

NEW RECORDS FROM USTYURT IN THE FLORA OF UZBEKISTAN

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The research was conducted in Ustyurt that is one of the arid zones of Central Asia (Uzbekistan). The method of the research was rout-floristic and classical of morphologic-geographical studies. Two new records including *Astragalus vulpinus* Willd. & *Centaurea apiculata* Ledeb. are reported for the flora of Ustyurt. These specimens were collected by the author have been entered in the database for the flora of the Ustyurt in TASH.

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Key words: Ustyurt; Uzbekistan; new species; *Astragalus*; *Centaurea*

گزارش گونه‌های جدید برای منطقه Ustyurt برای فلور ازبکستان

دیلاروم منجاتدینووا تاج‌الدینووا: عضو هیأت علمی مؤسسه گیاه‌شناسی و جانورشناسی آکادمی علوم جمهوری ازبکستان این تحقیق در منطقه بیابانی Ustyurt که یکی از مناطق بیابانی آسیای مرکزی (ازبکستان) است با استفاده از روش‌های کلاسیک فلورستیک و مطالعات ریخت‌شناسی و جغرافیایی انجام شد. دو گزارش جدید شامل *Astragalus vulpinus* Willd. و *Centaurea apiculata* Ledeb برای فلور Ustyurt کشور ازبکستان ارائه می‌گردد. این نمونه‌ها که توسط نویسنده مقاله جمع‌آوری شده است وارد بانک اطلاعاتی شده و در هرباریوم Ustyurt در TASH نگهداری می‌شود.

INTRODUCTION

The Republic of Uzbekistan belongs to the Turanian (or Aralo-Caspian) and Turkestan (or Central Asian mountain) Provinces of the Irano-Turanian region in the Tethyan (Ancient Mediterranean) floristic subkingdom of Holarctic (Takhtajan 1986). The region is one of the world's major centers of plant diversity. Almost 85% of the country is occupied by deserts. One of the desert territories is Ustyurt. It represents a raised table plateau with absolute heights 160-300 m, bordered from different directions more and less distinct breakages, so-called "chinks", with an altitude of 190-256 m a.b.s.l. The flora of Ustyurt accounts 724 species of vascular plants including large numbers of endemic and rare species (Saribaev, 1994). The floristic data is imperfect yet for regions of Ustyurt and nowadays, studies are continuing and new discoveries appear regularly.

Since 2015 the research team of the Central Herbarium of Uzbekistan (TASH) is compiling the digital database of plant diversity of country with application of ArgGIS software. This work is based on current field surveys and analysis of herbarium materials. During floristic study (2011-115) and the field collection and study of plant specimens in Ustyurt herbarium, information from more than 3,000 herbarium specimens were included into the database and new records for the flora of Uzbekistan were reported. These results have a great importance for compiling the new checklist of the flora of Uzbekistan.

MATERIALS AND METHODS

Our field research was conducted in 2011-2014 on the Ustyurt in desert regions of Uzbekistan by traditional methods. The coordinates of plants species location were recorded using GPS device. In the

Central Herbarium of Uzbekistan (TASH), we studied all herbarium specimens of *Astragalus* L. and *Centaurea* L. We also investigated the Herbarium of the LE. The data were entered into the Microsoft Excel table, geo-referenced and imported into ArcGIS 10, transformed to a point map layer. The Google Earth and WGS84 Geographic coordinate system was used as a reference datum.

Nomenclature and identification of the specimens are based on keys and descriptions in Flora of Uzbekistan (Gontscharow, 1955) and Conspectus Florae Asiae Mediae (Abdullaeva et al. 1981;

Makhmedov 1993).

Accepted names of the species are given according to S.K Cherepanov (1995).

RESULTS AND DISCUSSION

The phyto-geographical regionalization project and the creation of a single database work on the flora of Ustyurt conducted plant diversity of Uzbekistan. Two species including *Astragalus vulpinus* Willd. and *Centaurea apiculata* Ledeb. were identified during the floristic study of the flora of Ustyurt. They were collected from the territory of Karakalpakstan (fig. 1).

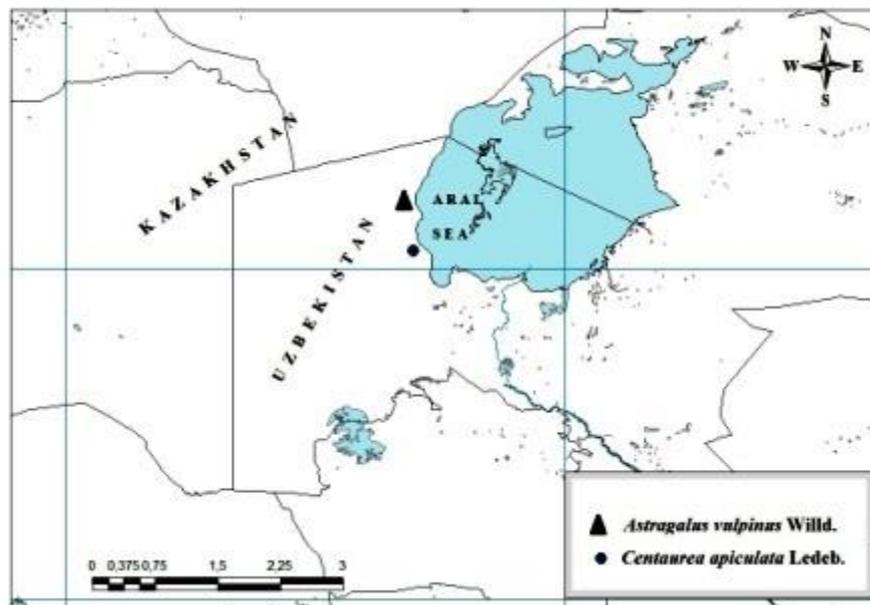


Fig. 1. Distribution of the *Astragalus vulpinus* Willd. and *Centaurea apiculata* Ledeb. in the Ustyurt.

Astragalus L. is the largest genus in the flora of Uzbekistan and Central Asia. In TASH, there are more than 7000 herbarium specimens of *Astragalus*, collected from all regions of the Uzbekistan. About 100 of them were collected from Ustyurt. Main depositories of Central Asian specimens are the Komarov Botanical Institute, St. Petersburg (LE).

New records

Astragalus vulpinus Willd. Consp. Fl. Asiae Med.6: 118 (1981).

According to the "Conspectus Florae Asiae Mediae" (Abdullaeva & al., 1981), this species is widespread in Zaysan, Aral Sea, Tien-Shan, river of Sirdarya and Northern Ustyurt.

Several specimens of this species were collected from Kazakhstan are stored in TASH including

Kazakhstan: Sirdarya, Aktyube, left of the river Koktal. 30 V 1925, M.M. Sovetkina, Det.: M.G. Popov, 241; The Island in the northern part of the Gulf of the Great Sary chaganak, Hummocky sands, scattered groups. 3 VI 1921, I. Raikov, Det.: M.G. Popov; West of Betpak-dala, Kendrlik Cemeteries, the slopes of the red clays. 24 V 1936. B. Mironov, Det.: A. Li, 324; West of Betpak-dala. Kopana District, Taskuduk, Salty brown clay. 31 VIII 1934, B. Mironov & V. Pazii, Det.: A. Li, 201.

During floristic study (2011) we found one specimen of *A. vulpinus* Willd. from Karakalpakstan part (Uzbekistan) of the Ustyurt, *Uzbekistan* (TASH), East chink of the Ustyurt, Between Ustyurt and Aral Sea, 31 V 2011, D.M. Tajetdinova, Det.: N.Yu. Beshko (fig. 2).



Fig. 2. *Astragalus vulpinus* Willd.

Centaurea apiculata Ledeb. Consp. Fl. Asia Med. 10: 411 (1993).

Makhmedov (1993) reported this species for Kazakhstan including the Turgai trough the Aral deserts, the Caspian lowland.

In TASH, several herbarium specimens collected from Kazakhstan, Karaganda region are identified, Near Lake Boz kul, the grave Sambuga, the sandy hills. VI.1937. V. Pazii. 779. Det.: Makhmedov.

28.V.1985; Turgai region, sandy steppe is in the 25-30 km from the Turgai towards west. 13.VI.1921, E.P. Korovin, Det.: Makhmedov. 29.III.1985.

During floristic study (2012) we found one specimen of *C. apiculata* Ledeb. from the part of Karakalpakstan (Uzbekistan) of the Ustyurt, Uzbekistan (TASH), East chink of the Ustyurt. Between Ustyurt and Aral Sea. 24 V 2012, D.M. Tajetdinova (fig. 3).



Fig. 3. *Centaurea apiculata* Ledeb.

Based on these collections from Ustyurt, *Astragalus vulpinus* Willd. and *Centaurea apiculata* Ledeb. are included in the list of flora Uzbekistan.

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