

**New taxa of butterflies (Lepidoptera, Rhopalocera)
from Mongolia**
by
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Summary: The following new taxa are described: *Parnassius nomion chin-gizkhan* **ssp. n.** (TL: Mongolia, Bayanhongor aimak, Khangai Mts., Tuin-gol R.), *Erebia callias chastilovi* **ssp. n.** (TL: South Mongolia, Gobi-Altai Aimak, 30 km South fr. Biger somon), *Cupido minima lhagvajavi* **ssp. n.** (TL: South Mongolia, Gobi-Altai Aimak, 30 km South fr. Biger somon), *Polyommatus aloisi dividus* **ssp. n.** (TL: South Mongolia, Gobi-Altai aimak, 30 km South fr. Biger Somon) and *Tongeia burte* **sp. n.** (TL: South Mongolia, Gobi-Altai aimak, 30 km W Tzogt somon). Distribution and diagnostic characters of new and closely related taxa are discussed.

Резюме: В статье описаны следующие новые таксоны из Монголии: *Parnassius nomion chingizkhan* **ssp. n.** (Монголия, Баянхонгор аймак, хр. Хангай, р. Туин-гол), *Erebia callias chastilovi* **ssp. n.** (Южная Монголия, Гоби-Алтайский аймак, 30 км южнее сомона Бигер), *Cupido minima lhagvajavi* **ssp. n.** (Южная Монголия, Гоби-Алтайский аймак, 30 км южнее сомона Бигер), *Polyommatus aloisi dividus* **ssp. n.** (Южная Монголия, Гоби-Алтайский аймак, 30 км южнее сомона Бигер) и *Tongeia burte* **sp. n.** (Южная Монголия, Гоби-Алтайский аймак, 30 км западнее сомона Цогт). Обсуждаются распространение и отличительные признаки новых и ближайших к ним таксонов.

Key words: New taxa, Mongolia, Rhopalocera, Lepidoptera, taxonomy, zoogeography.

Introduction

Study of the material collected by the members of a Russian-Mongolian expedition (2002) allowed to reveal several new for science taxa of Rhopalocera. The most interesting material was collected in the unnamed mountain chain situated 30 km south from Biger somon in Gobi (Govi) Altai aimak. On some maps this small range was included in the Gobi (Govi) Altai Mountains, but usually – in the system of Mongolian Altai as its south-eastern limit; this is true because the main highland fauna is closely related to that of Altai and often different from the taxa distributed in Gobi Altai mountain system or Gurvan-Saikhan Range. Some other new taxa were found in Khangai mountains.

The fauna of Rhopalocera of South Mongolia is practically not studied, and this looks very strange because the situation with some other groups of insects is quite different. This has happened because no professionals worked in this territory in the past times; practically all known material was collected in the northern half of the country, with very rare exceptions. The well-known papers, published by Y. KORSHUNOV, also did not include material from South Mongolia, as it was mentioned in the text (KORSHUNOV, SOUANIKOV, 1976; KORSHUNOV, 1977). Some new Lycaenidae were described from this territory by BALINT; his works were based on the material which was received from the scientists who collected Heterocera and for this reason was also very poor (and the type series often includes a few specimens only). As a result, many interesting butterflies were found now, some of which are described below.

The holotypes and part of the para types of the new taxa will be deposited in the State Darwin Museum (Moscow). The other part of the para types is preserved in the private collections of S. CHURKIN (Moscow) and V. PLETNEV (Moscow) with some exceptions, if it is marked in the text of the description.

Abbreviations: FW – brewing
HW – hindwing
TL – type locality

Parnassius nomion chingizkhan **ssp. n.**

Holotype: male, Mongolia, Bayanhongor aimak, Khangai Mts., 45 km N Bayan-Knohgor, Tuin-gol R., 2200-2500 m, 21-25.07.2002, S. CHURKIN leg.

Paratypes: 86 males, 27 females, same data, S. CHURKIN, V. PLETNEV & S. CHASTILOV leg. Part of the paratype series are in the collections of Mr. C. ULRICH (Le Castera, France), Mr. P. HEINKELE (Germany), Mr. Yu. KAWASAKI (Japan), Mr. T. FRANKENBACH (Munich).

Colour plate I: 1 (holotype), 2, 3.

Description and diagnosis

Male

Holotype FW length is 34 mm, paratypes – 33-36 mm.

The size is smaller than in the ssp. *korshunovi* KREUZBERG et PLRJSTSH 1992 or nominotypical subspecies, only slightly more than in the ssp. *dii* GRUM-GRSHIMAILO, 1890 (= *nominulus* STGR., 1894). The size of *korshunovi* varies from 38 to 45 mm (40 specimens measured); in the original description only the size of the holotype was mentioned – 40 mm.

The upperside looks very different from that of all known subspecies because of the combination of 3 main specific distinctions: dark suffusion in the central part of the FW upperside is absent; the submarginal dark band looks very contrasting, much more than in other races (it is not so dark as central and basal dark spots, but distinctly not so diffuse than in the ssp. *nomion* or, especially, *korshunovi*); this band consists of tooth-shaped spots. The first character is the main distinction of the ssp. *korshunovi* (but even in this subspecies some dark scales can be usually found in the central part of the wings, while in the new subspecies the ground colour is clear bright white and even scattered dark scales are practically always absent), while the tooth-shaped shape of the submarginal band is a distinction of two other subspecies – *dis* and *nomion*; in the ssp. *korshunovi* this band is not contrasting and diffuse. The size of the red ocelli on the HW in the new subspecies is slightly but distinctly smaller than in the ssp. *korshunovi*. At the same time, the much more contrasting submarginal band is an absolutely peculiar character which we have not found in all other subspecies of *nomion* (neither in Russia and Mongolia nor in China). This contrast results from the clear bright ground colour, without dark suffusion, as it was mentioned, and – that is also very important – without any traces of yellowish colour.

All other characteristics are typical for the species. The red colour is often present in the Cu – A spot on the FW (nearly 50% of the specimens) as well as in the postdiscal spots.

The underside is typical for the species.

The genitalia seem to have no real differences from other subspecies.

Female

FW length is 34-39 mm (34-36 mm, as a rule). The females have all the characters of the males and thus are even more different from the females of all other subspecies, because the sexual dimorphism is obviously not so expressed – it means that even in the females dark scales are usually absent in the central part of the FW (the females of *korshunovi* often have such a suffusion – not so developed as in the nominotypical subspecies, but distinct); the submarginal and marginal dark pattern is not more diffuse than in the males; the size of the red ocelli is practically the same as in the males.

Distribution and taxonomic notes

Known only from the type locality. The ssp. *korshunovi* is distributed in the main part of Altai and Sayan, while the very interesting darkened ssp. *dis* is known from the Irkut River valley; Dauria being populated by the nominotypical subspecies. It is important to note here, that one character which can be regarded as a distinction of *chingizkhan* is present in the description of *korshunovi* – the more contrasting submarginal and marginal black pattern; a careful study of the description shows that the authors meant only comparison with the ssp. *dis*, where the specimens are often totally darkened and the black pattern looks not so contrasting with the ground colour. Actually, this pattern is more diffuse exactly in *korshunovi* if we compare it with the ssp. *nomion* or many other races; and it represents an important characteristic of *korshunovi*.

One more subspecies of *nomion* was recently described from Mongolia – the ssp. *culutensis* EISNER & KRUSEK, 1983; the type locality is situated to the south from Ulan-Bator. I am not in a position to discuss the status of this taxon, but it is not *chingizkhan* in all cases, because it belongs to the nominotypical subspecies complex, with darkened central parts of the FW and other typical characteristics. Noteworthy, that all specimens of *nomion* mentioned in KORSHUNOV'S publications (KORSHUNOV, SOUANIKOV, 1976; KORSHUNOV, 1977) were collected in North Mongolia or Central Aimak. Only once a specimen originating from Khangai was mentioned in the first paper, but without a detailed label – I can suppose that it was collected at the northern slopes of the great range, because the characters of *chingizkhan* are very distinct, and I can not suppose that KORSHUNOV couldn't find it.

I am not mentioning other subspecies, the distribution areas of which are not connected with Central Mongolia; the characteristics of all of them is easy to find in many *Parnassius* publications (BRYK, 1935; DIETZ, 2000).

Habitat and biology

Open stony slopes; flies together with *Parnassius phoebus* F. The females were rare, rested under rocks and inside small bushes. We did not find this species in the northern slopes of Khangai Range (to make a comparison), in spite of all the efforts. Host plant – *Orostachys* sp.

Etymology

The subspecies is named after the famous CHINGIZKHAN, the creator of the most extensive empire in the history of mankind.

Erebia callias chastilovi ssp. n.

Holotype: male, South Mongolia, Gobi-Altai Aimak, 30 km South Ir. BigerSomon, 2700-3000 m, 3-10.07.2002, S. CHURKIN leg.

Paratypes: 31 males, 14 females, same data, S. CHURKIN, V. PLETNEV & S. CHASTILOV leg.; 1 male, same loc, 29.06.2002, S. CHURKIN leg.; males, S. Mongolia, Gobi-Altai aimak, Tzakhir Khalgyn Nuruu, Detyir Davaa Pass, 3000-3400m, 2.07.2002, CHURKIN S. leg

Colour plate II: 7 (holotype), 8, 9, 13, 15 (female, aberration).

Description and diagnosis

Male

Holotype FW length is 17.7 mm, paratypes – 16-18.5 mm.

This is a very distinctive subspecies which can be very easily distinguished from all other known subspecies of *E. callias* EDWARDS by the greatly reduced size of the ocelli on the FW. The size of these ocelli varies; sometimes the ocelli look like two black dots, more often the diameter of the ocelli is 2-3 times less than in other subspecies – even compared to some rare known specimens of the ssp. *simulata* LUKHTANOV, 1987 where the ocelli are slightly smaller than in the ssp. *altajana* STAUDINGER, 1901; the same situation is with the ssp. *sibirica* STAUDINGER, 1881. The ocelli are distinctly separate, except very rare cases, and never forming a single united spot. The reddish area around the ocelli usually has the same size as in *sibirica*, i. e. less than in *altajana* or *simulata*. The ocelli on the upperside of the HW are very often greatly or totally reduced (50% of the specimens), but sometimes the full number of them is present, but their size is smaller than in other races. Thus, the upperside recalls that of the ssp. *tsherskiensis* DUBATOLOV, 1992, only the reddish area is smaller and the ocelli are not removed to the apex – in spite of the fact that the areal of this subspecies is situated thousands of kilometres to the north and has no connections with the areal of the new subspecies (in addition, the climatic conditions in North Yakutia and South Mongolia are quite different!).

In the whole type series I have found only 2 specimens with more or less normally developed ocelli, (looking like a strong aberration, if we do not take into consideration that this represents a normal form in other parts of the species distribution) which are similar to those of the mentioned rare form of *simulata*, but the underside has the same colouration as in normal specimens – light-greyish, which is different from the silvered, whitish underside of *altajana* or *simulata*.

The genitalia seem to be identical to the genitalia of *altajana* and *simulata*.

Noteworthy, that the genitalia of the actual *sibirica*, which have not been studied by WARREN (1936), are very different from that of all other known subspecies as it was found by LUKHTANOV (1987) and confirmed during our work with this description. It is necessary to investigate this strange situation in more detail but this is impossible in the present paper.

Female

FW length 17-18.5 mm. All characters are as in the males, but the colouration is brighter (on the underside as well). At the same time, the great reduction of the ocelli on the HW underside is often more than in the males. Worthy to note, that the shape of the wings is

obviously narrower than in *sibirica* – but similar to other subspecies. 1 collected also a two fantastic females absolutely without ocelli, which represent an unknown form in this species (plate II-15).

Distribution and taxonomic notes

We have also a series from the southern slopes of Khangai Range, the butterflies being practically identical to the typical ones; this material is not included in the type series just because it is better to limit the type area in such a widely distributed species.

Habitat and biology

Flies practically everywhere, but usually is not numerous; prefers stony alpine grasslands. Host plant unknown.

Etymology

This subspecies is named after Sergei Yu. CHASTILOV (Ivanovo, Russia), a professional biologist, one of the members of the Mongolian expedition.

Cupido minima lhagvajavi ssp. n.

Holotype: male, South Mongolia, Gobi-Altai Aimak, 30 km South fr. Biger Somon, 2700-3000 m, 3-10.07.2002, S. CHURKIN leg.

Paratypes: 19 males, 9 females, same data, S. CHURKIN, V. PLETNEV & S. CHASTILOV leg.; 1 male, same loc, 29.06.2002, S. CHURKIN leg.

Colour plate III (upperside) **and IV** (underside): 3 (holotype, male), 6, 9.

Description and diagnosis

Male

FW length is 13 mm in the holotype, and 10.5-13.5 mm (12.5-13 mm, as a rule) in the paratypes.

The upperside is the same as in the nominotypical subspecies, but slightly darker, practically without traces of bluish scales which are faintly visible in the typical race. The underside provides the main distinction – a strong reduction of the size of the spots on the FW as well as on the HW; even the specimens with totally reduced pattern represent not an aberration but a common form (at least, 35% of the population). Usually, the size of all spots is much smaller than in the nominotypical subspecies, and in 95% specimens at least the median spots on the FW and cubital spots on the HW are absent. In very rare cases, the number of the spots is normal, but the size is also very reduced and the cubital spots on the HW (as well as the median spots on the FW) are quite small.

The genitalia are practically identical to those of the butterflies from Buryatia and Tuva.

Female

FW length 10.5-13 mm. The female has the same specific characteristics as the male, the reduction of the spots being statistically not so obvious, but the form with fully reduced pattern is also not rare.

Distribution

Known only from the type locality. Noteworthy, that the nominotypical race is distributed from Europe up to Kamchatka (TUZOV et al., 2000) – and the butterflies from different parts of this area have practically no differences (colour plate III and IV: 7, 8). The discovery of such a form of a so widely distributed and usually common butterfly emphasizes the degree of endemism in South Mongolia. Noteworthy, that in Central Mongolia (Central aimak) the nominotypical subspecies is distributed.

Habitat and biology

Open stony slopes, usually around small springs; flies together with *Thersamonolycaena dabrerai* BALINT and *Agrodiaetus mediator* DANTCHENKO & CHURKIN (in press). It was a very local and really rare species, one of the rarest *Lycaenidae* in the vicinity of Biger. The altitudes also look very high for the species. Probably, only one generation per year.

Etymology

The subspecies is named after LHAGVAJAV Nyamsuren, our driver and guide in Mongolia, a very good man.

Polyommatus aloisi dividus ssp. n.

Holotype: male, South Mongolia, Gobi-Altai aimak, 30 km South fr. Biger Somon, 2700-3000 m, 3-10.07.2002, S. CHURKIN leg.

Paratypes: 57 males, 15 females, same data, S. CHURKIN, V. PLETNEV & S. CHASTILOV leg.; 4 males, S. Mongolia, Gobi-Altai aimak, 45 km SE Biger v., 27.06.2002, 1950-2050m, S. CHURKIN leg.

Additional material: 3 males, 3 females, Mongolia, Bayanhongor aimak, Khangai Mts., 45 km N Bayan-Khohgor, Tuin-gol R., 2200-2500m, 21-25.07.2002, S. CHURKIN leg.

Colour plate III (upperside) **and IV** (underside): 16 (holotype, male), 17, 18.

Taxonomic notes

Polyommatus aloisi BALINT was described in 1988 on the base of four males only from the type locality Mongolia, Omnegov (Umnegov) aimak, Mts. Gurvan Sayhan uul, valley Alyut am, 2400 m, 103-55'E, 43-30' N, 24.07.1986"; no females were described. The main diagnostic characters of this little known species are as follows: the black margins on the upperside are much more extended compared to *P. erotides* STAUDINGER, 1892 while the underside has a dark-brown ground colour. The description is more or less detailed and it is not necessary to repeat it. I visited the exact type locality and collected a small series (15 males, 4 females) of the nominotypical subspecies in 2002 (colour plate III and IV: 19, 20, 21). Also, one more population was found in the western range of Gurvan-Saikhan mountain system – in Dund Saikhany Nuruu, northern slopes, where a great number of specimens, including 20 females, were collected at the altitudes 2400-2750 m. This population certainly belongs to the nominotypical subspecies, if we compare it with the new taxon, but displays more variation: the black margins are sometimes not so wide. In the typical population, the width of the black margins on the FW is usually 2-3 mm and only in one specimen – 1.5 mm, but one paratype with 1 mm black margins was mentioned in the description; this is strange

because such a specimen was not found in the colour plates with the photos of the types. Half of the males in the new population has the margins about 1.5 mm (but never less than 1 mm); I found also several specimens with not so dark underside as in the topotypes. The females were practically identical with the topotype females.

At the same time, in the mountain near Biger, which represent the eastern limit of Mongolian Altai, we found populations which certainly belong to the mentioned species but represent, in my opinion, a new subspecies, in spite of the great variability in the *erotides* – complex as a whole.

Before the description of the new subspecies it is necessary to describe the female of the nominotypical subspecies. The description is based on the characters of the topotypes – but, as I wrote, the females from Dund Saukhan Range were identical.

The size is the same or smaller than in the males – 13-15 mm (while in *erotides* it is often more than in the males). The upperside is totally dark, FW fringes whitish, HW fringes whitish with very small not-contrasting dark streaks long veins. FW with non-contrasting black discal spot which is more conspicuous than in *erotides* because this spot has a diffuse indistinct whitish frame. HW with not dense and narrow but distinct bluish-green suffusion near the base, which is absent in *erotides*.

The marginal band of the blackish spots in diffuse pale whitish rings is more or less developed on the HW, these spots being separated by black veins; this marginal band represents one of the most important characters of *P. aloisi*. The genitalia were not studied.

Description and diagnosis

Male

FW length is 14 mm in the holotype, and 12-15 mm (13-14.5 mm, as a rule) in the paratypes – the butterfly is slightly, but surely statistically smaller than the nominotypical subspecies (13.5-15.5 mm).

The males possess all characters of the nominotypical subspecies: darkened underside, silver-blue with very slight greenish shade (different from *erotides* or *aloisi*) FW upperside with moderately widened black margins. The width of these margins is statistically but absolutely clearly less than in the nominotypical subspecies. I found only one male with the margin of 2.5 mm, looking like an aberration, because all others show the width of 0.5-1.5 mm, and often the actual colour of the margins is not deep but diffuse. It means that it was possible to see the differences from *erotides* only in a series; only the ground colour of the wings being slightly different. At the same time, the differences from the population from Dund Saikhany Nuruu look not so distinct as from the typical specimens of *aloisi* (where the width of the margins is practically twice more), the males from Dund Saikhany Nuruu looking like an intermediate form.

The underside is conspicuously paler than in the nominotypical subspecies and is of a pale brown colour. The spots are usually reduced and distinctly smaller, except some rare cases. Very often part of the spots are reduced and absent at all, this character being not found in the nominotypical subspecies (one hundred specimens checked). The marginal border of the HW underside looks paler, the dark margin is very thin and not blackened, the fringes also look practically without dark segments from the underside (as a rule).

The genitalia look very similar to those of the ssp. *aloisi*, but I have not made a lot of preparations because it would be senseless without real revision of other related taxa.

Female

FW length – 13-15 mm.

Differs from the nominotypical females much more than the males, because the black discal spot has a more or less bright whitish frame on both wings – and, at the same time, the greenish-bluish basal suffusion is much more extended, especially on the HW, covering practically half of the wing, always including the anal zone. The females with these two characters have very different appearance compared to the nominotypical females as well as with *erotides* females. The submarginal pattern on the HW upperside is more developed than in the ssp. *aloisi*. The underside has the same characteristics as in the males.

Distribution and taxonomic notes

One more population of the new subspecies was found at the southern slopes of Khangai Range, together with a new subspecies of *Parnassius nomion*. The three pairs collected are practically identical to the Biger population. No material from actual Gobi Altai is known.

Habitat and biology

Dry stony slopes and valleys of the rivers; the butterflies were very local. The rare males flying everywhere, the females were found usually near the small springs. The most numerous population was found at a very high altitude in a single very small place. Flies together with *Thersamonolycena dabrerai* BALINT, *Agrodiaetus mediator* DANTCHENKO & CHURKIN (in press), *Parnassius phoebus* ssp. n.

Thus, the females represent a very interesting form, which looks quite different from all other known females. While the males are very variable¹, and their differences from the related taxa are of a statistical character, the distinctions of the females seem to be clear; the combination of characters is very important for the *erotides* – complex as a whole. The males of the new subspecies, the areal of which must have a contact with the areal of *erotides* (normal *erotides* is known from the northern slopes of Khangai, according to KORSHUNOV'S papers), look not so different from the mentioned species: the black margins have practically the same width and variability, the underside is not so darkened as in ssp. *aloisi*. Of course, the butterflies still differ from *erotides* (which has the pure whitish underside), but it would not be so clear if the females were not so distinct as it is in reality. The females of the new subspecies differ from the females of *erotides* much more than the females of *aloisi*, where all characteristics look not distinct. I can conclude that the upperside of the males is much more variable than it was supposed by BAUNT, and the characters of the females are of an more taxonomic importance. The population from Dund Saikhany Nuruu presents a variant of the nominotypical race, which seems to be true because the whole Gurvan-Saikhan mountain system is isolated from other ranges. At the same time the upperside colour of the males of the ssp. *dividus* looks very similar to that of ssp. *aloisi* under daylight, but becomes strongly different under electric light – as it is clearly visible in the colour plate IX. This strange and important fact needs further investigations.

The other distinctions between the subspecies are the differences in the underside colour, the size of the postdiscal spots on the HW underside and very different forms of the females. On the other hand, if we compare the typical populations of both subspecies of *aloisi*, the males also would not be confused (by the width of the marginal band) – thus, the version that these two subspecies represent the opposite sides of the cline within the species areal is also not excluded.

All this hypotheses need further investigation which will provide a key for understanding the actual relations between *erotides* and *aloisi*, the two related and probably allopatric taxa.

Etymology

Dividus (Latin) can be translated as “separated”.

Tongeia burte ssp. n.

Holotype: male, S. Mongolia, Gobi-Altai aimak, 30 km W Tzogt v., 1800-1900m, 30.06.2002, CHURKIN S. leg.

Paratypes: 18 males, 5 females, same data, S. CHURKIN, V. PLETNEV & S. CHASTILOV leg.

Colour plate III (upperside) **and IV** (underside): : 4 (holotype, male), 5 (paratype, female).

Taxomic notes

Two years ago a new species of *Tongeia* TUTT, 1908 was described from SW Mongolia – *Tongeia bisudu* ZHDANKO et JAKOVLEV [Yakovlev], 2001 (colour pi. IX and X: 1,2). The taxon was based on two specimens only. In 2002 I collected a series of this species in two localities in Mongolia; the new investigations confirm the status of *T. bisudu*, including great differences in the genitalia structures from *T. fischeri* EVERS-MANN, 1843, widely distributed in South Siberia and Far East (about these differences – see in original description of *T. bisudu*). However, some species of *Tongeia* known from China have the same structure of the male genitalia as in *T. bisudu* (i.e. with quite different type of the valva compared to *T. fischeri*) – for example, *Tongeia davidi* POUJADE, 1884. It is interesting, that *T. bella* HUANG, 2001, a new species from SE Tibet, described practically at the same time as *T. bisudu*, recalls many of *b/sudu*-characteristics; the figure of the genitalia is absent but the characters of the genitalia given are clearly different from those of *T. bisudu*. I think, that *bisudu*, *davidi* as well as the new species described below and some other Chinese taxa (as, probably, *T. bella*) must be united in another subgenus than *T. fischeri*. I am not in a position to work with generic taxonomy, thus, I shall name this species complex as the *davidi* – group. The hiatus between all species belonging to this group, is much less than with *T. fischeri*, in spite of the similar external characteristics, because of absolutely different genitalia. It means that the main characters which were marked in the description of *T. bisudu* as specific are mainly the characters of the group, because A. ZHDANKO compared the new species with *T. fischeri* only (he had no other possibilities because the genitalia structure of *T. davidi* was published one year later (MIN.; XIAOLING, 2002). Thus, it is necessary to provide a more detailed description of the genitalia of *T. bisudu* which I will do in comparison to the genitalia of the new species and *T. davidi*.

Description and diagnosis

Male

FW length 9.7 mm in the holotype, 9.5-12.0 mm in the paratypes; the size is the same as in *T. bisudu* (9.7-11.5 mm).

The underside is typical for the genus and practically has no important characteristics, only the pale-bluish unclear spots on the HW are statistically slightly more developed in *T. bisudu*

but this distinction is very variable. (Worthy to note, that the colour of the upperside is not so different from *T. fischeri* as it was marked by ZHDANKO – neither in the new species nor in *T. bisudu*: fresh specimens often have practically the same colour, only the size is smaller. It is much more important that the shape of the wings in the whole *davidi* – group is narrower than in *T. fischeri* – this character is obvious in a series very well and was not marked by ZHDANKO for *T. bisudu*. Below I will not regard other characteristics of *fischeri* because it is not necessary due to the above mentioned structure of the genus).

The underside of the FW is very similar to *bisudu*, only the antemarginal pattern is more reduced, looking more contrasting with the clearly black postdiscal row and discal spot. But this character becomes clear only after a detailed examination of the series.

The HW underside provides the main characteristics, being distinctly different from that of *T. bisudu*. The spots in the postdiscal row are clearly black as well as the basal spots, in contrast to other pattern, which is just dark (only 2 or rarely 3 smaller antemarginal spots in the Cu-zone are more or less blackish). As a result, the postdiscal row on the HW looks as a continuation of the postdiscal row on the FW and has the same density of the black colour. In *T. bisudu* all spots on the HW are not black (except small basal spots) but diffuse and have a yellowish hue, so that the HW looks very contrasting with FW. This is the main distinction of *T. bisudu* – as well as the opposite version of the colouring of the postdiscal row of spots in *T. burte* is also the main characteristic of the new species.

The discal spots are greyish, not contrasting, but without yellowish scales (in contrast to *T. bisudu*). The yellowish spots in the antemarginal pattern are paler, while the blackish spots here (in the Cu-zone, between 2A-Cu2-Cu1 veins) are without (or with indistinct) metallic blue scales. In *T. bisudu* the discal spots are clearly yellowish, while the mentioned yellowish spots in the antemarginal pattern are more conspicuous; the blue-greenish metallic scales are distinctly present in the blackish spots between 2A-Cu2-Cu1 veins.

The colouration of the antennae and other parts of the body, fringes and the shape of the tails have no specific characteristics.

Genitalia (fig.1-a) similar to those of *T. bisudu* (fig.1-b) in the general structure. But the shape of the valva is clearly different and provides a very constant distinction. The part of the valva which represents the base of the costal process is much narrower than in *T. bisudu* – as a result, the valva in the new species looks moderately gradually tapered from the proximal to the distal end, while in *T. bisudu* it has a distinct extension just after the median narrowed part; the width of the valva here is the same as in the basal part of the valva. The basal part of the costal process from the lateral view is not visible in *T. bisudu* (fig. 1-e) because this part of the process is covered by the widened valva. In *T. burte* this process is more conspicuous, even the basal part – it is not covered by the narrowed valva (fig. 1-d). The caudal (apical in the publication of ZHDANKO & YAKOVLEV) process in *T. bisudu* is much more curved inside, more extended near the tip and, at the same time, the tip is more sharpened; the small plate in which this mentioned tip ends has a more developed denticulate margins. In *T. burte* the extension near the end of the caudal process is not clear, the borders of the small plate situated at the end of this process is not actually denticulate. Noteworthy, that exactly the characteristics of the caudal process are variable and has no so important taxonomic value: all mentioned distinctions are not so constant as the characters of the shape of the valva and costal process.

Uncus, tegumen, branches of the gnatos seem to be very similar to those of *T. bisudu* and have no specific characteristics.

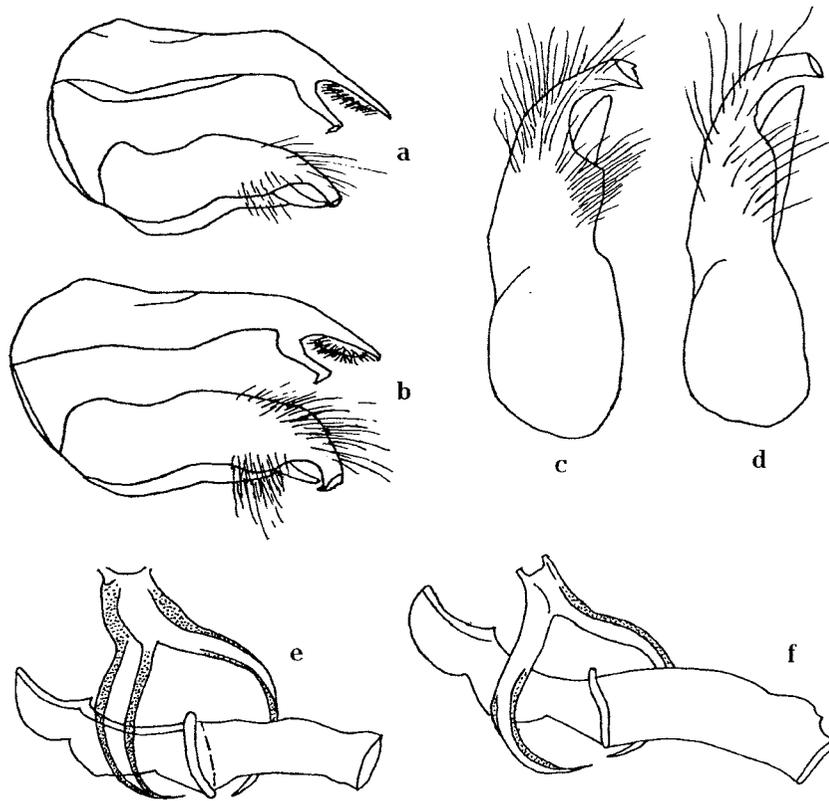


Fig. 1. *Tongeia bisudu* (b, c, f) and *T. burte* (a, d, e), male genitalia: a, b – lateral view; c, d – valva; e, f – juxta and aedeagus.

The branches of the juxta in *T. burte* are gradually tapered to the end from the widened base (fig. 1-e), while in *T. bisudu* it has practically the same width except sharply narrowed ends, the bases of the branches are not widened (fig. 1-f). The aedeagus has no such distinctive characters, but the distal end in *T. burte* is obviously narrower, while the basal part is not so widened and strong as in *T. bisudu*.

I prepared 5 dissections of each taxa, and the mentioned specific characteristics were very constant.

Worthy to note, that the figures of *T. bisudu* published in the original description have some small careless mistakes. For example, the shape of the juxta looks even more similar to *T. burte* and not identical to the actual juxta of the holotype – this is easy to explain because the aedeagus was not separated while preparing this figure (together with juxta) and it is very hard to picture the real shape without such a separation. The figure of the aedeagus is also not so valuable for an actual comparison. The position of the aedeagus in the whole structure of the genitalia is not strongly fixed – as a result the actual angle of vision at the aedeagus in different figures can not be constant – it means that it is very hard to make an

actual comparison with such kind of figures. On the published figure the aedeagus is similar to the real aedeagus of *bisudu* as well as to that of *burte*. From the figure of the valva (fig. 5, page 172) showing the main characters of *bisudu* (see before), it is easy to understand that the end of the apical process is curved inside. At the same time, a separate figure shows the valva from such a strange point of view that the costal process looks sharpened (it was mentioned in the description that the figure is from the lateral view, but this is not correct; and this note is absent in the explanations to the figures) while the small plate at the end of the apical process is not distinct – but the borders of this plate are distinctly denticulate, as it is mentioned in description.

Female

FW length is 10-12 mm (the same as in *T. bisudu*).

FW underside is similar to that of the male, but the HW underside has more darkened antemarginal pattern, while the postdiscal row is not so densely blackened. In some characters it recalls the underside of the male (!) of *T. bisudu* – but, at the same time, the differences between the females of these two species are even much more than between the males. The females of all species belonging to this genus are conspicuously paler from the underside than the males – in the case of *bisudu* the female underside is so yellowish, with so diffuse discal spot and postdiscal row, that the differences from the new species in the whole pattern look more sharp.

The females of *T. burte* have developed yellowish spots in the antemarginal pattern, the metallic scales also become obvious (in the females of *T. bisudu* the mentioned spots are orange, large and bright).

The genitalia of the females, in my opinion, do not provide characters of real taxonomic value, but further investigation is required using more numerous material.

T. burte in some respects recalls *T. davidi*, described from Sichuan, but this species has a whitish underside with very different shape of the blackish antemarginal spots on the HW underside, which is linear (in *T. burte* these are enlarged dots, as in *T. bisudu*). The genitalia (MEN, XIAOLING, 2002) also exhibit different shape of the valva and processes.

Distribution

The new species was found not so far from the known areal of *T. bisudu*, which was described from the following locality: Gobi-Altai [aimak], 15 km S from Altai v. [somon], 1800 m. The female para type was collected in another locality – 30 km S from Biger [somon], 2100 m. This data is wrong, because 30 km south from Biger there are mountains with the altitudes not less than 2500 m, where 1 was and where were no suitable habitats for *T. bisudu*. After a careful study of the information received from collectors (P. USTJUZHANIN, pers. comm.), we can be absolutely sure that the female was found in 20-30 km in the western or SW (!) direction from Biger. At the same time, I found populations of this species near the Biger, in dry mountains 30 and 45 km SE from this small town. According to all mentioned information, the areal of this species covers all mountains (at middle altitudes) bordered the “Valley of the Lakes” in SW Mongolia – i. e. the territory between Khangai Range and Mongolian Altai – Gobi-Altai chain. The butterflies are everywhere absolutely local and, as a rule, not numerous.

The new species was found on the opposite side of the southern edges of Mongolian Altai, i.e. on the southern slopes of this range. The Gobi desert lies southward from these slopes.

The alpine altitudes are not suitable for this species and, I think, the chain of the mountains – even not so high in some places – was the base for the isolation of these populations from all that occur in the Valley of the Lakes. I suppose that the new species will be found in other parts of the mountains along the Gobi border.

The butterflies belonging to the *davidi*– group are fantastically local in Mongolia and practically not flying – so, it is possible that some new taxa will be found in this country.

Habitat and biology

The new species was found in a giant rocky canyon situated in the western direction from the small town Tzogt. The butterflies flew at rocks (often semi-vertical) and were extremely rare. This was a very hot, dry and hard place, where practically no any other species of Rhopalocera lives, except some very common *Pieridae* and *Neolycaena*.

Etymology

BURTE (BORTE) – the first and beloved wife of Temujin Borjigin, the famous Chingiz-khan.

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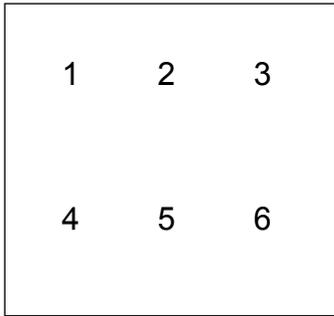
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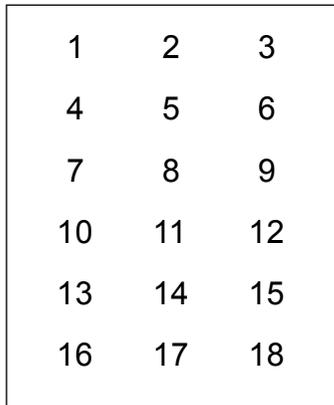
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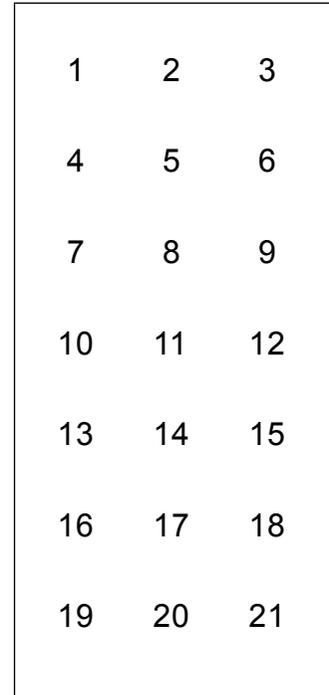
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Reutov, 143952 Moscow Reg., Russia

**Colour plate I (nomion):**

1. *Parnassius nomion chingizkhan* ssp. n., holotype, male, data in the text;
2. *P. nomion chingizkhan* ssp. n., paratype, female, data as 1;
3. *P. nomion chingizkhan* ssp. n., holotype, male, data as 1;
4. *P. nomion korshunovi*, male, Altai, Shebalino vie, 1000 m, 20.07.1991, G. SAMODUROV leg.;
5. *P. nomion korshunovi*, female, same data as 4;
6. *P. nomion korshunovi*, male, same data as 4.

**Colour plate II (callias):**

7. *E. callias chastilovi* ssp. n., holotype, male, data in the text;
8. *E. c. chastilovi* ssp. n., paratype, male, data as 7;
9. *E. c. chastilovi* ssp. n., paratype, female, data as 7;
10. *E. c. altajana*, male, Altai, Kurai Mts., 7-8.07.1996, 2000m, A. ANISKOVTCH leg.;
11. *E. c. sibirica*, male, E. Kazakhstan, Saur, Tas Mts., S Kyzyl-Kiya v., 2100-2300m, 10.07.2001, K. KOLESNICHENKO leg.;
12. *E. c. sibirica*, female, same data as 11;
13. *E. c. chastilovi* ssp. n., paratype, male, underside, data as 7;
14. *E. c. simulata*, male, E. Sayan, Tunkin, Arschan v., 2000 m, 15.07.1983, V. MICHAÏLOV leg.;
15. *E. c. chastilovi* ssp. n., paratype, female (aberrant), data as 7.

**Colour plate III (upperside) and IV (underside) (Lycaenidae):**

1. *Tongeia bisudu*, male, S. Mongolia, Govi-Altai aimak, 45 km SE Biger v., 27.06. 2002, 1950-2050m, S. CHURKIN leg.;
2. *Tongeia bisudu*, female, same data as 1;
3. *Cupido minima lhagvajavi* ssp. n., holotype, male, data in the text;
4. *Tongeia burte* sp. n., holotype, male, data in the text;
5. *Tongeia burte* sp. n., paratype, female, data in the text;
6. *Cupido minima lhagvajavi* ssp. n., paratype, female, data as 1;
7. *Cupido minima minima*, male, Tuva, Buren R, 1600 m, 16.06.2000, S. VASCHENKO leg.;
8. *Cupido minima minima*, male, Buryatia, Barguzin Mts., Nesterikha R., 18.06.1996, 800 m, S. CHURKIN leg.;
9. *Cupido minima lhagvajavi* ssp. n., paratype, male, data as 1;
16. *Polyommatus aloisi dividus* ssp. n., holotype, male, data in the text;
17. *Polyommatus aloisi dividus* ssp. n., paratype, female, data as 16;
18. *Polyommatus aloisi dividus* ssp. n., paratype, male, data as 16;
19. *Polyommatus aloisi aloisi*, male (topotype), S. Mongolei, Gurvan-Saikhan Mts., 12 km NW Tzokhor, 2300 m, 14.07.2002, S. CHURKIN leg.;
20. *Polyommatus aloisi aloisi*, female (topotype), data as 19;
21. *Polyommatus aloisi aloisi*, male (topotype), data as 19.

