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A new species of *Orobanche* (*Orobanchaceae*) from Israel

Abstract

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Orobanche daninii a new species belonging to *Orobanche* sect. *Trionychon* is described and illustrated from the inland near Paran, Israel. Its relationships with *O. aegyptiaca*, *O. mutelii* and *O. schultzei* are examined.

Key words: Flora, Broomrape, Parasitic plant.

Introduction

According to Beck (1930); Danin (2004); Eig & al. 1931, 1948); Grueter & al. (1989); Post (1932-1933) and Zohary (1976) 13 species of *Orobanche* occur in Israel: 7 belonging to the sect. *Orobanche* L. and 6 to the sect. *Trionychon* Wallr.

Herbarium investigations in HUJ substantially confirmed this situation. During field investigations in the south Israel done by A. Danin a new to science species was found. This species is here described and discriminated from the related taxa.

Orobanche daninii Domina & Raimondo, **spec. nova.** – Fig. 1.

Type: *Orobanche daninii* Domina & Raimondo, Israel, The Arava Valley, 10 km N of Paran, on *Moricandia nitens*, leg. A. Danin, 3.3.2009 (Holo: PAL!, Iso: HUJ, PAL!).

Etymology: Named for Prof. Avinoam Danin, expert and lover of Israel flora and vegetation, who collected the new plant.

Caulis firmus, 15-50 cm altus, simplex, basi saepe nodose vel clavatum incrassatus, parcesquamatus. Squamae triangulares, glanduloso-pilosae, 0.5-2 cm longae. Spica multiflora, cylindracea, apice plurimum rotundata, bracteis brevissime comosa; flores patentes vel erecto-patentes, sessiles. Bractea lanceolatae vel ovato-lanceolatae, glanduloso-pilosae, 6-8 mm longae, calyce breviores vel aequantes. Calyx breviter campanulatus, 4-dentatus, submembranaceus, flavescens, glanduloso-pilosus,

dentibus lineari-lanceolatis, acutis, tubo suo brevioribus vel aequantibus, corollae partem constricta aequantibus.

Corolla tubulosa, 16-22 mm longa, in parte basali inflata, supra germen constricta, hinc faucem versus ampliata et pronus curvata, extus glanduloso-pilosa, e infra albida, versus limbum coeruleo violacea; labium superum porrectum, bilobum; inferum aequaliter trilobum, lacinis ovatis, apice rotundatis, margine integris, repandis copiose pilosi. Filamenta 4-6 mm supra basim corollae inserta, infra copiose pilosa, supra subglabra; antherae, candidae, glabrae, evidenter mucronulatae. Germen ellipsoideum; stilus sparse breviter glanduloso-pilosus; stigma bilobum, lobis hemisphaericis, albis. Capsula 5-8 mm longa, calycem longitudine subaequans.

Semina ovata vel ampulliformia, 0,2-0,35 mm longa; cellulae testae reticulate-porosae, alveolis polygonis.

Ecology and distribution

Orobanche daninii is a rare plant occurring in south Israel affecting *Moricandia nitens* (Viv.) E. A. Durand & Barrate on weathered calcareous rocks in dry water-course (wadi) regarded as contracted vegetation (Danin 1983). This kind of vegetation in the same bioclimatic area, ca 40 km north of the *O. daninii locus classicus* is dealt with in detail by Rudich & Danin (1978).

Taxonomic position

Orobanche daninii Domina & Raimondo belongs to *Orobanche* sect. *Trionychon* Wallr. by the occurrence of two bracteoles on the calix sides. It differs from *O. aegyptiaca* Pers. mainly by flowers not pedunculated, smaller corollas and glabrous anthers; from *O. muteli* F. W. Schultz by its inflorescence not branched and the corolla more inflated; from *O. schultzi* by the teeth of the calyx and the corolla not geniculated. Diagnostic characters are summarized in table 1.

Table 1. Diagnostic characters of the considered taxa.

Character / species	<i>O. daninii</i>	<i>O. aegyptiaca</i>	<i>O. muteli</i>	<i>O. schultzi</i>
Stem	simple, rarely branched	branched	branched	simple, rarely branched
Lower flowers pedunculated	no	yes	no	shortly
Calix teeth	shorter or equalling the tube	equalling or longer than the tube	equalling the tube	2-3 times longer than the tube
Corolla length	16-22 mm	20-37mm	15-22	16-21
Corolla shape	constricted above the ovary, inflated near the upper lip	constricted above the ovary, inflated near the upper lip	constricted above the ovary, lightly inflated near the upper lip	constricted above the ovary, geniculated, inflated near the upper lip
Stamens inserted above the corolla base at	4-6 mm	5-7 mm	4-5 mm	4-5
Anthers	glabrous	hairy	glabrous or hairy	hairy

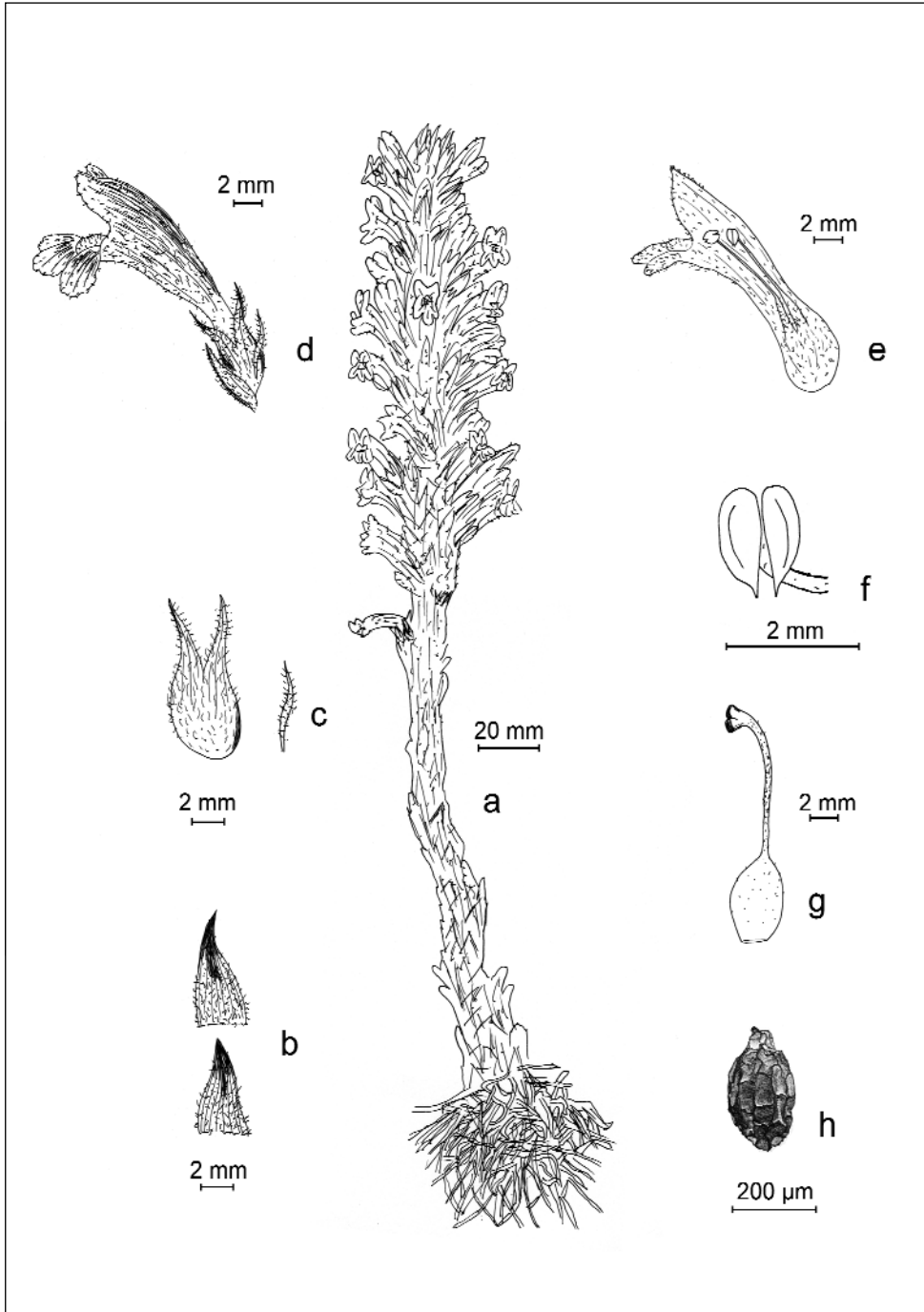


Fig. 1. *Orobanche daninii*: a) habit; b) bracts; c) calyx segments; d) flower; e) longitudinal section of flower; f) anther; g) style, stigma and ovary; h) seed. (Drawing by G. Domina).

Conclusions

The new species, from the inland of Israel, confirms the adaptability of the species of *Orobanche* sect. *Trionychon* Wallr. to dry environments and their capability to affect *Brassicaceae*. It enhances the originality of the flora of Israel already renowned for its high rate of endemism on arid environments.

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