



# NOCTUOID MOTHS (LEPIDOPTERA, NOCTUOIDEA) OF THE SOUTHERN PART OF KARAKALPAKSTAN

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## ABSTRACT

*The paper presents the results of faunal studies of the Lepidoptera group Noctuoidea in the southern part of Karakalpakstan, as well as a review of the literature on this topic. An annotated list of 51 species of 3 families is given: Erebidae, Nolidae and Noctuidae, which also includes previously published data on finds in the region.*

**KEY WORDS:** noctuoid, moths, Lepidoptera, Erebidae, Nolidae, Noctuidae, Karakalpakstan, ephemera, ephemerids, bush

## INTRODUCTION

The family of Noctuidae is the largest family of Lepidoptera. About 30 thousand species are known in the world fauna, and this figure can hardly be considered final. Uzbekistan stands out for its significant species abundance and zoogeographic diversity of the moths. The study of the Noctuidae fauna of Uzbekistan has always been associated with the study of the Lepidoptera fauna of the Khorezm oasis. The first information about the fauna of Noctuidae of the Kyzylkum desert is given in the works of E. Menetries (Menetries, 1832), Bogush (1935, 1956), Kuznetsov (1958, 1960) and many other scientists.

The taxonomic structure of the fauna of Lepidoptera moths and the phenology of the desert in the southern part of Karakalpakstan were studied.

Recently, there has been a great interest in studying both local faunas and individual aspects of the biology of various Lepidoptera groups (Kononenko, 2005; Barbarich, 2012; Barbarich, Dubatolov, 2012; Matov, Kononenko, 2012).

In information on the fauna of Lepidoptera moths, Kyzylkum desert is contained in separate works of the 20th century (Sukhareva, 1967; Daricheva 1988), as well as in modern identifiers and catalogs (Kononenko,

Sviridov, 2003; Kononenko, 2005; Matov et al., 2008; Kononenko, 2010). This work is devoted to the study of the fauna of Lepidoptera in the southern part of Karakalpakstan in the spring-summer period.

## AREA OF THE STUDY

The studies were conducted in the southern part of Karakalpakstan. Ephemeral plants and ephemeroids, including wild tulips, are abundant in the vegetation cover. Sand masses are characterized by Carex Arenaria, white Haloxylon, species of Calligonum, Salsola Richteri, for clay elevations - Asteraceae and Asteraceae - shrub vegetation.

In the north-west there are thickets of Anabasis salsa mixed with Amaranthaceae, along the valleys of dry channels there are forests of black Haloxylon.

The climate in the southern part of Karakalpakstan is sharply continental. Summer is hot, the average July temperature is from 26 to 29 ° C, (maximum 51 ° C), January is from 0 to - 9 ° C. Precipitation is about 100-200 mm per year, it falls mainly in winter and spring. Throughout the territory there is not a single surface watercourse (except for the Amu Darya River), but there are rich reserves of fresh groundwater.



Picture 1

## MATERIALS AND METHODS

The materials-the basis for this work were collected by the author in 2017-2019, (Picture 1.) And the collection is stored in the laboratories of the Department of Biology of Urgench State University. Research was held from the second decade of March to the second decade of August. The research was conducted in dots of the southern part of the Republic of Karakalpakstan,

- a) Miskin, near the railway station,
- b) 30 km north of the center of the Turkul district and in this point
- c) in the territories of the Ellikala district, in the village of Buston.

Catching was carried out at night using light lamp traps that installed a DRL-400 lamp. (Pictures 2-5) In this work, we adopted the classification of the

superfamily Noctuoidea according to the latest systematic list of European fauna (Fibiger et al., 2011), with the division of the group into 3 families: Erebiidae, Nolidae, and Noctuidae. The moth was determined according to the determinants (Kononenko, Sviridov, 2003; Kononenko, 2005; Kononenko, 2010), the Latin names of taxa are given in the Lepidoptera Catalog of Russia (Matov et al., 2008). For the most complete identification of the species composition of scythe lepidopterans in the study area, it is necessary to use the whole spectrum of collection methods, since some groups of species that do not feed on the adult stage or feed exclusively on flowers (Plusiinae, Cuculliinae) do not fly on bait at all; on the other hand, a number of species are much better attracted by bait than by light (some species of the genus Erebiidae).



Picture 2



Picture 3



Picture 4



Picture 5

## RESEARCH RESULTS AND DISCUSSION

In the fauna of Lepidoptera moths of the spring-summer phenological period in the southern part of

Karakalpakstan, 51 species are recorded, belonging to 26 genera of 15 subfamilies and 3 families, a systematic list of which is given below.

**Table 1. Identified species of Lepidoptera moths in the southern part of Karakalpakstan**

№	NAME OF TAXA	DISCOVERY DATE	COLLECTION POINTS		
			a	б	c
	Family Nolidae				
	Подсемейство Chloephorinae				
1	<i>Earias roseifera</i> Butler, 1881	03.07.2018,03.07.2019	+	+	+
	Family Erebidae				
	Subfamily Hypeninae				
2	<i>Rhynchodontodes ravalis</i> Herrich-Schaffer, 1851	03.07.2018,06.08.2019		+	
3	<i>Hypena kengkalis</i> Bremer	06.08.2018,18.07.2019	+		
	Subfamily Catocalinae				
4	<i>Catocala elocata</i> (Esper,1787)	03.07.2018,03.07.2019		+	
5	<i>Catocala puerpera</i> (Giorna, 1791)	12.08.2018, 13.08.2019	+		
6	<i>Catocala lupine</i> (Herrich-Schäffer, 1851)	03.07.2018,03.07.2019	+		
7	<i>Catocala optima</i> (Staudinger, 1888)	06.08.2018,18.07.2019		+	
8	<i>Catocala neonympha</i> (Esper, 1805)	06.08.2018,18.07.2019		+	
9	<i>Catocala deducta</i> (Eversmann, 1843)	10.08.2019, 18.06.2019		+	
10	<i>Catocala nupta</i> (Linnaeus, 1767)	06.08.2018,18.07.2019		+	
11	<i>Catocala electa</i> (Vieweg,1790)	25.05.2018,19.05.2019			+
12	<i>Catocala orientalis</i> (Staudinger, 1877)	12.08.2018, 13.08.2019	+		
13	<i>Catocala fulminea</i> (Scopoli, 1763)	12.08.2018, 13.08.2019			+
14	<i>Clytie syriaca</i> (Bugnion, 1837)	25.05.2018,19.05.2019			+
15	<i>Clytie illunaris</i> (Hubner 1813)	25.05.2018,19.05.2019		+	+
16	<i>Clytie gracilis</i> (A.Bang-Haas, 1907)	14.07.2018,11.06.2019	+		
17	<i>Pericyma albidentaria</i> (Freyer, 1842)	14.07.2018,11.06.2019		+	
18	<i>Anydrophila imitatrix</i> (Christoph,1887)	03.07.2018,03.07.2019	+		
	Subfamily Toxocampinae				
19	<i>Lygephilalubrica</i> (Freyer, 1846)	14.07.2018,11.06.2019			+
20	<i>Lygephila cracca</i> ([Denis et Schiffermüller],	03.07.2018,12.07.2019	+		



	1775)				
	Subfamily Boletobiinae				
21	Eublemma gratioza (Eversmann, 1854)	15.05.2018,18.05.2019		+	
	Subfamily Erebiniae				
22	Euclidia dentata (Staudinger, 1871)	25.05.2018,19.05.2019	+		
23	Euclidia glyphica (Linnaeus, 1758)	12.08.2018,17.08.2019			+
24	Euclidia mi (Clerk, 1759)	17.06.2018,21.06.2019			+
25	Euclidia triquetra ( Denis & Schiffermüller, 1775)	12.08.2018, 17.08.2019	+		
26	Dysgonia obscura (Bremer et Grey, 1853)	09.08.2018, 05.08.2019			+
27	Dysgonia rogenhoferi (Bahatsch, 1880)	10.08.2019, 18.06.2019	+		
	Family Noctuidae				
	Subfamily Plusiinae				
28	Macdunnoughia confusa (Stephens, 1850)	07.06.2018, 18.06.2019			+
29	Chrysodeixis chalcites (Esper, 1789),	12.08.2018, 13.08.2019	+	+	
30	Diachrysis nadeja (Oberthür, 1880),	12.06.2018, 30.06.2019	+		
31	Autographa mandarina (Freyer, 1845)	12.06.2018 14.07.2019			+
	Subfamily Acontiinae:				
32	Acontia trabealis (Scopoli, 1763).	26.05.2018,22.05.2019	+		
	Subfamily Pantheinae:				
33	Colocasia mus (Oberthür, 1884).	26.08.2018,17.08.2019			+
	Subfamily Acronictinae:		+		
34	Acronicta adaucta (Warren, 1909)	20.05.2018,25.05.2019			+
35	Acronicta alni (Linnaeus, 1767)	20.05.2018,19.05.2019			+
36	Acronicta digna (Butler, 1881)	28.08.2018,20.08.2019	+		
37	Acronicta leucocuspis (Butler, 1878)	22.07.2018,18.07.2019	+		
38	Acronicta rumicis (Linnaeus, 1758)	03.08.2018,01.08.2019		+	
39	Craniophora pacifica (Filipjev, 1927)	23.06.2018,08.06.2019		+	
	Subfamily Cuculliinae:				
40	Cucullia boryphora (Fischer de Waldheim, 1840)	22.08.2018,16.08.2019			+
41	Cucullia improba (Christoph,1885)	03.06.2018,21.06.2019	+		
42	Cucullia naruenensis (Staudinger, 1879)	18.05.2018,24.05.2019		+	
43	Cucullia hemidiaphana (Graeser,1829)	03.07.2018,29.09.2019	+		
44	Cucullia lucifuga (Denis et Schiffermüller, 1775)	08.05.2018,18.05.2019		+	
	Subfamily Heliiothinae:				+
45	Heliiothis maritima (Graslin, 1855)	03.05.2018,22.05.2019		+	
	Subfamily Xyleninae		+		
46	Orbona fragariae (Vieweg, 1790)	06.08.2018,01.08.2019	+		
	Subfamily Hadeninae			+	
47	Lacanobia aliena (Hübner, 1808)	16.08.2018,14.07.2019	+		
48	Lacanobia splendens (Hübner, 1808)	11.08.2018,18.08.2019			+
49	Leucania obsoleta (Hübner, 1803)	14.08.2018,22.08.2019			+
	Subfamily Noctuinae				
50	Ochropleura plecta (Linnaeus, 1761)	12.08.2018,15.08.2019	+		
51	Cerastis rubricosa (Denis et Schiffermüller, 1775)	03.07.2018,17.07.2019	+		

2 families are distinguished by the greatest number and species diversity: Erebidae - (26 species) and Noctuidae - (19 species). When analyzing the taxonomic structure of the material, 15 subfamilies were distinguished, which differ in the greatest species diversity (Catocalinae, Erebiniae, Plusiinae, Acronictinae, Cuculliinae). The remaining subfamilies have a small fraction of the total number of species. Such a distribution is quite typical for the fauna of the moths of deserts of the spring-summer phenological period.

## CONCLUSION

Thus, in the process of conducting the material on the territory, in the fauna of the spring-summer phenological period of the southern part of Karakalpakstan, 51 species of moths of Lepidoptera from 26 genera, 15 subfamilies and 3 families were identified. The dynamics of imago summers has one strongly pronounced threshold for increasing species diversity in June, associated with the activity of adults of the early summer and summer groups, and the second, less





pronounced, occurring at the end of spring, due to the overlap of the end of the summer of the spring fauna and the beginning of early summer activity.

## REFERENCES

1. Barbarich A.A. 2013. *The first information about the population of the moths (Lepidoptera, Noctuidae) of the Iversky reserve // Materials of the Xth Far Eastern Conference on Reserve Management. Blagoveshchensk: BSPU. P.38.*
2. Volynkin A.V. 2007. *About finds of rare and new for the Russian Altai species of moths (Lepidoptera, Noctuidae s.l.) // Altai Zoological Journal. Issue 1. P.17-20.*
3. Dubatolov V.V. 2011. *To the study of spring macroscopic wings (Insecta, Lepidoptera, Macroheterocera) of the Lower Amur Region: 2011 results // Amur Zoological Journal. Vol. 3. Issue 2. p.183-187*
4. Daricheva M.A. *To the biology of some lepidopterans harming saxaul and kandym in the lower reaches of Murghab (Turkmenistan SSR). Izvestiya AN TsSR. A series of biological sciences. - Ashgabat: Ylym, 1962. - No. 5. -p. 80-85*
5. Daricheva M.A. *Insects of the lower Murghab. Ashgabat. 1965.53 p.*
6. Klyuchko Z.F., Kononenko V.S., Mikkola K. 1992. *A systematic list of moths (Lepidoptera, Noctuidae) of the Daurian reserve // Insects of Dauria and adjacent territories. Collection of scientific papers. Issue 1. M.: Central Research Laboratory of Hunting and Reserves. P.31-46*
7. Kononenko V.S. 2003a. 12. *Subfamily. Bryophilinae // Key to insects of the Far East of Russia. T.V. Caddis flies and lepidoptera. Part 4. Vladivostok: Dalnauka. P.296-303.*
8. Kononenko V.S. 2003b. 14. *The subfamily. Amphipyriinae // Key to insects of the Russian Far East. T.V. Caddis flies and lepidoptera. Part 4. Vladivostok: Dalnauka. P.307-402.*
9. Kononenko V.S. 2003 c. 15. *Sub-sub. Cuculliinae // Key to insects of the Far East of Russia. T.V. Caddis flies and lepidopterans. Part 4. Vladivostok: Dalnauka. P.402-454.*
10. Matov A.Yu., Kononenko V.S., Sviridov A.V. 2008. *Catalog of Lepidoptera of Russia. St. Petersburg – Moscow: KMK. P.239-296, 341-347.*
11. Matov A.Yu., Kononenko V.S. 2012. *Trophic links of Noctuoidea caterpillars of the Russian fauna (Lepidoptera, Noctuoidea: Nolidae, Erebidae, Euteliidae, Noctuidae). Vladivostok: Dalnauka. P 347.*
12. Milko D.A. *The Noctuidae family - moths. // In the book: Cadastre of the genetic fund of Kyrgyzstan. T.III. Bishkek. 1996.P. 244-258*
13. Sviridov A.V. 1985. *Materials for the knowledge of the moths fauna (Lepidoptera, Noctuidae) of the Northern Amur region // Proceedings of the Zoological Museum of Moscow State University. T.23. Morphological and geographical aspects of the evolution of insects. Moscow: Moscow State University. P.155-182.*
14. Sviridov A.V. 2003a. 1. *Subfamily. Herminiinae // Key to insects of the Russian Far East. T.V. Caddis flies and lepidopterans. Part 4. Vladivostok: Dalnauka. P.34-70.*
15. Sviridov A.V. 2003b. 4. *Subfamily. Catocalinae // Key to insects of the Russian Far East. T.V. Caddis flies and lepidopterans. Part 4. Vladivostok: Dalnauka. P. 861-867.*
16. Sviridov A.V. 2003 c. 8. *Subfamily. Chloephorinae // Key to insects of the Russian Far East. T.V. Caddis flies and lepidopterans. Part 4. Vladivostok: Dalnauka. P.223-237.*
17. Sukhareva I.L. *To the fauna of the moths (Lepidoptera, Noctuidae) of the Kyzylkum desert // Insects of the arid regions of the USSR and neighboring countries / Tr. VEO. T.55. L. : Nauka, 1972.- p.55-65.*
18. Schetkin Yu.L. *The highest lepidopteran species of the Vakhsh valley. Dushanbe. 1965. p. 134-186 4. Cheek G.Kh. Scoops - pests of fields. Alma-Ata. 1975.P. 184.*
19. Ishkov E.V., Sukhareva I.L. *To the fauna moths (Lepidoptera, Noctuidae) Aksu. Dzhabaglinsky reserve (KazSSR). Tr. VEO. 1986, vol. 67, P. 6.6.*
20. Babics J., Kononenko V.S., Saldaitis A. 2012. *New genus and three new species of the subfamily Xyleninae (Lepidoptera, Noctuidae) // Zootaxa. Vol. 3509. P.55-68.*
21. Kononenko V.S. 2005. *Noctuidae Sibiricae. Vol. 1. An annotated check list of the Noctuidae (s. L.) (Insecta, Lepidoptera) of the Asian part of Russia and the Ural Region. Sorø: Entomological Press. 243 p.*
22. Ronkay G., Ronkay L., Gyulai P. 2011. *Cuculliinae II and Psaphidinae // The Witt Catalog. A Taxonomic Atlas of the Eurasian and North African Noctuoidea, Vol. 5. Budapest: HeteroceraPress. 380 p.*