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**NEW DATA ON DISTRIBUTION OF SOME
RARE PLANT SPECIES (*PYRUS GERGERANA*
GLADKOVA, *P. DARALAGEZI* MULK.,
P. VORONOVII RUBTZOV, *ORCHIS PUNCTULATA*
STEVEN EX LINDL.) IN ARMENIA**

The results of research on distribution of rare and endemic species of Armenian flora *Pyrus gergerana*, *P. daralagezi*, *P. voronovii* are represented; also data on pear diversity on the territory of Herher state sanctuary is given. New location for rare *Orchis punctulata* Steven ex Lindl. was found – the first record for the species in Darelegis floristic region.

Pyrus gergerana, *P. daralagezi*, *P. voronovii*, *Orchis punctulata*, endemic pears of Armenia, flora of Herher sanctuary

**Ասատրյան Ա.Թ. Նոր տվյալներ Հայաստանում
քոյսերի որոշ հազվագյուտ տեսակների (*Pyrus gergerana*
Gladkova, *P. daralagezi* Mulk., *P. voronovii* Rubtzov, *Orchis*
punctulata Steven ex Lindl.) տարածման վերաբերյալ:** Բեր-
վում են Հայաստանի ֆլորայի *Pyrus gergerana*, *P. daralagezi*,
P. voronovii էնդեմիկ և հազվագյուտ տեսակների տարած-
ման ուսումնասիրման արդյունքները, ինչպես նաև տվյա-
լներ Հերհերի նոսրանտառային պետական արգելավայրի
տարածքում վայրի տանձենիների տեսակային բազմազա-
նության վերաբերյալ: Հայտնաբերվել է հազվագյուտ *Orchis*
punctulata Steven ex Lindl.-ի նոր աճելավայր՝ տեսակը Դա-
րեղեգիսի ֆլորիստիկ շրջանի համար բերվում է առաջին
անգամ:

Pyrus gergerana, *P. daralagezi*, *P. voronovii*, *Orchis punctu-*
lata, Հայաստանի էնդեմիկ տանձենիներ, Հերհերի ար-
գելավայրի ֆլորա

Асатрян А.Т. Новые данные по распространению
некоторых редких видов растений (*Pyrus gergerana*
Gladkova, *P. daralagezi* Mulk., *P. voronovii* Rubtzov, *Orchis*
punctulata Steven ex Lindl.) в Армении. Приводятся ре-
зультаты исследования распространения редких эндемич-
ных видов флоры Армении *Pyrus gergerana*, *P. daralagezi*,
P. voronovii, а также данные по видовому разнообразию
груш на территории Гергерского государственного заказ-
ника. Обнаружено новое местонахождение редкого вида
Orchis punctulata Steven ex Lindl.; для Дарелегизского фло-
ристического района вид приводится впервые.

Pyrus gergerana, *P. daralagezi*, *P. voronovii*, *Orchis punctu-*
lata, эндемичные груши Армении, флора Гергерского заказника

Pyrus L. is one of the most interesting genera in the flora of Armenia: it is represented with 32 species 18 of which were described from Armenia; 6 species are endemics of the Southern Transcaucasia and 12 – endemics of Armenia (Akopian, 2007). 10 pear species of Armenian flora are listed in the Red Data Book of the republic (Tamanyan et al., 2010). Wild pears in the country are represented with great number of forms and demonstrate high level of polymorphism, which is the

evidence of active speciation processes within the genus (Rubtzov, 1941; Mulkijanyan, 1969a; Gladkova, 1990, 1990a; Akopian, 2007). Not only particular species, but also wild pear communities are of global conservation importance (Asatryan & Fayvush, 2013), but lack of data on the distribution, biology and threats to these unique botanical objects are obstacles for their effective conservation.

In 2016 and 2017 we carried out desk and field studies on some endemic pears of Armenia in order to clarify their distribution and to collect data on their ecology, possible threats and other. *P. gergerana* was chosen as the main target species, and two other rare endemic pear species *P. daralagezi* and *P. voronovii* were selected too as their distribution areas partially overlap with the area of *P. gergerana*.

P. gergerana is a high tree with broadly lanceolate and slightly asymmetrical and narrowly cuneate at base 7 x 2,5 cm leaves, entire or slightly serrate at apex, from above glabrous, dark green, shiny, from below dull, sometimes slightly floccose and with up to 3,5 cm long pyriform fruits (Photo 1.*). The species was described (Gladkova, 1990) from herbarium specimens, collected in 1968 by Ya. I. Mulkijanyan, A. A. Grigoryan and P. P. Gambaryan from surroundings of Herher village in Vayots Dzor region of Armenia. It is included in the Red Data Book of Armenia as endangered species, which is found only in Darelegis (Herher, Jermuk), Zangezur (Srashen) and Meghri (Tashtun) floristic regions (Tamanyan et al., 2010). *P. gergerana* is listed in The IUCN Red List as critically endangered species (The IUCN Red List...).

P. daralagezi is up to 5 m high tree with about 8 x 3 cm elliptic leaves, glabrous from above and with sparse hairs from below, regularly narrowed at both ends, at the base broadly cuneate, at margins acutidenticulate, ciliate. Fruits pyriform, peduncles thick, about 3 cm long (Photo 2.*). The species was described (Mulkijanyan, 1969) from the herbarium specimen, collected by Ya. Mulkijanyan, K. Browicz, I. Arevshatyan and T. Popova in 1968 from a forest near Kechut reservoir. The species is included in the Red Data Book of Armenia as endangered species; it is found only in Darelegis (Kechut, Jermuk, Yeghegis river gorge) and Meghri (Tashtun) floristic regions (Tamanyan et al., 2010). *P. daralagezi* is also listed in The IUCN Red List as endangered species (The IUCN Red List...).

P. voronovii – 8-9 m high tree with 7-7,5 x 4-4,5 cm glabrous rhomb shaped leaves, similarly narrowed at both ends. Fruits globose, 3 cm in diameter and slightly narrowed towards the peduncles. The species was described (Rubtzov, 1941) from specimens collected

* See color illustration pages

near village Tashtun (Megri) by R. Kordon in 1934 and by the author in 1936 and 1937. It is included in the Red Data Book of Armenia as endangered species, which is found only in Zangezur (Geghi river gorge and Vachagan village) and Meghri (Lichq, Arevik, Jindara, Myulk) floristic regions (Tamanyan et al., 2010). *P. voronovii* is listed in The IUCN Red List as critically endangered species (The IUCN Red List...).

The fieldtrips in April-October of 2016 were planned according to the known locations of the three target species and covered the following areas:

- village Herher – Goghtanik-Yeghegis
- surroundings of Jermuk town and Kechut reservoir
- Geghi River gorge up to surroundings of Ajibaj village
- Vachagan village near Kapan
- Tashtun Pass – villages Tashtun and Lichq
- surroundings of Shrashen village

We assessed the pear trees occurring by the roadsides of the routes as *P. gergerana* and *P. voronovii* habitats cover semi-natural or transformed landscapes near villages and by roadsides. *P. daralagezi* mainly occurs in natural oak forests, so we visited its locus classicus near Kechut reservoir.

Investigation on sites and processing of the collected herbarium let to fix 3 trees of *P. gergerana*: one big tree by the road to Herher village and two small trees not far from village Goghtanik. We didn't find any *P. gergerana* trees in other sites known as the species' locations. Most of the herbarium collections were made long ago, with no GPS data available, which made it difficult to find the exact locations of the trees. Despite the species' typical habitats are open areas not far from villages the presence of forests, groves and just separate trees or tree groups spread all around requires much more time and efforts for the site assessment on presence or absence of *P. gergerana*.

One tree of *Pyrus daralagezi* was found in a forest near Kechut reservoir – in its locus classicus. As far as the area we studied was only a very small part of the whole forest covering the surrounding slopes, we may not conclude on number of individuals or other characteristics of the population. The species was not found on Tashtun Pass – another known location of the species. Anyway, presence of forests, groves and many tree groups in the area does not let us state, that this species is absent there. What about *P. voronovii* we didn't find any tree matching its characteristics.

Fieldwork of September-October of 2017 covered the area of Herher sanctuary. The Herher sanctuary (6130 hectares) was established in 1958 for protection

of juniper open forests, oak forests and wild pear communities (Ministry of Nature Protection...) (Photo 3.*). Since then no any botanical surveys have been made on the site, botanical publications on flora of Herher sanctuary were unknown and so, there was no any data on pear species found in its area. The main goal of our work was search for *Pyrus gergerana* and *P. daralagezi* on the sanctuary's territory with estimation of numbers of individuals if any found. There was a high probability to find both species as the big *P. gergerana* tree is located just in one kilometer distance from the sanctuary, and *P. daralagezi* 's locus classicus is in a couple of kilometers from there – in a similar habitat by Kechut reservoir. We were also planning to assess the pear diversity on the territory of Herher sanctuary.

Both target species were found during the field surveys in September-October of 2017 on the sanctuary's territory: only one tree of *P. gergerana* with just a few fruits available and 4 trees of *P. daralagezi*, three of which had only a few fruits and only one had many. Except these, following pear species have been identified as occurring on the sanctuary's territory: *P. salicifolia*, *P. pseudosyriaca*, *P. nutans*, *P. caucasica*, *P. medvedevii*, endemics of Armenia *P. elata* (3 trees found) and *P. hajastana* (1 tree found). Also, four hybrid forms, possibly between *P. salicifolia* and *P. oxyprion*, *P. pseudosyriaca* and *P. nutans*, *P. pseudosyriaca* and *P. daralagezi*, *P. pseudosyriaca* and *P. elata* were found too. The material collected during the trips requires additional studies and analysis, so more results will be published later on.

A rare orchid species *Orchis punctulata* Steven ex Lindl. was found on one of our trips to Herher area in April of 2016 – there were only two plants not far from Herher reservoir, in a steppe habitat. This is a new location and the first finding of the species in Darelegis floristic region. It is included in the Red Data Book of Armenia as vulnerable species (Tamanyan et al., 2010) and before was known only from Zangezur and Megri floristic regions. Because of only a few plants available we didn't take any for herbarium, but took photos of the flowering plant (Photo 4.¹).

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* See color illustration pages

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НОВЫЕ ДАННЫЕ К
СЕМЕЙСТВАМ *APIACEAE*,
CARYOPHYLLACEAE, *ORCHIDACEAE*, *POACEAE*
ФЛОРЫ АРМЕНИИ

Подтверждается нахождение в Армении видов *Pimpinella puberula* (*Apiaceae*), *Orchis morio*, *Ophrys caucasica* (*Orchidaceae*), *Amblyopyrum muticum* (*Poaceae*). Приведены новые местонахождения редких видов *Aphanopleura trachysperma* (*Apiaceae*) и *Silene eremitica* (*Caryophyllaceae*). Указана возможность натурализации *Pastinaca umbrosa* (*Apiaceae*). Семена *Aphanopleura trachysperma* хранятся в “Банке Семян Флоры Армении”, экземпляры *Orchis morio* и *Ophrys caucasica* высажены в коллекцию *ex situ* «Центра сохранения биоразнообразия Армении» Института ботаники НАН РА им. А. Тахтаджяна.

Флора Армении, новые местонахождения, *ex situ* сохранение, *Apiaceae*, *Caryophyllaceae*, *Orchidaceae*, *Poaceae*

Ներսեսյան Ա. Հ. Նոր տվյալներ Հայաստանի ֆլորայի *Apiaceae*, *Caryophyllaceae*, *Orchidaceae*, *Poaceae* ընտանիքների վերաբերյալ: Հաստատվում է *Pimpinella puberula* (*Apiaceae*), *Orchis morio*, *Ophrys caucasica* (*Orchidaceae*), *Amblyopyrum muticum* (*Poaceae*) տեսակների առկայությունը Հայաստանում: Հայաստանի համար հազվագյուտ համարվող *Aphanopleura trachysperma* (*Apiaceae*) և *Silene eremitica* (*Caryophyllaceae*) տեսակների համար հայտնաբերվել են նոր աճելավայրեր և կատարվել հավաքներ: Ենթադրվում է *Pastinaca umbrosa* (*Apiaceae*) տեսակի բնական տարածվածության հավանականությունը Հայաստանում: *Aphanopleura trachysperma* տեսակի սերմերը պահպանվում են ՀՀ ԳԱԱ Ա. Թախտաջյանի անվ. բուսաբանության ինստիտուտի «Հայաստանի ֆլորայի սերմերի բանկ»-ում, *Orchis morio* և *Ophrys caucasica* տեսակների կենդանի նմուշները ներառված են նույն ինստիտուտի «Հայաստանի կենսաբանականության պահպանության կենտրոն»-ի *ex situ* հավաքածուի մեջ:

Հայաստանի ֆլորա, նոր աճելավայրեր, *ex situ* պահպանություն, *Apiaceae*, *Caryophyllaceae*, *Orchidaceae*, *Poaceae*

Nersesyan A. A. New data on families *Apiaceae*, *Caryophyllaceae*, *Orchidaceae*, *Poaceae* of the Armenia flora. Existence of the species *Pimpinella puberula* (*Apiaceae*), *Orchis morio*, *Ophrys caucasica* (*Orchidaceae*), *Amblyopyrum muticum* (*Poaceae*) in Armenia has been confirmed. New collections and new localities for the rare Armenian species *Aphanopleura trachysperma* and *Silene eremitica* have been recorded. *Pastinaca umbrosa* (*Apiaceae*) is expected to be naturalized in Armenia. *Aphanopleura trachysperma* seeds