

## Revision of the *Paralasa hades* species-group from Ghissaro-Darvaz and Pamiro-Alai regions

(Lepidoptera, Satyridae)

by

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### Summary

The species-group of *Paralasa hades* from highlands of Tadjikistan and SW Kirghizia is examined. The specific status of *Paralasa nero* (STAUDINGER, 1894) and *Paralasa hades* (STAUDINGER, 1882) is confirmed and their lectotypes are designated. New subspecies of *Paralasa hades yaktchashma* (West Pamirs) and *Paralasa hades maida* (Ghissar) and new species of *Paralasa ali* (Alai) are described.

### Резюме

Данный обзор охватывает виды группы *Paralasa hades*, населяющие высокогорье Таджикистана и Ю-Киргизии. Подтвержден видовой статус и установлены лектотипы *Paralasa nero* (STAUDINGER, 1894) и *Paralasa hades* (STAUDINGER, 1882). Описываются новые подвиды *Paralasa hades yaktchashma* субспес. нов. с Западного Памира и *Paralasa hades maida* субспес. нов. с Гиссарского и Туркестанского хребтов, а также новый вид *Paralasa ali* спес. нов. с Алайского хребта.

### Introduction

All species of *Paralasa* MOORE, 1893 are confined to the mountains of Central Asia. Although morphologically similar to *Erebia*, they form an ecologically distinct group associated with rock and stony screes. So far the diagnosis of this genera, and *hades*-group especially, has not been elaborated. The host plants and biology of most species are virtually unknown.

To *Paralasa hades* group we attribute the following taxa: *hades* (STAUDINGER, 1882), *nero* (STAUDINGER, 1894), *erebus* (GRUM-GRSHIMAILO, 1890), *afgana* (GOLTZ, 1937), *asura* WYATT, 1961, *panjshira* WYATT & OMOTO, 1966, *paghmanni* (O. BANG-HAAS, 1927), *mohabbati* SAKAI, 1978. The last five taxa inhabit the mountain ranges of Afganistan and Pakistan and are not considered in this paper.

The appearance of the *hades*-group butterflies is variable enough though with very poor marking. Male genitalia structure (valva especially) is also very variable and thus along with previous factor it makes difficult determination. Individual variation of valva structure usually is masking geographical variation, although some distinctions can be found. Meanwile our research disclosed that specifical features are not valva but gnatos, uncus, aedeagus structure and antenna's bulb. Accordingly we were indicated to undertake new descriptions of all known taxa despite of accurate descriptions made by STAUDINGER.

Types of all new taxa will be presented to the Zoological Museum of the Moscow State University. Some types are available in private collections of I. PLYUSHCH, V. MURZIN, A. SOTCHIVKO, D. ZAMOLOTCHIKOV and authors.

The photos of the butterflies were made by A. SOTCHIVKO.

### Abbreviations

UPFW – upper side of forewings

UPHW – upper side of hindwings

TL – type locality

UNFW – under side of forewings

UNHW – under side of hindwings

## Systematic part

### Key to determination

- 1 UNHW with distinct row of 5–7 white points. Top of unkus short (beak-like) or long sharpened. Underside of females is bicolour since FW apex and the whole HW are covered with dense layer of whitish-grey scales 2
  - UNHW without or with very reduced white points. Top of unkus extended, blunt, without sharp tip. Underside of females is almost unicolor since FW apex and the whole HW are covered with whitish-grey scales only slightly. UPFW of males usually with reduced white pupil *nero*
- 2 Males 3
  - Females 4
- 3 Uncus near the top (ventral view) with widening on the sides; the top not sharpened, obtuse, because its lateral sides turned outside of cavity (nominate subspecies has the blade-like widening). Proximal tip of the aedeagus sclerotised alike as distal tip. Top of aedeagus with well sclerotised teeth. Bulb of antenna widened spoon-like. Wide yellow ring surrounds 2/3 of as a minimum the eye of UNFW *hades*
  - Uncus gradually tapering and strongly sharpened to the top, because its lateral sides (ventral view) turned inside of cavity. Proximal tip of the aedeagus slightly sclerotised not as apparently as distal tip. Top of aedeagus with faintly sclerotised, small teeth. Bulb of antenna has a drawing, cylindrical form. The eye on UNFW has a delicate aureole of brown-grey scales *ali*
- 4 Black eye (usually oval) with white pupils distinctively apparent on UPFW; the outstanding pupil rounded. Other white marks on the UPFW besides that inside the eye are absent *hades*
  - UPFW with two white pupils surrounded delicate by a narrow black ring merging with groundcolour; the outstanding pupil is extended horizontally in a form of ellipse. On UPFW under the eye there are usually one or two small white points. *ali*

*Paralasa hades hades* (STAUDINGER, 1882)  
(colour plate, fig. 1)

"*Erebia Hades* STGR. n. sp." – STAUDINGER, O. & A. BANG-HAAS, 1882. Ueber einige neue *Parnassius*- und andere Tagfalter-Arten Central-Asiens. Berl. ent. Z. **26**: 172. TL: "Alai-Gebirge; ... Provinz Samarkand". [Jordan, Alaisky Mts., Kirghizia].

### Type material

Lectotype ♂. The following labels are in use: 1 – "Origin"; 2 – small brown circle; 3 – "Margelan Hohn" [STAUDINGER's hand]; 4 – "8/7,80" [STAUDINGER's hand]; 5 – Lectotype, ♂, *hades* STGR., design. V. TUZOV.

Paralectotypes. 4 ♂♂, 3 ♀♀ with the same labels. Type materials are available in STAUDINGER's collection in the Zoologisches Museum, Humboldt University (Berlin).

Types examined.

### Synonyms

"[*Erebia Hades* STGR.] var. *Erebus*" – GROOM-GRSHIMAILO, 1890. Le Pamir et sa faune lépidoptérologique. Mém. Lép., **4**: 448–449. TL: "...Kisil-Art..." [Zaalaisky Mts., Kizyl-Art Pass].

### Records

*Erebia Hades*. – GRUMM-GRSHIMAILO, 1885: 247

[*Erebia*] *hades* STGR. – ELWES, 1889: 331.

- Erebia Hades* STGR. – GROOM-GRSHIMAILO, 1890: 446, Pl. XIII, figs. 3a, b.  
[*Erebia Hades* STDGR.] var. *Erebus* GRUM. – RÜHL, [1894]: 491; [1895]: 810.  
[*Erebia*] *Hades* STDGR. – RÜHL, [1894]: 491.  
[*Erebia*] *hades* STGR. – ELWES, 1898: 183.  
[*Erebia*] *hades* – CHAPMAN, 1898: 233, f. 59.  
[*Erebia*] *Hades* STGR. – STAUDINGER, 1901: 49 (part).  
*E.[rebia] hades* STGR. – EIFFINGER, [1907]: 110, Taf. 35e.  
*Paralasa hades* – WARREN, 1930: 106.  
[*Erebia*] *hades* STAUDINGER – GAEDE, 1931: 573.  
[*Erebia*] *hades* var. *erebus* GRUM-GRSHIMAILO (nom. nud.) – GAEDE, 1931: 573.  
*E. [rebia] hades* STGR. – SHCHETKIN, 1971: 71.  
*Paralasa hades* STAUDINGER, 1882 (= *shallada* LANG.) – KORSHUNOV, 1972: 150 (part).  
*Paralasa hades* ST. – MURZIN, 1990: 17.  
*Paralasa hades erebus* GROOM-GRSHIMAILO, 1890. – TSHIKOLOWEZ, 1992b: 183.  
*Paralasa hades hades* STAUDINGER, 1882. – TUZOV, 1993: 33 (part).  
*Paralasa h.[ades] erebus* GRUM-GRSHIMAILO, 1890? – TUZOV, 1993: 33.

#### Material

1 ♂, Alai, Kollektorsky Mts., Dugoba R., 3000 m, 20.VII.1993, O. ALIKHODJIN leg. 1 ♂, 1 ♀, *ibid.*, S. DIALEKTOV leg. 2 ♂♂, 1 ♀, *ibid.*, 10.–15.VII.1994, O. ALIKHODJIN leg. 7 ♂♂, 6 ♀♀, *ibid.*, 17.–19.VII.1996, S. CHURKIN leg. 4 ♂♂, 4 ♀♀, *ibid.*, A. PETROV leg. 1 ♂, *ibid.*, 20.VII.1996, A. KLIMENKO leg. 1 ♂, 1 ♀, Alai, Kollektorsky Mts., Haidarkan, 3000 m, 12.VII.1992, A. ZYKOV leg. 1 ♂, 1 ♀, *ibid.*, 3500–3600 m, 11.VII.1989, V. Tuzov leg. 1 ♂, Alai, Kichik-Alai Mts., Korgon R., Kumbel Pass, 3500 m, 8.VII.1995, A. PETROV leg. 1 ♀, Alai, Kichik-Alai Mts., Argatash, 3100 m, 12.VII.1986, V. TCHIKOLOVETS leg. 1 ♀, Zaalaisky Mts. (east), Nura, 3500 m, 23.VII.1994, L. KAABAK leg.

#### Description

Male. FW length 26–30 mm, usually 28–29 mm. Palpi (front view) black, with a very limited number of grey hairs. Bulb of antenna rounded, widened in the middle, its length being 2–2.5 times larger than its width. UPFW ground colour black. Fringes almost unicolor, dark segments adjoining cubital veins are usually broader than brighter segments. UPFW with one or rare by two white round pupils. Pupils surrounded by narrow black ring merging with background. Black eye on UPFW usually has two (1–3) white pupils. Wide yellowish ring surrounds the eye. Sometimes the ring is reduced in part. UPHW black. UNHW ground colour black with dense whitish-grey dust; distinctive row of 5–7 white points extends along the external border.

Male genitalia (fig. 1). Valva with large, very variable teeth. Uncus near the top with blade-like widenings; the top is beak-like with short sharpened tip. Gnathos relatively short, curved slightly. Top of gnathos without sharpened tip. Top of aedeagus with well sclerotized, numerous thorns. Proximal tip of aedeagus not sharpened, frequently with cylinder-like widening.

Female. FW length 27–30 mm, one specimen 26 mm, as a rule 28–29 mm. Palpi (front view) much lighter than that of males. Bulb of antenna similar. Fringes brighter, grey, somewhat darkened near veins end. UPFW ground colour black. The eye on the UPFW consisting of two white pupils surrounded by wide black ring which is clearly apparent on the background. The eye is correctly round or narrow to the bottom, and oftenly (40% of specimens) surrounded by aureole of yellowish scales. Only one female has an 8-like eye where the upper half is much larger than the lower one. Lower pupil always smaller than upper pupil. UPFW ground colour black, central area often with cherry-brown diffuse area, apex with grey dust; the eye surrounded by wide yellow ring, usually with two white pupils. Two female specimens have reduced lower pupil. One specimen with third additional white dot situated upper to the right from two others. UNHW ground colour black with dense whitish-grey dust; distinctive row of 5–7 white points along the external border.

#### Distribution

Alai and Kichik-Alai mts., Zaalaisky Mts. (east) (fig. 4).

#### Habitat and biology

Flies together with *Parnassius staudingeri* on the screes of large black stones at 2,800–3,500 m a.s.l. Females keep in the upper part of screes, males may descent much downward. Flight period – July, peak for females: mid July.

#### Taxonomic notes

The taxon *erebus* (GRUM-GRSHIMAILO, 1889) was described from Kyzyl-Art Pass in the eastern part of the Zaalaisky Mts. Cherry-brown area on the UNFW was indicated as the only distinction. We examined the type in the BMNH but didn't find another distinctions. This features is present in many specimens in all populations of *P. hades*. Thus definite judgement with regard to the status of this taxon can be passed only after additional material will be obtained and studied.

Two new subspecies of *P. hades* from Ghissar and Vanchsky mts. were discovered in the course of studies.

#### *Paralasa hades maida* subsp. nov.

(colour plate, fig. 2)

#### Records

[*Erebia*] *Hades* STGR. – STAUDINGER, 1901: 49 (part).

*Paralasa hades* STAUDINGER, 1882 (= *shallada* LANG.) – KORSHUNOV, 1972: 150 (part).

*Paralasa hades hades* STAUDINGER, 1882. – TUZOV, 1993: 33 (part).

*Paralasa hades* STAUDINGER – SAKAI, 1981: 105, pl. 17, figs. 19, 20.

*Paralasa hades* STAUDINGER, 1882 – D'ABRERA, 1992: 190.

#### Type material

Holotype ♂, Turkestanysky Mts., Kumbel Pass, 3100 m, 5.VII.1992.

Paratypes. 3 ♂♂, Turkestanysky Mts., Kumbel Pass, 3100 m, 7.VII.1992. 1 ♂, *ibid.*, 8.VII.1976, V. KIPNIS leg. 1 ♂, *ibid.*, 27.VI.1980, Y. SHCHERBINA leg. 1 ♂, *ibid.*, 10.VII.1992, A. SOTCHIVKO leg. 9 ♂♂, 5 ♀♀, *ibid.* 10.VI.1997, A. LEGEZIN leg. 2 ♂♂, Ghissarsky Mts., Anzob Pass, 3300 m, 13.VII.1985, V. TCHIKOLOVETS leg. 2 ♂♂, 1 ♀, *ibid.*, 14.VII.1980, I. PLYUSHCH leg. 3 ♂♂, 1 ♀, *ibid.*, 12.–20.VII.1993, G. LUTSENKO leg. 1 ♀, *ibid.*, 28.VII.1993, D. LASTOCHKIN leg. 1 ♂, *ibid.*

#### Material

3 ♂♂, 7 ♀♀, Ghissarsky Mts., Diakhandria R., 3500 m, 27.VII.–10.VIII.1986, L. KAABAK leg.

#### Description and diagnosis

Male. FW length of holotype 25 mm, Paratypes 24–26 mm (25 mm as a rule). Similar by appearance to nominate subspecies but smaller. Black eye on UPFW the with two white pupils (1/5 of specimens with one pupil). The diameter of this pupil is smaller. We dispase of one male spesimen with pupil reduced almost completely. Holotype with one stretched pupil inside the eye on UPFW. UNHW always with row consisting of 7 white points.

Male genitalia (fig. 2) from dorsal and lateral view similar to *P. ali*, but lateral sides of uncus from ventral view not bringed and forms poor developed blade characteristic of *P. hades*. Near the top of uncus the lateral sides turned outside of cavity therefore the tip is widened and without sharpened beak. Ventral surface of distal part of valva sometimes straight, sometimes concave. The proximal tip of aedeagus with thorns which are not apparent. Proximal tip of aedeagus usually slightly tapered, but not sharpened.

Female. FW length 25–26 mm. The eye on the UPFW consist of two white pupils.

#### Distribution

Ghissar (Turkestanysky and Ghissarsky mts. (fig. 4)

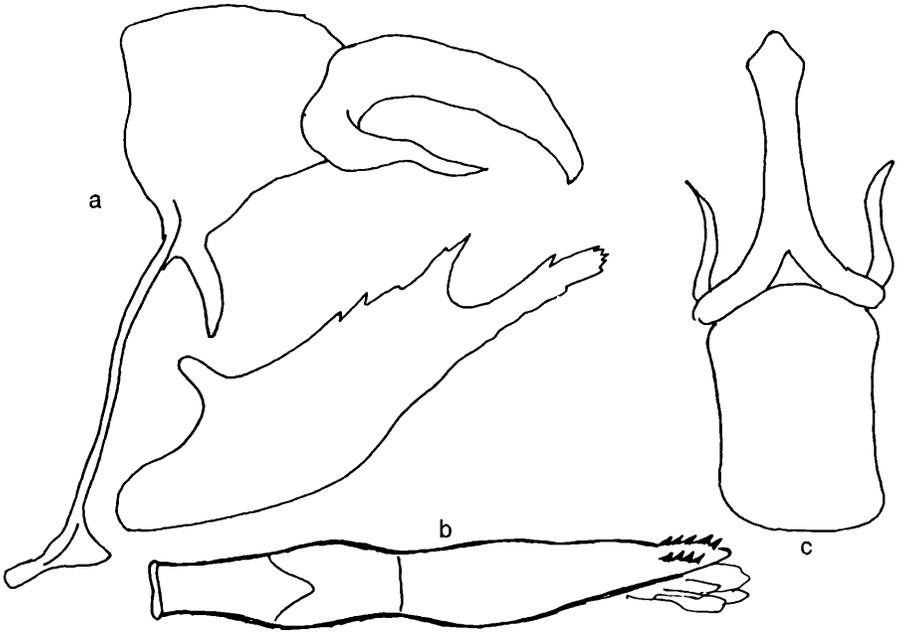


Fig. 1. Male genitalia of *Paralasa hades hades* (Alai, Kollektorsky Mts., Dugoba): a – lateral view; b – aedeagus; c – dorsal view.

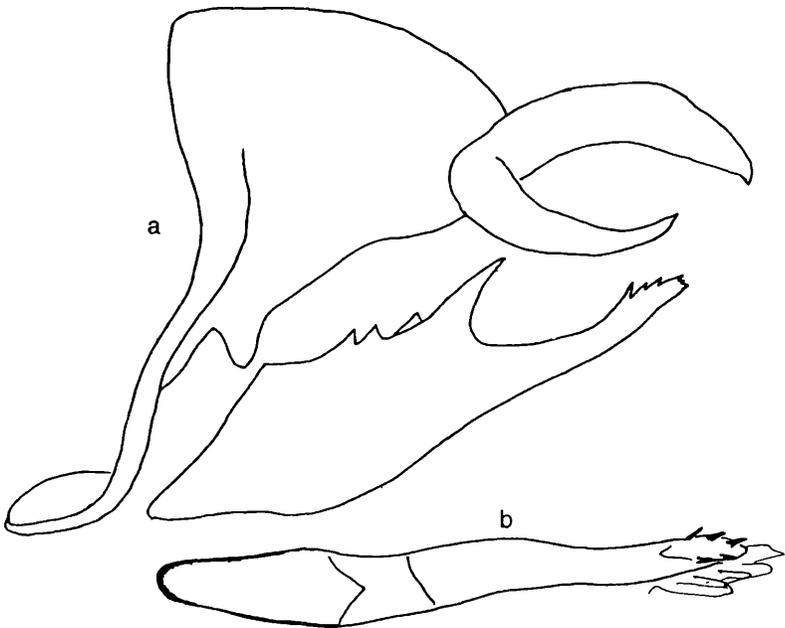


Fig. 2. Male genitalia of *Paralasa hades maida* (paratype, Turkestansky Mts., Kumbel Pass): a – lateral view; b – aedeagus.

#### Habitat and biology

Flies on the screes of dark-brown stones at 3,000–3,500 m a.s.l. Flight period: July.

#### Etymology

The name derives from tadjik's word "little"

#### *Paralasa hades yaktchashma subspec. nov.*

(colour plate, fig. 3)

#### Records

*Erebia hades* – ROSEN, 1921: 93.

*Paralasa nero* (STAUDINGER, 1894) (bona species?) – TSCHIKOLOWEZ, 1992: 149.

*Paralasa nero* STAUDINGER, 1889. – TUZOV, 1993: 33 (part).

#### Type material

Holotype ♂, Tadjikistan, Vanchsky Mts., Gushkhoun Gorge, 3600 m, 27.VII.1996, R. GADZHIEV leg.

Paratypes. 2 ♂♂, *ibid.*, R. GADZHIEV leg. 1 ♂, *ibid.*, 28.VII.1991, D. ZAMOLODCHIKOV leg. 1 ♂, 2 ♀♀, *ibid.*, 3500 m, 25.–30.VII.1993, S. CHURKIN leg. 1 ♀, *ibid.*, 3500 m, 2.VIII.1994, R. GADZHIEV leg. 12 ♂♂, 1 ♀, *ibid.*, 10.–30.VII.1997, R. GADZHIEV leg. 1 ♂, Tadjikistan, Vanchsky Mts., Lyangar Gorge, 3900 m, 20.VII.1986, S. SAZONOV leg. 2 ♂♂, 1 ♀, *ibid.*, 28.VII.1989, V. TUZOV leg.

#### Description and diagnosis

Male. FW length of holotype 27 mm, paratypes 27–29 mm. Black eye on UPFW the with only one white pupil (*P. hades hades* and *P. hades maida* with two). One paratype with very small additional dot. Similar dot on the left forewing of holotype.

Male genitalia (fig. 3) similar to nominate subspecies. Ventral surface of distal part of valva slightly concave. Proximal top of aedeagus with only two rows of thorns. Proximal tip of aedeagus sharpened.

Female. FW length 26–30 mm. Rounded eye on UPFW and UNFW has only one pupil and is always surrounded by reddish aureole. The eye on UNFW may have sometimes very small additional dot.

#### Distribution

Vanchsky and, probably, neighbouring mountain ranges of the Darvaz and West Pamirs (fig. 4).

#### Habitat and biology

Flies together *Parnassius staudingeri darvasika* on the screes of black stones at 3,500–3,900 m a.s.l. Flight period: end July–August. As a rule, populations consist of a small numbers of specimens.

#### Etymology

The name derives from tadjik's word "single-eyed"

#### *Paralasa ali spec. nov.*

(colour plate, fig. 4)

#### Type material

Holotype ♂, Alai, Kollektorsky Mts., Dugoba R., 2700 m, 18.VII.1995, S. CHURKIN leg.

Paratypes. 6 ♂♂, 3 ♀♀, *ibid.*, 17.–19.VII.1995, S. CHURKIN leg. 7 ♂♂, 2 ♀♀, *ibid.*, A. PETROV leg. 1 ♂, *ibid.*, VII.1984, A. NEKRASOV leg. 3 ♂♂, *ibid.*, 19.VII.1992, V. TUZOV leg. 2 ♂♂, 2 ♀♀, *ibid.*, O. ALIKHODZHIN leg. 1 ♂, *ibid.*, 20.VII.1993, S. DIALEKTOV leg. 2 ♂♂, 1 ♀, *ibid.*, 8.VII.1994, O. ALIKHODZHIN leg. 6 ♂♂, 5 ♀♀, *ibid.*, 6.–11.VII.1984, V. MURZIN leg. 1 ♂, Alai Mts., Isfairamsai vall., Kaindy, 2800 m, 13.VII.1995, S. CHURKIN leg. 2 ♀♀, *ibid.*, A. PETROV leg.

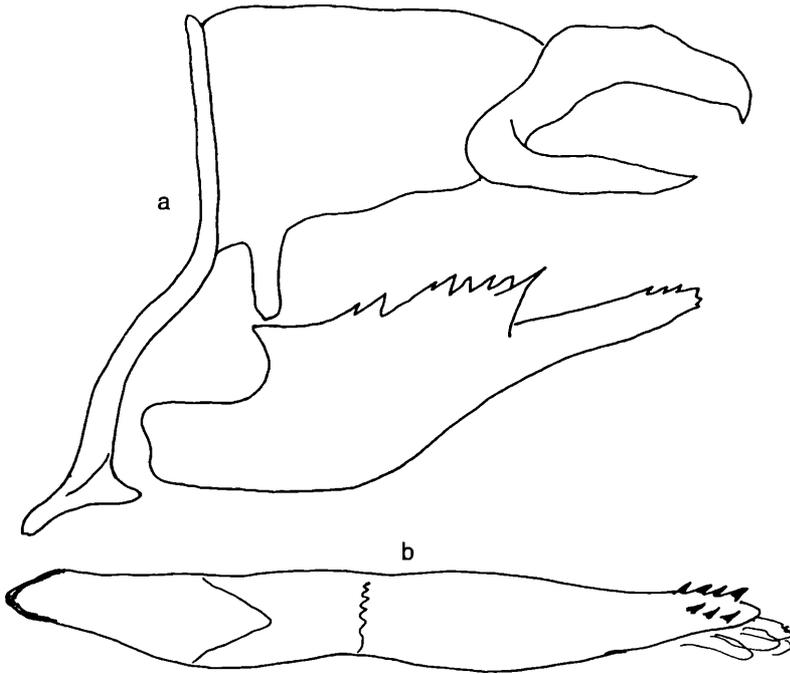


Fig. 3. Male genitalia of *Paralasa hades yaktchashma* subsp. nov. (paratype, Vanchsky Mts., Lyangar Gorge): a – lateral view; b – aedeagus.

#### Description and diagnosis

Male. FW length of holotype 25 mm, paratypes 23–26 mm (24–25 mm as a rule), smaller than *P. hades hades* from the same locality. Palpi (front view) bicolour, short grey hairs are clearly visible behind long black hairs. Bulb of antenna flat-cylindric form, its length exceeding 3–3.5 times its width. Fringes more contrast and bright than those of *P. hades*, dark segments adjoining cubital veins narrower than brighter segments. UPFW and UPHW ground colour black. UPFW has one extended pupil with small white dot under it. Pupils surrounded by narrow black ring merging background. Black eye on UNFW usually has two white pupils. Upper pupil is larger and extended. Sometimes extra small dote is available above or under two others. Yellowish-grey ring surrounding the eye is reduced. Sometimes the ring is reduced completely (50% of specimens). UNHW ground colour black with whitish-grey scales on marginal side; the row of 7 white points is available along external border between veins (see *P. hades maida*); the costal point often reduced.

Male genitalia (fig. 5). Valva is somewhat wider and shorter than that of *P. hades hades*; teeth large, variable. Uncus curved, even sharpened, without blade-like widening typical for *P. hades*. Gnathos long, strongly curved; tip sharpened and curved outside. Proximal tip of aedeagus sclerotised faintly than distal top, thorns small.

Female. FW length 26–27 mm. Palpi (front view) distinctively lighter than those of males. Bulb of antenna somewhat shorter giving access to determination females. Fringes grey with some darkness near vein ends. UPFW ground colour black. The eye on UPFW consists of two white pupils surrounded by narrow black ring clearly apparent on the background; the ring often disintegrates around each pupil. Upper pupil larger and ellipse-like (*P. hades* – rounded). Eye without aureole from yellowish scales as *P. hades*. UPFW ground colour black, central area often with cherry-brown area, apex with grey dust; the eye surrounded by narrow yellow ring, usually with three white pupils. Two females have reduced upper pupil. Additional small dot is under the eye, between M3 and Cu1

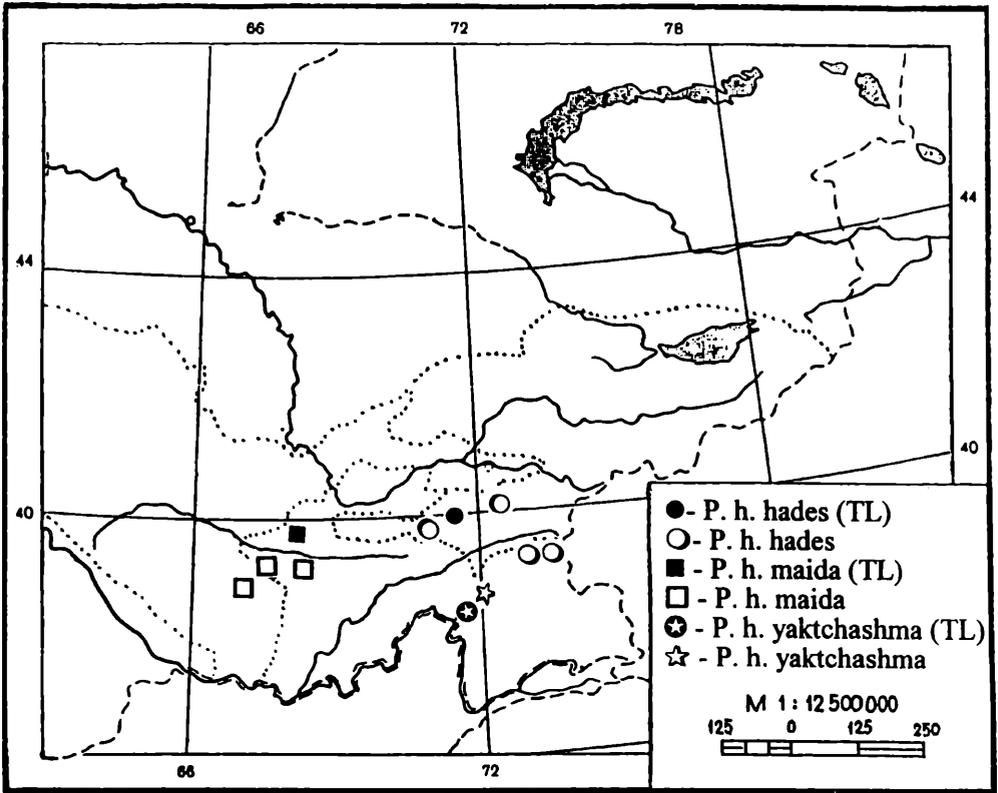


Fig. 4. Distribution of *Paralasa hades*.

veins; another one frequently available between Cu1 and Cu2. This feature distinguishes well from *P. hades*. UNHW ground colour black with dense whitish-grey dust; distinct row of 7 white points extends along external border.

#### Distribution

The species was discovered only in two locality in the Kollektorsky Mts. (Central Alai) (fig. 7).

#### Habitat and biology

Inhabits the screes of grey stones at 2,000–2,800 m a.s.l. Flight period: July–August, one week later than *P. hades*. In one locality both species fly together, *P. hades* occurs in upper gorge (2,700–2,800 m a.s.l.) and *P. ali* in lower gorge (2600 m). The imago of *P. ali* feed on the flowers with different nymphalide butterflies.

#### Taxonomic notes

We dispose of three females from West Ghissar (Ghissarsky Mts., Shing Gorge) similar to *P. ali* by appearance but the status of these specimens can be defined only after additional material will be studied, especially male specimens.

#### Etymology

The name derives from family of good collector – O. ALIKHODZHIN.

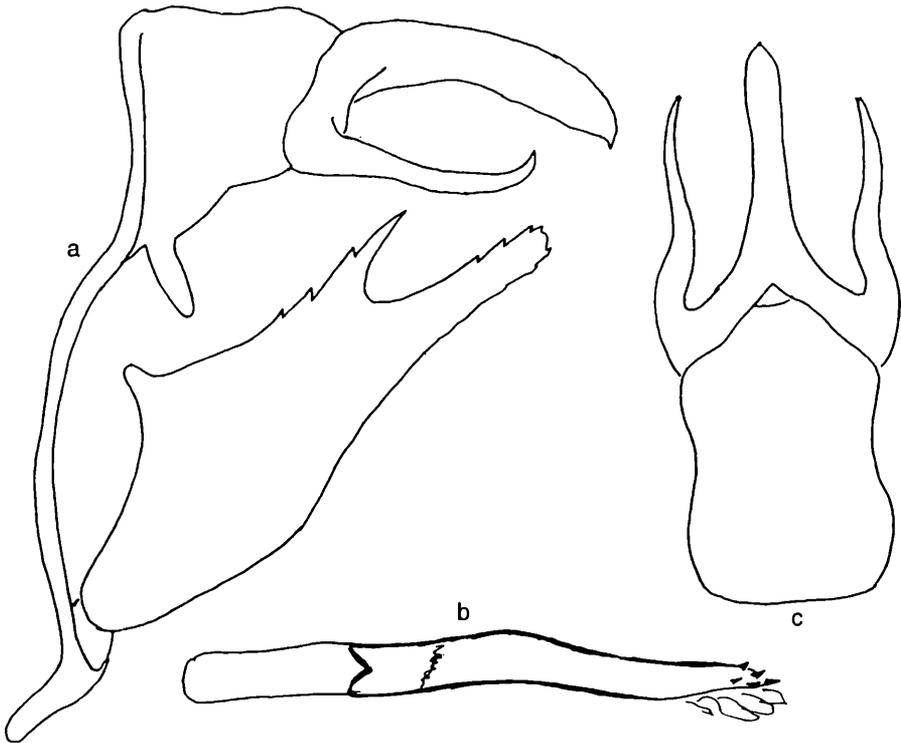


Fig. 5. Male genitalia of *Paralasa ali* spec. nov. (holotype): a – lateral view; b – aedeagus; c – dorsal view.

*Paralasa nero* (STAUDINGER, 1894)  
(colour plate, fig. 5)

"*Ereb.[ia] Nero* STGR. n. sp." – STAUDINGER, O. 1894. Neue Lepidopteren-Arten und Varietäten aus dem paläarktischen Faunengebiet. Deut. Ent. Zeit. 7:247. TL: "Transalai" [Zaalskys Mts., Alai].

#### Type material

Lectotype ♂. The following labels are in use: 1 – "Origin"; 2 – small brown round; 3 – "Transalai / Pamir? / 88 Maur." [STAUDINGER's hand]; 4 – Lectotype, ♂, *nero* STGR., design. V. Tuzov.

Paralectotype: 1 ♂ with labels: 1 – "Origin"; 2 – small brown round; 3 – Paralectotype, ♂, *nero* STGR., design. V. Tuzov. Type material is available in STAUDINGER's collection in the Zoologisches Museum, Humboldt University (Berlin).

Types examined.

#### Records

[*Ereb[ia] Nero* STGR. – RÜHL, [1895]: 811.

[*Ereb[ia] ?Nero* STGR. – STAUDINGER, 1901: 49.

*E.[reb[ia] nero* STGR. – EIFFINGER, [1907]: 110, Taf. 35d.

[*Ereb[ia] nero* STAUDINGER – GAEDE, 1931: 623.

*Paralasa nero* STAUDINGER, 1894 – KORSHUNOV, 1972: 150.

*Paralasa nero* (STAUDINGER, 1894) (bona species?) – TSHIKOLOWEZ, 1992a: 149.

*Paralasa nero* STAUDINGER, 1889. – TUZOV, 1993: 33 (part).

*Paralasa hades erebus* (GROUM-GRSHIMAILO, 1890). – TSHIKOLOVETS, 1997: 78; Pl. XVIII, fig. 1; Pl. XIX, fig. 1.

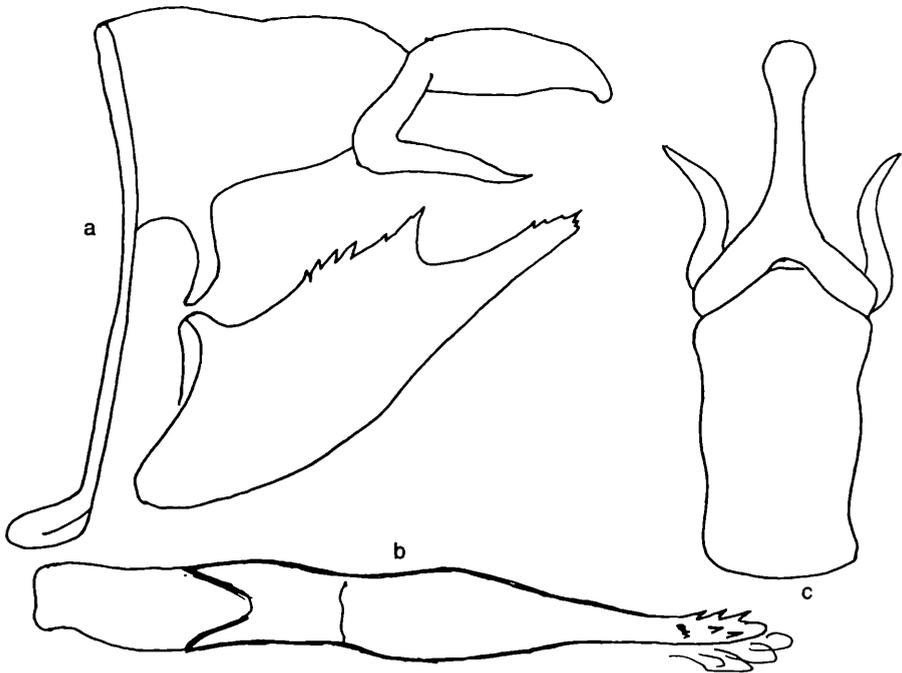


Fig. 6. Male genitalia of *Paralasa nero* (Zaalaisky Mts., Aram-Kungei, 3500 m): a – lateral view; b – aedeagus; c – dorsal view.

#### Material

1 ♂, 1 ♀, Kirghizia, Zaalaisky Mts., Aram-Kungei Gorge, 3500–3600 m, 12.–15.VII.1994, S. CHURKIN leg. 1 ♂, 4 ♀♀, *ibid.*, 13.–20.VII.1993, A. SOTCHIVKO leg. 1 ♀, Zaalaisky Mts. (west), Lenin Peak, Abdugagor Glacier, 4950 m, 20.VII.1982, L. KAABAK leg.

#### Description

Male. FW length 27–28 mm. Palpi (front view) black. Bulb of antenna similar to *P. hades*. Fringes almost unicolor, darker than these of *P. hades*. According to original description UPFW with one normal or reduced white rounded pupil. On UNFW the black eye is small, rounded, usually with one or two white pupils, the lower pupil being very small. There is a yellowish ring surrounding the eye. Ground colour of underside is black without grey dust and white points. One specimen available with anal and cubital dots only slightly apparent on UNHW.

Male genitalia (fig. 6). Valva with large, very variable teeth. Uncus (lateral view) similar to *P. hades* but the tip is obtuse. Specific features are visible when seen from the bottom: the top of uncus extended much more than in *P. hades*, without beak-like tip resembling shovel. Gnathos long, similar to *P. ali*, strongly curved outside. Top of aedeagus with some sclerotised thorns. Thorns similar to *P. hades* by size but not of the same amount. Proximal tip of aedeagus similar to *P. hades* but almost not sclerotised, and this differs from other species.

Female. FW length 26–30 mm. Palpi (front view) slightly more light than that of males. Bulb of antenna shorter. Fringes bright-grey with narrow dark area near vein ends. UPFW ground colour black. The eye on UPFW black, oval, with one rounded pupil. The eye surrounded by aureole of yellowish scales sometimes reduced. Two of five females have small additional white dot under the pupil. UPFW ground colour dark-grey, without cherry-brown part in the central area, apex grey. The eye is rounded with one circular pupil and wide yellow ring. One specimen available with additional white

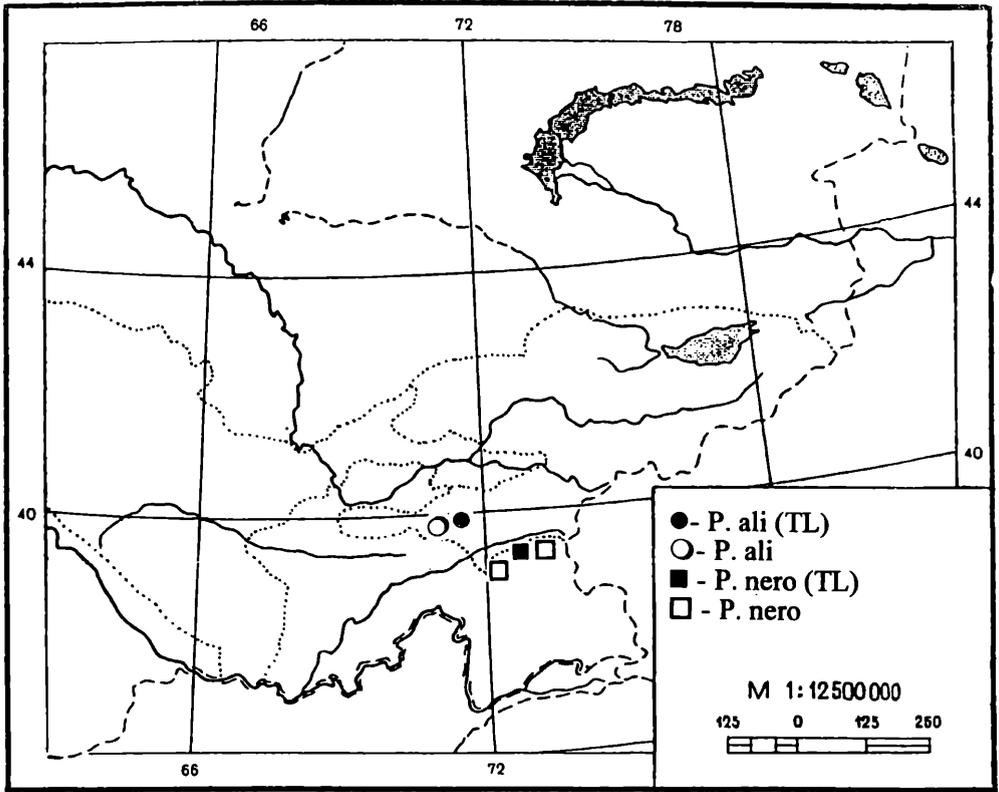


Fig. 7. Distribution of *Paralasa ali* and *Paralasa nero*.

dot in the eye. UNHW ground colour black, without intensive whitish-grey dust and distinctive white points while upperside appears unicolor. Three females have with 2–4 strongly reduced white dots on the UNHW.

Distribution  
Zaalaisky Mts. (fig. 7).

Habitat and biology  
Flies together *Parnassius charltonius* on the screes of large light stones at 3,500–5,000 m a.s.l.  
Flight period: July.

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References

- CHAPMAN, T. (1898): A Review of the Genus *Erebia* based on an Examination of the Male Appendages. – Trans. ent. Soc. Lond. **46** (3): 209–239.
- D'ABRERA, B. (1992): Butterflies of the Holarctic Region. Part II. Satyridae (concl.) & Nymphalidae (partim). – XV + 186–334.
- EIFFINGER, G. [1907]: Satyridae (part). In: SEITZ, A. Grossschmet. Erde, Fauna Pal., **1**: 94–114.
- ELWES, H. (1889): Notes on the Genus *Erebia*. – Trans. ent. Soc. Lond. **37** (4): 317–342.
- ELWES, H. (1898): A revision of the Genus *Erebia*. – Trans. ent. Soc. Lond. : 169–207.
- GAEDE, M. (1931): Satyridae. In: STRAND, E., Lepidopterorum Catalogus, pars **43, 46**, 48: 1–789.
- GRUMM-GRSHIMAILO, G. (1885): Bericht über meine Reise in das Alai-Gebiet. – ROM. Mem. Lep. **2**: 212–247.
- GROUM-GRSHIMAILO, G. (1890): Le Pamir et sa faunae Lepidopterologique. – ROM. Mem. Lep. **4**: 17 + 577, tt. 1–21, 1 cl.
- KORSCHUNOV, YU. P. (1972): Catalogue of the Butterflies (Lepidoptera, Rhopalocera) of USSR-fauna. – Ent. Obozr. **51** (1): 136–154; **51** (2): 352–368 (in russian).
- MURZIN, V. S. (1990): The butterflies of Alaisky Mts. – Bull. MSSN, Sec. biol. **95**: 15–17
- ROSEN, K. (1921): Die Rhopaloceren-Arten der Pamir-Expedition des Deutsch-Oesterreichischen Alpenvereins. – Mitt. münch. Ent. Ges. **11**: 83–100.
- RÜHL, F. [1895]. Satyridae, Lycaenidae. In: HEYNE, Die palaearktischen Grossschmetterlinge und ihre Naturgeschichte. 1. Tagfalter. – Leipzig, 1892–1893: 385–857.
- SHCHETKIN, J. L. (1971): New *Erebia* species from Pamirs. – **4** (45): 67–72.
- STAUDINGER, O. & A. BANG-HAAS (1882): Ueber einige neue *Parnassius*- und andere Tagfalter-Arten Central-Asiens. – Berl. ent. Z. **26** (1): 161–177, 2 t.
- STAUDINGER, O. (1894): Neue Lepidopteren-Arten und Varietäten aus dem paläarktischen Faunengebiet. – Deut. Ent. Zeit. **7**: 241–296.
- STAUDINGER, O. & H. REBEL (1901): Catalog der Lepidopteren des palaearktischen Faunengebiets. – Berlin, 42 + 411 pp.
- TSCHIKOLOWEZ, W. W. (1992a): Eine kommentierte Artenliste der Tagfalter des Vantsch-Gebirges (Pamir). – *Atalanta* **23** (1–2): 139–157.
- TSCHIKOLOWEZ, W. W. (1992b): Eine kommentierte Artenliste der Tagfalter des Transalaj-Gebirges (Pamir-Alai) nebst Beschreibung der *Erebia progne samodurovi* ssp. n. – *Atalanta* **23** (1–2): 169–193.
- TSHIKOLOVETS, V. V. (1997): The Butterflies of Pamir. – Bratislava, 282 pp., 46 pl.
- TUZOV, V. K. (1993): The synonymic list of Butterflies from the ex-USSR. – Moscow, Rosagroservice, 73 pp.
- WARREN, B. C. S. (1930): A definition of the Satyrid genera: *Erebia*, *Callerebia*, *Paralasa* and *Erebomorpha*. – Ent. Rec. J. Var. **42**: 103–107.

5a	5b	5c	5d
2b	2d	4b	4d
2a	2c	4a	4c
1b	1d	3b	3d
1a	1c	3a	3c

Explanation of the colour plate:

Fig. 1: *Paralasa hades hades* (STAUDINGER, 1882): a – ♂, Alai, Kollektorsky Mts., Dugoba, 3000 m; b – ♂ (UNS), *ibid.*; c – ♀, *ibid.*; d – ♀ (UNS), *ibid.*

Fig. 2: *Paralasa hades maida* subspec. nov.: a – ♂, holotype; b – ♂ (UNS), *ibid.*; c – ♀, paratype, Ghissarsky Mts., Anzob Pass, 3300 m; d – ♀ (UNS), *ibid.*

Fig. 3: *Paralasa hades yaktchashma* subspec. nov.: a – ♂, holotype; b – ♂ (UNS), *ibid.*; c – ♀, paratype, *ibid.*; d – ♀ (UNS), *ibid.*

Fig. 4: *Paralasa ali* spec. nov.: a – ♂, holotype; b – ♂ (UNS), *ibid.*; c – ♀, paratype, *ibid.*; d – ♀ (UNS), *ibid.*

Fig. 5: *Paralasa nero* (STAUDINGER, 1894): a – ♂, Zaalaisky Mts., Aram-Kungei, 3500 m; b – ♂ (UNS), *ibid.*; c – ♀, *ibid.*; d – ♀ (UNS), *ibid.*



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