

A new taxon of the genus *Polyommatus* LATREILLE, 1804 from the Transcaucasus

(Lepidoptera, Lycaenidae)

by

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Summary: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov. from South Transcaucasus (Armenia, Megrinsky spur of Zangezur range) is described. The new taxon represents the northern part of the distribution of the nominate taxon *Polyommatus (Agrodiaetus) zarathustra* ECKWEILER, 1997 described from North-West Iran (Zagros range).

The following abbreviations are used in text:

EMEM – Entomologisches Museum of Dr. Ulf EITSCHBERGER, Marktleuthen, Germany.

ZMMU – Zoological Museum of Moscow State University, Moscow Russia.

ZFMK – Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany.

CE – entomological collection of Dr. Wolfgang ECKWEILER, Frankfurt am Main, Germany.

CD – entomological collection of Alexandre DANTCHENKO, Moscow, Russia.

Introduction

During the study of the collection of the famous Russian entomologist Mr. A. TZVETAEV housed in the Zoological Museum of Moscow University in 1982, a singular male specimen of the genus *Polyommatus (Agrodiaetus)* has been found. It was determined preliminarily as *P. (A.) aserbeidschanus* (FORSTER, 1956) and placed in one block together with *P. (A.) aserbeidschanus* specimens from other localities. The specimen showed large differences in marginal obscuration, in the pattern of the hindwing underside and in size as compared with typical specimens of *P. (A.) aserbeidschanus* from the north side of the Zangezur range and with specimens from other allopatric populations which occurred in the Zuvand plateau (Azerbaidzhan, Talysh range) and in Dagestan (Northern slopes of the eastern part of the Great Caucasus). Since it was a single specimen, it was treated as an aberrant form.

In 1993 during scanning the lycaenid collection of Dr. W. ECKWEILER it was found that the singular specimen of *P. (A.) aserbeidschanus* mentioned above fitted almost completely to the males collected by Dr. ECKWEILER in the Zagros range (North Iran). This latter material has been treated by Dr. W. ECKWEILER at that time as a new taxon. Recently it was described as *Polyommatus (Agrodiaetus) zarathustra* (ECKWEILER, 1997).

In 1998 the first additional specimens close to typical *P. (A.) zarathustra* were collected in the Megry district (South Transcaucasus, Zangezur range) by the famous ornithologist Karen AGABEBIAN. A following collecting in 1999 revealed clearly that this Zangezur population should be treated as a new subspecies of *P. (A.) zarathustra* due to its external features.

Polyommatus (Agrodiaetus) zarathustra neglectus subsp. nov.

(colour plate XII, figs. 1–4)

Material

Holotype ♂: Transcaucasus, Armenia, Zangezur range, Megry distr., 2000 m, 24.VII.1999, DANTCHENKO A. leg. (will be deposited in ZFMK).

Paratypes: 3 ♂♂, same date, same locality; 1 ♂, 1 ♀, Transcaucasus, Armenia, Zangezur range, Megry distr., Litchk vic., 1600 m, 10.VII.1998, AGABEBIAN K. leg.; 1 ♂, Transcaucasus, Armenia,

Zangezursky range, Megry distr., Shvanidzor vall., 2000 m, Gjumoratz vill. vic., 18.–24.VII.1998, AGABEBIAN K. leg. (EMEM, CD); 1 ♂, Transcaucasus, Armenia, Zangezursky range, Megry, July 1928, GAMBURGER leg. (ZMMU).

Description

Holotype ♂: forewing length 19.0 mm. Upperside: ground colour dark violet-blue, discal strokes clearly visible, forewing costal area bordered by white pubescence, marginal obscuration very strong, extends to one third in forewings and one half in hindwings, veins darkened distally up to discal stroke, in the last two cells of the hindwings blue brackets of submarginal pattern are clearly visible on the black obscuration; inner part of cilia dark grey in forewings, light grey in hindwings, outer part of cilia white; UNS: ground colour grey with brownish tint, discal spot and row of postdiscal spots relatively large, encircled with white, marginal design of forewings consist of dark grey spots diffused and enlarged posteriori, submarginal pattern in hindwings sharp, in hindwings marginal pattern clearly distinct, marginal brackets in cell 2A–Cu2 very bright with reddish tint, white stroke sharp, equal in width from basal to distal part, basal obscuration of hindwings with bluish tint, not strong but well developed.

Paratype ♀: forewings length 14.2 mm. Upperside: ground colour dark brown, black discal stroke of forewings almost indistinct, the inner part of cilia brown in forewings, light brown in hindwings, outer part cilia white. UNS: general pattern as in male but ground colour light brown, marginal pattern in forewing consists of diffused brown spots more depicted posteriori, in hindwings marginal pattern sharp, composed by dark brown brackets, in cell 2A–Cu2 with reddish tint, white stroke sharp, equal in width, basal obscuration of hindwings almost indistinct.

Variation

Forewing length in paratype ♂♂ varies from 17.0 to 19.0 mm, blue tint of ground colour in male undersides varies from dark violet-blue to dark blue, in two males marginal obscuration of the upper-side of the hindwing extends to discal stroke, blue brackets of submarginal row are depicted more sharply in the last third cells.

Definition

From the nominate subspecies *P. (A.) zarathustra neglectus* subsp. nov. differs by larger size (forewings length in a typical population is 13.7–16.4 mm) and a sharper pattern in the underside of the hindwings. The caryotype of *P. (A.) zarathustra neglectus* subsp. nov. is estimated as CN = 25 (LUKHTANOV & DANTCHENKO, in print). It shows good difference in structure as compared with the populations studied from South Azerbaidzhan and Dagestan. For this populations the caryotype is estimated as CN = 21, 22 (LUKHTANOV, 1989; LUKHTANOV & DANTCHENKO, in print).

Bionomy

The type series was collected from the glades in a mountain oak forest near its high altitude border. The food plant and other aspects of the biology are unknown.

Distribution

Both localities, where the type series of *P. (A.) zarathustra neglectus* was collected, are disposed on southern slopes of the Zangezur range, which is isolated by the Arax valley from the mountain ranges extending north to the Zagros range, the area of typical *P. (A.) zarathustra*. The distribution of *P. (A.) zarathustra neglectus* seems to be limited from the West by the main Zangezur range, the eastern slope of which is known as Ordubad district. This famous locality is inhabited by a very different plant association and was completely investigated during the last century. The northern border of the areal of the new taxon is probably limited by the ridge of the Megrinsky range, being the East spur of the south ending of the Zangezur range. New findings of *P. (A.) zarathustra neglectus* could be expected east from the Shvanidzor valley. We cannot exclude that the new subspecies inhabits all slopes of Megrinsky range and its areal extends to the Karabakh plateau. This assumption is based mainly on the affinity of both regions in zoogeographic pattern, and the Karabakh plateau is still little investigated.

Notes on taxonomy and biology

P. (A.) zarathustra (ECKWEILER, 1996: 10) was originally placed by its author in the *carmon*-group. Newly obtained data on the ecology and the food plants of *P. (A.) surakovi* DANTCHENKO & LUKHTANOV, 1994 and *P. (A.) aserbeidschanus* (FORSTER, 1956) (DANTCHENKO, in print) allow us to expect that if *P. (A.) zarathustra* really belongs to the *carmon*-group, its food plant also could be a species of the genus *Astragalus* (Fabaceae) similar to the food plant of *P. (A.) surakovi*. Alternatively *P. (A.) zarathustra* could be treated as a member of the *aserbeidschanus*-complex to which it is closer from an ecological point of view. In this case the food plant of *P. (A.) zarathustra neglectus* will be a species of the genus *Onobrychis* of subsection *Eubrychis* sensu GROSSHEIM (1952). Both taxa *P. (A.) aserbeidschanus* and *P. (A.) surakovi* are allopatric with *P. (A.) zarathustra neglectus* in the southern Zangezur range.

Acknowledgments

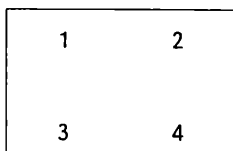
I wish to express my sincere thanks to Dr. Ulf EITSCHBERGER for the publication of this paper and supporting my investigation. I am grateful to Dr. A. SVIRIDOV (ZMMU) and Dr. W. ECKWEILER (Frankfurt) for providing me with the opportunity to study their butterfly collections. Further thanks to Dr. V. LUKHTANOV (St. Petersburg) for very useful discussions on the cytology and systematic position of the subgenus *Agrodiaetus*.

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Explanation of colour plate XII (p. 95):

- Fig. 1: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov., holotype ♂: Transcaucasus, Armenia, Zangezursky range, Megry distr., 2000 m, 24.VII.1999, DANTCHENKO A. leg. Upperside.
- Fig. 2: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov., holotype ♂: Transcaucasus, Armenia, Zangezursky range, Megry distr., 2000 m, 24.VII.1999, DANTCHENKO A. leg. Underside.
- Fig. 3: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov., paratype ♀: Transcaucasus, Armenia, Zangezursky range, Megry distr., Litchk vic., 1600 m, 10.VII.1998, AGABEBIAN K. leg. Upperside.
- Fig. 4: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov., paratype ♀: Transcaucasus, Armenia, Zangezursky range, Megry distr., Litchk vic., 1600 m, 10.VII.1998, AGABEBIAN K. leg. Upperside.



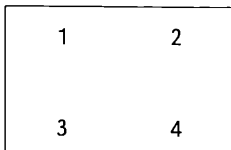
Colour plate XII

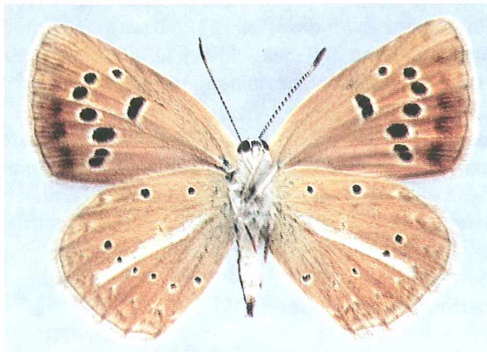
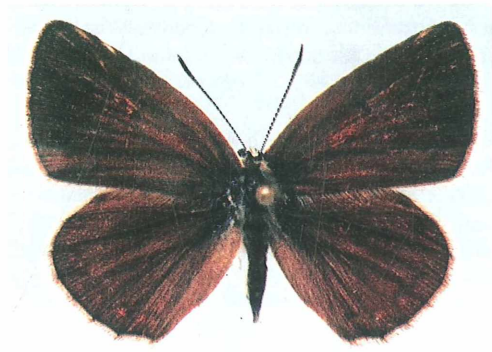
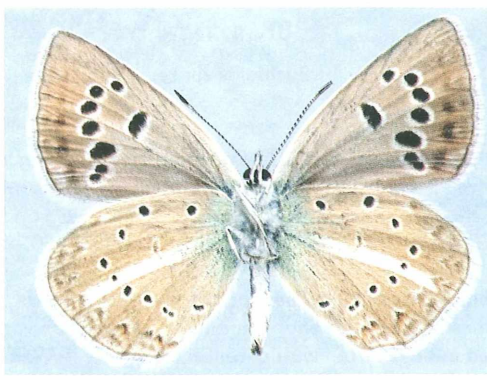
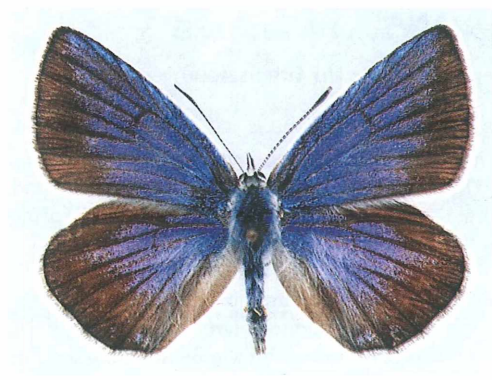
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Fig. 3: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov., paratype ♀: Transcaucasus, Armenia, Zangezursky range, Megry distr., Litchk vic., 1600 m, 10.VII.1998, AGABEBIAN K. leg. Upperside.

Fig. 4: *Polyommatus (Agrodiaetus) zarathustra neglectus* subsp. nov., paratype ♀: Transcaucasus, Armenia, Zangezursky range, Megry distr., Litchk vic., 1600 m, 10.VII.1998, AGABEBIAN K. leg. Upperside.





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