



## The genus *Gymnospermium* (Berberidaceae) in the Balkans

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### Abstract

A revision of the genus *Gymnospermium* (Berberidaceae) in the Balkan Peninsula is carried out. Three species are recognised. *Gymnospermium maloi* is described as a new species from Mt. Picari in Gjirokastra district, southern Albania. It is compared with the closely related *G. scipetarum* which has a different habitat and distribution in central Albania and southern Montenegro. The chromosome number and karyotype features of *G. maloi* are provided for the first time. The chromosome formula of  $2n = 2x = 14$  (1 metacentric, 1 meta-submetacentric and 5 submetacentric chromosome pairs) is unusual as  $2n = 16$  has been reported for other members of the genus. The nuclear DNA content (2C-value) of all three species was determined. The genome size of *G. maloi* is 29.44 ( $\pm 0.47$ ) pg, for *G. scipetarum* (chromosome number still unknown) 29.55 ( $\pm 1.35$ ) pg, and for *G. peloponnesiacum* ( $2n = 2x = 16$ ) 31.93 ( $\pm 2.38$ ) pg. These values are the first genome size measurements for the genus. All three species are mapped and fully illustrated. A key to the European species is also presented.

**Key words:** Albania, chromosome number, distribution map, genome size, Greece, identification key, new species, taxonomic revision

### Introduction

*Gymnospermium* Spach (1839: 67) in the Berberidaceae is a relatively small genus of early spring-flowering tuberous plants. The generic name derives from the Greek *gymnos* (naked) and *sperma* (seed), referring to the unripe seeds which are exposed when the membranous pericarp splits. The number of species varies from six (Komarov 1937, Săvulescu 1955, Takhtajan 1970) to seven (Kosenko 1980). Ten names are listed in the IPNI database ([www.ipni.org](http://www.ipni.org)). Five species occur in the former countries of URSS (Kosenko 1980). According to Stearn & Webb (1964, 1993) *Gymnospermium* is represented by only one species in Europe, viz., *G. altaicum* (Pallas) Spach (1839, syn.: *Leontice altaica* Pallas) which also occurs in the Caucasus and Central Asia. Takhtajan (1970) treated the plants from the Caucasus and Central Asia as *G. altaicum*, and the plants from Greece and the Black Sea region (from the Crimea and SW Ukraine to the Dobrogea area in eastern Romania) as *G. odessanum* (DC.) Takhtajan (1970, syn.: *L. odessana* (DC.) Fischer ex G. Don). The only known Balkan locality for *G. odessanum* was Mt. Panachaikon in the northern Peloponnese, Greece, where it was first discovered by Halácsy in 1893 and identified by him as *Leontice altaica*. At that time relatively little was known about the genus and its distribution in Europe and Takhtajan (1970) emphasized this at the end of his description of *G. odessanum* which we translate from the Russian: “Possibly, in the future, researchers will find several differences between my typical form [*G. odessanum* from the Ukraine] and the plants from the Peloponnese, but new and further collections are required”.