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ECOLOGY AND FAUNA OF THE SPECIES BELONGING TO THE FAMILIES *Elapidae*  
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E-mail: [rakhimov.matnazar@mail.ru](mailto:rakhimov.matnazar@mail.ru)*ЭКОЛОГИЯ И ФАУНА ВИДОВ СЕМЕЙСТВ *Elapidae* И *Viperidae*  
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## ABSTRACT

This article provides informations about the ecology and fauna of the family Colubridae in the Kashkadarya region. Herpetofauna of Kashkadarya region has not been studied scientifically for several decades. Our data were collected in the spring, summer and autumn of 2018-2021

## АННОТАЦИЯ

В статье представлена информация об экологии и фауне семейства Colubridae в Кашкадарьинской области. Герпетофауна Кашкадарьинской области уже несколько десятилетий не изучается научно. Наши данные были собраны весной, летом и осенью 2018-2021 гг.

**Keywords:** reptiles, Foliodosis, Elapidae, Viperidae, Lcd, Lcr, L, fauna.

**Ключевые слова:** рептилии, Foliodosis, Elapidae, Viperidae, Lcd, Lcr, L, фауна.

**Introduction:** Kahkadarya region is located in the southern Uzbekistan, east and west borders are from 39°14'00"N-66°52'45"E to 38°58'08"N-64°21'58"E and north and south borders are from 39°22'21"N-66°19'20"E to 38°01'46"N-66°22'02"E. The area is 28.57 thousand km<sup>2</sup>, of which 6.677 thousand km<sup>2</sup> is arable land, 0.863641 thousand km<sup>2</sup> is protected area. The average population density is 113 people / km<sup>2</sup>. The main part of the Kashkadarya region is the southern part of the Kyzylkum where are Sandikli desert and Karshi-Nishan steppes (including the lowlands of Guzar district) which covers an area of about 14.5 thousand km<sup>2</sup>, the about 5 thousand km<sup>2</sup> are foothills and about 9.5 thousand km<sup>2</sup> consists of mountainous areas[5]. Based on the above data, we are estimated that an average of 80% of the region's area is naturally preserved with excellent fauna and flora. In particular, the literature mentions the information about that 40 species of reptiles are found in the kashkadarya region [1,3].

The distribution and biological characters of reptiles species in the Kashkadarya region was studied by A.M. Nikoliskiy in 1915-16, S.K. Dalya in 1936, M.V. Kaluzhina in 1951, O.P. Bogdanov in 1950-60. Our research is of scientific interest, primarily in the fact that scientific research aimed at studying the Reptilia class in the Kashkadarya region was carried out for the last time by V.P. Karpenko, X.S. Salikhbayev, D.Y. Kashkarov, M.M. Ostapenko, A.A. Petrova, A. Zakirov, N.A. Pirnazarov in 1963-65. Then only places of residence of these species was mentioned on the common expeditions of the Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan [3].

**Materials and methods:** Field observation and biostatistical analysis of the collected data were mainly used in the study of the Kashkadarya region. The following methods were used.

**Selection of the study area:** Our research was conducted at 11 points located in the selected across the Kashkadarya region. The selection of these points took into account the biology and ecology of reptiles, the study of natural water bodies, artificial ecosystems, climate and relief effects in the study area, and then the

selection of routes. The routes were 4-6 lines that traversed 8-10 km strip crossing the specified coordinates [2,4].

**Determining of the species:** Further, the captured reptiles are carried to the base camp, where they are measured and folidosis is done.

Folidosis is a method in which similar species of reptiles are determined by counting certain scales on their body and head. In this case, you must have a measuring tape, ruler, vernier caliper, felt-tip pen, pen and field diary on hand. The last recorded all measurements: L - body length; Lcd-the tail length; Lcr-the length of the head; Scr-the width of the head; Hcr - head height; and also the results of reptile foliosis: Dors - dorsal transverse scales; Vent - ventral scales; An – anal [2].

**Results:** During our research, we identified 37 species of reptiles in Kashkadarya region. 7 species are in need of protection listed in the Red Data Book of the Republic of Uzbekistan, 2 species are on the TMXI red list and 1 species is on the CITES red list. 15 of these species belong to the suborder of Ophidia and 4 species are included in the Red Data Book of the Republic of Uzbekistan. 1 of them belong to family *Elapidae*.

During the research, a statistical analysis of 15 species of suborder Ophidia (Serpentes) in Kashkadarya region was divided into 6 families and the following results were obtained. These family are *Boidae*, *Typhlopiidae*, *Elapidae*, *Viperidae* and *Colubridae*

According to Our research, In Kashkadarya region, 3 species belong to family *Viperidae* and 1 species belong to family *Elapidae* are found and researched. (83 individuals during four years). (Table-1)

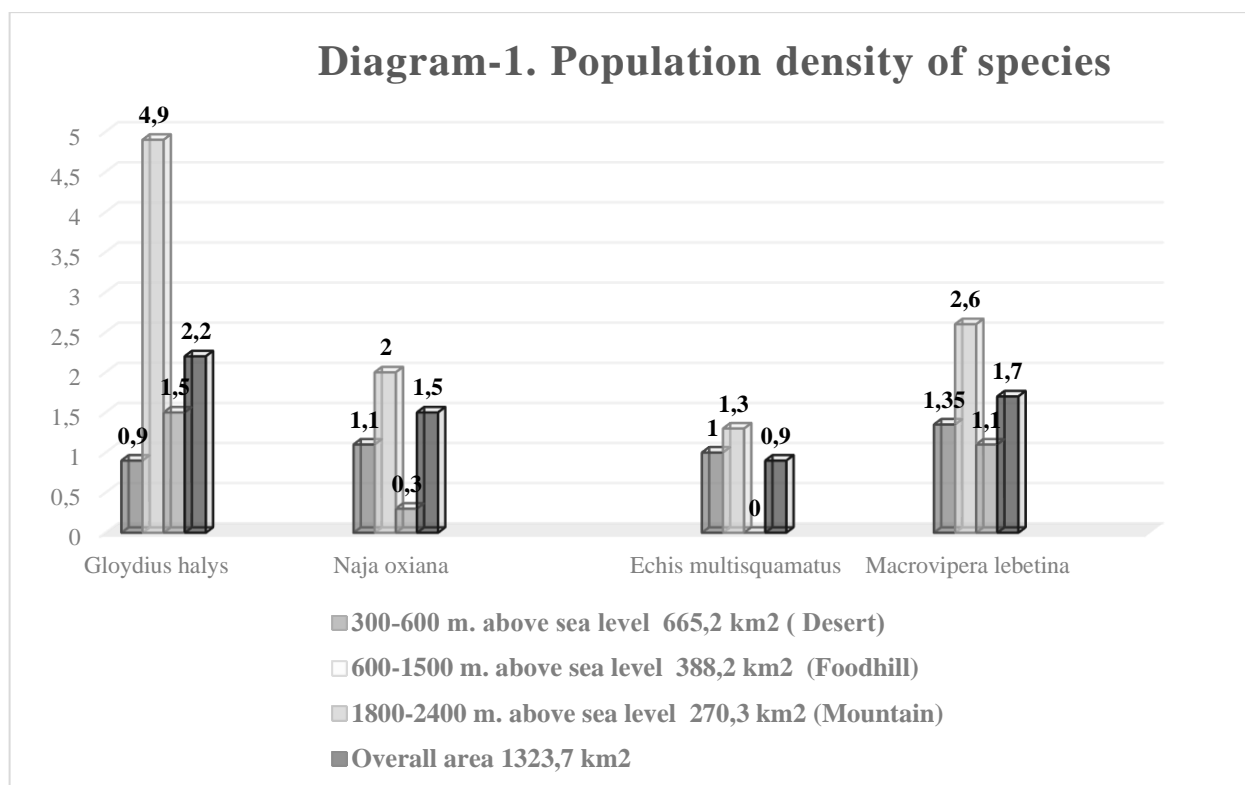
As can be seen from the diagram, members of this family are distinguished by the high number of species and individuals in 8 of the 11 study areas selected in the Kashkadarya region. (Diagram-1).

At the same time, the population density of individuals was analyzed based on the bio-ecological status of the representatives of this family. The result is that the frequency of meetings of this family in the mountains, hills and deserts throughout the region is given in the diagram below.

Table 1.

Number of found species across areas

| №№ | Species                                      | Coordinate of areas               |                                 |                                  |                                 |                                 |                                  |                                 |                                 |                                 |                                   |                                  |                                   |
|----|--|-----------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
|    |  | 38°15.121'N 64° 38'36.361"E (250- | 39° 25'50.281"N 65° 26'39.539"E | 38 °40'27.2532"N 65°35 55.1832"E | 38°33'35.4204"N 66° 06'27.198"E | 38° 26'55.425"N 65° 53'16.431"E | 39° 18'44.604"N 66° 36'30.5784"E | 38° 37'07.307"N 66° 33'56.996"E | 38° 09'35.958"N 66° 34'32.181"E | 39° 03'33.798"N 67° 12'59.966"E | 38° 41'22.5168"N 67° 11'06.6264"E | 38° 49'56.3412"N 67° 14'03.904"E | Number of species in Overall area |
| 1  | <i>Naja oxiana</i> (Eichwald, 1831)          | 3                                 | 4                               | 2                                | 2                               | 2                               | 2                                | 2                               | 2                               | 1                               | -                                 | -                                | 20                                |
| 2  | <i>Gloydius halys</i> (Eichwald, 1831)       | -                                 | -                               | 2                                | 4                               | 4                               | 5                                | 6                               | 4                               | 3                               | 1                                 | -                                | 29                                |
| 3  | <i>Echis multisquamatus</i> (Cherlin, 1981)  | 1                                 | 2                               | 2                                | 2                               | 1                               | 1                                | 2                               | 1                               | -                               | -                                 | -                                | 12                                |
| 4  | <i>Macrovipera lebetina</i> (Linnaeus, 1758) | 2                                 | 2                               | 2                                | 3                               | 2                               | 4                                | 2                               | 2                               | 3                               | -                                 | -                                | 22                                |



**Conclusion:** In conclusion, our research in Kashkadarya region identified 15 species of Ophidia suborder and they belong to 5 families, 13 genus and studied their ecology and fauna. Consequently, 3 species that are belonging to 3 genus of family *Viperidae* and 1 species of family *Elapidae* was found in Kashkadarya region. We

have studied only 5% of the total land area of the region, which is 1444.3 km<sup>2</sup>. I think there are still some unexplored species in this area. It should also be noted that today there is a clear decline in the fauna of reptiles due to land development, increasing industrial waste and other similar reasons.

#### References:

1. Red book of Republic of Uzbekistan II volume animals. - Toshkent: Chinor ENK, 2019. - p.114-125 c.
2. Нумеров А.Д., Климов А.С., Труфанова Е.И. //ПОЛЕВЫЕ ИССЛЕДОВАНИЯ НАЗЕМНЫХ ПОЗВОНОЧНЫХ// Издательско-полиграфический центр Воронежского государственного университета 2010г.—42-72 с.
3. Карпенко В.П. Пресмыкающиеся // Экология позвоночных животных Каршинской степи. - Ташкент: Фан, 1967. - С. 129-152.
4. Hester J.M., S.A. Budischak and M.E. Dorcas. 2008. The Davidson College box turtle mark-recapture program: urban herpetological research made possible by citizen scientists. Volume 3, pp. 549–555. Society for the Study of Amphibians and Reptiles, Salt Lake City, Utah.
5. Ананьева Н.Б. и др. - Атлас пресмыкающихся Северной Евразии (СПб., 2004) 24-78 с.