

# Butterfly fauna (Lepidoptera: Papilionoidea and Hesperioidea) of the Hazratisho Ridge (Tajikistan)

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## Abstract

The butterfly fauna of the Hazratisho Ridge includes 105 species and subspecies from 5 families. The faunal composition in general and taxonomic status of some recorded species is discussed.

## Keywords

Butterflies, distribution, species composition, taxonomic notes, collecting locations, southwestern Tajikistan

## Introduction

The Hazratisho Ridge begins in the southwest of Tajikistan and extends to the central part of Tajikistan. Its southern part is located in Shamsiddin Shokhin district (formerly Shuroabad), while the central part stretches into the Muminabad and Khovaling districts, and the northern part in Sangvor district (formerly Tavildara). The southern part of the Range borders Afghanistan in the west and is limited by the Panj River, and in the east this part of the Range borders with the Yahsu River valley. In the central part, the Ridge borders with the Obi – Mazor River valley in

the east, and this valley separates the Hazratisho Ridge from the Vakhsh Ridge. The relief of the Ridge is quite serrated, and interspersed by large areas of rocky outcrops and screes (Juraev, Stanyukovich 1982). The length of the ridge is 55 km.

Data on the butterflies of the Hazratisho Ridge is very scarce. There are records of butterflies from the southern part of the Ridge (Stshetkin 1963; Baeva 1963), as well as partially from the central part (Davlatov 2021, 2022). The work of Stshetkin (1963) focuses on ecological and faunal aspects, with the exception of the description of 4 new subspecies. The work of Baeva (1963) is generally devoted to insect pests of fruit and crops in the south-western Tajikistan, the territory also covering the southern part of the Hazratisho Ridge. The only butterfly species mentioned in this work is *Aporia crataegi* whose larvae can cause damage in orchards.

It is known that the butterfly fauna of Tajikistan is very interesting, but has been poorly studied, hence the current study. This paper summarizes data about the butterflies of the Hazratisho Ridge as part of southwestern Tajikistan, based on the author's collections in the period 2014–2023 and review of the literature.

## Materials and methods

During the period from 2014 to 2023, the author repeatedly visited the Hazratisho Ridge, and collected material on butterflies. The expeditions covered the entire territory of the Ridge, and includes the following localities (Figs 1–5):

(1) The Northern slope of the Hazratisho Ridge, the upper course of the Yahsu River, in the vicinity of the village of Siyofark. This is a rocky slope with juniper bushes, a single barberry and rosehip bushes 38°30'47.26"N, 070°15'51.93"E, h=1800 m.

(2) The Northern slope of the Khazratisho Ridge, Kozii Yaktefa gorge 38°28'53.14"N, 070°15'36.63"E, h=1700–2000 m. By the type of vegetation, this area belongs to the large-grass semi – savannah.

(3) The Eastern slope of the Hazratisho Ridge, vicinity of Devloh village 38°30'16.13"N, 070°13'43.71"E, h=2100 m. The slope is covered with low grass.

(4) Tiyun pass, located on the Western slopes of the Hazratisho Ridge, 3 km northwest of the center of Khovaling district 38°21'47.20"N, 070°02'06.50"E, h=1080–1640 m. Vegetation – large-grass semi-savannah.

(5) Anjirak gorge, located in the northern slopes of the Hazratisho Ridge, also in the upper reaches of the Obi-Mazor River, 18 km north of the center of Khovaling district 38°28'31.12"N, 070°05'58.65"E, h=2250 m. Vegetation-large herb semi – savannah.

(6) The Eastern slope of the Hazratisho Ridge, the left bank of the Yahsu River, 1640 m, the slope is covered by the large-grass semi – savannah.

(7) The Western slope of the Hazratisho Ridge, 10 km east of the Childukhtaron Nature reserve 38°21'20.03"N, 070°05'35.63"E, h=1500–1820 m. Vegetation – various – grasslands.

(8) The Western slope of the Hazratisho Ridge, the vicinity of the Childukhtaron Nature reserve 38°19'22.46"N, 070°08'05.90"E, h=1820 m. Mixed woods (barberry, walnut, wild apple, juniper, etc.).

(9) Childukhtaron Nature reserve, Northern slope of the Hazratisho Ridge 38°18'33.14"N, 070°09'14.11"E, h=2000 m. Rocky slopes with isolated junipers.

(10) Lokhuti pass on the southern slopes of the Hazratisho Ridge, the Obi – Mazor River valley, Khovaling district 38°18'48.89"N, 069°57'58.23"E, h=1580 m. The *Rosa ecae* bushes are dominant.

(11) Mountain Emom – Askari, the Western slope of the Hazratisho Ridge, 7 km north of the Shamsiddini Shokhin district 37°55'16.70"N, 070°02'45.88"E, h=2200 m. The lower part of the mountain is covered with various grasses, the upper part is characterized by stony – gravelly slopes with bushes of *Rosaecae*.

(12) The Western slope of the Hazratisho Ridge, North of the village of Dashtijum 38°03'02.61"N, 070°13'20.69"E, h=1520 m.

(13) Surroundings of Shohinak village, on the forest slope of the Southern exposure of the Hazratisho Ridge 38°02'19.81"N, 070°12'19.29" E, h=1330 m.

(14) Hilly place at the foot of the Hazratisho Ridge, South of Khovaling district 38°15'22.31"N, 069°50'43.90"E, h=1635 m. Vegetation – various – grasslands.

(15) The Northern slope of the Hazratisho Ridge, Shugnovi Bolo 38°35'12.14"N, 070°21'28.32"E, h=2520 m. Vegetation – large herb semi – savannah.

(16) The Southern slope of the Hazratisho Ridge, the surroundings of Sangvor district, Margzor gorge 38°39'25.83"N, 070°31'18.36"E, h=1920 m. Forest area.

The taxonomy in the annotated list follows the catalogue by Korb & Bolshakov (2016) with some minor changes. The species composition of butterflies is given below as follows: name, number of specimens, date of collection, collecting locations, and distribution.

## Result

### Hesperiidae

#### *Erynnis pathan* Evans, 1949

**Published records:** Hazratisho Ridge, Chortov bridge, 2200 m, Stshetkin, 1963: 68.

**Distribution.** Tajikistan, Pakistan, north Baluchistan.

#### *Carcharodus alceae* (Esper, 1780)

**Material.** 1 female, 09.07.2019, loc. 4; 1 male, 21.06.2021, loc. 13; 1 male 29.06.2023, loc. 5.

**Distribution.** Southern and central Europe, north Africa, the whole Caucasus, Central Asia, Kazakhstan.

***Carcharodus dravira* (Moore, 1874)**

**Published records:** Tajikistan – Darvaz (Hasratisho Ridge) (Devyatkin, 1990).

***Syrictus lutulentus* (Grum-Grshimailo, 1890)**

**Material.** 1 male, 2 females, 7.07.2015, loc.1; 1 female, 13.07.2019, loc. 7; 4 males, 2 females, 29.06.2021, loc. 9; 1 male, 1 female, 17.06.2021, 6 males, 18.06.2021, loc. 11; 2 males, 6.07.2021, loc. 15; 4 males, 1 female, 10.07.2014, 8 males, 1 female, 24.06.2022, loc. 16; 1 male, 4.07.2021, loc. 2; 3 males, 29.06.2023, loc. 5.

**Distribution.** Syria, Mesopotamia to Central Asia, Afghanistan.

***Syrictus nobilis* (Staudinger, 1882)**

**Material.** 1 male, 7.07.2015, loc. 1.

**Distribution.** Tajikistan, Kyrgyzstan, Kazakhstan.

***Spialia orbifer lugens* (Staudinger, 1886)**

**Material.** 1 male, 7.07.2015, loc. 1; 2 males, 29.07.2019, 1 male, 1 female, 4.07.2021, loc. 2; 1 male, 1 female, 30.07.2019, 1 male, 1 female, 7.07.2021, loc. 3; 1 female, 2 males, 12.07.2019, loc. 4; 2 male, 13.07.2019, loc. 7; 1 male, 29.06.2021, loc. 8; 1 male, 29.06.2021, loc. 9; 18 males, 1 female, 17.06.2021, 1 male, 18.06.2021 loc. 11; 1 male, 19.06.2021, loc. 13.

**Distribution.** Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan.

***Thymelicus lineola* (Ochsenheimer, [1808])**

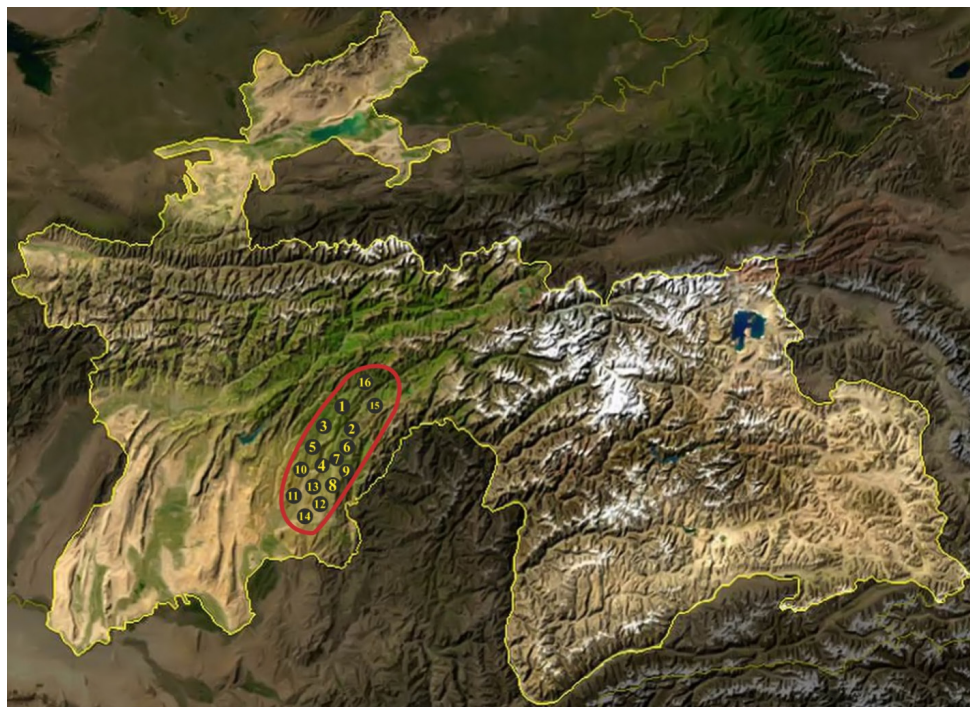
**Material.** 5 males, 16.05.2015, 2 females, 12.07.2019, loc. 5; 3 males, 1 female, 17.06.2021, 5 males, 18.06.2021, loc. 11; 2 males, 1 female, 6.07.2021, loc. 15; 1 male, 29.06.2023, loc. 5.

**Distribution.** Tajikistan, Afghanistan.

***Thymelicus alaicus* (Filipjev, 1931)**

**Material.** 2 males, 7.07.2015, loc. 1; 3 males, 3 females, 29.07.2019, 9 males, 1 female, 4.07.2021, loc. 2; 3 males, 2 females, 7.07.2021, loc. 3; 16 males, 1 female, 09.07.2019, loc. 4; 2 males, 12.07.2019, loc.5; 1 male, 3 females, 14.07.2019, loc. 6; 2 males, 4 females, 13.07.2019, loc. 7; 4 males, 29.06.2021, loc. 8; 8 males, 19.06.2021, 6 males, 21.06.2021, loc. 13; 9 males, 5 females, 20.06.2021, loc. 12; 3 males, 8 females, 12.07.2021, loc. 14; 1 male, 24.06.2022, loc. 16.

**Distribution.** Central Asia, Afghanistan, China.



**Figure 1.** Map of the research area: **1** – vicinity of the village of Siyofark; **2** – Kozii Yaktefa gorge; **3** – Vicinity of Devloh village; **4** – Tiyun pass; **5** – Anjirak gorge; **6** – The left bank of the Yahsu River; **7** – 10 km east of the Childukhtaron Nature reserve; **8** – The vicinity of the Childukhtaron Nature reserve; **9** – Childukhtaron Nature reserve; **10** – Lohuti pass; **11** – Mountain Emom-Askari; **12** – North of Dashtijum village; **13** – Surroundings of Shohinak village; **14** – Hilly place at the foot of the Hazratisho Ridge; **15** – The Northern slope of the Hazratisho Ridge, Shugnovi Bolo; **16** – Sangvor district, Margzor gorge. The red lines indicate the territory of the Hazratisho Ridge, and the black dots and numbers indicate collecting locations.

### *Thymelicus stigma* (Staudinger, 1886)

**Material.** 2 males, 1 female, 09.08.2020, loc. 10; 1 male, 12.07.2021, loc. 14; 2 males, 15.07.2021, loc. 5.

**Distribution.** Uzbekistan, Tajikistan.

### *Gegenes nostradamus* (Fabricius, 1793)

**Published records:** Hazratisho Ridge, Yoshdara canyon near Dashtijum, 11 km northwest of Muminabad, 1100 m, Stshetkin, 1963: 72.

**Distribution.** Mediterranean area of Europe and Africa, Afghanistan, Pakistan, India, Caucasus Minor, Russia, Kazakhstan, Central Asia.

## Papilionidae

### *Papilio machaon centralis* Staudinger, 1886

**Material.** 1 male, 30.07.2019, loc. 3; 1 female, 07.06.2020, loc. 4; 4 males, 13.07.2019, loc. 7; 4 males, 12.07.2019, loc. 5; 4 males, 20.06.2021, loc. 12; 2 males, 6.07.2021, loc. 15; 1 male, 7.07.2021, loc. 3; 1 male, 1 female, 4.07.2021, loc. 2.

**Distribution.** Kazakhstan, Tajikistan, Uzbekistan, Kyrgyzstan.

### *Driopa mnemosyne giganteus* Staudinger, 1886

**Material.** 1 male, 2 female, 17.06.2021, loc. 11; 1 female, 24.06.2022, loc. 16.

**Distribution.** Tajikistan, Kyrgyzstan.

## Pieridae

### *Leptidea darvazensis* Bolshakov, 2004

**Material.** 6 males, 7.07.2015, loc. 1; 3 males, 29.07.2019, loc. 2; 5 males, 12.06.2020, loc. 5.

**Note.** It is necessary to study populations of *Leptidea* from different parts of Tajikistan using molecular and karyological research.

**Distribution.** Tajikistan.

### *Colias erate* (Esper, 1801)

**Material.** 1 female, 7.07.2015, loc. 1; 2 females, 5 females, 29.07.2019, 2 males, 2 females, 4.07.2021, loc. 2; 10 males, 8 females, 09.07.2019, loc. 4; 1 female, 07.06.2020, loc. 5; 3 males, 1 female, 14.07.2019, loc. 6; 1 male, 5 females, 13.07.2019, loc. 7; 2 females, 17.06.2021, loc. 11; 2 males, 1 female, 19.06.2021, loc. 13; 2 males, 1 female, 20.06.2021, loc. 12; 8 males, 4 females, 12.07.2021, loc. 14; 1 male, 2 females, 10.07.2014, loc. 16; 1 male, 6.07.2021, loc. 15; 1 male, 1 female, 7.07.2021, loc. 3.

**Distribution.** South-eastern Europe, Asia Minor, Central Asia.

### *Colias wiskotti* Staudinger, 1882

**Published records:** Hazratisho Ridge at Shuroabad pass, 2540 m, Stshetkin, 1963: 35.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan, Hindu Kush.

### *Anthocharis cardamines* (Linnaeus, 1758)

**Published records:** Hazratisho Ridge, Chortov bridge, 2200 m, Stshetkin, 1963, 34.

**Distribution.** Europe and Palaeartic.

***Euchloe pulverata* (Christoph, 1884)**

**Published records:** Hazratisho Ridge, Chortov bridge, 2200 m, Stshetkin, 1963: 34.

**Distribution.** Transcaucasia, Afghanistan, Kazakhstan, Central Asia, south Altai.

***Aporia crataegi* (Linnaeus, 1758)**

**Material.** 4 females, 7.07.2015, loc. 1; 2 males, 12.07.2019, 5 males, 12.06.2020, loc. 5; 1 female, 29.06.2021, loc. 8; 1 female, 29.06.2021, loc. 9; 2 males, 17.06.2021, loc. 11; 1 female, 20.06.2021, loc. 12; 2 males, 10.07.2014, loc. 16; 2 males, 2 females, 6.07.2021, loc. 15; 2 females, 1male, 4.07.2021, loc. 2.

**Distribution.** Palaearctic Region.



**Figures 2–5.** Collection points in the Hazratisho Ridge. 2 – Emom–Askari Mountain; 3 – Childukhtaron Nature Reserve; 4 – Kozii Yaktefa gorge; 5 – Tiyun pass. (Author's photo).

***Metaporja leucodice aryana* Wyatt et Omoto, 1966**

**Material.** 3 males, 1 female, 7.07.2015, loc. 1; 3 females, 09.07.2019, 1 male, 07.06.2020, loc. 4; 1 male, 12.07.2019, 5 males, 12.06.2020, loc. 5; 5 females, 13.07.2019, loc. 7; 2 males, 4 females, 29.06.2021, loc. 9; 4 males, 4 females, 18.06.2021, loc. 11; 3 males,

1 female, 10.07.2014, 1 female, 24.06.2022, loc. 16; 2 males, 2 females, 6.07.2021, loc. 15.

**Distribution.** Tajikistan, Afghanistan.

***Pieris brassicae ottonis* Röber, 1907**

**Material.** 1 female, 12.07.2021, loc. 14.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan.

***Pieris rapae debilis* Alphéraky, 1889**

**Material.** 1 male, 09.07.2019, loc. 4; 3 females, 12.07.2019, 1 male, 15.07.2021, loc. 5; 1 male, 3 females, 19.06.2021, loc. 13; 1 male, 2 females, 12.07.2021, loc. 14.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan.

***Pieris canidia palaeartica* Staudinger, 1886**

**Material.** 4 males, 29.06.2021, loc. 9; 2 male, 17.06.2021, loc. 11; 1 male, 4.07.2021, loc. 2; 1 male, 15.07.2021, loc. 5.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan.

***Pontia daplidice* Linnaeus, 1758**

**Material.** 1 male, 07.06.2020, loc. 4; 1 male, 14.07.2019, loc. 6; 1 male, 09.08.2020, loc. 10; 2 males, 1 female, 19.06.2021, loc. 13; 8 males, 1 female, 12.07.2021, loc. 14.

**Distribution.** Northern Africa, western Europe, Central Asia.

**Nymphalidae**

***Libythea celtis platooni* Korb, 2005**

**Material.** 1 male, 1 female, 29.06.2021, loc. 8.

**Distribution.** Central Asia.

***Danaus chrysippus* (Linnaeus, 1758)**

**Published records:** Shuroabad village, Stshetkin, 1963: 36.

**Distribution.** Africa, Europe, Asia, Transcaucasus, Kazakhstan, Central Asia.

***Limenitis lepechini* Erschoff, 1874**

**Material.** 1 male, 10.07.2014, loc. 16.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan, Afghanistan, Pakistan.



***Argynnis pandora* ([Denis et Schiffermüller], 1775)**

**Published records:** Hazratisho Ridge, Chortov bridge, 1900 m, Stshetkin, 1963: 39.

**Distribution.** Southern Europe, north Africa and Asia, Caucasus, Transcaucasus, Kazakhstan, Central Asia.

***Argynnis niobe orientalis* Alphéraky, 1881**

**Material.** 2 males, 07.06.2020, loc. 4; 4 males, 12.07.2019, loc. 5; 6 males, 3 female, 13.07.2019, loc. 7; 5 males, 3 female, 29.06.2021, loc. 8; 4 males, 29.06.2021, loc. 9; 1 male, 24.06.2022, loc. 16.

**Distribution.** Kazakhstan, Central Asia.

***Brenthis hecate alaica* (Staudinger, 1886)**

**Material.** 3 males, 2 female, 4.07.2021, loc. 2; 1 male, 6.07.2021, loc. 15; 1 male, 15.07.2021, 6 males, 29.06.2023, loc. 5.

**Distribution.** Southern Europe, Asia Minor, Central Asia.

***Issoria lathonia* (Linnaeus, 1758)**

**Material.** 1 male, 17.06.2021, loc. 11.

**Distribution.** North Africa, Europe, Caucasus, Transcaucasus, Kazakhstan, western Siberia, Central Asia.

***Polygonia c-album interposita* (Staudinger, 1881)**

**Published records:** The southern part of the Hazratisho Ridge, Shuroabad pass, 2450 m, Stshetkin, 1963: 37.

**Distribution.** Tajikistan, eastern Kazakhstan, Altai, Northwest China, Himalaya.

***Nymphalis polychloros* (Linnaeus, 1758)**

**Material.** 1 female, 12.07.2019, loc. 5.

**Distribution.** Europe, north Africa, across temperate Asia from Turkey to Kazakhstan, Central Asia.

***Nymphalis xanthomelas hazara* Wyatt et Omoto, 1966**

**Material.** 1 female, 24.06.2022, loc. 16; 1 female, 29.06.2023, loc. 5.

**Distribution.** Palaearctic region.

***Aglais urticae* (Linnaeus, 1758)**

**Published records:** Near the south-eastern outskirts of Muminabad, 1250 – 1300 m, Stshetkin, 1963: 36.

**Distribution.** Europe, Russia, Caucasus, Transcaucasus, Kazakhstan, Central Asia.

***Aglais nixa* (Grum-Grshimaïlo, 1890)**

**Material.** 1 male, 1 female, 12.06.2020, loc. 5.

**Distribution.** Central Asia, Afghanistan, Pakistan, India, China.

***Vanessa cardui* (Linnaeus, 1758)**

**Material.** 1 female, 30.07.2019, loc. 3; 1 female, 07.06.2020, loc. 4; 3 females, 12.07.2019, 1 female, 12.06.2020, loc. 5; 1 male, 13.07.2019, loc. 7; 1 female, 10.07.2014, loc. 16; 1 female, 1 female, 6.07.2021, loc. 15.

**Distribution.** Widespread, except south America.

***Melitaea didyma turkestanica* Sheljuzhko, 1929**

**Material.** 1 male, 30.07.2019, loc. 3; 2 males, 09.07.2020, loc. 4; 1 female, 12.06.2020, loc. 5; 4 males, 14.07.2019, loc. 6; 2 males, 1 female, 6.07.2021, loc. 15; 4 females, 4.07.2021, loc. 2.

**Distribution.** Central Asia, southern Kazakhstan.

***Melitaea perseae* Kollar, [1849]**

**Published records:** Hazratisho Ridge, Chortov bridge, 1900 – 2000 m, Stshetkin, 1963: 37.

**Distribution.** South-west Asia.

***Melitaea kotshubeji* Sheljuzhko, 1929**

**Material.** 1 female, 30.07.2019, 1 female, 7.07.2021, loc. 3; 4 males, 4 females, 4.07.2021, loc. 2; 4 males, 1 female, 29.06.2023, loc. 5.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan.

***Melitaea enarea* Fruhstorfer, 1916**

**Material.** 1 male, 2 females, 7.07.2015, loc. 1; 3 males, 1 female, 12.06.2020, 2 males, 29.06.2023, loc. 5; 5 females, 2 females, 4.07.2021, loc. 2; 3 males, 1 female, 24.06.2022, loc. 16.

**Distribution.** Tajikistan.

***Melitaea trivialis catapelia* Staudinger, 1886**

**Material.** 4 males, 13.07.2019, loc. 7; 2 males, 17.06.2021, loc. 11; 7 males, 4 females, 15.07.2021, loc. 5.

**Distribution.** Tajikistan.

***Melitaea arduinna* (Esper, 1784)**

**Material.** 2 males, 2 females, 07.06.2020; 8 males, 18.06.2021, loc. 11; 1 male, 12.07.2021, loc. 14; 6 males, 29.06.2023, loc. 5.

**Distribution.** Europe, Russia, Caucasus, Transcaucasus, eastern Kazakhstan, Central Asia.

***Lasiommata menava* Moore, 1865**

**Published records:** Shuroabad village; Eastern slope of the Hazratisho Ridge; Nishorak village north of Dashtijum, 1700 – 2000 m, Stshetkin, 1963: 44.

**Distribution.** Asia Minor, Transcaucasia, north-western India.

***Esperarge eversmanni* (Eversmann, 1847)**

**Material.** 6 males, 1 female, 7.07.2015, loc. 1; 5 males, 29.07.2019, 5 males, 1 female, 4.07.2021, loc. 2; 1 male, 2 females, 30.07.2019, 1 male, 7.07.2021, loc. 3; 9 males, 09.07.2019, 1 male, 07.06.2020, loc. 4; 7 males, 12.07.2019, 7 males, 2 females, 15.07.2021, loc. 5; 2 females, 14.07.2019, loc. 6; 3 males, 5 females, 13.07.2019, loc. 7; 5 males, 2 females, 29.06.2021, loc. 8; 5 males, 2 females, 29.06.2021, loc. 9; 4 males, 17.06.2021, 3 males, 1 female, 18.06.2021, loc. 11; 4 males, 19.06.2021, loc. 13; 1 male, 1 female, 20.06.2021, loc. 12; 4 females, 12.07.2021, loc. 14; 4 males, 1 female, 10.07.2014, 2 males, 24.06.2022, loc. 16; 2 males, 2 female, 6.07.2021.

**Distribution.** Central Asia, Kazakhstan, Afghanistan, Pakistan, India.

***Melanargia parce* Staudinger, 1882**

**Material.** 3 males, 29.07.2019, 5 males, 1 female, 4.07.2021, loc. 2; 6 females, 09.07.2019, 2 males, 07.06.2020, 5 males, 14 female, 1.07.2021, loc. 4; 2 males, 1 female, 12.07.2019, 3 males, 12.06.2020, 4 males, 1 female, 29.06.2023, loc. 5; 4 females, 14.07.2019, loc. 6; 3 females, 13.07.2019, loc. 7; 1 male, 2 females, 29.06.2021, loc. 8; 12 males, 2 females, 17.06.2021, 1 male, 18.06.2021, loc. 11; 2 females, 12.07.2021, loc. 14; 1 male, 10.07.2014, 8 males, 24.06.2022, loc. 16.

**Distribution.** Central Asia, Kazakhstan.

***Disommata nolckenii* (Erschoff, 1874)**

**Material.** 3 males, 07.06.2020, loc. 4; 1 female, 12.07.2019, 6 males, 2 females, 12.06.2020, loc. 5; 1 male, 29.06.2021, loc. 9; 4 males, 3 females, 17.06.2021, 1 male, 2 females, 18.06.2021, loc. 11; 1 female, 24.06.2022, loc. 16; 1 male, 1 female, 6.07.2021, loc. 15;

**Distribution.** Central Asia, Kazakhstan.

***Paralasa maracandica* (Ershoff, 1874)**

**Material.** 5 males, 7.07.2015, 5 males, 2 females, 12.07.2019, loc. 5; 2 males, 1 female, 09.07.2019, loc. 4; 1 female, 13.07.2019, loc. 7; 7 males, 29.06.2021, loc. 8; 7 males, 2 females, 17.06.2021, 2 males, 18.06.2021, loc. 11; 3 males, 1 female, 4.07.2021, loc. 2; 1 male, 7.07.2021, loc. 3; 2 males, 10.07.2014, 1 male, 24.06.2022, loc. 16.

**Distribution.** Central Asia.

***Hipparchia parisatis* (Kollar, 1849)**

**Published records:** The eastern slope of the Hazratisho Ridge; Yoshdara gorge near Dashtijum, Stshetkin, 1963: 42.

**Distribution.** Transcaucasia, Turkey, India, Pakistan, China.

***Hipparchia stulta* (Staudinger, 1882)**

**Material.** 1 male, 14.07.2019, loc. 6.

**Distribution.** Central Asia, Afghanistan.

***Chazara briseis fergana* (Staudinger, 1886)**

**Material.** 3 males, 29.07.2019, loc. 2; 3 males, 30.07.2019, loc. 3; 1 male, 09.07.2019, loc. 4; 1 male, 14.07.2019, loc. 6; 4 males, 13.07.2019, loc. 7; 1 male, 09.08.2020, loc. 10; 1 female, 20.06.2021, loc. 12; 1 male, 15.07.2021, loc. 5.

**Distribution.** Central Asia.

***Chazara enervata* (Staudinger, 1881)**

**Published records:** Shuroabad village; Western slope of Hazratisho Ridge; Shuroabad pass, on the road from Dashtijum to Ruikash village, 2000 – 2550 m, Stshetkin, 1963: 40.

**Distribution.** Central Asia, Kazakhstan, Afghanistan, Pakistan.

***Pseudochazara turkeстана sagina* (Heyne, [1894])**

**Published records:** The eastern slope of the Hazratisho Ridge; Yoshdara gorge 4 km south of Dashtijum, 1000 – 2000 m, Stshetkin, 1963: 41.

**Distribution.** Tajikistan.

***Satyrus stheno* (Grum-Grshimailo, 1887)**

**Material.** 6 males, 1 female, 30.07.2019, loc. 3; 3 males, 13.07.2019, loc. 7; 1 male, 12.07.2021, loc. 14; 2 males, 1.07.2021, loc. 4.

**Distribution.** Tajikistan, Kyrgyzstan.

***Satyrus ferula cordulina* Lang, 1884**

**Published records:** Hazratisho Ridge at Shuroabad pass, 2340 – 2550 m, Stshetkin, 1963: 42.

**Distribution.** Tajikistan.

***Hyponophele lupina intermedia* Staudinger, 1886**

**Material.** 2 males, 4 females, 09.07.2019, 1 female, 07.06.2020, loc. 4; 1 male, 14.07.2019, loc. 6; 3 males, 13.07.2019, loc. 7; 1 male, 29.06.2021, loc. 9; 2 females, 09.08.2020, loc. 10; 1 male, 1 female, 20.06.2021, loc. 12; 6 males, 21.06.2021, loc. 13; 6 males, 7 females, 12.07.2021, loc. 14; 1 male, 24.06.2022, loc. 16; 1 male, 6.07.2021, loc. 15; 1 male, 1 female, 7.07.2021, loc. 3.

**Distribution.** Transcaucasia, Kazakhstan, Central Asia, Russia (Altai).

***Hyponophele interposita* (Erschoff, 1874)**

**Published records:** The foothills of the Hazratisho Range, the vicinity of Shuroabad, 2150 m, Stshetkin, 1963: 47.

**Distribution.** Central Asia, Kazakhstan, Afghanistan, Iran, Pakistan, China.

***Hyponophele dysdora dysdorina* (Heyne, 1894)**

**Material.** 3 males, 3 females, 7.07.2015, loc. 1; 1 male, 29.07.2019, 1 female, 7.07.2021, loc. 2; 1 male, 1 female, 20.06.2021, loc. 12; 5 males, 1 female, 21.06.2021, loc. 13; 1 male, 24.06.2022, loc. 16.

**Distribution.** Central Asia.

***Hyponophele maureri subnephele* (Stshetkin, 1963)**

**Material.** 4 males, 2 females, 29.07.2019, 17 males, 4.07.2021, loc. 2; 1 males, 3 females, 30.07.2019, loc. 3; 8 males, 4 females, 09.07.2019, 8 males, 3 females, 1.07.2021,

loc. 4; 11 males, 12.07.2019, 4 males, 1 female, 15.07.2021, 1 male, 29.06.2023, loc. 5; 2 males, 1 females, 14.07.2019, loc. 6; 3 males, 3 females, 13.07.2019, loc. 7; 5 males, 2 females, 29.06.2021, loc. 8; 1 male, 29.06.2021, loc. 9; 1 male, 17.06.2021, loc. 11; 3 males, 1 female, 19.06.2021, 2 males, 21.06.2021, loc. 13; 1 male, 1 female, 6.07.2021, loc. 15.

**Distribution.** Tajikistan.

### *Hyponophele naubidensis* (Erschoff, 1874)

**Published records:** Near the Shuroabad pass; the foot of the Western slope of the Hazratisho Ridge; Eastern slope of the Hazratisho Ridge; Chortov bridge, 2000 – 2300 m, Stshetkin, 1963:46.

**Distribution.** Central Asia, Kazakhstan, Afghanistan.

## Lycaenidae

### *Cigaritis epargyros* (Eversmann, 1854)

**Published records:** Yoshdara canyon; Dashtijum village, 1050 m, Stshetkin, 1963: 49.

**Distribution.** Central Asia, Afghanistan, Iran.

### *Satyrium sassanides* (Kollar, 1849)

**Material.** 1 male, 7.07.2015, loc. 1; 1 female, 19.06.2021, loc. 13; 1 female, 29.06.2021, loc. 8; 3 males, 1 female, 20.06.2021, loc. 12; 3 males, 24.06.2022, loc. 16.

**Distribution.** Central Asia, Afghanistan, Iran, Pakistan, India, China.

### *Neolycaena tengstroemi* (Erschoff, 1874)

**Published records:** Eastern slope of the Hazratisho Ridge along the Shuroabad road near the Chortov Bridge, 2000 m, Stshetkin, 1963: 49.

**Distribution.** Central Asia, Kazakhstan.

### *Neolycaena lunara* Zhdanko, 1998

**Material.** 3 males, 2 females, 15.07.2021, 18 males, 29.06.2023, loc. 5.

**Distribution.** Tajikistan.

### *Tomares fedtschenkoi* (Erschoff, 1874)

**Material.** 3 males, 4 females, 12.06.2020, loc. 5.

**Distribution.** Uzbekistan, Kyrgyzstan, Kazakhstan, Turkmenistan, Tajikistan, Afghanistan.

*Lycaena phlaeas oxiana* (Grum-Grshimailo, 1890)

**Material.** 1 female, 29.07.2019, loc. 2; 2 males, 2 females, 12.06.2020, 1 male, 29.06.2023, loc. 5; 1 female, 6.07.2021, loc. 15;

**Distribution.** Central Asia.

*Lycaena thersamon persica* (Bienert, 1860)

**Material.** 1 male, 14.07.2019, loc. 6; 1 male, 29.06.2021, loc. 9; 1 female, 1.07.2021, loc. 4; 1 female, 29.06.2023, loc. 5.

**Distribution.** Tajikistan, Turkmenistan.

*Lycaena solskyi* (Erschoff, 1874)

**Material.** 1 male, 17.06.2021, loc. 11.

**Distribution.** Central Asia and Kazakhstan.

*Lycaena alaica* (Grum-Grshimailo, 1888)

**Material.** 1 male, 17.06.2021, loc. 11; 1 female, 15.07.2021, 1 female, 29.06.2023, loc. 5.

**Distribution.** Tajikistan, Kyrgyzstan.

*Lycaena margelanica* (Staudinger, 1881)

**Material.** 1 male, 2 females, 20.06.2021, loc. 12.

**Distribution.** Central Asia and Kazakhstan.

*Athamanthia rushanica* Zhdanko, 1990

**Published records:** Khahazratysho Mts., Zhdanko, 1990: 138.

**Distribution.** Tajikistan.

*Hyrceanana sartha* (Staudinger, 1886)

**Material.** 1 female, 30.07.2019, loc. 3; 6 males, 3 females (17.06.2021) loc. 11; 1 male, 15.07.2021, loc. 5; 1 male, 7.07.2021, loc. 3.

**Distribution.** Central Asia.

***Hyrceanana transiens meridionalis* (Stchetkin, 1963)**

**Published records:** The vicinity of Shuroabad; near the Shuroabad pass; Eastern slope of the Hazratisho Ridge; Eastern slope of the Hazratisho Ridge at the Chortov bridge, 1900 – 2550 m, Stshetkin, 1963: 52-53.

**Distribution.** Tajikistan.

***Lampides boeticus* (Linnaeus, 1767)**

**Published records:** Shuroabad village; Western slope of the Hazratisho Ridge; Shuroabad pass; Eastern slope of the Hazratisho Ridge at the Chortov bridge; Ruidkash village; Nishorak village, 1600 – 2450 m, Stshetkin, 1963: 53-54.

**Distribution.** Africa, southern Europe, south Asia, Russia, Caucasus, Transcaucasus, Kazakhstan, Central Asia.

***Tarucus balkanicus* (Freyer, 1844)**

**Published records:** The eastern slope of the Hazratisho ridge, the lower part of the Yeshdara gorge, the right bank of the Obi-Niou River, 1050 m, Stshetkin, 1963: 54.

***Celastrina argiolus* (Linnaeus, 1758)**

**Material.** 3 males, 7.07.2015, loc. 5; 3 males, 2 females, 29.06.2021, loc. 8; 4 males, 29.06.2021, loc. 9; 2 males, 4.07.2021, loc. 2.

**Distribution.** Holarctic region

***Pseudophilotes vicrama cashmirensis* (Moore, 1874)**

**Material.** 2 males, 2 females, 18.06.2021, loc. 11.

**Distribution.** Tajikistan, Kyrgyzstan, Turkmenistan, India.

***Glaucopsyche alexis* (Poda, 1761)**

**Material.** 8 males, 4 females, 7.06.2020, loc. 5; 2 males, 3 females, 12.06.2020, loc. 5; 3 males, 4 females, 17.06.2021, 2 males, 1 female, 18.06.2021, loc. 11; 1 female, 6.07.2021, loc. 15; 1 male, 1.07.2021, loc. 4.

**Distribution.** Palearctic.

***Iolana gigantea* (Grum-Grshimailo, 1885)**

**Published records:** The eastern slope of the Hazratisho Range at the Chortov bridge, 2170 m, Stshetkin, 1963: 55.

**Distribution.** Central Asia, Afghanistan, Pakistan.



***Turanana panaegides* (Staudinger, 1886)**

**Published records:** Hazratisho Ridge near Shuroabad pass, 2500 m, Stshetkin, 1963: 55.

**Distribution.** Central Asia, Kazakhstan.

***Freyeria trochylus* (Freyer, 1845)**

**Material.** 1 male, 12.07.2019, loc. 5.

**Distribution.** Africa, south-eastern Europe, Transcaucasus, Central Asia.

***Plebeius argus pamirus* (Forster, 1936)**

**Material.** 1 female, 29.07.2019, 12 males, 4 females, 4.07.2021, loc. 2; 5 males, 6 females, 13.07.2019, loc. 7; 1 male, 29.06.2021, loc. 8; 1 male, 29.06.2021, loc. 9; 2 males, 1 female, 18.06.2021, loc. 11; 5 males, 1 female, 10.07.2014, 1 male, 1 female, 24.06.2022, loc. 16.

**Distribution.** Tajikistan, Kyrgyzstan.

***Plebeius idas shuroabadicus* (Stshetkin, 1963)**

**Published records:** Chortov bridge; Shuroabad pass, 1950 – 2550 m, Stshetkin, 1963: 57-59.

**Distribution.** Tajikistan.

***Plebeius argivus submontana* Stshetkin, 1960**

**Published records:** 16 km northwest of Muminabad, near the left bank of the Yahsu River; The eastern slope of the Hazratisho Ridge, the Yeshdara gorge, south of Dashtijum, 1080 m, Stshetkin, 1963: 57.

***Plebeius christophi* (Staudinger, 1874)**

**Published records:** 16 km north – west of Muminabad near the left bank of the Yahsu River; Eastern slope of the Hazratisho Range, Yoshdara canyon, 1080 m, Stshetkin, 1963: 57.

**Distribution.** Iran, Afghanistan, Transcaucasus, Central Asia.

***Rueckbeilia fergana* (Staudinger, 1881)**

**Material.** 1 male, 1 female, 13.07.2019, loc. 7; 1 male, 17.06.2021, 1 female, 18.06.2021, loc. 11.

**Distribution.** Central Asia, Kazakhstan, China.

***Alpherakya sarta* (Alphéraky, 1881)**

**Published records:** Shuroabad pass, 2500 m, Stshetkin, 1963: 63.

**Distribution.** Afghanistan, Pakistan, Central Asia, Kazakhstan.

***Glabroculus elvira* (Eversmann, 1886)**

**Material.** 1 female, 30.07.2019, loc. 3.

**Distribution.** Central Asia and Kazakhstan.

***Aricia agestis sarmatis* (Grum-Grshimailo, 1890)**

**Material.** 3 males, 1 female, 09.07.2019, 1 male, 3 females, 1.07.2021, loc. 4; 1 male, 1 female, 09.08.2020, loc. 10; 2 males, 1 female, (17.06.2021), 2 males, 6 females, 18.06.2021, loc. 11; 1 male, 2 females, 19.06.2021, 2 males, 3 females, 21.06.2021, loc. 13; 7 males, 3 females, 12.07.2021, loc. 14; 1 male, 1 female, 29.06.2023, loc. 5.

**Distribution.** Tajikistan.

***Aricia artaxerxes transalaica* (Obraztsov, 1935)**

**Material.** 3 males, 15.07.2021, loc. 5.

**Distribution.** Trans-Alai.

***Afarsia sieversii iris* (Lang, 1884)**

**Material.** 1 male, 1 female, 18.06.2021, loc. 11.

**Distribution.** Central Asia.

***Afarsia rutilans jurii* (Tshikolovets, 1997)**

**Published records:** Hazratisho Ridge, near the Shuroabad pass, 2450 – 2550 m, Stshetkin, 1963: 62.

**Distribution.** Tajikistan, Kyrgyzstan.

***Afarsia avinovi* Stshetkin, 1980**

**Material.** 2 males, 30.07.2019, loc. 3; 1 female, 07.06.2020, loc. 4; 3 males, 13.07.2019, loc. 7; 2 males, 4.07.2021, loc. 2; 2 males, 7.07.2021, loc. 3.

**Distribution.** Tajikistan.

***Plebejides patriarcha* (Bálint, 1992)**

**Material.** 1 male, 2 females, 07.06.2020, loc. 4.

**Distribution.** Tajikistan.

***Plebejidea loewii hissarica* (Stshetkin, 1963)**

**Published records:** The Eastern slope of the Hazratisho Ridge under the Shuroabad pass, 2400 m, Stshetkin, 1963: 59-61.

**Distribution.** Tajikistan.

***Eumedonia eumedon sarykola* (Sheljuzhko, 1914)**

**Material.** 1 male, 29.06.2021, loc. 9; 2 males, 1 female, 17.06.2021, loc. 11.

**Distribution.** Tajikistan.

***Eumedonia kogistana* (Grum-Grshimailo, 1888)**

**Published records:** Shuroabad pass, Stshetkin, 1963: 62.

**Distribution.** Tajikistan.

***Polyommatus amandus amata* (Grum-Grshimailo, 1890)**

**Material.** 11 males, 2 females, 17.06.2021, 5 males, 1 female, 18.06.2021, loc. 11; 2 males, 4.07.2021, loc. 2.

**Distribution.** Tajikistan, Kyrgyzstan, Kazakhstan.

***Polyommatus poseidonides danilevskyi* Dantchenko, 1994**

**Material.** 3 males, 7.07.2015, loc. 1; 4 males, 30.07.2019, loc. 3; 1 female, 13.07.2019, loc. 7; 6 males, 15.07.2021, 1 male, 1 female, 29.06.2023, loc. 5.

**Distribution.** Tajikistan.

***Polyommatus phyllides* (Staudinger, 1886)**

**Material.** 1 male, 2 females, 30.07.2019, 1 male, 7.07.2021, loc. 3; 1 male, 07.06.2020, 1 male, 21 females, 1.07.2021, loc. 4; 1 male, 15.07.2021, loc.5; 3 male, 5 females, 14.07.2019, loc. 6; 1 male, 13.07.2019, loc. 7; 6 males, 1 female, 20.06.2021, loc. 8; 2 males, 6.07.2021, loc. 15.

**Distribution.** Afghanistan, Iran, Kazakhstan, Central Asia.

***Polyommatus dagmara* (Grum-Grshimailo, 1888)**

**Material.** 10 males, 4 females, 07.06.2020, 1 male, 1.07.2021, loc. 4; 4 males, 1 female, 14.07.2019, loc. 6; 3 males, 1 female, 29.06.2021, loc. 8; 2 females, 29.06.2021, loc. 9; 9 males, 1 female, 17.06.2021, 8 males, 1 female, 18.06.2021, loc. 11; 3 males, 19.06.2021, loc. 13; 2 males, 4 females, 12.07.2021, loc. 14; 2 males, 2 females, 4.07.2021, loc. 2.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan, Afghanistan.

***Polyommatus pulchellus chaburobatus* Tshikolovets, 1992**

**Material.** 2 males, 1 female, 09.07.2019, 2 males, 1.07.2021, loc. 4; 4 males, 2 females, 7.07.2021, loc. 3.

**Distribution.** Tajikistan.

***Polyommatus magnificus* (Grum-Grshimailo, 1885)**

**Material.** 1 male, 20.06.2021, loc. 12; 1 female, 21.06.2021, loc. 13; 2 females, 24.06.2022, loc. 16.

**Distribution.** Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan.

***Polyommatus amor* Staudinger, 1886**

**Material.** 1 male, 13.07.2019, loc. 7.

**Distribution.** Central Asia.

***Polyommatus persicus balletto* Koçak, 1996**

**Material.** 1 male, 7.07.2015, loc. 1; 2 males, 16.06.2015, loc. 5; 3 males, 29.06.2021, loc. 8; 5 males, 20.06.2021, loc. 12; 5 males, 12.07.2021, loc. 14; 1 male, 6.07.2021, loc. 15.

**Distribution.** Tajikistan, Kyrgyzstan.

***Polyommatus icarus bienerti* Bálint, 1992**

**Material.** 1 female, 7.07.2015, loc. 1; 4 males, 3 females, 29.07.2019, loc. 2; 1 male, 30.07.2019, loc. 3; 22 males, 3 females, 09.07.2019, 1 female, 07.06.2020, loc. 4; 6 males, 3 females, 12.07.2019, 3 males, 2 females, 12.06.2020, loc. 5; 8 males, 4 females, 14.07.2019, loc. 6; 5 males, 3 females, 13.07.2019, loc. 7; 1 male, 29.06.2021, loc. 8; 1 male, 1 female, 09.08.2020, loc. 10; 1 male, 1 female, 1.06.2021, 2 males, 2 females, 21.06.2021, loc. 13; 4 males, 1 females, 20.06.2021, loc. 12; 11 males, 22 females, 12.07.2021, loc. 14; 7 males, 4 females, 6.07.2021, loc.15; 3 females, 10.07.2014, 1 male, 24.06.2022, loc. 16.

**Distribution.** Central Asia.

## **Discussion**

Based on the current studies and the literature, 105 species and subspecies of butterflies belonging to 5 families and 62 genera are currently known from the Hazratisho Ridge. The number of genera by family is as follows: Hesperiiidae 6 genera, Papilionidae 2 genera, Pieridae 8 genera, Nymphalidae 21 genera, Lycaenidae 25

genera. The most species have been identified in the following genera: *Polyommatus* 9, *Lycaena* 5, *Plebeius* 4, *Melitaea* 6, *Hyponephele* 5, the genus *Thymelicus*, *Pieris*, is represented by 3 species. In the remaining 98 genera, 1 or 2 species were noted. Ten species of butterflies were discovered for the first time in south-western Tajikistan (*Melitaea didyma turkestanica*, *Melitaea kotshubeji*, *Melitaea trivialis catapelia*, *Nymphalis polychloros*, *Libythea celtis platooni*, *Aricia agestis sarmatis*, *Aricia artaxerxes transalaica*, *Lycaena margelanica*, *Hyrceanana sartha*, *Plebeius argus pamiurus*). Of the total species of butterflies known for Tajikistan (295 species), the butterflies of the Hazratisho Ridge represent approximately 36% of the total fauna. It should be noted that this is the second finding of the taxon *G. elvira* for the mountainous region, the first finding is from the Rushan Ridge (Eastern Pamir) (Davlatov 2021). Prior to this, *G. elvira* was considered a characteristic inhabitant of the Turanian deserts.

In total, 105 registered species are indicator of the high diversity and richness of the butterfly fauna of this Ridge, when the total fauna of butterflies of Tajikistan (295 species) and in neighboring Uzbekistan (241 species) is taken into account.

### **Taxonomic notes**

While studying the materials collected by us and comparing them with literary data, doubts arose about the validity of the following subspecies, which require additional research.

#### ***Rueckbeilia fergana* (Staudinger, 1881)**

In addition to the nominative subspecies, ssp. *varzobicus* is described from Tajikistan (Tshikolovets 1994). A distinctive feature of ssp. *varzobicus* from nominative is as follows: larger size, lighter and bluer coloration of the upper side of the wings, a narrow black marginal line on the upper side of the wings, the absence or slight development of black discal spots on the upper side of the forewings, the general background of the underside of the wings is not light gray, but light gray-brown, orange-yellow spot on the underside of the hindwings is larger, brighter (Tshikolovets 1994). When studying our specimens and comparing them with both subspecies, we came to the conclusion that there is no significant difference between both subspecies. All characteristics are similar, except for minor differences. Perhaps ssp. *varzobicus* is an aberration, but since we have only two specimens, it is still early to judge the invalidity of ssp. *varzobicus*. If there are additional specimens, it is necessary to clarify the subspecific status of ssp. *varzobicus*.

#### ***Pseudophilotes vicrama cashmirensis* (Moore, 1874)**

According to the latest reports (Korb & Bolshakov 2016), there are two subspecies of the genus *Pseudophilotes* in Tajikistan: ssp. *cashmirensis* (Darvaz, Gissar, W. Pamir) and ssp. *pallida* (Stshetkin, 1960) (Vakhsh valley). Tuzov et al. (2000) indicate that

nominative and ssp. *pallida* inhabit Tajikistan, but in addition note that ssp. *pallida* can be synonymized with ssp. *astabene* (Hemming, 1929). Tshikolovets (2003) lists only ssp. *astabene* for Tajikistan in general, and in the recently published Benedek et al. (2021) also mentions ssp. *astabene* for Tajikistan.

The study of morphological features of all listed subspecies, reveals that they all have similar characteristics. These characteristics include the background color of the wings above and below, discal spots and a dark line of the outer edge on the upper part of both wings, the size and location of black spots on the lower part of the wings, a basal greenish background, as well as yellow spots on the outer edge of the hindwings of the male. The female has a darkish or dark brownish background of the wings, the degree of development of bluish plaque on the upper side of the wings, the eyes and the light background surrounded by them, there is also a change in the size of black dots from the underside of the wings.

Our specimens correspond most closely to ssp. *cashmirensis*, but also have some characteristics of the subspecies listed above. Thus, further taxonomic research is needed to clarify the subspecies.

### ***Lycaena solskyi* (Erschoff, 1874)**

The genus *Lycaena* is represented only by nominative subspecies in Tajikistan. Comparing our material with ssp. *fulminans* (Grum-Grshimailo, 1888) inhabiting Central Asia (Tian-Shan mountains, Alai) we did not find any relevant differences that would be characteristic of each and distinguished them from each other. Given the similar morphological features of both subspecies, it can be assumed that ssp. *fulminans* is a transitive form of the nominative subspecies. This opinion is also shared by Tuzov et al. (2000). The matter requires additional research.

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