



FAUNA AND ECOLOGY OF BUTTERFLIES OF THE FAMILY NOTODONTIDAE OF THE LOWER AMUDARYA STATE BIOSPHERE RESERVE

Abdullaeva Mekhriban

Urganch State University

Teacher of the Department of Preschool Education Methodology

<https://doi.org/10.5281/zenodo.7492156>

Abstract: This article contains comments on the theoretical features of the fauna and ecology of the butterflies of the Notodontidae family of the lower Amudarya biosphere reserve.

Key words: lower Amudarya, biosphere, ecology, butterfly fauna, reserve.

The Lower Amudarya Biosphere Reserve was established in 2011 and occupies an area of 68,717 hectares, which is 75% of all remaining orchards in Uzbekistan and 20% of orchards in Central Asia. In order to fulfill its goals and objectives, reserve, buffer and transition zones have been allocated in the territory of the biosphere reserve. The reserve zone consists of 11,568.3 hectares and is a strictly protected zone. This zone is intended for the complete preservation of natural objects and complexes, scientific research and monitoring. The lands of the reserve zone are assigned to the biosphere reserve for permanent use. In accordance with the law, the regime of state reserves has been established in the territory of the reserve zone of the biosphere reserve. As the groves are rich in natural food reserves, they are home to many species of wild animals.

As experts have informed, today 356 species of vertebrates, including 43 species of fish, 30 species of reptiles, 246 species of birds, 36 species of mammals, and 419 species of plants are found in the territory of the biosphere reserve. In particular, the most beautiful of mammals - Khanguli, i.e. Bukhara deer, is found in this region the most in Central Asia. The number of these rare animals increased from 2 pairs to about 800 in 10 years. Therefore, we have set ourselves the goal of studying the entomofauna of the Lower Amudarya state biosphere on a scientific basis.

Insect ecology is the study of the interaction of insects, either individually or in a given location, with their environment or ecosystem. Colorado beetle Insects are the largest group of animals in terms of species diversity (there are at least two million species, which is more than the total number of all other animals and plants).K. According to the calculation of B. Williams (C. W. Williams), insects are the most numerous by the number of individuals: there are at least 1018 individuals on the planet. The total biomass of just one grasshopper soil can exceed 10,000 tons.

The biodiversity of Lepidoptera insects of the Corydalis family (Lepidoptera, Notodontidae) in the tugai forests of the Lower Amudarya State Biosphere Reserve (NABR) was jointly studied. in order to study biodiversity and preserve fruit and woody trees from butterflies pests of the Corydalis family. The formulas by which we determined the frequency of occurrence of each species of Corydalis are given. The frequency of occurrence of species was estimated on the basis of many years of field research. The number of finds of each species and their frequency of occurrence are shown in Table 1. And also the wintering phases (Table 1) and the phenology of the summer of Corydalis are given in Table 2. The place of discovery of each

species and the number were described in detail. In the study of corydalis, a special study was given to the large harpy (Ceruravinula). Due to its high harmfulness, turanga leaves are completely destroyed, as a result, turanga remains naked. Excrement of the pest in the form of a granular preparation was observed on earthen ground. A month later, the leaves reappeared, and the pest disappeared. For two months (May-July), there were violations of physiological processes on Turanga trees, i.e. nutrition with the air of plants (photosynthesis) was disturbed. Based on the collected material, tables were compiled, as well as drawings from the reserve and the location of the reserve on the map. Thus, in the process of material processing on the territory, in the fauna of the spring-summer phenological period of the Lower Amudarya State Biosphere Reserve, 19 species of Corydalis belonging to 4 subfamilies and 12 genera were identified.

The purpose of conducting research on the territory of the Nizhne-Amudarya State Biosphere Reserve is to study the fauna and biodiversity of species of butterflies of the Corydalis family. The total area of NABR is 68717.8 ha. It is located in the lower reaches of the Amu Darya on its right bank. From the south, it is washed by the Amu Darya River and borders on the Tallyk tugai forest, and from the north and north-west it is surrounded by a tributary of the Amu Darya - the Kok Darya. The territory of NABR is divided into 3 functional zones; reserved, buffer, and transitional. The territory of the protected zone is intended for the conservation of old forests, forests of natural regeneration, rare and endangered species while preserving the biodiversity of the zone. In this zone, any industrial activity is prohibited and only research surveys and analyzes are allowed. A buffer area of 6,731.4 ha surrounds the protected area and provides a "buffer" or barrier between the protected area and the area of increased resource use. The buffer area provides important ecological corridors between the areas of the protected area for the movement of wild animals, contributes to the conservation of forests and their renewal. The transition zone or economic development zone 50,418.1 ha is adjacent to the main zones (reserve and buffer) and is intended for the development of sustainable nature management. This zone provides for the presence of the rural population, excludes large settlements and harmful and dangerous economic production facilities. Demonstration pilot projects are being implemented here on resource-saving technologies (drip irrigation, development of bio-organic farming, energy-efficient houses and stoves, stall keeping of cattle and small cattle), planting trees as a living barrier between the forest and the sown areas of local residents, development of beekeeping. The office of the biosphere reserve is located on the territory of the former Badai Tugai reserve. The tasks of the former reserve included the preservation of the tugai forest. The bioreserve is designed to preserve one of the most affected types of the tugai ecosystem with its unique flora and fauna. Additionally, the bioreserve, due to its various functional zones, will ensure the reproduction and sustainable use of natural resources by the local population, the socio-economic development of the region, and the protection of cultural values..

Материалом для статьи послужили сборы Х.У. Бекчанова, М.Р.Абдуллаевой, Г.К. Комилжоновой, произведённые им в разное время в течении 10 лет (с 2009 по 2019 гг.) на территории Нижне-Амударьинского Государственного биосферного резервата, а также не прилегающих к нему территориях. Сбор имаго проводился ночью привлечением на источник света с экраном и днем при помощи энтомологического сачка. Источником света в разное время служили электрическая ртутно-вольфрамовая лампа дневного света мощностью 250 Вт, лампа дуговая ртутно-люминесцентные 200

Вт, энергосберегающие и люминесцентные лампы ультрафиолетового и дневного света 8-30 Вт(Е.С. Кошкин, 2016).

The density of a species is the average number of individuals of a given species in terms of a unit of account. Accounting unit - 100 m². A comparative analysis of Lepidoptera groups in refugia was carried out using the following coefficients of species similarity; Czekanowski-Sørensen community similarity index (ICS), Jaccard index (K), Margalef species richness indices (DMg). The reliability of the obtained results was checked using the parametric Student's test (tst), (G.F. Lakin, 1990).



Location on the map of the Lower Amudarya State Biosphere Reserve.

The article presents the species composition and places of finds of butterflies from the Corydalids family. The frequency of occurrence is an indicator of the relative number of samples in which a species is represented to the total number of samples examined, expressed as a percentage. Also given are the formulas by which we determined the frequency of occurrence of each species of Corydalids. The frequency of occurrence of species was estimated on the basis of many years of field research. The number of finds of each species and their frequency of occurrence are given in Table 1. And also the wintering phases (Table 1) and the phenology of the summer of Corydalids are given in Table 2. The place of detection of each species and the number of specimens, as well as the location of the reserve and its division into refugia are described in detail : Beruni, Kegeyli, Sultan-Uvais and finally Amu Darya. In Figure 1, the location of the Lower Amudarya State Biosphere Reserve was marked. When studying Corydalids, a special study was given to the large harpy (Ceruravinula). Due to its high harmfulness, turanga leaves are completely destroyed, as a result, turanga remains naked. Excrement of the pest in the form of a granular preparation was observed on earthen ground. A month later, the leaves reappeared, and the pest disappeared. For two months (May-July), there were violations of physiological processes on Turanga trees, i.e. nutrition with the air of plants (photosynthesis) was disturbed. On the basis of the collected material, tables were compiled, as well as drawings from the reserve and the location of the reserve on the map. 4 subfamilies and 12 genera. Some of the above species have significantly changed their numbers during the observation period in the reserve.

References:



- 1.Александров И.Н., Скрипка О.В., Дудченко И.П., Сурина Т.А., НикифоровС.В.Фитофтороз земляники. Защита и карантин растений – 2007, стр 32 – 34
- 2.Васильев В.П., Лившиц И.З. Вредители плодовых культур. - М.Колос, 1984.- 399с.
- 3.Kharatova, S. K., & Ismailov, T. X. O. G. L. (2022). Use of innovative technologies in the educational process. Science and Education, 3(3), 713-718.
- 4.Kharatova, S. K. (2021). TENDENCIES OF DEVELOPMENT OF DISTANCE EDUCATION IN GLOBAL TRANSFORMATION. Oriental renaissance: Innovative, educational, natural and social sciences, 1(10), 353-362.
- 5.П.Ю. Горбунов.Высшие чешуекрылые (Macrolepidoptera) пустынь и южных степей Западного Казахстана. Екати́ренбург. 2011. С. 45.
- 6.Kharatova, S. K. (2021). STRATEGIC ISSUES OF IMPROVING SPIRITUAL AND EDUCATIONAL ACTIVITIES IN THE REPUBLIC OF UZBEKISTAN. Academic research in educational sciences, 2(11), 313-320.
- 7.Лакин Г.Ф. Биометрия: учеб. пособие для биол. спец. вузов. – 4-изд., перераб. и доп. – М.: Высшая школа, 1990. – 352 с.
- 8.Лер П.А. Определитель насекомых Дальнего Востока России. Т. V. Ручейники и чешуекрылые. Ч.4. – Владивосток