

CZU 582.594.2+582.734:581.95(478)

FLORISTIC NOTES IN BESSARABIA NO. 165 - 200

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Abstract: This paper includes the presentation of 4 new species for the wild flora of the Republic of Moldova: *Carex bohemica* Schreb., *Plantago lanceolata* L. var. *sphaerostachya* Mert. & W.D.J.Koch, *Elodea nuttallii* (Planch.) H.St.John, *Thymus roegneri* K.Koch, new locations where 24 rare species grow and 6 new species that have started to be cultivated recently: *Phegopteris connectilis* (Michx.) Watt, *Aconitum vulparia* Rchb., *Hepatica transsilvanica* Fuss, *Koeleria vallesiana* (Honck.) Gaudin, *Oxalis dillenii* Jacq. and *Thymus comosus* Heuff. ex Griseb. et Schenk. We suggest including in the Red Book of the Republic of Moldova, the 4th edition, the following species: *Carex bohemica* Schreb., *Dactylorhiza incarnata* (L.) Soó, *Senecio sarracenicus* L. with the conservation status Critically Endangered (CR) and *Sonchus palustris* L., *Valerianella coronata* (L.) DC., *Valerianella pumila* (L.) DC. with the conservation status Vulnerable (VU).

Key words: rare plants, new records, Bessarabia.

INTRODUCTION

"Floristic notes in Bessarabia" continues the no. 148-164 [22] and presents new data on the distribution of new or rare species in the flora of Bessarabia and adjacent territories.

MATERIALS AND METHODS

The field research on floristics was conducted during 2018. The species are pointed out on the basis of the traditional morphological-ecological method. Specimens of the studied plants are found in the Herbarium of the "Alexandru Ciubotaru" National Botanical Garden (I) [CHIS]. Floristic nomenclature [25].

Floristic notes refer to the new, rare species or the ones found for the first time on the territory of Bessarabia and localities from the left side of Dniester River of the Republic of Moldova. The presence of the species is indicated by "+" and their absence by "-", the distribution is indicated by region: BasN – includes the localities of northern Bessarabia (Cernăuți region: Hotin, Sochireni, Kel'menetsi, Noua - Sulită (partial), Zastavna (partial) districts); BasS – localities of southern Bessarabia (Odessa region between Dniester and Danube rivers); RMN – the north of the republic: Ocnița, Briceni, Edineț, Dondușeni, Rîșcani, Drochia, Soroca, Glodeni, Fălești, Sîngerei, Florești, Șoldănești, Rezina, Telenești districts and Bălți municipality; RMC – central part of the republic: Ungheni, Călărași, Orhei, Criuleni, Strășeni, Nisporeni, Hîncești, Ialoveni, Anenii Noi, Dubăsari (localities from the right bank of Dniester) districts, Chișinău municipality, Tighina municipality; RMS – the south of the republic: Leova, Cimișlia, Căușeni, Ștefan-Vodă, Basarabasca, Cantemir, Cahul, Taraclia, Comrat, Vulcănești, Ceadâr-Lunga districts; RME – localities from the left bank of Dniester (Camenca, Rîbnița, Dubăsari, Grigoriopol, Slobozia) districts and Tiraspol municipality; / RAR – rare species, / A – naturalized exotic species, / A – occasionally cultivated exotic species.

During our research, we analyzed the exsiccatae of plants of the genera *Dactylorhiza* Nevski and *Thymus* L. from the Herbarium of the "Alexandru Ciubotaru" National Botanical Garden (I), the Herbarium of the Museum of the Moldova State University and the Herbarium of the "Anastase Fătu" Botanical Garden from Iasi.

RESULTS AND DISCUSSIONS

As a result of the floristic field research, a lot of material for laboratory study was collected, from the territory of the Republic of Moldova, and herborized. After identification, 4 new species for the wild flora of the Republic of Moldova were highlighted: *Carex bohemica* Schreb., *Plantago lanceolata* L. var. *sphaerostachya* Mert. & W.D.J.Koch, *Thymus roegneri* K.Koch. and *Elodea nuttallii* (Planch.) H.St.John – the last one is an adventive species, native to North America.

We revised the exsiccatae from the Herbarium of the “Alexandru Ciubotaru” National Botanical Garden (I) and the Herbarium of the Museum of the Moldova State University, which according to previous determinations, belonged to the species *Dactylorhiza majalis* (Rchb.) P.F.Hunt & Summerh. But, after some additional examination of these specimens, it was determined that this material actually belonged to the species *Dactylorhiza incarnata* (L.) Soó:

- Lozova commune, Strășeni district, meadow, no. 21985, 13.VI.1952, collected by G. Simonov, determined on 13.V.1993, by V. Chirtoacă [CHIS];
- Scoreni commune, Strășeni district, the floodplain of Ișnovăț river, nr. 21988, 07.VI.1967, collected by X.Vitko; no. 21978, 21982-21984, collected by T. Gheideman [CHIS], determined on 13.V.1993, by V. Chirtoacă.
- Rădenii Vechi commune, Ungheni district, meadow, no. 68379, 21980, 21987, 13.VI.1954, collected by M. Pojarisscaia, determined on 13.V.1993, by V. Chirtoacă [CHIS];
- Lozova commune, Strășeni district, meadow, no. 528645, 228649, 19.VI.1956, collected by G. Șabanoava, determined by V. Kononov; 228648, collected and determined by V. Kononov; 428646, 28.VI.1959, collected by Șaterina, determined by P. Vanina, 286473, 28.VI.1959, collected by Șaterina, determined by P. Vanina; 28643, 10.VI.2003, collected by Nagacevscaia, determined by O. Donea [CHIS-USM].

Dactylorhiza majalis (Rchb.) P.F. Hunt & Summerh. is a European species, with ovate-elliptical to ovate-lanceolate leaves, with the maximum width at the middle or slightly below the middle, maculate as a rule, while our plants have lanceolate leaves, with the maximum width at the base, gradually narrowed to the tip, corresponding to the Eurasian species – *Dactylorhiza incarnata* (L.) Soó.

The presented material is alphabetically ordered as follows:

New taxa for the flora of the Republic of Moldova

165. *Carex bohemica* Schreb. 1772, Beschr. Gräs. 2: 52. (Cyperaceae). Fig 1.

+ RMN/RAR: Glodeni district, Cobani commune, Balatina forest, a small group of plants on a dry tree trunk, covered with moss, fallen in the “Potcoava” ancient river bed, 23.VI.2018, leg. P. Pînzaru, V. Cantemir [CHIS].

Note. Eurasian, mesohygrophilous-hygrophilous hemicryptophyte, characteristic of the vegetation of the alliance *Nanocyperion* Koch ex Libbert 1932 [28].



Figure 1. *Carex bohemica* Schreb.



Figure 2. *Elodea nuttallii* (Planch.) H.St.John

166. *Elodea nuttallii* (Planch.) H.St.John, 1920, Rhodora, 22: 29 (Hydrocharitaceae). Fig. 2.

Basio.: - *Anacharis nuttallii* Planch. 1848, Ann. Sci. Nat. Bot. II, 1: 86.

+ **RMN/A**: Glodeni district, Cuhnești commune, in the bed of Prut River, 24.VI.2018, leg. P. Pînzaru, V. Cantemir [CHIS]. It grows in small groups, in the bed of Prut River. During this research, it was found for the first time in the Republic of Moldova.

Note. Perennial, hemicryptophytic, hydrophilous species, native to North America, characteristic of the vegetation of the alliance *Potamogetonion pectinati* (Koch 1926) Görs 1977 [28].

167. *Plantago lanceolata* L. var. *sphaerostachya* Mert. & W.D.J.Koch, 1823, Deutschl. Fl., ed. 3. 1: 803. (Plantaginaceae). Fig. 3.

+ **RMN**: Glodeni district, Cuhnești commune, in meadow with halophilic vegetation, 26.VII.2018, leg. P. Pînzaru, V. Cantemir, and in the meadow near Moara Domnească village, Viișoara commune, 26.VII.2018, leg. P. Pînzaru, V. Cantemir [CHIS].

Note. Hemicryptophytic, European, mesophilic species, characteristic of the vegetation of the order *Puccinellietalia* Soó 1947 em. Vicherek 1973 [28].



Figure 3. *Plantago lanceolata* L. var. *sphaerostachya* Mert & W.D.J. Koch



Figure 4. *Thymus roegneri* K.Koch

168. *Thymus roegneri* K.Koch, 1849, Linnaea 21: 666. (Lamiaceae). Fig. 4.

+ **RMN**: Glodeni district, Cobani commune, on the territory of the Natural, Geological and Paleontological Monument “Stânca Mare”, on skeletal soil, rich in calcareous gravel, 27.VII.2018, leg. P. Pînzaru [CHIS].

Note. Camephytic, Pontic-Pannonian, xeromesophilic species, characteristic of the vegetation of the class *Festuco-Brometea* Br.-Bl. et Tüxen in Br.-Bl. 1949 [28].

New locations:

169. *Allium dioscoridis* Sibth. ex Sm. 1809, Fl. Graec. Prodr. 1(2): 222. (Amaryllidaceae).

Syn.: - *Nectaroscordum bulgaricum* Janka, 1873, Oesterr. Bot. Z. 23: 242.

+ **RMC/RAR**: Chișinău municipality, Durlești commune, the “Durlești” sessile oak forest, parcel no. 12, leg. P. Pînzaru [CHIS].

Note. Geophytic, Pontic-Balkan, xeromesophilic species, characteristic of the forests from the order *Quercetalia pubescenti-petraeae* Klika 1933. Vulnerable species (VU), included in the Red Book of the Republic of Moldova (as *Nectaroscordium bulgaricum* Janka), it grows in the districts of Telenești, Strășeni, Cimișlia, Leova, Hîncești and Cantemir [6].

170. *Allium flavescens* Besser, 1821, Enum. Pl.: 56. (Amaryllidaceae).

+ **RME:** Grigoriopol district, Butor village, on limestone rocks, 21.VIII.2018, leg. P. Pinzaru, A. Ruschuk [CHIS].

Note. Geophytic, Pontic, xerophilic, calciphilous species, characteristic of the phytocoenoses of the association *Asplenio ruta-murariae-Allietum flavescens* Pinzaru 2015 [16] in the alliance *Sempervivo ruthenici-Schivereckion* Pinzaru et Ruschuk 2009.

171. *Allium paniculatum* L. 1759, Syst. Nat. ed. 10, 2: 978. (Amaryllidaceae).

+ **RMN/RAR:** Glodeni district, Cobani commune, on the territory of the Natural, Geological and Paleontological Monument "Stânca Mare", in rock cracks, 27.VII.2018, leg. P. Pinzaru [CHIS].

Note. Geophytic, Pontic-Pannonian-Balkan, xerophilic species, characteristic of the vegetation of the class *Asplenietea trichomanis* (Br.-Bl. in Meier et Br.-Bl. 1934) Oberd. 1977. [25].

172. *Anacamptis palustris* (Jacq.) R.M.Bateman, Pridgeon & M.W.Chase, 1997, Lindleyana 12: 120. (Orchidaceae).

Basio.: *Orchis palustris* Jacq., 1786, Collectanea 1: 75.

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, in meadows, 19.V.2018, leg. P. Pinzaru [CHIS].

Note. Geophytic, Eurasian, meso-hygrophilous species, characteristic of the vegetation of the alliance *Magnocaricion elatae* W.Koch 1926. Endangered species (EN), included in the Red Book of the Republic of Moldova (as *Orchis palustris* Jacq.) [3, 26].

173. *Anthriscus caucalis* M.Bieb. 1808, Fl. Taur.-Caucas. 1: 230. (Apiaceae).

+ **RMC:** Ungheni district, Pîrlița commune, ruderal, next to the gas station, 18.V.2018, leg. P. Pinzaru [CHIS].

+ **RMS:** Vulcănești town, Autonomous Territorial Unit of Gagauzia, ruderal, 12.V.2018, leg. P. Pinzaru, V. Cantemir [CHIS].

Note. Therophytic, Eurasian (south), xeromesophilic species, characteristic of the vegetation of the alliance *Onopordion acanthii* Br.-Bl. et al. 1936. In the Republic of Moldova, it was found before only in Etulia commune (Autonomous Territorial Unit of Gagauzia) and Alexandru Ioan Cuza commune (Cahul) [18].

174. *Astragalus pastellianus* Pollini, 1816, Giorn. Fis. Chim. Storia Nat. Med. Arti 9: 95. (Fabaceae).

Syn.: - *Astragalus vesicarius* subsp. *pastellianus* (Pollini) Arcang. 1882, Fl. Ital.:186. - *Astragalus pallescens* M.Bieb. 1819, Fl. Taur.-Caucas. 3: 489.

+ **RMC/RAR:** Hîncești district, Pogănești commune, occurs sporadically on slopes with clay-sandy soil, on the left bank of Prut River, in a phytocoenosis dominated by *Bothriochloa ischaemum* (L.) Keng., 12.V.2018, leg. P. Pinzaru [CHIS]. Endangered species (EN), included in the Red Book of the Republic of Moldova [23].

Note. Camephytic, Pontic-Mediterranean, xeromesophilic species, characteristic of the vegetation of the class *Festuco-Brometea* Br. Bl. et Tx. in Br.-Bl. 1949 [25].

175. *Dactylorhiza incarnata* (L.) Soó, 1962, Nomina *Dactylorhiza*: 3. (Orchidaceae). Fig. 5.

Basio.: - *Orchis incarnata* L. 1755, Fl. Suec. ed. 2: 312.

Syn.: - *Dactylorhiza majalis* auct. mold. non (Rchb.) P.F. Hunt & Summerh., included in the Red Book of the Republic of Moldova. [2, 27].

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, 3 plants with flowers have been found in the meadow with high herbs, dominant species: *Ranunculus acris* L., *Cirsium canum* (L.) All., *Geranium sylvaticum* L.19.V.2018, leg. P. Pinzaru



Figure 5. *Dactylorhiza incarnata* (L.) Soó

[CHIS]. Липский В.(1889) has mentioned that *Orchis incarnata* L. is found in the village Cornești, district Ungheni [30].

Note. Eurasian, mesophilic geophyte, characteristic of the vegetation of the alliance *Molinion caeruleae* W.Koch 1926 [28]. According to the data from the Herbarium, it also occurs in the districts of Strășeni (Lozova and Scoreni communes) and Ungheni (Rădenii Vechi commune).

176. *Echinocystis lobata* (Michx.) Torr. et A.Gray (Cucurbitaceae).

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, in floodplain, in willow thickets along a canal, 11.VIII.2018, leg. P. Pînzaru; [CHIS].

Note. Therophytic species, native to North America, mesohydrophilous, characteristic for the vegetation of the alliance *Senecionion fluviatilis* R.Tx. 1950. As component of the wild flora, it was found, according to the data from the herbarium, in the districts: Briceni (Tețcani commune, “Tețcani” Landscape Reserve, in scrubs, at the confluence of a creek with the Prut River, 14.VII.2003, leg. P. Pînzaru), Soroca (Holoșnița commune, “Holoșnița” Landscape reserve, in scrubs on the bank of the Dniester River, 08.VIII.1987, leg. P. Pînzaru; Rudi commune in the “Rudi-Arionești” Landscape Reserve, in scrubs along a creek, 10.VIII.1993, leg. P. Pînzaru; “Trifăuți” forest, 06.VI.2006, leg. V. Ghendov, T. Izverscaia, G. Șabanova) and Dubăsari (RME) in the “Iagorlăc” Scientific Reserve, in the vicinity of Țibuleuca village, 23.VII.1991, leg. Gh. Popescu [CHIS].

177. *Fritillaria montana* Hoppe ex W.D.J.Koch, 1832, in Flora 15: 476. (Liliaceae).

+ **RMC/RAR:** Chișinău municipality, Durlești commune, in a sessile oak forest (*Quercus petraea* (Matt.) Liebl.), in groups, parcel no. 12, 16.IV.2018, leg. P. Pînzaru [CHIS].

Note. Geophytic, Mediterranean-Central European, mesophilic-xeromesophilic species, characteristic of the forests of the order *Quercetalia pubescenti-petraeae* Klika 1933. Vulnerable species (VU), included in the Red Book of the Republic of Moldova, widespread in the districts of Briceni, Edineț, Glodeni, Soroca, Florești, Șoldănești, Rezina, Telenești, Orhei, Chișinău municipality, Anenii Noi, Criuleni, Dubăsari, Cantemir, Leova, Camenca, Rîbnița [4, 21].

178. *Gagea reticulata* (Pall.) Schult. & Schult. f. 1829, Syst. Veg., ed. 15 bis [Roemer & Schult.] 7(1): 542. (Liliaceae).

Basio.: - *Ornithogalum reticulatum* Pall. 1776, Reise Russ. Reich. 3: 727.

Syn.: - *Gagea taurica* auct. mold. non Steven. - *Gagea ucrainica* Klokov, 1926, Ukrayins 'k Bot. Zhurn. 3: 16.

+ **RMS/RAR:** Autonomous Territorial Unit of Gagauzia, Etulia commune, on slopes with clay-sandy soil, in phytocoenoses dominated by *Bothriochloa ischaemum* (L.) Keng., 10.IV.2017, leg. P. Pînzaru.

+ **RMC/RAR:** Hîncești district, Pogănești commune, on slopes with clay-sandy soil on the left bank of the Prut River, in phytocoenoses dominated by *Bothriochloa ischaemum* (L.) Keng., 12.V.2018, leg. P. Pînzaru [CHIS].

+ **RME/RAR:** Administrative-Territorial Units of the Left Bank of the Dniester, Tașlic commune, on slopes with clay-sandy soil and pebble, 20.IV.1997, leg. Pînzaru.

Note. Geophytic, Pontic-Balkan, xeromesophilic species, characteristic of the vegetation of the alliance *Festucion valesiacae* Klika 1931. Endangered species (EN), included in the Red Book of the Republic of Moldova (as *G. ucrainica* Klok.): it has been found in the districts of Anenii Noi (Șerpeni), Taraclia (Ciului) and Cahul (Giurgiuiești, Cișlița-Prut) [7, 15].

179. *Galium rivale* (Sibth. & Sm.) Griseb. 1844, Spic. Fl. Rumel. 2: 156. (Rubiaceae).

Basio.: *Asperula rivalis* Sibth. & Sm. 1806, Fl. Graec. Prodr. 1: 87.

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, in meadows, 11.VIII.2018, leg. P. Pînzaru [CHIS].

Note. Hemicryptophytic, Eurasian, meso-hygrophilous species, characteristic of the vegetation of the alliance *Magnocaricion elatae* W.Koch 1926. In the Republic of Moldova, it was found before only in a meadow, in the territory of “Codru” Scientific Reserve (as *Asperula rivalis* Sibth. & Sm.) [29].

180. *Linum tauricum* Willd., 1809, Enum. Pl. 1: 339. (Linaceae).

+ **RME/RAR:** Grigoriopol district, Butor village, on limestones, 21.VIII.2018, leg. P. Pînzaru, A. Ruschuk [CHIS].

Note. Camephytic, Balkan-Pontic, xerophilic, calciphilous species, characteristic of the vegetation of the alliance *Genisto-Seselion peucedanifolii* P.Pînzaru 1997 [25].

181. *Ornithogalum boucheanum* (Kunth) Asch. 1866, in Oesterr. Bot. Z. 16: 192. (Asparagaceae).

Basio.: - *Myogalum boucheanum* Kunth, 1843, Enum. Pl. 4: 348.

+ **RMS/RAR:** Leova district, Sărata-Răzeși commune, in floodplain forest with *Populus alba* L., 22.IV.2018, leg. P. Pînzaru [CHIS]

Note. Geophytic, Pontic-Pannonian-Balkan, xeromesophilic-mesophilic species, characteristic of the forests of the class *Quercio-Fageteta* Br.-Bl. et Vlieger in Vlieger 1937. Endangered species (EN), included in the Red Book of the Republic of Moldova [5].

182. *Saxifraga tridactylites* L. 1753, Sp. Pl.: 404. (Saxifragaceae).

+ **RMC/RAR:** Orhei district, Trebujeni commune, on rocks, rocky soils with gravel, 23.IV.2018, leg. P. Pînzaru.

Note. Therophytic, ephemeral, xerophilic, calciphilous species, characteristic of the vegetation of the alliance *Sempervivo ruthenici-Schivereckion* Pînzaru et Ruschuk 2009, forms abundant bunches on limestone cliffs, included in the association *Sedo acri-Saxifragetum tridactylitis* Pînzaru 2015 [17]. Critically endangered species (CR), included in the Red Book of the Republic of Moldova [11].

183. *Scorzonera mollis* M.Bieb. 1819, Fl. Taur.-Caucas. 3: 522. (Asteraceae).

+ **RMC/RAR:** Hîncești district, Pogănești commune, a group of about 50 plants, on slopes with clay-sandy soil, on the left bank of Prut River, in a phytocoenosis dominated by *Bothriochloa ischaemum* (L.) Keng., 12.V.2018, leg. P. Pînzaru [CHIS].

Note. Hemicryptophytic, Pontic-Balkan, xeromesophilic species, characteristic of the vegetation of the alliance *Festucion valesiacae* Klika 1931. Vulnerable species (VU), included in the Red Book of the Republic of Moldova [9].

184. *Sempervivum ruthenicum* (W.D.J.Koch) Schnittsp. et C.B.Lehm. 1855, Flora (Regensb.) 38: 5. (Crassulaceae).

Basio.: *S. globiferum* var. *ruthenicum* W.D.J.Koch, 1844, Syn. Fl. Germ. Helv. Ed. 2: 289.

+ **RMN/RAR:** Glodeni district, Cobani commune, on the territory of the Natural, Geological and Paleontological Monument “Stânca Mare”, in rock cracks, 27.VII.2018, recorded by P. Pînzaru.

Note. Camephytic, Pontic, xerophilic, calciphilous species, characteristic of the vegetation of the alliance *Sempervivo ruthenici-Schivereckion* Pînzaru et Ruschuk 2009. Endangered species (EN), included in the Red Book of the Republic of Moldova [13].

185. *Senecio sarracenicus* L. 1753, Sp. Pl. 2: 871. (Asteraceae).

Syn.: *Senecio fluviatillis* Wallr. 1840, Linnaea, 14: 646.

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, in the meadow along a canal, 11.VIII.2018, leg. P. Pînzaru [CHIS]. In the Republic of Moldova, it was also found near Criva commune, Briceni district, 18.VIII.1957, leg. L. Nikolaeva [CHIS].

Note. Hemicryptophytic, Central European-East European, mesohygrophilous species, characteristic of the vegetation of the alliance *Senecionion fluviatilis* R.Tx. 1950 [28].

186. *Serratula tinctoria* L. 1753, Sp. Pl. 816. (Asteraceae).

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, flood-meadow, 11.VIII.2018, leg. P. Pînzaru [CHIS].

Note. Hemicryptophytic, Euro-Siberian, mesophilic-mesohygrophilous species, characteristic of the grasslands of the alliances *Molinion caeruleae* W.Koch 1926 and *Magnocaricion elatae* W.Koch 1926 [25, 28].

187. *Silene atropurpurea* (Griseb.) Greuter & Burdet, 1982, Willdenowia, 12 (2): 189. (Caryophyllaceae).

Basio.: - *Viscaria atropurpurea* Griseb. 1843, Spic. Fl. Rumel. 1 (2/3): 166.

+ **RMC/RAR:** Hîncești district, Lăpușna commune, very rare, in glades in sessile oak forest, parcel 23, 08.V.2018, observed by P. Pînzaru. Critically endangered species, included in the Red Book of the Republic of Moldova (as *Viscaria atropurpurea* Griseb.), in Mirești commune (Hîncești district), Șișcani commune and Păurceni village (Nisporeni district) and Stejareni village (Strășeni district) [12].

Note. Hemicryptophytic, Central European-Balkan, xeromesophilic species, characteristic of the vegetation of the order *Origanietaalia vulgaris* Th. Müller 1961.

188. *Silene flos-cuculi* (L.) Greuter & Burdet, 1982, Willdenowia 12: 189. (Caryophyllaceae).

Basio.: *Lychnis flos-cuculi* L. 1753, Sp. Pl.: 436.

Syn.: *Coccyganthe flos-cuculi* (L.) Rchb. 1844, Fl. Germ. Excurs. 16: 55; *C. flos-cuculi* (L.) Fourr, 1868, Ann. Soc. Linn. Lyon, sér. 2, 6: 345.

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, in flood-meadow, 19.V.2018, leg. P. Pînzaru [CHIS]. In the Republic of Moldova, according to the exsiccatae from the Herbarium of the Botanical Garden [CHIS], it occurs in the districts of Briceni (Cotuieni commune) and Călărași (between Hîrjauca commune and Mîndra village).

Note. Hemicryptophytic, Eurasian, mesohygrophilous species, characteristic of wet grasslands of the class Molinio-Arrhenatheretea R.Tx. 1937, alliance *Magnocaricion elatae* W.Koch 1926 [25, 28].

189. *Sonchus palustris* L. 1753, Sp.Pl.: 793. (Asteraceae).

+ **RMC/RAR:** Ungheni district, Pojarna village, Sinești commune, in flood-meadow, along a canal, 07.VII.2016, leg. Pînzaru [CHIS]. The plant height reaches up to 3m 25cm, blooms in July and produces fruits in August. Rare species for the flora of the Republic of Moldova [8], according to the exsiccatae from the Herbarium of the Botanical Garden [CHIS], it occurs in the districts of Ocnîța (Calarașovca), Briceni (Lipcani), Edineț (Viișoara), Soroca (Trifăuți), Orhei (Vatici), Nisporeni (Bălănești), Hîncești (Nemțeni).

Note. European, mesohygrophilous-hygrophilous species, characteristic of the vegetation of the alliances *Phragmition* Koch 1926 and *Senecionion fluviatilis* R.Tx. 1950 [28].

190. *Thladiantha dubia* Bunge, 1833, Enum. Pl. China Bor.: 29. (Cucurbitaceae).

+ **RMC/A:** Strășeni town, along a canal along the road Strășeni x Chișinău, 16.IX.2018, leg. P. Pînzaru [CHIS]. Half-wild.

Note. Geophytic (dioecious liana, herbaceous, up to 4m long), native to East Asia (China), mesophilic-mesohygrophilous, characteristic of the vegetation of the order *Convolvuletalia sepium* R.Tx. 1950. [28].

191. *Thymus calcareus* Klokov & Des.-Shost. 1927, Trudy Sil's'ko-Gosp. Bot. 1(3): 129. (Lamiaceae).

+ **RME/RAR:** Administrative-Territorial Units of the Left Bank of the Dniester, Grigoriopol district, Butor village, on limestone, 21.VIII.2018, leg. P. Pînzaru, A. Ruchuk [CHIS]. It grows on limestones, in phytocoenoses of the association *Sileno-Pimpinellietum tragii* P. Pînzaru 1997, in the studied territory, it occurs at the western boundary of its range. This species was previously found only near Tașlic village, Grigoriopol district (Administrative-Territorial Units of the Left Bank of the Dniester), on calcareous slopes, collected on 15.VIII.1995 and 21.VIII.2018, leg. P. Pînzaru. Critically endangered species (CR) included in the Red Book of the Republic of Moldova [24].

Note. Camephytic, xerophilic, calciphilous, Pontic species, characteristic of the vegetation of the order Thymo-Hyssopetalia cretaei Didukh 1989 [25].

192. *Valerianella coronata* (L.) DC. 1805, in Lam. & DC., Fl. Franç. ed. 3, 4: 241. (Caprifoliaceae).

Basio.: - *Valeriana locusta* var. *coronata* L. 1753, Sp.Pl.: 34.

+ **RMS/RAR:** Autonomous Territorial Unit of Gagauzia, Etulia commune, on South-West facing slope with clay-sandy soil and with the inclination 35°, about 100 plants in a phytocoenosis dominated by *Bothriochloa*

ischaemum (L.) Keng., 10.V.2018, leg. P. Pînzaru, V. Cantemir [CHIS]. In the Republic of Moldova, it was found, according to the exsiccatae from the Herbarium of the Botanical Garden [CHIS], in the districts of Cahul (Giurgiulești, Cișlița-Prut, Văleni, Baurci-Moldoveni) and Taraclia (Dermengi).

Note. Annual, therophytic, Mediterranean, xeromesophilic species, characteristic of the steppe vegetation of the order *Festucetalia valesiacae* Br.-Bl. et Tüxen in Br.-Bl. 1949. [25].

193. *Valerianella pumila* (L.) DC. 1815, in Lam. & DC., Fl. Franç. ed. 3, 5: 494. (Caprifoliaceae).

Basio.: - *Valeriana locusta* L. var. *pumila* L. 1767, Syst. Nat., ed. 12. 2: 73.

+ **RMS/RAR:** Autonomous Territorial Unit of Gagauzia, Etulia commune, on South-West facing slope with clay-sandy soil and with the inclination 35, 30 plants in a phytocoenosis dominated by *Bothriochloa ischaemum* (L.) Keng. 10.V.2018, leg. P. Pînzaru, V. Cantemir [CHIS]. In the Republic of Moldova, it occurs on the outskirts of Speia commune, Anenii Noi district [18].

Note. Annual, therophytic, Mediterranean, xeromesophilic species, characteristic of the steppe vegetation of the alliance *Festucion valesiacae* Klika 1931 [18, 28].

194. *Viola elatior* Fr. 1828, Novit. Fl. Suec. Atl.: 277. (Violaceae).

+ **RMS/RAR:** Leova district, Sărata-Răzeși commune, floodplain forest with *Salix alba* L., *Populus alba* L., 22.IV.2018, leg. P. Pînzaru [CHIS]. Vulnerable species (VU), in the Republic of Moldova, it can be met in the districts of Glodeni (Cobani, Balatina, Moara Domnească), 23.VI.2018, leg. P. Pînzaru, Cantemir [CHIS], in Florești (Cernița), Strășeni (Stejăreni) and Anenii Noi (Delacău) [19, 20, 25].

Note. Perennial, hemicryptophytic, Eurasian, mesohydrophilous species, characteristic of the vegetation of the alliances *Magnocaricion elatae* W.Koch 1926 and *Salicion albae* Soó 1951.

New species cultivated in the private garden of the author P. Pînzaru

195. *Aconitum vulparia* Rchb. 1819, Uebers. Aconitum 70. (Ranunculaceae).

Syn.: - *Aconitum lycoctonum* subsp. *vulparia* (Rchb.) Nyman, 1889, Cons. Fl. Eur. Suppl. 2(1):13.

+**RMC/A:** Codru town, Chișinău municipality. It has been cultivated since 2016. It has palmatipartite leaves, blooms in May-June, has whitish perianth, the tepals are yellowish-green towards the tip, it has a distinguishable petaloid sepal, called the galea, in the form of a cylindrical helmet, 24-25 mm long and 6-8 mm wide. The plants come from the flora of Romania.

Note. West-Central European, alpine, hemicryptophytic, mesophilic-mesohydrophilous species, characteristic of the vegetation of the order *Fagetalia sylvaticae* Pawlowski 1928. [28].

196. *Hepatica transilvanica* Fuss, 1850, Veh. Mitth. Siebenbürg. Vereins Naturwss. Hermannstadt 1:83. (Ranunculaceae).

+**RMC/A:** Codru town, Chișinău municipality. It has been cultivated since 2016. The plants bloom at the same time as *Hepatica nobilis* Schreb., in March-April. It has three-lobed leaves, with crenate-lobulate lobes, three-toothed sepals.

Note. Endemic species for the Carpathians of Romania, mesophilic hemicryptophyte, which grows mostly in forests, characteristic of the forests of the alliance *Symphyto cordati-Fagion* Vida 1959 [28].

197. *Koeleria vallesiana* (Honck.) Gaudin, 1808, in Alpina 3: 47. (Poaceae).

Basio.: - *Poa vallesiana* Honck. 1782, Verz. Gew. Teutschl.: 224.

+**RMC/A:** Codru town, Chișinău municipality. It has been cultivated since 2008. The plants bloom in May-June. The species propagates by seeds and vegetatively.

Note. Mediterranean, hemicryptophytic, xerophilic species, grows on sunny hills. The plants come from the Italian flora, from a mountainous area, 1360 m altitude, Usseaux comune, the Province of Turin, characteristic of the vegetation of the order *Ononidetalia striatae* Br.-Bl. 1952 [1].

198. *Oxalis dillenii* Jacq. Oxalis 28. (Oxalidaceae).

Syn.: - *Xantoxalis dillenii* (Jacq.) Holub, 1972, Bot. Közlem. 59: 38.

+RMC/A: Codru town, Chişinău municipality. It has been cultivated since 2008. The seeds have been brought from Italy, Pont-Canavese comune, the Province of Turin, 450 m altitude.

Note. Biennial, North-American (sub-cosmopolitan), mesophilic, ruderal, characteristic of the vegetation of the class *Stellarietea mediae* R.Tx., Lohmeyer et Preising. in R.Tx. 1950. Plant without stolons, upright stem, branched at the base, does not produce roots at the nodes, fruits on subumbelliferous peduncles [1, 28].

199. *Phegopteris connectilis* (Michx.) Watt, 1867, in Canad. Naturalist & Quart. J.Sci. ser. 2, 3: 159. (Thelypteridaceae).

Basio.: *Polypodium connectile* Michx. 1803, Fl. Bor.-Amer. 2: 271.

+RMC/A: Codru town, Chişinău municipality. It has been cultivated since 2018. Plants brought from the flora of Romania (Făgăraş Mountains). This species was also found in the northern areas of Bessarabia, it grew in ravine beech forests (in the vicinity of Blişceadi and Ruhotin villages) [14].

Note. Geophytic, circumpolar, mesophilic species, characteristic of the vegetation of the order *Fagetalia sylvaticae* Pawlowski 1928 [1, 28].

200. *Thymus comosus* Heuff. ex Griseb. et Schenk, 1852, Arch. Naturgesch. 18(1): 38. (Lamiaceae).

+RMC/A: Codru town, Chişinău municipality. It has been cultivated in the author's private garden since 2016. Plants without sterile shoots, with floral branches more or less cylindrical or obtuse four-angular, hairy. Leaves with thick marginal nerves, prominent lateral nerves, equally thick. Blooms in May-August. The plants originate from the Carpathian Mountains (Romania).

Note. Camephytic, xeromesophilic species, endemic to the Carpathian Mountains, grows in sunny, rocky regions with skeletal soil, covered with grassy vegetation. This species is characteristic of the vegetation of the alliance *Bromo-Festucion pallentis* Zólyomi 1966 [28].

CONCLUSIONS

We suggest including in the Red Book of the Republic of Moldova, the 4th edition, the following species: *Carex bohémica* Schreb., *Dactylorhiza incarnata* (L.) Soó and *Senecio sarracenicus* L. in the category Critically Endangered (CR), and *Sonchus palustris* L., *Valerianella coronata* (L.) DC. and *Valerianella pumila* (L.) DC. – in the category Vulnerable (VU).

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