

The first information about Geometridae of Katun Nature Reserve, Central Altai, Russia (Lepidoptera: Geometridae)

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Abstract

Thirty seven Geometridae species were reported for the territory of the Katun Nature Reserve.
KEY WORDS: Lepidoptera, Geometridae, Altai, protected areas, fauna, entomology, Russia.

La primera información acerca de los Geometridae de la Reserva Natural de Katún, Altái Central, Rusia (Lepidoptera: Geometridae)

Resumen

Treinta y siete especies de Geometridae fueron citadas para el territorio de la Reserva Natural de Katún.
PALABRAS CLAVE: Lepidoptera, Geometridae, Altái, áreas protegidas, fauna, entomología, Rusia.

Introduction

Katun Nature Reserve is a specially protected natural territory, located in the Katunskii Mt. Ridge (or the “Katunskie Belki” Mt. Ridge) in the Central Altai (Fig. 1), forming part of the “Golden Mountains of Altai” UNESCO World Heritage Site. The ridge is characterized by a complete succession of altitudinal vegetation belts of the Altai-Sayan Mountain System, ranging from desertified steppes to the nival zone (KUMINOVA, 1960; SEDELNIKOV, 1988; KOSTERIN, 1994).

Most well was researched butterflies fauna (Lepidoptera, Rhopalocera) of Katunskii Mt. Ridge (KOSTERIN, 1994, 2007). Partly information about geometer moths has in the publication (VASILENKO, 2007), but collecting localities are not located on the official territory of Katun Nature Reserve.

Materials and methods

The article is based on the materials collected by the author in territory of Katun Nature Reserve and adjoining areas in the period 15-VII-07-VII-2018. The Geometridae fauna was examined in seven localities of this territory (Fig. 2):

1. Russia, Altai Republic, Katunskie Belki Mts., Sredneye Mul'tinskoye lake, 49° 58'N; 85° 50'E, H - 1740-1800 m., 16-22-VII-2018.
2. Russia, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018.

3. Russia, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018.
4. Russia, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018.
5. Russia, Altai Republic, Katunskie Belki Mts, mouth of Northern Ioldo river, 49° 49'N; 86° 09'E, H - 1791 m., 29-VII-2018.
6. Russia, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018.
7. Russia, Altai Republic, Katunskie Belki Mts, mouth of Kyrgyz river, 49° 57'N; 86° 06'E, H - 1200 m., 04-05-VIII-2018.

The Geometridae were collected by the following methods: 1. Mowing with a butterfly net; 2. Night catching on light.

Results

Species list of geometer moths with collecting localities:

ENNOMINAE

Lomaspilis marginata (Linnaeus, 1758)

Material: 1♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Cabera exanthemata (Scopoli, 1763)

Material: 1♂, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Apeira syringaria (Linnaeus, 1758)

Material: 3♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Hylaea fasciaria (Linnaeus, 1758)

Material: 2♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Macaria loricaria (Eversmann, 1837)

Material: 3♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Macaria wauaria (Linnaeus, 1758)

Material: 8♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1♂, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Chiasmia clathrata (Linnaeus, 1758)

Material: 2 ♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49°52'N; 86°06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Gnophopsodos sabine Erlacher & Erlacher, 2016

Material: 8 ♂♂, 5 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Alcis deversata (Staudinger, 1892)

Material: 3 ♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

GEOMETRINAE

Geometra papilionaria Linnaeus, 1758

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. Katun Nature Reserve, Ust-Koksa).

STERRHINAE

Idaea serpentata (Hufnagel, 1767)

Material: 2 ♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Scopula dignata (Guenée, [1858])

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Scopula frigidaria (Möschler, 1860)

Material: 1 ♂, 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♂, 2 ♀♀, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Scopula immorata (Linnaeus, 1758)

Material: 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Scopula ternata Schrank, 1802

Material: 4 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Naydenov, Novoaltaysk); 2 ♂♂, 1 ♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Scopula virgulata ([Denis & Schiffermüller], 1775)

Material: 1 ♂, 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

LARENTIINAE

Scotopteryx chenopodiata (Linnaeus, 1758)

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts., Sredneye Mul'tinskoye lake, 49° 58'N; 85° 50'E, H - 1740-1800 m., 16-22-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♂, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 11 ♂♂, 4 ♀♀, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 3 ♂♂, 1 ♀, Altai Republic, Katunskie Belki Mts, mouth of Northern Ioldo river, 49° 49'N; 86° 09'E, H - 1791 m., 29-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Xanthorhoe designata (Hufnagel, 1767)

Material: 3 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Xanthorhoe fluctuata (Linnaeus, 1758)

Material: 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Xanthorhoe montanata ([Denis & Schiffermüller], 1775)

Material: 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♂, 1 ♀, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♀, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 4 ♂♂, 3 ♀♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Pseudentephria lamata (Staudinger, 1897)

Material: 2 ♂♂, 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Entephria caesiata ([Denis & Schiffermüller], 1775)

Material: 6 ♂♂, 5 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 3 ♂♂, 3 ♀♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Entephria tzygankovi Wehrli, 1929

Material: 2 ♂♂, 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♂, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Spargania luctuata ([Denis & Schiffermüller], 1775)

Material: 5 ♂♂, 2 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♂, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Hydriomena furcata (Thunberg, 1784)

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 9 ♂♂, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Stammodes pauperaria (Eversmann, 1848)

Material: 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Colostygia aptata (Hübner, [1813])

Material: 13 ♂♂, 3 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 6 ♂♂, 1 ♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Dysstroma truncata (Hufnagel, 1767)

Material: 4 ♂♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 1 ♂, 3 ♀♀, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Eulithis mellinata (Fabricius, 1787)

Material: 1 ♂, 2 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Eulithis populata (Linnaeus, 1758)

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E – 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Eulithis prunata (Linnaeus, 1758)

Material: 7 ♂♂, 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Asthena amurensis (Staudinger, 1897)

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Coenocalpe lapidata (Hübner, [1809])

Material: 1 ♂, RUSSIA, Altai Republic, Katunskie Belki Mts, mouth of Kyrgyz river, 49° 57'N; 86° 06'E, H - 1200 m., 04-05-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Horisme scotosiata (Guenée, 1858)

Material: 10 ♂♂, 6 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, confluence of Ioldo and Kazinikha rivers, cordon «Kazinikha» 49° 52'N; 86° 06'E, H - 1487-1700 m., 24-VII-04-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Eupithecia pimpinellata (Hübner, [1813])

Material: 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Northern Ioldo river valley, 49° 49'N; 86° 11'E - 86° 13'E, H - 2030-2300 m., 30-VII-02-VIII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Eupithecia satyrata (Hübner, [1813])

Material: 1 ♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk); 2 ♀♀, Altai Republic, Katunskie Belki Mts, Poperechnoye lake, 49° 55'N; 85° 53'E, H - 1885-2000 m., 21-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Eupithecia veratraria Herrich-Schäffer, 1848

Material: 2 ♀♀, RUSSIA, Altai Republic, Katunskie Belki Mts, Verkhneye Mul'tinskoye lake, 49° 55'N; 85° 50'E, H - 1795-1900 m., 20-VII-2018, leg. A. E. Naydenov & K. E. Akulova (coll. A. E. Naydenov, Novoaltaysk).

Discussion

The fauna of geometer moths of the Katun Nature Reserve is currently represented by 37 species of 25 genera. This list of Geometridae can't be considered final, as this group of moths requires a long period of research on the different areas on territory of the reserve.

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BIBLIOGRAPHY

- KOSTERIN, O. E., 1994.– Butterflies (Lepidoptera, Diurna) of the Katunskii mountain Ridge, Central Altai.– *Actias*, **1**(1/2): 45-76, figs 1-25. (1993).
- KOSTERIN, O. E., 2007.– New data on butterfly fauna (Lepidoptera, Diurna) of the Katunskii mountain range (Central Altai).– *Altai Zoological Journal*, **1**: 24-34.
- KUMINOVA, A. V., 1960.– [*The vegetation of the Altai*]: 450 pp. Novosibirsk. Nauka. [in Russian].
- SEDELNIKOV, B. P., 1988.– [*Alpine Vegetation of the Altai-Sayan Mountain Region*]: 222 pp. Novosibirsk. Nauka. [in Russian].
- VASILENKO, S. V., 2007.– The review of geometer-moths (Lepidoptera, Geometridae), collected by the Russian-Finnish expedition from the Altai in 1983.– *Altai Zoological Journal*, **1**: 3-9.

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Figures 1-2.- 1. Location of Katun Nature Reserve. 2. Map of Katun Nature Reserve with collecting localities.