexed linear-lanceolate lobes 3–6 mm long. Stamens 4, protruding. Fruit an oblong drupe with 2 pyrenes, crowned by the persistent calyx, about 5 mm long, glossy, initially fleshy and red to dark-red, subsequently drying and splitting into 2 mericarps; seeds 2, *ca* 5 mm, oblong, with brownish, membranous testa. (Back-

lund & Thulin 2007, Devesa 2007). Chromosome numbers, $2n=22$ (Strid 1971).

This is a widespread species in the Mediterranean, occurring at low to moderate altitudes, seldom higher. It forms mats on rock surfaces, road cuttings, crevices and on the vertical surfaces of the walls.

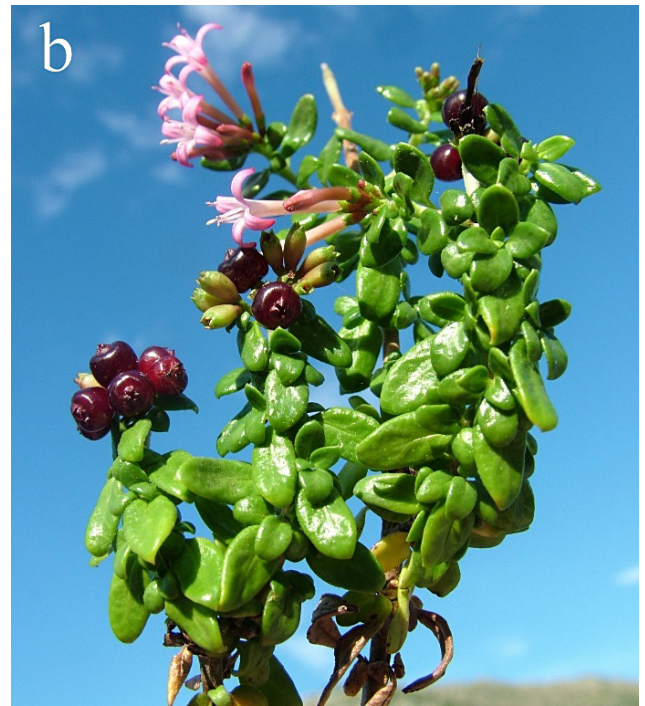


Fig. 1. *Putoria calabrica*: a. habitat; b. whole plant; c. flowers; d. fruits (Photo: Semir Maslo).

In April 2019, several *Putoria calabrica* plants (Fig. 1) were found in the South Herzegovina, in the vicinities of village Ivanica near the Croatian border. Occurrence of this species has not been previously reported from Bosnia and Herzegovina (see Beck-Mannagetta & al. 1974). Likewise, no herbarium voucher of the species originating from Bosnia and Herzegovina was found in the Herbarium of the National Museum of Bosnia and Herzegovina during this study. This is surprising, since the species has already been recorded in the area of neighbouring Dalmatia and the two closest Croatian localities – near villages Gornji Brgat and Buići (Nikolić 2012) – which are only few hundred meters away from the Herzegovina border. The species was observed at the end of April 2019, on the rock surfaces and road cuttings on the right side of the highway M 20, between Trebinje and Dubrovnik (42°39'27.95"N; 18°09'44.41"E; elevation 345 m. (Fig. 2.). The observed population covered an area of about 0.2 ha,

with uneven spatial structure and numbering above 20 individuals. In this locality *P. calabrica* was accompanied by *Calicotome infesta* (C. Presl) Guss., *Edraianthus tenuifolius* (Waldst. & Kit.) A. DC., *Erica manipuliflora* Salisb., *Inula verbascifolia* (Willd.) Hausskn., *Frangula rupestris* (Scop.) Schur, *Pistacia lentiscus* L., *Rubia peregrina* L., *Salvia officinalis* L., and *Spartium junceum* L.

P. calabrica is known only from one restricted locality in Bosnia and Herzegovina. It is suggested that this species should be placed in the IUCN category Critically Endangered (CR) (IUCN 2012), because the estimated area of its occupancy is less than 10 km² (criterion B2) and it is known only from one locality in the country (criterion B2a). The population size of the species is estimated at less than 50 mature individuals (criterion C2-ai). Furthermore, in the near future the distribution area of the species could be destroyed by anthropogenic impact, such as road construction or grazing.

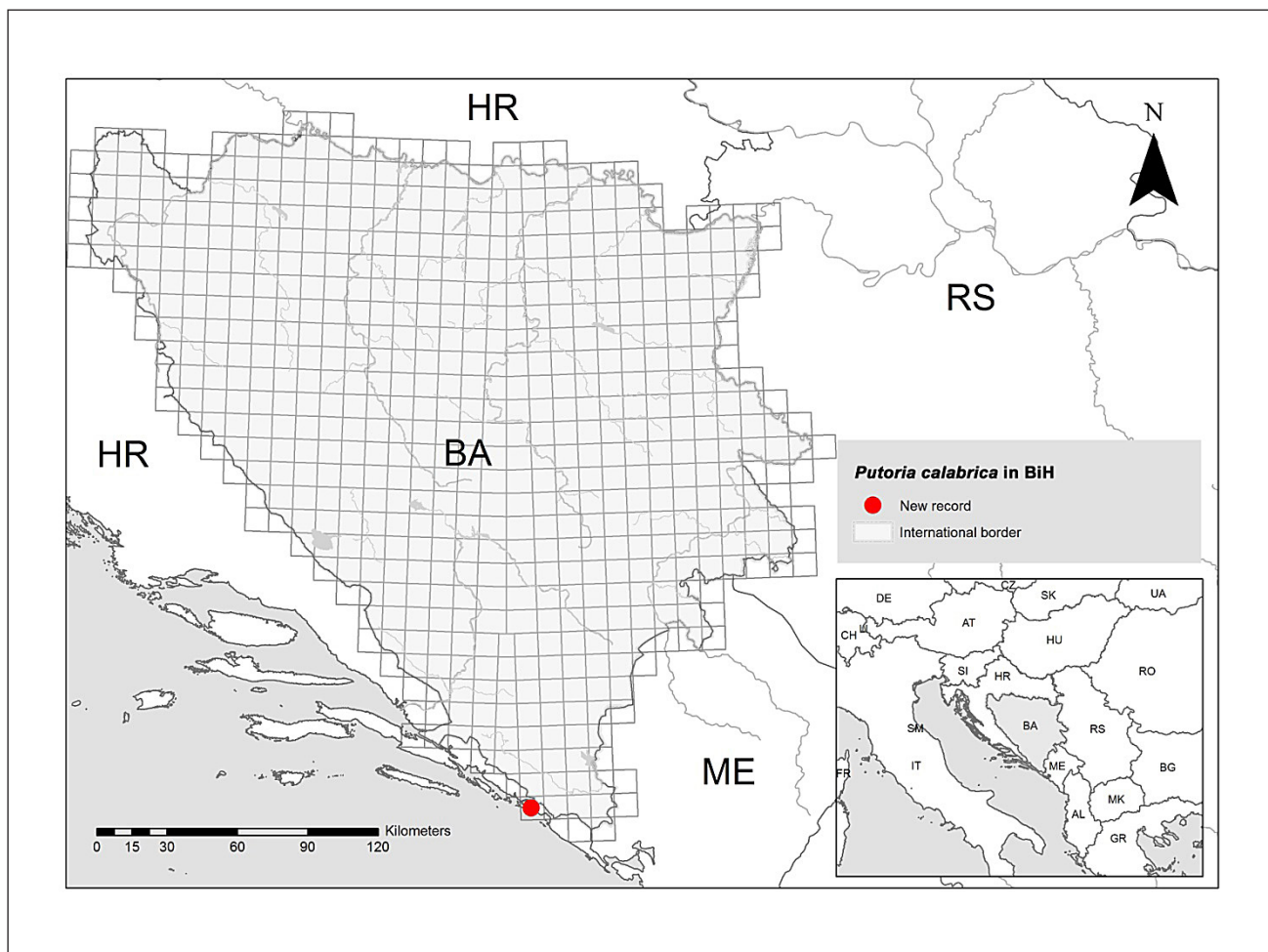


Fig. 2. The distribution of *Putoria calabrica* in Bosnia and Herzegovina.

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