

Taxonomic contribution on genus *Dactylorhiza* (Orchidaceae) from Iranian flora

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INTRODUCTION & AIM

The generic name *Dactylorhiza* was first introduced by Necker in 1790; later on in 1935, Nevski officially re-established the name and distinguished it from the genus *Orchis* by characteristics such as palmate tuberoids (vs. ovoid or globose), cauline leaves (vs. basal, rosette-forming), herbaceous leafy bracts (vs. scale-like), and the usual number of chromosomes $2n = 40$ (vs. $2n = 36, 42$). The number of *Dactylorhiza* species varies from 660 to over 720 names depending on the authors. In general, members of this genus occupy a wide range of habitats, usually humid, from the slopes of dunes to alpine meadows, including swamps, peatbogs, and various types of forest in Eurasia, Northern Africa, and North America. Some species of this genus are particularly noteworthy as ornamental and medicinal plants, with their underground parts (tubers) used to produce salep.

The genus is known for its great morphological variability within species and high frequency of hybridization between species, thus, leading to inconsistent taxonomic treatments in various regional floras and references. This study clarifies the taxonomic status and distribution of *Dactylorhiza* in Iran, providing an updated reference for future floristic, ecological, and conservation work.

METHOD

This work is based on a detailed investigation of relevant literatures (Renz 1978, Shahsavari, 2008, Kreutz and Spencer 2011, Ghorbani et al. 2014), and on a survey for type specimens of the species via virtual herbarium catalogues at E (<https://data.rbge.org.uk/search/herbarium/>), G (<http://www.ville-ge.ch/musinfo/bd/cjb/chg/>), and JSTOR Global Plants (<https://plants.jstor.org/>). For morphological comparisons, we carefully examined live specimens in the field (Iran) and all the available herbarium specimens.



Figure 1. *Dactylorhiza umbrosa*- Iran: Mazandaran, Chalus, Kamarin rangeland to Elika, Photographed by Tayyebbeh Amini

RESULTS & DISCUSSION

Based on our investigation involving the related literature and herbarium samples, it was revealed that in southwest Asia, the flora of Iran encompasses four species and four subspecies of this genus including *D. iberica*, *D. romana* (subsp. *georgica*), *D. umbrosa* (subsp. *knorringiana*, subsp. *longibracteata*, subsp. *ochroleuca*), and *D. lancibracteata*. These species are geographically distributed in the Hyrcanian district and Irano-Turanian region in the north, northwest and west of Iran, although, *D. iberica* and *D. umbrosa* have been additionally reported in the center and south of Iran.

Dactylorhiza lancibracteata was recently synonymized with *D. urvilleana*. In Flora Iranica, Renz (2008) mentioned that in the alpine marshes of the Turkish province Van, in the proximity of the Iran border *D. cruenta* occurs quite frequently. Until now, this species has not been recorded in Iran, however, it may be expected that future collections will extend the area of distribution of this sporadically occurring plant further to the east as far as the mountains of Azerbaijan. Following the footsteps of Renz in Iran, Kreutz and Spencer (2011) noted that during their field surveys, they could not find *D. flavescence* in the northwest of Iran. This species was not reported in Flora Iranica, Flora of Iran and any previous literatures, as one of *Dactylorhiza* species distributed in Iran. By detailed investigation on relative references and herbarium samples, it was revealed that it was synonymized under *D. romana* subsp. *georgica*, and not considered as an accepted and independent *Dactylorhiza* species.



Figure 2: Fresh (right) and dried palmate salep tuber of *Dactylorhiza* sp. Mahabad, West Azarbaijan province, Iran (Ghorbani et L. 2014).

FUTURE WORK / REFERENCES

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