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***Orobanche cohenii* (Orobanchaceae) a new species from Israel**

Abstract

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Orobanche cohenii a new species belonging to *Orobanche* sect. *Trionychon* is described and illustrated from Mt. Hermon, Israel. Its relationships with the other species of *Orobanche* sect. *Trionychon* occurring in this area are examined.

Key words: Broomrape, Flora, Endemism, eastern Mediterranean.

Introduction

In the framework of the revision of the genus *Orobanche* (including *Phelipaea*) in the Mediterranean area (Domina & Arrigoni 2007; Domina & Raab Straube 2010; Domina & Mazzola 2007, 2009, 2011; Domina & Raimondo 2009; Domina & Stepanek 2009; Domina & al. 2005, 2011, 2013), the plant material coming from Israel was examined. According to Beck (1930); Danin (2004); Domina & Raimondo (2009); Domina & von Raab-Straube (2013); Eig & al. (1931, 1948); Greuter & al. (1989); Post (1932-1933) and Zohary (1976) 16 species of *Orobanchaceae* occur in Israel: 2 of *Cistanche* and 14 of *Orobanche* (7 *Orobanche* sect. *Orobanche* L. and 7 *O.* sect. *Trionychon* Wallr.) Herbarium investigations in B, FI, HUJ, PAL, PRC and RO substantially confirmed this situation. During field investigations in the north of Israel by Simon S. Cohen a species, new to Science, of *Orobanche* sect. *Trionychon* Wallr. was found.

It is here described and discriminated from the related taxa.

Orobanche cohenii Domina & Danin, spec. nova – Figs. 1, 2.

Type: *Orobanche cohenii* Domina & Danin, Israel, Mount Hermon, 2200 m a.s.l., stony-rocky west-facing slope, 20.6.2012, S.S. Cohen, (Holo: PAL!).

Etymology: Plant named after Simon S. Cohen who discovered this new species.

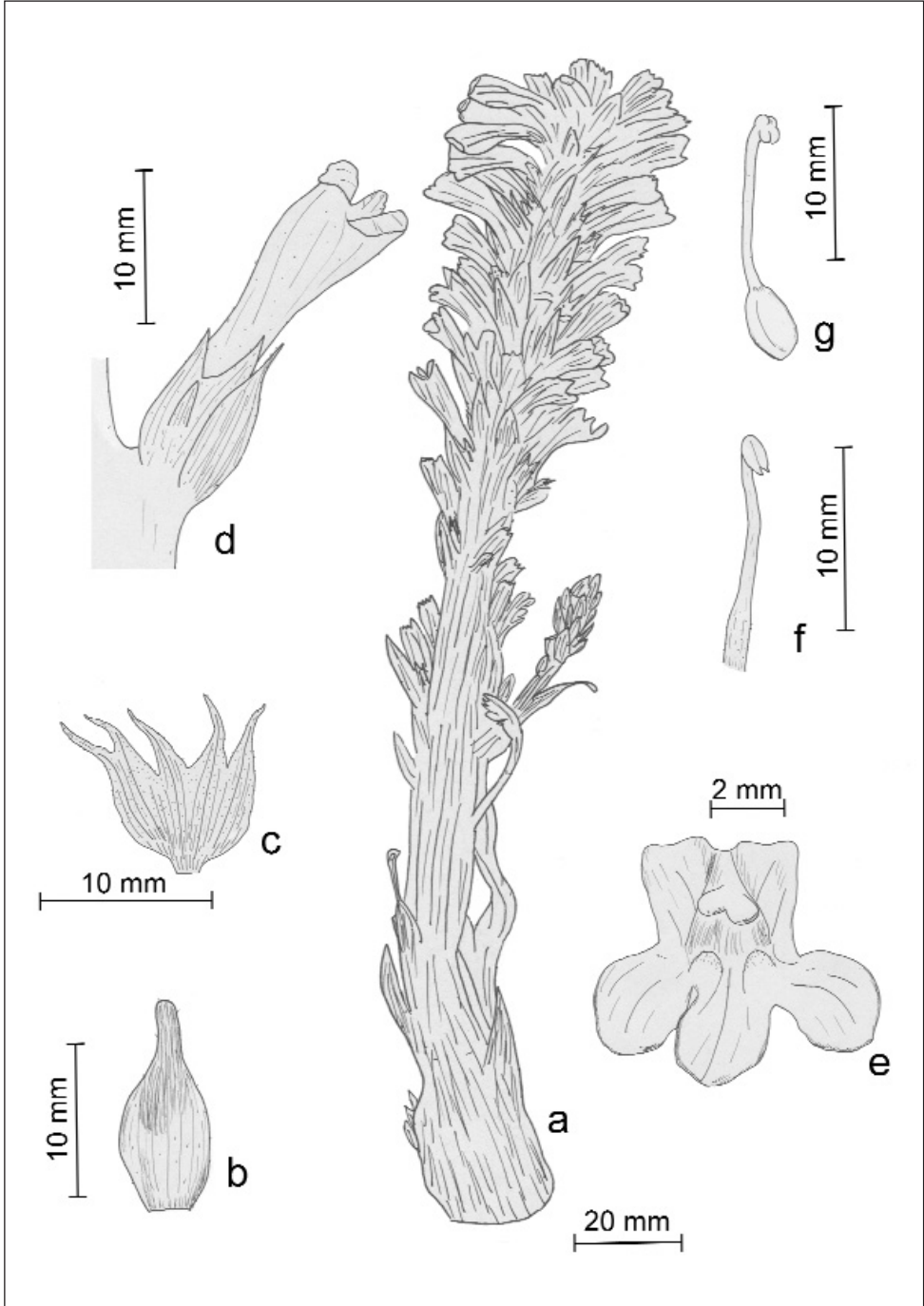


Fig. 1. *Orobanche cohenii*: a) habit; b) bract; c) calyx; d) flower; e) frontal view of the corolla; f) anther; g) style, stigma and ovary (Drawing from the original material by G. Domina).

Planta puberula; caulis crassus, firmus, simplex, rarius interdum in basi ramosus, parcesquamatus, inferne squamis laxis, oblongo-lanceolatis. Spica conica, densiflora, compacta. Flores 19-23 mm longi; bractae lineari-lanceolate, acuminatae, 10-15 mm longae, calycem longitudine aequantes vel superantes; bracteolae lineares, 5-7 mm longae, calyce breviores. Calyx stricte campanulatus, 5-dentatus; dentibus triangularibus, sub-aequalibus, tubum brevioribus vel aequantibus. Corolla tubuloso-campanulata, puberula, infra insertionem staminum angustata, leviter arcuata, lutea ad limbum versus violacea; 19-22 mm longa; limbus lobis subaequalibus, rotundatis, deorsum curvatis. Stamina in tertio infirmo corollae inserta; filamenta in basi cum tubo corollae insertionem barbata; antherae subglabrae.



Fig. 2. *Orobanche cohenii* in the field.

Ecology and distribution: *Orobanche cohenii* grows on Mount Hermon (Fig. 3) on rocky-stony soil, on tragacanth vegetation with *Astragalus cruentiflorus* (dominant), *Anthemis pauciloba*, *Biebersteinia multifida*, *Galium incanum*, *Heracleum humile*, *Siebera nana*, *Silene odontopetala* at 2,200 m a.s.l. on a west-facing slope (Fig. 4).

Taxonomic position: *Orobanche cohenii* Domina & Danin belongs to *Orobanche* sect. *Trionychon* Wallr. as indicated by the occurrence of two bracteoles on the calyx sides. This plant has some similarities with *O. astragali* Mouterde, described from Lebanon in similar habitat (Mouterde 1973; Tohmé G. & Tohmé H. 2007, 2009), but differs from it mainly by the shorter corolla with the stamens inserted closer to its base. It differs from *O. daninii*, *O. aegyptiaca* and *O. muteli* mainly by shape of the corolla; strictly tubular. Diagnostic characters are summarized in Table 1.

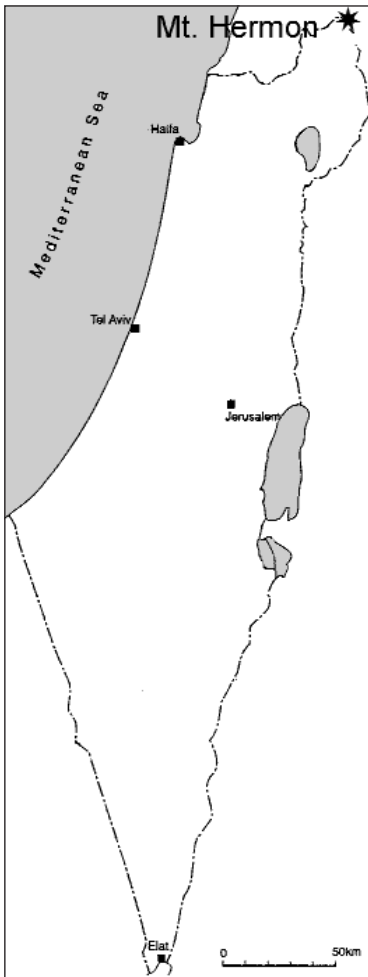


Fig. 3. Distribution of *Orobanche cohenii*.



Fig. 4. Tragacanth vegetation dominated by *Astragalus cruentiflorus* on a stony-rocky west-facing slope of Mt. Hermon.

Table 1. Diagnostic characters of the taxa considered.

Character species	<i>O. cohenii</i>	<i>O. astragali</i>	<i>O. daninii</i>	<i>O. aegyptiaca</i>	<i>O. muteli</i>	<i>O. schultzei</i>
Stem	simple, rarely branched	simple, rarely branched	simple, rarely branched	branched	branched	simple, rarely branched
Lower flowers pedunculate	yes	yes	no	yes	no	shortly
Calyx teeth	5, shorter than or equal to the tube	4, equal to the tube	4, shorter than or equal to the tube	4, equal to or longer than the tube	4, equal to the tube	4, 2-3 times longer than the tube
Corolla length (mm)	19-22	25-30	16-22	20-37	15-22	16-21
Corolla shape	tubular, constricted above the ovary, lightly inflated near the upper lip	strictly tubular, constricted above the ovary, lightly inflated near the upper lip	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	3-4 mm	4-6 mm	4-6 mm	5-7 mm	4-5 mm	4-5 mm
Anthers	glabrous	glabrous	glabrous	hairy	glabrous or hairy	hairy

Discussion and Conclusions

We have not stressed the occurrence of 5 teeth in the calyx as a diagnostic character, because the occurrence of organs with 5 elements in *Orobanche* is anything but uncommon (Beck 1930) and has been considered a tendency to return to the features of the evolutionary ancestor (Crugnola 1899). Populations of *Orobanche rapum-genistae* Thuill. with 5 stamens have been reported (Crugnola 1899) and a 5 lobed calyx occurs in *O. nowackiana* Markgr. (Foley 2000), *O. ebuli* Huter & Rigo and in some populations of *O. gracilis* Sm.

This new species, from inland Israel, enhances the originality of the flora of this country and, in particular, of the Mt Hermon area already notable for its high rate of endemism.

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