

## *Clinopodium serpyllifolium* subsp. *sirnakense* (Lamiaceae), a new taxon from south-eastern Anatolia, Turkey

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### Abstract

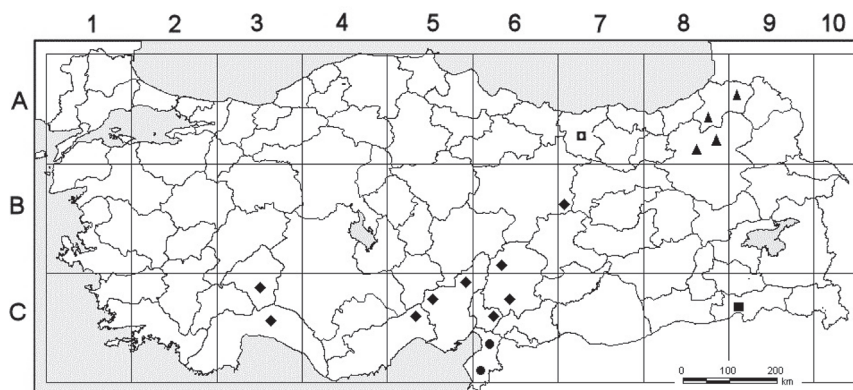
*Clinopodium serpyllifolium* subsp. *sirnakense* (Lamiaceae) is described as a new subspecies from south-eastern Anatolia, Turkey. It is considered morphologically similar to *Clinopodium serpyllifolium* subsp. *brachycalyx*, from which it differs in indumentum, calyx characters and mericarp surface. Detailed illustrations are provided along with a distribution map, an IUCN ranking and notes on taxonomic affinities.

### Introduction

The genus *Clinopodium* Linnaeus (1753: 587) is mostly distributed in the New World (both temperate and tropical) and temperate Eurasia, but a few in Africa, tropical Asia and Indo-Malaysia (Harley *et al.* 2004). Species number in *Clinopodium* recently increased to about 100 by inclusion of numerous taxa from other genera (Harley & Granda 2000, Bräuchler *et al.* 2005, 2006, 2008, 2010, Ryding 2006a, 2006b).

While the first revision of *Clinopodium* for Turkey (Leblebici 1982) listed two species only, the changes mentioned above and a recently described species (Firat & Dirmenci 2009) increased the number of accepted species in the area to 21 (31 taxa).

During an expedition to south-eastern Anatolia in October 2013, some unusual specimens of *Clinopodium* were collected by the first author in Şırnak province, Turkey (Fig. 1). The specimens were examined using relevant literature (Ball & Getliffe 1972, Boissier 1879, Leblebici 1982, Rechinger 1982, Firat & Dirmenci 2009, Güner *et al.* 2000, Dirmenci *et al.* 2010, Özhatay & Kültür 2011, Dirmenci 2012, Satıl *et al.* 2012). This literature research did not give a perfect match. Since none of the characteristics given in previous descriptions completely agreed with the doubtful specimens, we conducted extensive (micro)morphological studies. This comparison with previous collections of *Clinopodium* from Turkey confirmed the Şırnak collections to represent an undescribed subspecies of *Clinopodium serpyllifolium* (Bieberstein 1808: 40) Kuntze (1891: 515) s.l.



**FIGURE 1.** Geographical distribution of *Clinopodium serpyllifolium* subsp. *sirnakense* (■), subsp. *barbatum* (●), subsp. *serpyllifolium* (▲), subsp. *giresunicum* (■) and subsp. *brachycalyx* (◆) in Turkey.

The pollen of both subspecies is stephanocolpate (hexacolpate). The main exine sculpturing type is reticulate with more or less polygonal lumina which wider in subsp. *brachycalyx* as *Clinopodium* species (formerly *Acinos* sp.) (Kaya & Kutluk 2007). The dimension for the polar length (P) ranges between 31.4–37.7 µm (in subsp. *sirnakense*) and 30.5–40 µm (in subsp. *brachycalyx*), equatorial (E) width 18.6–28 µm (in subsp. *sirnakense*) and 18–30 µm (in subsp. *brachycalyx*), colpus length (clg) 22–31.5 µm (in subsp. *sirnakense*) and 24–34.2 µm (in subsp. *brachycalyx*) and colpus width (clt) 0.2–0.6 µm (in subsp. *sirnakense*) and 0.3–0.8 µm (in subsp. *brachycalyx*). The pollen grains prolate in shape, P/E 1.3–1.6 (Figs. 4–5).

**Discussion:**—*Clinopodium serpyllifolium* subsp. *sirnakense* grows in rock crevices in 423 m elevation. This species has 5 subspecies in total. Four of these subspecies grow in Turkey. The subspecies resemble each other. However, they differ in their indumentum, calyx characters and mericarp surface. *Clinopodium serpyllifolium* subsp. *sirnakense* is similar to subspecies *brachycalyx*, from which it differs in its hirsute hairy stems (not appressed-velutinous hairy stems), calyx divided to 1/3(–1/4) (not to 1/4–1/5) of its length, calyx nerves very prominent (*vs.* inconspicuous nerves), calyx teeth triangular acute and recurved (not triangular, obtuse and erect), corolla 2–2.75 mm long (*vs.* 3–3.75 mm long). On the other hand, subsp. *giresunicum* is characterized by its procumbent stems (not erect), subsp. *sirnakense* by its calyx throat densely hairy with the hairs 7 mm long (not densely to sparsely hairy and 1.5–5 mm long), and subsp. *barbatum* by its dense thyrses and ovate-oblong (not interrupted thyrses and cylindrical) (Table 1).

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