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ADDITIONAL NOTES ON *ONOSMA*-SPECIES (*BORAGINACEAE*) FROM TURKEY

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1. *Onosma anisocalyx* EDMONDSON et H. RIEDL, Israel Journal of Botany 27(1): 14 (1978)

The combination proposed by us for our new species proved to be antedated bei *O. anisocalyx* PONERT, Fedde's Repertorium specierum novarum 86: 504(1975). It has to be replaced, therefore, by a new name:

Onosma edmondsonii H. RIEDL, nom.nov.

Syn.: *O. anisocalyx* EDMONDSON et H. RIEDL, Israel Journal of Botany 27(1): 14 (1978), nec Ponert (1975)

O. edmondsonii is not related to PONERT's species in any way. The epitheton "*anisocalyx*" has been given to it for the different size of the calyx in flowers on the main stem and on lateral branches respectively, while in our species the lobes are different in one and the same calyx.

The type of *O. anisocalyx* PONERT, described from Iran, has been examined by the present author. It seems to represent a taxon of its own, though it may be a mere variety or local subspecies of the extremely polymorphous *O. microcarpum* DC.

2. *Onosma davisii* H. RIEDL, Notes Roy.Bot.Garden Edinburgh 30: 318 (1970)

TEPPNER in 1980 published a paper on the *O. albo-roseum* group as he understands it - the delimination seems to be highly arbitrary in the present author's opinion, and some of TEPPNER's arguments for excluding species certainly cannot be accepted as valid - in which cytological data are well founded beyond doubt, but morphology is dealt with in a deplorably superficial way. He mentions *O. davisii* among critical taxa and wants to unite it with *O. albo-roseum* FISCHER et C.A. MEYER, though he has

seen the type only at the beginning of his studies (as he admits himself) and is not sure, whether it may not be identic with *O. sanguinolentum* VATKE rather than *albo-roseum* (I am still not convinced that these two taxa should be considered as separate species). Apart from this fairly unusual argument he must have overlooked a considerable number of characters useful for recognizing *O. davisii* as a separate unit at once.

O. davisii has no sterile basal leaf rosettae apart from the flowering stems, which are erect to ascendant, not separated by creeping stolons, and usually higher than in *O. albo-roseum*. The lower stem leaves are shorter than the upper ones, a very unusual feature among all *Onosmas*. The uppermost stem leaves are much wider than they are in both *O. albo-roseum* and *O. sanguinolentum* as a rule, though exceptions are possible taking into account the enermous variability of these taxa. The basal tubercles of hairs are always distinct in *O. albo-roseum* and *O. sanguinolentum* on the upper surface of leaves, often indistinct in *O. davisii*. The number of small hairs on the tubercles is considerably lower (5-6) in *O. davisii* than in both the other species (confer RIEDL 1978: 335, fig.14.9). In *O. davisii*, they are appressed to the leaf surface and arranged in one circle only, while in *O. albo-roseum* there are at least two circles, the hairs of the inner circle(s) suberect or oblique. Flowers are sessile or pedicels upto 1 mm long in *O. davisii*, pedicels 1-3(4) mm long in *O. albo-roseum*. Calyx lobes are free to the base and green with only a few hairs in *O. davisii*, united for at least 2 mm in flower and whitish with a great number of dense, appressed hairs in the upper part, more or less patent hairs near the base in *O. albo-roseum*. Anthers are coherent at base in *O. davisii*, usually free in *O. albo-roseum*, but that character is not very reliable.

From the differences mentioned it can be concluded that the relationship between *O. albo-roseum* and *O. sanguinolentum* on one side, *O. davisii* on the other certainly can't be very close. All they have in common is the colour of the flowers, which does not seem to be very useful in establishing groups of closely related taxa from the present author's knowledge of more than 100 different species of *Onosma*, length of calyx and corolla, which is extremely variable in *O. albo-roseum*, and the asterotrichous type of indument.

3. *Onosma mutabile* BOISSIER et HAUSSKNECHT in BOISSIER, Plant.nov. orient .decas 2: 3-4 (1875).

TEPPNER, l.c., maintains, that there is no possiblity to separate *O. mutabile* from *O. albo-roseum* FISCHER et C.A. MEYER according to his opinion. But once more he overlooked a number of important distinguishing characters, though a fairly close relationship cannot be denied. Here it is the calyx that provides the most reliable differences. While flowering, both species are very similar indeed. The lobes of the calyx are not wider than 1-1,2 mm in *O. mutabile* as a rule, while they are 1,5-2 mm in *O. albo-roseum*. They are free to about 1 mm from the base in *O. mutabile*, usually coherent for a little more in *O. albo-roseum* (the descriptin in RIEDL 1967 is not quite correct). After flowering the lobes remain unchanged or grow a little in length in *O. mutabile*, in which they also may appear somewhat flexuous; the basis is not changed at all. In *O. alboroseum* the lobes may become wider or not, but the basal tube is elongated to about 2,5-3 mm. The base of at least some of the bristly hairs becomes more distinctly elevated to form a white, subglobose tubercle. The bristles are now distinctly patent. As a consequence of the growth of the fruit, this basal tube also becomes wider at last, and sometimes it may even appear somewhat constricted below the free lobes. Fortunately, there are flowering and fruiting specimens of *O. mutabile* collected by HAUSSKNECHT at nearly the same locality present in herbarium W so that the whole development can be followed up in specimens from one and the same population (there is no reason to assume that the area is heterogenous to such a degree that it will give rise to several markedly distinct populations). The behaviour displayed by *O. albo-roseum* is characteristic also for species united in subgen. *Aponosma* by De CANDOLLE (1846) among the haplotrichous *Onosma* species. TEPPNER's argument that *Onosma qandilicum* RECH.f et RIEDL is more closely related to species of *Aponosma* than to the *O. albo-roseum* group does not make sense, therefore. The character seems to constitute one of the most important distinguishing features in the whole genus. *O. mutabile*, therefore, does not seem to be too close to *O. alboroseum* inspite of its general habit and undeniable relationship.

Other distinguishing characters of minor importance comprize the hairs that become yellowish in the calyx and also in many parts of the leaves in *O. mutabile* when getting dry, but only in a few small spots if at all in *O. albo-roseum*, and the tubercles on the upper side of the leaves,

that are all of the same size in *O. mutabile*, sometimes variable in size in one and the same leaf in *O. albo-roseum*.

Apart from the type collection, no specimens are known that can be identified as *O. mutabile* beyond doubt, so that it may well represent a very locally distributed endemic as they seem to abound in the high mountain areas of Anatolia.

Zusammenfassung

Für *Onosma anisocalyx* EDMONDSON et H. RIEDL (1978), nec PONERT (1975), wird *O. edmondsonii* als nomen novum vorgeschlagen. Die morphologischen Unterschiede zwischen *O. davisii* H. RIEDL und *O. mutabile* BOISSIER et HAUSSKNECHT einerseits, *O. alboroseum* FISCHER et C.A. MEYER und *O. sanguinolentum* VATKE andererseits werden im einzelnen erörtert und die spezifische Selbständigkeit der zwei erstgenannten betont.

Summary

For *Onosma anisocalyx* EDMONDSON et H. RIEDL (1978), nec PONERT (1975) *O. edmondsonii* is proposed as a new name. The morphological differences between *O. davisii* H. RIEDL and *O. mutabile* BOISSIER et HAUSSKNECHT on one side, *O. albo-roseum* FISCHER et C.A. MEYER and *O. sanguinolentum* VATKE on the other are discussed in some detail and the specific separation of the former defended.

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