Impact Factor:	ISRA (India) = 1.344	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.207	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 4.102	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 2.031	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 01 **Volume:** 57

Published: 30.01.2018 http://T-Science.org

Ibragimjon Toshpulatovich Azimov
Senior teacher of
Tashkent State Pedagogical University named after
Nizami, Republic of Uzbekistan

SECTION 11. Biology

MODERN ECOLOGICAL CONDITION OF ENDEMIC SPECIES SPREADING IN AKHANGARAN BASIN

Abstract: *This article gives information about endemic species spread in the basin of Akhangaran river. The data about the role of endemic species in the process of learning of evolutionally of systematical units in real territory were studied, and so research results about spreading of endemic species of the family of Ranunculaceae, Caryophyllaceae, Limoniaceae, Brassicaceae, Rosaceae, Fabaceae, Apiaceae, Cap-rifoliaceae, Asteraceae, Gentianaceae, Boraginaceae, Scrophulariaceae, Lamiaceae, Liliaceae, Alliaceae, Asphodelaceae and their growing territories were given.*

Key words: *Akhangaran basin, desert, ecosystems, foothills, Endemis.*

Language: *English*

Citation: Azimov IT (2018) MODERN ECOLOGICAL CONDITION OF ENDEMIC SPECIES SPREADING IN AKHANGARAN BASIN. ISJ Theoretical & Applied Science, 01 (57): 169-171.

Soi: http://s-o-i.org/1.1/TAS-01-57-30 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.01.57.30

Introduction.

Akhangaran basin is one of the largest basin (5260 km ^{2}) of southern-western parts of Tyan-Shan ranges, and all zones of Uzbekistan: desert (266-500 m), foothills (500-1500 m), mountain (1500-2500 m) and pasture (2500-4062 m) are ecosystems having bio spectrums that zones have self-peculiarities. A diversity of endemic species spreading in Akhangaran basin, ecological condition, spreading laws are significant to study.

Endemism - specific component part of the any biota, which is one of the real indicators of paths the evolution of taxa in a particular area. Many of the local mountain flora of Central Asia have a high rate of endemism (Kamelin, 1973, 1990), and in some cases reach 10 - 12%. According to K. SH. Tojibaev (2010), flora of the Uzbekistan part of South - Western Tien - Shan has 207 endemics, representing 10% of all species (2056 species) [1]. An important part of this area is the basin of the Akhangaran river, uniting the South - Western spurs of the Chatkal ridge and Northern macro decline of the Kuramin ridge. A published data on the flora of Akhangaran basin is absent. Here are archival data from S.E. Korovin at least 910 species. In the consolidated list the flora of South - Western Tien - Shan (Todjiboev, 2010); the species are given on the ridges. Calculations which indicate the approximate number of species, they include about 1450 - 1500 species.

According to R.V. Kamelin (1973) in mountain countries ".the elementary natural flora - flora opening area of a drainage basin, has composed at least one endemic species [2]." Within the Akhangaran basin, it was observed the growth one of endemic species - ***Kamelinia*** F.O. Khass. et Malzev - ***K.tianschanica*** F.O. Khass. et Malzev and at least 10 narrow - endemic species.

According to our data in the flora of the basin Akhangaran river there are endemic species, also we would like to note that the flora is represented by subendemic species, mostly linking flora Akhangaran with the rest of the West Tien - Shan.

The composition of the endemic flora of Akhangaran river basin is given in the following. The family, genus and species are showed in the list. For each species is given especially systematic position, distribution and some other features. The families are located on the system of A. Takhtajyan (1995). The authors of the species can farms to reference book [3].

Ranunculaceae- ***Adonis leiosepala*** Butkov - not clearly isolated from the closely related to ***A. tianschanica*** (Adolf) Lipsch. with West - Chatkal spread. There are only a few local

populations on the top of the Chatkal and Kuramin ridges. It is sub - endemic for the Akhangaran river basin.

Caryophllaceae- ***Silene pubicalyx*** Bondarenko et Vved. - species from with ***S. fedtschenko*** and ***pugionifolia,*** featuring with small omission (prolapsus) and with more narrow leaves. It is endemic for northern slopes of the Kuramin ridge [4].

Limoniaceae- ***Acantholimon kuramense*** Linez. - endemic for southern slopes of the Kuramin ridge, within Tajikistan. It may be found in the watershed part; ***A. laxiusculum*** F.O. Khass. et I.I. Malzev. - weakly - limited form of kinship Pamir - Alay ***A. annae*** Linez, noted only in the Kamchik pass.

Brassicaceae-*Achoriphragma kuramense* (Botsch.) Sojak and ***A. saxifragum*** (Bosch. et Vved.) Sojak. Distribution of these two species is limited by the Akhangaran river basin; ***Pseudoclausia kuramensis*** Ovcz. et Junussov. It is described from the Tajikistan part of the Kuramin Ridge, but in the area of research; ***Stubendorffia pterocarpa*** Botsch. et Vved. - ecologically isolated from the Pamir - Alay S. curvinerva Botsch. et Vved. , it is endemic to the West of Chatkal [5].

Rosaceae-Rosaceae are represented in the Akhangaran River basin by two species of genus ***Potentilla*** **L. - *P. fedchenkoana*** Siegfr. and ***P. tephrosericea*** **Juz.,** limited by slopes of Western Chatkal.

Fabaceae-*Astragalus dolonus* (Rassulova et B.A. Sharipova) Kamelin - well isolated species from Kopetdag - Pamir - Alay (section ***Stenonychium*** Bunge). It grows on a separate of Kuramin and Chatkal ridge slopes; ***A. mogoltavicus*** Popov - well isolated species of section ***Alopecias*** (Stev.) Bunge. to the Pamir - Alay kinship. It is endemic to the Mogoltau and Kuramin Ridge; ***A. pseudoamygdalinus*** Popov - well isolated species of section ***Erinotus*** to Western Tien - Shan kinship, endemic to the Akhangaran; ***A. nucleosus*** Popov - well isolated species to Akhangaran from the section of ***Cytisodes*** Bunge to Western Tien - Shan kinship; ***A. rubrivenosus*** Gontsch. - vicar ***A. baranovii*** species, borders have extented from South - Western spurs of the Chatkal ridge to the Maydantal ridge; ***Oxytropis fedchenkoana*** Vassilez. - reducing area of a rare plant to Western Tien - Shan - ***O. ugamica*** Gontsch. - main habitats are in the Akhangaran basin; ***O. gymnogyna*** Bunge - refers to the kinship of Western Tien – Shan, Pamir Alay species with ovate cluster, it is endemic to the Kuramin and Mogoltau ridge; ***Cicer mogoltavicum*** (Popov) A.S. Korol. - a plant of Pamir - Alay kinship of ***Flexuosa*** Lincz. row comes to northern slopes of the Kuramin ridge. Also found in Mogoltau Ridge. ***Hedysarum angrenicum*** Korotkova - very rare species with Akhangaran spread; ***H. macrocarpum*** Korotkova - from the kinship of Pamir - Alay ***H. bucharicum*** B. Fedtch., it grows in the west of Chatkal; ***H. popovii*** Korotkova - the narrow - local endem for the Akhangaran river basin [6].

Apiaceae-*Bunium angreni* Korovin - high-mountain species of the kinship of ***B. setaceum*** (Schrenk) H. Wolff. It is spread out of the Akhangaran river basin; ***Kamelinia tianschanica*** F.O. Khass. et I.I. Malzev - relic of Akhangaran endemic, stenobiont with spread in two colloteral say of Akhangaran - Kattasay and Dukentsay [7].

Caprifoliaceae-*Lonicera anisotricha* Bondar. - a close species to the mountain-Central Asian - Himalayan ***L. heterophylla*** with narrow area.

Asteraceae-*Hypacanthium evidens* Tscherneva - the second species of bitype kind with narrow area within the Akhangaran river basin; ***Cousinia angreni*** Juz. - from the kinship of ***C. Vicaria*** Kult., section ***Cousinia***, has the West - Chatkal distribution; ***Jurinea kuramensis*** Iljin - western - Chatkal species of section ***Olgaea*** Iljin, not sharply separated from the Pamir - Alay ***J. ferganica*** (Iljin); ***Tanacetopsis kamelinii*** Kovalevsk. - one of the rare species of the Akhangaran river basin; ***Trichantemis glabrifolia*** Novopokr. - conditional Akhangaran species, accurate distribution is not installed [8].

Gentianaceae-*Swertia gonczaroviana* Pissjuak. - the only endemic representative of the family of the Akhangaran river basin.

Boraginaceae-*Rindera cristulata* Lipskiy - the main habitat of species is located in the middle mountain part of the Akhangaran river basin.

Scrophulariaceae- ***Scropularia botschanzevii*** Turak. - the species was described from northern Tajikistan, the upper reaches of Oshoba say, some locations are available around Arashan.

Lamiaceae-*Salvia tianschanica* Makhm. - West-Chatkal, comes to southern slopes of the Kuramin ridge - Altin-topkan.

Liliaceae-In the Akhangaran river basin flora grows more narrowly-areal species of ***Gagea*** Salisb kind. They are mainly distributed on the Mogoltau and Kuramin Ridge. We can attribute to their number that ***Gagea angrenica*** Levichev, ***G. ferganica*** Levichev, ***G. incrustata*** Vved., ***G. kuraminica*** Levichev, ***G. premixta*** Vved. The composition of rare species of goose onion was installed in the base of study of archival herbarium materials. Identification of new field collections is complicated by the difficulty of systematic of kind and the lack of a

key for the definition of described species, with the beginning of 80-ies of the last century. ***Tulipa mogoltavica*** Popov et Vved. - not clearly isolated species from the kinship of ***T. Greigii.*** A main habitat is Mogoltau, and comes to the Kuramin Ridge. ***T. vvedenskiy*** Botschantz. - previously was known as narrow local endemic to Akhangaran. Later were found outside of the Akhangaran basin - in southern slopes of the Kuramin ridge (yellow-flowered form) and the Chatkal biosphere reserve [9].

Alliaceae-*Allium gracillimum* Vved. - a good isolated species of kinship of the Tien-Shan section of ***Reticulato-bulbosae*** Kamelin, subendemic of the Kuramin ridge. Recently had been found the localities in the lower reaches of the Gavasay (Lazkov, Turdimatova, 2011); ***A. pangasicum*** Turak. - a good isolated low-mountain species of Kuramin species of the kinship of ***A. sewertzovii*** Regel. Also it closes to ***A. dodecadontum*** Vved., the distinct lack of teeth at the base of external stamen thread; ***A. rudolfii*** Turak. - low-mountain species of Kuramin species of the kinship ***A. sewerzowii*** with turned back leaves of perianth; ***A. taeniopetalum*** subsp. ***mogoltavicum*** (Vved.) R.M. Fritsch et F.O. Khass. - not sharply isolated coastal race of the Pamir-Alay ***A. teaniopetalum*** Vved.

Asphodelaceae-Eremurus korovinii B. Fedtsch. - apparently extinct once collected from pass Kendyrdavan in the upper reaches of the Abjassay. Subsequent attempts to find a plant was not finished successful [10].

Thus, endemism of the flora Akhangaran river basin is one of the original and has its own specific characteristics. Most of them are West Tien-Shan kinship, connecting the flora with more humid area of Western Tien-Shan. A small number of species is Pamir-Alay kinship. Narrow endemics of the Akhangaran river basin are little. They make up no more than 30% of the total number of rare species. The basic number of endemics is concentrated to the ancient Mediterranean in Allium**,** *Astragalus*, *Cousinia*, *Gagea*, *Tulipa* and others.

Conclusion

A zone of the studied basin will be scientific document that following results: defining the full list of dynamic position of the endemic species, efficiently usages, planning the reconstruction ways of to be protected places and protecting the gene fund of the territory. Conclusions and recommendations of the research work are significant as scientific document for planning the works of ecology specialists.

References:

1. Kamelin R.V. (1973) Florogeneticheskiy analiz gornoy Sredney Azii. L., 1973. -355 p.
2. Kamelin R.V. (1990) Flora Syrdar'inskogo Karatau. L., 1990. -146 p.
3. Tozhibaev K.Sh. (2010) Flora yugo-Zapadnogo Tyan'-Shanya (v predelakh Respubliki Uzbekistan). Tashkent, Fan, 2010. -100 p.
4. Brummit R.K., Powell C.E. (1992) Authors of plants names. Kew, Royal Botanic Gardens, 1992. -732 p.
5. Tozhibaev K.Sh. (2010) Flora yugo-Zapadnogo Tyan'-Shanya (v predelakh Respubliki Uzbekistan). Tashkent, Fan, 2010. -100 p.
6. Brummit R.K., Powell C.E. (1992) Authors of plants names. Kew, Royal Botanic Gardens, 1992. -732 p.
7. Kamelin R. (2017) Flora Syrdarinskogo Karatau. -147 p.
8. Brummit R. (2000) Biological aspects. IPA, 2000. –p.56.
9. Tozhibaev K.Sh. (2010) Flora yugo-Zapadnogo Tyan'-Shanya (v predelakh Respubliki Uzbekistan). -Tashkent, Fan.
10. (2010) Fan va turmush, Toshkent, 2010. -p.32.