



Lectotypes of *Erebia kefersteinii* (Eversmann, 1851), *Clossiana selenis* (Eversmann, 1837), *Melitaea arcesia* Bremer, 1861 and holotype of *Melitaea baikalensis* Bremer, 1861 (Lepidoptera: Nymphalidae)

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Abstract

In this paper, the lectotypes are designated and figured for *Erebia kefersteinii* (Eversmann, 1851), *Clossiana selenis* (Eversmann, 1837) and *Melitaea arcesia* Bremer, 1861. The holotype by monotypy of *Melitaea baikalensis* Bremer, 1861 is found and illustrated. The type localities of all mentioned taxa are discussed and clarified. The lectotypes and the holotype are deposited in the collection of Zoological Institute of the Russian Academy of Sciences, St. Petersburg.

Key words: Lepidoptera, *Erebia*, *Melitaea*, *arcesia*, *kefersteinii*, *baikalensis*, *selenis*, lectotype, type locality, taxonomy.

Introduction

Some important for the science old syntypes of different taxa of Nymphalidae were found in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg (later ZISP). For the stability of zoological nomenclature (ICZN 1999) it is important to make the lectotype designation for *Erebia kefersteinii* (Eversmann, 1851), *Clossiana selenis* (Eversmann, 1837), *Melitaea arcesia* Bremer, 1861 and *Melitaea baikalensis* Bremer, 1861.

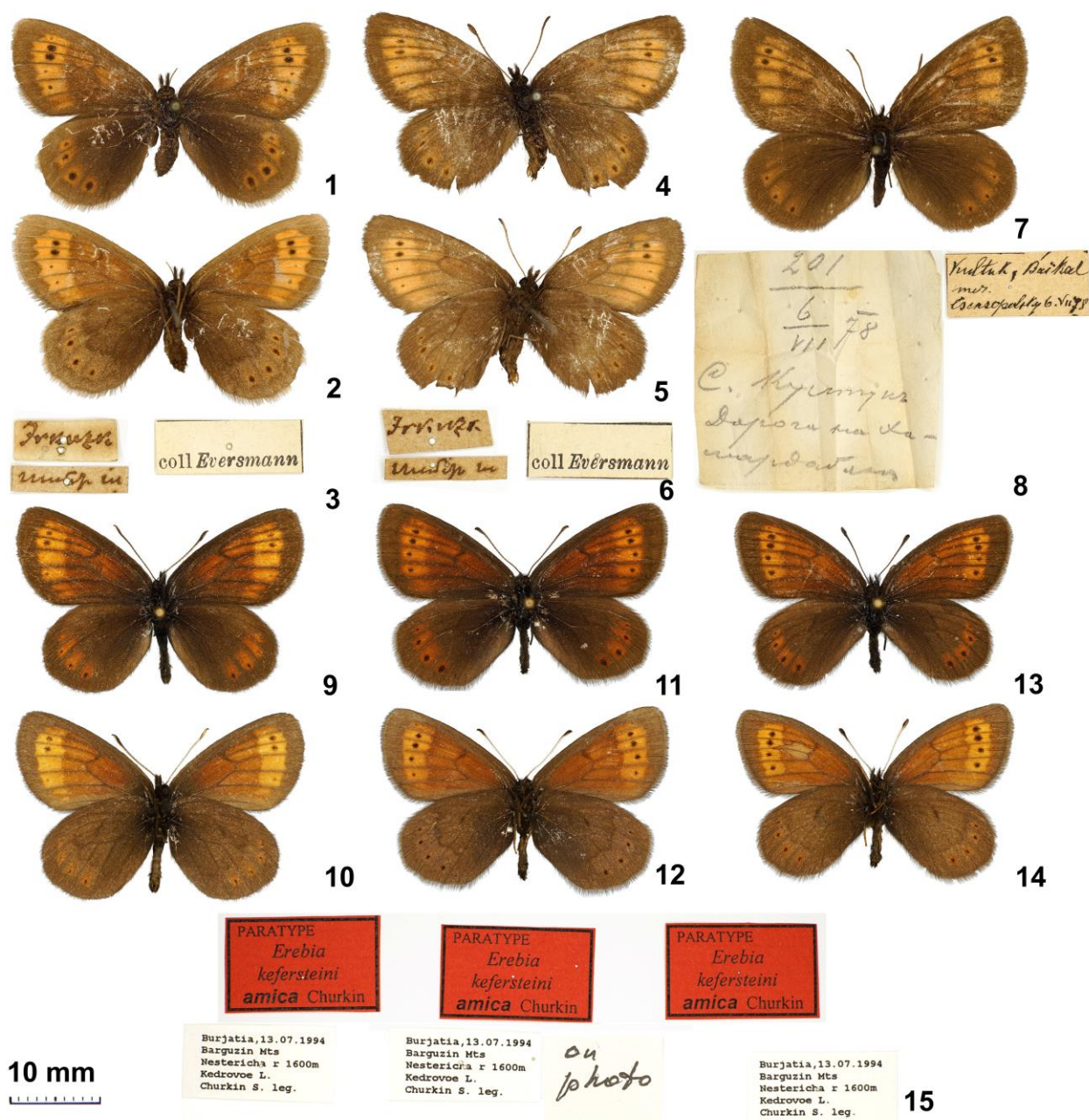
Erebia kefersteinii (Eversmann, 1851)

Bull. Soc. imp. Nat. Moscou 24 (2): 610–611

Originally published as “*Hipparchia* (*Erebia*) *kefersteinii* “

Type locality after Eversmann: “...Siberie orientale.”

Two syntypes, male and female, were found in the former Eversmann collection in ZISP. At least 4 more subspecies are known, thus, to preserve the stability of zoological nomenclature, it is important to have the name-bearing type of the taxon fixed by the lectotype designation.



Figures 1–15. *Erebia kefersteinii* Eversmann, 1851, adult specimens and labels: 1. *E. kefersteinii*, lectotype, female, upperside (ZISP); 2. *E. kefersteinii*, lectotype, female, underside (ZISP); 3. *E. kefersteinii*, lectotype, labels; 4. *E. kefersteinii*, paralectotype, female, upperside (ZISP); 5. *E. kefersteinii*, paralectotype, female, underside (ZISP); 6. *E. kefersteinii*, paralectotype, labels; 7. *E. kefersteinii*, male, Kultuk village, road to Khamar-Daban, upperside (ZISP); 8. *E. kefersteinii*, male, labels; 9. *E. kefersteinii amika*, paratype, male, upperside (coll. S. Churkin, Reutov); 10. *E. kefersteinii amika*, paratype, male, underside (coll. S. Churkin, Reutov); 11. *E. kefersteinii amika*, paratype, female, upperside (coll. S. Churkin, Reutov); 12. *E. kefersteinii amika*, paratype, female, underside (coll. S. Churkin, Reutov); 13. *E. kefersteinii amika*, paratype, female, upperside (coll. S. Churkin, Reutov); 14. *E. kefersteinii amika*, paratype, female, underside (coll. S. Churkin, Reutov); 15. *E. kefersteinii amika*, labels.

Lectotype (Figs 1–3): female, forewing length 18 mm, with three original labels:
- printed label "coll Eversmann" [Eversmann's collection];

- small handwritten rectangular label "Irkutzk" [Irkutsk] (certainly, Eversmann's hand);
- small rectangular label with two words written illegibly (we spent a lot of time searching different old maps of the region trying to understand the name of the locality and even asking the help of the Irkutsk History Museum but all efforts were without any success).

We add the red label "LECTOTYPUS/ *Hipparchia (Erebia) / kefersteinii* Eversmann,/ 1851 S.CHURKIN et al. des."

The specimen has no antennae (except the part of the right one), the coloration is fully similar to the description, full series of the blackish dots are situated on the fore- and hindwings.

Paralectotype (Figs 4–6): male, forewing length 18.2 mm, all labels are the same as under the lectotype.

The specimen is not fresh and partly damaged (left forewing and both hindwings with some chips).

We add the red label "PARALECTOTYPUS/ *Hipparchia (Erebia) / kefersteinii* Eversmann,/ 1851 S.CHURKIN et al. des."

Type locality

Unfortunately, the true name of the collecting locality is written illegibly. Undoubtedly, this place is located somewhere on the road to Baikal, only one available road here at that times.

In addition, we found in ZISP collection a small series of the specimens from Erschoff collection, also very old specimens collected in 1878, some are with the reddish label "Irkutsk". Some butterflies have additional label "Kultuk" and only one has the four-fold paper with the explanation: «село Култу́к, дорога на Хамар-Дабан» (Kultuk village, road to Khamar-Daban") (Figs 7–8). All these specimens are not the types, but look very similar to those, and it is very possible that it were collected according to the information where the first known *kefersteinii* were caught. Worth to note that Kultuk is situated at the mentioned Baikal road, it was well-known collecting place.

Thus, the type locality is not far from Kultuk vicinity, NW Baikal Lake, Irkutsk reg.

Status and notes

The species demonstrates obvious geographical clines and forms, which are masked by individual variability. The butterflies from the Altai have clear reddish hue and short median band. The butterflies from the Khamar-Daban and the East Sayan have broader median band and clearly yellowish with reduced reddish hue (i.e. belong to the nominate taxon) while the West Sayan and Tuva populates by the specimens with all variants of mixed colouration. The representatives of ssp. *amica* Churkin, 1999 from the most eastern point of the distribution area – the Barguzinsky Range – are characterized by reddish coloration as the specimens from the Altai, but usually have broad band as the specimens from the Khamar-Daban and the East Sayan.

We are able to figure here the good colored photo of the paratypes of this taxon (Figs 9–15, one male and two females).

Two subspecies – ssp. *kholsumica* Lukhtanov, 1990 (type locality – South Altai, Kholzun range) and ssp. *otteni* Murzin & Sinayev, 2003 (type locality – Kuznetskyi Alatau) are characterised by the reduced black dots.

The simple idea that butterflies from high altitudes have reduced dots is wrong: the type series of *otteni* without the spots and the type series of *amica* with full number of spots were collected at the same altitudes.

In such a situation it is impossible to unite all known geographical forms under one subspecies name, but true system of the subspecies is needed in revision.

Clossiana selenis (Eversmann, 1837)

Bull. Soc. imp. Nat. Moscou 1837 (1): 10

Originally published as "*Argynnis selenis*"

Type locality after Eversmann: "Kasan."

Three male syntypes were found in ZISP. All specimens are very similar, have the same style of preparation and definitely belong to the same series. The species is widely distributed especially in Siberia and Far East with many described infraspecies taxa, thus, to preserve the stability of zoological nomenclature, it is important to have the name-bearing type of the taxon fixed by a lectotype designation.

Lectotype (Figs 16–18): male, forewing length 20 mm, with three original labels:

- printed label "coll. Acad. Petrop.";
- small square gold label (typical mark of the type in those times);
- rectangular label with very special dark reddish irregular color (typical for some old types) "Russ. Mer." [Russia meridionalis].

The specimen is in good condition, only some scales are lost from the costal sides of both forewings.

We added the red label: "LECTOTYPUS/ *Argynnis selenis*/ Eversmann, 1837/ S. CHURKIN et al. des."

Paralectotype 1 (Figs 19–21): male, forewing length 19 mm, with two original labels:

- printed label "к. Ершова." [Erschoff's collection].
- rectangular orange-red label with (typical for some old types) "Kasan" [Kazan].

The specimen is in good condition, but both antennae are situated above the head and wings so that both are inconspicuous.



Figures 16–21. *Clossiana selenis* Eversmann, 1837, adult specimens and labels: 16. *C. selenis*, lectotype, male, upperside (ZISP); 17. *C. selenis*, lectotype, male, underside (ZISP); 18. *C. selenis*, lectotype, labels; 19. *C. selenis*, paralectotype, male, upperside (ZISP); 20. *C. selenis*, paralectotype, male, underside (ZISP); 21. *C. selenis*, paralectotype, labels.

We added the red label: “PARALECTOTYPUS/ *Argynnis selenis*/ Eversmann, 1837/ S.CHURKIN et al. des.“

Paralectotype 2 (not figured on the plate): male, forewing length 18 mm, with two original labels:

- printed label "к. Ершова." [Erschoff's collection].

- rectangular label with dark reddish irregular colour “Kasan” [Kazan] (the piece of the paper seems to be the same as the label under the lectotype).

The specimen is in good condition, but has no head.

We added the red label: “PARALECTOTYPUS/ *Argynnis selenis*/ Eversmann, 1837/ S.CHURKIN et al. des.“

Type locality: vicinity of Kazan, Tatarstan, Russia.

Status. *Clossiana selenis* is bona species, widely distributed in Siberia and Far East, but with very limited known area in Europe (European part of Russia) where the nominate taxon is known to occur.

***Melitaea arcesia* Bremer, 1861**

Melanges biol. Acad. Sci. St.-Petersbourg, 1861, 3: 466

Originally published as “*Melitaea Arcesia* “

Type locality after Bremer: “im Norden des Baikal und in Daurien...”

The taxon was described with details later in 1864 in “*Lepidopteren Ost-Sibiriens...*”, where the stylized figure of the type was published. The true number of the figure on the plate I is 7, but wrong number 6 is figured on the legend under the plate.

The specimen figured on the plate is found in the ZISP collection, it is female from Dauria. In addition, we found two more specimens undoubtedly belong to the type series.

This species includes many taxa described from the Altai to the Himalaya, in addition to the previously dubious taxonomic situation with *M. baikalensis*. To preserve the stability of zoological nomenclature, it is important to have the name-bearing type of the taxon fixed by a lectotype designation. We prefer to design as the lectotype the specimen selected by Bremer (which, however, was not collected at North Baikal).

Lectotype (Figs 22–24): female, forewing length 20.5 mm, 5 labels:

- small golden circle;
- small rectangular paper with printed number “49”;
- handwritten rectangular label “Bremer 49”;
- printed label "coll. Acad. Petrop.";
- rectangular label with dark reddish irregular colour “Dauria/ Radde”.

The lectotype has no antennae and presents big darkened female with moderately enlarged medium row of blackish spots and obvious pattern on the forewing underside – exactly as on the figure published by Bremer.

We added the red label: “LECTOTYPUS/ *Melitaea Arcesia* / Bremer, 1861/ S. CHURKIN et al. des.“

Paralectotypes (Figs 25–27, 28–30):

1. Female, forewing length 19 mm, 4 labels:

- small yellow square;
- handwritten rectangular label “Bremer 49”;
- printed label "coll. Acad. Petrop.";
- semi-square handwritten label “Nordseite/Baikal./Jun–Aug.” (highly likely Bremer’s hand).

The specimen presents medium-sized darkened female in good condition.

2. Male, forewing length 19.5 mm, 4 labels:

- small yellow square;
- handwritten rectangular label “Bremer 49”;
- printed label "coll. Acad. Petrop.”;
- semi-square handwritten label “Nord Baik[al], /20 Jun–1 Aug.” (highly likely Bremer’s hand).

The specimen presents medium sized moderately bright orange male in good condition.

We added the red labels: “PARALECTOTYPUS/ *Melitaea Arcesia* / Bremer, 1861/ S.CHURKIN et al. des.”

Tshikolovets (2002) published 3 syntypes of *M. arcesia* (Pl. XLVIII: 25–26, 31–32) considering one of them as the syntype of *M. baikalensis*. It is simple mistake because he forgot that the latter taxon was based on one specimen only. The true type of *M. baikalensis* is absent in the mentioned book.

Type locality The material was collected by G. Radde during his trip to Siberia. Gustav Radde (15 [27] November 1831, Danzig – 3 [16] March 1903, Tbilisi) – Russian geographer and naturalist, corresponding member of the St. Petersburg Academy of Sciences.

Radde published the detailed dairy (Radde 1861). In 1855 he collected in a Baikal area, while “Dahuria” was explored in 1856 and partly in 1857. In the latter year he spent the summer moving on a raft along great Amur River and serious insect collecting is not mentioned at all.

In 1856, he was concentrated in preparation of the scarecrows (including 5 yaks!) of Mammalia (and birds) which he described later. No doubts that *Melitaea* were collected 22–23 of July nearby Bukukun village (“... In Bukukun till to 23 [of July], in sparse birch groves nearby this place I collected many nice butterflies (*Argynnis*, *Melitaea*, *Hipparchia*) (1861: 25).”

It is sure that this area was considered as a part of Dahuria (1861: 19).

Thus, the type locality of *Melitaea arcesia* Bremer is Bukukun village vicinity, 49°26'59" N, 111°8'5" E, situated in South Transbaikalia (Dahuria zoogeographically), not far from the Mongolian border and not so far from Sokhondo natural reserve.

Two paralectotypes were collected somewhere at the southern-western shores of Baikal, for our opinion. Radde travelled in 1855 from the Angara to the Verkhnyaya Angara River, then all southern shores of Baikal (!), visited the Tunkin Range (as it was mentioned – the hot springs in Tunkin, i.e. the famous Arschan Valley) and went back to port Baikal and Irkutsk. Practically all material was labeled “Nord Baikal”, so, such a remark in the description has no practical meaning. S. Churkin (Churkin, 2005: 6) found a series of old specimens of *M. arcesia* from Erschoff collection depositing in ZISP. He made a mistake supposing this series as syntypical – in reality it was collected in 1878, but highly likely in the same places as true paralectotypes of the taxon.

Status. Well-known species, nominate taxon is distributed from Baikal to Primorie (see below).

Melitaea baikalensis Bremer, 1861

Melanges biol. Acad. Sci. St.-Petersbourg, 1861, 3: 465

Originally published as “*Melitaea baikalensis* “

Type locality after Bremer: “...Nordseite des Baikal...”

The taxon was described basing on one specimen only, which is only the bright and big specimen of *M. arcesia*. The detailed description was done in 1864 in “Lepidopteren Ost-Sibiriens...”, where the figure of the type was published. This book includes numerous mistakes and misprints. The number of the figure is again wrong (5 in the legend of the Plate 1 instead of the correctly printed 6 in the description). But more important, the wrongly printed name of the taxon was given as *baicalensis* both in the text and on the plate. This name became common, even Higgins used it (Higgins 1981). Bremer used in both his large publications Baikal but not Baical. Thus, we have a deal with a misprint, which has been widely distributed after Higgins by many careless authors.

Thus, the correct variant is *Melitaea baikalensis* according to the original description.

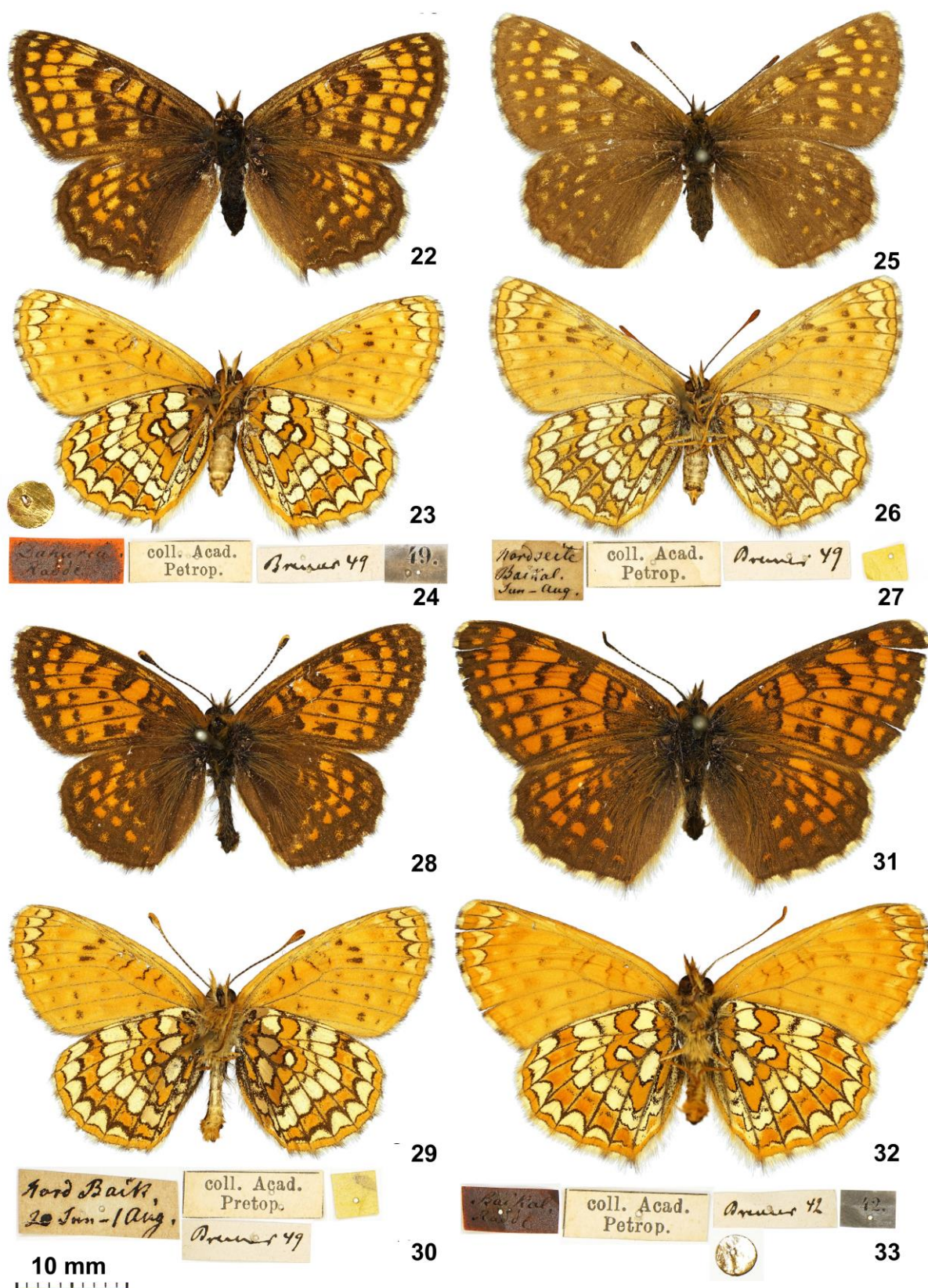


Figure 22–33. *Melitaea*, adult specimens and labels: 22. *M. arcesia*, lectotype, female, upperside (ZISP); 23. *M. arcesia*, lectotype, female, underside (ZISP); 24. *M. arcesia*, lectotype, labels; 25. *M. arcesia*, paralectotype, female, upperside (ZISP); 26. *M. arcesia*, paralectotype, female, underside (ZISP); 27. *M. arcesia*, paralectotype, labels; 28. *M. arcesia*, paralectotype, male, upperside (ZISP); 29. *M. arcesia*, paralectotype, male, underside (ZISP); 30. *M. arcesia*, paralectotype, labels; 31. *M. baikalensis*, holotype, male, upperside (ZISP); 32. *M. baikalensis*, holotype, male, underside (ZISP); 33. *M. baikalensis*, holotype, labels.

Holotype by monotypy (Figs 31–33): male, forewing length 22 mm, 5 labels:

- small golden circle;
- small rectangular paper with printed number “42”;
- handwritten rectangular label “Bremer 42”;
- printed label “coll. Acad. Petrop.”;
- rectangular label with dark reddish irregular colour “Baikal/Radde”.

The figure in the Bremer’s book (Fig. 1: 6) is stylized but there are no doubts with the identity of the specimen, that is confirmed by the labels.

The specimen has only one (left) antenna, being fresh and bright with several cracks on the forewings.

We added the red labels: “HOLOTYPUS/ *Melitaea baikalensis* / Bremer, 1861/ S.CHURKIN et al. des.”

Type locality. As he marked in his diary, Radde collected first insects at Baikal in Olkhon Island 28–29 of June 1855. On the July 3 he reported remarkable *Melitaea* species collected in the “forests that dressed the mountains of the island” (Radde 1861: 9). No doubts that he was impressed with this big fire-coloured specimen definitely different from all *Melitaea* which he collected in his life before – and it was the first definitely new taxon collected in his travel. Of course, later he was not so intense with other butterflies because he collected more and more interesting animals including new Mammalia.

We suppose that exactly this first impression was the base of Bremer’s mistake, who was influenced by Radde receiving his material for study.

The type locality is Olkhon Island, Baikal Lake, Irkutsk region, Russia, 53°09' N, 107°24' E.

Status and notes. The presence of two “different” *arcesia*-like butterflies in one area was the base of numerous problems. The efforts to make name *baikalensis* (using the variant *baicalensis*!) valid again as the species name (Korshunov & Gorbunov 1995) is correctly considered by P. Gorbunov (2001: 174), who based on the rule of the first reviser (ICZN, 24.2.1).

After the present lectotype designation the name *baikalensis* Bremer, 1861 is valid and could be applied to *arcesia*-populations from northern Baikal.

M. arcesia is common but local butterfly which is very variable. Without any doubts, all populations from southern Baikal (the Khamar-Daban Mts.) to Khabarovsk and Primorie belong to nominate subspecies. Small and yellowish butterflies from the Altai, the South Altai, the West Sayan and Tuva belong to ssp. *minor* Elwes, 1899 (some southern populations are more colourful with contrasting nice females, but it has no sense to use separate name for it). The intermediate populations living between two marked above large areas (the East Sayan, the Khangai, North Baikal and western part of North Transbaikalia) are maximally variable in size and colour. Their status needs in clarification. Very light ssp. *dea* Churkin & Kolesnichenko, 2003 is distributed in South Mongolia (Mongolian and partly Gobi Altai).

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