

## Some new combinations and synonyms in *Alcea* (Malvaceae) from Iran

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### Abstract

Five new combinations: *Alcea rechingeri* (ZOHARY) I.RIEDL var. *macrocarpa* (I.RIEDL) PAKRAVAN, *A. arbelensis* BOISS. & HAUSKN. var. *crassicaulis* (I.RIEDL) PAKRAVAN, *A. kurdica* (SCHLECHT.) ALEF. var. *laxiflora* (I.RIEDL) PAKRAVAN, *A. wilhelminae* I.RIEDL var. *lineariloba* (I.RIEDL) PAKRAVAN, *A. wilhelminae* var. *sublacerata* (ZOHARY) PAKRAVAN are made. Three new synonyms are recognized: *A. xanthochlora* I.RIEDL is treated as a synonym of *A. glabrata* ALEF.; *A. tholozani* STAPF and *A. scabridula* I.RIEDL are considered as synonyms of *A. kurdica* (SCHLECHT.) ALEF.

**Keywords:** Flora of Iran; Malvaceae, *Alcea*.

### Zusammenfassung

Fünf neue Kombinationen werden durchgeführt: *Alcea rechingerii* (ZOHARY) I.RIEDL var. *macrocarpa* (I.RIEDL) PAKRAVAN, *A. arbelensis* BOISS. & HAUSKN. var. *crassicaulis* (I.RIEDL) PAKRAVAN, *A. kurdica* (SCHLECHT.) ALEF. var. *laxiflora* (I.RIEDL) PAKRAVAN, *A. wilhelminae* I.RIEDL var. *lineariloba* (I.RIEDL) PAKRAVAN, *A. wilhelminae* var. *sublacerata* (ZOHARY) PAKRAVAN. Drei neue Synonyme wurden erkannt: *A. xanthochlora* I.RIEDL als Synonym von *A. glabrata* ALEF., *A. tholozani* STAPF sowie *A. scabridula* I.RIEDL gehören in die Synonymie von *A. kurdica* (SCHLECHT.) ALEF.

### Introduction

*Alcea* is a mainly South West Asian genus with about 70 species. It contains only few species in Europe (ZOHARY 1963). RIEDL (1976) has mentioned 39 species and PAKRAVAN (2001) 34 species from Iran.

In the course of 5 years study on the systematics of *Alcea* for subject of Ph. D. thesis by one of the authors (PAKRAVAN) new insights in the taxonomy of *Alcea* in the Iranian area resulted. Based on this study the necessary taxonomic consequences are published in this short communication.

Following a detailed examination of plants in their habitats and of preserved specimens in the herbarium Wien [W] and those obtained on loan from other herbaria [BM, E, HUI, P, JE, WU, IRAN, TARI, TUH] it became clear that some taxa needed new categorization. Five of them are reduced in their rank, three species are put into synonymy. The technical terms are used in accordance with ZOHARY (1963).

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## Results and discussion

### ***A. rechingeri* (ZOHARY) I.RIEDL var. *macrocarpa* (I.RIEDL) PAKRAVAN comb. et stat.n.**

≡ *A. macrocarpa* I.RIEDL, Fl. Iran. 120: 63 (1976).

Type: Iraq: Distr. Erbil (Kurdistan). Montes Qandil ad confines Persiae, 1100 m, 1. 8. 1957 Rechinger 11051 [W!].

*A. macrocarpa* was described and separated by RIEDL (1976) by its large fruits and long pedicels in fruiting stage. It grows in Iraq, at the border of Iran and in W Iran. Examining the type specimens of *A. rechingeri* (Type: Iraq: Sulaimaniya, 8 km Penjwin, Rechinger 12334, W!) and *A. macrocarpa*, as well as many other specimens of *A. macrocarpa* (e.g. Rechinger 1189, W; Rechinger 4854, W; Pakravan et al. 26431, TUH) and *A. rechingeri* (e.g. Behbudi 981, IRAN; Iranshahr 1627, IRAN; Runemark et al. 29353, TARI; Rechinger 1236, W) no differences in the characters of fruits and pedicels of these two species remained. The only differences between them are the slender and loose inflorescences of *A. macrocarpa*. These inflorescence characters separate them as two taxa, but they are not enough for putting *A. macrocarpa* as a separate species or subspecies, therefore it was decreased to the variety level.

### ***A. arbelensis* BOISS. & HAUSKN. var. *crassicaulis* (I.RIEDL) PAKRAVAN, comb. et stat.n.**

≡ *A. crassicaulis* I.RIEDL, Fl. Iran. 120: 79 (1976).

Type: Persia: Khamseh, Adversuras 8-22 km SW Zanjan versus Bijar, 30. 6. 1971 Rechinger 42352 [W!].

The examination of the type specimen of *A. crassicaulis* showed clearly that this species is very closely related to *A. arbelensis* by its form of carpels and leaves and dense inflorescences, but differs from it by short pedicels and sparing indumentum. These differences make it possible to distinguish the two taxa. Because there is no geographical separation, *A. crassicaulis* is classified as variety of *A. arbelensis*.

### ***A. kurdica* (SCHLECHT.) ALEF. var. *laxiflora* (I.RIEDL) PAKRAVAN, comb. et stat.n.**

≡ *A. laxiflora* I.RIEDL, Fl. Iran. 120: 73 (1976).

Type: Persia: W: Azerbaijan, 55 km W Mianeh, adversura, 1600 m, Rechinger 32616 [W!].

*A. laxiflora* has been described from Iran (Azarbaijan) and was separated by the form of calyx and epicalyx, and color and shape of corolla. *A. kurdica* is a very polymorphic species and there is broad variation of this species especially in these characters (RIEDL l.c.: 176). The comparison of the type specimen with that of *A. kurdica* (Type: Iraq, Kurdistan, Inhabitius savorum in altioribus regionibus Mt. Gera, Kotschy 365, W!) shows, that *A. laxiflora* differs only in having lax inflorescences. Based on this character the taxon is acknowledged on the rank of variety.

### ***A. wilhelminae* I.RIEDL var. *lineariloba* (I.RIEDL) PAKRAVAN, comb. et stat.n.**

≡ *A. lineariloba* I.RIEDL, Fl. Iran. 120: 48-49 (1976).

Type: Persia, Azerb., In facibus 122 km NW Zandjan versus Mianeh, 1050 m, 31. 7. 1967 Rechinger 32585 [W!].

*A. lineariloba* was separated from *A. wilhelminae* by the shape of stipules, leaf shape, articulation of pedicels and number, color and shape of the carpels. The examination of the type specimens of *A. lineariloba* and *A. wilhelminae* (Type: Iran: Azerbaijan occid. in valle fluvii Qotur, W Khoy versus fines Turcicas, 1300-1500 m, Rechinger 41764, W!) showed that they differ in the form of the stipules and leaf shape. The other characters such as articulation of the pedicels are very variable within this species and also some specimens with intermediate shape of leaves have been seen (eg. Rechinger 49834, 49499, 48684, 48287, all W). Also carpel characters are similar in both species. There only remains the difference in stipule shape for distinguishing these two taxa. Sharing the same habitat *A. lineariloba* is considered as a variety of *A. wilhelminae*.

***A. wilhelminae* I.RIEDL var. *sublacerata* (ZOHARY) PAKRAVAN, comb.n.**

≡ *A. dissecta* (BAKER) ZOHARY var. *sublacerata* ZOHARY, Israel J. Bot. 12: 16 (1963). Type: Turkey, Prov. Tunceli, Ovacik, 1400 m, fallow fields, 1957, Davis and Hedge D31456 [E!].

*A. dissecta* (BAKER) ZOHARY var. *sublacerata* ZOHARY does not have the characters of *A. dissecta* such as smooth epicalyx, but is very similar to *A. wilhelminae*. These two taxa differ only in the color of petals. Therefore var. *sublacerata* ZOHARY is transferred to *A. wilhelminae*.

### New Synonyms

***A. kurdica* (SCHLECHT.) ALEF.**

Type: Iraq: Kurdistan, in habitibus saxorum in altioribus regionibus Mt. Gara, Kotschy 365 [W].

= *A. tholozani* STAPF, Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl. 512: 40 (1886), **syn.n.** Type: Persia: In agris prope Ecbatanens, in agris lente consistis ad Schawin, a. 1882, Pichler [WU!, K].

*A. kurdica* is a very polymorphic and widespread species in W Iran and E Iraq. The type material of *A. tholozani* contains no fruits, but fruiting specimens have been collected from the type locality (Hamedan [= Ecbatan], Hamedan to Assadabad, Pakravan et al. 26442, TUH). The comparison with *A. kurdica* showed no differences, therefore *A. tholozani* is considered as a synonym of *A. kurdica*.

= *A. scabridula* I.RIEDL, Fl. Iran. 120: 57 (1976), **syn.n.**

Type: Persia, prov. Azerbaijan occid. Ad versus et in agris derelictis 16 km N Mahabad, 1280 m, 16. 6. 1976 Rechinger 42215 [W!].

*A. scabridula* is equal to *A. kurdica* in the form of the carpels and flowers. They differ in leaf divisions and leaf margin only. Examination of the type material and many other specimens of *A. kurdica* (e.g. Pakravan et al. 26424 TUH; Rechinger 48482, 49100, 42496, 48058, all W; Mozaffarian 63991 TARI) showed broad variation of leaf characters. The type and other specimens named *A. scabridula* (e.g. Rechinger 11679, W; Moussavi 35187, IRAN; Iranshahr 16268, IRAN) are clearly within this variation. Therefore *A. scabridula* has to be considered as a synonym of *A. kurdica*.

***A. glabrata* ALEF.**

Type: Persia, Gachsar, inter Asadbar et vallem fl. Lour, Kotschy 531 [W!].

= *A. xanthochlora* I.RIEDL, Fl. Iran. 120: 75 (1976), **syn.n.**

Type: Persia, prov. Azerbaijan orient. in declivibus saxosis inter Livarjan et Daran SE Jolfa, 1200 m, 25. 7. 1971 Rechinger 43659 [W!].

*A. xanthochlora* was characterized with rigid stellate hairs on stem, prominent reticular nerves and thick pedicels (RIEDL 1976). Type material of *A. xanthochlora* and also several specimens determined by Riedl as *A. xanthochlora* (e.g. Rechinger 43659, 3264b, 43618, all W) was compared with the type of *A. glabrata*. No clear character remained as difference. Some other recently collected specimens (eg. Riazi 5684, TARI; Foroughi 14513, TARI; Pakravan et al. 26384, TUH) with intermediate characters confirm the fusion of the two taxa.

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