

235. *ONOSMA TRICEROSPERMA* SUBSP. *TRICEROSPERMA* LAG. (BORAGINACEAE), A NEW SPECIES AND GENUS TO THE PORTUGUESE FLORA

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Onosma tricerasperma subsp. *tricerasperma* Lag. (Boraginaceae), uma nova espécie e género para a flora portuguesa

Key words. *Onosma tricerasperma*, Boraginaceae, chorology, Portugal.

Palavras chave. *Onosma tricerasperma*, Boraginaceae, corologia, Portugal.

Onosma tricerasperma* subsp. *tricerasperma

Lag. in Elenchus Plantarum, Madrid (1816)

Exsiccata:

PORTUGAL, BAIXO ALENTEJO: Beja, Beja, Mombeja, UTM 29S NC8510. Num afloramento de rocha ígnea ca. 1,8 km a NNE da aldeia. Num mato baixo e aberto com *Ulex* sp. e *Cistus monspeliensis* L., em solo argiloso e pedregoso, muito seco. Um núcleo com não mais de 20 indivíduos. 7-VI-2012, det. M. Porto, leg. A.J. Pereira SPB12 (LISU 251050).

Onosma tricerasperma Lag. is a perennial herb that inhabits shrublands and open areas in dry and alkaline soils, endemic to southern Spain and northwestern Morocco. In Spain, it is restricted to a few scattered populations in the east of Sevilla (Valdés, 1986), all occurring above 300 m.s.m (Valdés, 2009). The most recent revision of the genus (Valdés, 2012) divides the species into three subspecies, the typical; *O. tricerasperma* subsp. *granatensis* (Debeaux & Degen) Stroh, endemic to center and southern Spain; and *O. tricerasperma* subsp. *mauretanicum* (Maire) G. López restricted do southern Spain and northern Morocco and Algeria. The genus spreads from the Iberian Peninsula, where only three species occur,

to Asia, being the highest diversity spot the Eastern Mediterranean (Valdés, 2012).

We now add *Onosma tricerasperma* subsp. *tricerasperma* to the Portuguese flora, being the first record of the genus in Portugal. The small population - which is located about 220 km from the nearest population (Anthos, 2012) - was found growing in an open low shrubland in very dry and rocky soils. The area falls within a complex of geologic islands characterized by igneous rocky outcrops and shallow soils, interspersed within a matrix of deeper calcareous soils, which is mostly cultivated or grazed. A first field approach to the area suggests the existence of an underlying gradient in soil composition such that some areas present a more calcicolous vegetation (with *Rosmarinus officinalis* L., *Cistus monspeliensis* L., *Serratula baetica* DC. subsp. *lusitanica* Cantó, *Scilla peruviana* L., and others) - where *O. tricerasperma* is found - while in other areas a more silicicolous vegetation develops (with *Calluna vulgaris* (L.) Hull, *Erica scoparia* L., *Cistus ladanifer* L., and others).

Seed shape and size are important diagnostic characters in Iberian *Onosma* species, together with the color of stems and bracts (López-González, 1994; Valdés, 2009). Plants in this population show an intense reddish-purple color

in the stems, bracts and calyx (fig. 1). Seeds measure 6.8 ± 0.76 mm (mean \pm s.d., $n=7$, same plant) along their dorsal side and have two horns 3.5 ± 0.5 mm long on either side (fig.1). These characters point to the inclusion of Portuguese plants in subsp. *tricosperma*. However, as expressed below, the very low number of plants did not allow an adequate examination of the range of variation within the population.

The population is very small and restricted to a small area, with an estimated number of ca. 20 plants, of which only three plants flowered in 2012. Even though, in this year, fertility was low, with a very small number of flowers setting seed, there were several seedlings and saplings from previous years. We suppose that the unfavorable climatic conditions in 2012 (a very dry year) could be the main reason for such low flowering and fruiting ratio, expecting that upcoming prospections will lead to a better picture of the current population status.

Although the species inhabits a rocky area which is unlikely to be used for agricultural purposes, the very high conservation value of these rocky outcrops and their surroundings calls for precaution. In fact, the flora of these islands is very unique in the region, comprising several other species and populations of high conservation value for their rarity in Portugal, such as *Micropus supinus* L., *Otospermum glabrum* (Lag.) Willk., *Arenaria emarginata* Brot., *Scilla peruviana* L. and *Ranunculus gramineus* L. The calcareous soils in the surroundings are also home of one of the very few portuguese populations of *Echium boissieri* Steud., which is threatened by habitat loss, being confined to a few fallow lands and roadside verges (personal observation).

Efforts made to find other colonies of *O. tricosperma* in the region were unsuccessful, despite the fact that its habitat seems to occur in a larger area. We emphasize, therefore, that conservation measures should be taken to



Figure 1: Left: Side view (top row), top view (bottom left) and bottom view (bottom right) of two seeds from the same plant (left and right columns). Right: Detail of inflorescence. Note the dark red-purple color of bracts, stem and calyx. Esquerda: Vista lateral (primeira linha), de topo (canto inferior esquerdo) e de baixo (canto inferior direito) de duas sementes da mesma planta (coluna da esquerda e da direita). Direita: Detalhe da inflorescência. Note a cor vermelho-escuro/púrpura das brácteas, caule e cálice.

secure these populations, since the existence of an active quarry and a new highway in the vicinity, together with other eventual land use changes associated with agricultural intensification, may constitute serious threats in the future. Furthermore, the extreme isolation of *O. tricosperma* relative to the closest Spanish populations highlights its value. Given this, we think this taxon should be considered extremely rare in Portugal, and possibly in the brink of extinction.

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