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The status of *Crambe alutacea* Hand.-Mazz. (*Cruciferae*, tribe *Brassicaceae*)

Abstract

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Morphological evidence obtained from type material, additional herbarium specimens and cultivated plants, shows that *Crambe alutacea* differs from *C. orientalis* L in a series of characters, including the type of leaf indumentum and fruit size and should be maintained as a separate species.

Introduction

The genus *Crambe* L. (*Cruciferae*, tribe *Brassicaceae*) includes c. 30 species distributed from the Macaronesian archipelagos to the steppes of Central Asia. Macaronesian species are subshrubs and as a rule have small fruits with the pericarp adhered to the seed, whereas the Eastern ones are hemicryptophytes with larger fruits and the pericarp normally not adhered to the seed. Around the Mediterranean area and in E. Africa there are annual as well as perennial species.

One of the Eastern species, *Crambe alutacea*, has been the object of some controversy concerning its taxonomic status in relation to *Crambe orientalis*.

Handel-Mazzetti (1913) described *C. alutacea* on the basis of two specimens collected in N. Syria; two additional localities, in S. Turkey and Iraqi Kurdistan, were also mentioned as possibly enlarging its area. Schulz (1919: 239) accepted this species, though apparently without having seen any material, since he only transcribed the protologue. However, according to Blakelock (1955: 530), the characters in the original description do not differentiate it clearly from *C. orientalis*, the biennial condition of *Crambe alutacea* being mentioned as the only differential character. Hedge & Huber-Morath (1965: 181) reduced it to variety rank under *C. orientalis*, although without any explanation. Hedge (1966, 1980) maintained the same criterion in his contributions to the "Flora of Turkey" and "Flora of Iraq", respectively. Mouterde (1970: 122) suggested, although without much certainty, that *C. alutacea* might deserve specific status. More recently Khalilov (1991a) mentioned *C. alutacea* as one of the species within his new section *Orientecrambe*, whereas in a later contribution published the same year (Khalilov 1991b) omitted any reference to this taxon.

More recently (Khalilov 1993) *C. alutacea* is considered a synonym of *C. persica* Boiss., which is in fact a synonym of *C. orientalis*.

Discussion and conclusion

Examination of the type material of *C. alutacea* has confirmed the peculiarity of its leaf indumentum: hairs appear in tufts on small protuberances (Fig. 1a, b), a character already briefly described by Handel-Mazzetti (1913) but apparently overlooked by all other subsequent authors. This type of indumentum is unique in the genus, although it is somewhat similar to that of *C. shugnana* Korsh. (Schulz 1919: 240). Apart from this character, the leaves of *C. alutacea* are less deeply divided than in *C. orientalis* and its mature fruits are larger and slightly rugose. These characters also proved constant in the herbarium specimens cited here and in plants grown from seeds collected in Hilloan (Turkey) and kept in the Seed Bank of the Universidad Politécnica de Madrid (Fig. 1c, d), and confirm the rank of species for *C. alutacea*. None of these features are found in *C. orientalis* (Fig. 1e, f), of which material collected in the area shared by both entities was also studied. This two species can be differentiated by the following key:

A. Leaves velvety and softly pubescent; hairs tufted on protuberances with a stellate appearance; upper joint of the silicula 3.5-4 mm diameter, rarely 4-ribbed.

Crambe alutacea

A'. Leaves glabrous to hirsute and rough; hairs with variable density, never tufted, solitary on protuberances; upper joint of the silicula 2.5-3 mm diameter, frequently 4-ribbed.

Crambe orientalis

***Crambe alutacea* Hand.-Mazz.** *Annal. K. K. Naturhist. Hofmus. Wien* 27(1): 53. 1913.

= *Crambe orientalis* L. var. *alutacea* (Hand.-Mazz.) Hedge & Hub.-Mor. *Notes Roy. Bot. Gard. Edinburgh* 26: 181. 1965.

-*C. orientalis* L. var. *aucheri* Boiss. *sensu* Post. *Flora of Syria, Palestine and Sinai*: 101. 1896.

Types — Syria: In steinigen Kalksteppen am Nordfuß des Dschebel Abd el Asis zwischen El Abed und Gharra, 21 Jun 1910, *Handel-Mazzetti 1709* (W). Zwischen Gharra und Spaijan, 23 Jun 1910, *Handel-Mazzetti 1822* (W).

Biennial or shortly perennial, 0.80-1 m; roots thick, many branched, light brown outside and white inside. Stem swollen and at base, with many buds, then slender, striate and sparsely hispid, glabrous at top. Basal leaves 15-35 × 12-18 cm; blade thick, ovate-lanceolate to elliptical, undivided to pinnatifid with 1 to several unequal lateral lobes, margin irregularly toothed, sometimes repand, greyish green, velvety, densely pubescent on both sides; hairs with stellate appearance, tufted on protuberances, the central hair of each group erect and longer than the several lateral ones; petioles 2.5-5 cm, channelled, widely broadened at base; cauline leaves scarce, similar to the basal ones but much smaller, sometimes almost sessile. Inflorescence very loose, up to 50 cm in diameter. Sepals 1.8 × 1 mm, glabrous, slightly margined. Petals 3 × 1 mm, white or yellowish-white, shortly clawed. Silicula jointed; upper joint obtuse, spherical, 3.5-4 mm in diameter, glabrous, slightly rugose, very hard, frequently pale brown, containing 1 normally developed seed and 0-1 vestigial seed below; lower joint clavate, irregularly striate lengthways, seedless or rarely with 1 vestigial seed.

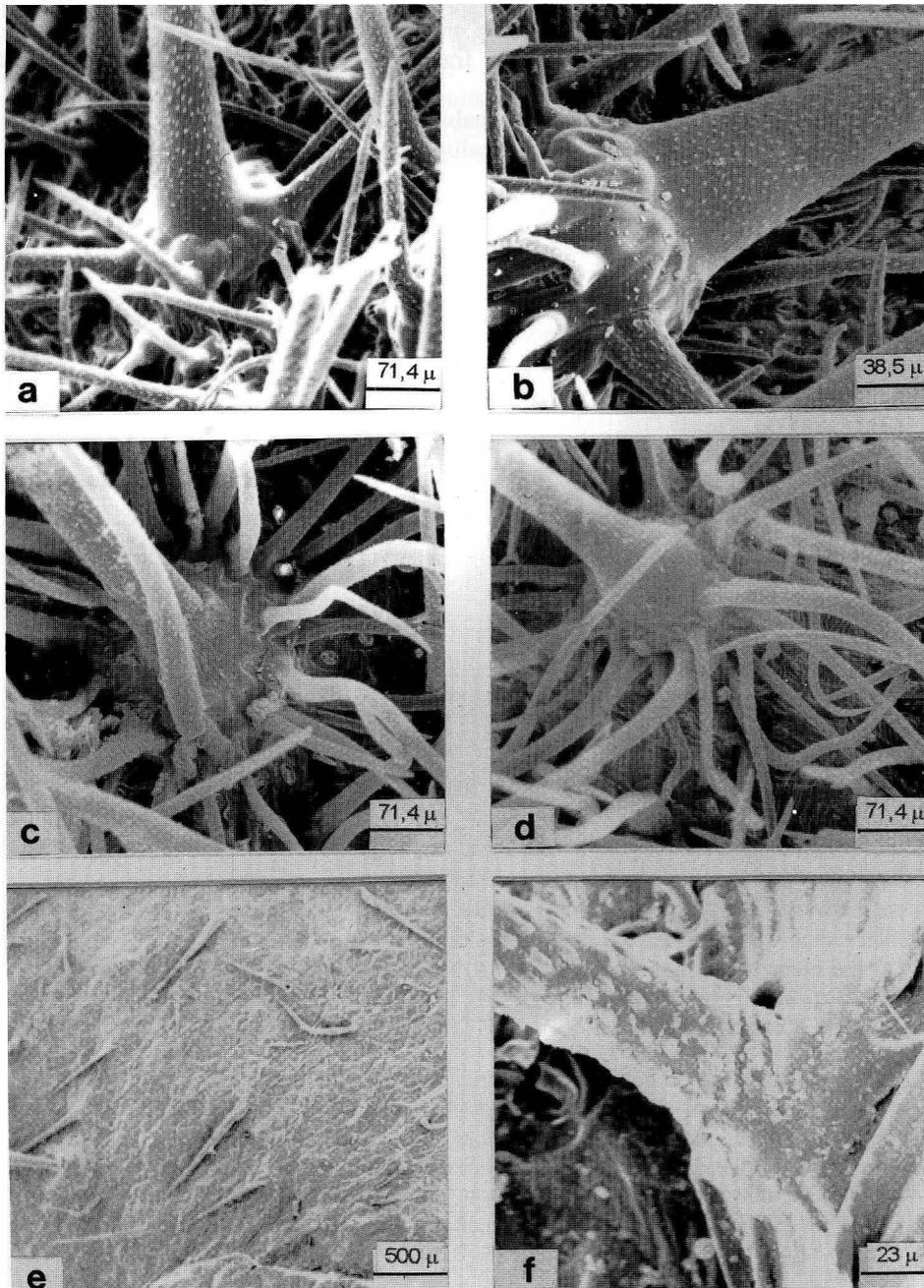


Fig. 1. **a-d**, tufted hairs in *C. alutacea* Hand.-Mazz., (**a-b**, *Handel-Mazzetti 1709*, **c-d**, *GC 6243*, cultivated); **e-f**, solitary hairs in *C. orientalis* L. (*Haussknecht s/n*).

This species grows in arid and desertic areas, on the calcareous steppes of N. Syria (Ain Tab; Aleppo; Jbel Abdul Aziz), N. Iraq (Jbel Sinjar) and S. Turkey (Adyaman; Urfa).

Based on its morphological characters, habit and geographical distribution, *C. alutacea* would belong into section *Astrocrambe* Khalilov.

Additional examined specimens

Crambe alutacea

Iraq: Jbel-Sinjar, 20 Apr 1951, *Thesiger 547* (BM); 40 km from Shabani to Sinjar, 140 m a.s.l., 4 Apr 1978, *Al Kaysi & Hamad 48989* (K).

Syria: Ain-Tab, Jun 1907, *M. Haradjian 1264* (E) (W); Ain-Tab, 22 May 1882, *Post s/n* (BM); Aleppo, *Rusell 258* (BM).

Turkey: Hilloan, near Adyaman, GC 6243* (cultivated).

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C. orientalis

Syria: without locality, 1837, *M. Aucher 180* (G-Boiss, type of *C. aucheri* Boiss.); Aleppo, 29 Apr 1841, *Kotschy 165* (BM) (W); Ain-Tab, alt. 2000 ped., 3 Apr 1865, *Hausknecht s/n* (W).

It seems in fact to have been Post (1896: 101) who first observed the velvety aspect of the leaves ("velvety canescent") of these plants, and their consequent taxonomic peculiarity. However he failed to realise that he had found a new taxon, and erroneously thought that the plants with this type of indumentum corresponded to *C. orientalis* var. *aucheri* (Boiss.) Boiss. However, the type of *C. aucheri* Boiss. shows no tufted hairs nor velvety aspect and the name should be considered a synonym of *C. orientalis*.

On the other hand, a specimen collected by Post in Aleppo (Syria) has been found to belong to *C. alutacea*. However, this species has been overlooked in the second edition of Post's Flora (Dinsmore 1932: 129-130).

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References

- Blakelock, R. A. 1955: Notes on the Flora of Iraq with keys. — *Kew Bull.* **10**: 530.
 Hedge, I. 1968: *Crambe* L. — In: Davis, P. H. (ed.), *Flora of Turkey and the East Aegean Islands* **1**: 272-273. — Edinburgh.

- & Huber-Morath, A. 1965: Materials for a Flora of Turkey. — Notes Roy. Bot. Gard. Edinburgh. **26**: 181.
- & Lamond, J. M. 1980: *Crambe* L. — In: Townsend, C. C. & Guest E. (ed.), Flora of Iraq **4(2)**: 869-870, Baghdad.
- Khalilov, I. 1991a: Generis *Crambe* L. (*Cruciferae*) sectiones tres novae. — Novosti Sist. Vyssh. Rast. **28**: 78-79.
- 1991b: The system of the genus *Crambe* (*Brassicaceae*). — Bot. Zhurn. **76(11)**: 1612-1613.
- 1993: A synopsis of the genus *Crambe* (*Brassicaceae*). — Bot. Zhurn. **78(1)**: 107-115.
- Mouterde, P. 1970: *Crambe* L. — In: Nouvelle Flore du Liban et de la Syrie **2**: 120-123, Beyrouth.
- Post, G. E. 1896. *Crambe* L. — In: Flora of Syria, Palestine and Sinai; from the Taurus to Ras Muhammad and from the Mediterranean Sea to the Syrian Desert: 101-102. Beirut.
- 1932: *Crambe* L. — In: Flora of Syria, Palestine and Sinai **1**, 2nd ed. revised and enlarged by J. E. Dinsmore, Beirut: 129-130.
- Schulz, O. E. 1919. *Crambe* L. — In: Engler, A., Das Pflanzenreich 70-IV.105: 228-249. Neudruck 1959. Weinheim.

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