

# A new *Colias* species from Afghanistan – *Colias delshade* sp. n. (Lepidoptera: Pieridae)

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## Abstract

A new *Colias* species from Afghanistan from the western border of the Bamiyan Province is described herein: *Colias delshade* sp. n.

## Zusammenfassung

In dieser Arbeit wird eine neue *Colias* Art aus Afghanistan, von der westlichen Grenze der Provinz Bamiyan beschrieben: *Colias delshade* sp. n.

## Introduction

In 2017, after a number of expeditions to Afghanistan a hitherto unknown *Colias* species has been found in small numbers, in a region that has never been investigated before by butterfly specialists and collectors. During a two-weeks-expedition only two males and six females were found. At the first glance this species resembles tightly, namely by its roughly same size and similar colouration, the nominotypical *C. staudingeri* ALPHÉRAKY, 1881, known from the eastern part of Kyrgyzstan. However, the type locality is more than 1,300 km to the southwest of the *C. staudingeri* populations. The closest locality and border of the western distribution of *C. staudingeri pamira* GRUM-GRSHIMAILO, 1890, is in the Tadjik Zeravshansky Range and in the Ghissar Range, approximately 500 km in the NNE, where it is known from few localities only. However, such specimens are considerably larger and deeper orange-reddish coloured. Studying the male colouration under a sunny daylight, the wing ground colour looks much more similar to that of *C. romanovi* GRUM-GRSHIMAILO, 1885, but also this species has its nearest and western border of its distribution in the Tadjik Zeravshansky Range and is known there only from a few localities. Moreover, *C. romanovi* is much bigger in size and with a darker ground colouration. Notably, already during the collecting of the specimens it became clear that no such *Colias* has ever been found in Afghanistan. The distribution areas of the possible related species *C. staudingeri* and *C. romanovi* are divided by the wide Afghan-Tadjik depression where no suitable biotopes can be found. The only connection would be via a wide arrow along the Darvaz Mts., the western Pamir Mts. and the Hindukush mountain system. Neither *C. staudingeri* nor *C. romanovi* are known from these mountain ranges.

## Type locality

Afghanistan, ca. 230 km W Kabul, ca. 110 km W Bamiyan, western end of Bamiyan Province, Ayolnagh Mts. (Black Mountains), W Sare Bum (34°49'47"N, 66°40'53"E), Mt. Shahi and Mt. Ayoub, 2,800-3,200 m, 10.-20.07.2017.

## Type material and depository

1 ♂ holotype, 1 ♂ and 6 ♀♀ paratypes. The ♂ holotype and a ♀ paratype will be deposited in the Plant, Pests and Diseases Research Institute, Tehran. 1 ♂ and 4 ♀♀ paratypes are in coll. KARBALAYE and a ♀ paratype is in coll. GRIESHUBER.



Fig. 1: *C. delshade* sp. n. ♂ holotype.



Fig. 2: *C. delshade* sp. n. ♂ holotype.



Fig. 3: *C. delshade* sp. n. ♀ paratype.



Fig. 4: *C. delshade* sp. n. ♀ paratype.



Fig. 5: *C. wiskotti swadneri* ♀.

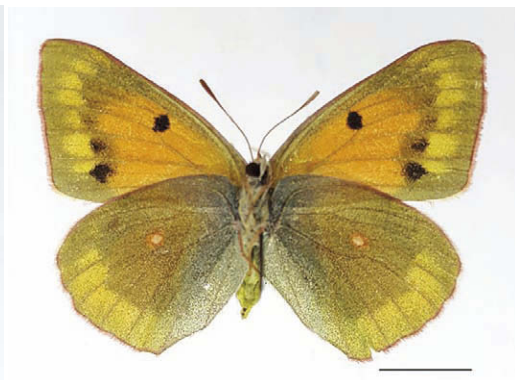


Fig. 6: *C. wiskotti swadneri* ♀.

**Plates:** **figs. 1, 2** (holotype ♂), **figs. 3, 4, 8** (paratype ♀♀), **fig. 7** (paratype ♂) *C. delshade* sp. n., Afghanistan, ca. 230 km W Kabul, ca. 110 km W Bamiyan, western end of Bamiyan Province, Ayolnagh Mts. (Black Mountains), W Sare Bum (34°49'47"N, 66°40'53"E), Mt. Shahi and Mt. Ayoub, 2,800-3,200 m, 10.-20.07.2017; **figs. 5, 6** *C. wiskotti swadneri* ♀, Afghanistan, ca. 230 km W Kabul, ca. 110 km W Bamiyan, western end of Bamiyan Province, Ayolnagh Mts. (Black Mountains), W Sare Bum (34°49'47"N, 66°40'53"E), Mt. Shahi and Mt. Ayoub, 2,800-3,200 m, 10.-20.07.2017; **fig. 9** *C. romanovi romanovi* ♂ (holotype of *C. r. seravschana*), Tajikistan, Zeravshansky Range, 8 km south Oburdan (39°24'25"N, 69°05'25"E), Dascht (ca. 39°20'N, 69°08'E), 3,200-3,500 m, col. ZISP (St. Petersburg); **fig. 10** *C. r. romanovi* ♀ Kyrgyzstan, W Transalai, ca. 20 km south of Daraut-Kurgan, Aram Kungei, 05.07.1886, leg. GRUM-GRSHIMAILO, col. ZISP (St. Petersburg); **figs. 11, 12** (paralectotype ♂ and ♀), *C. staudingeri staudingeri*, China, Xinjiang, Tian Shan, Borohoro Shan, ca. 45 km north-north-east Narat, north Arschan village, Arschan Valley near a left tributary of the Arschan River, probably ca. 3-5 km north-west 43°17'53"N, 84°33'06"E, 2,300-2,600 m, col. MNHU (Berlin) (see GRIESHUBER et al.)

Scale bars 10 mm.

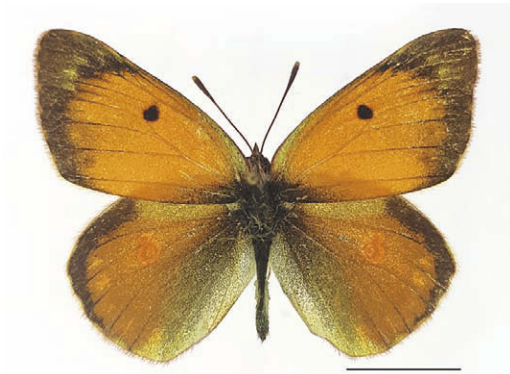


Fig. 7: *C. delshade* sp. n. ♂ paratype.



Fig. 8: *C. delshade* sp. n. ♀ paratype



Fig. 9: *C. r. romanovi* ♂ (holotype of *C. r. seravschana*).



Fig. 10: *C. r. romanovi* ♀.



Fig. 11: *C. s. staudingeri* ♂ paralectotype.



Fig. 12: *C. s. staudingeri* ♀ paralectotype.

### Description and differential diagnosis

**Male holotype:** The forewing length is 24 mm (♂ paratype: 22 mm). The black submarginal band is narrow along the upper 2/3 of the forewing and the hindwing, but becoming considerably wider at the forewing apex. It is shaded with yellow scales, which are well expressed in the forewing apex. These features are nearly identical with that of the nominotypical *C. staudingeri* from eastern Kyrgyzstan and China as well as with that of the markedly larger *C. romanovi*. The ground colour of the wing upperside is of a dull orange-reddish colour, duller than in *C. staudingeri* and paler than in *C. romanovi*. Along the fringes at the border of the wings is a line of semicircular spots of the same colour like the ground colour.

The underside is of yellow-orangeish colour with greenish scales, dusted with small brownish and blackish scales. The discal spots are identical with that of *C. staudingeri* and *C. romanovi*. On the left hindwing there are two small parts of wing missing.

**Female paratypes:** The forewing length is 25-26 mm. The ground colour is of dark orange resembling that of *C. hyperborea* GRUM-GRSHIMAILO, 1900, females. Inside the black submarginal band of the forewing there is a row of yellow spots, on the hindwing submarginal band the yellow spots are forming a yellow band which connects with the orange-reddish ground colour. The yellow spot in the forewing marginal band, between Cu2 and 2A veins, is situated much closer to the inner border of black margin - i.e., the inner band of this margin is narrower than the external part. In *C. romanovi* and *C. staudingeri* this spot is always more central in the marginal band. Interestingly we noted that the first impression when seeing such females is, they look a bit like North-Siberian *C. hyperborea* females. Especially the placement of the above mentioned yellow spot in the submarginal band (Cu2 - 2A) was described by CHURKIN & GRIESHUBER (2001) as a typical feature for north Siberian *C. hyperborea* females. The ground colour of the underside is yellow-greenish on the forewing and more darkened yellow-green on the hindwing. At the bottom part of the inner border of the submarginal band of the forewing underside is only one black spot. In the supposedly related species, i.e. *C. romanovi* and *C. staudingeri*, in almost all specimens there has been observed a row of such well marked black spots. The discal spot on the hindwing underside is of a bright marking, silvery inside with a reddish ring, with a bright marking of the discal spots. The submarginal zone is more darkened green with pale yellow spots like shining through from the upperside.

We guess that no *Colias* species known from Afghanistan could be confused with males of *C. delshade* **sp. n.** A bit more tricky is the situation with females of *C. wiskotti sweadneri* CLENCH & SHOUMATOFF, 1956, a species which is flying together with *C. delshade* **sp. n.** On average, the *C. wiskotti sweadneri* females are larger, more yellowish coloured and the above mentioned spot in the submarginal band of the forewing is situated more or less central in the band, similar to *C. staudingeri* and *C. romanovi*. In *C. wiskotti sweadneri* the inner border of the forewing submarginal band is formed like a curve at the apex (more jagged in *delshade* **sp. n.**) and at the marginal band between Cu2 and 2A veins significantly concave inwards. Concerning the black spot on the forewing underside, which is situated at the bottom part of the inner border of the submarginal band: What very often holds also for the females of *C. wiskotti* from Afghanistan - there is only one black spot. Only in about 25 % of the specimens there is more than one black spot expressed.

### Etymology

The new species is named after Mr. Morteza DELSHAD (Tehran), one of the oldest Persian butterfly collectors and a very close friend of the junior author.

### Biology

Information about the biology of the proposed species is necessary to get deeper insights to its distribution patterns and ecology to enhance our knowledge about the status and placement in the genus *Colias*.

### Biotope and concomitant species

*C. delshade* **sp. n.** was discovered in an altitude between 2800 and 3200 m, flying low near the ground on stony green meadows. When flying, it is nearly impossible to distinguish it from *C. marcopolo kushana* WYATT & OMOTO, 1966.

The butterfly fauna in the area of the type locality, in a hitherto unexplored region, is surprisingly rich in a broad variety of interesting species. E. g. the following species were found there: *Papilio alexanor hazarajatica* WYATT, 1961, *P. machaon centralis* STAUDINGER, 1886, *Parnassius (delphioides) elegans kohibaba* CLENCH & SHOUMATOFF, 1956, *P. inopinatus* KOTZSCH, 1940, *P. jacquemonti kohibabaensis* EISNER & SAKAI, 1975, *Colias erate* (ESPER, [1805]), *C. shahfuladi* CLENCH & SHOUMATOFF, 1956, *C. wiskotti sweadneri* CLENCH & SHOUMATOFF, 1956, *C. alpherakii alpherakii* STAUDINGER, 1882, *C. cocandica hinducucica* TYTLER, 1926, *C. marcopolo kushana* WYATT & OMOTO, 1966, *Pieris krueperi prisca* STAUDINGER, 1886, *Pontia callidice hazara* (WYATT, 1961), *P. chloridice alpina* (VERITY, 1911), *P. glaucone* KLUG, 1829, *Aglais caschmirensis* (KOLLAR, [1844]), *Argynnis argyrospilata* KOTZSCH, 1938, *A. niobe kurana* WYATT & OMOTO, 1966, *Issoria lathonia* (LINNAEUS, 1758), *Melitaea avinovi*

SHELJUZHKO, 1914, *M. kuchi* WYATT, 1961, *Nymphalis xanthomelas hazara* WYATT & OMOTO, 1966, *Vanessa cardui* (LINNAEUS, 1758), *Chazara briseis meridionalis* (STAUDINGER, 1886), *C. heydenreichi kullmanni* (WYATT & OMOTO, 1966), *Hyponphele davendra latistigma* (MOORE, 1893), *H. difficilis* CLENCH & SHOUMATOFF, 1956, *H. hilaris shahnawazi* WYATT & OMOTO, 1966, *H. susurrans susurrans* CLENCH & SHOUMATOFF, 1956, *Karanasa haslundi* AVINOFF & SWEADNER, 1951, *K. voighti nigrocellata* AVINOFF & SWEADNER, 1951, *Lyela amirica* WYATT, 1961, *Paralasa pagmanni mohabbati* SAKAI, 1978, *Pseudochazara baldiva watsoni* CLENCH & SHOUMATOFF, 1956, *P. droshica porphyritica* CLENCH & SHOUMATOFF, 1956, *Agrodiaetus bogra afghanistana* (FORSTER, 1972), *Lycaena phlaeas stygiana* BUTLER, 1880, etc.



**Fig. 13: Biotop of *Colias delshade* sp. n. in the Ayolnagh Mts. (Black Mountains), Afghanistan, ca. 2800-3200 m.**

### Acknowledgements

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### References

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- GRIESHUBER, J., WORTHY, R. & G. LAMAS 2012: The Genus *Colias* FABRICIUS, 1807. Jan HAUGUM's annotated catalogue of the Old World *Colias*. – Pardubice, Tshikolovets Publications. x + 483 pp, 32 pls., 11 figs., 24 maps.

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