

Additions to the list of Lepidoptera (Insecta, Lepidoptera) of North Kazakhstan

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Abstract

The article presents the results of studying the fauna of Lepidoptera in the North Kazakhstan region in the field season of 2023. An annotated check-list includes 162 species from the families Psychidae, Plutellidae, Depressariidae, Autostichidae, Gelechiidae, Pterophoridae, Pyralidae, Crambidae, Tortricidae, Cossidae, Sesiidae, Hesperidae, Papilionidae, Pieridae, Lycaenidae, Nymphalidae, Satyridae, Drepanidae, Geometridae, Lasiocampidae, Lemoniidae, Endromidae, Sphingidae, Notodontidae, Arctiidae, Erebidae, Noctuidae. 47 species reported from the North Kazakhstan region for the first time.

Keywords

Fauna, biodiversity, Psychidae, Plutellidae, Depressariidae, Autostichidae, Gelechiidae, Pterophoridae, Pyralidae, Crambidae, Tortricidae, Cossidae, Sesiidae, Hesperidae, Papilionidae, Pieridae, Lycaenidae, Nymphalidae, Satyridae, Drepanidae, Geometridae, Lasiocampidae, Lemoniidae, Endromidae, Sphingidae, Notodontidae, Arctiidae, Erebidae, Noctuidae, new data

Introduction

Previously, we published a series of articles on the Lepidoptera fauna of North Kazakhstan (Knyazev 2015; Knyazev and Zuban 2016; 2019; Zuban et al. 2022). The total number of species listed in these publications is 557. During the 2023 field season, in April, May and August, the author checked steppe habitats in the south of

the North Kazakhstan region, including rocky steppes and coniferous forests of the Kazakh uplands. Also, occasional observations of some species have been made in the northern part of the region (Fig. 1). The collected materials served as the basis for this article.

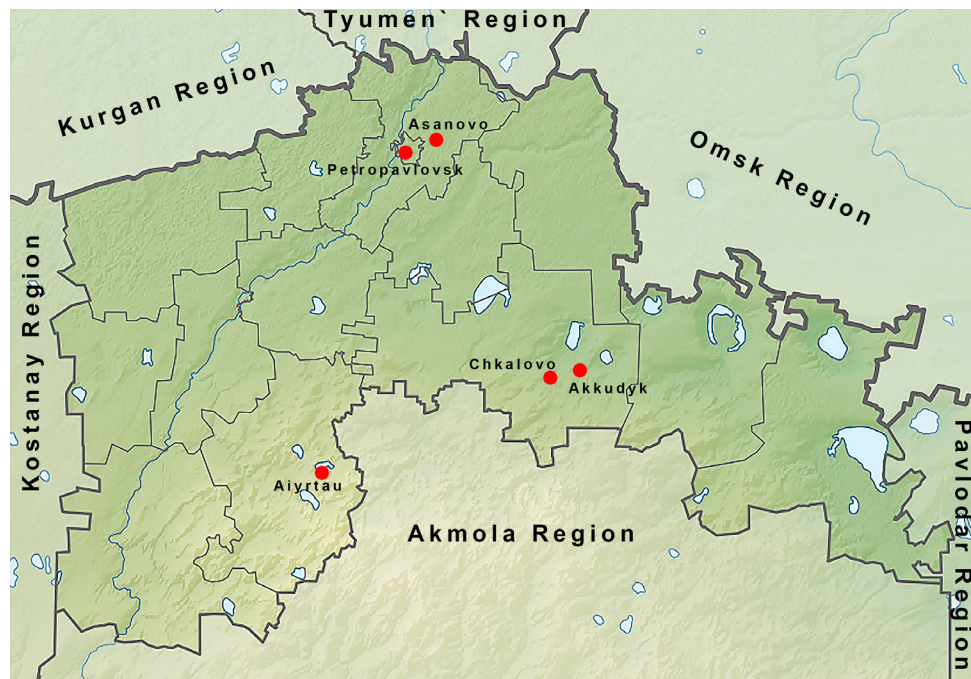


Figure 1. Localities of Lepidoptera collection in the North Kazakhstan region.

Materials and methods

Author used standard methods to collect specimens: catching butterflies with the air butterfly net; moths were collected using light traps (with mercury bulbs DRV-250), also using vine baits. All photos were made using Xiaomi Redmi Note 10Pro camera.

The systematic list is given in accordance with the last edition of the Catalogue of Lepidoptera of Russia (Sinev 2019). All specimens are stored in author's private collection (Omsk, Russia). New species to North Kazakhstan marked with an asterisk (*).

Materials were collected in the following localities:

Aiyrtau – Aiyrtau district, 2 km E of Aiyrtau village, uplands near lake Shalkar, 53°10'7.86"N, 68°22'19.62"E; Fig. 2.

Akkudyk – Taiynshinsky distr., 6 km SE of Akkudyk village, 53°37'58,64"N, 70°42'47,80"E; Fig. 3.

Asanovo – Kyzylzharsky district, 6 km N of Asanovo village, 54°54'48.96"N, 69°26'42.29"E;

Chkalovo – Taiynshinsky distr., 0,6 km S of Chkalovo village, 53°36'43.28"N, 70°26'15.30"E;

Petropavlovsk – Petropavlovsk, Park of the first President, 54°51'31.92"N, 69°8'10.43"E.



Figure 2. Landscapes of collecting points in the North Kazakhstan region: Aiyrtau, 22.04.2023, photo by S.A. Knyazev.



Figure 3. Landscapes of collecting points in the North Kazakhstan region: Akkudyk, 20.05.2023, photo by S.A. Knyazev.

Result

Family Psychidae

1. *Taleporia tubulosa* (Retzius, 1783) – 1 specimen, Aiyrtau, ex-larva, 20.05.2023. Figs 4, 5.

Family Plutellidae

2. **Plutella xylostella* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.05.2023.

Family Depressariidae

3. **Depressaria chaerophylli* Zeller, 1839 – 1♀, Aiyrtau, 19-20.08.2023.
4. *Depressaria hystericella* Möschler, 1860 – 1 specimen, Aiyrtau, 23-24.04.2023.

Family Autostichidae

5. *Deroxena venosulella* (Möschler, 1862) – 1 specimen, Aiyrtau, 19-20.05.2023. Fig. 6.

Family Gelechiidae

6. *Nothris lemniscella* (Zeller, 1839) – 1 specimen, Aiyrtau, 19-20.08.2023.

Family Pterophoridae

7. *Emmelina monodactyla* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 23-24.04.2023.

Family Pyralidae

8. **Acrobasis advenella* (Zincken, 1818) – 1♀, Aiyrtau, 19-20.08.2023.

Family Crambidae

9. **Crambus hamella* (Thunberg, 1788) – 1 specimen, Aiyrtau, 19-20.08.2023.
10. **Acentria ephemerella* ([Denis & Schiffermüller], 1775) – 2 specimens, Aiyrtau, 19-20.08.2023.
11. **Thisanotia chrysonuchella* (Scopoli, 1763) – 1 specimen, Aiyrtau, 19-20.05.2023.
12. **Titanio normalis* (Hübner, 1796) – 1 specimen, Aiyrtau, 20.05.2023, visual registration.
13. *Pyrausta despicata* (Scopoli, 1763) – 1 specimen, Aiyrtau, 20.05.2023.

14. *Loxostege sticticalis* (Linnaeus, 1761) – 1 specimen, Akkudyk, 20-21.05.2023; 1 specimen, Akkudyk, 20-21.08.2023.

Family Tortricidae

15. **Xerocnephasia rigana* (Sodoffsky, 1829) – 1 specimen, Aiyrtau, 23-24.04.2023.

Family Cossidae

16. **Cossus cossus* (Linnaeus, 1758) – larvae, Akkudyk, 20-21.08.2023.

Family Sesiidae

17. **Synanthedon uralensis* (Bartel, 1906) – exuvies in *Artemisia abrotanum*, Akkudyk, 20-21.08.2023.

Family HesperIIDae

18. *Hesperia comma* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.08.2023.
 19. *Pyrgus malvae* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023; 1 specimen, Aiyrtau, 20-21.05.2023.
 20. *Pyrgus alveus* (Hübner, 1803) – 1 specimen, Akkudyk, 20-21.05.2023.

Family Papilionidae

21. *Papilio machaon* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023; 1 specimen, Akkudyk, 20-21.05.2023, visual registration; 1 specimen, Akkudyk, 20-21.08.2023.

Family Pieridae

22. *Leptidea sinapis* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023, visual registration.
 23. *Antiocharis cardamines* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023, visual registration.
 24. *Pieris napi* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023; 1 specimen, Akkudyk, 20-21.05.2023.
 25. *Pontia edusa* (Fabricius, 1787) – 1 specimen, Akkudyk, 20-21.08.2023.
 26. *Colias chrysotheme* (Esper, 1781) – 1♂, Akkudyk, 20-21.05.2023.
 27. *Colias hyale* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023; 1 specimen, Akkudyk, 20-21.08.2023.

Family Lycaenidae

28. *Callophrys rubi* (Linnaeus, 1758) – 1 ♀, Aiyrtau, 20.05.2023.
29. *Celastrina argiolus* (Linnaeus, 1758) – 1 ♀, Aiyrtau, 20.05.2023.
30. *Pseudophilotes vicrama* (Moore, 1865) – 1 ♂, Akkudyk, 20.05.2023. Fig. 7.
31. *Polyommatus icarus* (Rottemburg, 1775) – 1 ♀, Akkudyk, 20.08.2023. Fig. 8.

Family Nymphalidae

32. *Nymphalis antiopa* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 23-24.04.2023, visual registration; 2 specimens, Asanovo, 19.05.2023, visual registration; 1 specimen, Aiyrtau, 20.05.2023, visual registration.
33. *Nymphalis xanthomelas* (Esper, 1781) – 1 specimen, Aiyrtau, 23-24.04.2023, visual registration; 1 specimen, Aiyrtau, 20.05.2023, visual registration.
34. *Polygonia c-album* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023, visual registration.
35. *Inachis io* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 23-24.04.2023, visual registration; 1 specimen, Aiyrtau, 20.05.2023, visual registration.
36. *Vanessa atalanta* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20.08.2023. Fig. 9.
37. *Vanessa cardui* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023, visual registration; 1 specimen, Akkudyk, 20-21.05.2023, visual registration.
38. *Araschiana levana* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023, visual registration.

Family Satyridae

39. **Lasiommata petropolitana* (Fabricius, 1787) – 27 specimens, Aiyrtau, 20.05.2023. Fig. 10.
40. *Coenonympha pamphilus* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 20.05.2023; multiple specimens, Akkudyk, 20-21.05.2023, visual registration; 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
41. **Triphysa phryne* (Pallas, 1771) – 2 ♂, 3 ♀, Akkudyk, 20-21.05.2023.
42. **Proterebia afra* (Fabricius, 1787) – 1 specimen, Akkudyk, 20-21.05.2023.
43. *Oeneis tarpeia* (Pallas, 1771) – 1 specimen, Aiyrtau, 20.05.2023.
44. *Arethusana arethusa* ([Denis & Schiffermüller], 1775) – 1 specimen, Akkudyk, 20-21.08.2023.
45. *Chazara briseis* (Linnaeus, 1764) – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.

Family Drepanidae

46. *Achlya flavicornis* (Linnaeus, 1758) – 1 ♂, Aiyrtau, 23-24.04.2023. Fig. 11.

Family Geometridae

Subfamily Archiearinae

47. *Archiearis parthenias* (Linnaeus, 1761) – 1 specimen, Aiyrtau, 23-24.04.2023, visual registration.

Subfamily Ennominae

48. *Ennomos autumnaria* (Werneburg, 1859) – 2♀, Aiyrtau, 19-20.08.2023; 1♀, Akkudyk, 20-21.08.2023.
 49. **Aspitates (Napuca) albaria* (Bartel, 1903) – 10♂, 2♀, Akkudyk, 20-21.05.2023. Fig. 12.
 50. *Aspitates (Aspitates) gilvaria* ([Denis & Schiffermüller], 1775) – 36 specimens, Akkudyk, 20-21.08.2023.
 51. *Cleora cinctaria* (Denis et Schiffermüller, 1775) – 1 specimen, Aiyrtau, 19-20.05.2023.
 52. *Biston strataria* (Hufnagel, 1767) – 3♂, Aiyrtau, 23-24.04.2023.
 53. *Ematurga atomaria* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023.
 54. *Isturgia murinaria* (Denis et Schiffermüller, 1775) – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Chkalovo, 20.08.2023.
 55. **Narraga tessularia* (Metzner, 1845) – 1 specimen, Akkudyk, 20-21.05.2023.

Subfamily Larentiinae

56. **Lobophora halterata* (Hufnagel, 1767) – 1♀, Aiyrtau, 19-20.05.2023. Fig. 13.
 57. *Phibalapteryx virgata* (Hufnagel, 1767) – 3 specimens, Aiyrtau, 19-20.05.2023; 1 specimen, Akkudyk, 20-21.05.2023; 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
 58. *Eupithecia succenturiata* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.08.2023.

Subfamily Sterrhinae

59. *Scopula decorata* ([Denis & Schiffermüller], 1775) – 1 specimen, Akkudyk, 20-21.08.2023.
 60. *Scopula marginepunctata* (Goeze, 1781) – 3 specimens, Aiyrtau, 19-20.08.2023.
 61. *Scopula ornata* (Scopoli, 1763) – 1 specimen, Akkudyk, 20-21.05.2023.
 62. *Scopula rubiginata* (Hufnagel, 1767) – 1 specimen, Akkudyk, 20-21.08.2023.

Family Lasiocampidae

63. **Eriogaster lanestris* (Linnaeus, 1758) – 150♂, 30♀, Aiyrtau, 23-24.04.2023. Fig. 14,15.
64. *Phyllodesma tremulifolium* (Hübner, 1810) – 4♂, Aiyrtau, 19-20.05.2023; 2♂, Akkudyk, 20-21.05.2023. Fig. 16.

Family Lemoniidae

65. *Lemonia taraxaci* ([Denis & Schiffermüller], 1775) – 8♂, Akkudyk, 20-21.08.2023. Fig. 17.

Family Endromididae

66. *Endromis versicolora* (Linnaeus, 1758) – 1♂, 1♀, Aiyrtau, 23-24.04.2023.

Family Sphingidae

67. *Sphinx ligustri* Linnaeus, 1758 – 1 specimen, Aiyrtau, 19-20.05.2023.
68. **Hyloicus pinastri* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.05.2023.
69. *Hyles euphorbiae* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.08.2023.
70. *Hyles gallii* (Rottemburg, 1775) – 5 specimens, Aiyrtau, 19-20.05.2023; 1 specimen, Akkudyk, 20-21.05.2023; 1 specimen, Aiyrtau, 19-20.08.2023; 7 specimens, Akkudyk, 20-21.08.2023. Fig. 18.
71. *Choerocampa porcellus* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023.

Family Notodontidae

72. *Notodonta tritophus* ([Denis & Schiffermüller], 1775) – 2♂, Aiyrtau, 19-20.05.2023; 2♂, Akkudyk, 20-21.05.2023. Fig. 19.
73. *Eligmodonta ziczac* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023.

Family Arctiidae

Subfamily Lithosiinae

74. *Manulea complana* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.08.2023.
75. *Miltochrista miniata* (Forster, 1771) – 1 specimen, Aiyrtau, 19-20.08.2023.

Subfamily Arctiinae

76. *Coscinia cribraria* (Linnaeus, 1758) – 2♂, Aiyrtau, 19-20.08.2023.
77. *Eucharia festiva* (Hufnagel, 1766) – 3♂, Akkudyk, 20-21.05.2023. Fig. 20.

Family Erebidae

Subfamily Hypeninae

78. *Zekelita ravulalis* (Staudinger, 1879) – 1 specimen, Akkudyk, 20-21.05.2023.
79. *Hypena rostralis* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023.

Subfamily Erebininae

80. **Catocala neonympha* (Esper, 1805) – 1 specimen, Akkudyk, 20-21.08.2023.
81. *Catocala nupta* (Linnaeus, 1767) – 1 specimen, Petropavlovsk, 18.08.2023; 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
82. *Catocala fraxini* (Linnaeus, 1758) – 1 specimen, Petropavlovsk, 18.08.2023; 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023. Fig. 21.
83. *Catocala pacta* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.08.2023.
84. *Callistege mi* (Clerck, 1759) – 1 specimen, Aiyrtau, 19-20.05.2023; 1 specimen, Akkudyk, 20-21.05.2023.

Subfamily Toxocampinae

85. *Lygephila cracca* ([Denis & Schiffermüller], 1775) – 2 specimens, Aiyrtau, 19-20.08.2023.

Family Noctuidae

Subfamily Acontiinae

86. *Acontia trabealis* (Scopoli, 1763) – 1 specimen, Akkudyk, 20-21.08.2023.

Subfamily Acronictinae

87. *Acronicta auricoma* ([Denis & Schiffermüller], 1775) – 1 specimen, Aiyrtau, 19-20.05.2023.
88. *Acronicta cinerea* (Hufnagel, 1766) – 1 specimen, Aiyrtau, 19-20.05.2023.
89. *Acronicta rumicis* (Linnaeus, 1758) – 1 specimen, Akkudyk, 20-21.05.2023; 1 specimen, Akkudyk, 20-21.08.2023.

Subfamily Cuculliinae

90. *Cucullia artemisiae* (Hufnagel, 1766) – 1 specimen, Akkudyk, 20-21.08.2023.
91. *Cucullia biornata* Fischer von Waldheim, 1840 – 1 specimen, Akkudyk, 20-21.05.2023. Fig. 22.

92. *Cucullia mixta* Freyer, 1841 – 10 specimens, Akkudyk, 20-21.05.2023.
93. *Cucullia propinqua* Eversmann, 1842 – 1 specimen, Akkudyk, 20-21.05.2023.
94. *Cucullia splendida* (Cramer, 1777) – 1 specimen, Akkudyk, 20-21.08.2023.
95. *Cucullia umbratica* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.08.2023.
96. **Cucullia virgaureae* Boisduval, 1840 – 1 specimen, Aiyrtau, 19-20.08.2023.

Subfamily Oncocnemidinae

97. **Calophasia lunula* (Hufnagel, 1766) – 1 specimen, Aiyrtau, 19-20.05.2023.
98. *Sympistis nigricula* (Eversmann, 1847) – 10 specimens, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023. Fig. 23.
99. **Sympistis senica* (Eversmann, 1856) – 10 specimens, Aiyrtau, 19-20.08.2023.

Subfamily Amphipyridae

100. *Amphipyra pyramidea* (Linnaeus, 1758) – 1 specimen, Petropavlovsk, 18.08.2023; 2 specimens, Akkudyk, 20-21.08.2023.
101. *Brachionycha nubeculosa* (Esper, 1785) – 11 specimens, Aiyrtau, 23-24.04.2023.

Subfamily Heliothinae

102. *Heliothis adaucta* Butler, 1878 – 1 specimen, Akkudyk, 20-21.08.2023.

Subfamily Bryophilinae

103. **Bryophila orthogramma* Boursin, 1954 – 1 specimen, Akkudyk, 20-21.08.2023.
104. **Athaumasta expressa* (Lederer, 1855) – 1 specimen, Aiyrtau, 19-20.05.2023.

Subfamily Noctuinae

105. *Caradrina albina* Eversmann, 1848 – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
106. **Caradrina terrea* Freyer, 1840 – 3 specimens, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
107. **Caradrina inumbrata* (Staudinger, 1900) – 1♀, Aiyrtau, 19-20.08.2023.
108. **Sidemia spilogramma* (Rambur, 1871) – 1 specimen, Akkudyk, 20-21.08.2023.
109. *Calamia tridens* (Hufnagel, 1766) – 3 specimens, Aiyrtau, 19-20.08.2023; 2 specimens, Chkalovo, 20.08.2023. Fig. 24.
110. *Staurophora celsia* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
111. **Celaena haworthii* (Curtis, 1829) – 1 specimen, Aiyrtau, 19-20.08.2023.

112. **Helotropha leucostigma* (Hübner, 1808) – 1 specimen, Aiyrtau, 19-20.08.2023; 9 specimens, Akkudyk, 20-21.08.2023. Fig. 25.
113. **Fabula zollikoferi* (Freyer, 1836) – 5 specimens, Akkudyk, 20-21.08.2023. Fig. 26.
114. *Nonagria typhae* (Thunberg, 1784) – 1 specimen, Aiyrtau, 19-20.08.2023.
115. *Photedes fluxa* (Hübner, 1809) – 1 specimen, Aiyrtau, 19-20.08.2023.
116. *Globia sparganii* (Esper, 1790) – 1 specimen, Akkudyk, 20-21.08.2023. Fig. 27.
117. **Apamea oblonga* (Haworth, 1809) – 1♂, Akkudyk, 20-21.08.2023.
118. **Xanthia togata* (Esper, 1788) – 4 specimens, Akkudyk, 20-21.08.2023.
119. *Cirrhia icteritia* (Hufnagel, 1766) – 2 specimens, Aiyrtau, 19-20.08.2023; 27 specimens, Akkudyk, 20-21.08.2023. Fig. 28.
120. **Cirrhia ocellaris* (Borkhausen, 1792) – 3 specimens, Akkudyk, 20-21.08.2023. Fig. 29.
121. **Cirrhia tunicata* (Graeser, 1890) – 2 specimens, Akkudyk, 20-21.08.2023.
122. **Sunira circellaris* (Hufnagel, 1766) – 2 specimens, Akkudyk, 20-21.08.2023.
123. *Conistra rubiginea* (Denis et Schiffermüller, 1775) – 1 specimen, Aiyrtau, 23-24.04.2023.
124. *Conistra vaccinii* (Linnaeus, 1761) – 1 specimen, Aiyrtau, 23-24.04.2023.
125. *Xylena exsoleta* (Linnaeus, 1758) – 3 specimens, Aiyrtau, 23-24.04.2023.
126. **Xylena solidaginis* (Hübner, 1803) – 1 specimen, Akkudyk, 20-21.08.2023. Fig. 30.
127. *Xylena vetusta* (Hübner, 1813) – 1 specimen, Aiyrtau, 23-24.04.2023; 1 specimen, Akkudyk, 20-21.05.2023.
128. *Enargia paleacea* (Esper, 1788) – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
129. **Leucochlaena fallax* (Staudinger, 1870) – 2♀, Akkudyk, 20-21.08.2023.
130. *Mniotype satura* ([Denis & Schiffermüller], 1775) – 2 specimens, Aiyrtau, 19-20.08.2023.
131. *Panolis flammea* ([Denis & Schiffermüller], 1775) – 1 specimen, Aiyrtau, 23-24.04.2023.
132. **Egira conspicularis* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.05.2023. Fig. 31.
133. *Orthosia incerta* (Hufnagel, 1766) – 1 specimen, Aiyrtau, 23-24.04.2023; 1 specimen, 19-20.05.2023.
134. *Orthosia opima* (Hübner, 1809) – 1 specimen, Aiyrtau, 23-24.04.2023.
135. *Perigrapha circumducta* (Lederer, 1855) – 4 specimens, Aiyrtau, 23-24.04.2023. Fig. 32.
136. *Tholera cespitis* ([Denis & Schiffermüller], 1775) – 4 specimens, Akkudyk, 20-21.08.2023.
137. *Tholera decimalis* (Poda, 1761) – 1♂, Aiyrtau, 19-20.08.2023.
138. *Anarta trifolii* (Hufnagel, 1766) – 1 specimen, Aiyrtau, 19-20.05.2023; 1 specimen, Akkudyk, 20-21.05.2023; 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023. Fig. 33.

139. **Pachetra sagittigera* (Hufnagel, 1766) – 2♂, Aiyrtau, 19-20.08.2023; 2♂, Akkudyk, 20-21.05.2023.
140. *Lacanobia suasa* (Denis et Schiffermüller, 1775) – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.05.2023. Fig. 34.
141. *Lacanobia thalassina* (Hufnagel, 1766) – 1 specimen, Aiyrtau, 19-20.08.2023.
142. *Mamestra brassicae* (Linnaeus, 1758) – 2 specimens, Akkudyk, 20-21.08.2023.
143. *Sideridis turbida* (Esper, 1790) – 1♂, Akkudyk, 20-21.05.2023.
144. **Mythimna anderreggii* (Boisduval, 1840) – 10 specimens, Aiyrtau, 19-20.05.2023; 24 specimens, Akkudyk, 20-21.05.2023. Fig. 35.
145. **Eriopygodes impar* (Staudinger, 1870) – 3 specimens, Akkudyk, 20-21.05.2023. Fig. 36.
146. *Dichagyris musiva* (Hübner, 1803) – 1 specimen, Akkudyk, 20-21.08.2023.
147. *Euxoa adumbrata* (Eversmann, 1842) – 1 specimen, Aiyrtau, 19-20.08.2023; 2 specimens, Akkudyk, 20-21.08.2023.
148. *Euxoa basigramma* (Staudinger, 1870) – 15 specimens, Akkudyk, 20-21.08.2023.
149. **Euxoa deserta* (Staudinger, 1870) – 1 specimen, Aiyrtau, 19-20.08.2023; 13 specimens, Akkudyk, 20-21.08.2023. Fig. 37.
150. **Euxoa distinguenda* (Lederer, 1857) – 2♂, Akkudyk, 20-21.08.2023.
151. **Euxoa hastifera* (Donzel, 1847) – 37 specimens, Akkudyk, 20-21.08.2023.
152. *Euxoa nigricans* (Linnaeus, 1761) – 4 specimens, Aiyrtau, 19-20.08.2023; 8 specimens, Akkudyk, 20-21.08.2023.
153. *Euxoa obelisca* ([Denis & Schiffermüller], 1775) – 1 specimen, Akkudyk, 20-21.08.2023.
154. *Euxoa ochrogaster* (Guenée, 1852) – 15 specimens, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
155. **Euxoa vitta* (Donzel, 1847) – 28 specimens, Aiyrtau, 19-20.08.2023; 5 specimens, Akkudyk, 20-21.08.2023. Fig. 38.
156. *Agrotis vestigialis* (Hufnagel, 1766) – 1♂, Akkudyk, 20-21.08.2023.
157. **Agrotis characteristica* Alphéraky, 1892 – 5 specimens, Aiyrtau, 19-20.08.2023; 101 specimens, Akkudyk, 20-21.08.2023. Fig. 39.
158. *Agrotis trifurca* Eversmann, 1837 – 2 specimens, Aiyrtau, 19-20.08.2023; 5 specimens, Akkudyk, 20-21.08.2023.
159. **Chersotis transiens* (Staudinger, 1897) – 3 specimens, Aiyrtau, 19-20.08.2023.
160. *Spaelotis ravida* ([Denis & Schiffermüller], 1775) – 1 specimen, Aiyrtau, 19-20.08.2023; 1 specimen, Akkudyk, 20-21.08.2023.
161. *Xestia c-nigrum* (Linnaeus, 1758) – 1 specimen, Aiyrtau, 19-20.08.2023; 2 specimens, Akkudyk, 20-21.08.2023.
162. *Xestia baja* ([Denis & Schiffermüller], 1775) – 1 specimen, Aiyrtau, 19-20.08.2023.



Figures 4–21. Adult specimens in Nature, photos by S.A. Knyazev: 4 – *Taleporia tubulosa*, a case, Aiyrtau, 22.04.2023; 5 – *Taleporia tubulosa*, adult, male, ex pupa, Aiyrtau, 20.05.2023; 6 – *Deroxena venosulella*, Aiyrtau, 20.05.2023; 7 – *Pseudophilotes vicrama*, Akkudyk, 20.05.2023; 8 – *Polyommatus icarus*, Akkudyk, 20.08.2023; 9 – *Vanessa atalanta*, Akkudyk, 20.08.2023; 10 – *Lasiommata petropolitana*, Aiyrtau, 20.05.2023; 11 – *Achlya flavicornis*, Aiyrtau, 22–23.04.2023; 12 – *Aspitates (Napuca) albaria*, Akkudyk, 20.05.2023; 13 – *Lobophora halterata*, Aiyrtau, 19–20.05.2023; 14 – *Eriogaster lanestris*, ♂, Aiyrtau, 23–24.04.2023; 15 – *Eriogaster lanestris*, ♀, Aiyrtau, 23–24.04.2023. Continued on the next page.

Figures 4–21. Continued from the previous page. **16** – *Phyllodesma tremulifolium*, Aiyrtau, 20.05.2023; **17** – *Lemonia taraxaci*, Akkudyk, 20-21.08.2023; **18** – *Hyles gallii*, Akkudyk, 20-21.08.2023; **19** – *Notodonta tritophus*, Aiyrtau, 19-20.05.2023; **20** – *Eucharia festiva*, Akkudyk, 20-21.05.2023; **21** – *Catocala fraxini*, Akkudyk, 20-21.08.2023.



Figures 22–39. Adult specimens in Nature, photos by S.A. Knyazev: **22** – *Cucullia biornata*, Akkudyk, 20-21.05.2023; **23** – *Sympistis nigricula*, Akkudyk, 20-21.08.2023; **24** – *Calamita tridens*, Aiyrtau, 20-21.08.2023. Continued on the next page.

Figures 22–39. Continued from the previous page. **25** – *Helotropha leucostigma*, Akkudyk, 20-21.08.2023; **26** – *Fabula zollikoferi*, Akkudyk, 20-21.08.2023; **27** – *Globia sparganii*, Akkudyk, 20-21.08.2023; **28** – *Cirrhia icteritia*, Akkudyk, 20-21.08.2023; **29** – *Cirrhia ocellaris*, Akkudyk, 20-21.08.2023; **30** – *Xylena solidaginis*, Akkudyk, 20-21.08.2023; **31** – *Egira conspicillaris*, Aiyrtau, 19-20.05.2023; **32** – *Perigrapha circumducta*, Aiyrtau, 23-24.04.2023; **33** – *Anarta trifolii*, Aiyrtau, 19-20.05.2023; **34** – *Lacanobia suasa*, Aiyrtau, 19-20.05.2023; **35** – *Mythimna anderreggi*, Aiyrtau, 19-20.05.2023; **36** – *Eriopygodes impar*, Akkudyk, 20-21.08.2023; **37** – *Euxoa deserta*, Akkudyk, 20-21.08.2023; **38** – *Euxoa vitta*, Akkudyk, 20-21.08.2023; **39** – *Agrotis characteristica*, Akkudyk, 20-21.08.2023.

Thus, the list of Lepidoptera of the North Kazakhstan region has been replenished with 47 species. *Heliothis maritima* (Graslin, 1855) was erroneously stated for the fauna of North Kazakhstan (Zuban` et al. 2022) and excluded from the list of Lepidoptera of this Region. This indication should refer to the species *Heliothis adaucta* Butler, 1878. The total number of species known from the territory of the North Kazakhstan region is 603.

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References

- Knyazev SA (2015) The list of Lepidoptera (Insecta, Lepidoptera) of Northern Kazakhstan. Amurian zoological journal 7 (4): 325–331. [In Russian]
- Knyazev SA, Zuban IA (2016) The list of Lepidoptera (Insecta, Lepidoptera) of Northern Kazakhstan. Part 2. Amurian zoological journal 8 (3): 199–208. [In Russian]
- Knyazev SA, Zuban IA (2019) The list of Lepidoptera (Insecta, Lepidoptera) of Northern Kazakhstan. Part 3. Acta Biologica Sibirica 5 (1): 133–140. <https://doi.org/10.14258/abs.v5.i1.5348> [In Russian]
- Sinev SYu (Ed.) (2019) Catalog of Lepidoptera of Russia. Edition 2. Zoological Institute of RAS, Saint Petersburg, 448 pp. [In Russian]
- Zuban IA, Knyazev SA, Schevchuk NV, Korobeinikova YuN (2022) Results of studying the fauna of Lepidoptera in the North Kazakhstan region (Republic of Kazakhstan) in 2019–2021. Acta Biologica Sibirica 8: 115–128. <https://doi.org/10.5281/zenodo.7700512>