

## New taxa of Rhopalocera from Siberia and Kazakhstan

(Lepidoptera, Satyridae and Nymphalidae)

by

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received 16.XII.2010

**Abstract:** *Oeneis ammon smirnovi* spec. nov. (Russia, W. Sayan, border between Tuva and Khakasiya, Sayanskij pass), *Oeneis norna ivonini* subspec. nov. (E. Kazakhstan, Altai, Kalba Mts., Shubarshoky Mt.) and *Euphydryas iduna jacobsoni* subspec. nov. (E. Kazakhstan, Saur Mts., upper stream of B. Dzhemenej river) are described.

In having collected specimens of Rhopalocera from Siberia and Eastern Kazakhstan, 3 new subspecies were detected. Their descriptions are given below.

List of abbreviation:

RYB: Collection of ROMAN YAKOVLEV (Barnaul, Russia).

SZMN: Siberian Zoological Museum (Novosibirsk, Russia)

ZISP: Zoological Institute of Science Academy of Russian Federation (Sankt-Petersburg, Russia)

***Oeneis ammon smirnovi* subspec. nov.** (col. pl. 1: 5-8, col. pl. 2:1, figs 1, 2)

Holotype ♂, Russia, W. Sayan, border between Tuva and Khakasiya, Sayanskij pass, 1900 m, 19.VI.2010, leg. R. YAKOVLEV (ZISP).

Paratypes: 12 ♂♂, 6 ♀, same data (RYB), 1 ♂, same data, 9.VII.2000, leg. O. KOSTERIN (SZMN).

**Description:** The length of the forewing is 17-20 mm.

♂: The wings are grey, patternless on the upperside, with a poorly defined elongate androconial spot on the anal margin of the discal cell, better defined in cells Cu1-Cu2 and Cu2-2A. The fringe is pale grey. The forewing underside is pale brown, with a pale grey preapical area, and a very slender dark brown border. The hindwing is greyish brown near to the base, with an obscure marginal pale grey band. The submarginal zone has an ochreous area of a typical marmorate pattern and the discal zone has a broad almost parallel-sided greyish brown band, unsmooth at margins, flanked with more or less broad pale areas.

The ♀ has slightly broader and apically rounded forewings. The forewing is grey brown, with a broad pale brown band in the postdiscal area, with a small blind poorly defined ocellus near to the apex in M1-M2. The hindwing is grey brown, with a broad underside band, visible through. The forewing underside is ochreous brown, with a small pale grey area on the costa near to the apex and a marmorate pattern through the wing area. The postdiscal zone bears a curved grey stria, separating the darker (proximal) area from the paler distal one. The hindwing underside is similar to that of the ♂, with a better defined ochreous brown colouration of the submarginal area.

The ♂ genitalia are typical for the species group ground plan. The uncus is elongate, beak-shaped, acute apically. The arms of the gnathos are almost straight, rather short, acute apically. The tegumen is rather massive. The valvae are lanceolate, unsmooth costally, with a small costal process in the medial part of the costal margin and smoothed irregularities towards the lanceolate-like acute apex. The aedeagus is long, slightly curved in the distal third, widened in the middle third, with small typical denticles on dorsal and abdominal surfaces.



Fig. 1: ♂ genitalia of *Oeneis ammon smirnovi* subspec. nov.

**Habitat:** The butterflies were collected in the grass tundra on the summit of the Sayanskij pass. The flight period is likely to be very short, as the species was not seen on the territory of this well studied area in a later period. It should be noted that summer 2010 was very cold and late in Southern Siberia and, in general, Lepidoptera activity and vegetation of June 19 corresponded to those of about June 5<sup>th</sup> of a standard year.

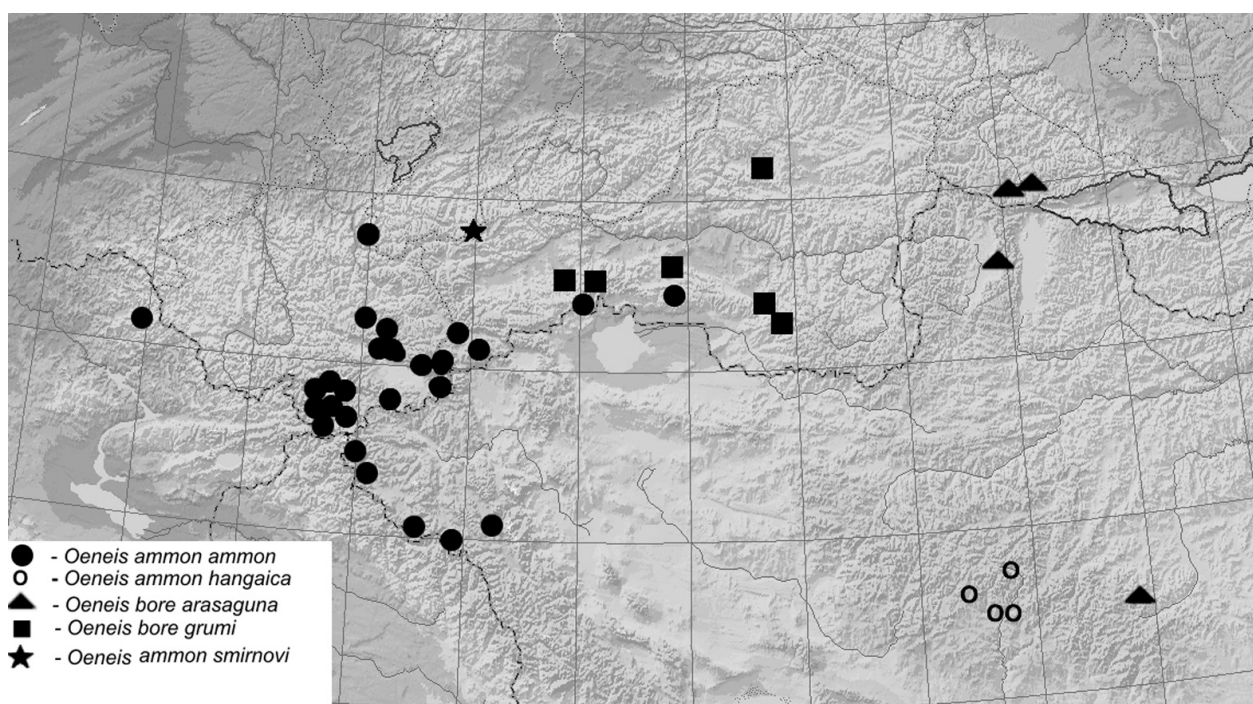


Fig. 2: Distribution of the *Oeneis ammon-bore* group in the Altai-Sayans Mountain Country.

**Diagnosis:** The new subspecies refers to the *O. pansa-ammon* species group, of which 4 taxa inhabit the mountain country of Altai-Sayan: *O. ammon ammon* ELWES, 1899 (widely spread in the highlands of Altai), *O. ammon hangaica* KURENZOV, 1970 (the highlands of Khangai), *O. bore arasaguna* AUSTAUT, 1911 (undoubtedly noticeable in the Eastern Prihubsugulie) and *O. bore grumi* KORSHUNOV, 2002 (Tuva, Western and Eastern Tanu-Ola, the Obruchev Ridge) (LUKHTANOV & EITSCHBERGER, 2001; KORSHUNOV, 2002; TSHIKOLOVETS, YAKOVLEV & KOSTERIN, 2009; TSHIKOLOVETS, YAKOVLEV & BALINT, 2009). In the Western Sayan of the Sayanskij pass O. KOSTERIN discovered *O. ammon* ELWES (TSHIKOLOVETS et al., 2009). And he definitely detected the species described here. The new subspecies is the closest to *O. ammon ammon* ELWES (col. pl. 1: 1-4) but clearly distinguished by its uniform grey colouration of the wing upperside in the ♂, the better defined androconial streak, slightly smaller size, the poorly defined pale broad band on the forewing in the ♂, the poorly developed costal process on the valva, and acute apexes of the valvae.

**Etymology:** The new subspecies bears the name of the well-known botanist, my close friend Dr. SERGEI SMIRNOV (Barnaul); with his help I managed to make an early and productive expedition to the Western Sayans in June 2010.

***Oeneis norna ivonini* subsp. nov.** (col. pl. 1: 9-12, col. pl. 2: 2, figs 3, 4)

Holotype ♂, E. Kazakhstan, Altai, Kalba Mts., Shubarshoky Mt., 600-700 m, Pinus forest, 24.V.2000, leg. V. IVONIN (ZISP).

Paratypes: 7 ♂♂, 2 ♀♀, same data (RYB); 2 ♂♂, E. Kazakhstan, Altai, Kalba Mts., Sibinskie lakes, 700 m, 12.VI.2006, R. YAKOVLEV (RYB).

**Description:** The length of the forewing is 25-26 mm in the ♂ and 26-30 mm in the ♀.

The ♂ wing upperside is brown, with an ochreous slender band in the postdiscal area. The band is of almost equal width. Cells M1-M2, M3-Cu1 and Cu1-Cu2 contain better or worse defined black ocelli, the preapical one of them enclosing a small central nucleus. The ocellus in cell M3-Cu1 is more or less reduced. The androconial streak is well defined, rather distinct and smooth on the borders. The fringe is bright, dark at veins and pale between them. The hindwing bears an ochreous band in the postdiscal area, narrowing towards the tornus, with a more or less defined ocellus in cell Cu1-Cu2. Every ocellus of the forewing underside or the preapical one only are white centered. The preapical area of the forewing underside is pale grey, with a marmorate pattern. The hindwing underside has a wide greyish brown band in the discal area, underlined with narrow pale areas proximally and distally. The submarginal zone has an ochreous area with a marmorate pattern and the marginal one is brown grey. The ocellus in the cell is more or less defined, white centered.

The ♀ is slightly larger than the ♂ and rather variable. The forewing's ochreous band varies in its width, with three ocelli in cells M1-M2, M3-Cu1 and Cu1-Cu2 on it. The ocellus on the hindwing upperside can be reduced. The forewing underside is white-centered. The hindwing underside pattern is marmorate, well-defined, which makes the dark discal band obscure on borders.

The ♂ genitalia are typical for the *O. norna* group ground plan. The uncus is long, beak-shaped. The arms of the gnathos are slender, much shorter than the uncus, acute apically. The valvae are bottle-shaped, strongly narrowed and elongate caudally (the valvan caudal end is twice narrower than the valva in the middle third). The costal margin of the valvan distal fourth bears numerous small (relatively tiny) developed denticles, directed caudally. The abdominal margin of the valva is truncate apically and forms a well developed deep incision on the valvan caudal end. The saccus protrudes backwards. The aedeagus is long, slender, straight, with very small denticles in the middle third on dorsal and abdominal surfaces. The vesica contains a small dentiform cornutus.

**Habitat:** The butterflies were collected at low altitudes, between 600-700 m, in pine forests growing on granitoids. The imago is easily frightened; it sits on rocks and pine trunks. It is of interest to note that not less than two species, traditionally known from other areas of the Palearctic, e.g. highland and arctic-alpine areas, were found here. It is the described new subspecies of *Oeneis norna* (THUNBERG, 1791), inhabiting other regions of the Altai and the Sayans at altitude higher than 1300-1500m, taiga and tundra, and *Colias thisoa irtysheensis* LUKHTANOV, 1999, that occurs in the Caucasus, Transcaucasia, Central Asia, Altai in the much higher mountain zone (no lower than 1500 m). Catching such species as *Oeneis norna* (THUNBERG) and *C. thisoa* MÉNÉTRIÉS, 1832



at very low altitudes in pine forests of the Kalba Mountains, as well as typical plain and lowland species of Euro-Siberian faunistic complex, looks paradoxical. Studying these 'lowered' species of the Kalba Mountains is of theoretical interest, I believe. Similar situations in the flora of the Kalba Mountains are not known until now (pers. comm. by Dr. SERGEJ SMIRNOV and Dr. DMITRIJ GERMAN).



Fig. 3: Genitalia of male of *Oeneis norna ivonini* subsp. nov.

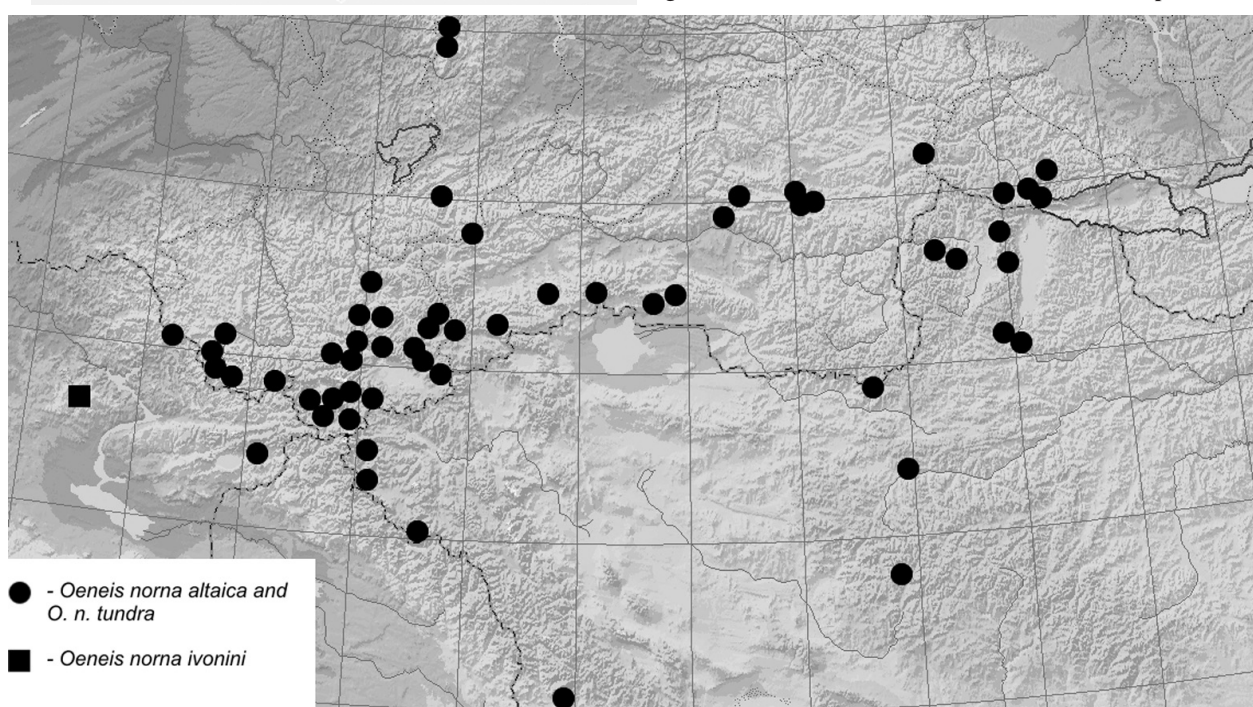


Fig. 4: Distribution of *Oeneis norna* (THUNBERG, 1791) in the Altai-Sayans Mountain Country.

**Diagnosis:** The new subspecies differs from the closest *O. norna altaica* ELWES, 1899 by a number of characters: the narrower aequilate postdisical band of the forewing, the narrower androconial streak with distinct borders (the outer border of the androconial streak in *O. n. altaica* ELWES, is generally obscure and at veins extends on the periphery), more distinct and better defined incision on the abdominal margin of the valva apically.

**Etymology:** The new subspecies bears the name of the well-known entomologist VADIM IVONIN (Novosibirsk), an expert on Siberian Lepidoptera, who collected a part of the type series.

*Euphydryas iduna jacobsoni* subsp. nov. (col. pl. 1: 13-16, col. pl. 2: 3, fig. 5)

Holotype ♂, "Саурская горы. Верховья Б. Джемни, 2150 мтр. 13.-15.VI.[1]910. А. Якобсон" [E. Kazakhstan, Saur Mts., upper stream of B. Dzhemenej river, 2150 m, 13.-15.VI.[1]910, A. JAKOBSON] (ZISP).

Paratypes: 18 ♂♂, same data (ZISP).

**Description and diagnosis:** The length of the forewing is 16-18 mm, less than the medium size of the forewing in all subspecies, known in the region, except for South Mongolian *E. i. eremita* CHURKIN & KOLESNICHENKO, 2003. Generally the pattern is typical for the members of the species, although it is different with the slight narrowing of brick-red bands on the upperside of the both wings and an abrupt strengthening of dark pattern elements; the hindwing is invariably dark grey (usually cream and greyish transparent with other subspecies); the brick-red border of the wings is almost completely reduced on the both upper and undersides. The system *E. iduna* (DALMAN, 1816) was recently thoroughly studied by CHURKIN & KOLESNICHENKO (2003). *Euphydryas iduna sayana* HIGGINS, 1950 (Altai, Tuva, Eastern Sayans) (col. pl. 1: 17, 18), *E. i. semenovi* KORSHUNOV & IVONIN, 1996 (Western Sayans) (col. pl. 1: 19, 20) and *E. i. eremita* CHURKIN & KOLESNICHENKO, 2003 (eastern part of the Mongolian Altai) (copl. pl. 1: 21, 22) occur in the region. The new subspecies is well differentiated and presents the most southern find of the species. According to my data,

*E. iduna* (DALMAN, 1816) is not collected in the Saur.

**Etymology:** The new subspecies is named after ALEXEJ G. JACOBSON (1869-1919), the elder brother of the great Russian coleopterologist GEORGIJ G. JACOBSON, a professor of Natural Science, an amateur entomologist and the professional insect collector, who collected the type series of the new subspecies.

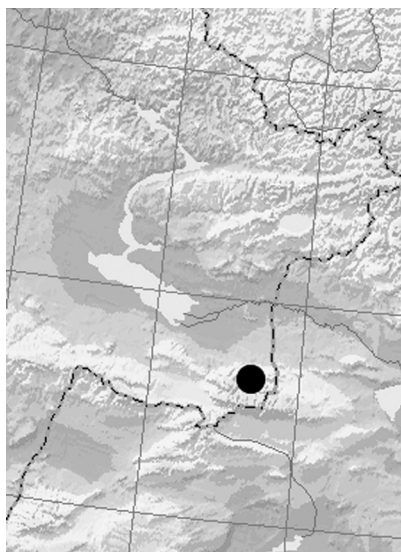


Fig. 5: Distribution of *Euphydryas iduna jacobsoni* subspec. nov.

**Acknowledgements:** The author expresses sincere gratitude to Prof. Dr. S.YU. SINEV (St. Petersburg), Dr. V. V. DUBATOLOV (Novosibirsk), Dr. O. KOSTERIN (Novosibirsk), Dr. A. ERST (Novosibirsk), Mr. V. IVONIN (Novosibirsk).

Thanks are also due to my colleagues from South Siberian Botanic Garden of the Altai University, Prof. A. I. SHMAKOV, Drs. S. V. SMIRNOV, D. A. GERMAN, S. A. DJACHENKO, P. A. KOSACHEV, E. A. DAVYDOV. Without their friendly cooperation, my work would have been impossible; and to our drivers M. SIDOROV and V. YEVDOSENKO, who managed to take us to the most inaccessible parts of Altai, Sayan, Kazakhstan and Mongolia.

#### Literature

- CHURKIN, S. V. & K. A. KOLESNICHENKO (2003): A review of *Euphydryas iduna* (DALMAN, 1816) with description of new taxa (Lepidoptera, Nymphalidae). - *Helios* 4: 92-119, Pl. VI-VI, textfig. 1-6, Moscow.
- KORSHUNOV, Y. P. (2002): Butterflies of Northern Asia. - "Flora and Fauna of Russia", Moscow, KMK 4: 1-424, fig. 1-106, Pl. 1-4 (in Russian).
- LUKHTANOV, V. A. & U. EITSCHBERGER (2001): Catalogue of the genera *Oeneis* and *Davidina*. In BAUER, E. & T. FRANKENBACH, Butterflies of the world Supplement 4: 1-37, map 1-32, fig. 1-64. - Goecke & Evers, Keltern.
- TSHIKOLOVETS, V. V., YAKOVLEV R. V. & O. E. KOSTERIN (2009): The Butterflies of Altai, Sayans and Tuva (South Siberia). - Kyiv-Pardubice.
- TSHIKOLOVETS, V. V., YAKOVLEV, R. V. & Z. BALINT (2009): The Butterflies of Mongolia. - Kyiv-Pardubice.

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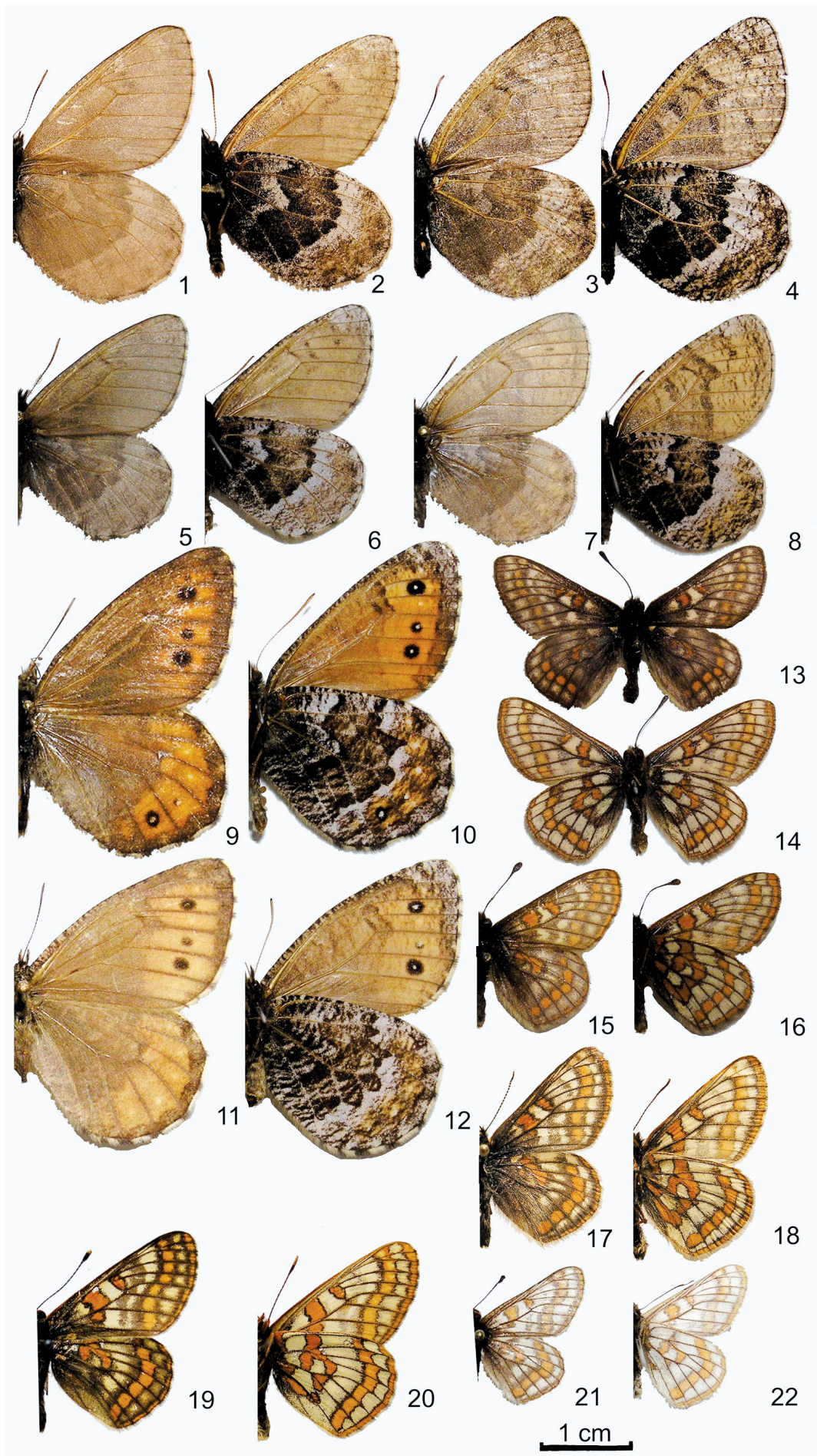
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#### Legend to colour plate 1, p. 229

- Fig. 1, 2: *Oeneis ammon ammon* ELWES, 1899, ♂, upper and under side, Russia, Altai, Ukok pl. (RYB).
- Fig. 3, 4: *Oeneis ammon ammon* ELWES, 1899, ♀, upper and under side, Russia, Altai, Ukok pl. (RYB).
- Fig. 5, 6: *Oeneis ammon smirnovi* subspec. nov., holotype ♂, upper and under side (ZISP).
- Fig. 7, 8: *Oeneis ammon smirnovi* subspec. nov., paratype ♀, upper and under side (RYB).
- Fig. 9, 10: *Oeneis norna ivonini* subspec. nov., holotype ♂, upper and under side (ZISP).
- Fig. 11, 12: *Oeneis norna ivonini* subspec. nov., paratype ♀, upper side (RYB).
- Fig. 13, 14: *Euphydryas iduna jacobsoni* subspec. nov., holotype ♂, upper and under side (ZISP).
- Fig. 15, 16: *Euphydryas iduna jacobsoni* subspec. nov., paratype ♂, upper and under side (ZISP).
- Fig. 17, 18: *Euphydryas iduna sajana* HIGGINS, 1950, ♂, upper and under side, Russia, Altai, Aktash (RYB).
- Fig. 19, 20: *Euphydryas iduna semenovi* KORSHUNOV & IVONIN, 1996, paratype ♂, upper and under side, Khakasiya, Sarala river valley, 7.VII.1975, YU. KORSHUNOV (SZMN).
- Fig. 21, 22: *Euphydryas iduna eremita* CHURKIN & KOLESNICHENKO, 2003, paratype ♂, upper side, Mongolia, Gobi Altai aimak, 30 km S from Biger somon, 2700-3000 m, 3.-10.VII.2002, leg. S. CHURKIN (RYB).



Colour plate 1





Colour plate 2



Fig. 1: Type locality of *Oeneis ammon smirnovi* subsp. nov. (photo by Dr. O. KOSTERIN)

Fig. 2: Type locality of *Oeneis norna ivonini* subsp. nov. (photo from <http://altai-photo.ru>)

Fig. 3: Type locality of *Euphydryas iduna jacobsoni* subsp. nov. (photo by Dr. A. ERST)



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Autor(en)/Author(s): Yakovlev Roman V.

Artikel/Article: [New taxa of Rhopalocera from Siberia and Kazakhstan 225-230](#)