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FLORISTIC FINDS IN THE NORTHERN PRIISHIMYE, KAZAKHSTAN

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Abstract

The article provides information on the floral finds of 4 plant species new to our region: *Pleurospermum uralense* Hoffm., *Sedobassia sedoides* (Pall.) GLChu., *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K. Koch. Among the finds, *Pleurospermum uralense* Hoffm., is a new genus and species for the Tobol-Ishim botanical and geographical region of our republic. Such species as *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K. Koch., as well as *Sedobassia sedoides* (Pall.) GLChu. they are previously unknown to vegetation of our area. New species are adding to the list of plants of our region.

Keywords: flora, plant species, location, Sogrovskiy nature reserve.

СОЛТҮСТІК КАЗАҚСТАННЫҢ ЕСІЛ БОЙЫНДАҒЫ ФЛОРАЛЫҚ ЖАҢА
ТҮРЛЕРІ

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Аңдатпа

Мақалада біздің аумағы үшін жаңа өсімдіктердің 4 түрінің флористикалық олжалары туралы ақпарат берілген: *Pleurospermum uralense* Hoffm., *Sedobassia sedoides* (Pall.) GLChu., *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K.Koch. Табылған жаңа түрлерінің арасында *Pleurospermum uralense* Hoffm бар., Қазақстанның Тобыл-Есіл ботаникалық-географиялық ауданы үшін жаңа тұыс және түр болып табылады. *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K. Koch сияқты түрлер., сондай-ақ *Sedobassia sedoides* (Pall.) GLChu. біздің облысының флорасы үшін жаңа түрлер болып табылады. Жаңа түрлер біздің облысының флорасының тізімін толықтырады.

Кілт сөздер: флора, өсімдік түрлері, орналасқан жері, Согров қорығы.

ФЛОРИСТИЧЕСКИЕ НАХОДКИ В СЕВЕРНОМ ПРИИШИМЬЕ, КАЗАХСТАН

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Аннотация

В статье приводится информация о флористических находках 4 видов растений, новых для нашего региона: *Pleurospermum uralense* Hoffm., *Sedobassia sedoides* (Pall.) GLChu., *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K.Koch. Среди находок *Pleurospermum uralense* Hoffm., является новым родом и видом для Тобол-Ишимского ботанико-географического района нашей республики. Такие виды как *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K.Koch., а также *Sedobassia sedoides* (Pall.) GLChu. являются ранее неизвестными для растительности нашего региона. Новые виды пополняют список флоры нашей области.

Ключевые слова: флора, виды растений, местонахождение, Согровский заказник.

Introduction

The territory of research on floral zoning is located within the Tobol-Ishim forest-steppe botanical and geographical area. The climate of the area is ultra-continental, the vegetation is floodplain in nature, most of it is occupied by forest-steppe. Following the literature data list of species in our region, there are 760 plants from 96 families. Most of them are represented by flowering plants, these are 744 species; representatives of the Dicotyledonae class are 587 species [1; p. 15].

Identifying new species for the flora of our region is a very urgent task. Data on the location of species in individual habitats, including protected areas, have been obtained.

The publication considers floral finds for forest and steppe landscapes. *Pleurospermum uralense* Hoffm. (Apiaceae). The species is common in Western Siberia and the Urals of the Russian Federation, often as a weed. In some areas it is listed in the regional Red Books, including in the Samara region of Russia, it is marked in the Kalinovsky Spruce forest natural monument [2; p. 29-34]. According to information [3; p. 86-90], it is part of the upper grassy sublayer (up to 100 cm high) in the birch and pine forests of the Kemerovo region. According to some data, the plant has a bacteriostatic effect on bacterial growth [4; p. 145-150]. In Kazakhstan, *Pleurospermum uralense* Hoffm. it grows in birch-aspen and birch forests and along the edges, it is recorded only in Altai [5; p. 362]. It is rare in the Kokchetav region, in the vicinity of Lake Borovoye [6, 7; p.189].

Atraphaxis frutescens (L.) K. Koch. (Polygonaceae Lindl.). First published in Dendrologie 2 (1):360 (1872). General distribution: Caucasus, Western and Eastern Siberia, Kazakhstan, Mongolia, Western China (Dzungaria) [8; p. 115-116]. Distribution in Kazakhstan: the species is widespread throughout the republic. It grows on gravelly slopes, clay, sandy steppes. In the Central melkosopochnik it grows in steppes, along the slopes of low mountains, on clay and gravelly soils, along dry watercourses [7; p. 93].

Viola mirabilis L. is a European non-moral species (species of the European non-moral floral complex). It is more common in the European part, having the eastern limit of its range in the Southern Urals [9; p.43]. According to available data, this plant grows in addition to our area in three more regions: Altai, Tarbagatai and Dzungarian Alatau [10; pp. 197-198]. The distribution in Kazakhstan has been poorly studied. According to modern data, there is information about the presence of Burabaya flora in floristic lists. It is very rare in the Kokchetav region: in the lower reaches of the Imanayevsky stream [7; p. 112]. And also,

according to our data for 2022, the species is found in floodplain birch ravine forests of our area [11; p. 683-691].

Sedobassia sedoides (Pall.) GLChu. *Grubovia sedoides* (Pall.) Moq. *Bassia sedoides* Pall. (*Echinopsilon sedoides* (Pall.) Moq.). The Chenopodiaceae family. This species is found quite widely in Kazakhstan, grows in salt marshes, salt flats, saline steppes, pastures and wastelands [12; p.229]. The species was absent from the list of plants of a certain region. It was discovered during field research in 2023 in the Ualikhanov district of North Kazakhstan region.

Research methods

Floristic studies in the study area were carried out in the period from May to September 2019-2024 by route reconnaissance method. To study the flora, generally accepted geobotanical methods were used [13], desk processing, list compilation, and literature analysis. The nomenclature names of plants are given according to WCSP (wcsp.science.kew.org). The Illustrated Plant Identifier of Kazakhstan was used for identification species of plants [14, 15]. Latin names of plants and taxa are given in accordance with IPNI (powo.science.kew.org) [16]. We have collected herbarium samples (10 samples). The collected herbarium specimens are stored in the herbarium collection of the university, which has an index SQU (Index Herbariorum), duplicates are transferred to the herbarium of the branch of the RSE "Institute of Botany and Phytointroduction" in Astana (Kazakhstan).

Results and discussion

As a result of the conducted field research, new locations of 4 plant species were discovered – floristic finds of our region. Among them: *Pleurospermum uralense* Hoffm., *Sedobassia sedoides* (Pall.) GLChu., *Viola mirabilis* L., *Atraphaxis frutescens* (L.) K. Koch. *Pleurospermum uralense* Hoffm is the representative of the Apiaceae family. It is a new genus and species for the forests of the Ishim plain of Kazakhstan.

A new species for the Tobol-Ishim botanical and geographical part of Kazakhstan

Pleurospermum uralense Hoffm. The Apiaceae family.

Location: Kyzylzhar district of North Kazakhstan region. Sogrovsky nature reserve, 5 km south of the village of Dolmatovo, ravine birch forest, 55.29501°N, 69.52630°E.

Habitat: forests, shrubs. Plant communities with *Pleurospermum uralense* Hoffm. are located in a birch forest at the bottom of a deep ravine. The population is in good condition, this is the territory of the Sogrov Zoological Reserve. The species grows in single specimens (Fig. 1).

This type of distribution is indicated for Altai. There were no herbarium specimens of *Pleurospermum uralense* Hoffm. in the floral lists our area and there are also no herbarium specimens of this species in the herbarium collection of the university. The species is not marked for the Tobol-Ishim botanical and geographical area and therefore is a godsend for our region. Location: Kyzylzhar district of North Kazakhstan region. Sogrovsky nature Reserve, 5 km south of the village of Dolmatovo, bereznyak ravine, 55.29501°N, 69.52630°E.

Habitat: forests, shrubs. Plant communities with *Pleurospermum uralense* Hoffm. They are located in a birch forest at the bottom of a deep ravine. The population is in good condition, this is the territory of the Sogrov Zoological Reserve. The species grows in single specimens (Fig. 1).

This type of distribution is specified for Altai [17]. Herbarium specimens of *Pleurospermum uralense* Hoffm. there were no floral lists in our region, and there are also no herbarium specimens of this species in the herbarium collection of the university. The species is not marked for the Tobol-Ishim botanical and geographical area and therefore is a godsend for our region.



Fig. 1. *Pleurospermum uralense* Hoffm., *Sedobassia sedoides* (Pall.) GLChu.
(photo by the authors)

New species for the North Kazakhstan region

Sedobassia sedoides (Pall.) GLChu. (Family Chenopodiaceae). This species was noted for the most remote and poorly studied floristically area of the region – Ualikhanov district, it occurs in deposits as a weed plant (Fig. 1).

Location: 53.46260° N, 73.17968° E. near the village of Kishkenekol in the Ualikhanov district. It is a part of the lapchatnik-wormwood association.

Viola mirabilis L. (Violaceae). Tobol-Ishim botanical and geographical area: Kyzylzhar district, Sogrovsky Nature Reserve, ravine birch forest, 55.29501° N, 69.52630° E.

Date of survey: 18 YII 2021; 18 YIII 2021; 13 IX 2021; 18 Y 2022; 26 Y 2022; 03 YI 2022; 10 YI 2022. A rare forest species. It grows in swampy birch forests (Fig. 2).

The species was found in birch ravine forests within the borders of the Sogrovsky nature Reserve, grows on the bottom and western slope of the ravine. As a result of observations conducted in the spring season of 2022, flowering was noted starting in mid-May, for example, on 18 Y 2022, all plants were in full bloom. In May, there are very few flowering plants in the forest. Therefore, individuals of *Viola mirabilis* L. contrasted with the dark brown forest litter. They grow in separate instances.



Fig. 2. *Viola mirabilis* L. (the end of flowering on 06 IY 2024,
Sogrovsky nature reserve, photo by the authors)

The state of the population is stable. The species is part of the herbaceous tier of the mixed-herbaceous slipper-fern birch (ass. grass - *Cypripedium* sp. - *Pteridium aquilinum* - *Betula pendula*).

Atraphaxis frutescens (L.) K. Koch. (Polygonaceae Lindl.).

Location in the North Kazakhstan region: 3-4 km from the village of Berezovka. 55.02351°N, 69.13406°E. Grows on a steep rocky steppe slope.

Survey date: 30 IY 2021; 17 YI 2021 (fruiting), 29 IY 2022; 12 Y 2022; 17 YI 2022; 25 YI 2024. *Atraphaxis frutescens* is a part of herbaceous and cereal cenoses on steppe slopes formed by *Festuca sulcata*, *Glycyrrhiza glabra*, and *Allium nutans* (Fig. 3).



Fig. 3. General view of the steppe slope towards the ravine

The shrubby curlew was absent from the floral lists of our area and there are also no herbarium specimens in the herbarium collection of the our university.

Atraphaxis frutescens in our region is distributed almost on the extreme limit of its range (Fig. 4). For example, the species are subject to protection of neighboring regions of Russia (Kurgan, Omsk, Tyumen, Novosibirsk [18]. Which indicates the rarity of this species in our region.



Fig. 4. *Atraphaxis frutescens* (L.) K. Koch. (on the left during flowering on 17 YI 2022, on the right a general view of the plant, photo by the authors)

Conclusions

Thus, we have marked *Pleurospermum uralense* Hoffm. - a new species for the Tobol-Ishim botanical parts of our republic, as well as 3 new species *Sedobassia sedoides* (Pall.) GLChu., *Viola mirabilis* L. *Atraphaxis frutescens* (L.) K. Koch. for the flora our area. It is necessary to monitor the number of populations of rare plants and study their locations in the steppe and forest communities of the Priishimye region.

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