Rodríguez, J.P. (eds.). Guidelines for the application of IUCN Red List of Ecosystems Categories and Criteria, Version 1.0. Gland, Switzerland, 2016, 94pp.

Habitats Classification Scheme (Version 3.1). (http://www.iucnredlist.org/technical-documents/classification-schemes/habitats-classification-scheme-ver3

Janssen J.A.M., Rodwell J.S., Criado M.G., Gubbay S., Haynes T., Nieto A., Sanders N.,. Landucci F, Loidi J., Ssymank A., Tahvanainen T., Valderrabano M., Acosta A., Aronsson M., Arts G., Attorre F., Bergmeier E., Bijlsma R.-J., Bioret F., Biţă-Nicolae C., Biurrun I., Calix M., Capelo J., Čarni A., Chytry M., Dengler J., Dimopoulos P., Essl F., Gardfjell H., Gigante D., del Galdo G.G., Hajek M., Jansen F., Jansen J., Kapfer J., Mickolajczak A., Molina J.A., Molnar Z., Paternoster D., Piernik A., Poulin B., Renaux B., Schaminee J.H.J., Šumberova K., Toivonen H., Tonteri T., Tsiripidis I., Tzonev R., Valachovič M. European Red List of Habitats. Part 2. Terrestrial and freshwater habitats. Luxembourg: Publications Office of the European Union, 2016, 38 p.

Strategy of the Republic of Armenia on Conservation, Protection, Reproduction and Use of Biological Diversity. Yerevan, 2016, 31 p.

Tamanyan K., Fayvush G., Nanagjulyan S., Danielyan T. (eds.) Red Data Book of Plants of RA. Yerevan: Zangak, 2010, 598 p.

The fifth National Report to the Convention on Biological Diversity. Yerevan, 2014, 108 p.

Институт ботаники им. А.Тахтаджяна НАН РА
gfayvush@yahoo.com
alla.alexanyan@gmail.com
ripi1991@mail.ru

A. A. TUMANYAN, A. S. ALEKSANYAN, G. M. FAYVUSH

MAIN ECOSYSTEMS OF THE LAKES OF LORI PLATEAU (ARMENIA)

The article gives a brief description of the ecosystems of the lakes of the Lori plateau. These ecosystems belong to categories C (Inland surface waters) and D (Mires, bogs and fens). Ecosystems of the category D are located either at the edges of lakes or in the place of overgrown or drying lakes. Among the ecosystems listed in article 10 are described for the first time.

Ecosystems, EUNIS, Armenia, Lori Lakes

Туманян А. А., Алексанян А. С. Файвуш Г. М. Основные экосистемы озер Лорийской нагорной равнины Армении. В статье приводится краткая характеристика экосистем озер Лорийской нагорной равнины. Приведенные экосистемы относятся к местообитаниям категорий C (Внутриконтинентальные поверхностные воды) и D (Болота и переувлажненные местообитания), при этом экосистемы второй категории располагаются или по краям озер, или на месте зарастающих или высыхающих озер. Среди приведенных в статье экосистем 10 описываются впервые.

Экосистемы, EUNIS, Армения, Лорийские озера

Թումանյան Ա. Ա., Ալեքսանյան Ա. Ս., Ֆայվուշ Գ. Մ. Լոռվա սարահարթի լճերի էկոհամակարգերը. Հոդվածում բերված են Լոռվա սարահարթի լճային էկոհամակարգերի համառոտ բնութագրերը: Նկարագրված էկոհամակարգերը պատկանում են բնակմիջավայրերի C (ներցամաքային մակերեսային ջրեր) և D (ճահիճներ և գերխոնավ բնակմիջայրեր) կատեգորիաներին: Ընդ որում երկրորդ կատեգորիային պատկանող էկոհամակարգերը գտնվում են կամ լճերի եզրերին կամ չորացող ու ճահճացող լճերի տեղում: Հոդվածում բերված էկոհամակարգերից 10-ը նկարագրվում են առաջին անգամ:

Էկոհամակարգեր, EUNIS, Հայաստան, Լոռվա լճեր

The Lori Mountain plateau is located in Northern Armenia and is included in the Lori floristic region (Takhtadjan, 1954; Tamanyan, Fayvush, 2009). There are about 30 small relict lakes (from 0.5 to 10 hectares) on average, located at an altitude of 1400-1600 m above the sea level. The plain, along with these lakes, stands out as the "Important Plant Area" (Asatryan, Fayvush, 2013) and is included in the number of areas of particular interest to the ecological network "Emerald" (Fayvush et al., 2016).

The flora and vegetation of the Lori lakes are very original and interesting from the botanical and environmental points of view. Thus, the flora of 11 lakes studied by us includes 187 species of vascular plants belonging to 86 genera from 34 families (Khandjan, Tumanyan, 2011; Tumanyan, 2014; Fayvush et al., 2014), 8 of which are included in the Red Book of Plants of Armenia (Tamanyan et al., 2010). The research of vegetation in the Lori Lakes was initiated by A. L. Takhtadjan (1939), and then A. M. Barsegyan during many years studied the vegetation, summarizing the results in his monograph (Barsegyan, 1990). The current state of the flora and vegetation of 11 lakes was investigated by A. A. Tumanyan (2014).

In this article we tried to summarize all available data and present a scheme of the ecosystems of the lakes and surroundings areas of the Lori Mountain plateau on the basis of the habitats classification scheme of EUNIS (Fayvush, Aleksanyan, 2016) with new additions and some changes. Below all the ecosystems identified by us are shortly described (the suffix "AM" is used for ecosystems not listed in previous publications and

original EUNIS scheme). The main base for this article was the A. A. Tumanyan's investigations of 11 lakes (map 1*, table 1). All listed ecosystems are included in the Categories C (Inland surface waters) and D (Mires, bogs and fens).

Table 1

Investigated lakes

Nº	Lake	Altitude (m)	Coordinates	
			Longitude	Latitude
1.	Shushan Lake (Shushanalich)	1560	44⁰18'16''E	41⁰01'22''N
2.	Pars Lake (Svetly liman)	1480	44⁰18'37''E	41⁰03'06''N
3.	Long Lake (Dlinny liman)	1460	44⁰19'21''E	41⁰03'06''N
4.	Horse's Lake (Konsky liman)	1440	44⁰19'41''E	41⁰02'30''N
5.	Novoseltsev's Lake	1460	44⁰17'02''E	41⁰03'26'''N
6.	Pjatachok Lake	1440	44⁰20'03''E	41⁰02'56''N
7.	Stepanavan's Big Lake 1	1445	44⁰21'42''E	41⁰01'57''N
8.	Stepanavan's Big Lake 2	1450	44⁰21'33''E	41⁰02'02''N
9.	Stepanavan's Middle Lake	1447	44⁰21'28''E	41⁰02'15''N
10.	Stepanavan's Small Lake	1450	44⁰21'45''E	41⁰02'08''N
11.	Saratovka's Lake	1450	44⁰18'44''E	41⁰03'49''N

Category C. Inland surface waters
C1 - Surface standing waters

All the investigated lakes are classified as the third level Category C1.2 - Permanent mesotrophic lakes, ponds and pools. Within this category we have identified the following ecosystems.

C1.2211 - *Lemna* covers. This ecosystem is more typical for eutrophic reservoirs, therefore, in the lakes of the Lori Mountain plateau it occupies small areas in different lakes, and its appearance in some of the lakes indicates the processes of eutrophication and ecosystem's succession.

C1.2241-AM – Floating bladderwort (*Utricularia intermedia*) colonies in mesotrophic lakes. Ecosystem occupies a very small area and is represented only in "Round" lake.

C1.2242-AM – Floating bladderwort (*Utricularia vulgaris*) colonies in mesotrophic lakes. Rare in Armenia ecosystem. It is known only in some lakes of Lori Mountain plateau (Long, Novoseltsev's, Pjatachok, Horse's lakes). The habitat is included in the Resolution 4 to Berne Convention (Fayvush et al., 2016).

C1.225 - Floating *Salvinia natans* mats. Freely floating communities with the dominance of the water fern *Salvinia natans*, which forms dense carpets on the surface of the water. A very rare habitat in Armenia, in fact only one lake (Pars Lake) is known where it is represented. Habitats are included in the Resolution 4 to the Berne Convention.

C1.2311-AM – Large pondweed (*Potamogeton lucens*) beds in the Lori lakes. Rare in Armenia ecosystem, it is represented only in two lakes (Stepanavan's Big Lake 1 and Stepanavan's Big Lake 2). Here in the community *Nymphoides peltata, Polygonum amphibium, P. minus, P. nodosum* are included. (*Note that this and the following ecosystems belong to category C1.23 - " Rooted submerged vegetation of mesotrophic waterbodies ", in contrast to C1.24 - "Rooted floating vegetation of mesotrophic waterbodies", which, among others, includes ecosystems dominated by Potamogeton natans and P. pectinatus*).

C1.2323 – Armenian small pondweed communities. Ecosystems are very wide distributed in Armenia, they occur in many meso- and eutrophic lakes from low to upper mountain belt. In Lori lakes usually *Potamogeton crispus, P. filiformis, P. panormitanus, P. trichoides* are dominants.

C1.233 – Water milfoil (*Myriophyllum spicatum*) communities. The ecosystem is characteristic of many meso- and eutrophic lakes in Armenia and is often found in the Lori lakes.

C1.24112 - Northern *Nymphaea* beds (*Nymphaea alba*). A very rare ecosystem in Armenia, actually currently it is known only from several Lori lakes (Vitek et

* See color illusration pages

al., 2013). In these lakes, *Nymphaea* expands and occupies relatively large areas of the water surface; in more shallow places numerous species of sedges (*Carex acuta, C. atherodes, C. caucasiaca, C. hordeistichos, C. lasiocarpa, C. leporina, C. otrubae, C. pallescens, C. vesicaria*) and rushes (*Juncus articulatus, J. effusus, J. tenuis*) join it.

C1.2413 – Fringed waterlily carpets (*Nymphoides peltata*). A rare ecosystem in Armenia, represented only in several Lori lakes, but in fact, due to the presence of different co-dominants in each of these lakes, lower-ranking ecosystems are formed, which are listed below. This again emphasizes the richness and diversity of the vegetation of the investigated lakes.

C1.24131-AM – Fringed carpets with *Nymphoides peltata* and *Polygonum* spp. (Stepanavan's Middle and Small Lakes). In this ecosystem *Polygonum amphibium, P. hydropiper, P. minus* join *Nymphoides peltata*. *Potamogeton gramineus, Potamogeton lucens. Potamogeton natans, Potamogeton perfoliatus* are represented in this ecosystem too.

C1.24132-AM – Fringed carpets with *Nymphoides peltata* and *Potamogeton* spp. (Only Pjatachok Lake). In this ecosystem *Potamogeton natans* and *P. trichoides* join to *Nymphoides peltata.* Some species of sedges (*Carex acutiformis, C. caucasiaca, C. disticha, C. hirta, C. lasiocarpa, C. panicea*) are common here.

C1.2414 – Broad-leaved pondweed (*Potamogeton natans*) carpets. This ecosystem is rather common in Armenia, but on Lori Mountain plateau it was registered only in one lake (Stepanavan's Small Lake). It has to be noticed, that *Potamogeton pectinatus* joins to this community. Maybe after additional investigations this ecosystem will receive its own category.

C1.2415 – Amphibious bistort carpets (*Polygonum amphibium*). Rather common ecosystem in Armenia. It occurs in several Lori lakes, as well in some other reservoirs of Armenia (for example, Arpilich, sevan, etc.).

C1.27 – Plankton communities of mesotrophic standing waters. Freely floating microscopic plants (phytoplankton) and animals (zooplankton) in standing mesotrophic waters. Unfortunately, this ecosystem is practically not studied in the lakes of the Lori plateau.

C3 – Littoral zone of inland surface waterbodies

C3.12 – Beds of small helophytes of standing waters. The ecosystem occupies small areas in the shores of many lakes in Lori Mountain plateau. Characteristic species here are *Deschampsia caespitosa, Glyceria notata, Isolepis setacea, Juncus bufonius, J. articulatus, Eleocharis acicularis, Carex transcaucasica, C. divisa, C. hirta, Blysmus compressus.*

C3.2111 – Freshwater *Phragmites* beds. *Phragmites australis* thickets, constantly or usually flooded with fresh water. The ecosystem is characteristic of most lakes in the Lori plateau.

C3.2311-AM – Great reedmace (*Typha latifolia*) and simplestem bur-reed (*Sparganium erectum*) beds. The ecosystem is not very common in Armenia. *Typha latifolia* is a dominant in the first layer, and *Sparganium erectum* is abundant in the second. This ecosystem is registered only in Stepanavan's Big Lake 1.

C3.2312-AM – Great reedmace (*Typha latifolia*), sedges and rushes beds. Ecosystem is very common on Lori Mountain plateau. *Typha latifolia* is a dominant in the first layer, and different species of sedges (*Carex acutiformis, C. appropinquata, C. caucasiaca, C. contigua, C. leporina, C. tomentosa, C. acuta, C. atherodes, C. hordeistichos, C. lasiocarpa, C. otrubae, C. pallescens, C. vesicaria*) and rushes (*Juncus articulatus, J. effusus, J. tenuis*) are abundant in the second layer.

C3.233 – *Typha domingiensis* beds. This ecosystem is fairly common on the Lori plateau. It is habitually very similar to an ecosystem dominated by *Typha latifolia*, but in the latter all phenological phases occur 2-3 weeks earlier than ecosystem with *Typha domingiensis*.

C3.242 – Neglected bur-reed (*Sparganium neglectum*) communities. The ecosystem is very common on Lori plateau, but do not occupy big areas.

C3.243 – Erect bur-reed (*Sparganium erectum*) communities. The ecosystem is characteristic of many lakes in the Lori plateau, and usually develops in strongly silted areas, often in areas of intensive watering of cattle.

C3.247 – Water horsetail (*Equisetum fluviatile*) beds. Low, homogeneous, often flooded communities. They develop along the edges of the lakes, usually do not occupy large areas.

C3.24A – Common spikerush (*Eleocharis palustris*) beds. Low, often extended and very homogeneous communities developing along the shores of lakes with a variable water regime. The ecosystem is quite rare on the Lori plateau, probably because most of the lakes here have a relatively stable water regime.

C3.24C-AM – *Alisma plantago-aquatica* communities. Common water-plantain is often found in the coastal zone of the lakes of the Lori plateau, but rarely dominates in the ecosystem. It is usually joined to *Sparganium neglectum* and various species of sedge (*Carex contigua, C. hirta, C. otrubae, C. panicea, C. riparia, C. rostrata, C. tomentosa*). The ecosystem is good represented in the Stepanavan's Middle Lake.

C3.251 - Sweetgrass (*Glyceria arundinacea*) beds. The ecosystem usually develops along the shores of lakes in which eutrophication processes occur. On the Lori plateau *Glyceria arundinacea* is often joined by *Glyceria fluitans*.

C3.254 – Water-fringe *Calamagrostis pseudophragmites* beds. Common ecosystem on the Lori plateau that occurs

along the shores of many lakes.

C3.255-AM – Water fringe medium-high grasses and sedges beds. Polidominant ecosystem. It usually develops between water-fringe and meadow vegetation. In the composition of ecosystem grasses (*Agrostis stolonifera, Alopecurus aequalis, A. armenus, Catabrosa aquatica, Colpodium versicolor, Dactylis glomerata, Deschampsia caespitosa, Phleum alpinum*) and sedges (*Carex acuta, C. atherodes, C. caucasiaca, C. hordeistichos, C. lasiocarpa, C. leporina, C. otrubae, C. pallescens, C. vesicaria*) are good represented. On the Lori plateau the ecosystem is known only from Pars Lake.

C3.26 – Reed canary-grass (*Phalaroides arundinacea*) beds. Communities are mono-dominant or more often in composition with *Phragmites australis, Carex acutiformis, C. elata*. The ecosystem is relatively rare on the Lori plateau. It is resistant to drying and pollution, usually develops on degraded habitats.

C3.27 – Halophile *Scirpus, Bolboschoenus* and *Schoenoplectus* beds. Communities border deep (up to 1.5 m) water bodies, usually with brackish water, but on the Lori plateau with fresh waters. *Schoenoplectus tabernaemontani, Bolboschoenus maritimus, Schoenoplectus triqueter, Juncus gerardii* are typical components of the ecosystem.

C3.29 – Water-fringing large sedge communities (*Carex acuta, C. riparia*). Ecosystem is very characteristic for the Lori lakes. Usually sedge species composition is very rich (very often *Carex acuta* and/or *C. riparia* join by *C. atherodes, C. caucasiaca, C. contigua, C. disticha, C. divisa, C. hordeistichos, C. lasiocarpa, C. leporina, C. otrubae, C. pallescens, C. panacea, C. vesicaria*). Sometimes ecosystem includes *Eleocharis palustris, Sparganium neglectum, S. emersum, Juncus articulatus, J. buffonius, J. effusus, J. tenuis* as well.

C3.52 – *Bidens tripartita* communities of lake and pond shores. Thick, annual high communities (usually up to 1 m in height) colonizing nitrogen-rich muds of drying and overgrown lakes, usually in places of cattle watering.

Category D - Mires, bogs and fens

Currently, there are practically no mires or bogs on the Lori plateau, in most cases marsh ecosystems are represented by ecosystems of overgrown and drying lakes. It is possible, after a while, especially in connection with the forecasted climate change, the marsh ecosystems will expand.

D2 - Valley mires, poor fens and transition mires

D2.11 - Acid valley mires. On the Lori plateau we include in this category small areas of wetlands, where peat accumulation processes are taking place. Usually they are formed near lakes in depressions of the relief.

D2.31 – Slender-sedge (*Carex lasiocarpa*) swards. Transition mire communities with *Carex lasiocarpa* dominance, often sphagnum and pleurocarpic mosses are included in the community. Rather rare on the Lori plateau ecosystems.

D2.32 – Lesser tussock sedge (*Carex diandra*) quaking mires. Transition mires with *Carex diandra* dominance, *C. lasiocarpa, C. appropinquata* are usually represented in the community as well. Ecosystem does not occupy large areas and usually is formed in landscape depressions.

D2.33 – Bottle sedge (*Carex rostrata*) quaking mires. Transition mires with *Carex rostrata* dominance. Usually community is thick and low, and develops on moss carpets. Ecosystem also does not occupy large areas, is confined to landscape depressions, sometimes with stagnant water.

D5 - Sedge and reedbeds, normally without free-standing water

D5.111 – Non-inundated *Phragmites australis* beds occupying mires, the landfilling zone of waterbodies, the edges of watercourses and other soils permeated by fresh water. The ecosystem is widespread on the Lori plateau, located usually at a distance from the lakes and is connected to groundwater.

D5.121 – Communities with *Schoenoplectus tabernaemontani*. In Armenia this ecosystem is widespread on Ararat valley, on Lori plateau it does not occupy large areas, usually on wetlands near the lakes.

D5.131 - Great reedmace (*Typha latifolia*) beds. Monodominant single-layered communities formed on the place of overgrown and drying lakes already without open water. Fortunately, these ecosystems do not currently occupy large areas.

D5.133 – *Typha domingiensis* beds. The ecosystem is habitually very similar to the previous one and occupies similar habitats.

D5.14 – Wood-reed (*Calamagrostis pseudophragmites, C. epigeios*) beds. Ecosystems do not occupy large areas and usually develop on poorly swampy soils, where competition with other helophytes is less pronounced.

D5.15 – Tussock-grass (*Deschampsia caespitosa*) beds. The ecosystem is widespread on Lori plateau. Usually it is formed on poorly swampy soils, often in transition zone between mires and meadows.

D5.2121 – Slender tufted sedge (*Carex acuta*) beds. On Lori plateau this ecosystem usually represented on the place of overgrown and drying lakes already without open water, but with very high soil moisture. These communities are not resistant to drying, sometimes in its composition one can find very rare in Armenia, included

in the Red Book species *Potentilla erecta.*

D5.2127 – *Carex melanostachya* beds. *Carex melanostachya* itself is widespread in Armenia, but it does not often dominate in ecosystems. On the Lori plateau this ecosystem is a relatively rare, confined to slightly saline soils, usually along the shores of lakes.

D5.2141 – Bottle sedge (*Carex rostrata*) beds. Ecosystem is widespread on Lori plateau; usually it is formed on very moist meso-oligotroph substrates, mainly on the edges of overgrown lakes.

D5.2142 – Bladder sedge (*Carex vesicaria*) beds. Ecosystem is widespread on Lori plateau; often accompany the ecosystem with *C. rostrata* dominance, forming the outer drier margins of sedge thickets.

D5.2143 – Slender sedge (*Carex lasiocarpa*) beds. The ecosystem is characteristic for dystrophic-mesotrophic waters with a low or medium level change, on weakly or mediumly acidic peat substrates.

D5.31 – *Juncus effusus* dominated swamps. Ecosystem is widespread on Lori plateau, but does not occupy large areas.

D5.32 – *Juncus buffonius* dominated swamps. Ecosystem is widespread on Lori plateau, usually it is developed on sandy or mud-sandy soils in the lakes neighborhood.

REFERENCES

Asatryan A., Fayvush G. 2013. Important Plant Areas representing the rare and threatened habitat types of Armenia. Yerevan: AG Print, 78 p.

Barsegyan A.M. 1990. Water-marsh vegetation of Armenian SSR. Yerevan, 354 p. (In Russ.) (Барсегян А. М. 1990. Водно-болотная растительность Армянской ССР. Ереван, 354 с.)

Fayvush G. M., Aleksanyan A. S., Tumanyan A. A., Movsesyan G. G. 2014. Connections between Important plant areas and local floras \\ "Comparative floristic: analysis of plant species diversity. Problems. Perspectives". "Tolmachev's Readings". Digest of articles on the basis of X Int. school-workshop on comparative floristic (Krasnodar, April 14-18 2014), p.201-207 (In Russ.). (Файвуш Г. М., Алексанян А. С., Туманян А. А., Мовсесян Г. Г. 2014. Связи ключевых ботанических территорий и локальных флор \\ «Сравнительная флористика: анализ видового разнообразия растений. Проблемы. Перспективы. «Толмачевские чтения». Сб. статей по материалам X Международной школы-семинара по сравнительной флористике (Краснодар, 14-18 апреля 2014 г.), ООО «Просвещение-Юг», с. 201-207.

Fayvush G. M., Aleksanyan A. S. 2016. Habitats of Armenia. Yerevan: Institute of Botany of NAS RA, 360 p. (In Russ.) (Файвуш Г. М., Алексанян А. С. 2016. Местообитания Армении. Ереван: Институт ботаники НАН РА, 360 с.)

Fayvush G., Arakelyan M., Aghababyan K., Aleksanyan A., Aslanyan A., Ghazaryan A., Hovhannisyan M., Kalashyan M., Nahapetyan S. 2016. The "Emerald" Network in the Republic of Armenia. Yerevan, 144 p.

Khandjan N. S., Tumanyan A. A. 2011. Conspectus of the water-marsh flora of Lori lakes (Armenia) \\ Takhtadjania, 1, p. 178-180 (In Russ.). (Ханджян Н. С., Туманян А. А. 2011. Конспект водно-болотной флоры озер Лорийского плоскогорья (Армения) \\ Тахтаджяния, 1, с. 178–180).

Takhtadjan A. L. 1939. To the knowledge of water vegetation of Lori plateau \\ Proc. Of Biol. Inst. Of Armenian Branch of Academy of Sciences of USSR, 1, p. 19-37 (In Russ.) (Тахтаджян А. Л. 1939. К познанию водной растительности Лорийской нагорной равнины \\ Тр. Биол. ин-та Арм. Фил. АН СССР, 1, с. 19-37).

Takhtadjan A. L. 1954. Map of floristic regions of Armenian SSR. In: Flora of Armenia, Yerevan, 1, p. 3. (Тахтаджян А. Л. 1954. Карта районов флоры Армянской ССР. В кн.: Флора Армении, Ереван, 1, с. 3).

Tamanyan K. G., Fayvush G. M. 2009. On the problem of floristic regions of Armenia \\ Flora, vegetation and plant resources of Armenia, Yerevan, 17, p. 73-78 (In Russ.). (Таманян К. Г., Файвуш Г. М. 2009. К проблеме флористических районов Армении \\ Флора, растительность и растительные ресурсы Армении, Ереван, 17, с. 73-78).

Tamanyan K., Fayvush G., Nanagjulyan S., Danielyan T. (eds.) 2010. The Red Book of Plants of the Republic of Armenia. Yerevan, 598 p.

Tumanyan A. A. 2014. Water-marsh flora of Lori plateau and problems of its conservation. Abstract of the Ph.D. Dissertation, Yerevan, 26 p. (Туманян А. А. 2014. Водно-болотная флора Лорийского плоскогорья и задачи ее охраны. Автореферат дис... канд. биол. наук, 26 с).

Tumanyan A. A. 2014. Comparison of systematic structure of the flora of lakes of Lori plateau of Armenia \\ Proc. X Int. school-workshop "Comparative floristic: analysis of plant species diversity, problems, perspectives". "Tolmachev's Readings". Krasnodar, p. 156-158 (In Russ.) (Туманян А. А. 2014. Сравнение систематической структуры флор озер Лорийского плоскогорья Армении \\ Мат. X Международной школы-семинара «Сравнительная флористика: анализ видового разнообразия растений, проблемы, перспективы. «Толмачевские чтения». Краснодар, с. 156-158).

Vitek E., Fayvush G., Oganesian M., Tamanyan K., Ter-Voskanyan H., Margaryan K., Tumanyan A. 2013. *Nymphaea alba* (Nymphaeaceae) in Armenia \\ Rostaniha, 14/1, p. 43-47.

Институт ботаники им. А.Тахтаджяна НАН РА
arusyaktumanyan@mail.ru
alla.alexanyan@gmail.com
gfayvush@yahoo.com

М .Э. ОГАНЕСЯН

ФЛОРИСТИЧЕСКИЕ НОВИНКИ ИЗ АРМЕНИИ И НАГОРНОГО КАРАБАХА

Приводятся новые для флоры Армении виды *Persicaria orientalis* (L.) Spach и *Valerianella pumila* (L.) DC., а также новые местонахождения *V. pumila* и *V. locusta* (L.) Laterr. из Армении и Нагорного Карабаха

Армения, Нагорный Карабах, новинки флоры, Persicaria orientalis, Valerianella pumila, V. locusta

Հովհաննիսյան Մ. Է. Ֆլորիստական նորույթներ Հայաստանից և Լեռնային Ղարաբաղից: Բերվում են Հայաստանի ֆլորայի համար նոր տեսակներ ՝ *Persicaria orientalis* (L.) Spach և *Valerianella pumila* (L.) DC., ինչպես նաև *V. pumila* և *V. locusta* (L.) Laterr. տեսակների նոր աճելավայրեր Հայաստանից և Լեռնային Ղարաբաղից:

Հայաստան, Լեռնային Ղարաբաղ, ֆլորայի նորույթներ, Persicaria orientalis, Valerianella pumila, V. locusta

Oganesian M. E. **Floristic novelties from Armenia and Mountainous Karabagh.** New for the flora of Armenia *Persicaria orientalis* (L.) Spach and *Valerianella pumila* (L.) DC. are introduced, as well as new localities of *V. pumila* and *V. locusta* (L.) Laterr. from Armenia and Mountainous Karabagh

Armenia, Mountainous Karabagh, novelties of flora, Persicaria orientalis, Valerianella pumila, V. locusta

Persicaria orientalis (L.) Spach (≡ *Polygonum orientale* L.)

Армения, Араратский р-н, окрестности пос. Масис, 05.07.2002, К.Таманян, Г. Файвуш, ERE 193486—193488, det. M. Oganesian II. 2018

Новый вид для Армении.

Вид широко культивируется как декоративный и в настоящее время распространился по всем континентам (https://www.gbif.org/species/2889229) . Во “Флоре СССР” (Комаров, 1936: 648) приводился для юга европейской части СССР, З. Закавказья, Ирана, Ср., Ц. и В. Азии. В «Конспекте флоры Кавказа» (Цвелев, 2012: 258) приводится для Предкавказья и Западного Закавказья. Во “Флоре Турции” (Coode & Cullen, 1967) не приводится. Во “Флоре Ирана” (Rechinger & Schiman-Czeika, 1968 :57) приводится без виденных образцов, а в общем распространении указываются Кавказ и Азия. В Западной Грузии культивируется как декоративное. Скорее всего, наши образцы – одичавшие и культурные растения, как и повсюду.

Valerianella pumila (L.) DC.

Armenia, Vayotsdzor province, Vajk distr., road Vajk-Kochbek, c. 8 km ENE Vajk, gorge of Darb river, 1380 m s. m., 45º34′ E/ 39º41′ N, sandy area, 24.06.2002, Fayvush & al., OPTIMA Iter XI/ 1877, det. M. Oganesian 6.03.2018, ERE 193412

Новый вид для Армении. В “Конспекте флоры Кавказа” (Михеев, 2008: 126) указывается Мегри-Зангеланский флористический район Кавказа (Меницкий, 1986), однако все образцы в гербарии LE собраны с территории Нагорного Карабаха (Южнокарабахский флористический район).

Общее распространение: Кавказ (Предкавказье, Ц. и В. Кавказ, С-З. В. и Ю. Закавказье), Ц., Ю. И Ю-В. Европа, Средиземноморье, З. (Анатолия, Палестина, С. Ирак, С. и Ц. Иран) и Ср. Азия.

Mountainous Karabakh, Republic of Artsakh, road from Laçin to the south, in direction Kavdadiq / Qaralar, c. 9 km SSE of Laçin, 790 m s.m., 39°33’29” N / 46°34’32” E, dry slope with bushes, 2017-05-11,Vitek, E., Oganesian, M., Sargsyan, M. & Khachatryan, A. 17-0270, det. M. Oganesian 23.03.2018, ERE 193489

Формально впервые публикуется для флоры Карабаха, так как все указания для Мегри-Зангеланского района из гербария LE в «Конспекте флоры Кавказа» (Михеев, 2008: 126), на самом деле относятся к Южному Карабаху. А. А. Гроссгейм (1934: 43; 1949: 256) для *V. tridentata* (Steven) Bas.*(=V. pumila*) Армении и Карабаха не приводит. И. А. Линчевский (1958: 675) для *V. pumila* приводит В. Закавказье

Известные образцы *V. pumila* из Ю. Карабаха (LE)

Карабах, Елисаветпольская г., Карягинский уезд, близ с. Ханныха, полынная степь, по склонам холмов, 8.05.1911, Н. Введенский (Ю. Воронов N 572), det. И. А. Линчевский 1955 (LE, photo!); Азербайджан, Джебраильский р-н, р. Куру-чай, на галечниках, около 400 м н. у. м., 26.04.1948, А. А. Гроссгейм, М. И. Кирпичников, А. А. Смольянинова, det. А. Д. Ми-