

TAXONOMICAL POSITION AND DISTRIBUTION OF *BUSCHIA LATERIFLORA* (DC.) OVCZ. (RANUNCULACEAE JUSS.) SPECIES IN THE BESSARABIA

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Abstract: Having the target of taxonomic concretization the *Ranunculus* L. and *Buschia* (DC.) Ovcz. genera from Bessarabia flora, the Herbarium specimens of Botanical Garden Academy of Sciences, and Moldova State University were investigated and analyzed. Research results attest the priority concept of *Ranunculus* L. genus and the presence of *Buschia lateriflora* (DC.) Ovcz. species in native flora. Revealing a new habitat for *Buschia lateriflora* species complete the species area within South-East Europe limits. Morphologic distinctive criteria of studied genus are given.

Key words: taxonomical position, distribution, *Buschia lateriflora* (DC.) Ovcz., Bessarabia

Introduction

It is known that from BERNARD DE JUSSIEU (1789) and up to present the *Ranunculaceae* family system is constantly exposed to taxonomic treatments and modifications. For its classification, this family, possessing pronounced and difficult heterobaty, is the subject of a comprehensive study concerning to all methods of modern taxonomy. However, up to date, a perfect system of classification of this family is absent.

According to A. Takhtajan's phylogenetic system [TAKHTAJAN, 1987], the *Ranunculaceae* family is divided into 6 subfamilies: *Coptidoideae* (phylogenetically, the most archaic and primitive), *Thalictroideae* (including *Isopyroideae*), *Anemonoideae*, *Ranunculoideae*, *Delphinioideae*, *Hellebroideae*. The *Ranunculoideae* subfamily, where is included the *Ranunculus* genus (including *Buschia*), numbers 21 genera.

Analyzing the data referring the *Ranunculus* L. genus for the monograph "Flora of Bessarabia", we deviated from the traditional classification system on above-mentioned genus, following the N. Tsvelev's opinion [TSVELEV, 2001] in assessing the systematic value of taxa at the level of genus. We are considering really and more adequate such treatment of the volume "in *sensu stricto*" and the delimitation within the *Ranunculoideae* subfamily of the *Ranunculus* L., *Ficaria* Guett., *Batrachium* (DC.) S.F. Gray, *Ceratocephala* Moench, *Buschia* Ovcz. genera, earlier and at present recognized by us, confirmed in the limits of the Bessarabian territory.

Material and methods

As biological material for investigations the Herbarium of Botanical Garden (Institute) and, Moldova State University exsiccates were served. The basic methodical recommendations [KOROVINA, 1986] were used, for performing the expedition and cameral studies. The taxa nomenclature at the level of family, genus and species was taken

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from the fundamental published works by [CEREPANOV, 1995; TUTIN & al. 1993-2006] and, the bioecological peculiarities of species are exposed [POPESCU & SANDA, 1998].

Results and discussions

The formal system of *Ranunculus* L. s. l. genus includes a great biodiversity of species (over 600) that distinguish themselves both by distinctive morphologic criteria and, geographic localization. The morphologic non-homogeneity of species of given genus induced the systematic investigators' to such attempts of dividing this genus into a number of generic taxa.

According to Ovczinikov's [OVCZINIKOV, 1940] opinion, scientist-taxonomist, Prantl's introduction (1876) in taxonomic composition of *Ranunculus* genus the *R. lateriflorus* DC. and *R. nodiflorus* L. species is considered unjustified. These species, based on comparative analysis of their morpho-structural peculiarities, could not be assigned to any sections of the genus *Ranunculus*. The distinctions being rather evident, the author, analyzing the *Ranunculaceae* family for the USSR Flora, includes these two taxons in the *Micranthus* Ovcz. subgenus (OVCZINIKOV, 1937). Later on, OVCZINIKOV (1940) combines both species into *Buschia* Ovcz. new genus.

Tab. 1. Morphological distinctive criteria of the *Ranunculus* and *Buschia* genera.

Genus/Criterion	<i>Buschia</i>	<i>Ranunculus</i>
Calyx structure	Perigon (petaloid, deciduous)	Perianth (bicalyculate)
Flower position	Sessile, axillary in the dichotomies stem	Flowers are not axillary, sessile
Honey-leaves	Reduced, elongated, spoon-shaped	Honey-leaves of another type (sessile)
Stem branched	Dichotomous – dichasial	Cauline ramification of another type
Differentiation of the inflorescence from the vegetative part	Lack of differentiation in the upper part to separate from the vegetative part of the inflorescence	Presence of inflorescence and of vegetative part

From the ecological point of view *Buschia* genus prefers the humid and swampy habitats (biotopes), sometimes halophilous; it is also identified in water surfaces forming a number of ecological modifications. The terrestrial forms are small (4-13 cm), branched from the base with short internodes; the aquatic forms (*Ranunculus lateriflorus* form *natans* Gluck) are high, achieving to 15-20 cm, subramose, with long internodes and narrow leaves. Among these forms there are crossing varieties.

The investigation of exsiccates, existent in the Herbarium of the Botanical Garden Academy of Sciences of Moldova concerning the *Ranunculus* genus permitted the revealing of an exsiccate, collected by Zelenetskij N. and identified initially as *Ranunculus nodiflorus* L. (the South of Bessarabia, Tatarbunar, on the alkaline soils) [ZELENETSKIJ, 1891]. Later on, V. Lipskij in 1892 reviewing Zelenetskij's herbarium, collected from the South of Bessarabia, determined this sample as *R. lateriflorus* DC. We confirm the correctness of this species identification. With the purpose of discovering the new places of growth of the

species *Buschia lateriflora* (DC) Ovcz. within Bessarabia's limits, new additional expedition studies are necessary.

Genus *Buschia* Ovcz.

1940, Bot. journal. 25, 4-5: 339. - *Ranunculus* L. subgen. *Micranthus* Ovcz. 1937, USSR Flora, 7: 474

Annual herbs, erect or ascending. Stems dichotomous branched. Basal alternately-leaved, complete, ovate-oblong, long-petiolate, those superior are opposed, short-petiolate, oblong-lanceolate, rarely dentate. Very small flowers, achieves to 2,0-3,0 mm in diameter, those superior are 2-3, sessile, disposed in the axil of the branches, with an opposite bracteate's foliole. Perigon petal-shaped; tepals 5(4), yellow, partially bi-symphetalous, deciduous. Honey-leaves 3-5, membranous, candicant, spoon-shaped, sometimes very reduced, nectariferous foveole at the base, covered with a semicircular squama (rudimentary leaf), free in the superior part. Stamens 4-7, anthers small, orbiculated. Apocarpous gynoecium, numbers 3-10 uniovulate carpels. Receptacle glabrous. Relative numerous fruit (6-25) dispose in globulous cephalodium, granular-tuberculated, beak slightly dilated at the base, a little elongated (*B. lateriflora*) or short (*B. nodiflora*).

Typus generis: *Buschia lateriflora* (DC.) Ovcz. (*Ranunculus lateriflorus* DC.).

Species type of the genus in the native flora of Bessarabia is identified.

The genus includes 2-4 species, sporadic spread in the South-East Europe, in Mediterranean region (including, Northern Africa), Caucasus, Crimea, the inferior stream of Volga river, the Northern part of the Middle Asia.

***Buschia lateriflora* (DC.) Ovcz.** 1940, Бот. журн. 25, 4-5: 339; Доброч. и др. 1999, Опред. высш. раст. Украины: 52; Цвелев, 2001, Фл. Вост. Европы, X: 159. – *Ranunculus lateriflorus* DC. 1817, Reg. Veg. Syst. Nat. 1: 251; Овч. 1937, Фл. СССР, 7: 474; Tutin, 1964, Fl. Europ. 1: 236; Tutin et Akeroyd, 1993, Fl. Europ., ed. 2, 1: 284. Ciocârlan, 2009, Fl. Ilustr. a Rom.: 169. – Fig. 1.

Plants are of 4-15 (25) cm, glabrous. Stems dichotomic ramified. Basal leaves ovate or oval elliptical, complete or dentate, long-petiolate, lamina of 12-20 (25) x 5-8 (10) mm. Leaves caulinary elongated-lanceolate, rarely dentate, and short-petiolate. Flowers of 2.4-3.0 mm in diameter, sessile or subsessile, axillary in the dichotomies of the stem, in the superior part 2-3. Sepals 5, petal-shaped, membranous, elongated-elliptical, yellowish, deciduous. Honey-leaves 3, rarely 2, reduced, elongated spoon-shaped. Androecium of 4-5 stamens, anthers suborbicular. Receptacle conic, glabrous. Achenes achieve 2.8-3.3 mm, ovate-pear-shaped, brown, granular-tuberculated on the margins, beak of 1.0-1.3 mm. 2n=16.

Annual terofite, blooming in April-May, vegetates on sandy-place, humid, alkaline soil, river meadows temporary flooded.

Element eurasiatic (mediterranean), mesophyte (hygrophyte) species, halophilous, mesotherm, prefers soils with neutral-alkaline reaction. The species area covers continental Eurasia and North Africa. In the flora of Bessarabia it vegetates in the southern part of the territory (the steppe by *Stipa* L. with *Festuca* L. districts, on the alkaline soils, southern Budgeac).



Fig. 1. *Buschia lateriflora* (DC) Ovcz. (after P. N. Ovczinikov).
a – general view; b – flower; c – nectary; d – achene; e – apical part of flowering shoots.

Conclusions

The study and the analysis of the herbarized material confirm the presence of the *Buschia lateriflora* (DC) Ovcz. species in the Bessarabia's flora.

The discovery of this habitat *Buschia lateriflora* completes the species area in the South-East Europe limits.

Buschia lateriflora represents a native floristic element (not adventive), spread rarely in the Bessarabia's limits and requires further research.

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