

A new subspecies of *Parnassius staudingeri* A. BANG-HAAS, 1882 from the Sarykolsky Mountain Ridge in Tadjikistan

(Lepidoptera, Papilionidae)

by

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Summary: In this paper a new subspecies of *Parnassius staudingeri* A. BANG-HAAS, 1882 named *dunkeldykyus* subsp. nov. is described.

Zusammenfassung: In dieser Arbeit wird die neue Unterart *Parnassius staudingeri dunkeldykyus* subsp. nov. beschrieben.

In the period from 27 July until 8 August 1995 the members of the entomological expedition L. KAABAK, A. SOTSHIVKO, V. TITOV and V. LESIN discovered and collected in the spurs of the Sarykolsky Mountain Ridge two forms of *Parnassius staudingeri* A. BANG-HAAS, 1882. The first form is in our opinion very similar to *P. staudingeri mustagata* ROSE, 1990, that was described from the Mustagata Mountain, China, not distant from the border with Tadjikistan (ROSE, 1990). The second form according to the colouration of the wings is similar to *P. staudingeri kiritshenkoi* AVINOV, 1910 (that flies in Eastern Pamir in the Muzcol and Mynkhadzhir Mountain Ridges) and also *P. staudingeri mustagata* ROSE, but differs in our opinion from both of them. A series of pronounced differences discovered allows to nominate the second form as a new subspecies, which we name *dunkeldykyus* subsp. nov., taking into consideration that it was found in the spurs of the Sarykolsky Mountain Ridge, surrounding the high mountain lake Dunkeldyky.

Parnassius staudingeri dunkeldykyus subsp. nov.

Holotype ♂: Tadjikistan, South-East Pamir, Western spurs of Sarykolsky Mtn. Ridge, Dunkeldyky Lake, rocky crumbling slope, 4300 m above sea level, 04.VIII.1995, leg. A. SOTSHIVKO.

Paratypes: same locality, 4200–4600 m above sea level, 1 ♂ 27.VII.1995, 1 ♂ 4.VIII.1995, 1 ♂ 6.VIII.1995, 1 ♀ 30.VII.1995, 3 ♀♀ 6.VIII.1995 (leg. A. SOTSHIVKO); 1 ♂ 01.VIII.1994, 1 ♂ 31.VII.1995, 1 ♀ 29.VII.1994, 2 ♀♀ 01.VIII.1994, 1 ♀ 30.VII.1995 (leg. L. KAABAK).

Type material is presented in the collections of A. SOTSHIVKO and L. KAABAK.

Description

Male (fig 1). The length of the forewing of the holotype is 32 mm, that of the paratypes 29–33 mm. The marginal semi-transparent dark band of the forewing is rather broad (up to 5 mm at the top) with a curve in the M2-M3 area. The submarginal band is dark, its breadth is up to 2 mm. This band has a slight curve at the M2 vein and is concluded between Cu2-2A. The marginal and submarginal bands are divided by a light band of the main background colour, its breadth is 2–2.5 mm. An almost black postdiscal band (breadth 2–2.5 mm) is concluding

at the M3 vein, and appears again in the Cu2-2A area as a dark spot similar to a comma. The discal spot and the central cell spot are deep black, and the discal spot is much larger than the central cell spot. The hindwing has two pronounced postdiscal round or oval red spots of almost equal size with black bordering. Two submarginal spots are small and black. The submarginal band between the Rs and M3 veins is narrow, wavy, often interrupted. The marginal semi-transparent dark band between Rs and M3 is rather broad (up to 4 mm between M2 and M3) and narrows down to 1–1.5 mm between the veins M3 and Cu2. The darkness, which occupies the anal edge, covers also part of the discal cell.

Female (colour plate 11a, fig 2). The length of the forewing is 30–35 mm. It has all the subspecies' characteristic features of the male. The difference is as follows: the submarginal band of the forewing is more diffuse and the two red spots on the hindwing are larger. The female is slightly larger in size than the male.

Comparative diagnosis

The new subspecies is most similar to ssp. *kiritshenkoi* and ssp. *mustagata*. We compared it with these particular subspecies. Specimens used for comparison were taken from the private collections of L. KAABAK, A. SOTSHIVKO, V. TITOV and V. LESIN. The difference from ssp. *kiritshenkoi* from the Muzcol Mountain Ridge and the Mountain Ridge Mynkhadzhir is as follows: the new subspecies has a cream background colour of the wings, while that of ssp. *kiritshenkoi* is pure white. The dark pattern of its wings is better developed and the forewing's submarginal dark band is wider and longer than that of ssp. *kiritshenkoi*, whose forewing's submarginal band usually ends between the Cu1-Cu2 veins. The postdiscal band is wider than that of ssp. *kiritshenkoi*. The hindwing of the new subspecies has a fine submarginal dark band, whereas that of ssp. *kiritshenkoi* is a very thin dotted line or missing at all. The semitransparent marginal band of the hindwing between the veins M3 and Cu2 is wider and the red ocelli are larger than that of ssp. *kiritshenkoi*. Usually the females exhibit more pronounced differences between these subspecies. The difference with regard to another form from the Sarykolsky Mtn. Ridge, that is in our opinion similar to *P. staudingeri mustagata* ROSE, 1990, is as follows: the dark pattern, especially the marginal and submarginal bands, of the new subspecies is less developed. The forewing's marginal and submarginal bands of the new subspecies do not have the tendency to confluence between the veins Cu2-2A in contrast to the *mustagata*-similar form. The forewing's submarginal band of the new subspecies is considerably narrower than the marginal band, while the width of the submarginal band of the *mustagata*-similar form approaches the width of the marginal band. The forewing's postdiscal band and the basal dark dusting are less developed. The hindwing's anal dark dusting of the new subspecies covers only a little basal part of the discal cell, while that of the majority of the butterflies of the *mustagata*-similar form is considerably vaster and covers the whole discal cell. In the big series available one can see that the butterflies of the new subspecies are slightly larger.

Variability

Various specimens of ssp. *dunkeldykus* spec. nov. of the series obtained differ from each other to a certain extent in size, shape, width and intensity of the dark colouration. The forewing's postdiscal band between the veins Cu2-2A appears as a dark spot of different size

or is missing at all. Approximately one out of 10 specimens has a strongly reduced red dusting of the hindwing postdiscal ocelli.

Biotop

The place we observed *dunkeldykyus* subsp. nov. is characterized by the following features: rocky or detritus cliffs, stony slopes at an elevation of 4200–4600 m with thinned out xerophile vegetation. Plants of the genus *Cysticorydalis*, known to be the food plants of the caterpillars, are found rather frequently. Alongside of *P. staudingeri dunkeldykyus* subsp. nov. the most frequently observed representatives of the following species of Rhopalocera have been: *P. charltonius mistericus* KAABAK, SOTSHIVKO & TITOV, *C. marcopolo marcopolo* GRUM-GRSHIMAILO, 1888, *Pieris deota* (NICÉVILLE, 1883), *Pontia callidice* (HÜBNER, 1800) and *Melitaea fergana* STAUDINGER, 1882. It is necessary to emphasize that both discovered forms (*mustagata*-similar form and *dunkeldykyus* subsp. nov.) are found together in the same area and at the same period, though the flight (hatching) of the *mustagata*-similar form begins earlier than that of *dunkeldykyus* subsp. nov. Maybe in the Sarykolsky Mountain Ridge there are two different ecological forms of *Parnassius staudingeri*. But taking into account that these forms have the pronounced differences discovered, we suppose that it is necessary to investigate with care the possibility to consider one of the three subspecies (*kiritshenkoi*, *mustagata*, *dunkeldykyus*) as a bona species of *Parnassius*.

Reference

ROSE, K. (1990): Eine neue Unterart von *Parnassius staudingeri* (BANG-HAAS, 1882) aus China (Lepidoptera, Papilionidae). – Nachr. ent. Ver. Apollo 11: 151–154.

Explanation of colour plate IIb (p. 453):

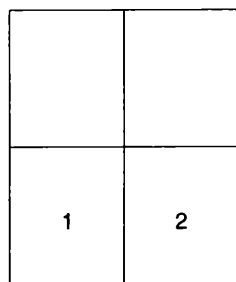


Fig. 1: *Parnassius staudingeri dunkeldykyus* SOTSHIVKO & KAABAK subsp. nov. Holotype ♂, Tadzhikistan, South-East Pamir, Western spurs of Sarykolskiy Mtn. Ridge, Dunkeldyk Lake, 4300 m, 04.VIII.1995, leg. A. SOTSHIVKO.

Fig. 2: *Parnassius staudingeri dunkeldykyus* SOTSHIVKO & KAABAK subsp. nov. Paratype ♀, Tadzhikistan, South-East Pamir, Western spurs of Sarykolskiy Mtn. Ridge, Dunkeldyk Lake, 4300 m, 04.VIII.1995, leg. A. SOTSHIVKO.

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Colour plate IIa

KAABAK, L. V., SOTSHIVKO, A. V. & V. V. TITOV: A new subspecies of *Parnassius charltonius* GRAY, 1853 from the Sarykolsky Mountain Ridge in Tadjikistan (Lepidoptera, Papilionidae). – *Atalanta* **27** (1/2): 195–198.

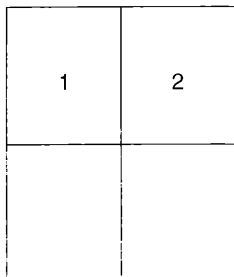


Fig. 1: *Parnassius charltonius mistericus* subspec. nov. Holotype ♂, Tadjikistan, South-East Pamirs, western spurs of Sarykolsky Mtn Ridge, Dunkeldyk Lake, 4300 m, 02.VIII.1995, leg. A. SOTSHIVKO.

Fig. 2: *Parnassius charltonius mistericus* subspec. nov. Paratype ♀, Tadjikistan, South-East Pamirs, western spurs of Sarykolsky Mtn Ridge, Dunkeldyk Lake, 4300 m, 02.VIII.1995, leg. A. SOTSHIVKO.

Colour plate IIb

SOTSHIVKO, A. V. & L. V. KAABAK: A new subspecies of *Parnassius staudingeri* A. BANG-HAAS, 1882 from the Sarykolsky Mountain Ridge in Tadjikistan (Lepidoptera, Papilionidae). – *Atalanta* **27** (1/2): 199–202.

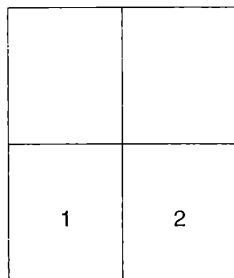
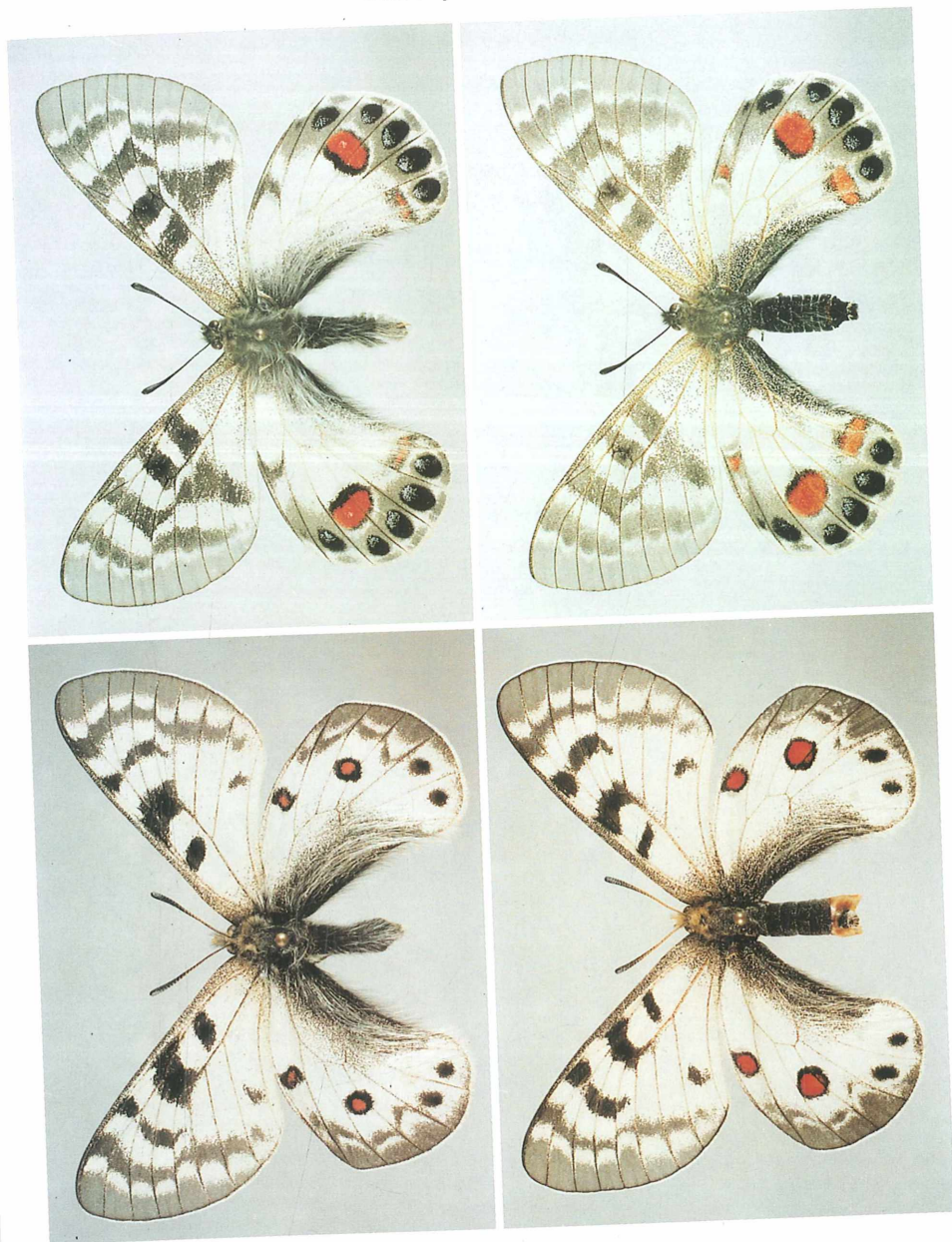


Fig. 1: *Parnassius staudingeri dunkeldykus* subspec. nov. Holotype ♂, Tadjikistan, South-East Pamir, Western spurs of Sarykolskiy Mtn. Ridge, Dunkeldyk Lake, 4300 m, 04.VIII.1995, leg. A. SOTSHIVKO.

Fig. 2: *Parnassius staudingeri dunkeldykus* subspec. nov. Paratype ♀, Tadjikistan, South-East Pamir, Western spurs of Sarykolskiy Mtn. Ridge, Dunkeldyk Lake, 4300 m, 04.VIII.1995, leg. A. SOTSHIVKO.

Colour plate IIa/b



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