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DISTRIBUTION AND BIOECOLOGY OF THE FLAT-TOOTHED RAT.

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Abstract: Rodents, Flat-toothed rat, Botgerin rat, Amudarya delta, Mount Kuskhan, Mount Purli, Samanbai, Chortanboy, Kazakh river, Takhtakopyr, Shakhaman, Lake Itkyr-Chilim..
Keywords: Rodents, Lamellar rat, Botger's rat, Amudari Delta, Kuskana tau, Porly tau, Samanbai, Shortanbai, Kazakhdarya, Takhtakupyr, Shakhaman, Itkir-Shylymkol.

A number of reforms have been implemented in the Republic of Uzbekistan to ensure the sustainability and development of biological diversity, specific tasks have been identified for the implementation of scientific and innovative ideas of the action strategy for its further development.

In this regard, the dynamics of the number of rodents can be widely used as a bioindicator in assessing environmental changes.

The flat-toothed rat is widely distributed along the watersheds of the Amu Darya, Murgap, Tejen, Sumbar, Chandyr, Atrek (Turkmenistan), Zarafshan and their tributaries Surkhandarya, Kafirdzhigan, Vakhsh, Yakhsu and Kyzyl watersheds of Central Asia. common types. [1. 2]

The Botger's rat, a subspecies of Nesokia indica boetteriRadde et Walter, is distributed in the lower reaches of the Amudarya delta, that is, on the territory of the Republic of Karakalpakstan.

All scientists and researchers agree that the flat-toothed rat is a dangerous pest for agriculture and causes economic and material damage. In addition, flat-toothed rats are considered as an additional type of carriers and distributors in the natural focus of some especially dangerous infectious diseases.

E.A. Cheglova (1960) found microbes causing tularemia in this species; The experience of N. A. Pletneva and A. M. Karpuchova (1960) about her acute infection of suma with a microbe; Together with N. Ya. Sharapkova and other authors (1965), he reports that he became infected with this type of pastellosis in Karakalpakstan. At the same time, this rat was found to be infected with suma disease under natural conditions in India. (Rall, 1958).[12/11/13]

Despite the fact that the flat-toothed rat is an epidemiological and agricultural pest, there is very little information in the scientific literature about the ecology and biology of this species as a monographic, scientific written source. No studies have been conducted in Karakalpakstan. (GA Asenov, 1968) It is difficult to talk about the method of active struggle with flat-toothed rats. One of the main reasons for this is that the biology and ecology of the species have not been studied in depth, and the second is that the damage caused by this species during the period when nature was away from habitats and before the ecological crisis was unknown. At present, human intrusion into the natural environment on cultivated fields and even residential areas creates the problem of developing a method of active struggle[3].

We see that a number of studies have been carried out by scientists below the level of the study of the flat-toothed rat in various regions of Central Asia, and they often cover past periods. (Ognev, Geptner, 1929 [18], Gepner, 1932, Vinogradov, 1932, Argyropulo, Geptner, 1936, Petrov, 1935, Flerov, Gromov, 1934, 1935, Mecklenburgsev, 1935, Rybalkin, 1938, Minin, 1938, Kolesnikov, 1947, 1955, 1961, Davydov 1948, 1950, 1951, 1957, 1964, Kostin 1962, Bondar 1959, 1963, 1965).

Among them, the ecology of the flat-toothed rat was studied by G. S. Davydov in Tajikistan, a wide range of data was collected, published and brought to the attention of scientists. E.P. Bondar for many years conducted research in various regions of Central Asia, collected significant data on the ecology of this species and published them. P. A. Beltyshev (1941) drew attention to the fact that the population density of the flat-toothed rat in the Amudarya delta and the fact that it consists of a large number of individuals is associated with dense reeds. In our opinion, this situation should depend on the quantity and quality of the cane root, which is the main and nutritious food of the rat.[4]

In addition to scientific literature, most of the oral information about the flat-toothed rat is based on petitions received by the plague court about the harm caused by rats to people, studies carried out on their basis, observations - habitats, the amount of damage, the number of rats, types of residence (with personal plots, multi-storey houses, etc., by type of locality). Captured rats were analyzed in the anti-plague laboratory, court, sex, age, structure of the genital organs, number of embryos, time of study and area of study were taken into account. The data collected was analyzed in accordance with all established guidelines.

The impact of pesticides used for the destruction and extermination of pests, grain harvested for food, rice crops, oil, etc. is considered, and the question of conducting scientific research aimed at this work is raised. New problems related to these issues have given rise to problems such as their solution, research and implementation. In conclusion, it should be noted that the biology and ecology of

flat-toothed rats is the least studied region of Central Asia, therefore, attention was paid to broad and deep scientific research in the Lower Amudarya delta, where they are widespread. Recently, the most complicated and deepening situation of the ecological crisis in the Central Asian region has been designated as the "Ecological Disaster Zone" at the suggestion of the UN. biodiversity became a national problem, the reforms that needed to be implemented were brought under control.

With the drying up of the Aral Sea and the drastic reduction in the water of the Amu Darya, disruption of our environment and natural balance, harm to fauna and flora, many changes are observed during their life. For example, a large number of species are declining, a small number of species are on the verge of extinction, and rare species are disappearing. At the same time, great changes take place in the life of the flat-toothed rat (general migration is observed, the place of residence changes, the number, reproduction, damage caused by it, etc., undergo noticeable changes.

Although the flat-toothed rat is widespread in the Amudarya delta, it is unevenly distributed over the territory. S. N. Varshavsky. writes that he found it in the vicinity of Boz-ozek, which is located on the border of Karakalpakstan and the Kyzyl-Orda region of Kazakhstan, that is, 180-200 km east of the main habitat of the rat. G. A. Asenova (1968), the flat-toothed rat was discovered in the south of the Sudochya region in 1963-1964. V.P. Kostin (1948) reports that he found his bones from the remains of Filin (Ukka) in the Ustyurt precipice (Chink) in the area shown by us. Thus, we see that the northern border of the range of the flat-toothed rat runs north of the territory of the Republic of Karakalpakstan [3,19].

The distribution and abundance of the flat-toothed rat in the territory of Karakalpakstan depends on the abundance of plants that it eats well and the high and low levels of groundwater. The rat is found in large numbers in dense reeds, thickets or dense reeds mixed with dense reeds, as well as in the foothills of forests. At the same time, along the banks of large canals and ditches, among dense shrubs and semi-shrubs, in rice, rice and cotton fields, irrigation dams, in gardens, alleys, in wheat and other cereal fields, brick fields and form populations. with a large number of individuals in muddy habitats and storages.

We distinguish 3 types of settlements in Karakalpakstan, where we conducted research and study. They differ from each other in the following. Two of them are first-class housing. It includes the Amudarya delta and dense thickets of reeds and forest edges. The third type is distributed throughout the oasis, and they are connected with each other, forming a foothill area. Thus, out of 5 types in Central Asia identified by E. P. Bondar (1965), we see that in the lower part of the Amudarya delta there are three types of settlement, forest and oasis[7].

In table. 2 and in fig. 3 shows the distribution and number of rats in 1964-1966. in residential areas, agricultural land, orchards, orchards and biotopes. As can be seen from the second table, the number of flat-toothed rats varies by season and year. Those who are trying to explain the reason for this situation have not yet come to an agreement. Some of them explain this by the fact that many populations will die due to flooding, while others think that it is because of their gluttony that they end up eating food plants.

The number of flat-toothed rats in biotopes (1956-2000)

biotopes(types of settlements)	Number of colonies with rats in %	Number of heads corresponding to one hectare
Forests along the banks of rivers and canals (type II)	70,0	40-50
Reed-shrub mixed forests (I type)	70-80,0	80-100
Dense reed beds (I-type)	80,0	200,0
Alfalfa garden (type II)	30-40,0	10-15,0
Gardens (type III)	80,0	50-100,0
Plots close to home	80,0	10-15,0
Residences	100,0	15-20,0
wheat fields	80-90,0	50-100,0
Canals and ditches	50-60	20-30,0
Abandoned horse fields	30-40,0	5-10,0

I.S. Soldatkin (1955) T.M. MokeevavaI. Ya. Polyakov (1952) described a high frequency (maximum) of flat-toothed rats in the spring (March-May) and autumn-autumn periods, the main reason for which is a decrease in their reproductive power. B. S. Vinogradov et al. (1936) and V. G. Geptner (1932) associate its main cause with the migration of rats and summer hibernation, and V. P. Kostin (1962) associates the accumulation of rats in one place during high water with the dynamics breeding. this is like causing a direct increase in the number of rats, and he says that flooding is a temporary fear for rats that swim well, and during this period there is only a process of forced migration, I. I. Kolesnikov (1947). . T.M. Mokeeva and I.I. Polyakov (1952) observed 3 populations of rats that migrated to cultivated fields in the 1940s and described them as frequent migrations to areas with an abundance of food [10.14.15].

Flooding is a great disaster that not only kills rats, but also causes great material and economic damage to the national economy and private households. Such disasters were repeated several times during the flood of the Amu Darya. In the summer of 1943, there was a big flood that flooded the two villages of Kenes and Bes Kalhos, located between the Kongrot region and Lake Sudochye. Then the

flood intensified, and the territory from the banks of the Amu Darya to the sheer cliffs of Ustyurt was flooded. The people gathered on the nearby hills and suffered with their food and mats, which they took on foot. The depth of the water was so high that the tops of the poplars were submerged. People sailed with the help of oars on boats and ships that they found with the help of Moinok's relatives. Bearing beams 3-4 meters long were flooded. They say that under the clear water at an inaccessible depth, flooded crops of cotton, white johori and policy were visible. At this time, a 13-year-old boy (Prof. G.A. Asenov) remembered the place of his birth. Under this blue sea, all kinds of wild animals and plants, as well as cultivated grains, rice crops, gardens and orchards, perished. This year, the right bank of the Amu Darya and the Amu Darya-Kushkhan mountain range were also flooded. This was an unexpected natural disaster, the settlements located on both banks of this river were separated from their possessions, which were flooded with water, and people moved from Chomanai (left bank of the river), Shakhaman and Karao, which lasted for two years. They came and settled in the areas of the mind (shores of consciousness)[3].

After that, the floods were repeated in 1946, 1950 and 1963, and in small areas there were floods, and the old riverbeds, which were previously dry or flooded lakes, were filled with water. Then, even if such floods occur, they are limited to limited areas and residential areas. During this period, rats and other rodents and animals survived on the hills. After these big floods (1953) the population and number of rats decreased sharply, to a very insignificant number (Mokeeva, 1952, Soldatkin, 1955, Kostin, 1962, Asenov, 1968).[3.10.14.16]

According to V.P. Kostin (1959), G.A. Asenov and Barovsky (1964), not a single population of rats was found between the heights of Mount Kuskhan and Mount Porli and Nukus and Chortanboy, the Kazakh River and Takhtakopyr. At the same time, during our research in 1963, between lakes Shakhaman and Itkir-Chilim, we saw many empty rat nests even in reed fields with water under them. There are no such single rats, before there were many rats, dense nests are often found in the mountainous regions of Bugutli-Kushkhan and Purli [17].

After the great flood, the rat began to appear in 1962. Migratory rats were often observed in autumn (September-October) of this year. Since then, rats have appeared in many convenient habitats. At first, the rats cleaned out the old nests in the wastelands of the reeds, and now they began to multiply by eating the thick and young roots of the reeds.

In the spring of 1963, new dense nests were counted in the thickets of young dense reeds between the gardens of Bogatli-Shilimkol, Itkir-Andijan, 5 km away. In some areas, plots with 1-5 rats per 1 ha are frequent and plentiful.

The lake was covered with dense and young reeds, and its outskirts were covered with young shrubs mixed with reeds, creating the most favorable habitats for rats. In conclusion, it will not be a mistake to say that the most favorable ecological conditions for rat nests have been created in the entire delta region.

Summary: Habitat habitats and the most favorable conditions for the life of the flat-toothed rat have been created throughout the Amudar delta.

Summary: Habitat biotopes and the most favorable conditions for the vital activity of the flat-toothed rat have been created throughout the territory of the Amudary delta.

REFERENCES:

1. Vinogradov B.S., Argiropulo A.I., Geptner V.G. 1936. Georgians of Central Asia, ANSSSR, M-L.

2. B. S. Vinogradov and I. M. Gromov, 1952. The rodent fauna of the USSR. M-L.

3. Asenov G.A. Ecology of rodents in the oasis of the lower reaches of the Amudarya and ix epizootological and epidemiological significance. Abstract of Candidate of Diss. 19 p. Frunze. 1968

4. Beltishchev P.A. About the earth rat in the delta of the Amudarya Plant protection herald #2.1941.

5. Bondar E.P. On the question of the distribution of the earth rat over the irrigated lands of Central Asia and preventive measures for its resettlement. Scientific conference of the National Research University of Central Asia and Kazakhstan (Abstract) Alma-Ata 1959.

6. Bondar E.P. On the ecology of the earth rat. Sat 1-5. Distribution and stationary security, nutrition, activity and foraging activities, shelters and burrowing activities, On the issue of combating the earth rat. Mater., Scientific Conf. nature. Foci and profile of plague. February Alma-Ata.1963.

7. Bondar E.P. Ecology of the earth rat (Nesokia indica Grey). Abstract of Ph.D. dissertation of ANKaz SSR. Alma-Ata, 1965.

8. Gromov I.M., Gureev A.A., Novikov G.A., Ph.D. Mammalian fauna of the USSR. Part 1. Publishing house of the ANSSR. M-L. 1963.

9. Kostin V.P. Rodents of the Lower Amu Darya, Ustyurt and adjacent territories. Publishing house of SamGU, Tashkent 1962.

10. Soldatkin I.S. Brief essay on the ecology of the lamellar-toothed rat and borbiasneu in the Amudarya-Gryz delta. What is the first time? Issue 4. "Microbe" Saratov 1955

11. Shcheglova E.A. The important role of rat plastinhatosobo and the epidemiology of tularemia in the Amu-Darya River. Works of the Turkmen anti-plague station, T. 1. Ashgabat, 1960.

12. Pletneva N.A., Karpusheva A.M., 1960. Susceptibility of plastozoan rats to plague infection, its leading role in the epizootology of plague in Turkmenistan. Turv anti-plague station in Ashgabat. "Questions of the nature of focality and epizotology of plague in Turkmenistan".

13. Sharapkova N.I., Serzhanov O.S. Maksimenko N.P., Adunts N.A., Churbakova A.E. To the question of the cause of pasteurellosis in the territory of Karakalpakstan. Owner. III scientific conference on natural sciences Foci and profile of plague. Alma-Ata 1965.

14. Mokeeva T. M., Polyakov I. Ya. 1952. Earthen roof in the Amudarya delta and issues of fighting it in connection with the construction of the Main Turkmen Canal. Zoological journal, vol. 1, p. XXXI, issue 6.

15. Vinogradov B.S., Argiropulo A.I., Geptner V.G. Rodents of Central Asia. ANSSSR, M-L., 1936

16. Kostin V.P. Rodents of the Lower Amu Darya, Ustyurt and adjacent territories. Publishing house of SamGU, Tashkent 1962.

17. Asenov G.A. On some features of the stationary distribution of rodents and ix block on the ethics of the desert and oasis. In the book: Natural foci of diseases and questions of parasitology. Frunze, 1964. Issue 4.S.100-101.

18. Ognev S.I., Geptner V.G. Mammals of the Middle Kopetdag and adjacent plains. tr. Scientific research Institute of Zoology. Moscow State University, vol. III, issue 1, M. 1929.

19. Varshavsky S.N. 1950. Kurganchikovy and house mice at an early age. Vestnik MOIP, t.u., issue 6.