

# New taxa of *Plebejus eversmanni* (Lang, 1884) and *Polyommatus icarus* (Rottemburg, 1775) (Lepidoptera, Lycaenidae)

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The paper presents the descriptions of four new taxa: *Plebejus eversmanni geminus* ssp. nova from Tian-Shan (Suusamyр Mts.), *P. eversmanni campulus* ssp. nova from the East Pamirs, *Polyommatus icarus lacuina* ssp. nova (Mongolia, Mongolian Altai, Sutai Uul Mt.) and *Polyommatus icarus incoronatus* ssp. nova (Mongolia, Mongolian Altai, southern slopes, Mogoin-Gol r.).

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## Keywords

Blues, zoogeography, Kyrgyzstan, Tadjikistan, taxonomy, Mongolia, Mongolian Altai, Pamirs, Suusamyр, new subspecies

## Introduction

Two articles were published in the “Proceedings of the State Darwin Museum. Volume XVI” (published in 2023): “Two new subspecies of *Polyommatus icarus* (Rottemburg, 1775) from Mongolia (Lepidoptera, Lycaenidae)” and “Short review of *Plebejus eversmanni* (Lang, 1884) with the description of two new subspecies (Lepidoptera, Lycaenidae)” (Churkin & Bogdanov 2023a, 2003b). The second author of the articles, the chief keeper of the State Darwin Museum P.V. Bogdanov has died before the publication, and the volume XVI as a whole was dedicated to his memory. Both articles are available on the internet, address is [https://www.darwinmuseum.ru/docs/doc\\_works%202023%20XXVI.pdf](https://www.darwinmuseum.ru/docs/doc_works%202023%20XXVI.pdf).

Unfortunately, this volume was not published in paper, thus the taxonomic acts published in the above mentioned articles are not valid according to the Amendment of Articles 8, 9, 10, 21 and 78

of the International Code of Zoological Nomenclature to expand and refine methods of publication (ICZN, 2012).

The present article is prepared in order to make new names and taxonomic acts valid. The generic taxonomy is out of the limits of the present paper.

## Materials and methods

The adults were photographed using Canon 5DII with Sigma-50 Macro.

For wing venation, the Comstock-Needham nomenclature adopted for butterflies (Miller 1970) was used.

The present study is based upon the collections of the following institutions: State Darwin Museum (SDM, Moscow), The Museum of Natural History St. Alexis Hermitage (MSAH, Yaroslavl reg.), collections of the authors, K. Kolesnichenko (Moscow), V. Tuzov (Moscow), P. Beda (Ljubertzy, Moscow reg.).

**Abbreviations:** FW – forewings; HW – hindwings; m – m. a. s.l., metres above sea level.

## Result

### **1. *Plebejus eversmanni campulus* ssp.**

**nova** <http://zoobank.org/99DC6E8F-E6B1-4B69-9A4C-C4A855DDA289> Figs 1-2: 1, 2, 3, 4

**Holotype:** male, Tadjikistan, East Pamirs, Western part of Sarykol Range, Dunkeldyk lake, 4100 m. a. s.l., 20–30.07.1996, A. Sochivko leg.

**Paratypes:** 3 males, 3 females, same data, A. Sochivko leg.; 5 males, 3 females, Tadjikistan, E. Pamirs, Ak-Bura r., 4100–4300 m, 16.07.2005, A. Zhdanko leg.; 1 male, same loc., 29.07.1995, A. Zhdanko leg.; 1 male, Tadjikistan, E. Pamirs, Chechekty, 4200 m., 19–22.07.1999, Yu. Vasilchenko leg.; 1 female, Tadjikistan, E. Pamirs, 40 km SW Murgab, Shakhtasai r., 4200 m, 28.07.2000, V. Neforosnyi leg.; 1 male, Tadjikistan, E. Pamirs, Dzhanghi-Davan Pass, 4300 m, 20.07.1986, V. Ganson leg.; 1 male, Tadjikistan, E. Pamirs, Chechekty, Muzkol, 28.07.1966, A. Kuzyakin leg. Holotype and paratype are deposited in the collection of the State Darwin Museum (Moscow), paratypes are in the collections of S. Churkin, P. Beda (Lyubertzy, Russia) and the Museum of Natural History St. Alexis Hermitage.

**Description.** Holotype FW length is 14 mm, male paratypes 13.5–15.3 mm, female paratypes 13.5–16 mm.

**Male.** Antennae, palpi, body and fringes colouration and hairs seem to have no taxonomically valuable characters.

FW upperside blackish but mainly or fully covered by not dense but obvious blue scales. Discal spot obvious. FW also with blue scales (except costal area) and expressed submarginal pattern consists of 3-4 black spots in bluish aureoles, margins and veins' ends blackish.

Underside gray with thick whitish rings around the spots. FW postdiscal series with large and as a rule not extended/enlarged spots, submarginal pattern only slightly obvious. HW spots small, partly reduced (not always but often), discal spot thin with thick white aureole sharply extended towards the margin, submarginal spots small, separated, not bright, lunules usually yellowish, metallic scales often absent.

Genitalia similar to *grumi*, the detailed investigation of the geographical variability did not lead to taxonomically valuable results.

**Female** similar to male, but darker, blackish with blue basal spots, these spots moderately big and sometimes covers half of the wing. Underside submarginal pattern more developed, lunules often orange and bigger than in males, but all spots separated from each other.

**Diagnosis.** New subspecies sharply differs from neighbouring *badachshanus* Forster, 1972 (Figs 1–2: 15) by bluish wings, small size and partly reduced underside pattern. New taxon relates with Transalajan ssp. *grumi* (Staudinger, 1901) (Figs 1–2: 14) without any doubts presenting smaller and reduced variant. If it would be only the highland form of *badachshanus*, the status of the taxon will be not so evident.

**Etymology.** Campulus (Lat.) – piece of land, deminutivum from campus.

**Bionomics and distribution.** Inhabits stony meadows among high mountain deserts. Very local. The food plant is unknown. Apparently endemic to the Eastern Pamirs.

## 2. *Plebejus eversmanni geminus* ssp.

**nova** <http://zoobank.org/27984FF1-5CA1-472F-A15F-3466F3E57F6B> Figs 1–2: 5, 6, 7, 9, 10, 11

**Holotype:** male, Kyrgyzstan, Tian-Shan, Suusamyр Mts., Kekemeren r., 5 km N Kyzyl-Oi v., 1800–2000 m. a. s.l., 24–29.06.2000, S. Churkin leg.

**Paratypes:** 1 male, 2 females, same data, S. Churkin & V. Pletnev leg.; 1 female, same loc, 19–20.06.2001, S. Churkin leg.; 2 males, 4 females, same loc., 2400–2800 m, 20–21.07.2006, S. Churkin leg.; 2 males, 1 female, same loc., 2200 m, 15.07.2004, A. Irtlach leg.; 5 males, 1 female, Kekemeren r., 5 km SW Aral v., 28.06.2001, 1450 m, S. Churkin; 1 male, Kyrgyzstan, Talassky Alatau (southern sl.), 45 km Alabel pass, 2300–2400 m, 23.06.2000, S. Churkin leg.; 2 males, Kyrgyzstan, Chatkal Mts. (SE sl.), Kassar-Sai r., 1400 m, 10.06.2001, S. Churkin & A. Zhdanko leg.; 1 male, same loc., 6-7.06.2001, S. Churkin leg.; 1 male, 1 female, Chatkal Mts. (SE sl.), Kazdza-Ata r., Pyasty-Say, 1200–1400 m, 21.06.2012, S. Churkin leg.; 4 males, 3 females, Chatkal Mts. (SE sl.), Uspenovka v., 1300–1400 m, 29.06.2012, S. Churkin & V. Pletnev leg.; 3 males, South Chatkal Mts., 10 km SE Sumsar v., 8–9.06.2000, 1400 m, 21.06.2012, A. Klimenko leg.; 1 male, same loc., 12.06.1996, 800 m (?!), A. Klimenko leg.; 1 male, 1 female, same loc., 27.06.2012, 1200 m, S. Churkin leg.; 1 male, 1 female, Kyrgyzstan, Talassky Alatau, Kara-Buura pass, 1600 m, 1–2.07.1999, K. Kolesnichenko leg.; 1 male, 2 females, Kyrgyzstan, N Fergansky Mts., SE Toktogul res., Sargata v., Ortok-Too range, 1100 m, 14.06.2000, S. Churkin leg.; 3 females, N Fergansky Mts., 15 km SE Karakul v., 1300-1400 m, 14.06.2000, S. Churkin leg.; 2 males, 1 female, N Fergansky Mts., Isfan-Dzhailo range, 5 km SE Karakul v., 1350- 1450 m, 20.06.2000, S. Churkin leg.; 2 males, 1 female, N Fergansky Mts., 5 km SE Karakul v., 1300 m, 17.06.2000, S. Churkin leg.; 1 female, N Fergansky Mts., Karakul vic., 1300 m, 26.06.2007, S. Churkin leg.; 2 males, N Fergansky Mts., Karasy lake, Tokhtalyk range, 16.06.2000, 1400-1600 m, 16.06.2000, S. Churkin leg.; 1 female, Kyrgyzstan, Toktogul lake, 10 km SE Sargata v. Kochkor-Tebe Mts., 20.06.2008, 1350-1500 m, S. Churkin leg.; 1 male, Kyrgyzstan, Sarykamysh range, Kokemeren r., 5 km W Tabylgaty v., 1400 m, 22.06.2006, S. Churkin leg.

Holotype is deposited in the collection of the State Darwin Museum (Moscow), paratypes are in the collections of the authors and the Museum of Natural History St. Alexis Hermitage.

**Description.** Holotype FW length 16 mm, male paratypes 12.5–16 mm (14–15 mm, as a rule), female paratypes 13–16.5 mm (as a rule, 14–15.5 mm).

**Male.** Antennae, palpi, body and fringes colouration and hairs seem to have no taxonomically

valuable characters.

The general shape of the butterflies recalls extended rectangular. Upperside darkened with not bright but moderately dense violet-blue scales covering all wing but more expressed on the basal part. Specimens from the lowlands often paler, colour bluish and less dense. Discal spots obvious. HW upperside with developed series of submarginal black spots (4–5 as usually) in bluish aureoles, margin and veins' ends blackened.

Underside as a whole lightened gray with sharp blackish spots, whitish rings not so expressed, diffuse. Rarely the underside colour darker and white rings more developed.

FW underside with expressed thin submarginal pattern, postdiscal series with enlarged spots - at least some of them (3, 5 and usually 6) have sharply extended shape. Sometimes all spots extended, pattern as a whole looks unusual. Discal spot thick.

HW underside: two basal spots, postdiscal series full, submarginal spots practically not separated from each other forming united band, orange lunules thick. Metallic scales obvious in 2–3 spots as usually. Bluish basal suffusion usually not obvious, being not dense and developed only in very narrow area near the wing base. One male is generally blackish, the underside is darkened also but the FW postdiscal spots are typically extended.

Genitalia: not identical to *grumi* and *badachshanus* but variability contradict efforts to treat valuable characters.

**Female** similar to male (including general wings shape), upperside darkened with small violet-blue basal spots (rarely absent or more developed), submarginal pattern on the HW uppersides expressed, sometimes with orange unclear scales.

HW underside with smaller spots comparing with males, submarginal orange lunules brigher and larger - so, that all spots fully united on one orange band, as a rule. Basal suffusion practically absent. Female genitalia not studied.

**Diagnosis.** New subspecies slightly recalls highland forms of nominate subspecies (Figs 1–2: 13) (which areal does not bordered with the areal of new taxon). The size of the butterflies widely varies, but abruptly smaller than in ssp. *tatjana* Churkin & Pletnev, 2017 и ssp. *grumi*. General shape is rectangular, quite different from the quadratic shape of *tatjana*. Bluish upperside similar to that of *grumi* but HW underside with expressed submarginal band while postdiscal spots on the FW underside are unusually enlarged and extended. The latter character sometimes (but uncommonly) is registered in Darvasian populations of *grumi* or at south Ghissar, i. e. in the opposite part of the species areal. In *geminus*-population this character is dominant and easy differs new taxon from each other together with the united submarginal band on the hindwing underside (especially the females).

The tendency to reduce both important characters is registered in the lowland populations.

**Etymology.** *Geminus* (Lat.) - related to twins, double, dual.

**Bionomics and distribution.** Low and mid mountain dry meadows, does not rise high, in good conditions the wing length reaches 16 mm, but this is the largest size, despite many years of searching.

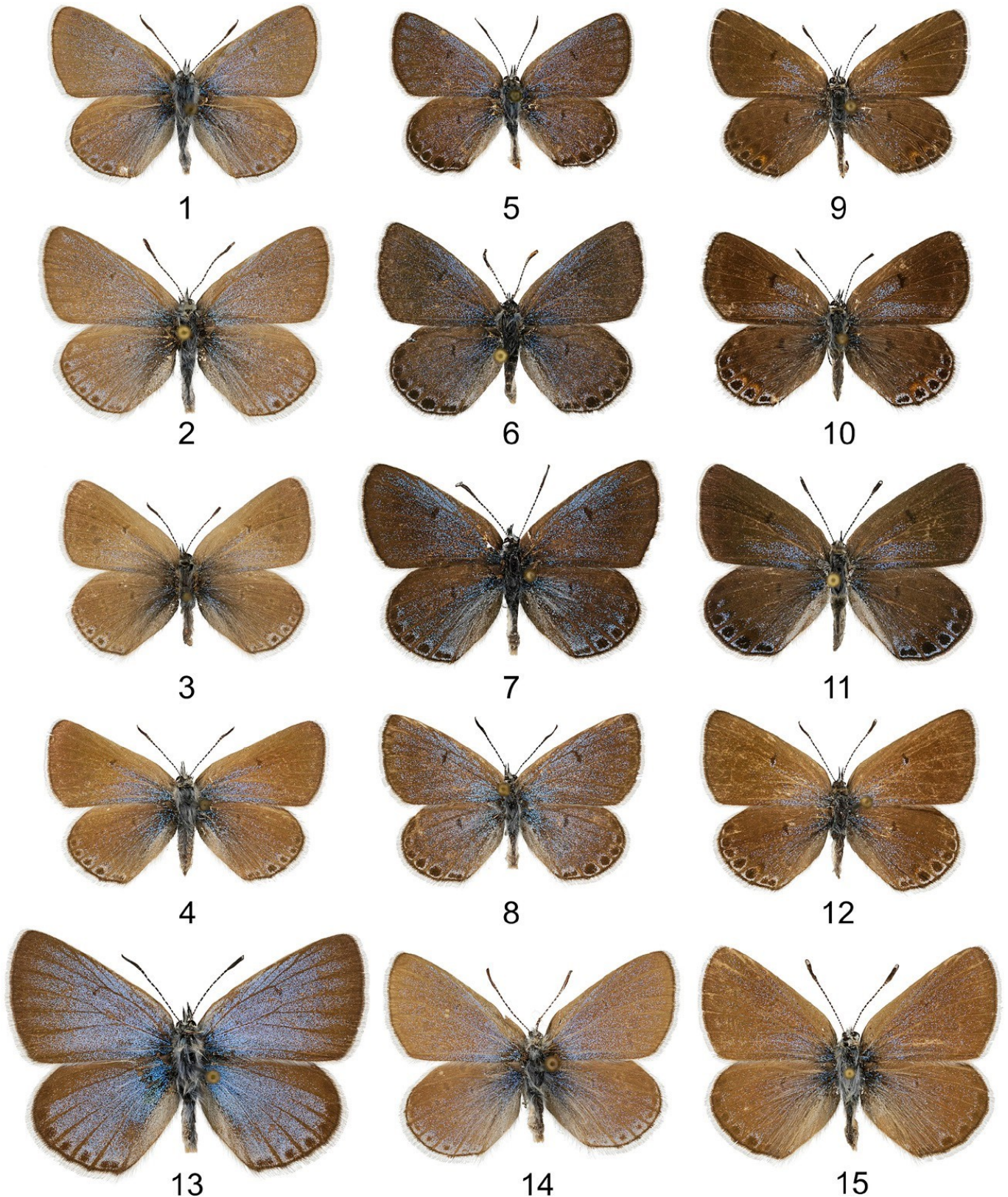
Very local and, as a rule, not numerous - which is easy to detect, studying the list of type series collected over many years and representing collected in single copies or small series.

Inhabits West and Inner Tian-Shan.

The most difficult situation is revealed in Alai. We have at our disposal a small series (3 males and 4 females), collected by A. Petrov in June 1998 in the town of Chauvai, 20 km southward Kyzyl-Kia v., Isfaram-say r., 1700 m. (Figs 1–2: 11–12). These butterflies are very similar to ssp. *geminus*, especially those collected in the foothills of Chatkal near Sumsar. The similarity looks paradoxical: the mountains between two loci are occupied by the area of a sharply different ssp. *tatjana*.

It is obvious that in the recent past, during the glaciations, some species had a simple way of genetic exchange along the edges of the valley; some of their habitats were circular. Currently, such exchange does not exist (or is extremely difficult), which led to the breaking of chains and the complicated areal the tianshanian subspecies, once represented in the Northern Alai.

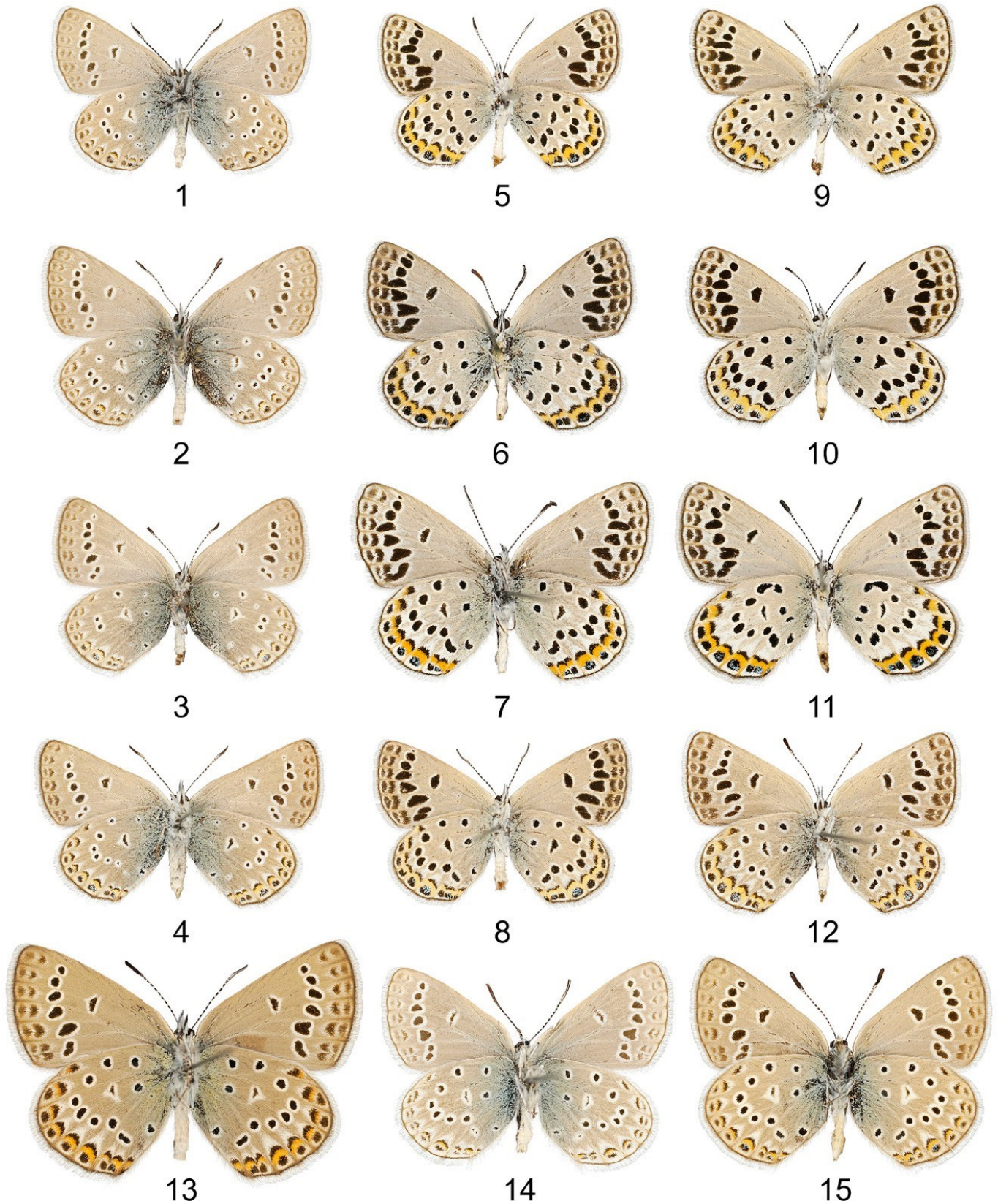
We cannot exclude that *geminus* presents *bona species*, in which case the population from Isfaram-say may have gradually dissolved lives among real *eversmanni*. Perhaps mDNA research can solve this problem.



**Figure 1.** *Plebejus* spp., upperside. 1 - *P. eversmanni campulus* ssp. nova, holotype, male, Tadjikistan, East Pamirs, 4100 m, 20-30.07.1996, A. Sochivko leg.; 2 - *P. e. campulus* ssp. nova, paratype, Tadjikistan, E. Pamirs, Ak-Bura r., 4100-4300 m, 16.07.2005, A. Zhdanko leg.; 3 - *P. e. campulus* ssp. nova, paratype, female, same data as 2; 4 - *P. e. campulus* ssp. nova, paratype, female, same data as 1; 5 - *P. e. geminus* ssp. nova, paratype, male, Kyrgyzstan, South Chatkal Mts., 10 km SE Sumsar v., 8-9.06.2000, 1400 m, 21.06.2012, A. Klimenko leg.; 6 - *P. e. geminus* ssp. nova, paratype, male, Kyrgyzstan, Chatkal Mts. (SE sl.), Uspenovka v., 1300-1400 m, 29.06.2012, S. Churkin leg.; 7 - *P. e. geminus* ssp. nova, holotype, male, Kyrgyzstan, Tian-Shan, Suusamyр Mts., Kekemeren r., 5 km N Kyzyl-Oi v., 1800-2000 m, 24-29.06.2000, S. Churkin leg.; 8 -



*P. eversmanni* ssp.?, male, Kyrgyzstan, North Alai, 20 km S Kyzyl-Kya v., 1700 m, 20–25.06.1998, A. Petrov leg. Continued on the next page. 9 – *P. e. geminus* ssp. nova, paratype, female, , Kyrgyzstan, N Fergansky Mts., SE Toktogul res., Sargata v., Ortok-Too range, 1100 m, 14.06.2000, S. Churkin leg.; 10 – *P. e. geminus* ssp. nova, paratype, female, same data as 6; 11 – *P. e. geminus* ssp. nova, paratype, female, same data as 7; 12 – *P. eversmanni* ssp.?, female, data as 8; 13 – *P. e. eversmanni*, male, Uzbekistan, West Ghissar, Kalta-Kol lake, 20–30.06.1997; 14 – *P. e. grumi*, male, Kyrgyzstan, West Transalai, Altyn-Dara r., Aram-Kungei loc., 3000 m, 1.07.1992, S. Churkin leg.; 15 – *P. e. badachshanus*, male, Tadjikistan, West Pamirs, Vanch Mts., Gyshkhun valley, 3100 m, 31.07.1990, S. Churkin leg.



**Figure 2.** *Plebejus* spp., underside. See description for Fig. 1.

**3. *Polyommatus icarus lacuina* ssp.**

**nova** <http://zoobank.org/E1A53ED3-09B7-48EC-9B1B-0BA16EC516CD> Figs 3-4: 1-4



**Holotype:** male, SW Mongolia, Khovd aimak, Sutai Uul (NW sl.), 1750 m, 9.07.2003, S. Churkin leg. (46°52'28"N; 93°16'56"E).

**Paratypes:** 6 males, 4 females, same data, S. Churkin, V. Pletnev leg.; 3 males, same place, 2000 m, 10.07.2004, S. Churkin leg.; 1 female, same place, 2300–2400 m, 11.07.2003, S. Churkin leg.

Holotype is deposited in the collection of the Darwin State Museum (Moscow), paratypes are in the collections of the authors and the Museum of Natural History St. Alexis Hermitage.

**Description.** Holotype FW length 15.1 mm, males paratypes 14-17 mm (14.5–15 mm, as a rule, one male - 17.8 mm), females paratypes 15–16 mm.

**Male.** Antennae with colouration typical for species, palpi bluish-white with dark hairs and blackened ends.

Upperside colour violet-blue but not dense and deep, washy, similar to ssp. *czabokyi*. One male more shining bluish, another more shining violet. Wings with thin blackish marginal line but without black dots, veins are not blackened, rarely with indistinctive darkening at the very ends. Fringes whitish. Wings shape varies from rounded to moderately sharp.

Underside whitish light-gray.

FW underside: 2 basal spots, discal spot, full curved row of postdiscal spots, submarginal pattern is reduced and only slightly obvious, as a rule. HW underside: basal row includes 3 spots, discal spot thin with distinctive white aureole, postdiscal row complete, size of spots practically the same as on FW. Submarginal pattern consists of disjointed yellowish lunules internally outlined by short V-shaped thin blackish lines and externally by thin simple blackish lines situated along the margin between the veins. Rarely lunules not deep orange, rarely reduced. Median white touch slightly obvious. Basal suffusion bluish, moderately dense and covered basal spots.

Genitalia. Similar to that of *czabokyi*. The detailed study of the genitalia is possible only in review of the complex that is outside of the paper limits.

**Female.** FW upperside brown with bluish or/and lightened scales, basal zone bluish and often extends to submarginal zone. Fully blue form not known (but must be present), fully dark brown form is absent too. Discal spot well obvious, sometimes with whitish aureole, in this case even the apex with whitish scales. Submarginal pattern obvious and consists of several orange spots, the darkest form with obvious series of deep black submarginal spots. Fringes whitish, darkest female have brownish inner part.

HW upperside have similar colouration but bluish colour not so developed at the base, the unclear bluish spot often extends along the anal-cubital zone. Submarginal pattern developed and consists of several bluish-orange-black spots.

Underside as in male, but darker and grayish. HW often darker and slightly brownish, whitish aureoles around the spots more distinctive.

FW underside pattern developed not less than in males, submarginal pattern consists of several orange spots.

HW underside pattern with reduced postdiscal spots definitely smaller than on FW while submarginal spots bigger and lighter, lunules usually orange, but not contrasting reddish-orange.

Median white touch more expressed comparing with males. Basal bluish suffusion as in males.

Female genitalia not studied.

**Diagnosis.** The areal of the new taxon is connected with areals of ssp. *czabokyi* Bálint, 1990 (Figs 3–4: 5–8) and ssp. *korshunovi* Gorbunov, 1995 (Figs 3–4: 13–15). The upperside colour is very similar to that of *czabokyi* being paler and less violet than in *korshunovi*.

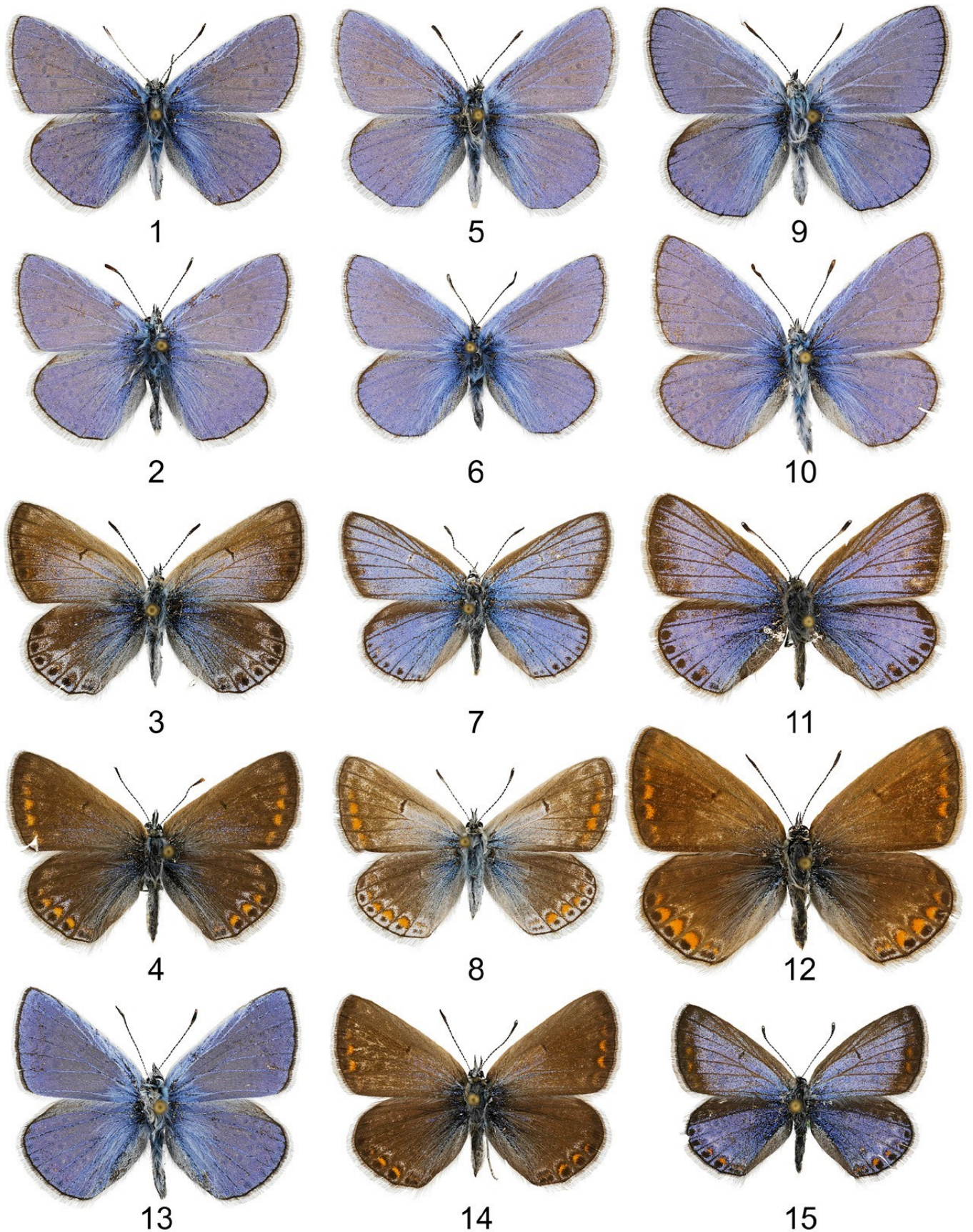
Underside has intermediate characters between *czabokyi* and *korshunovi*: first taxon has this pattern reduced, black dots are small or absent, while in second taxon the pattern is normally developed but not enlarged or fused. New subspecies has this pattern more or less developed but FW submarginal spots are always moderately reduced (but females are often have orange spots in this area).

The females of *czabokyi* and *lacuina* are characterized by the obvious reducing of the postdiscal row on the HW underside, while submarginal spots are expressed. The females of *korshunovi* have developed postdiscal HW spots which are only slightly smaller than on FW. The typical for the species dark-brown females present vast majority among *korshunovi*-populations (but these forms often have expressed upperside submarginal pattern which is rare in Altajan or Siberian *icarus*). The females of *czabokyi* demonstrates fantastic variability of nice light forms with complex bluish-light-brown colouration, the fully-light form is abundant, while the true dark-brown females are practically absent. The females of new taxon much close to the later variant being darker, not so paler, the bluish form is not known, the brownish form is not so rare but not deeply dark as it is usually for the species.

Thus, new subspecies demonstrates complexity of the different characters. From nominate subspecies and *P. i. fuchsi* (Sheljuzhko, 1928) it can be easily differs because of paler colour and reducing underside pattern which never forms joined submarginal band with deeply V-shaped inner blackish lines.

**Etymology.** *Lacuina* (Lat.) - lake, pond, which connects the taxon with the Great Lakes Basin, along the edges of which it lives.

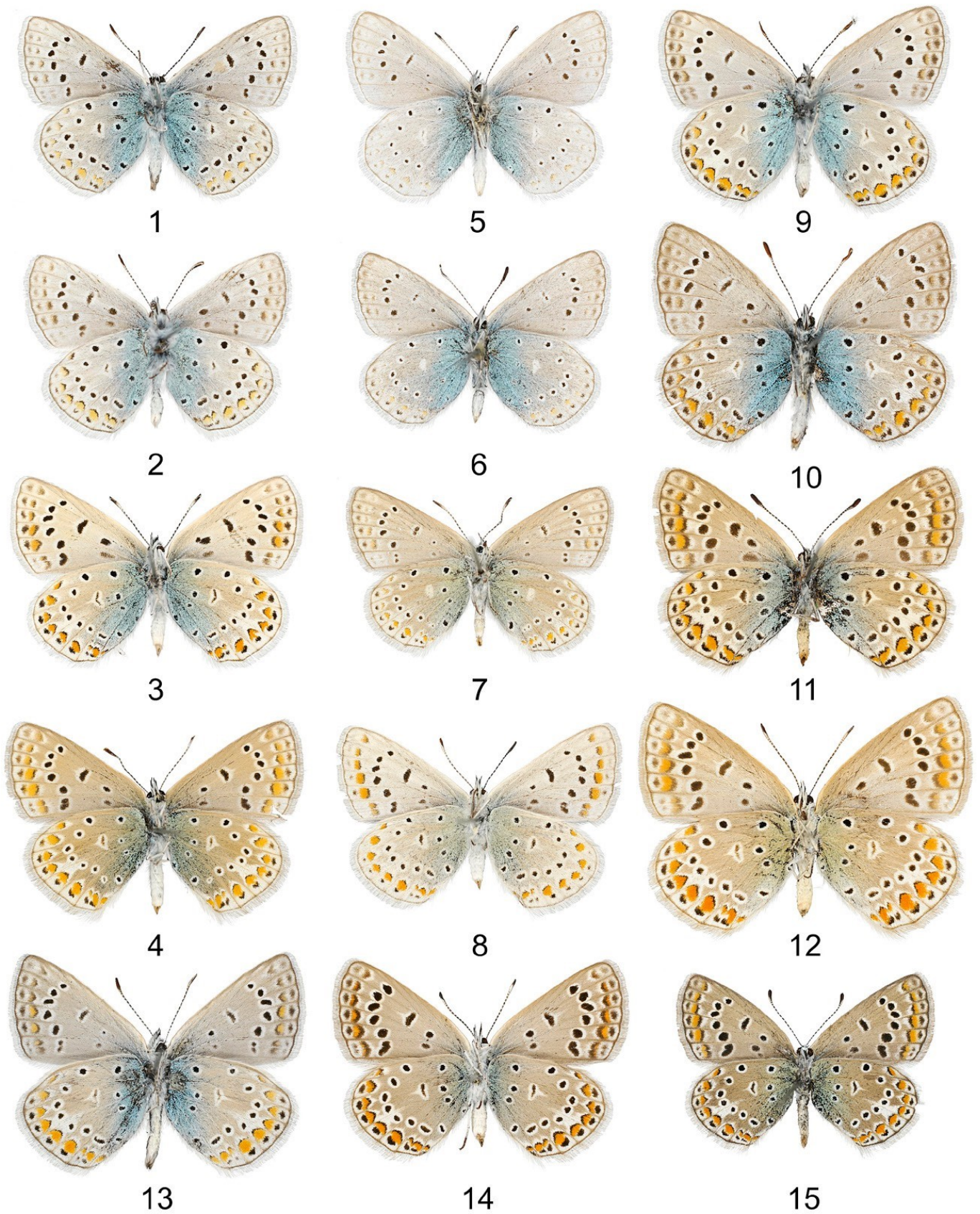
**Bionomics and distribution.** Inhabits a river valley in the northwestern macroslope of the Sutai Uul massif, where it is not numerous and local. Food plant is unknown. Two generations per year are possible. This biotope is typical for *korshunovi* in southern Tuva.



**Figure 3.** *Polyommatus* ssp., upperside. 1 - *Polyommatus icarus lacuina* ssp. nova, holotype, male, SW Mongolia, Khovd aimak, Sutai Uul (NW sl.), 1750 m, 9.07.2003, S. Churkin leg.; 2 - *P. i. lacuina* ssp. nova, paratype, male, same data as 1; 3 - *P. i. lacuina* ssp. nova, paratype, female, same data as 1; 4 - *P. i. lacuina* ssp. nova, paratype, female, same data as 1; 5 - *P. i.*



czabokyi Balint, 1990, topotype, male, Mongolia, Bayanhongor aimak, Orog-Nur lake, 23-24.06.2003, 1230 m, A. Saldaitis leg.; 6 - *P. i. czabokyi*, male, Mongolia, Gobi-Altai aimak, 35 km E Khurkhre loc., 16.06.2003, S. Churkin leg.; 7 - *P. i. czabokyi*, female, same data as 6; 8 - *P. i. czabokyi*, topotype, female, same data as 5; 9 - *Polyommatus icarus incoronatus* ssp. nova, holotype, male, SW Mongolia, Gobi-Altai aimak, Mongolian Altai (southern slopes), Mogoin-gol r., 2000-2400 m, 16-18.06.2004, Churkin S. leg. 10. - *P. i. incoronatus* ssp. nova, paratype, male, same loc., 8.07.2004, S. Churkin leg.; 11 - *P. i. incoronatus* ssp. nova, paratype, female, same data as 10; 12 - *P. i. incoronatus* ssp. nova, paratype, female, same data as 9; 13 - *P. i. korshunovi* Gorbunov, 1995, topotype, male, Russia, South Tuva, Tes-Khem r., Erzin vic., 1050 m, 10.06.2022, S. Churkin leg.; 14 - *P. i. korshunovi*, topotype, female, same data as 13; 15 - *P. i. korshunovi*, topotype, female, 10 km NNE Moren v., 13.06.2022, 1450 m, S. Churkin leg.



**Figure 4.** *Polyommatus ssp.*, underside. See description for Fig. 3.

**4. *Polyommatus icarus incoronatus ssp.***

**nova** <http://zoobank.org/5B9749E9-5007-4555-9E03-7D4697087B6E> Figs 3-4: 9-12

**Holotype:** male, SW Mongolia, Govi-Altai aimak, Mongolian Altai (southern slopes), Mogoin-gol r., 2000–2400 m, 16–18.06.2004, Churkin S. leg.

**Paratypes:** 5 male, 1 female, same data, Churkin S. & Chastilov S. leg., 3 males, 2 females, same loc., 8.07.2004, S. Churkin leg.

Holotype is deposited in the collection of the Darwin State Museum (Moscow), paratypes are in the collections of the authors and the Museum of Natural History St. Alexis Hermitage.

**Description.** Holotype FW length is 16.5 mm, males paratypes 15.2–17.6 mm (16.3–16.7 mm, as a rule), females paratypes 16.5–18.6 mm (one bluish female – 16.5, all other more than 17 mm).

**Male.** Antennae with colouration typical for species, palpi bluish-white with dark hairs and blackened ends.

Upperside colour violet-blue, more dense than in *czabokyi* and recalls *korshunovi*. Distinctively larger than other discussed taxa. Wings with thin blackish marginal line, have no black dots, veins ends darkened for 2 mm and more from margin. Fringes whitish with darkened inner part. General wing shape varies but looks slightly widened comparing with neighbouring subspecies.

Underside whitish light-gray.

FW underside: 2 basal spots, discal spot, full curved row of postdiscal spots, submarginal pattern developed.

HW underside: basal row includes 3 spots, discal spot large and deep with white aureole, postdiscal row complete, its spots with not contrasting whitish aureoles, size of spots practically the same as on FW. Submarginal spots joined or nearly joined all together forming one band, especially shortly v-shaped inner lines; lunules large and yellowish, rarely orange-yellowish, marginal lines thick and short recalling extended dots. Basal bluish suffusion dense, moderately narrow, comparing with relatives. Median white touch only slightly obvious.

Underside pattern rarely moderately reduced recalls ssp. *lacuina* and rarely underside colour darkened so that submarginal spots enlarged and extended (recalls nominate subspecies).

Genitalia not fully identical with *czabokyi* and *korshunovi*, but detailed analysis is wanting.

**Female** often bigger than males, that is uncommon. Two forms: totally brownish with developed bluish submarginal spots on HW – and violet, with typical for species pattern. The intermediate forms or light/pale forms are not known. Violet form exactly deeply violet-blue, not true bluish. Fringes darkened in inner part.

Underside as in males, but darker, brownish with light-gray areas, HW pattern fully developed, all spots large, thick, with expressed white aureoles. Lunules enlarged, orange or orange-yellowish (but not reddish orange or deep orange).

Basal bluish suffusion often reduced and very narrow especially comparing with males and especially in dark forms.

Female genitalia not studied.

**Diagnosis.** New taxon recalls *Polyommatus icadius* Grum-Grshimaïlo, 1890, but only because of large size. It differs from *czabokyi* and *lacuina* by the deeper and violet upperside colouration of the males, and absence of the abundant pale bluish female forms being similar to *korshunovi* (which areal is disjoined with a distance of several hundred kilometers). In addition, the underside pattern

is fully developed and thick, the colour of the bluish females is violet-bluish, but not light-bluish as it is normal for *czabokyi*. Basal suffusion is reduced but the value of this character needs in confirmation and further investigations.

The representatives of nominate subspecies known from Altai and Sayan differs by the smaller size, more angled apex, brighter and deeper submarginal pattern, the submarginal spots often have stretched V-shaped inner segments. *P. i. fuchsi* (Sheljuzhko, 1928) has no any physical connection with new subspecies, and differs by the darker underside with fully joined submarginal band.

**Etymology.** *Incoronatus* (Lat.) – uncrowned, without a wreath.

**Bionomics and distribution.** Deserted river valley in the southern spurs of Mongolian Altai, bordering the Dzungarian Gobi.

Butterflies flies together with *Hyponephele lycaon dmitrievae* Yakovlev, 2012, *Melitaea danae* Churkin & Kolesnichenko, 2005, *Melitaea cinxia mogoin* Churkin & Kolesnichenko, 2005.

Food plant is unknown. Very local. The areal may extends from Dzhungarian Gobi to Transaltajan Gobi and further to the east.

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## References

Churkin SV, Bogdanov PV (2023a) Short review of *Plebejus eversmanni* (Lang, 1884) with the description of two new subspecies (Lepidoptera, Lycaenidae). Proceedings of the State Darwin Museum XVI: 12-29, 2 cpls.

Churkin SV, Bogdanov PV (2023b) Two new subspecies of *Polyommatus icarus* (Rottemburg, 1775) from Mongolia (Lepidoptera, Lycaenidae). Proceedings of the State Darwin Museum XVI: 30-47, 2 cpls.

International Commission on Zoological Nomenclature (2012) Amendment of Articles 8, 9, 10, 21 and 78 of the International Code of Zoological Nomenclature to expand and refine methods of publication. Zootaxa 3450: 1-7.

Miller LD [1970] Nomenclature of wing veins and cells. Journal of Research on the Lepidoptera 8 (2): 37-48.