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A new species for Mongolia and new records of vascular plants from Dzungarian Gobi

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Summary. A record of *Silene alexandrae* B. Keller converts it to a new species for Mongolia. *S. alexandrae* was found on the Khavtag Mountain ranges in Dzungarian Gobi region. Data about previous records of this species in Mongolia are discussed and rejected. Characters distinguishing *Silene alexandrae* from close species *S. altaica* Pers. are given. We noted also new distribution points of five taxa: *Cortusa matthioli* L. subsp. *altaica* (Losinsk.) Korobkov, *Ranunculus turczaninovii* (Luferov) Vorosch., *Rubus saxatilis* L., *Polygonatum odoratum* (Mill.) Druce and *Pyrola rotundifolia* L. – in Dzungarian Gobi region of Mongolia.

Новый вид для Монголии и новые находки сосудистых растений из Джунгарской Гоби

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Ключевые слова: ботанико-географический район, монгольская флора, распространение, *Cortusa matthioli* subsp. *altaica*, *Polygonatum odoratum*, *Pyrola rotundifolia*, *Ranunculus turczaninovii*, *Rubus saxatilis*, *Silene alexandrae*.

Аннотация. Сообщается о находке *Silene alexandrae* B. Keller – нового вида для флоры Монголии, который был найден в горах Хавтаг, регионе Джунгарской Гоби. Обсуждены и отвергнуты предыдущие данные

о распространении этого вида в Монголии. Приводятся признаки, отличающие данный вид от *S. altaica* Pers. В регионе Джунгарской Гоби Монголии впервые отмечены следующие таксоны: *Cortusa matthioli* L. subsp. *altaica* (Losinsk.) Korobkov, *Polygonatum odoratum* (Mill.) Druce и *Pyrola rotundifolia* L., *Ranunculus turczaninowii* (Luferov) Vorosch., *Rubus saxatilis* L.

Introduction

A total of 3160 species of vascular plants, which belong to 684 genera and 108 families, have been recorded in the flora of Mongolia to date (Gubanov, 1996; Urgamal et al., 2014, 2016). According to the latest classification by Grubov and Yunatov (1952), Mongolia is divided into sixteen phytogeographical regions based on floral composition, vegetation and geographical characteristics. From these, two regions we surveyed, Mongolian Altai (MA) and Dzungarian Gobi (DzG), locate in the western part of Mongolia.

The Dzungarian Gobi region is the extreme west of Gobi, which locates in Khovd province of Mongolia and near borders with China. Despite it is one of the desert regions of Mongolia (Grubov, 1982), several high mountains, such as Baitag Bogd (3400 m), Khavtag (2800 m), Takhiin Shar nuruu (2727 m), Khalzan (2105 m) and Mergen (1883 m) occur here. Due to this, different plant communities developed in this region and vicinity of the mountains have relatively high diversity of plant species compared to the lowland desert area in DzG (Darikhand, 2017, mscr.).

Several important floristic surveys conducted in the DzG region and number of new records of plants, new distribution points and plant communities were noted by von Wehrden et al. (2006), Oyuntsetseg et al. (2013), Kechaykin et al. (2014), Bekket et al. (2015) and Darikhand (2017, mscr.). In total, there are 879 species noted in the Dzungarian Gobi region, which shares 27.81 % of the Mongolian flora (Grubov, 1982; Urgamal et al., 2016; Oyuntsetseg et al., 2017). Researchs on flora and vegetation of Mongolia are still ongoing with higher rate than even before. Yet, floristic richness in western part of Mongolia is high and DzG regions is home to many rare and unknown species. In the present study, we record one new species and five new distribution points of vascular plants, which are new points for DzG region.

Material and Method

Our botanical expeditions to Khavtag and Baitag Bogd mountains have been carried out in August, 2013 and 2017 in DzG region. The herbarium

materials were collected and photographs of fertile specimens in natural habitat were taken during the field trips. The voucher specimens are deposited in the herbarium of the National University of Mongolia (UBU). For species determination and comparison, we checked herbarium (UBU), electronic data of species information and herbarium materials from the “Moscow University Herbarium (MW)” (<https://plant.depo.msu.ru>; Seregin, 2016).

During our field trips, we found *Silene alexandrae* B. Keller in DzG region. In addition, new distribution points of five species in DzG region have been recorded. In the enumeration, the new for Mongolia species is cited with the nomenclature, commonly known synonyms, morphological description, ecology, phenology and geographical distribution. The new records in Dzungarian Gobi region are listed alphabetically with references to previously known distribution of taxa.

Result and Discussion

New species for Mongolia

Silene alexandrae B. Keller, 1912, Trav. Soc. Nat. (Kazan) 44 (5): 71, fig. 1A, B.

= *S. altaica* Pers. var. *b. grandiflora* Fisch. et C. A. Mey. 1835, Ind. Sem. Hort. Petrop. 2: 87.

= *S. altaica* Pers. var. *hystrix* Trautv. 1860, Bull. Soc. Nat. Mosc. 33(1): 151.

Type: East Kazakhstan “Kaldzhir valley on left side of Kaldzhir river, Chiganchiy, shale mountains, 22–23 VI 1908. B. A. Keller” (lectotypus LE!, designated by Lazkov, 2002: 129; isolectotype LE!).

Species examined (new record): “Mongolia, Dzungarian Gobi region, Khovd province, Altai sum, Khavtag Mountain range, 2686 m, 45°09'08.3"N, 92°09'01.4"E. 20 VII 2014, Sh. Baasanmunkh, B. Oyuntsetseg” (UBU).

Taxonomic notes:

The genus *Silene* L. includes 24 reported species in Mongolia (Urgamal et al., 2014). Species *S. altaica* together with *S. alexandrae* closely related and sometimes included in last one species belongs to section *Suffruticosae* (Rohrb.) Schischk. However, *S. alexandrae* is different by several morphological characters such as shoots of the leaves located at the base of the stems, where they form a turf or a pillow,

flowering stems poorly covered with leaves and look like a flower-bearing scapes, calyx 1.8–2.5 cm long, glabrous androgynophore 8–10 mm, versus *S. altaica* has no shoots of leaves, forms turf or a pillow at the base of the stems, all leaves are evenly

distributed along the stem, calyx 1.4–1.6 cm long, subglabrous, short hairy androgynophore 4–6 mm.

S. alexandrae has been described by B. Keller from Zaisan lake (between Kaldzhir and Chiganchi river) of Kazakhstan. In “Flora of China” edition

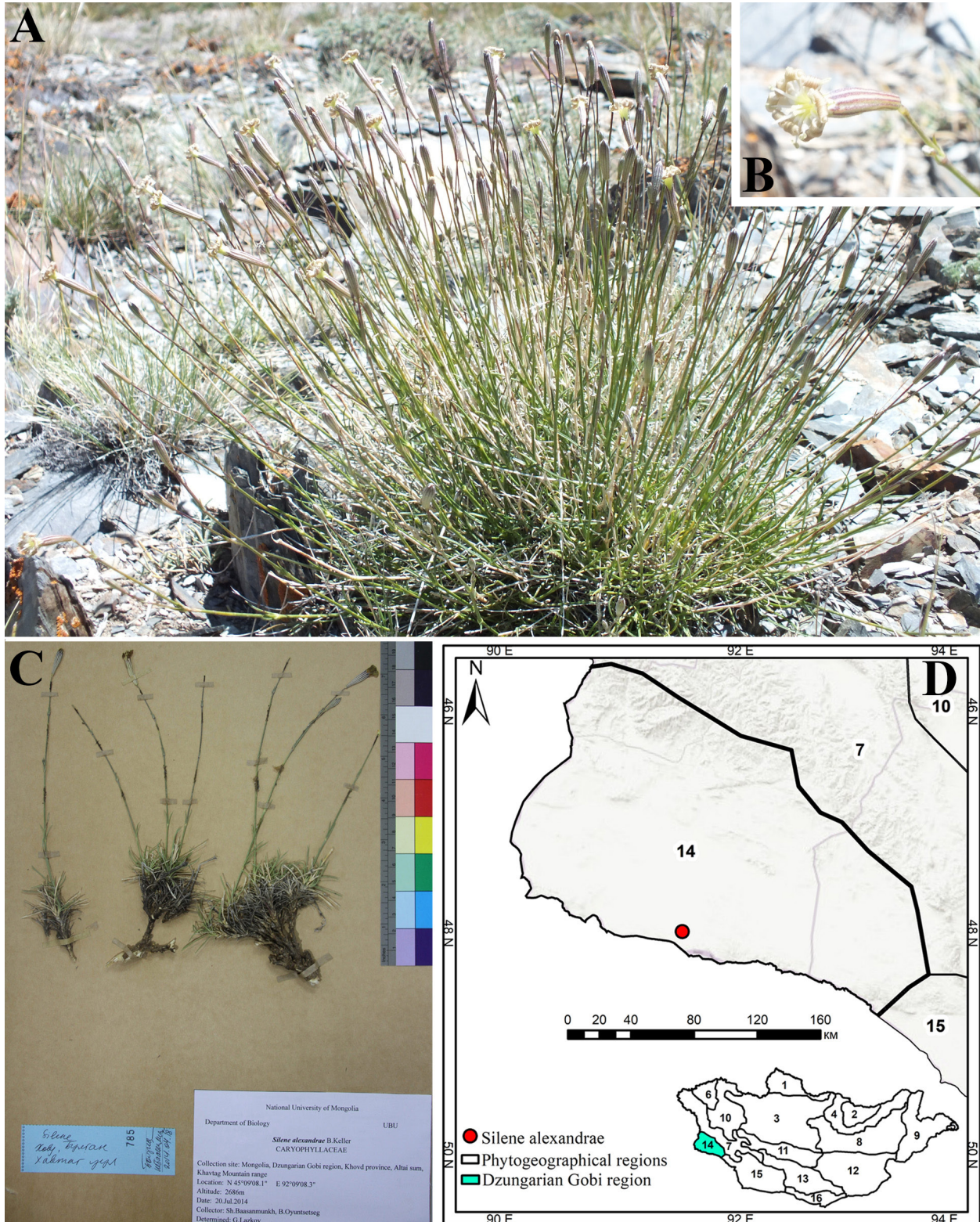


Fig. 1. *Silene alexandrae* B. Keller from Mongolia: A – general habitat in rocky and stony mountains; B – calyx; C – herbarium; D – distribution map.

this species is indicated from Dzungaria, China (N Xinjiang) (Zhou et al., 2001). This species has been reported from Mongolia by Sanchir et al. (1985) and Kozevnikov (1994). But these records were based on misidentification of *S. gubanovii* Lazkov (Gubanov, 1996) and corrected. Now, we found *S. alexandrae* newly from Dzungarian Gobi region of Mongolia and thereby it becomes new native species to Mongolia.

Probably, *S. alexandrae* has been reported before from Mongolia under the name *S. altaica* (Grubov, 1982). But no true specimens of *S. altaica* have been seen by us from Mongolia in different herbariums (LE, MW, UBU). According herbarium studies, specimens from Mongolia which reported as *Silene altaica* by Kozevnikov (1994) are in fact *S. gubanovii* as well.

Habitat: Species distributes in subalpine zone and grows in rocky and stony slopes.

Phenology: Flowering time is between June to July, and fruiting in August.

General distribution: China and Kazakhstan.

New records in Dzungarian Gobi region

Cortusa matthioli L. subsp. *altaica* (Losinsk.) Korobkov: “Dzungarian Gobi, Khovd province, Bulgan sum, Baitag Bogd mountain, Buduun Khargaitiin gol, 2500–2600 m, 45°13'320”N, 90°55'221”E. 12 VI 2013. Oyuntsetseg et al.” (UBU). – It was previously known from several regions, e. i. Khangai, Khuvsgul, Mongolian Altai, Khentei and Gobi Altai of Mongolia (Gubanov, 1996; Urgamal et al., 2014). Moreover, we found it in DzG region in 2013.

Polygonatum odoratum (Mill.) Druce: “Dzungarian Gobi, Khovd province, Bulgan sum, Baitag Bogd mountain, Buduun Khargaitiin gol, 2220 m, 45°14'44”N, 90°56'10”E. 28 VIII 2013, Oyuntsetseg et al.” (UBU). – It was previously known from several regions, e. i. Khangai, Khentei, Khuvsgul, Mongolian Dauria, foothills of Great

Khingan, Middle Khalkha and East Mongolia in Mongolia (Grubov, 1982; Gubanov, 1996; Urgamal et al., 2014). Moreover, we found it from DzG region in 2013.

Pyrola rotundifolia L.: “Dzungarian Gobi: Khovd province, Bulgan sum, Baitag Bogd mountain, Buduun Khargaitiin gol, 2220 m, 45°14'44”N, 90°56'10”E. 11 VIII 2017. Sh. Baasanmunkh et al.” (UBU). – It was previously recorded in several regions, e. i. Khangai, Khuvsgul, Khentei, Mongolian Dauria and Mongolian Altai of Mongolia (Gubanov, 1996; Urgamal et al. 2014). In addition, we recorded it from DzG region in 2017.

Ranunculus turczaninovii (Lufarov) Vorosch.: “Dzungarian Gobi, Khovd province, Bulgan sum, Baitag Bogd mountain, Buduun Khargaitiin gol, 2318 m, 45°14'066”N, 90°55'499”E. 13 VI 2013. Oyuntsetseg et al.” (UBU). – It has been newly recorded only from Khentei region to Mongolian flora by Nobis et al. (2017). In addition, we noted it from DzG region which was known as second location in Mongolian flora.

Rubus saxatilis L.: “Dzungarian Gobi, Khovd province, Altai sum, Khavtag mountain range, 2686 m, 46°02'10”N, 92°18'40” E. 03 VIII 2013. Oyuntsetseg et al.” (UBU). – It was formerly noted in several regions, e. i. Khangai, Khentei, Khuvsgul, Mongolian Dauria, foothills of Great Khingan and East Mongolia of Mongolia (Grubov, 1982; Gubanov, 1996; Urgamal et al., 2014). Moreover, we found it from DzG region in 2013.

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