

## A New Record for Turkey: *Malcolmia intermedia* C.A.Mey. (Brassicaceae)

Murat ÜNAL\*, Fevzi ÖZGÖKÇE

Yüzüncü Yıl University, Faculty of Science and Arts, Department of Biology, 65080 Van - TURKEY

Received: 16.07.2008

Accepted: 28.08.2008

**Abstract:** *Malcolmia intermedia* C.A.Mey. (Cruciferae/Brassicaceae) is recorded for the first time (A9 Kars) for the flora of Turkey. A description, scan, and distribution map of the species are given.

**Key Words:** Flora of Turkey, Kars, Cruciferae, *Malcolmia*, new record

### Türkiye İçin Yeni Bir Kayıt: *Malcolmia intermedia* C.A.Mey. (Brassicaceae)

**Özet:** *Malcolmia intermedia* C.A.Mey. (Cruciferae/Brassicaceae) Türkiye'de ilk defa A9 Kars'tan kaydedilmektedir. Türün deskripsyonu, taraması ve dağılışı verilmiştir.

**Anahtar Sözcükler:** Türkiye Florası, Kars, Cruciferae, *Malcolmia*, yeni kayıt

### Introduction

During floristic investigations, the authors collected many interesting specimens belonging to Cruciferae from around the Aras River (Halıkışlak, Kars, north-east Anatolia, Turkey). Initial attempts to name one specimen using the *Flora of Turkey* (Cullen, 1965; Davis et al., 1988; Güner et al., 2000) were unsuccessful. Eventually, using the generic account in the *Flora of Iraq* (Townsend, 1980), the specimens were identified as *Strigosella intermedia* (C.A.Mey.) Botsch. *Strigosella* Boiss. is now considered a synonym of *Malcolmia* W.T.Aiton (Greuter et al., 1986; Al-Shehbaz et al., 2006). It was a new record for the flora of Turkey. The species has a wide range of distribution including Iraq, Transcaucasia, Iran, Afghanistan, and Pakistan.

*Malcolmia intermedia* C.A.Mey., Verz. Pflanz. Cauc.: 186 (1831). (Figure 1).



Figure 1. *Malcolmia intermedia* C.A.Mey.

\* E-mail: muratunal\_yyu@yahoo.com

Syn.: *Strigosella intermedia* (C.A.Mey.) Botsch. in Bot. Zhurn.57: 1040 (1972)

*M. runcinata* C.A.Mey., *ibid.*: 186 (1831); Boiss., Fl. Orient. 1: 223 (1867); Zoh. in Dep. Agr. Iraq Bull. 31: 68 (1950); Blakelock in Kew Bull. 10: 547 (1955); Rech.f., Fl. Lowland Iraq: 315 (1964); Rawi in Dep. Agr. Iraq Tech. Bull. 14: 35 (1964).

*M. africana* (L.) R. Br. var. *intermedia* (C.A.Mey.) Boiss., Fl. Orient. 1: 223 (1867).

*M. taraxacifolia* (non DC) Vassilchenko in Fl. URSS. 8: 283 (1939); Rech.f., Fl. Iran. 57: 260 (1968); Hada & Chrték in Act. Univ. Carol. Biol. 4, 1971: 257 (1973).

**Type:** "In campis et collibus prope Baku" G

The following description of the species was based on the specimens collected from Halıkışlak village.

Annual herb, 2-12 cm, much-branched from about the base or frequently very condensed, glabrous to sparingly or more densely furnished with a few simple and more numerous furcate hairs. Leaves elliptic-oblong, 1.5-4.2 × 0.4-1 cm, long-attenuate and subpetiolate below, repand-dentate to runcinate-pinnatifid, glabrous or sparingly hairy, the upper smaller and more shortly attenuate. Racemes short, axillary and terminal, sessile, the lowest fruit situated almost on the main stem, frequently the whole axis ± suppressed so that the fruits appear stellately disposed, mostly 2-8-flowered pedicels very short and stout, 0.5 mm, or less. Sepals 2.5-3 mm, glabrous or with scattered simple or furcate strigose

hairs, narrowly oblong, with broad pale margins, the inner broader less cucullate above, feebly saccate at the base. Petal white, 4.5-7 mm, narrowly lingulate-attenuate, rounded at the apex. Long inner filaments fused in pairs to c. halfway. Siliqua ± densely hairy with simple and furcate hairs, strongly divaricate 16- 45 × 1 mm, rigid; usually ± curved; seed c. 1.25 mm, shortly oblong, compressed, minutely rugulose. Flowering: April-May, fruiting: June. Irrigated alluvium along ditches and channels, slightly saline, sandy banks. 974-1000 m.

Turkey, North-east Anatolia. A9 Kars, south-east Halıkışlak village, around Aras River, slightly saline, sandy banks, 06 v 2006, 974 m, 40°07'388 N-043° 37'752"E. M.Ünal & F.Özgökçe 9182 (in flower), 9294 (in fruit).

The distribution based on this record and previously published records: S, E European Russia, Transcaucasia, Iran, W Pakistan, Afghanistan, C Asia (Turkmenia to Kirgisiya) (Zohary, et al., 1980). (Townsend, 1980) is given in Figure 2. The herbarium specimens are deposited at VANF.

## Results and Discussion

The number of species of *Malcolmia* R.Br. in Turkey (Cullen, 1965; Yıldırım, 2001; Özgökçe & Ünal, 2007) reaches 12 with the addition of *M. intermedia*. The closest species to *M. intermedia* among Turkish *Malcolmia* is *M. africana* (L.) R. Br. It differs from *M. africana* as indicated below:

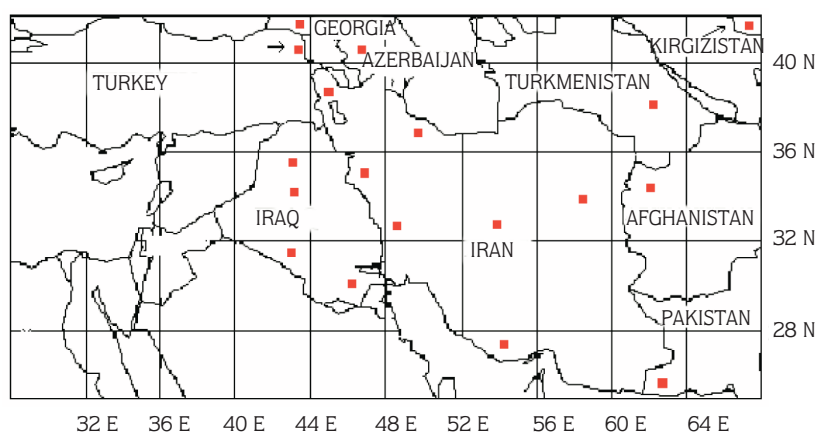


Figure 2. Global distribution of *Malcolmia intermedia*.

Characters	<i>M. intermedia</i>	<i>M. africana</i>
Petal (colour)	white	pale lilac
Petal (length)	4.5-7 mm	c.(5-)7-10 (-12) mm
Sepal (length)	2.5-3 mm	2.5-5 mm
Pedicels	very short and stout 0.5 mm or less	distinct 2-3 mm

*M. intermedia* grows in a very limited area (in Turkey), where it is under high grazing pressure. The recommended IUCN Red Category is Vulnerable (VU (B1a)) (IUCN, 2001). In its locality, the following taxa exist abundantly: *Suaeda confusa* Iljin, *Salsola nitraria* Pall., *Salix pentandroides* A.Skv., *Tamarix parviflora* DC., *Euclidium syriacum* R.Br., *Alyssum linifolium* Steph. ex Willd. var. *linifolium*, *A. desertorum* Stapf. var. *prostratum* T.R.Dudley, *Veronica polita* Fries, *Astragalus ornithopodioides* Lam, *Tripleurospermum parviflorum* (Willd.) Pobed., *Sisymbrium*

*altissimum* L., *Ceratocephalus falcatus* (L.) Pers., *Capsella bursa-pastoris* (L.) Medik., *Nonea caspica* (Willd.) G.Don, *Anchusa arvensis* (L.) M.Bieb. subsp. *orientalis* (L.) Nordh., and *Euphorbia heteradena* Jaub & Spach.

### Acknowledgement

We are grateful to Prof. Dr. Hayri Duman (Gazi University, Ankara, Turkey) for confirming our identification.

### References

- Al-Shehbaz IA, Beilstein MA & Kellogg EA (2006). Systematics and phylogeny of the Brassicaceae: an overview. *Pl Syst Evol* 259: 89-120.
- Cullen J (1965). In: Davis PH (ed). *Flora of Turkey and the East Aegean Islands*. 1: 460-462. Edinburgh: Edinburgh University Press.
- Davis PH, Mill RR & Tan K (eds) (1988). *Flora of Turkey and the East Aegean Islands*. Vol.10 (supplement 1): pp. 29-58, Edinburgh: Edinburgh University Press.
- Güner A, Özhatay N, Ekim T & Başer KHC (eds) (2000). *Flora of Turkey and the East Aegean Islands*. Vol. 10 (supplement 2): pp. 29-41. Edinburgh: Edinburgh University Press.
- Greuter W, Burdet HM & Long G (1986). *Med-Checklist*, Vol. 3: 136. Conservatoire et Jardin Botanique, Genève.
- IUCN (2001). *Red List Categories*: Version 3: 1. Prepared by the IUCN Species Survival Commission. IUCN, Gland. Switzerland and Cambridge. UK.
- Özgökçe, F & Ünal M (2007). A New Record for Turkey: *Malcolmia exacoides* (DC.) Spreng. (Brassicaceae). *Turk J Bot* 31: 345-347.
- Townsend CC (1980). *Strigosella* Boiss. In: Townsend CC, Guest E (eds.) *Flora of Iraq*. 4 part: 2: 1031-1037. Baghdad: Ministry of Agriculture, Republic of Iraq.
- Yıldırım Ş (2001). The Chorology of the Turkish Species of *Brassicaceae*, *Buddlejaceae* and *Buxaceae* families. *Ot Sist Bot Derg* 8: 141-171.
- Zohary M, Heyn CC & Heller D (1980). *Conspectus Florae Orientalis*, Fascicle 1: 18, Israel Academy of Science and Humanities, Jerusalem.