

Rare species proposed for inclusion in the Red Book of the Republic of Moldova (4th edition)

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Abstract. The article presents the results of the study on vascular plants, conducted during 2024-2025, with the aim of assessing the current status of rare plant populations for inclusion in the 4th edition of the Red Book of the Republic of Moldova. A total of 23 rare species were identified and classified as follows: 16 species – Critically Endangered (CR), 3 – Endangered (EN), and 4 – Vulnerable (VU). The name in Latin and Romanian, synonyms if any, growing localities, habitat, biological and ecological features, territorial protection, and some recommendations for protection measures are indicated for each species.

Keywords: rare species, Red Book, Republic of Moldova, vascular flora.

Specii rare pentru includere în Cartea Roșie a Republicii Moldova (ediția a IV-a)

Rezumat. În articol sunt expuse rezultatele studiului asupra plantelor vasculare, efectuat în anii 2024-2025, în scopul evaluării stării actuale a populațiilor de plante rare pentru a fi incluse în ediția a IV-a a Cărții Roșii a Republicii Moldova. Speciile rare, în număr de 23, sunt atribuite la următoarele categorii: 16 specii – Critic periclitare (CR), 3 – Periclitare (EN) și 4 – Vulnerabile (VU). Pentru fiecare specie se indică denumirea în latină și română, sinonimele dacă sunt, localitățile de creștere, habitatul, particularități biologice și ecologice, protejarea teritorială și unele recomandări a măsurilor de protecție.

Cuvinte-cheie: specii rare, Cartea Roșie, Republica Moldova, flora vasculară.

1. INTRODUCTION

In 2024-2025, new floristic expeditions were organized on the territory of the Republic of Moldova in order to assess the current status of populations of rare spontaneous vascular species for inclusion in the 4th edition of the Red Book, which is reissued every 10 years. The Red Book of the Republic of Moldova (3rd edition, 2015) included 165 species of vascular plants: 150 – angiosperms, 1 – gymnosperm, and 14 – pteridophytes [1].

This article presents the results of the author's floristic study, proposing the addition of 23 rare species, including both recently discovered taxa and species whose presence in the Republic of Moldova has been newly confirmed.

2. MATERIALS AND METHODS

To conduct this study, new floristic investigations were carried out in the field, and dried specimens from several herbaria in Moldova were examined, including: CHGB – Herbarium of the National Botanical Garden (Institute) “Al. Ciubotaru” of USM; CH-HM-USM – Herbarium of the Museum of the State University of Moldova, CH-HBPP – Herbarium of the botanist Pavel Pînzaru at the Faculty of Biology and Chemistry of the “Ion Creangă” State Pedagogical University of Chisinau. In addition, published floristic records were analysed. The species determination was carried out in accordance with the classical comparative morphological method, consulting standard floristic identification keys [4, 29, 35]. Species nomenclature follows the monograph “Vascular flora of the Republic of Moldova (species list and ecology)” [12]. The rarity status of each species was assessed according to IUCN categories and criteria [3]. The following symbols are used to denote the species distribution: ○ – locality, where the species has occurred in the past (before 1974, i.e. 50 years ago) and ● – locality, where the species occurs currently (from 1974 to 2025). Collected specimens are found in CHGB and CH-HBPP herbaria.

3. RESULTS AND DISCUSSIONS

As a result of new floristic investigations carried out in the field and on exsiccates from herbaria in the Republic of Moldova, as well as previously published floristic information, 23 species of rare vascular plants were found, which are included in the *List of Rare Plants* to be proposed into the 4th edition of the *Red Book of the Republic of Moldova*. Some of these species were recently discovered for the first time in the country's flora and 1-2 growing localities are recorded, with few specimens, others previously did not have sufficient data to determine rarity categories or were erroneously determined. The rare species proposed in this article are assigned to the following categories: 16 species – Critically Endangered (CR), 3 – Endangered (EN), and 4 – Vulnerable (VU). For each species, the name in Latin and Romanian, synonyms if any, breeding locations, habitat, biological and ecological particularities, territorial protection, and some recommendations for protection measures are indicated.

Carex bohemica Schreb. (Cyperaceae) – **Bohemian Sedge (Rogoz boemic)** (Figure 1). Status. Critically Endangered species (CR).

In the Republic of Moldova, this species is known only from the vicinity of the village of Balatina, Glodeni district: 23.06.2018, collected by P. Pînzaru and V. Cantemir, identified by P. Pînzaru; 09.09.2025, collected by P. Pînzaru, V. Cantemir, and V. Slivca, identified



Figure 1. *Carex bohemica* Shreb.: *a* – plant appearance; *b* – distribution in the Republic of Moldova

by P. Pînzaru (CHGB, CH-HBPP). It grows sporadically on marshy, frequently flooded land in “Starița Potcoava,” covering an area of approximately 150 m². The species propagates by seeds. It is territorially protected within the Scientific Reserve “Pădurea Domnească” [15]. Collection of plants from this locality is not recommended.

Eurasian, mesohygrophilous, hemicryptophyte species, characteristic of the vegetation of the alliance *Nanocyperion* Koch ex Libbert 1932 [12, 29].

***Carex pseudocyperus* L. (Cyperaceae) – Cyperus Sedge (Rogoz pseudociperoid)** (Figure 2).

Status. Critically Endangered species (CR).

This species was first collected from a meadow near Peresecina commune, Orhei district, by V. Andreev, 14.06.1946 (CH-HM-USM). During recent floristic surveys, the species was not found, likely due to improper habitat management. Another breeding station was observed on the edge of the bed of the “Manta” lake in the locality of the same name, Cahul district, 19.06.2023, collected by P. Pînzaru, V. Cantemir, E. Tofan-Dorofeev, and identified by P. Pînzaru (CHGB, CH-HBPP) on the territory of the “Danube Delta” Biosphere Reserve. A few specimens grow in the lakebed, where the water depth reaches up to 50 cm. This species occurs alongside *Thelypteris palustris* Schott. [23].

Circumpolar species, helohydatophyte (hemicryptophyte), hygrophilous (mesohygrophilous), characteristic of the vegetation of the class PHRAGMITO-MAGNOCARICETEA Klika in Klika et Novák 1941 [12, 29].

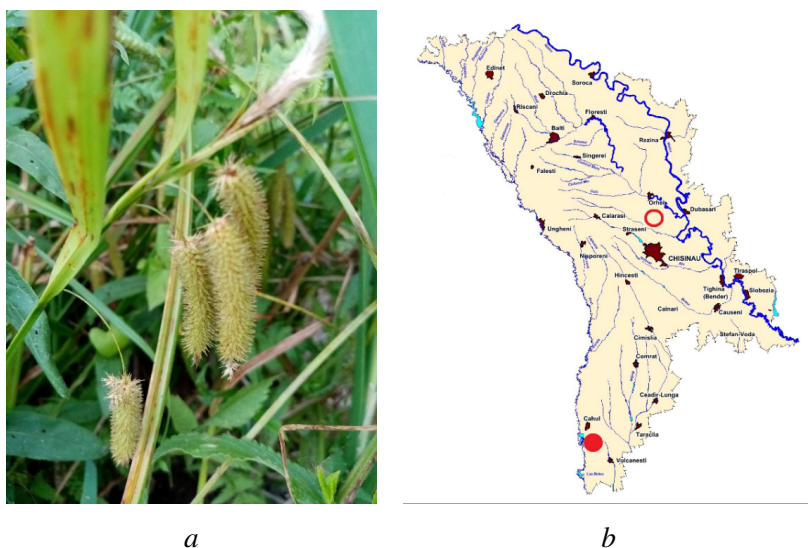


Figure 2. *Carex pseudocyperus* L.: *a* – plant appearance, *b* – distribution in the Republic of Moldova

***Carex stenophylla* Wahlenb. (Cyperaceae) – Needleleaf Sedge (*Rogoz angustifolium*)**
(Figure 3).

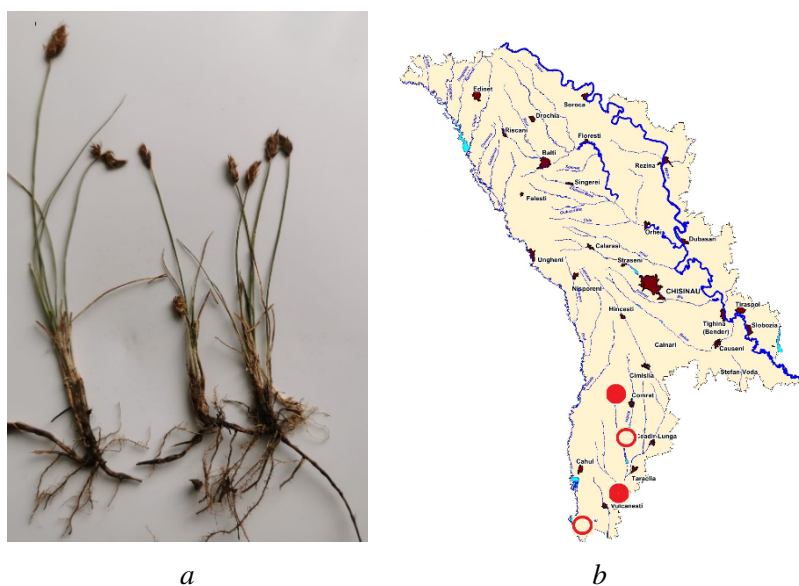


Figure 3. *Carex stenophylla* Wahlenb.: *a* – plant appearance, *b* – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

In the territory of the Republic of Moldova, this species was first collected by C. Zahariadi on 06.04.1925, from the slopes of the ravines near the village of Ciumai, Vinogradovca commune, Taraclia district (Cahul county) [27, 28], and later confirmed by L. Toderaş on 11.05.1977 (CHGB). Rarely, in small clusters, it has also been recorded near Cîşliţa-Prut commune (Cahul district, 27.04.1952, collected by L. and M. Pojarisscaia, CHGB), Congaz commune (Comrat district, 24.04.1952, collected and identified by L. and M. Pojarisscaia, CHGB) and Bugeac commune (Comrat district, 07.05.2025, 18.05.2026, collected and identified by P. Pînzaru, CHGB, CH-HBPP). The species reproduces both by seeds and vegetatively.

This Central and Eastern European species is a geophyte, xeromesophilic and halophilic, occurring on sandy, sometimes slightly saline soils. It is characteristic of the vegetation order *Festucetalia vaginatae* Soó 1957 [12, 29].

Carex strigosa Huds. (Cyperaceae) – **Thin-spiked Wood-sedge (Rogoz setos)** (Figure 4).

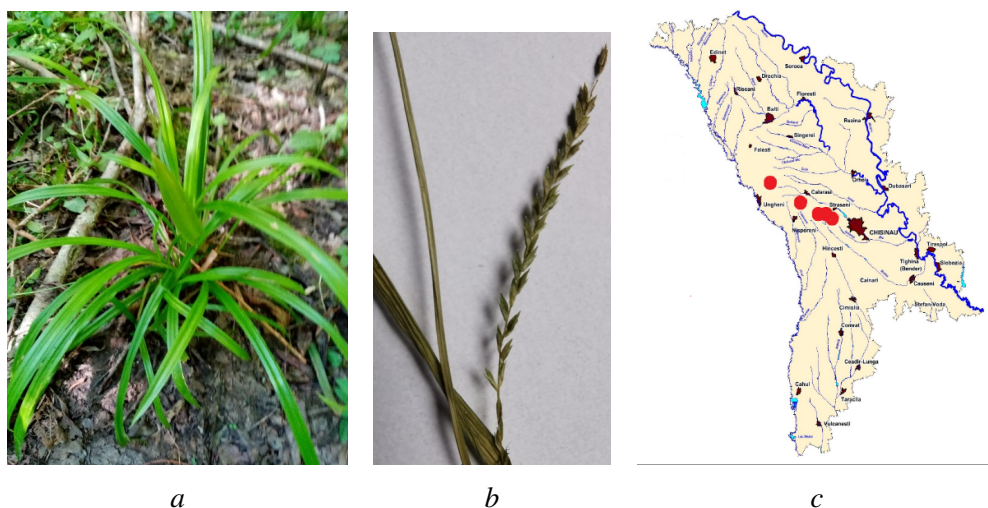


Figure 4. *Carex strigosa* Huds.: a, b – plant appearance; c – distribution in the Republic of Moldova

Status. Endangered species (EN).

The species was first collected by L. Toderaş from the forests of the villages of Scoreni commune, Străşeni district, on 05.05.1976 and Cioreşti commune, Nisporeni district, on 06.05.1976 (LE) [37]. New growth sites were recorded in the forests around the communes of Lozova commune, Străşeni district (07.05.2025, 18.10.2025) and Căpriana commune

(Valea “Buda”, 01.07.2024), collected by P. Pînzaru, V. Cantemir, identified by P. Pînzaru, (CHGB); Rădenii Vechi commune, Ungheni district, 11.08.2024, collected by P. Pînzaru, V. Sfecă (CH-HBPP). The species occurs in groups on moist soils within meadow forests or near springs. It is territorially protected in the Scientific Reserves “Codru” and “Plaiul Fagului” [24, 23]. Reproduction occurs both by seeds and vegetatively.

It is a West and Central European species, hemicryptophyte, mesohydrophilic, characteristic of the vegetation order *Alno-Fraxinetalia excelsioris* Passarge 1968 [12, 29].

Carex vesicaria L. (Cyperaceae) – **Blister Sedge (Rogoz vezicar)** (Figure 5).

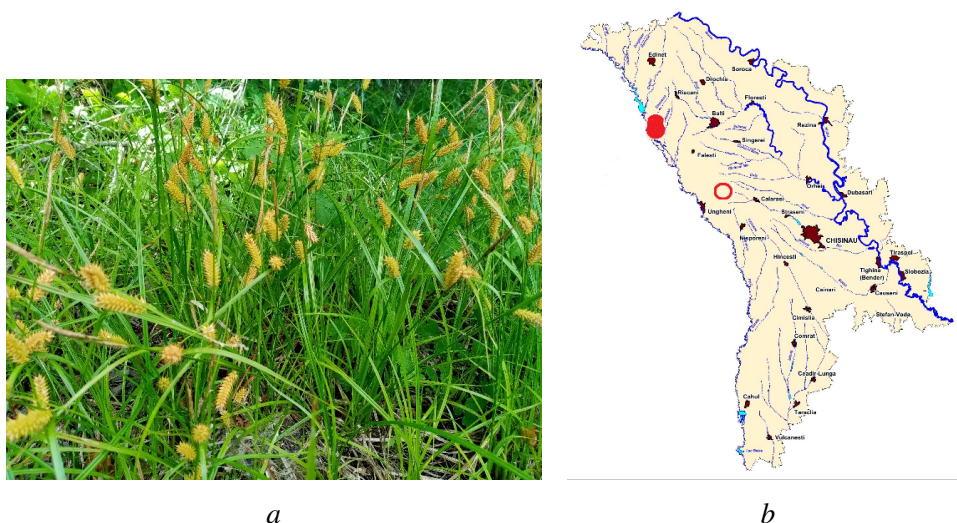


Figure 5. *Carex vesicaria* L.: a – plant appearance; b – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

The species was first reported by Ch. Tardent [33] for Chişinău, Orhei and Bălţi. Later, T. Săvulescu and T. Rayss (1924) recorded it near Corneşti station (Ungheni county) [26], but it disappeared following drainage works. Currently, the species is known from the vicinity of Cobani commune (19.06.2023) and Balatina commune (11.06.2024), Glodeni district, collected by P. Pînzaru, V. Cantemir, V. Slivca, and identified by P. Pînzaru (CHGB, CH-HBPP) [23]. It occurs on wet, frequently flooded soils. It reproduces both by seeds and vegetatively. The species is territorially protected within the “Pădurea Domnească” Scientific Reserve.

It is a circumpolar species, perennial, hemicryptophyte, mesohydrophilic, characteristic of the vegetation alliance *Magnocaricion* Koch 1926 [12, 29].

***Centaurea ruthenica* Lam. (Asteraceae) – Russian knapweed (*Centauree rusească*)**
(Figure 6).

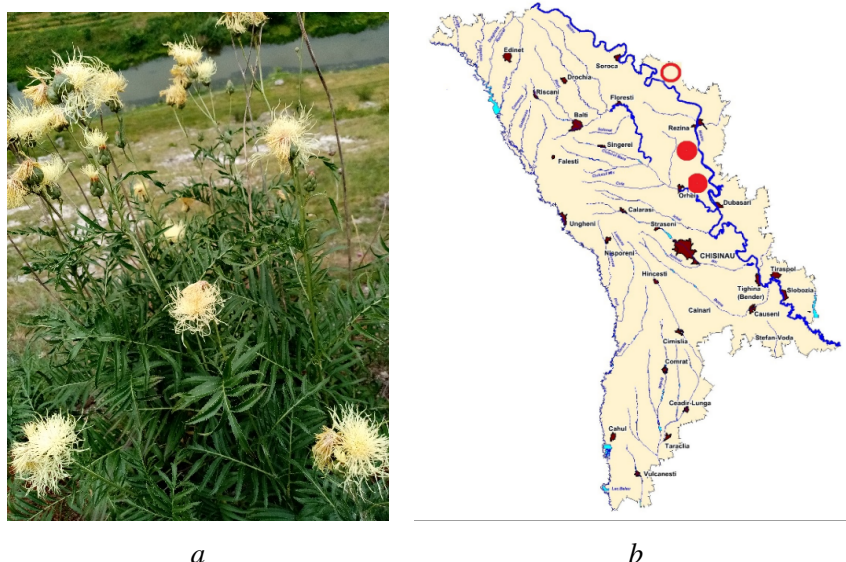


Figure 6. *Centaurea ruthenica* Lam.: a – plant appearance; b – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

This species was first reported by Johannes Schmalgauzen (1886) from the vicinity of the village of Rașcov, Camenca district [38], it is not mentioned in other bibliographical sources. New growth sites were reported near the village of Țipova, Rezina district, 27.06.2021, collected and identified by P. Pînzaru, and near the commune of Trebujeni, Orhei district, 14.06.2023, collected and identified by P. Pînzaru (CHGB, CH-HBPP). The plants grow sporadically or in small groups on limestone rocks in the valleys of the Dniester and Răut rivers [9, 17]. They reproduce by seeds and are also cultivated *ex situ*, flowering in the second year of growth. The species is territorially protected within the National Park “Orhei” and the Landscape Reserve “Țipova”.

Centaurea ruthenica Lam. is a hemicyptophyte and xerophyte, occurring in the Balkans, southern Central and Eastern Europe, the Caucasus, western Siberia and Central Asia [9].

***Dactylorhiza incarnata* (L.) Soó (Orchidaceae) (*Orchis incarnata* L. – *D. majalis* auct. mold., non (Rchb.) P.F.Hunt & Summerth.) – Early Marsh-orchid (*Dactyloriză carnee*)**
(Figure 7).

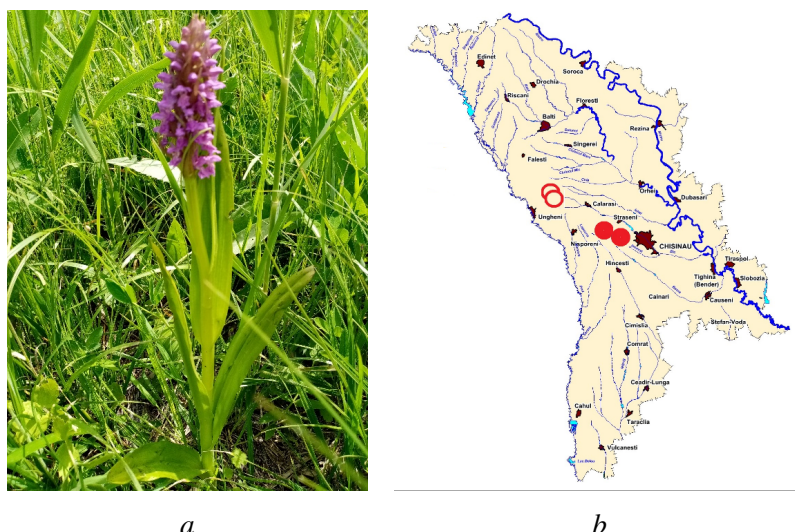


Figure 7. *Dactylorhiza incarnata* (L.) Soó: *a* – plant appearance; *b* – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

The species, initially recorded as *Orchis incarnata* L. by Vladimir Lipsky (1889) in Cornești, Ungheni district [36], was later misidentified by botanists from the Republic of Moldova as *Dactylorhiza majalis* (Rchb.) P.F. Hunt & Summerh. During new floristic investigations in 2018, it was correctly identified as *Dactylorhiza incarnata* (L.) Soó. It was also recorded in the meadow near the village of Pojarna, commune of Sinești, Ungheni district [15]; however, by the fall of 2020, this meadow no longer contained the species. An inventory of the vascular flora in the “Plaiul Fagului” Scientific Reserve revealed that the species was absent from plot no. 9 [2]. Currently, *Dactylorhiza incarnata* occurs in wet meadows with grassy vegetation near the communes of Lozova and Scoreni, Strășeni district. It is territorially protected in the “Codru” Scientific Reserve and occurs rarely in wet meadows within phytocenoses of the association *Geranio pratensi-Cirsietum cani* Pînzaru et al. 2019 [21]. It is a Eurasian species, geophyte, mesohygrophilous, and valued for its decorative properties.

***Dryopteris dilatata* (Hoffm.) A.Gray (Dryopteridaceae) – Broad Buckler-fern (Ferigă dilatată) (Figure 8).**

Status. Critically Endangered species (CR).

This species was previously misreported as occurring only in the “Plaiul Fagului” Scientific Reserve; the two exsiccates collected on 23.05.1985 and 10.09.1987 by V. Chirtoacă and A. Istrati (CHGB 226754, 226756) actually correspond to *Dryopteris*

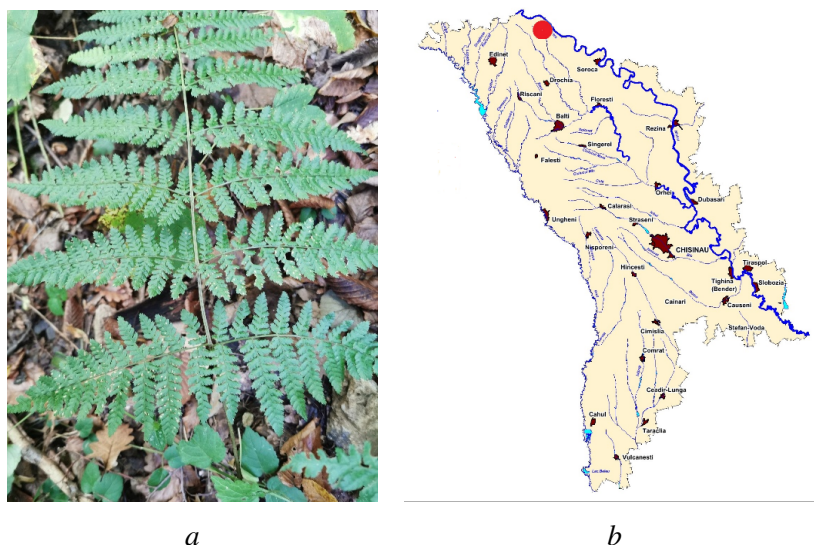


Figure 8. *Dryopteris dilatata* (Hoffm.) A.Gray: *a* – plant appearance; *b* – distribution in the Republic of Moldova

cathusiana (Vill.) H.P. Fuchs [2]. In the summer of 2025, *D. dilatata* was recorded near the commune of Unguri, Ocnița district (CHGB 240421; CH-HBPP 12018). It grows at an altitude of 88 m in the lower part of a deep, canyon-type valley, on purple schists with a thin soil layer mixed with shale fragments, covered with moss, under the canopy of hazelnut shrubs (*Corylus avellana* L.). The species is territorially protected in the “Rudi-Arionești” Landscape Reserve (plot 62) [14].

It is a Eurosiberian species, hemicryptophyte, geophyte, mesohygrophilous (mesophilous), characteristic of the vegetation order *Fagetalia sylvaticae* Pawlowski 1928 [12, 29].

***Epipactis leptochila* (Godfery) Godfery (Orchidaceae) – Narrow-lipped Helleborine (Dumbrăviță delicată) (Figure 9).**

Status. Critically Endangered species (CR).

In the territory of the Republic of Moldova, *Epipactis leptochila* has been recorded in the forests surrounding the communes of Olișcani (Șoldănești district), Cărpiana (Strășeni district), and Rădenii Vechi (Ungheni district) [24, 30, 32]. The species occurs rarely in the phytocenoses of the associations *Carici pilosae-Carpinetum* Neuhausl et Neuhauslova-Novotna 1964 [31] and *Euonymo nanae-Quercetum roboris* Pînzaru, Sfecă & Cantemir 2025 [24]. It reproduces by seeds. The species is territorially protected in the Dobrușa Landscape Reserve and the Plaiul Fagului Scientific Reserve. It is a European-Caucasian species, geophyte, mesophile.

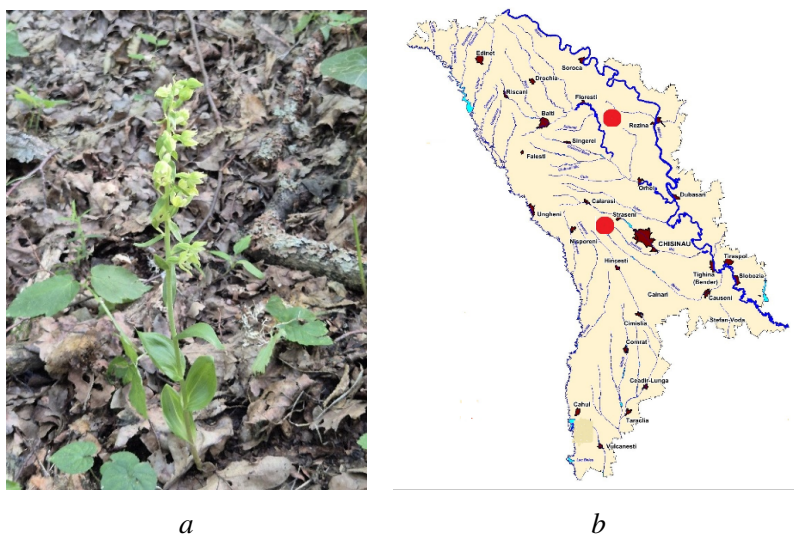


Figure 9. *Epipactis leptochila* (Godfery) Godfery: *a* – plant appearance; *b* – distribution in the Republic of Moldova

***Gagea bulbifera* (Pall.) Salisb. (Liliaceae) – Bulblet-Bearing Yellow Star (Scânteiuță bulbiferă) (Figure 10).**

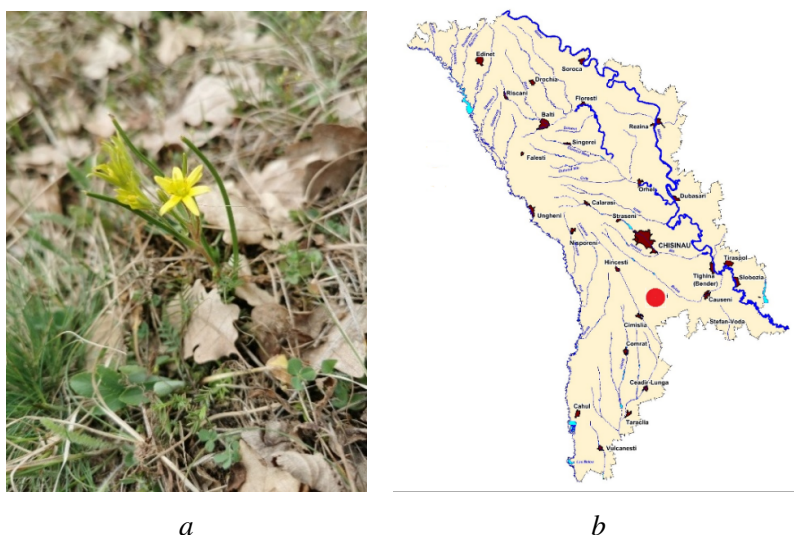


Figure 10. *Gagea bulbifera* (Pall.) Salisb.: *a* – plant appearance; *b* – distribution in the Republic of Moldova

Status. Critically Endangered (CR).

The species was indicated for the steppe vegetation of Bugeac [35], but there are no specimens in the herbarium of the Chisinau Botanical Garden (CHGB). Recently, a small group of plants was recorded in a clearing in the downy oak forest (*Quercus pubescens* Willd.) near the village of Baurci, Chircăieştii Noi commune, Căuşeni district, 24.03.2025, collected by P. Pînzaru (CH-HBPP). It reproduces by seeds. It is a Eurasian, geophyte, xeromesophilic species, characteristic of the vegetation of the alliance *Festucion valesiacae* Klika 1931.

***Hieracium umbrosum* Jord.** (Asteraceae) – **hawkweed (Vulturică umbroasă)** (Figure 11).



Figure 11. *Hieracium umbrosum* Jord.: *a, a'* – plant appearance; *b* – distribution in the Republic of Moldova

Status. Vulnerable species (VU).

This species has been recorded near the localities of Mereşeni (17.06.1973, collected by A. Istrati, identified by V. Nicolaev, 1993; 4–5.08.2016, collected and identified by P. Pînzaru, CHGB, CH-HBPP). New growth locations in Hînceşti district (Logăneşti and Lăpuşna communes, 05.04.2017, 27.06.2017, collected by P. Pînzaru and V. Cantemir, CHGB, CH-HBPP) and in Ialoveni district (Văsieni commune, 03.08.2017, collected by P. Pînzaru and V. Cantemir, CHGB, CH-HBPP and Răzeni commune, 05.08.2019, collected by P. Pînzaru, CH-HBPP). The species grows sporadically in oak forests, forming groups within the association *Hieracio umbrosi-Quercetum petraeae* Pînzaru, Cantemir, Manic et Popescu 2017 [16, 19]. It reproduces by seeds, and plants cultivated *ex situ* flower in the second year of vegetation. The species is territorially protected in the *Logăneşti* Natural Reserve of Medicinal Plants. It is a European species, hemicryptophyte, xeromesophilous [12, 29].

Iris brandzae Prodan (Iridaceae) – **Brandze-Iris (Stânjenel-Brandze)** (Figure 12).

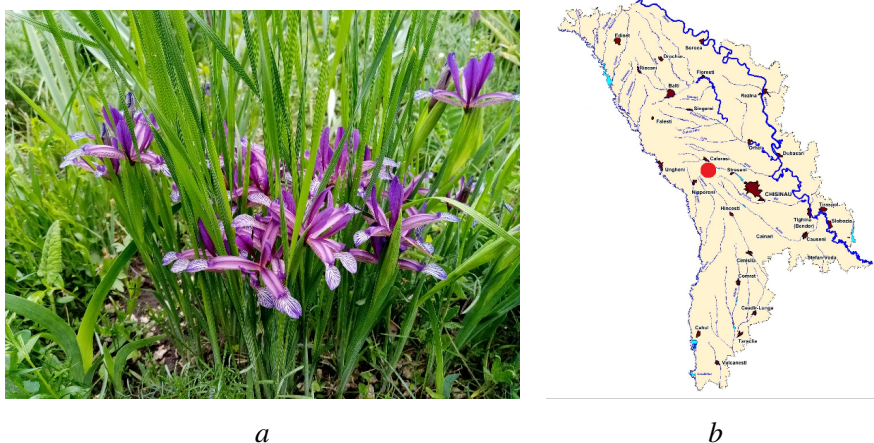


Figure 12. *Iris brandzae* Prodan: *a* – plant appearance (plants grown in *ex situ* conditions); *b* – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

The species *Iris brandzae* was first collected by L. Lipovaia on 05.07.1954, southeast of Tuzara commune, Călărași district, but wrongly determined as *Iris humilis* M. Bieb. (CHGB 21078); the identification was corrected on 20.12.2025 by P. Pînzaru. This subendemic species is a geophyte and xeromesophilic. Outside the Republic of Moldova, it is known from Romania (counties: Prahova, Buzău, Vrancea, Galați, Vaslui, Iași, Botoșani) [29] and Ukraine (Sulița Nouă, Chernivtsi region, under the name *Iris sintensii* Janka) [34]. This species is cultivated in the author's private garden, Codru commune, Chisinau municipality, using original plants from Iași county. It is propagated both by seeds and vegetatively.

Linum catharticum L. (Linaceae) – **Fairy Flax (In purgativ)** (Figure 13).

Status. Critically Endangered species (CR).

The species *Linum catharticum* was reported by T. Săvulescu and T. Rayss (1934) from Ocnîța district (communes of Ocnîța and Mihălășeni) and Dondușeni (near Dondușeni) [27]; it has likely disappeared from these localities, as no other records exist. In the summer of 2024, the species was observed near the commune of Bumbota, Ungheni district, on 29.07.2024, collected by P. Pînzaru (CHGB, CH-HBPP) [23]. It grows sporadically on sandy clay soils with northern exposure, in phytocenoses dominated by *Anthericum ramosum* L.



Figure 13. *Linum catharticum* L.: *a, a'* – plant appearance; *b* – distribution in the Republic of Moldova

It is a European/West-Asian species, therophyte, mesophilous, characteristic of the vegetation order *Molinietalia caeruleae* Koch 1926 [23, 29].

***Lunaria rediviva* subsp. *bassarabica* Pînzaru** (Brassicaceae) (= *L. rediviva* auct. mold. non L.) – **Bassarabeian lunaria (Lunarie basarabeană)** (Figure 14).

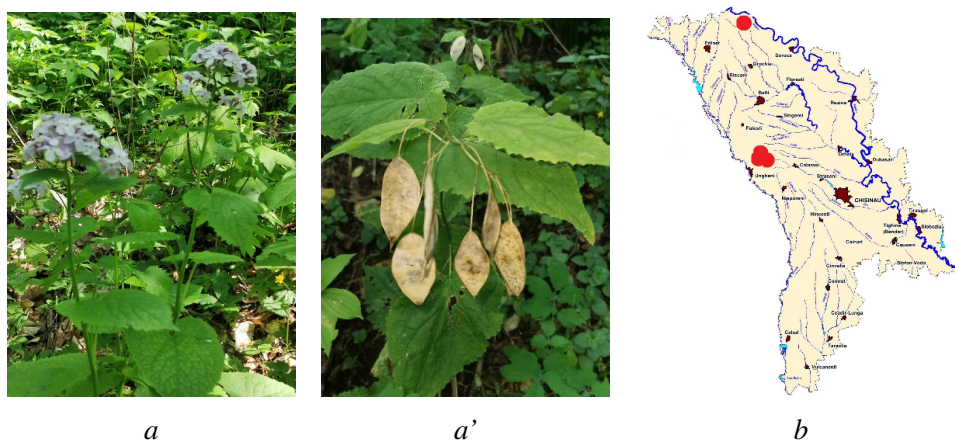


Figure 14. *Lunaria rediviva* subsp. *bassarabica* Pînzaru: *a, a'* – plant appearance; *b* – distribution in the Republic of Moldova

Status. Endangered species (EN).

Lunaria rediviva subsp. *bassarabica* Pînzaru occurs sporadically or forms dense clusters in beech-hornbeam forests, hornbeam-pedunculate oak forests within the “Plaiul Fagului” Scientific Reserve (Rădenii Vechi, Cornești, Vălcineț) and in *Quercus robur* L. forests with *Cerasus mahaleb* (L.) Mill. on the northern cliff of the “Calarașovca”

Landscape Reserve (Calarașovca commune, Ocnîța district) [17, 24]. The species is a hemicryptophyte, mesophilous to xeromesophilous, and is propagated by seeds. Outside the Republic of Moldova, it has been recorded in Ukraine (near the village of Ruhotin, Hotin district, Chernivtsi region, 09.04.1995, collected by P. Pînzaru) and in Romania (counties of Iași, Caraș-Severin and Bacău). Earlier records in Romania were determined as *Lunaria rediviva* L. but have been redetermined as subsp. *bassarabica* by P. Pînzaru.

Odontarrhena obtusifolia (Steven ex DC.) A.A. Mey. (Brassicaceae) [= *Alyssum tortuosum* auct. mold., non Waldst. & Kit.] – **Madwort (Odontarenă obtuzifolie)** (Figure 15).

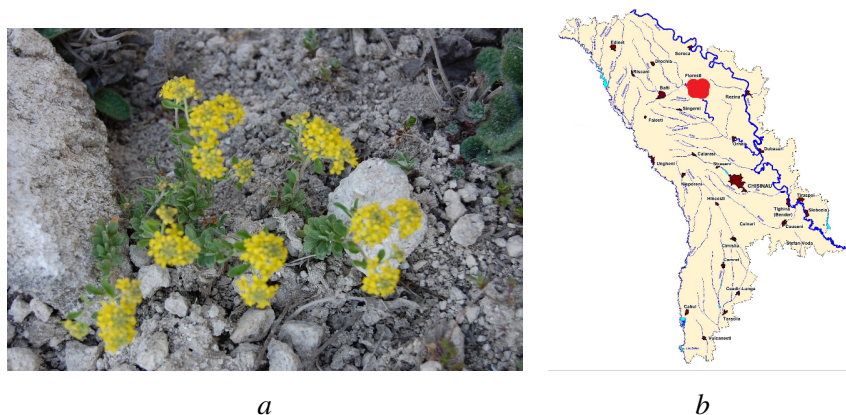


Figure 15. *Odontarrhena obtusifolia* (Steven ex DC.) A.A.Mey.: a – plant appearance; b – distribution in the Republic of Moldova

Status. Vulnerable species (VU).

In the Republic of Moldova, this species is found around the villages of Florești district (Bobulești, Cenușa, 10.03.2020, collected by P. Pînzaru; Țîra, 20.05.2015, collected by P. Pînzaru; Prodănești commune, 26.04.2009, collected by P. Pînzaru) and Soldănești district (Rogojenii Vechi, village, 20.05.2015, collected by P. Pînzaru) (CH-HBPP). The species is a chamaephyte, xerophilous, calciphilous, and heliophilous plant. It reproduces by seeds. The species is not currently protected by the State territorially. It was proposed to be included in the Network of State Protected Areas as natural botanical monuments “Bobulești Hill”, the surface area is about 1 ha and “Cenușa” the surface area is about 5 ha [6, 8].

The native range extends from southeastern Europe to Iran. The species is characteristic of the vegetation alliance *Genisto tetragonae-Seselion besseriani* Pînzaru 1997 corr. 2022 [11].

***Peucedanum arenarium* Waldst. & Kit. (Apiaceae) – Sand-parsley (Chimin arenicol) (Figure 16).**



Figure 16. *Peucedanum arenarium* Waldst. & Kit.: *a* – plant appearance, inflorescence fragment, fruits; *b* – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

In the Republic of Moldova, according to the herbarium of the Botanical Garden (CHGB), it was collected in 1928-1934 by Constantin Zahariadi near the villages of Dermengi, Moldovan-Baurci, Mingir and Zloți; by Afanasie Istrati near the village of Valea Florii, Hincesti district (24.07.1981); Selemet commune, Cimișlia district, plot no. 15., 30.06.2021, collected by P. Pînzaru, V. Cantemir, identified by P. Pînzaru. It grows in small groups on sandy-clay soils in glades. It is a Pontic-Pannonic-Balkan species, hemicryptophyte, xeromesophilic. It reproduces by seeds. Territorially it is protected in the “Hîrtopul Moisei” forest reserve, near the commune of Selemet, Cimișlia district.

***Polystichum setiferum* (Forssk.) T.Moore ex Woy. (Dryopteridaceae) – Soft Shield-fern (Scutarie setiferă) (Figure 17).**

Status. Critically Endangered species (CR).

The species is known only from the vicinity of the commune of Calarașovca, Ocnîța district. A small group of plants (20 specimens) were observed on the steep, forested slope of the “Calarașovca” Landscape Reserve, 16.05.2023, 11.08.2025, collected and identified by P. Pînzaru (CHGB; CH-HBPP) [17].

***Ranunculus binatus* Kit. ex Rchb. (Ranunculaceae) – Buttercup binate (Boglar binat) (Figure 18).**

Status. Endangered species (EN).



Figure 17. *Polystichum setiferum* (Forssk.) T. Moore ex Woyn.: *a* – plant appearance; *b* – distribution in the Republic of Moldova

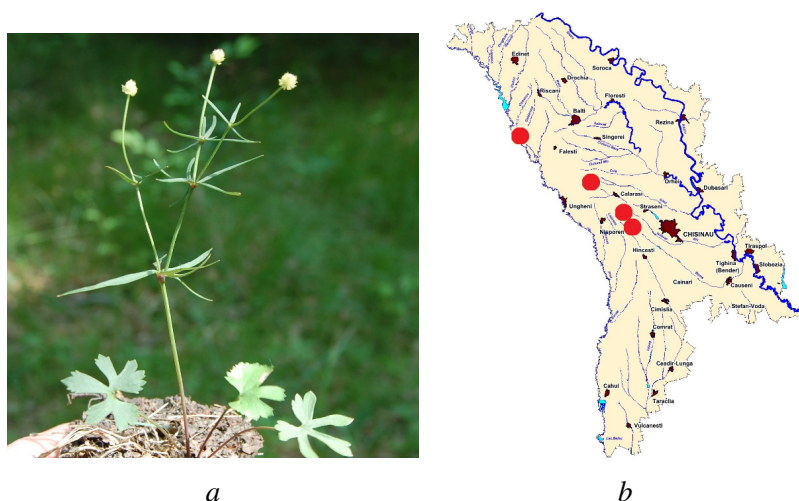


Figure 18. *Ranunculus binatus* Kit. ex Rchb.: *a* – plant appearance; *b* – distribution in the Republic of Moldova

This rare species is widespread in the districts of Fălești (Călinești commune, 11.06.2021, collected by P. Pînzaru and V. Cantemir, identified by P. Pînzaru), Ungheni (near the town of Cornești and Pojarna, 04.05.2019, collected and identified by P. Pînzaru), Strășeni (Lozova commune, 20.05.2021, collected by P. Pînzaru and N. Jardan, identified by P. Pînzaru) and Hîncești (Horodca village, Drăgușenii Noi commune) (CH-HBPP, CHGB). It grows sporadically or in small groups in wet meadows and propagates by seeds. This

Central European-Ponto-Balkan species is a hemicryptophyte, mesophilous to mesohygrophilous, and is characteristic of the vegetation order *Molinietalia caeruleae* Koch 1926. It is territorially protected in the “Pădurea Domnească” and “Codru” Scientific Reserves [7, 16, 18].

Seseli libanotis (L.) W.D.J. Koch (Apiaceae) – **Moon Carrot (Zmeoaie montană)** (Figure 19).

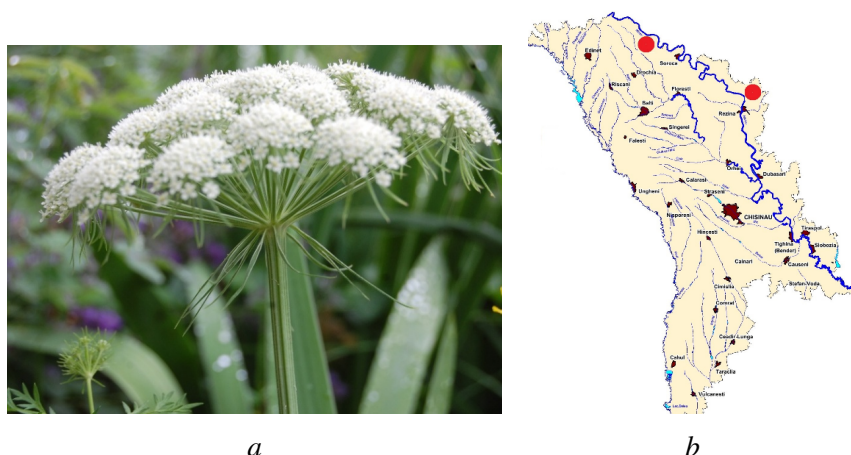


Figure 19. *Seseli libanotis* (L.) W.D.J.Koch: a – plant appearance; b – distribution in the Republic of Moldova

Status. Critically Endangered species (CR).

This rare species was recorded in the districts of Soroca (Rudi commune, 17.08.1991, collected and identified by P. Pînzaru; 14.07.2007, leg. T. Izverscaia, G. Şabanova) and Rîbnița (Molocișul Mare commune, 13.08.1995, collected and identified by P. Pînzaru) (CHGB). It grows sporadically in glades, reproduces by seeds. It is territorially protected in the “Rudi-Arionești” Landscape reserve. It is and European species, hemicryptophyte, xeromesophilous, characteristic of the vegetation of the class TRIFOLIO-GERANIETEA SANGUINEI T. Müller 1962 [5, 8, 12].

Silphiodaucus prutenicus (L.) Spalik, Wojew., Banasiak, Piwczyński & Reduron (Apiaceae) (= *Laserpitium prutenicus* L.) – **Prussian laserwort (Silfiodaucus prusian)** (Figure 20).

Status. Critically Endangered species (CR).

This very rare species has been recorded only near the commune of Cotuijeni, Briceni district, on 06.08.2024 and 13.09.2025, collected and identified by P. Pînzaru (CHGB, CH-HBPP) [14]. It grows solitarily in the *Rosoșeni* forest, in communities dominated by

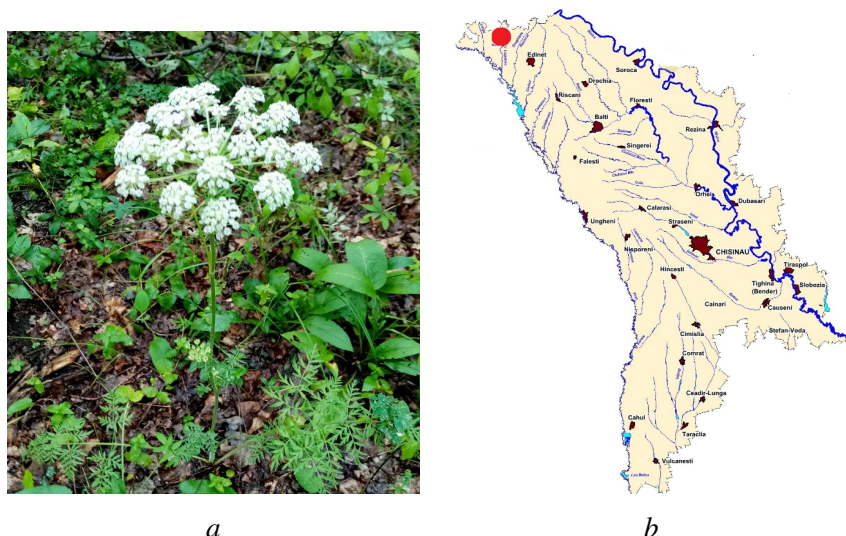


Figure 20. *Silphiodaucus prutenicus* (L.) Spalik, Wojew., Banasiak, Pi-wczyński & Reduron: *a* – plant appearance; *b* – distribution in the Republic of Moldova

Quercus robur L. with *Carex montana* L., *Potentilla alba* L. and *Veratrum nigrum* L. It is a Central European–Mediterranean species, biennial, hemiterophyte and mesophilous, reproducing by seeds. It is currently not protected by the State; inclusion in the Network of Protected Areas has been proposed, specifically as forest reserve plots 18 and 19 of the *Rosoşeni* forest near Cotiujeni village. Collection of plants from known sites is not recommended.

***Spiraea hypericifolia* L. (Rosaceae) – Iberian spirea (Cununiță hipercifolie)** (Figure 21).

Status. Critically Endangered species (CR).

In the Republic of Moldova, this species was recorded in the districts of Briceni (Caracușenii Vechi commune, 20.04.1994, collected by P. Pînzaru; 17.05.2024, collected by P. Pînzaru, V. Cantemir and V. Slivca, identified by P. Pînzaru), Fălești (Pietrosu commune, 16.06.2011, collected by V. Ghendov and T. Izverscaia), and Rîșcani (Horodiște commune, 17.05.2024, collected by P. Pînzaru) (CHGB, CH-HBPP) [14, 22]. It grows in small groups on calcareous slopes and reproduces by seeds and vegetatively. The species is territorially protected in the Landscape Reserve “Geological and Paleontological Complex of the Lopatnic Basin”. It is a Mediterranean species, nanophanerophyte, xeromesophilous.

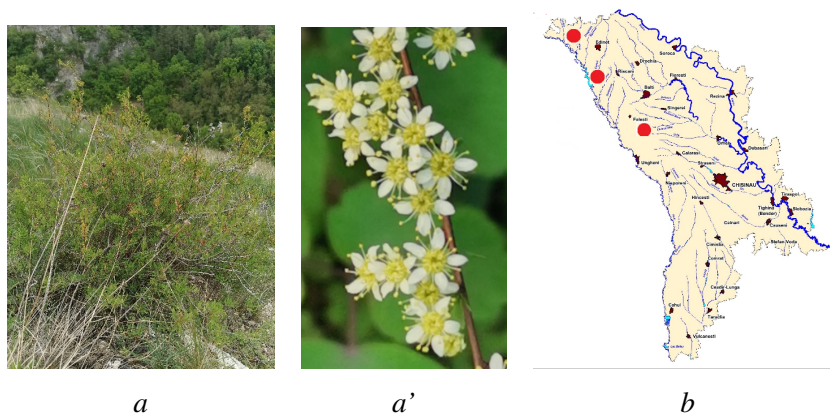


Figure 21. *Spiraea hypericifolia* L.: *a*, *a'* – plant appearance; *b* – distribution in the Republic of Moldova

***Thymus coldeae* Pînzaru (Lamiaceae) – Coldea-thyme (Cimbru-Coldea) (Figure 22).**



Figure 22. *Thymus coldeae* Pînzaru: *a* – plant appearance; *b* – distribution in the Republic of Moldova

Status. Vulnerable species (VU).

It is an endemic species, which grows sporadically or in groups on calcareous slopes, around the localities of Chisinau (village Făurești and Goian in Ciorescu commune, Cricova commune, 19.05.2018, 21.06.2020, 07-08.06.2021, collected and identified by P. Pînzaru), Dubăsari (Molovata commune, 20.05.2016, collected and identified by P. Pînzaru), Orhei (Păhârnicieni commune, 12.05.2009, collected and identified by P. Pînzaru), Șoldănești (Rogojenii Vechi village, 28.07.2003, 21.05.2009, coll. and det. P. Pînzaru), Florești (village Țîra in Ghindești commune, 20.05.2015, collected and identified by

P. Pînzaru), Glodeni (Cobani commune, 10.06.2020, collected and identified by P. Pînzaru) (CHGB, CH-HBPP). It is a cameophyte, xerophilous, calcicola species. It reproduces both by seeds and vegetatively [10]. It is not currently territorially protected, but it was proposed to be included in the Stîncă “Ciorescu” Protected Area Network on the right bank of the Ichel River.

***Thymus moldavicus* Klokov & Des.-Shost. (Lamiaceae) – Moldavian thyme (Cimbru moldovenesc) (Figure 23).**



Figure 23. *Thymus moldavicus* Klokov & Des.-Shost.: a – plant appearance; b – distribution in the Republic of Moldova

Status. Vulnerable species (VU).

This endemic species grows on Middle Sarmatian limestones near the localities of Orhei (Trebujeni commune and Butuceni, Morovaia village, 23.06.2020, collected and identified by P. Pînzaru), Criuleni (Mașcăuți commune, 23.05.2018, 13.07.2018, 22.06.2020, collected and identified by P. Pînzaru) and Grigoriopol (Butor and Tașlic communes, 21.08.2018, collected and identified by P. Pînzaru) districts (CHGB, CH-HBPP). It is a cameophyte, xerophilous, calcicola species, reproducing both by seeds and vegetatively. It is territorially protected in the “Orhei” National Park [8, 6].

4. CONCLUSIONS

As a result of new floristic investigations, 23 species of rare vascular plants from the spontaneous flora were identified and are proposed for additional inclusion in the Red Book of the Republic of Moldova (4th edition). These include:

- Critically Endangered species (CR) – 16: *Carex bohémica* Schreb., *C. pseudocyperus* L., *C. stenophylla* Wahlenb., *C. vesicaria* L., *Centaurea ruthenica* Lam.,

Dactylorhiza incarnata (L.) Soó, *Dryopteris dilatata* (Hoffm.) A.Gray, *Epipactis leptochila* (Godfery) Godfery, *Gagea bulbifera* (Pall.) Salisb., *Iris brandzae* Prodan, *Linum catharticum* L., *Peucedanum arenarium* Waldst. & Kit., *Polystichum setiferum* (Forssk.) T.Moore ex Woyn., *Seseli libanotis* (L.) W.D.J. Koch, *Spiraea hypericifolia* L., and *Silphiodaucus prutenicus* (L.) Spalik, Wojew., Banasiak, Piwczyński & Reduron;

- Endangered species (EN) – 3: *Carex strigosa* Huds., *Lunaria rediviva* subsp. *bassarabica* Pînzaru, and *Ranunculus binatus* Kit. ex Rchb.;
- Vulnerable species (VU) – 4: *Hieracium umbrosum* Jord., *Odontarrhena obtusifolia* (Steven ex DC.) C.A. Mey., *Thymus coldeae* Pînzaru, and *T. moldavicus* Klokov & Des.-Shost.

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(2) “Assessment of the state of plant, fungi and animal species, development of the list of species with rarity status and the algorithm for their presentation in the 4th edition of the Red Book of the Republic of Moldova”, funded by the National Environment Fund of Republic of Moldova and co-financing by the Moldova State University, according to the financing Contract No. 01-23p-096/03-05-2024 from 27.02.2024.

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