

## A new subspecies of *Pamassius nomion* FISHER DE WALDHEIM, 1923 from South-West Mongolia (Lepidoptera, Papilionidae)

by  
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**Summary:** *Pamassius nomion saldaitisi* ssp. nova from SW Mongolia (type locality — Mongolia, Govi-Altai aimak, Khan Taishiryn Mts., 17 km S Zhargalan somon) is described. The characters of the new taxon are discussed in comparison with the nearest subspecies — *P. nomion korshunovi* KREUZBERG et PLJUSTCH, 1992 and *P. nomion chingizkhan* CHURKIN, 2003; some characters of the ssp. *saldaitisi* recall Chinese subspecies of *nomion*, this being important in the zoogeographical respect.

**Резюме:** В статье описан новый подвид аполлонов *Pamassius nomion saldaitisi* ssp. нова из Юго-Западной Монголии (типовая местность — Гоби-Алтайский аймак, хребет Хан Тайширын, 17 км южнее сомона Жаргалан). Признаки нового таксона даны в сравнении с признаками ближайших подвидов — *P. nomion korshunovi* KREUZBERG et PLJUSTCH, 1992 и *P. nomion chingizkhan* CHURKIN, 2003; некоторые отличия ssp. *saldaitisi* повторяют черты китайских представителей вида.

**Key words:** *Pamassius*, *nomion*, Lepidoptera, taxonomy, Mongolia, zoogeography

### Introduction

A short review of the characters and distribution of the Siberian and Westmongolian subspecies of *P. nomion* FISCHER DE WALDHEIM, 1923 was published by the author together with the description of *P. nomion chin-gizkhan* CHURKIN, 2003. The last subspecies was found at the southern slopes of Khangai Range. It was also clear that *P. nomion* should be distributed in South-West Mongolia — and such a population was really found in 2004 at the northern macroslopes of Khan Taishiryn Range, in the south-western direction from Khangai.

Khan Taishiryn presents a moderately high mountain chain (the highest altitudes — 3000-3150 m a.s.l.) situated between Khangai and the desert steppes of the Lakes Valley. There are no connections with the Mongolian Altai — while the topographic relations with Khangai look obvious. The recent investigation of the fauna of this range shows paradoxical results: many species inhabiting the range are the same as in the mountains of SE slopes of the Mongolian Altai, including Satal Uul Mnt. and the mountain chains near Biger somon (many new taxa were described from the last locality).

Among the butterfly fauna collected in Khan Taishiryn by the members of the Russian - Mongolian expedition were *Agrodiaetus mediator* DANTCHENKO et CHURKIN, *Tongeja bisudu* ZHDANKO et YAKOVLEV, a new subspecies of *Melitaea cinxia* L. (will be described separately, the type locality is situated at the southern slopes of the Mongolian Altai). The mentioned Lycaenidae are absent in Khangai, while *M. cinxia* provides another taxon (the nominate one), the same as in the Altai and Sayan. The race of *Plebejus idas* sensu lato which was found here belongs to *P. (idas) munkhbayar* CHURKIN et ZHDANKO, 2004 — although the western and southern slopes of Khangai are populated by the butterflies which are much more close to *P. (idas) subsolanus* EVERSMANN. At the same time, we found some Palearctic

species which have never been found in Biger and the southern half of the Mongolian Altai: *Aricia allous* HUBNER, *Eumedonia eumedon* ESPER.

It is clear that the fauna of the low and medium altitudes of Khan Taishiryn Range is much more related to the fauna of the Southern Mongolian Altai than to the Altaian-Sayanian fauna populating Khangai Range. I believe that it is more correct to speak about a complex of species which populates the borders of the valley extending between the Mongolian Altai and Khan Taishiryn — this complex being almost absent in Khangai. On the contrary, the fauna of the forests of the northern slopes of Khan Taishiryn is closely related to that of the same complex in Khangai (i.e., it represents a part of the AJtai-Sayan fauna) — and the level of the endemism of this complex is not known (up to now, we have found only the commonest representatives). The complicated nature of the whole fauna of the mountain system poses a serious problem for the future studies of the Mongolian zoogeography.

*P. nomion* was found at the altitudes 2100-2300 m, at the lowest border of the forest here. This is not an alpine species and must be placed in the faunistic complex of the butterflies of medium altitudes. This is the actual reason why its populations from the southern and northern slopes of Khangai belong to very different subspecies.

**Note.** A new population of *P. nomion* was found in 2004 closely to the type locality of the ssp. *chingizkhan* — just near Tzetzlerleg city, at the northern slopes of Khangai, “symmetrically” to the *chingizkhan*-siie at the southern slopes of the Range (Tuin-gol R., 45 km N Bayan-Knoghgor). This population certainly belongs to the nominate subspecies, with darkened contrasting females and marked sexual dimorphism. The distance between these populations and the type locality of *chingizkhan* is slightly more than 100 km but no intermediate forms have been found. Originally, I believed that the northern slopes of Khangai were populated by intermediate forms between the ssp. *chingizkhan* and ssp. *korshunovi*; the record of the populations belonging to the nominate subspecies from this area makes the position of the ssp. *chingizkhan* even more isolated in the subspecific structure of *nomion* than it seemed before.

The newly collected series of *P. nomion* has so significant differences from other Mongolian and Russian races that it could be even a surprise — but finding of some features of the Chinese *nomion* clarifies the problem. As I mentioned several times in the previous Mongolian articles, the fauna of South Mongolia is closely related to the fauna of North China. It can be explained only basing of the facts that Gobi represents a very young kind of desert, which was populated by some butterfly species during the glacier periods (and only at present practically lacks lepidopterofauna).

The new subspecies is surely isolated now from the areal of the ssp. *korshunovi* (TL: Altai, Russia) as well as from the areal of the ssp. *chingizkhan*. The distance between the type localities of the two last taxa is not more than 300 km but they are separated by a large territory of very dry low southern slopes of Khangai. However, it is certain that in the past these slopes were also covered by forests (even in the end of XIX century there was a lot of forest there, as it was mentioned by PRZEVALSKY in his Mongolian Diary — we can imagine the situation during the glacier period). Thus, the most important obstacle must be the valley of Zavkhan — one of the largest Mongolian rivers. At present, it is not so wide, but it was a great river in the past. The valley was covered by peculiar forests with peculiar microclimate, not suitable for most part of the South Mongolian butterflies of the low-medium altitudes (which are the elements of dry habitats). These forests are now practically extinct (and destroyed by the man) — we found only small and last parts of them near the low stream

of Bogdyn-gol River, the largest tributary of Zavkhan (the fauna of the forests is very simple but interesting and needs separate article). Only the presence of Zavkhan can explain the obvious differences between the fauna of the southern slopes of Khangai (just on the other side of the river) and the fauna of Khan Taishiryin.

As a result, the new subspecies has some characters of the ssp. *chingizkhan*, less characters of the ssp. *korshunovi*, and some special distinctions recall the races known from North China.

The holotype will be deposited in the Darwin State Museum (Moscow). The paratypes are preserved in my collection; one pair is in the collection of A. SALDAITIS.

**Abbreviations:** FW - brewing  
HW - hindwing  
TL - type locality

### *Pamassius nomion saldaitisi* ssp. nova

**Holotype:** male, Mongolia, Govi-Altai aimak, Khan Taishiryin Mts., 17 km S Zhargalan s. 12-14.07.2004, 2100 - 2300m, CHURKIN S. leg.

**Paratypes:** 22 males, 15 females, same data, CHURKIN S. & CHASTILOV S. leg

**Colour plate V:** 1 (holotype), 2, 3, 4; **colour plate IV:** 8.

### Description and diagnosis

#### Male

FW length 33 mm (holotype), 32-34 mm (paratypes) (two specimen — 36 mm).

This is the smallest subspecies (except the Chinese taxa), even obviously smaller than the ssp. *chingizkhan* (average FW length — 33.5, while in the ssp. *chingizkhan* — 34.7 mm, in the ssp. *korshunovi* — 40 mm; 20 specimens measured in all cases). The white ground colour has a yellowish tinge, the marginal and submarginal bands are not contrasting, similar to the ssp. *korshunovi* and in contrast to the ssp. *chingizkhan* (this character united *chingizkhan* and the nominate subspecies), At the same time, the submarginal dark band is very marrow, 1.5 times narrower than in the ssp. *korshunovi*.

Practically all specimens (90%) have well developed red postdiscal eyes near the d-cell — in *korshunovi* such specimens are practically absent and only 15% of the *chingizkhan*-males have these spots (as a rule, much smaller in size). The spot Cu2-A also has a red eye, with rare exceptions.

HW with two red eyes each, always with white ocelli inside.

The whole shape of the wing iis obviously more narrower than in the ssp. *korshunovi*. This character recalls the ssp. *chingizkhan*, thus, the two unusually large specimens look more similar to the last subspecies, being paler, not contrasting but yellowish with much more developed red spots

#### Female

FW length 34-36 mm, two specimens — 38 mm, average - 35 mm (it is necessary to point out that I made a mistake with the average size of the females on chingizkhan in the original description, it is 36 mm — however much smaller than in the females of other subspecies, except the smallest new ssp. *saldaitisi*). The main characters are typical for the species, but the dark postdiscal suffusion is absent on the FW (as in *chingizkhan*), while the red eyes on the HW are larger (compared to the size) and always have white ocelli inside; these ocelli cover practically the whole inner area of the spot. Other characters are the same as in the males.

#### Notes

The new subspecies differs from both closest geographically taxa very significantly, being externally a very different butterfly: small, with reduced dark pigmentation (in contrast to the ssp. *korshunovi*), yellowish (in contrast to the ssp. *chingizkhan*) and with much more developed red spots on the FW. Such a composition of characters looks more similar to the subspecies known from Qinghai (China) - ssp. *nomius* GR.-GR., 1891 or ssp. *lussaensis* BANG-HAAS, 1935. Of course, they are not identical, but externally are even more similar to the ssp. *saldaitisi* than the nearest subspecies.

The presence of abruptly larger specimens (in a small quantity) in the population of the new taxon shows that some genetic exchange was possible not so far in the past, what may be important for a study of the history of the region.

#### Habitat and biology

Typical habitat of the species: dry stony slopes near the forests. Worthy to note a very early flight period of the taxon: most part of the butterflies was worn, even the females (seriously damaged pieces were not included in the type series). Both subspecies known from Khangai fled in 2004 at the same or even lower altitudes at least two weeks later. This distinction can also be an obstacle to the genetic exchange with other populations. In addition, *P. nomion* was very rare at the highest altitudes although the main forest massifs grow higher. Host plant — *Orostachys* sp.

#### Distribution

The distribution area of the new subspecies is not clear. It can be the endemic for the range, but I suppose that similar populations (belonging to the same subspecies or to an undescribed but closely related one) will be found at the other mountain borders of the valley between the Mongolian Altai and Khangai / Khan Taishiryin. The related forms can be found, in my opinion, even at the southern limits of Tuva Republic in Russia (southern slopes of the East Tanuola Range?).

#### Etymology

The taxon is named after Aidas SALDAITIS (Lithuania), the member of the expedition who gave the lucky idea to visit Khan Taishiryin Range.

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All photos were taken by Andrei SOCHIVKO.

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### Colour plate V:

1. *P. nomion saldaitisi* ssp. n. , male, holo-type, Mongolia, Govi-Altai aimak, Khan Taishiryng Mrs., 17 km S Zhargalan s. , 12-14.07.2004, 2100 - 2300m, CHURKIN S. leg. .;
2. *P. n. saldaitisi* ssp. n. , male, paratype, same data (form with reduced eyes on FW);
3. *P. n. saldaitisi* ssp. n. , female, paratype, same data;
4. *P. n. saldaitisi* ssp. n. , female, paratype, same data;
5. *P. n. chingizkhan*, male, paratype, Mongolia, Bayanhongor aimak, Khangai Mts., 45 km N Bayan-Khohgor, Tuin-gol R., 2200 - 2500 m, 21 - 25. 07. 2002, S. CHURKIN leg.;
6. *P. nomion chingizkhan*, paratype, male, data as 5;
7. *P. nomion chingizkhan*, paratype, female, data as 5;
8. *P. nomion chingizkhan*, paratype, female, data as 5.

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2	6
3	7
4	8

