



## A new subspecies of *Grammosciadium macrodon* Boiss. (Apiaceae) from Turkey

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### Abstract

*Grammosciadium macrodon* subsp. *nezaketae* is described as endemic to Eastern Anatolia. The new subspecies differs remarkably from the *G. macrodon* subsp. *macrodon* based on fruit characters. In addition to the diagnostic fruit characters, other significant morphological and anatomical differences between these two taxa are presented as well. A quantitative, morphometric analysis was carried out to achieve more reasonable results and to discuss diagnostic characters in *Grammosciadium macrodon* and its morphologically closest relatives.

**Key words:** Anatolia, morphology, taxonomy

### Introduction

The genus *Grammosciadium* Candolle (1829: 62) from the Apiaceae family consists of 9 species (Hedge & Lamond 1972, Vinogradova 1995, Pimenov & Leonov 2004, Bani *et al.* 2011). The members of the genus are distributed into two subgenera and six sections, with limited phylogenetic evidence so far. The subgenus *Grammosciadium* contains five species [*G. daucooides* Candolle (1829: 62), *G. scabridum* Boissier (1844: 66), *G. macrodon* Boissier (1844: 67), *G. cornutum* (Nábělek 1923: 124) Townsend (1966: 83) and *G. confertum* Hub-Mor. & Lamond in Hedge *et al.* (1971: 75)], while the subgenus *Caropodium* (Stapf & Wettstein 1886: 317) Tamamschian & Vinogradova (1970: 652) is represented by four species [*G. platycarpum* Boiss. & Hausskn. ex Boissier (1872: 901), *G. pterocarpum* Boissier (1844: 68), *G. schischkinii* (V.M.Vinogr. & Tamamsch. in Tamamschian 1968: 203) Vinogradova (1995: 95) and *G. haussknechtii* Boissier (1872: 901)] (Vinogradova 1995).

The genus *Grammosciadium* is endemic to Irano-Turanian phytogeographic region (Takhtajan 1986). This phytogeographic region is represented by a high number of endemics, and also the endemism ratio at species level is not less than 25%. Moreover this area is the diversification centre of many species-rich genera such as *Astragalus* Linnaeus (1753: 755), *Centaurea* Linnaeus (1753: 909), and various others (Zohary 1971, Thakhtajan 1986). Furthermore, Apiaceae comprise many endemic species and genera in this phytochorion (Davis 1971). Thakhtajan (1986) reported that the number of endemic apioid genera, which are characteristic for the flora of the Irano-Turanian region, is more than 60 (16% of all Irano-Turanian endemic genera).

The distribution area of the genus *Grammosciadium* is extending from inner Anatolia, through the East Anatolian mountainous system to Elburz and Zagros ranges (Iran and Iraq) and mountains of Transcaucasia (Vinogradova 1970). With respect to this distribution pattern, *Grammosciadium* is one of the Irano-Caucaso-Anatolian genera. Noroozi *et al.* (2007) reported that this distribution pattern is represented by a considerable number of taxa and 21 species which exhibit this distribution pattern were given as examples. Anatolia is the diversity centre of the genus *Grammosciadium* (Vinogradova 1970). Moreover Turkey is the only country where majority of the taxa (eight out of nine) are distributed (Vinogradova 1995). The only species not occurring in Turkey is *G. scabridum* from Iran and Iraq. Among the Turkish members of the genus, *G. confertum*, *G. schischkinii* and *G. haussknechtii* are endemic to Anatolia (Pimenov & Lenov 2004).