

Materials on the flora of Bulgaria

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ABSTRACT: A number of taxa new to the flora of Bulgaria are given: the genus *Parvotrisetum* CHRTEK, *Parvotrisetum myrianthum* (BERTOL.) CHRTEK, *Trigonella orthoceras* KAR. et KIR., *Anchusa macedonica* DEG. et DÖRFL., *Veronica trichadena* JORD. et FOURR., *Aegilops speltoides* subsp. *ligustica* (SAVIGN.) BORN., *Cardamine graeca* var. *eriocarpa* (DC.) FRITSCH. Two forms are described as new for the science: *Gentianella bulgarica* f. *albiflora* f. n., and *Cirsium appendiculatum* f. *albiflorum* f. n. New localities are reported for a series of rare Bulgarian plants.

KEYWORDS: rare plants, flora, Bulgaria,

In studying the herbarium material collected from different regions of the country, as well as in revising materials from some of our herbaria, the author found taxa which are new for the Bulgarian flora, as well as new chorological data for some species with a limited distribution in our country.

Aegilops speltoides TAUSCH 1. Thracian plain. On dry grassy places near the village of Raikova mogila, Svilengrad district. Plants with spikelets collected on July 18, 1990, 2. Eastern Rhodope mountains. On grassy places near the village of Svirachi, Ivailovgrad district. Herbarium material collected on July 27, 1991.

B. STEFANOV was the first botanist to report *Ae. speltoides* TAUSCH for the Bulgarian flora. In June 1924 he collected material of it in dry meadows near the village of Drebesna, Ivailovgrad district, Eastern Rhodopes. These specimens are kept in the herbarium of the former Agricultural Faculty, Sofia (SOA) which is at present at the Higher Institute of Agriculture in Plovdiv.

In 1924 the major work of STOYANOV N. and B. STEFANOV, Flora of Bulgaria, Part I, was published where the *Gramineae* family is treated but *Ae. speltoides* TAUSCH is not included. In the second edition of the same work the authors include the species in the genus *Triticum* L. - *T. speltoides* GODR. = *Ae. speltoides* TAUSCH (1933, p. 166) as a member of the Bulgarian flora, and report its distribution in the district of Ivailovgrad. In the third edition (1948, p. 175), the authors accept the same status of the species and add some new floristic regions of its distribution - the Thracian plain (Svilengrad district) and the Tunja hilly region (Elhovo district). The fourth edition, published in two parts and written in co-authorship with B. KIFANOV, separates the genus *Aegilops* L. from the genus *Triticum* L. (1966, p. 148). The authors repeat the distribution of *Ae. speltoides* TAUSCH without changes - near the towns of Ivailovgrad, Svilengrad and Elhovo. This distribution is also accepted by St. Vulev, the author of the genus *Aegilops* L. in Volume 1 of Flora of the People's Republic of Bulgaria (1963, p. 472).

The material collected by us as well as the herbarium samples inspected belongs exclusively to *Ae. speltoides* TAUSCH - subsp. *ligustica* (SAVIGN.) BORNM, which, however, was not pointed out by any of the authors cited. The two subspecies of *Ae. speltoides* TAUSCH subsp. *speltoides* and subsp. *ligustica* (SAVIGN.) BORNM., are very well distinguishable from one another. In subsp. *ligustica* (SAVIGN.) BORNM. the lemmas of the lateral spikelets as well as those of the terminal one are awned, while in *Ae. s.* subsp. *speltoides* only the lemmas of the terminal spikelet are awned, those of the lateral spikelets being awnless. In addition at ripening the rachis of the former subspecies is fragile and the spikelet joints are gently curved at the base and as long as the glumes, in the latter subspecies the rachis is slightly fragile, the spikelet joints are abruptly curved at the base and about twice as long as the glumes. These differences are the reason for some authors to accept subsp. *ligustica* (SAVIGN.) BORNM. as a species (*Ae. ligustica* SAVIGN.), for others - as a subspecies, third ones as a variety. We accept that there are grounds to share HAMMER's treatment of this taxon (1980) in the rank of a subspecies.

Parvotrisetum myrianthum (BERTOL.) CHRTEK. Struma valley. On dry grassy places on the hill of Malkia kozhuh, near the railway station of General Todorov, Sofia region. Specimens with spikelets collected on June 2, 1987.

The genus *Parvotrisetum* CHRTEK and the species *P. myrianthum* (BERTOL.) CHRTEK are new for the Bulgarian Flora. *P. myrianthum* is an eastern Mediterranean element that is found in Italy, Yugoslavia, Greece and

Turkey. Its localities closest to our country are in Macedonia, Northern Greece and the European part of Turkey (the district of Odrin).

Nardurus maritimus (L.) MURB. subsp. *aristatus* (KOCH) TZVEL. 1. Western Rhodopes. On sandy grassy places near the river of Lepenitza, not far from the holiday house "Zavrat", to the south-west of the town of Velingrad, Plovdiv region. Plants with spikelets collected on June 20, 1987. 2. Thracian plain. On sandy rocky places, to the west of the mineral baths near the town of Haskovo. Specimens with spikelets collected on May 20, 1988. According to KUZMANOV (1963, p. 419) and STOYANOV, STEFANOV and KITANOV (1966, p. 131), *N. maritimus* (L.) MURB. subsp. *aristatus* (KOCH.) TZVEL. [= *N. tenuiflorus* (SCHRAD.) BOISS. var. *aristatus* (KOCH.) HAYEK], is known only "At the foot of the Belasitza Mountain, Ograzhden and on the hill of Malkia kozhuh."

Desmazeria rigida (L.) TUTIN. Western Rhodopes. On dry grassy places on the hills between the town of Krichim and the village of Kozarsko, Plovdiv district. Specimens with spikelets collected on June 14, 1965. STOYANOV, STEFANOV and KITANOV (1966, p. 132) report this species as occurring only in the southern part of the Strouma valley, the valley of Mesta (the district of Gotze Delchev), the Thracian plain (the district of Chirpan), the Eastern Rhodopes, the southern part of the Black Sea coast, and Stranja Mountain.

Allium rhodopaeum VEL. Strouma Valley. On uncultivated grassy places by the village of Parvomai, near the town of Petrich, Sofia region. Plants with flowers and unripe fruits were collected on Sept. 15, 1989. It has not been reported for the Strouma Valley before.

Silene gallica L. Thracian plain. On grassy places to the east and south-east of the town of Harmanli, Haskovo region. Specimens with flowers and unripe fruits collected on May 28, 1988. The species is new for the Thracian plain.

Delphinium peregrinum L. Thracian plain. On uncultivated places to the east of the town of Svilengrad, Haskovo region. According to SIMEONOVSKI and PENEV (1970, pp. 65-66) this species can be met with only in the Toundja hilly region and Strandja Mountain.

Fumaria kralikii JORD. Strouma Valley. On uncultivated grassy places near the village of Stroumeshnitza, not far from Petrich, Sofia region. Specimens with flowers and unripe fruit collected on April 13, 1989.

According to YORDANOV and KOZHUHAROV (1979, p. 304), this species is known in our country only from "the Middle and Eastern Rhodopes, the Thracian plain and the Toundja hilly region".

Cardamine graeca L. var. *eriocarpa* (DC.) FRITSCH. Western Rhodopes. On stony places in the woods along the valley of the Vacha river, 6-8 km to the south of the town of Krichim, Plovdiv region. Plants with flowers and unripe fruit were collected on May 1, 1991. *C. graeca* L. is a new species for the flora of Western Rhodopes, while var. *eriocarpa* (DC.) FRITSCH. is new for the flora of Bulgaria.

Bunias erucago L. 1. Strouma valley. On dry grassy places on the eastern slope of the hill of Malkia kozhuh near railway station General Todorov, Sofia region. Plants with flowers and unripe fruit collected on June 2, 1987; 2. Western Rhodopes. On dry calcareous grassy and rocky places between the villages of Kozarsko and Zhrebichko, Plovdiv region. Plants with flowers and unripe fruit collected on June 22, 1991. The species is new for both floristic regions.

Trigonella orthoceras KAR. et KIR. There is only one herbarium specimen of this species new for the flora of Bulgaria, kept in the herbarium of the former Agricultural Faculty (SOA). The plant was collected by STRÍBRNÝ and carries the following label: "*Trigonella striata* L. Krichim. On hills, May, 1896. Leg. Střbrný". The material is revised by the author of the genus *Trigonella* L. (KOZHUHAROV) in the Flora of the People's Republic of Bulgaria who confirms the determination made by STRÍBRNÝ.

T. orthoceras KAR. et KIR. is well distinguished from *T. striata* L. in having inflorescences and fruit that are sessile or on a stalk, 1-2(-3) mm long while in *T. striata* L. they are on a stalk that is as long as the leaf at the base of the inflorescence or longer, rarely shorter. In addition, fruits of *T. orthoceras* KAR. et KIR. are erect or almost erect and pointing upwards while in *T. striata* L. they are falcate and patent or downward pointing. The geographical range of *T. orthoceras* KAR. et KIR. is the Caucasus, Western Siberia (south), Central Asia and Iran (VASSILCHENKO, 1987, p. 185).

Trifolium retusum L. Strouma valley. On stony grassy places near the town of Petrich, Sofia region. Plants with flowers were collected on June 2,

1987. KOZHUHAROV (1976, p. 347) does not report this species for Strouma valley.

Trifolium glomeratum L. Western Rhodopes. On grassy places by the railway between the towns of Bratzigovo and Peshtera. Specimens with flowers collected on June 9, 1991. The species is new for the Western Rhodopes.

Bupleurum affine SADLER. The Strandja Mountains. On grassy uncultivated places near the village of Gramatikovo, Bourgas region. Plants with flowers collected on July 22, 1990. According to ASSENOV (1982, p. 122) and STOYANOV, STEFANOV and KITANOV (1967, p. 781) this species has not been collected from the Strandja Mountain before.

Bifora testiculata (L.) ROTH. Western Rhodopes. On calcareous rocky places and in abandoned fields on the hills west of the town of Krichim, Plovdiv region. Materials with flowers and unripe fruit were collected on May 11, 1989. This is the second locality of this species in Bulgaria. Up to now, it was known in our country only from "the Eastern Balkan Mountains, near Sliven" (STOYANOV, STEFANOV and KITANOV, 1967, p. 773; ASSENOV, 1972, p. 96).

Cyclamen hederifolium AIT. The Belassitza Mountain. In the forests in the lower belt, up to 1000 m above sea level. Specimens with flowers collected on Oct. 10, 1991 above the town of Petrich. In addition the herbarium of the Higher Institute of Agriculture "Vassil Kolarov" in Plovdiv stores specimens under Nos. 15699-15705, also collected from the Belassitza Mts., above the village of Skrut, near the town of Petrich, Sofia region. These specimens are not revised by the author of the *Primulaceae* in "Flora of the People's Republic of Bulgaria" (PEEV, 1982, p. 316-317) and the species occurrence in the Belassitza Mts. is not reported. STOYANOV, N., B. STEFANOV and B. KITANOV (1967, p. 836) also do not record this locality.

Gentianella bulgarica (VEL.) HOLUB. f. *albiflora*, f. n. Flores albi. Typus: M. Pirin, in herbosis alpinis cca lac. Popovo, cca 2600 m s. m. Leg. D. Delipavlov, 23.08.1989. (Herbarium facultatis agronomice, Plovdiv, Bulgaria)

Anchusa macedonica DEG. et DÖRFL. The Strouma valley. On rocky talus places in a wood of *Juniperus excelsa* BIEB., *Carpinus orientalis* MILL., etc., to the west of the town of Kresna, Sofia region. Specimens with flowers and unripe fruits collected on April 16, 1987. The species is new

for the Bulgarian flora. Its range covers the Republic of Macedonia, and its localities nearest to Bulgaria are there.

Celsia rupestris DAV. The Thracian plain. On stony grassy places and by rocks south of the town of Harmanli, Haskovo region. Materials with flowers collected on May, 28, 1989. According to STOYANOV, STEFANOV and KITANOV (1967, p. 956) the species is known only from "the Eastern Rhodopes, near the valley of the river Arda."

Veronica trichadena JORD. et FOURREAU. In a shrubby wood of *Carpinus orientalis* MILL., to the west of the town of Kresna, Sofia region. Plants with flowers and unripe fruits collected on April 16, 1989. New species for the Bulgarian flora whose area comprises the Balearic Islands, Sicily, Greece and Turkey (FISCHER, 1978, p. 724).

Ptercephalus papposus (L.) COULTER. Eastern Rhodopes. On stony grassy places above the town of Ivailovgrad, Haskovo region. Plants with flowers and fruits collected on July 19, 1990. According to STOYANOV, STEFANOV and KITANOV this species can be found in "Southern Bulgaria, the Black Sea coast and the Strouma valley - near Petrich." In the first edition of "Flora of Bulgaria" STOYANOV and STEFANOV (1925, p. 1073) report this species for the town of Ivailovgrad, basing on a VELENOVSKÝ record. In the other editions, however, they exclude this locality due to lack of herbarium material.

Chamomilla suaveolens (PURSH) RYDB. = *Matricaria matricarioides* (LESS.) PORTER. Western Rhodopes. In the streets of the vilage of Ravnogor, Plovdiv region. Specimens with flowers and unripe fruits collected on July 16, 1990. Up to now the species has been known in our country only from the vicinity of Sofia and Borovets, above the town of Samokov (STOYANOV, STEFANOV and KITANOV, 1967, p. 1096).

Cirsium appendiculatum GRISEB. f. *albiflorum*, f. n. Flores albi. Typus: M. Pirin, inter ref. Pirin et ref. Begovitzta, l. d. Kelyova mandra, cca confl. fl. Kraina, 1650 m s.m. Leg. D. Delipavlov, 24.08.1989. (Herbarium facultatis agronomice, Plovdiv, Bulgaria)

Lactuca chaixii VILL. Middle Rhodopes. In the wood along the track to the chalet "Bezovo" in the Koru dere, above Assenovgrad. Specimens with flowers and fruit collected on July 7, 1989. Up to now the species has not been reported for the flora of the Rhodopes.

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