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**LEPIDOPTERA (INSECTA) OF PROPOSED SPECIALLY PROTECTED  
NATURAL AREA 'BELOKURIKHA NATURE PARK' (NORTHERN ALTAI).  
FIRST RESULTS**

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149 Lepidoptera species from 16 families were reported for the territory of the proposed protected area "Belokurikha Natural Park". This list is the primary data on the fauna of Lepidoptera in the region. Most of the species belongs to Euro-Siberian and Transpalearctic groups.

*Key words: Altai, fauna, protected areas, Lepidoptera.*

## INTRODUCTION

The study is carried out within the project on creation of specially protected natural area (SPNA) of regional importance, Belokurikha Natural Park, in the Smolenskiy and Altayskiy districts of the Altai Krai (Fig. 1).

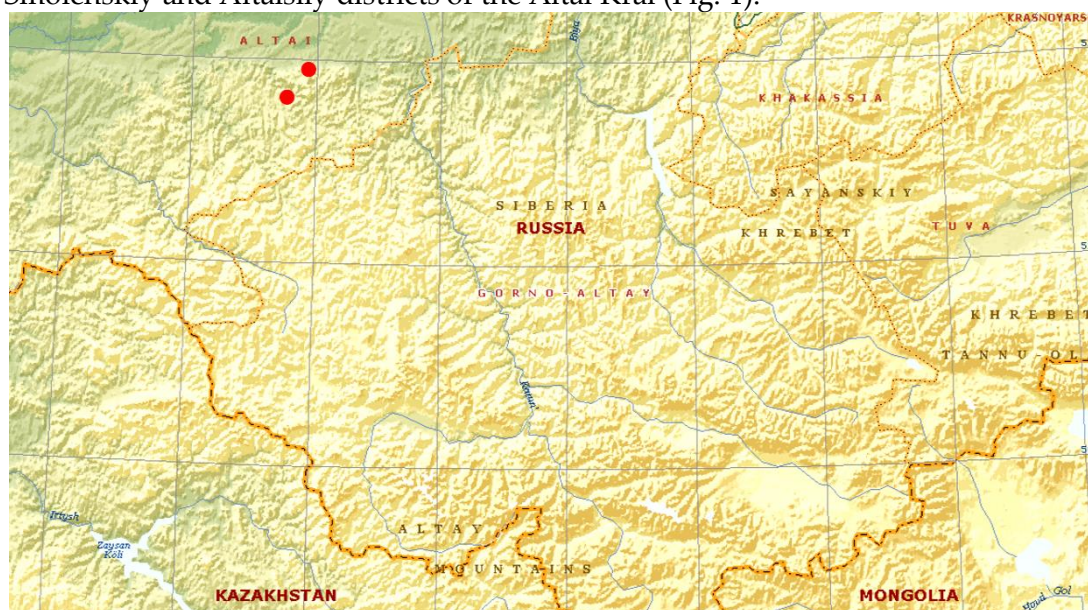


Figure 1. Map of collecting localities.



The territory of the proposed natural park is located in the low part of the Altai mountain region. The absolute level of relief varies from 240 to 1379 m asl (Mt. Sinyukha). As remnant surfaces, the intrusive massifs with the peaks Sinyukha, Sukhaya Griva, Listvyanka, Tserkovka Kruglaya, Chernovaya and others rise above the rest of the territory. Most of the streams and small rivers are part of the Peschanaya river basin. The river Peschanaya is a left tributary of the river Ob and flows into it at 8 km above Ust-Anui village. It starts in the south-western end of Seminsky ridge near its connection to the Cherginsky ridge. According to the botanical zoning of Altai (Kamelin, 2005) the territory of the proposed SPNA belongs to the North Altai district of the Altai-West Sayan mountainous province of the Circumboreal Holarctic region. A considerable part of the territory (52,8%) is covered by forests, among which the taiga is predominating by area. The main forest-forming species of the natural park are the following types of trees: *Abies sibirica*, *Pinus sylvestris*, *Betula pendula*, *Populus tremula*. *Picea obovata*, *Larix sibirica* and *Pinus sibirica* are found in the park quite rarely and do not form pure stands. Communities of mesophilic shrubs (*Caragana frutex*, *C. arborescens*, *Spiraea media*, *S. chamaedrifolia*, *Sambucus racemosa*, *Rosa spinosissima*) occur in ravines and low parts of slopes. The herbage is characterized by strong tall grasses (*Aconitum septentrionale*, *Trollius asiaticus*, *Millium effusum*, *Vicia pisiformis*, *V. unijuga*, *V. sylvatica*, *Galium boreale*, *Veratrum lobelianum* and *Bupleurum aureum*) (Silantieva, 2005).

The Lepidopteran fauna of the Russian Altai is still fragmentarily studied. The Rhopalocera butterflies (Papilionoidea) are studied rather well. There are reviews on the day butterflies fauna of the West Altai (Lukhtanov et al., 2007), North-West Altai (Malkov, 1999), Tigirek State Reserve (Volynkin et al., 2011), Kurai ridge (Yakovlev & Nakonechnyi, 2001) and plateau Ukok (Yakovlev, 2004a). All the data on the local faunas of day butterflies are summarized in the monograph (Tshikolovets et al., 2009). The summary on the other Lepidoptera groups of Altai with detailed published faunistic data include only Cossidae (Yakovlev, 2004b), Pterophoridae (Ustjuzhanin, Kovtunovich, 2008), Acrtiidae (Dubatolov, 2010) and Noctuidae (Volynkin, 2012). Thus, the local faunas of Altai Lepidoptera need further study, and such research acquires a peculiar importance in areas of existing or planned SPNA.

## MATERIALS AND METHODS

The examination of the Lepidopteran fauna was carried out in two localities of the proposed SPNA during the period of 21.07.–1.08.2015:

1. Smolenskiy district, near Belokurikha city, (51°55'21.4"N/084°59'14.1"E) (taiga) (B1);
2. Altaiskiy district, Valley of Peschanaya river (51°49'42.8"N/084°47'55.8"E) (lowlands) (B2).

The Lepidoptera specimens were collected using the standard methods, such as:



1. Collecting with a butterfly net;
2. Attracting to artificial light screen (generator Subaru-750 and lamps OSRAM HWL-250W);

3. Using battery traps with lamps «Phillips 12W» (killing agent - chloroform).

The characterization of the collected material was carried out by the experts in groups: Geometridae – S.V. Vasilenko, Noctuoidea – A.V. Volynkin, Pyraloidea – P.Ya. Ustjuzhanin and L.S. Snigireva, the other groups – R.V. Yakovlev.

## RESULTS

During the field research 149 Lepidoptera species were collected, which are listed below.

### Family GEOMETRIDAE

1. *Lomaspilis marginata* (Linnaeus, 1758) B1
2. *Stegania cararia* (Hübner, 1790) B1
3. *Epione vespertaria* (Linnaeus, 1767) B2
4. *Hylaea fasciaria* (Linnaeus, 1758) B2
5. *Chiasmia clathrata* (Linnaeus, 1758) B1
6. *Arichanna melanaria* (Linnaeus, 1758) B2
7. *Alcis extinctaria* (Eversmann, 1851) B2
8. *Alcis deversata* (Staudinger, 1892) B1, B2
9. *Alcis jubata* (Thunberg, 1788) B1
10. *Hypomecis roboraria* ([Denis & Schiffermüller], 1775) B1
11. *Geometra papilionaria* (Linnaeus, 1758) B1
12. *Idaea biselata* (Hufnagel, 1767) (0093 - 6) B1
13. *Scopula marginepunctata* (Goeze, 1781) B2
14. *Scopula subpunctaria* (Herrich-Schäffer, 1847) B1
15. *Scotopteryx chenopodiata* (Linnaeus, 1758) B2
16. *Epirrhoe alternata* (Müller, 1764) B1, B2
17. *Hydriomena furcata* (Thunberg, 1784) B1
18. *Dysstroma citrata* (Linnaeus, 1761) B1, B2
19. *Thera variata* ([Denis & Schiffermüller], 1775) B1
20. *Eustroma reticulata* ([Denis & Schiffermüller], 1775) B1
21. *Eulithis testata* (Linnaeus, 1761) B2
22. *Perizoma hydrata* (Treitschke, 1829) B1, B2

### Family DREPANIDAE

23. *Drepana falcataria* (Linnaeus, 1758) B1
24. *Drepana curvotula* (Borkhausen, 1790) B2

**Family NOLIDAE**

25. *Nycteola degenerana* (Hübner, [1799]) B2

**Family EREBIDAE**

26. *Rivula sericealis* (Scopoli, 1763) B1, B2  
27. *Hypena obesalis* Treitschke, 1828 B1  
28. *Lymantria dispar* (Linnaeus, 1758) B1  
29. *Leucoma salicis* (Linnaeus, 1758) B2  
30. *Dicallomera fascelina* (Linnaeus, 1758) B1, B2  
31. *Arctia caja* (Linnaeus, 1758) B1  
32. *Phragmatobia fuliginosa* (Linnaeus, 1758) B1, B2  
33. *Miltochrista miniata* (Förster, 1771) B2  
34. *Eilema griseolum* (Hübner, 1803) B1, B2  
35. *Eilema flavociliatum* (Lederer, 1853) B1  
36. *Eilema complanum* (Linnaeus, 1758) B1  
37. *Calyptra thalictri* (Borkhausen, 1790) B1, B2  
38. *Catocala fulminea* (Scopoli, 1763) B2

**Family NOCTUIDAE**

39. *Abrostola triplasia* (Linnaeus, 1758) B1  
40. *Abrostola tripartita* (Hufnagel, 1766) B1, B2  
41. *Macdunnoughia confusa* (Stephens, 1850) B2  
42. *Diachrysis stenochrysis* (Warren, 1913) B1, B2  
43. *Euchalcia mongolica* (Staudinger, 1901) B1, B2  
44. *Polychrysis esmeralda* (Oberthür, 1880) B1, B2  
45. *Polychrysis splendida* (Butler, 1878) B2  
46. *Autographa buraetica* (Staudinger, 1892) B1, B2  
47. *Autographa mandarina* (Freyer, 1846) B1, B2  
48. *Autographa bractea* ([Denis & Schiffermüller], 1775) B2  
49. *Autographa excelsa* (Kletschmar, 1862) B1, B2  
50. *Syngrapha ain* (Hochenwarth, 1785) B2  
51. *Plusia putnami* Grote, 1873 B2  
52. *Deltote pygarga* (Hufnagel, 1766) B1, B2  
53. *Acronicta auricoma* ([Denis & Schiffermüller], 1775) B1, B2  
54. *Cucullia asteris* ([Denis & Schiffermüller], 1775) B1  
55. *Amphipyra perflua* (Fabricius, 1787) B1, B2  
56. *Amphipyra livida* ([Denis & Schiffermüller], 1775) B2  
57. *Pyrrhia umbra* (Hufnagel, 1766) B2  
58. *Pseudeustrotia candidula* ([Denis & Schiffermüller], 1775) B2  
59. *Hoplodrina blanda* ([Denis & Schiffermüller], 1775) B2



60. *Amphipoea asiatica* (Burrows, 1911) B2
61. *Resapamea hedeni* (Graeser, [1889]) B2
62. *Parastichtis suspecta* (Hübner, [1817]) B2
63. *Ipimorpha retusa* (Linnaeus, 1761) B2
64. *Ipimorpha contusa* (Freyer, 1849) B2
65. *Polia serratilinea* (Treitschke, 1825) B1
66. *Lacanobia contigua* ([Denis & Schiffermüller], 1775) B2
67. *Melanchra persicariae* (Linnaeus, 1761) B1, B2
68. *Hadena variolata* (Smith, 1888) B2
69. *Mythimna conigera* ([Denis & Schiffermüller], 1775) B1, B2
70. *Mythimna pudorina* ([Denis & Schiffermüller], 1775) B2
71. *Mythimna impura* (Hübner, [1808]) B2
72. *Mythimna ferrago* (Fabricius, 1787) B1, B2
73. *Axylia putris* (Linnaeus, 1761) B2
74. *Ochropleura plecta* (Linnaeus, 1761) B2
75. *Diarsia dahlia* (Hübner, [1813]) B2
76. *Eurois occulta* (Linnaeus, 1758) B1, B2
77. *Graphiphora augur* (Fabricius, 1775) B2
78. *Anaplectoides prasina* ([Denis & Schiffermüller], 1775) B1, B2
79. *Xestia baja* ([Denis & Schiffermüller], 1775) B1, B2
80. *Xestia ditrapezium* ([Denis & Schiffermüller], 1775) B1, B2
81. *Xestia triangulum* (Hufnagel, 1766) B1, B2
82. *Protolampra sobrina* (Duponchel, 1843) B2
83. *Naenia typica* (Linnaeus, 1758) B1

#### Family NOTODONTIDAE

84. *Phalera bucephala* (Linnaeus, 1758) B2
85. *Pheosia tremula* (Clerk, 1759) B2
86. *Clostera albosigma curtuloides* (Erschoff, 1870) B1, B2
87. *Notodonta dromedarius* (Linné, 1767) B2

#### Family LASIOCAMPIDAE

88. *Gastropacha quercifolia* (Linnaeus, 1758) B1
89. *Euthrix potatoria* (Linnaeus, 1758) B1
90. *Trichiura crataegi* (Linnaeus, 1758) B2
91. *Malacosoma neustria* (Linnaeus, 1758) B1, B2
92. *Lasiocampa quercus* (Linnaeus, 1758) B1
93. *Dendrolimus superans sibiricus* Tschetverikov, 1908 B1

#### Family SPHINGIDAE

94. *Sphinx ligustri* Linnaeus, 1758 B1



95. *Laothoe populi* (Linné, 1758) B1
96. *Laothoe amurensis* (Staudinger, 1892) B1, B2
97. *Hyles gallii* (Rottemburg, 1775) B1
98. *Deilephila elpenor* (Linné, 1758) B1
99. *Deilephila porcellus* (Linné, 1758) B1, B2

#### Family PAPILIONIDAE

100. *Papilio machaon* Linnaeus, 1758 B1, B2
101. *Parnassius nomion* Fischer von Waldheim, 1823 B2 (photo of male by D. Ryzhkov)
102. *Parnassius apollo* (Linnaeus, 1758) B2

#### Family PIERIDAE

103. *Leptidea morsei* (Fenton, 1881) B1
104. *Leptidea amurensis* (Ménétriés, 1859) B1
105. *Leptidea reali* Reissinger 1989 B1, B2
106. *Aporia crataegi* (Linnaeus, 1758) B1, B2
107. *Pieris napi* (Linnaeus, 1758) B1, B2
108. *Pontia edusa* (Fabricius, 1777) B2
109. *Anthocharis cardamines* (Linnaeus, 1758) B1, B2
110. *Gonepteryx rhamni* (Linnaeus, 1758) B1, B2

#### Family LYCAENIDAE

111. *Thecla betulae* (Linnaeus, 1758) B1
112. *Lycaena phlaeas* (Linné, 1761) B2
113. *Celastrina argiolus* (Linnaeus, 1758) B1, B2
114. *Everes argiades* (Pallas, 1771) B2

#### Family NYMPHALIDAE

115. *Limenitis populi* (Linnaeus, 1758) B1, B2
116. *Neptis rivularis* (Scopoli, 1763) B1, B2
117. *Polygonia c-album* (Linnaeus, 1758) B1, B2
118. *Nymphalis vaualbum* (Denis et Schiffermüller, 1775) B1, B2
119. *Nymphalis xanthomelas* (Esper, 1781) B1, B2
120. *Aglais urticae* (Linnaeus, 1758) B1, B2
121. *Inachis io* (Linnaeus, 1758) B1
122. *Araschnia levana* (Linnaeus, 1758) B1, B2
123. *Damora sagana relictata* (Korshunov, 1984) B1
124. *Argynnis paphia* (Linnaeus, 1758) B1, B2



125. *Fabriciana adippe* (Denis & Schiffermüller, 1775) B2
126. *Mesoacidalia aglaja* (Linnaeus, 1758) B1, B2
127. *Brenthis ino* (Rottemburg, 1775) B2
128. *Issoria lathonia* (Linnaeus, 1758) B2
129. *Clossiana selene* (Denis et Schiffermüller, 1775) B1
130. *Clossiana selenis* (Eversmann, 1837) B1
131. *Clossiana dia* (Linné, 1767) B2

#### Family SATYRIDAE

132. *Lopinga achine* (Scopoli, 1763) B1, B2
133. *Lasiommata maera* (Linné, 1758) B2
134. *Crebeta deidamia* (Eversmann, 1851) B1
135. *Coenonympha glycerion* Borkhausen, 1788 B2
136. *Coenonympha hero perseis* Lederer, 1853 B2
137. *Hyponephele lycaon* (Rottemburg, 1775) B2
138. *Erebia aethiops* (Esper, 1777) B1
139. *Aphantopus hyperantus* (Linnaeus, 1758) B1, B2

#### Family HESPERIIDAE

140. *Carcharodus alcae* (Esper, 1780) B2
141. *Thymelicus lineola* (Ochsenheimer, 1808) B2
142. *Heteropterus morpheus* (Pallas, 1771) B1, B2
143. *Hesperia comma* (Linnaeus, 1758) B2

#### Family CRAMBIDAE

144. *Ecpyrrhorhoe rubiginalis* (Hübner, 1796) B2
145. *Evergestis pallidata* (Hufnagel, 1767) B1
146. *Pleuroptya ruralis* (Scopoli, 1763) B1, B2
147. *Agriphila straminella* (Denis & Schiffermüller, 1775)
148. *Sitochroa verticalis* (Linnaeus, 1758)

#### Family PYRALIDAE

149. *Sciota fumella* (Eversmann, 1844) B2

### DISCUSSION

Thus, 149 Lepidoptera species belonging to 16 families have been discovered. This list is just primary data, and it is not exhaustive, as in the further systematic studies in different seasons and different parts of the proposed SPNA, according to the expert assessment, it is possible to discover up to 800 species of the order Lepidoptera. The vast majority of the collected species belong to two arealogical groups - Transpalaeartic and Euro-Siberian.



Two species of Papilionoidea (*P. nomion* and *D. sagana*) belong to East-Palaearctic group. The complex of Lepidoptera species is standard for the Northern Altai. One species is listed in the Red Book of the Russian Federation and in the Red Data Book of the International Nature Protection Union – *P. Apollo*; two species are listed in the Red book of the Altai territory – *P. apollo* and *D. sagana*. Thus, due to the Lepidopteran fauna typicality and to the presence of at least two protected species in the studied area, we can confirm the good preservation and typicality of this area in the natural complex of the Northern Altai.

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