A NEW SPECIES OF OXYTROPIS (FABACEAE) AND A NEW RECORD OF ANDROSACE (PRIMULACEAE) FROM NORTH IRAN

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Oxytropis guilanica Maassoumi & Moradi is described as a new species from Talesh (N Iran, Guilan Province). The new species is probably most closely related to O. pilosa (L.) DC. Androsace elongata L. is a new record for Iran that is also collected from this area. These species are compared with their relatives. Distribution map as well as illustrations of these novelties are represented. An identification key for new record is prepared.

Key words: New taxa; Oxytropis; Androsace; new record; flora of Iran

INTRODUCTION

The species of the genus Oxytropis DC. (Fabaceae) are characterized by beaked keel petal which is absent in Astragalus that de Candolle (1802) identified it for the first time and segregated several species from Astragalus and established this genus (Maassoumi 2013). Oxytropis includes about 310 species of caulescent or acaulescent perennial herbs or cushion-like shrublets (Zhu & al. 2010). All species of the genus Oxytropis belong to temperate and cold zones of northern hemisphere, which mostly grow in the colder mountain regions and northern plains, absent in the deserts and semideserts (Fedchenko & Vasilchenko 1948). In the Flora Iranica (Vassilczenko 1984) 40 species of this genus has been reported from Iran, but at the recent revision of the genus, 38 distinct species
have been recognized, from them, 11 new species are described from Iran and 23 species (about 60%) are endemic to Iran (Maassoumi 2013). Characters of diagnostic importance in Oxytropis are the features corresponding to: indumentum, stipules, calyx, corolla parts (standard, wing-petals, and keel) and pods. During a floristic study in the area around Lomir watershed (from highest point of this area) from Talesh Mountains in N of Iran we found a new species of Oxytropis, increasing the number of species in Iran to 39.

The genus Androsace L. (Primulaceae) comprises ca. 150 species mainly distributed in extra-tropical mountain ranges of the northern hemisphere (Mabberley 2008). The greatest concentration of species is found in the Sino-Himalayan area. In Flora Iranica (Wendelbo 1965) two species, i.e. Androsace villosa L. (caespitose in habit) and A. maxima L. (annual) were reported from N and NW of Iran. Also in more comprehensive study in Flora of Iran (Jamzad 1999) A. armeniaca Duby (biennial) was reported from north, west, center and south of Iran. At this paper, the annual species A. elongata L. is reported as a new record from N Iran.

New species

Oxytropis guilanica Maassoumi & Moradi, sp. nov. (figs. 1).

New species with having yellow flowers is only close to O. pilosa, but differs from it with having the long stems habit (not stemless), inflorescence with long racemes and dense flowered (not few flowered), legumes densely covered with mixed black and white hairs (not only white hairs), from O. pallasii Pers in calyx 7-9 mm long (not10-15 mm), pods covered with black and white hairs (not only white hairs), from O. pallasi Pers in calyx 7-9 mm long (not10-15 mm), pods covered with black and white hairs (not only white hairs), from O. aurea Vass. Pods covered with black and white hairs (not only white hairs) (Fedchenko & Vasilenko 1948).

Typus: Guilan, Ponel to Khalkhal road, Talesh Mountains, above Jahangyr, Tyrab peak (N: 37°32'06.7", E: 48°01'46.9"), 2740 m, 16.07.2014, A. Moradi, 4892 (Holotypus: TARI, isotypus: Herbarium of Agricultural and Natural resources research center of Guilan).

Etymology: The specific epithet refers to Gilan province in N. Iran.

Plant densely caespitose, stemless ca. 8.5-13 cm tall, in vegetative parts densely covered with long appressed and scattered to ascending white hairs, up to 2.5 cm long, at the end of peduncle, bracts, pedicels and calyx densely covered with two kinds of hairs, black and white Caudex divided, blackish with remnant of old petioles and stipules. Stipules greenish-hyalin, 6-12 mm long, adnate to petiole for 2.5-4.5 mm, free portion lanceolate, 3-8 mm long, densely covered with white appressed hairs up to 1.5 mm, later glabrescent, margin ciliate. Leaves 3-4.5 cm long; petiole 1-1.5 cm long, like the rachis with double indumentum, densely covered with subappressed and white spreading hairs up to 2.5 mm long. Peduncles erect 4.5-10 cm long, covered with short to medium sized black and white hairs, very sparsely mixed with long ascending hairs up to 2.5 mm. Racemes 4-9 flowered. Bracts greenish, lanceolate, ca. 3.5 mm long. Pedicels 1-2 mm long. Calyx 7-9 mm long, campanulate, densely covered with appressed to spreading white and black hairs, at the base densely black hairs; teeth lanceolate, acute, 2-3 mm long. Inner side towards the apex densely covered with long black hairs. Petals yellowish. Standard ca. 15 mm; blade orbicular, ca. 11 mm long and 9-11 mm wide, emarginated at the apex. Wings ca. 13 mm long; blade clearly dilated toward the apex; ca. 8 mm long and 5 mm wide; incised at the apex, auricle ca. 0.2 mm long; claw ca. 5 mm long. Keel ca. 11 mm long; blades obovate, 7 × 2.5 mm, beak straight 0.6 mm long. Ovary shortly stipitate. Immature legumes stipitate, stipe ca. 1 mm long, erect, oblong-elliptic, 12 mm long, ca. 3.5 mm wide, beak 2 mm long; densely covered with appressed black and white hairs, unilocular.

Phenology: Flowering in May-June, fruiting in June to August.

Additional specimens examined (paratypus): Guilan: Ponel to Khalkhal road, Talesh Mountains, above Jahangyr, Tyrab peak (N: 37°32'06.7", E: 48°01'46.9"), 2740 m, 16.07.2014, A. Moradi, 4892; The same location, Sonbolekuh (N: 37°35'25.7", E: 48°43'36.2"), 2496 m, 31/05/2014, A. Moradi, 4892; Talesh, Road of Asalem to Khalkhal, Almas Pass (N: 37°35'25.7", E: 48°40'28"), 2320 m, 31/05/2014, A. Moradi, 4647.

Distribution and habitat: Oxytropis guilanica was collected from 2320-2740 m a.s.l., the highest point of Lomir watershed of Talesh Mountains in N of Iran (map 1). The habitat of the new species is located in western boundary of Lomir watershed and

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Map 1. Distribution of *Oxytropis guilanica* and *Androsace elongata* in Guilan province, N Iran.


**New record**

*Androsace elongata* L. (figs. 2).

Specimen examined: Guilan, road of Asalem to Khalkhal, near Kerman village (N: 37°36′13.4", E: 48°41′26.5"), 2091m, 04.05.2014, A. Moradi, 4397, Herbarium of Agricultural and Natural resources research center of Guilan and TARI.

Annual, Leaves 7-15 mm long, 3-7 mm wide, oblong-lanceolate, entire or with a few obtuse teeth; peduncles & pedicels covered with forked hairs, peduncle 2-4.5 cm long 3-10-flowered; pedicels several times as long as the bracts; calyx teeth acute lanceolate as long as the tube; capsule 3-5 mm long.

**Distribution and habitat:** *Androsace elongata* was collected at the same place as mentioned for *O. guilanica* at altitude of 2091 m a.s.l. (map 1). It occurs in SE aspects dominated by *Carex-Alchemilla* community. In this habitat, *Ornithogalum sintenisii* Freyn, *Hieracium hoppeanum* Wlrr. ex Nyman, *Centarea zuvandica* (Sosn.) Sosn., *Crepis sancta* (L.) Borrn., *Carduus semindus* M.Bieb., *Myosotis* sp., *Veronica arvensis* L., *Plantago atrata* Hoppe, *Alyssum stapfii* Vierh., *Astragalus aureus*
Fig. 1. *Oxytropis guilanica*. A: Habit; B: Calyx; C: Standard; D: Wing; E: Legum (X4).

Fig. 2. *Androsace elongata*. A, habit; B, calyx; C, seed; D, indumentum of stem.
New species and new records from Guilan

(Willd.) Podlech, Bromus tectorum L., Thlaspi umbellatum Steven ex DC., Mascari neglectum Guss. ex Ten., Sedum lenkoranicum Grossh., Valerianella uncinata Dufr., Nepeta haussknechtii Bornm. and Sclerantus orientalis Rossler are also distributed.

key to the species of Androsace in Iran
1. Plant perennial, caespitose, leaves verticillate
   1. A. villosa
   Plant annual or biennial, leaves rosette
2. Plant biennial, covered with short forked hairs
   2. A. armeniaca
   Plant annual, covered with simple hairs
3. Leaves ovate, bracts as long as pedicels or taller than pedicels
   3. A. maxima
   Leaves linear-lanceolate, pedicels much longer than bracts
   3. A. elongata

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