

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.

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گونه‌ای جدید از جنس *Oxytropis* DC. (Fabaceae) و یک گزارش جدید از جنس *Androsace* L. (Primulaceae) از شمال ایران

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Oxytropis guilanica Maassoumi & Moradi به‌عنوان گونه‌ای جدید از کوه‌های تالش (شمال ایران) معرفی می‌شود که خویشاوندی نزدیک با *O. pilosa* (L.) DC. دارد. گونه دیگری با نام *Androsace elongata* L. که در محدوده رویشی نامبرده برای گونه جدید جمع‌آوری گردید، برای اولین بار از ایران گزارش می‌شود. این گونه‌ها با نزدیک‌ترین خویشاوندان خود مقایسه شده، تصاویر و نقشه پراکنش جغرافیایی آن‌ها ارائه می‌شود.

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 (Vassilchenko 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 of 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), legums densely covered with mixed black and white hairs (not only white hairs), from *O. pallasii* Pers in calyx 7-9 mm long (not 10-15 mm), pods covered with black and white hairs (not only white hairs), (Hedge & Lamond 1979), from *O. aurea* Vass. Pods covered with black and white hairs (not only white hairs) (Fedchenko & Vasilchenko 1948).

Typus: Gilan, Ponel to Khalkhal road, Talesh Mountains, above Jahangyrieh, Tyrab peak (N: 37°32'06.7", E: 48°41'46.9"), 2740 m, 16.07.2014, A. Moradi, 4892 (*Holotypus*: TARI, *isotypus*: Herbarium of Agricultural and Natural resources research center of Gilan).

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

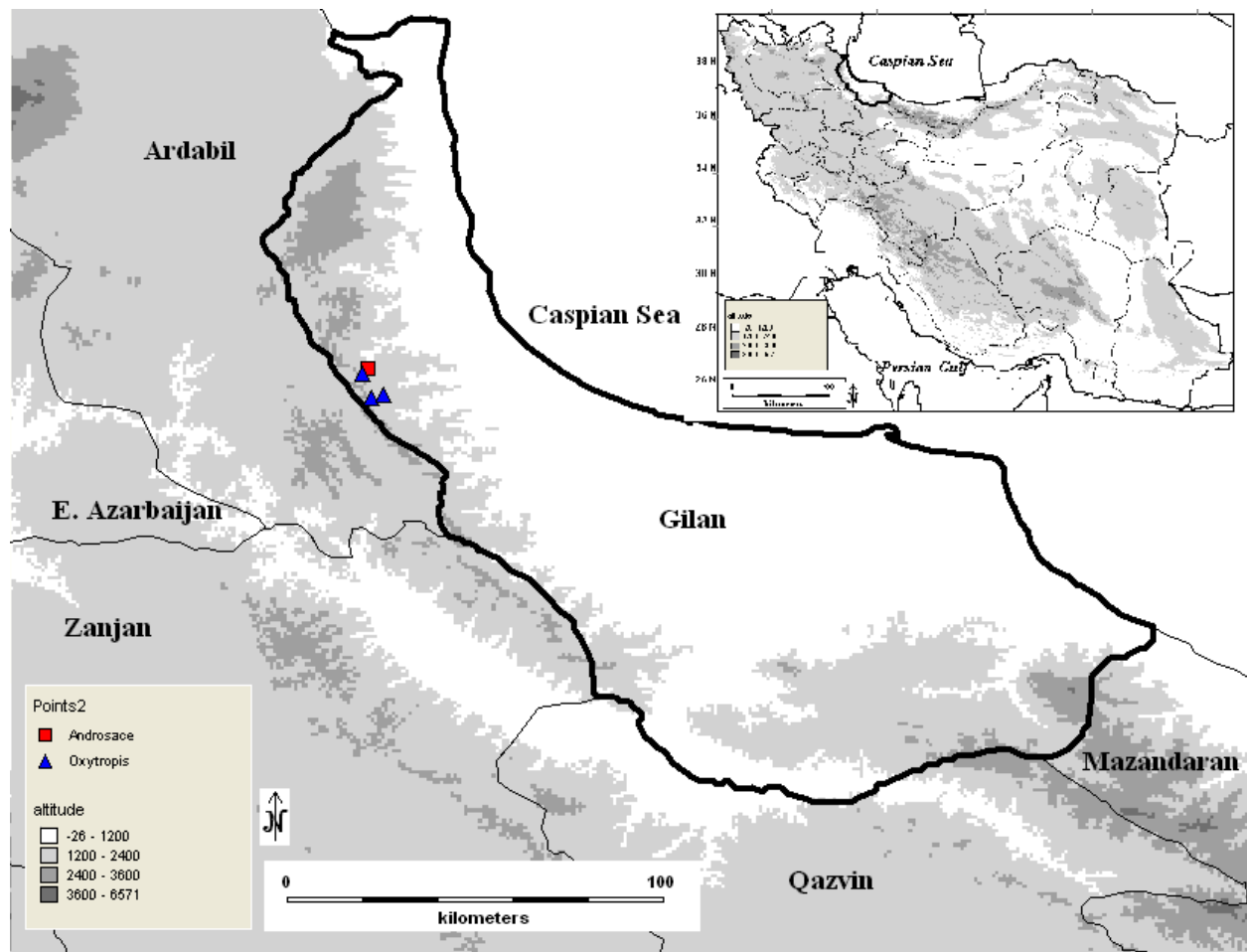
Plant densely caespitose, stemless ca. 8.5-13cm tall, in vegetative parts densely covered with long appressed and scattered to ascending white hairs, up to 2.5 cm

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, 6-12mm long, adnate to petiole for 2.5-4.5mm, free portion lanceolate, 3-8mm long, densely covered with white appressed hairs up to 1.5mm, later glabrescent, margin ciliate. Leaves 3-4.5cm long; petiole 1-1.5cm long, like the rachis with double indumentum, densely covered with subappressed and white spreading hairs up to 2.5mm long. leaflets 9-13 pairs, acute, ovoide to narrowly elliptic, ca. 7-12 × 2.5-4 mm, both sides densely covered with white appressed hairs up to 2mm long. Peduncles erect 4.5-10cm 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 1-2mm 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. 15mm; blade orbicular, ca. 11 mm long and 9 - 11mm wide, emarginated at the apex. Wings ca. 13mm long; blade clearly dilated toward the apex; ca. 8mm long and 5mm wide; incised at the apex, auricle ca 0.2 mm long; claw ca. 5mm long. Keel ca. 11mm long; blades obovate, 7 × 2.5 mm, beak straight 0.6 mm long. Ovary shortly stipitate. Immature legumes stipitate, stipe ca. 1mm long, erect, oblong-elliptic, 12mm long, ca. 3.5mm wide, beak 2mm long; densely covered with appressed black and white hairs, unilocular.

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

Additional specimens examined (paratypes): Gilan: Ponel to Khalkhal road, Talesh Mountains, above Jahangyrieh, Tyrab peak (N: 37°32'06.7" E: 48°01'46.9"), 2740m, 16/07/2014, A. Moradi, 4880; The same location, Sonbolekuh (N: 37°32'36" E: 48°43'36.2"), 2496 m, 31/05/2014, A. Moradi, 4725; 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



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

narrow transition zone between Hyrcanian and Irano-Turanian Region, that is usually covered with heavy snow in winter and early spring. It was observed in rocky steppes with NE aspect dominated by *Festuca-Carex* community. Other species such as *Potentilla bungei* Boiss., *Pulsatilla albana* (Stev.) Bercht. & J.Presl., *Draba bruniifolia* Steven, *Astragalus aureus* Willd., *Campanula ruprechtii* Boiss., *Colchicum szovitsii* Fisch. & C. A. Mey., *Alchemilla citrina* S.E.Frhner, *Alchemilla sericata* Rchb. ex Buser, *Asperula prostrata* (Adams) K. Koch, *Podospermum meyeri* K.Koch, *Plantago atrata* Hoppe, *Veronica orientalis* Mill., *Myosotis lithospermifolia* (Willd.) Hornem.), *Helichrysum pallasii* (Spreng.) Ledeb., *Artemisia splendens* Willd. *Poa alpina* L., *Bromus tomentellus* Boiss. and *Minuartia recurva* (All.) Schinz. & Thell. are frequent in this area.

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 3-5mm 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* Willr. ex Nyman, *Centaurea zuvandica* (Sosn.) Sosn., *Crepis sancta* (L.) Bornm., *Carduus semindus* M.Bieb., *Myosotis* sp., *Veronica arvensis* L., *Plantago atrata* Hoppe, *Alyssum stapfii* Vierh., *Astragalus aureus*

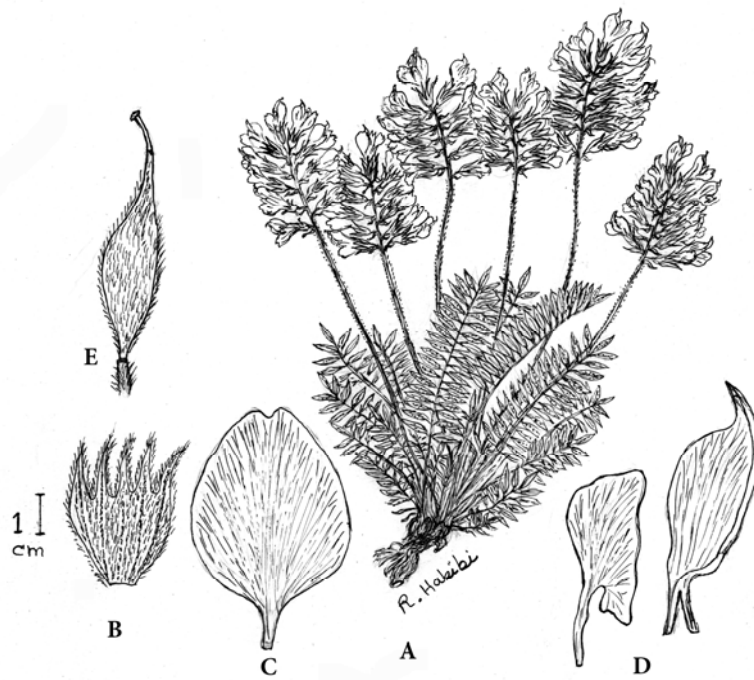


Fig. 1. *Oxytropis gilanica*. A: Habit; B; Calyx C: Standard; D: Wing; E: Legum (X4).

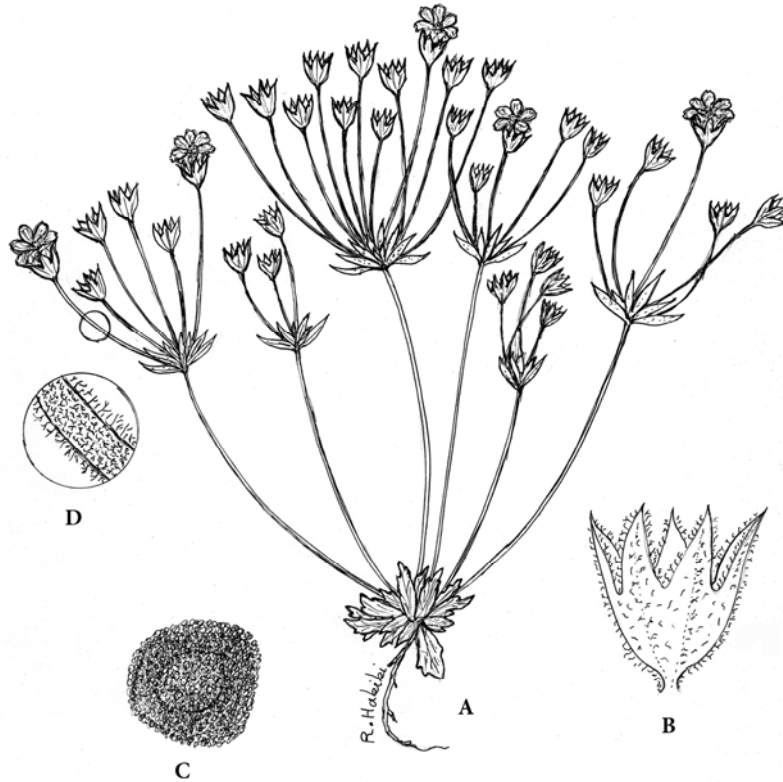


Fig. 2. *Androsace elongata*. A, habit; B, calyx; C, seed; D, indumentum of stem.

(Willd.) Podlech, *Bromus tectorum* L., *Thlaspi umbellatum* Steven ex DC., *Muscari neglectum* Guss. ex Ten., *Sedum lenkoranicum* Grossh., *Valerianella uncinata* Duf., *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
2. Plant biennial, covered with short forked hairs
 2. *A. armeniaca*
Plant annual, covered with simple hairs 3
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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