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New taxa of blues from Tian-Shan

(Lepidoptera, Lycaenidae)

by

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Summary: The following new taxa are described: *Agrodiaetus phyllides* ***urumbash*** **subspec. nov.** (TL: 15 km E Kazarman, Naryn River valley, Tian-Shan, Kyrgyzstan), *Plebejus* ***mellarius*** **spec. nov.** (TL: Uzun-Akhmat River, 5 km NW Chon-Aryk v., Tian-Shan, Kyrgyzstan), *Polyommatus* (*Elviria*) *elvira* ***hanusi*** **subspec. nov.** (TL: Naryn River valley, 90 km W Naryn, Tian-Shan, Kyrgyzstan), *Polyommatus icarus* ***effatus*** **subspec. nov.** (TL: Baibiche-Too Mts., Beuroily loc.,Tian-Shan, Kyrgyzstan) and *Neolycaena medea* ***idyia*** **subspec. nov.** [TL: Ala-Buka R. valley, Chaartash Mts.(southern edges), Tian-Shan, Kyrgyzstan]. The distribution and diagnostic characters of the new and closely related taxa are discussed.

Zusammenfassung: In dieser Arbeit werden folgende Taxa neu beschrieben: *Agrodiaetus phyllides* ***urumbash*** **subspec. nov.** (TL: 15 km E Kazarman, Naryn River valley, Tian-Shan, Kyrgyzstan), *Plebejus* ***mellarius*** **spec. nov.** (TL: Uzun-Akhmat River, 5 km NW Chon-Aryk v., Tian-Shan, Kyrgyzstan), *Polyommatus* (*Elviria*) *elvira* ***hanusi*** **subspec. nov.** (TL: Naryn River valley, 90 km W Naryn, Tian-Shan, Kyrgyzstan), *Polyommatus icarus* ***effatus*** **subspec. nov.** (TL: Baibiche-Too Mts., Beuroily loc.,Tian-Shan, Kyrgyzstan) und *Neolycaena medea* ***idyia*** **subspec. nov.** [TL: Ala-Buka R. valley, Chaartash Mts.(southern edges), Tian-Shan, Kyrgyzstan]. Außerdem wird zur Verbreitung der neuen und nahe verwandten Taxa sowie zu deren Unterscheidungsmerkmalen Stellung genommen.

A study of material collected in Kyrgyzstan in 2005-2007 revealed five new Lycaenidae taxa new to science. The holotypes of the new taxa will be deposited in the Darwin State Museum (Moscow). The other paratypes are preserved in the the authors' private collections.

Abbreviations: FW - fore wing. HW - hind wing. TL - type locality.

Agrodiaetus phyllides ***urumbash*** **subspec. nov.**

Holotype ♂: Kyrgyzstan, Tian-Shan, 15 km eastern Kazarman v., Naryn River valley, 1300-1400 m, 5.VI.2005, S. CHURKIN leg.

Description and diagnosis: FW length 16 mm in the holotype, 13-18 mm in the ♂♂ paratypes and 13,5-17,5 mm in the ♀♀.

Male: Upperside with wide blackish margins, wider than in all other known subspecies (2-3 mm in 80% of the specimens), although the character is variable and two specimens have the margins very narrow - less than 1 mm. The uppserside ground colour is clear bluish with silvery shading, this being very different from the silvery (with a greyish, greenish or slightly bluish hue) upperside in other taxa. Sometimes the ground colour glistens, on other occasions it is relatively dull; the veins are darkened, especially near the margins. This is the main distinction, which is absolutely constant. HW sometimes with widened blackish margins (up to 3 mm), but often they are not

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so dark and exhibit a series of blackish v-shaped spots with black dots. The wing is always darker at the costal than in other subspecies.

Underside grey or steel-grey, only very rarely being lighter (whitish), as in the nominate subspecies. All other characters are variable, i.e. the size of the spots, the intensity of the orange or yellowish colour in the antemarginal (submarginal) spots, etc. However, the marginal dark spots on the HW underside are larger and more distinct, being darker than in other subspecies. The underside as a whole is similar to the underside of the ♀♀ of the nominate taxon, being significantly darker than that of the ♂♂. The genitalia seem to be similar to those of the nominate subspecies.

Female: The upperside is similar to that of other subspecies; the submarginal orange spots are faint, but sometimes much more developed forming a wide orange fascia (widened towards the anal side of the wing and with darkened veins).
The underside is darker than in other subspecies (and darker than in the ♂♂), being dark grey with a steel or brownish hue. HW with blackish marginal spots, which are obviously darker than the ground colour. In other taxa these spots are also sometimes (but not always) large but are not so contrasting because the marginal spots are more greyish than the whitish-grey ground colour.

Distribution and taxonomic notes: The nominate subspecies was described by STAUDINGER (1886); the lectotype was designated by FORSTER (1960) from Namangan; such a label means that the type area should be restricted by the southern macroslopes of West Tian-Shan (Chatkal Range, as it has been proved for many other taxa described with the label "Namangan"). Another known subspecies, viz., *kentauensis* LUKHTANOV,1990 was described from the north-western edges of West Tian-Shan, Karatau Range. It was mentioned that the ♂♂ are also bluish, although we have a series of the topotypes which are only silvery bluish, not clearly bluish. Such specimens are known also from Kyrgyzsky range (from breeding undertaken by S. TOROPOV). The second brood of the taxon has a normal colour (LUKHTANOV & LUKHTANOV, 1994).
The taxa *kentauensis* LUKHT. and ***urumbash*** **subspec. nov.** have very different distributions. The status of *kentauensis* LUKHT. is outside of the limits of this paper. It is worthy of note that ZHDANKO (1999) found that the third brood of *A. phyllides* STGR. (Zailyisky Alatau) was no different from other known populations of the nominate form. ZHDANKO also noted slight blushis shades. Another distinction of *A. ph. kentauensis*LUKHT., viz., reduced black margins, represents a very variable feature and cannot be regarded as a true subspecific character (although this feature is quite opposite to that of *A. ph.* ***urumbash*** **subspec. nov.**)
The known *A. ph. askhabadicus* FORSTER, 1960, represents a lowland form of the nominate subspecies.
We have studied a lot of material belonging to different broods and originating from Tadjikistan (Vakhsh, Karatau Mts.; Ghissar - many localities; Peter the Great Range - only one specimen), Uzbekistan (topotypes of *kentauensis* LUKHT.), Kyrgyzstan (Transalai, Aran-Kungei; Fergana Valley, Chakmak; West Tian-Shan, Pskemsky Mts.; West Tian-Shan, Chatkal valley, several localities; South Chatkal, Kara-Terek (this must be very close to the type locality), Talassky Alatau, Uzun-Akhmat; Talass R. valley, Echkilu-Too; Kyrguzsky Mts, Besh-Kungei; etc.) and Kazakhstan (Transili Alatau). The most interesting specimens were collected at the middle branch of the Naryn River, near Kara-Kul village. The available specimens are slightly more bluish than normal and may represent intermediate forms between the nominate subspecies which

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certainly populate the Fergana Valley and the new one. In the other case the status of the new taxon urumbash may be higher, because of significant differences in the ground colour, which is a very important distinction for the *Agrodiaetus* taxa. Unfortunately, the series from Karakul is too small to make a definitive comparison.

We have also two ♂♂ collected in Suusamyr River valley, which are very similar to the new subspecies, being slightly more dull (not so glistening, and more bluish) with even wider dark margins. These two ♂♂ are not included in the type series because we prefer to limit the type locality to one zoogeographical district.

The distribution of this taxon includes two districts – the Naryn River valley together with the neighbouring slopes of Moldo-Too Range (there is no material from Chaartash range) and Suusamyr River valley, i.e. the upper stream of Naryn and its main tributary. This area is well isolated from the Fergana Valley by the long rocky valley of lower Naryn, where populations of *A. phyllides* Stgr. are absent or local - the genetic exchange between the populations living in Inner Tian-Shan and Fergana is therefore very problematic. So, *A. ph.* ***urumbash*** **subspec. nov.** represents one more specific element of the fauna in the territory studied, in addition to many others which we have found and described in the past.

It is necessary to note that Tshikolovets (2005: 229-230) summarized all available data about the distribution of Kyrgyzyan butterflies - and according to his book, *A. phyllides* Stgr. is not known at all from the territory populated by the new subspecies.

Habitat and biology: The butterflies fly from the end of May to the beginning of July, depending on annual weather conditions and altitude. Populations are sparse and are not found in the mountains higher than 2100-2200 m. a.s.l. The food plant was not investigated. In spite of all efforts, the second brood was not found (even in August).

Etymology: Toponymic name.

Polyommatus (*Elviria*) *elvira* ***hanusi*** **subspec. nov.**

Holotype ♂: Kyrgyzstan, Tian-Shan, Naryn River valley, 90 km W Naryn, 1600 m, 10.VI.2006, S. Churkin leg.

Paratypes: 32 ♂♂, 13 ♀♀, same data; 6 ♂♂, 6 ♀♀, same loc., 21.VI.2007, all S. Churkin, V. Pletnev & S. Saluk leg.

Description and diagnosis: FW length 16 mm in the holotype, 14,5 - 18 mm in the ♂♂ paratypes and 14,5 – 18,5 mm in the ♀♀.

Male: FW upperside is silvery blue with darkened veins, in contrast to the silvery colour (with pearl-greenish shades) of the nominate ♂♂. The dark margins are very wide, covering 1/5-1/4 of the surface of FW (width 3-4 mm). Each margin consists of three parts - a dark marginal band, a series of small lightened inner spots and a submarginal dark band (the inner spots are often not distinct, and the blackish band looks uniform). In the nominate subspecies the final submarginal band is sometimes faintly visible as an unclear dark suffusion covering the normal silvery ground colour, while the series of lightened spots at the inner border of the marginal band are well developed. Only one paratype has reduced margins, looking more or less similar to the nominate form from the upperside. The discal spot is narrow but contrasting.

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HW upperside with a wide marginal band, looking uniform, so that the antemarginal spots are generally not really distinct [in *P. e. elvira* (EVERSM.) these spots are always visible and contrasting even if they are joined into a single "band"]. The HW shape is rounded without a distinct Cubital angle.

The underside pattern is typical for the species, but all spots are blackish, not simply dark as in is in *P. e. elvira* (EVERSM.). The greenish suffusion is well developed at the corner of HW, reaching the basal spots, while in the nominate taxon the suffusion is reduced, not dense, and is often nearly absent.

The genitalia are without significant differences from other taxa. Many specimens from different places were dissected, but no geographical variability was found.

Female: The specimens look much more similar to the females of other subspecies, being only darker (a dark brown); the submarginal lightening is almost absent. Underside with all subspecific characters. The discal and basal parts on the underside (especially HW) are clearly grey, darkened, and are in contrast to the uniform colouration in the *P. e. elvira* (EVERSM.) (this distinction is present in the ♂♂ too, but not so clear).

Taxonomic notes and distribution: The lectotype of *P. elvira* (EVERSMANN,1854) was designated by G. SAMODUROV (TUZOV et al., 2000: 181), the type locality is situated in South Kazakhstan, Syr-Darya River valley. We collected and studied a lot of material originating from North Turan (up to Chundzha, Ily River valley near the Chinese border), and all populations seem to be identical. The same butterflies were found in Fergana Valley. The status of the populations inhabiting the Tadjik Depression and neighbouring mountain slopes needs clarification, along with the status of the taxon *oberthueri* GRUM-GRSHIMAILO, 1887 (TL: Surkhan-Darja). The last taxon has always been treated as a synonym of the nominate subspecies. In all cases *oberthueri* GR.-GR. has no developed blue glistening, and its home may be situated in the Turanian deserts. The new subspecies is known only from the Naryn River valley, where it exists in a very small and isolated area. It was unexpectedly found by French entomologists (HANUS, HOUREAU & MANON, 1997) in the Bayetovo district in July 1993, which was too late to collect a series sufficient for the description. However, strange characters within the collected ♂♂ were noted. We were lucky in 2005 and found a very good but a very small locus to collect this nice butterfly.
In spite of all efforts, we have not found this species in the vicinity of Kazarman, where the altitudes are lower, but the habitats similar to the type biotope near Naryn are totally absent.

Habitat and biology: Flight period June, being very short and clearly varying in different years, depending on the weather. Semi-desert areas with poor vegetation. Food plant unknown. One generation.

Etymology: The taxon is named after Mr. JEAN HANUS (France, Grenoble), who discovered this nice butterfly.

Polyommatus icarus ***effatus*** **subspec. nov.**

Holotype ♂: Kyrgyzstan, Tian-Shan, Baibiche-Too Mts., Beuroily loc., 2950 m, 11.VII.2006, S. CHURKIN leg.
Paratypes: 6 ♂♂, 1 ♀, same loc., 2650-2950 m, 10.-11.VII.2006; 37 ♂♂, 17 ♀♀, Kyrgyzstan, Tian-

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Shan, Baibiche-Too Mts., Orto-Syrt v., Kalkagar R., 2900-3000 m, 15.VII.2006, all S. CHURKIN, V. PLETNEV & S. SALUK leg.

Taxonomic note: This is a well known butterfly, figured by TUZOV et al. (2000, plate 77: 31-33) under the name "*napaea* GR.-GR." [*Lycaena napaea* GRUM-GRSHIMAILO (1891) was described from Boro-Khoro ("Boro-Choro") and belongs to the"*eros*-complex (according to the description and lectotype designation made by BALINT (1999: 46)]. In fact, the subspecies of *P. icarus* (ROTTEMBURG, 1775), populating the highlands of Inner and Central Tian-Shan has no name. Moreover, it is not possible to deal with the clarification of the Central Asian *P. icarus* (ROTT.), even for such a subspecies.
The density of the Tianshanian populations of icarus is not high; as a rule, private collections contain only a few specimens from each place. In 2005 a strong highland population was found in Baibiche-Too, a very good and logical type locality where the variability is not too high; the collected series is large enough to be the type series in such a complicated group. We did not include material from other localities, even though this is our disposal, this being better in such a situation.
It is worth noting that other names often applied to the Central Asian *P. icarus* (ROTT.) belong to the butterflies originating from Iran (*bienerti* BALINT) or India-Pakistan. This means that the current systematic view of the complex is very doubtful. Below, the new taxon is compared to the bienerti-like taxon distributed in Fergana Valley and lowlands of Tian-Shan.

Description and diagnosis: FW length 15 mm in the holotype, 14-17 mm in the ♂♂ paratypes and 14-16,0 mm in the ♀♀. The most common size is 15-16 mm in both sexes.

Male: The upperside is violet-blue, the colour being obviously deeper, brighter, and more bluish, than in the neighbouring populations of the *P. i. bienerti* BALINT (known from Fergana Valley, Naryn River valley near Tash-Kumyr, Kara-Kul and Toktogul as well as the lowlands of Dzhumgal valley). The narrow black margins are more developed [even in comparison with the nominate *P. icarus* (ROTT.)], although on rare occasion a light suffusion of dark scales is developed at the inner border of these margins. The ends of the veins are darkened. HW upperside without any dark or orange spots. The cubital angle is not distinct.
The underside is greyish. FW underside with two basal spots, one discal spot, and a slightly curved row of blackish postdiscal spots surrounded by thin non-contrasting whitish rings. The FW antemarginal pattern is reduced near the apex and at the anal angle of the wing. HW with small basal spots, some of of which are sometimes absent; the discal spot and postdiscal spots are encircled with small whitish rings. The antemarginal series consists of v-shaped dark spots and orange macules, which are almost touching at their borders, and blackish marginal lines. The fringes are whitish, the inner part sometimes with a very faint brownish shade. The basal suffusion is very well developed, consisting of dense greenish-bluish scales reaching the discal spot (in *P. i. bienerti* BALINT this suffusion is reduced, while the antemarginal spots are not joined and the ground colour is not grey but pale brownish).
Sometimes all spots are reduced in size (or absent) and sometimes they are enlarged (on the HW, while the FW underside spots are more constant size).
The genitalia have not been examined – this seems pointless without a serious revision of all Central Asian *P. icarus* (ROTT.).

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Female: Brownish with a more or less well developed row of antemarginal orange spots. The veins are darker than the ground colour, as are the blackish margins. The underside is brownish with well developed whitish rings around the spots. The basal suffusion is often considerably reduced. The fringes (especially on HW) with brownish inner parts. All spots are larger than in the ♂♂ and are not reduced, the antemarginal spots forming a more or less uniform orange band.
The bluish forms (known for many icarus-populations) are rare but were collected. They are typical for the *icarus*-complex colouration.

Distribution: This taxon is clearly more closely related to the nominate *P. icarus* (ROTT.) distributed in Europe and East Kazakhstan and is very significantly different to the so called "*bienerti*" However, we have do not have large series of these taxa collected from the same locality (although this does seem possible in the Fergansky Range, for example). The area includes Baibiche-Too (three other localities), At-Bashi (Karasu R., Ak-Bosogo, etc.), Terskey and Baiduly ranges (including Dolon Pass), Song-Kel Too and the eastern part of Moldo-Too ranges, the Narynsky Mts., and the upper branch of the Naryn (from Aktal with the altitude 1750 a.s.l. to Eki-Naryn). It should fly on all the other ranges of Inner and Central Tian-Shan. The butterflies from the Kaingdy-Katta Range are only slightly different from the nominotypical and can be included in the territory of the subspecies as well.
The specimens which we collected in the western Moldo-Too, Fergansky Range, Uzuh-Akhmat and West-Tian-Shan or Alai have a paler underside, with more reduced patterning. They look slightly different from the *P. i.* ***effatus*** **subspec. nov.**; however, a placement of all of the populations mentioned into the territory of *P. i.* ***effatus*** **subspec. nov.** is possible (the populations from the western Moldo-Too include both variants). We suppose that *P. i.* ***effatus*** **subspec. nov.** populates the main part of the Chinese Tian-Shan and Boro-Khoro & Dzhungaria, while the nominate subspecies is situated further to the north.

Habitat and biology: The highland populations have only one generation (July, 2500-3000 m a.s.l.), but it seems that across the Naryn River they fly in two generations (in June and at the end of July). They prefer grassy wet places, near springs.

Etymology: "Effatus" (Latin) - consecrated by augures, priests.

Plebejus ***mellarius*** **spec. nov.**

Holotype ♂: Kyrgyzstan, Tian-Shan, Uzun-Akhmat River, 5 km NW Chon-Aryk v., 1050 m. 25.V.2006, S. CHURKIN leg.
Paratypes: 41 ♂♂, 25 ♀♀, same data, S. CHURKIN, V. PLETNEV & S. SALUK leg.

Taxonomic note: Three taxa of *Plebejus* associated with *Hippophae* were found by the authors in Tian-Shan. *P. churkini* ZHDANKO, 2001 inhabits the Naryn River valley from Aktal to Naryn town, *P. churkini exterius* ZHDANKO, 2001 the Naryn valley near Kazarman, while *P. zhdankoi* CHURKIN, 2002 populates the Chatkal River valley in West Tian-Shan. One more taxon, *P. rogneda* GR.-GR.,1890, is known from the Alai valley (*P. rogneda micropunctulatus* SHCHETKIN, 1975) and the valley of the Chinese Kyzyl-Suu River (*P. rogneda nura* ZHDANKO & CHURKIN, 2005). The species status of *P. rogneda* GR.-GR. and *P. zhdankoi* CHURKIN is clear, while the relationship

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between the taxa *P. churkini* ZHDANKO and *P. churkini exterius* ZHDANKO has always been questionable - they are very different but their territories are very close. New investigations clarified the situation. Firstly, both taxa have two generations (both type series are of the second brood, the first generation flying in June) which show the same distinctions. The first generation of *P. churkini exterius* ZHDANKO is obviously larger than the second while in *P. churkini* ZHDANKO the differences in size are not so obvious. CHURKIN (2002) remarked that some very rarely some ♀♀ with intermediate characters (between both taxa) were found in the *P. churkini* ZHDANKO-population. However, further study has shown that the undersides of such ♀♀ have none of the characters of *P. churkini exterius* ZHDANKO, i.e. the external similarity of the upperside is based on the development of the dark suffusion, nothing more (in addition, this suffusion does not cover the main part of the wings, as in *P. churkini exterius* ZHDANKO). It means that no real intermediate forms have ever been found. The genetic exchange between the two macro-populations is therefore completely excluded (see the original description). A new study of the genitalia of numerous specimens confirms the existence of some small but constant differences between *P. churkini* ZHDANKO and *P. churkini exterius* ZHDANKO, firstly published in 2002 (CHURKIN, 2002), especially in the structure of the aedeagus. All these data confirm that, according to the recent taxonomy, *P. exterius* ZHDANKO, 2001 **stat. nov.**, represents a good species.
The new taxon represents one more variant, populating another part of the Naryn valley. This taxon is more similar to *P. churkini* ZHDANKO, being very different externally to the nearest *P. exterius* ZHDANKO, 2001. In addition, it has some specific distinctions (not known in the studied complex at all) and small specific features in the ♂ genitalia.
It is possible that all three taxa represent classic subspecies within completely isolated areas; on the other hand, the known differences and the absence of intermediate forms suggests that this is a young but distinct species.

Description and diagnosis: FW length 14.2 mm in the holotype, 13-15.5 mm in the ♂♂ paratypes and 13,5-16,0 mm in the ♀♀.

Male: Upperside is violet-blue, typical for the complex. The main characteristic distinction is the black margins of the FW. The ♂♂ of all related taxa known from Tian-Shan (*P. churkini* ZHDANKO, *P. exterius* ZHDANKO, and *P. rogneda nura* ZHDANKO & CHURKIN, 2005,) have very narrow black margins with a distinct inner border; the width of this black band is constant and looks similar to that in the *P. maracandica*-complex. In contrast, the ♂♂ of the new species have black margins with an unclear and irregular inner border, with a slight suffusion of blackish scales. Such a character must be treated as long held and close to ancestral characters; it is found in *P. christophi* STAUDINGER, 1874 and *P. argivus* STAUDINGER, 1874 - the two species belonging to the same group which has *Alhagi* as a food plant (as well as in *P. tilo* ZHDANKO & CHURKIN, 2001, a *Hippophae*-species inhabiting Pamir) . At the same time, the outer margins in the new species are narrow and only rarely widened to more than 1 mm. HW upperside without black antemarginal spots. The cubital angle is larger than in the nearest *P. exterius* ZHDANKO.
Underside whitish-grey (not brownish-grey as in *P. exterius* ZHDANKO and not white as in *P. zhdankoi* CHURKIN); the HW postdiscal spots are often partly reduced and are always small. The HW antemarginal spots are not contrasting and are more or less v-shaped - while in *P. exterius* ZHDANKO these spots are "flattened" looking like thick lines and forming a single uniform structure. The metallic spots in the antenmarginal pattern are silvery-greenish and faint; the

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metallic scales are not dense. The yellow spots within the pattern are yellowish, pale, and not bright orange as in other taxa.
On the whole the underside pattern is similar to that in the nominate *P. churkini* ZHDANKO, whose territory is situated eastwards from the closest home of *P. exterius* ZHDANKO - or *P. zhdankoi* CHURKIN (which is endemic to the Chatkal River valley, West Tian-Shan). However, both taxa have contrasting, bright and an unreduced series of spots, this easily differentiating them from the new species.

Genitalia (fig. 1): The valva is narrower than in *P. churkini* ZHDANKO or *P. exterius* CHURKIN (see in: CHURKIN, 2002). The juxta is similar to that in *P. exterius* ZHDANKO (in contrast to the short and wide juxta of *P. zhdankoi* CHURKIN). The aedeagus is closer to that of *P. churkini* ZHDANKO, differing from *P. exterius* ZHDANKO in its smaller size with a smaller distal end. The distal part of the aedeagus is not shorter than the proximal part (in contrast to *P. exterius* ZHDANKO, the proximal end is not curved and is almost straight).

Female: The specimens look more similar to the ♀♀ of *P. exterius* ZHDANKO or *P. rogneda* GR.-GR., in contrast to the considerably darkened ♀♀ of *P. zhdankoi* CHURKIN or the totally bluish ♀♀ of *P. churkini* ZHDANKO. FW is darkened at the costal side; the marginal darkened area extends to the discal line; the basal and discal parts of the wing are bluish. There are no distinct black submarginal spots inside the darkened margins (which are more or less visible in *P. exterius* ZHDANKO, often with a surrounding orange colour). HW upperside bears the main specific distinction - a total absence of the antemarginal (submarginal) spots. All other known species (including the *christophi*-group s. str.) have well developed antemarginal spots (five or six), often with orange rings. The new species generally has no spots on the upperside; a maximum of one or two blackish spots are only rarely present and are invisible from the underside. On the whole the HW upperside is violet blue with a darkened costal section.
The underside is as in the ♂; it is slightly darker (but without any brownish colour, in contrast to *P. exterius* ZHDANKO) and all spots are larger, the coloured parts of the antemarginal spots being orange. The degree of the reduction in the patterning is less obvious than in the ♂. However, all marked differences exist because the underside of other ♀♀ more obviously contrast with the bright orange colour.

Disribution and biology: It is clear that medium and low parts of the Naryn River valley should be populated by some *Plebejus* belonging to the *Hippophae*-complex. However, the first search was not successful: a giant complex of water reserves has changed the nature and placed some parts of the valley available for *Hippophae* under water. It was 2005 before we found a very small population living near the mouth of Uzun-Akhmat River, on the left-hand side of the Toktogul water reserve. Only one very small area was inhabited by this butterfly, although we checked all shrubs of *Hippophae* for 15 km.
This species is nearly extinct. Its habitat is pebble banks with small compressed *Hipphophae rhamnoides* shrubs (this is very important because previously the external characteristics of *P. exterius* ZHDANKO were related with compressed plants - but the new taxon lives on the same compressed shrubs while it has the wing-pattern close to *P. churkini* ZHDANKO). The number of generations is unknown (most probably, two).
Still, no representatives of the Hyppophae are known from the Fergana Valley.

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Etymology. "Mellarius" (Lat.) - A beekeeper. This species is named in honour of our good friend, the best beekeeper of Kyrgyzstan,"VICTOR IGNATCHENKO (Dzhelal-Abad) whose apiary we often used as a home or place for our tents.

Neolycaena medea ***idyia*** **subspec. nov.**

Holotype ♂: Kyrgyzstan, Tian-Shan, Ala-Buka R. valley, Chaartash Mts.(southern edges), 5 km E Dzhargatal v., 2000 m, 17.VI.2006., S. CHURKIN leg.
Paratypes: 39 ♂♂, 21 ♀♀, same data; 6 ♂♂, 1 ♀, Kyrgyzstan, Tian-Shan, Kalkagar R., 2600-2700 m, 9.VII.2007; 1 ♂, 1 ♀♀, Kyrgyzstan, Tian-Shan, Karatau Mts., Karabulak R., 20.VI.2007; 3 ♂♂, 1 ♀, Kyrgyzstan, Tian-Shan, Mazar R., 2100-2200 m, 13.VII.2006, all S. CHURKIN, V. PLETNEV & S. SALUK leg.

Description and diagnosis: FW length 13 mm in the holotype, 12,5-15 mm in the ♂♂ paratypes and 13-15,5 mm in the ♀♀.

Male: The upperside colouration is the same as in the nominate subspecies, being a dark blackish-brown, although the wings seem to be larger.
The underside is covered by a dense suffusion of light-grey scales, in contrast to the monotonous brownish colour of the nominate subspecies. The postdiscal row of spots on the HW is slightly removed from the antemarginal pattern (but only statistically - and in all cases some spots are more or less touching the antemarginal spots in contrast to the pattern of *N. olga* LUKHTANOV, 1999, where the postdiscal row is situated at the centre of the wing). A row of white lines is developed from the external side of these postdiscal spots. An additional spot is developed at the costal side of the HW underside – just between the basal upper line and the first postdiscal spot; this additional spot represents an ellipse of lightened grey suffusion with unclear borders and some dark scales inside (slightly similar to an eye). This spot is present more than in 50% of the males; about 20% have no such spot, and the others have it more or less reduced. A greenish basal suffusion is developed, extending to the basal spots in the discal area and even the postdiscal spots in the anal area - however, the suffusion is not so contrasting becathis too is suffused by dense greyish scales.
The genitalia are similar to those of the nominate taxon (fig. 2), with slightly narrower distal parts of the valvae; the basal part of the valva is also narrower from a lateral view. These differences are more or less constant, but they are much less than the known differences between other good species in this group of taxa - and especially when compared to the very different genitalia of *N. olga* LUKHTANOV, the areal of which contacts with the areal of the nominate subspecies.

Female: As a rule the uppserside has no differences from other *Neolycaena* s. str. However, some ♀♀ do have a narrow dark-orange discal spot (the ♀♀ from Karabulak even have a distinct large orange area situated away from the spot). In many ♀♀ this spot seems almost absent, but is more or less visible using small magnification under a microscope. *N. medea* ZHDANKO, 1998 has no such spot, while *N. olga* LUKHTANOV has a large and usually oval orange discal spot.
The underside has the same characters as the ♂, but the grey suffusion is not so dense (and the greenish suffusion is also reduced), the ground colour becoming grey-brown; the costal "eye" is shorter.

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Distribution and taxonomic notes: *N. medea* ZHDANKO is known from Inner Tian-Shan, but nobody has paid any attention to the characters of this butterfly. The territory of *N. medea medea* ZHDANKO (TL: Terskey Alatay, Tamga v.,2500 m) covers the southern shores of Issyk-Kul Lake, in the vicinity of the Orto-Takoi water reserve and Boom valley. WEIDENHOFFER at all. (2004) published figures of the genitalia of *N. medea* ZHDANKO taken from the southern branch of Suusamyr River, Minkush v.. (northern slopes of Moldo-Too) - and *N. olga* LUKHTANOV is also pictured from the same place in this book. This means that both species are known from the northern slopes of Moldo-Too - the first case for *Neolycaena* s. str., where many species have been described but all of them were considered allopatric. Our studies confirm the data of WEIDENHOFFER. First, the type series of *N. medea* ZHDANKO includes two pairs from Minkush (incorrectly mentioned in the description as having the labels "Kekemerek river, Min-Kuta v.") - these pairs are deposited in the first author's collection of and represent true *N. olga* LUKHTANOV (the genitalia were not studied by A. ZHDANKO when he prepared the description of *N. medea* ZHDANKO, as at that time he was not aware that ther could be another species in Tian-Shan). These incorrect types were collected not by "SULUK" as marked in the description but by SERGEI SALUK (Minsk), often mentioned in the present article. In addition, a series (10 ♂♂, 2 ♀♀) of true *N. medea* ZHDANKO were collected at the southern slopes of Moldo-Too (near Djudjumel) in July 2006 at the altitude 2700-2800 (!) m a.s.l. These specimens are very similar to *N. medea* ZHDANKO being distinctly darker than the new taxon, without the dense greyish suffusion and with totally blackened ♀♀; the ♂ genitalia seem to be identical to those from Issyl-Kul (see the figures).

We also collected a large series of *medea*-like butterflies south from Dolon Pass (40 km S Dolon, 2200 m, 15.VII.1999) and near Kulanak village in the Naryn River valley (1850 m, 17.VII.1999). Both series belong to the new subspecies (judging from the genitalia characters already mentioned). We did not include them into the type series because it is better to restrict the type locality for such "hard" complexes to avoid possible mistakes. In addition, only rarely do specimens from Dolon have an eye-like marking and it seems to be more or less intermediate between the typical series of both subspecies.

Thus, the territory of *N. medea medea* ZHDANKO extends from Issyk-Kul to the lower Suusamyr where this butterfly penetrates Moldo-Too Range using the rocky Naryn River valley. It seems completely impossible but this species can fly at very different altitudes - up to 2800 m. In Moldo-Too the butterfly's territory covers the southern slopes of the western Moldo-Too where it is now connected with that of a true Narynian taxon - *N. medea* ***idyia*** **subspec. nov.**. Certainly, these territories were not connected in the past; *N. medea* ZHDANKO inhabited Naryn valley only recently, because the butterflies from Moldo-Too seem to be identical with the nominotypical population (although only DNA-studies can confirm or deny this hypothesis).

On the contrary, *N. olga* LUKHTANOV lives at a height not exceeding 2000 m a.s.l. (as a rule, not higher than 1800 m) - thus it has no potential to penetrate Inner Tian-Shan. But the territories of *N. medea medea* ZHDANKO and *N. olga* LUKHTANOV have been connected for a long time at the northern slopes of Moldo-Too and southern slopes of Dzhumgal-Too (at least). As a result, natural selection has eliminated the *N. medea* ZHDANKO-♀♀with orange spots, while in the isolated Narynian population the old colouration still exists.

It is important, that the known elevated population of*N. medea* ***idyia*** **subspec. nov.**. (Kalkagar, 2600-2700 m) has no differences from the typical population from Ala-Buka - i.e. the marked distinctions are not so dependent on the altitude (the highland population is characterized by the often smaller sizeand patterning of the spots).

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One more locality where *N. medea* ZHDANKO and *N. olga* LUKHTANOV fly together was found in 2006: this is the valley of Orto-Kaingdy River, north from Kairma village at the southern slopes of Dzhumgal-Too. *N. olga* LUKHTANOV flies much earlier and populates the shrubs of Caragana growing in dry places near water, at altitudes of 1700-1750 m. *N. medea* ZHDANKO inhabits the slopes (where the same Caragana grows), slightly higher and further up the valley (2000-2100 m a.s.l.).

It is worthy of note that the colours in the photos of *N. medea* ZHDANKO published in WEIDENHOFFER et all. (2004) seem to be slightly wrong. The figured butterflies look more greyish than in reality, more similar to the representatives of the new taxon. CHURKIN has a large series from Orto-Takoi Lake and Boom, and the figured specimens are out of his collection - it is sure that they (especially typical butterflies from Issyk-Kul) are more brownish, darker, and have no suffusion. This is only a printing problem.

The territory of the new taxon includes all river valleys and mountain slopes (except truly alpine habitats) south from Naryn River as well as the southern macroslopes of Moldo-Too, Baidulu and other ranges from the northern side of this river (approximately, from Aktal village to Naryn town and higher).

Habitat and biology: This new subspecies lives at different altitudes (from 1750-2700 m a.s.l.); flies in one generation in June or July depending on the place and altitude. The food plant is the same as for *N. medea medea* ZHDANKO and *N. olga* LUKHTANOV.

Etymology: IDYIA (Latin): The mother of MEDEA, a sea nymph.

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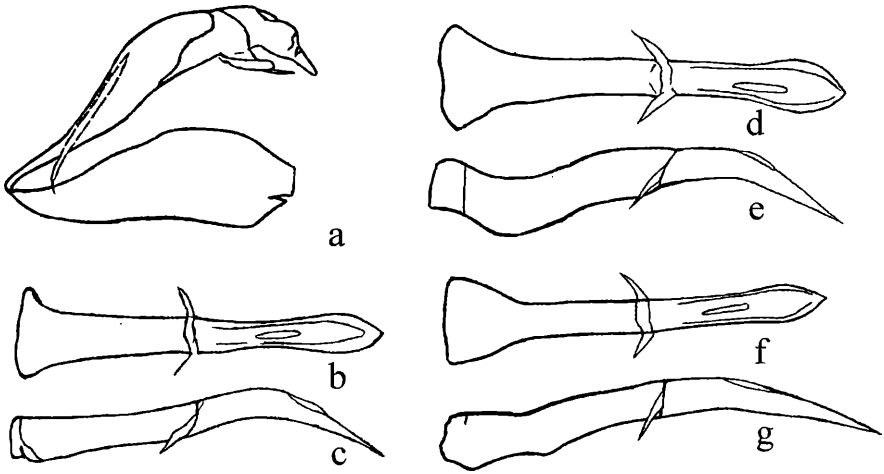

Fig.1. *Plebejus* spp., genitalia. a, b, c: *Plebejus* ***mellarius*** **spec. nov.**, paratype. d, e: *Plebejus exterius* ZHDANKO, 2001 **stat. nov.**, paratype. f, g: P. churkini, paratype (a: valva, tegumen & uncus; c, d, e, f, g: aedeagus).

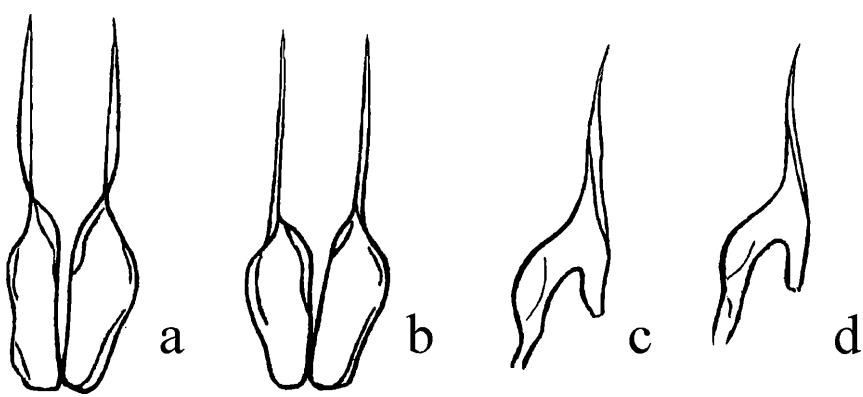

Fig.2. *Neolycaena medea* ZHDANKO, 1998, valva (ventral and lateral view). a, c: *medea medea* ZHDANKO, 1998 (Moldo-Too, southern slopes); b, d: *medea* ***idyia*** **subspec. nov.** (paratype, Ala-Buka).

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Farbtafel 2

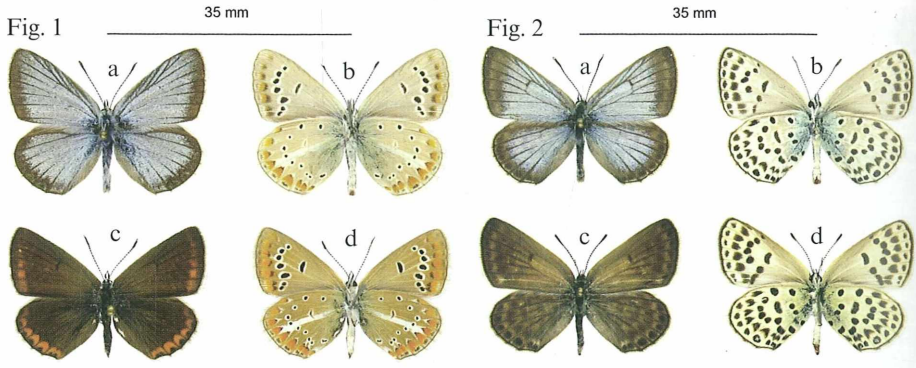

Fig. 1: *Agrodiaetus phyllides* ***urumbash*** **subspec. nov.** (a, b: holotype ♂, Kyrgyzstan, Tian-Shan, 15 km east Kazarman v., Naryn River valley, 1300-1400 m, 5.VI.2005, S. CHURKIN leg.; c, d: paratype ♀, same data as holotype).

Fig. 2: *Polyommatus* (*Elviria*) *elvira* ***hanusi*** **subspec. nov.** (a, b: holotype ♂, Kyrgyzstan, Tian-Shan, Naryn River valley, 90 km W Naryn, 1600 m, 10.VI.2006, S. CHURKIN leg.; c, d: paratype, female, same data as holotype).

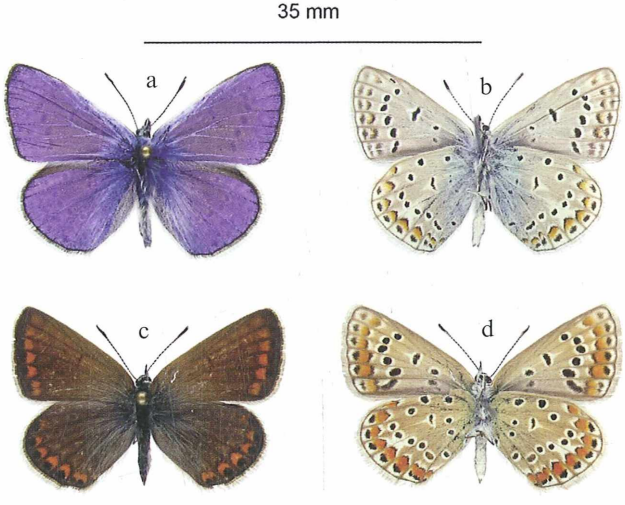

Fig. 3: *Polyommatus icarus* ***effatus*** **subspec. nov.** (a, b: holotype ♂, Kyrgyzstan, Tian-Shan, Baibiche-Too Mts., Beuroily loc., 2950 m, 11.VII.2006, S. CHURKIN leg.; c, d: paratype ♀, same data as holotype).

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Farbtafel 3

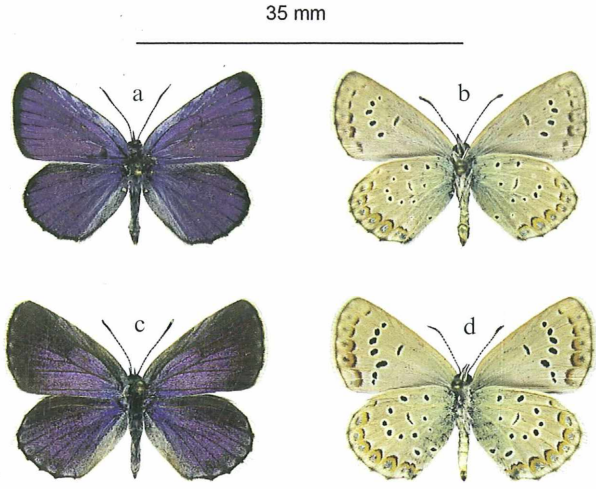

Fig. 4: *Plebejus* ***mellarius*** **spec. nov.** (a, b: holotype ♂, Kyrgyzstan, Tian-Shan, Uzun-Akhmat River, 5 km NW Chon-Aryk v., 1050 m, 25.V.2006, S. Churkin leg.; c, d: paratype ♀, same data as holotype).

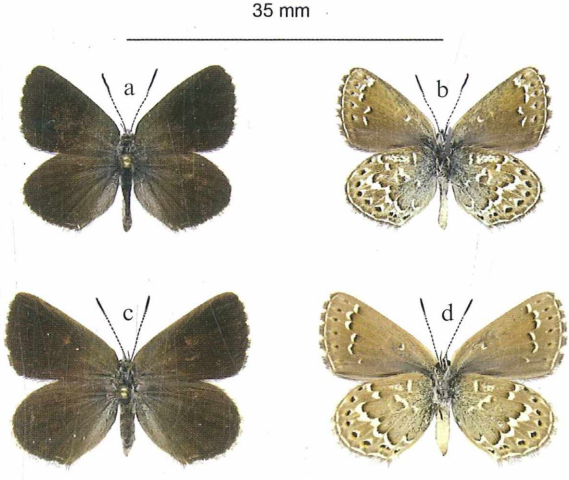

Fig. 5: *Neolycaena medea* ***idyia*** **subspec. nov.** (a, b: holotype ♂, Kyrgyzstan, Tian-Shan, Ala-Buka R. valley, Chaartash Mts.(southern edges), 5 km E Dzhargatal v., 2000 m, 17.VI.2006., S. Churkin leg.; c, d: paratype ♀, same data as holotype).

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