

Zygaena (Agrumenia) sedi cimmerica Efetov, a new subspecies from the Crimea (Lepidoptera: Zygaenidae, Zygaeninae)

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Abstract

A new subspecies, *Zygaena (Agrumenia) sedi cimmerica* Efetov, subsp. n. is described from the Crimea.
KEY WORDS: Lepidoptera, Zygaenidae, Zygaeninae, *Zygaena*, *Z. sedi cimmerica*, new subspecies, Crimea.

Zygaena (Agrumenia) sedi cimmerica Efetov, una nueva subespecie de Crimea
(Lepidoptera: Zygaenidae, Zygaeninae)

Resumen

Se describe una nueva subespecie de Crimea, *Zygaena (Agrumenia) sedi cimmerica* Efetov, subsp. n.
PALABRAS CLAVE: Lepidoptera, Zygaenidae, Zygaeninae, *Zygaena*, *Z. sedi cimmerica*, nueva subespecie, Crimea.

Introduction

The family Zygaenidae is divided now into the five subfamilies: Inouelinae Efetov & Tarmann, 2017; Procridinae Boisduval, 1828; Chalcosiinae Hampson, 1893; Callizygaeninae Alberti, 1954; and Zygaeninae Latreille, 1809 (EFETOV & TARMANN, 2017; EFETOV, 2010; EFETOV *et al.*, 2011, 2014). *Zygaena (Agrumenia) sedi* Fabricius, 1787, is a species of the tribe Zygaenini of the subfamily Zygaeninae (HOFMANN & TREMEWAN, 2017).

Z. sedi is distributed in the Crimea only in the eastern part of the Southern coast of the peninsula (EFETOV, 1989, 1996, 2004a, 2005; NAUMANN & NAUMANN, 1980). Hitherto this isolated population was attributed to the subspecies *Zygaena (Agrumenia) sedi sedi* Fabricius, 1787 (HOFMANN & TREMEWAN, 1996). However, Crimean specimens differ morphologically from those of nominotypical subspecies from Volga basin (type-locality 'Russia meridionali' [Saratov; Volgograd: Krasnoarmeysk (Sarepta)]. It was already noted by HOLIK & SHELJUZHKO (1956: 103): 'Zeichnung stark reduziert, insbesondere fehlt die Fleckeneinfassung'. Thus, it is necessary to describe a new subspecies inhabiting eastern part of the Southern coast of the Crimea.

Abbreviations

CKAE - Collection of Konstantin A. Efetov, Crimean Federal University, Simferopol, Crimea.
TLMF - Collection of Tiroler Landesmuseen, Ferdinandeum, Hall, Austria.

Zygaena (Agrumenia) sedi cimmerica Efetov, subsp. n. (Figs 2, 3)

Material: Holotype ♂, length of the forewing 13.2 mm (Fig. 2), 'CRIMEA, N of Sudak, Dachnoye, 100 m, 16-VI-2008, leg. K. A. Efetov' (CKAE).

Paratypes: 1 ♀, 'CRIMEA, Alushta, 10 m, 5-VII-1987, leg. K. A. Efetov' (CKAE); 6 ♂♂, 'CRIMEA, vic. Alushta, Verkhnyaya Kutuzovka, 300 m, 8-VI-2003, leg. K. A. Efetov' (CKAE); 1 ♂, 'CRIMEA, vic. Alushta, Verkhnyaya Kutuzovka, 300 m, 16-VI-2003, leg. K. A. Efetov' (CKAE); 1 ♂, 2 ♀♀, 'CRIMEA, Karadag, 200 m, 21-VI-1987, leg. K. A. Efetov' (CKAE); 1 ♂, 'CRIMEA, NNW of Rybach'ye, 450 m, 21-VI-2003, leg. K. A. Efetov' (CKAE); 25 ♂♂, 24 ♀♀, 'CRIMEA, N of Sudak, Dachnoye, 100-160 m, leg. K. A. Efetov': 1 ♀, 3-VII-1993 (CKAE); 4 ♂♂, ex larva, 7-V-1994, imagines emerged 26-V-1994, 27-V-1994, 29-V-1994, 30-V-1994 (CKAE); 1 ♀, ex larva, 7-V-1994, imago emerged 26-V-1994 (CKAE); 1 ♂, 1 ♀, 9-VI-1994 (CKAE); 2 ♂♂, 2 ♀♀, 12-VI-1996 (CKAE); 1 ♂, 1 ♀, 14-VI-1997 (CKAE); 3 ♂♂, ex larva, 10-V-1999, imagines emerged 8-VI-1999, 11-VI-1999, 15-VI-1999 (CKAE); 5 ♀♀, ex larva, 10-V-1999, imagines emerged 10-VI-1999 (2), 11-VI-1999, 13-VI-1999 (2) (CKAE); 1 ♀, ex larva, 18-V-2003, imago emerged 8-VI-2003 (CKAE); 12 ♂♂, 10 ♀♀, (Fig. 3), 16-VI-2008 (CKAE); 2 ♂♂, 2 ♀♀, 16-VI-2008 (TLMF).

The holotype and paratypes have been supplied with printed pin-labels on red paper: 'HOLOTYPUS [or PARATYPUS] ♂ [or ♀] *Zygaena sedi cimmerica* Efetov, 2018'.

Description: Length of forewing: males 11.1-14.0 mm; females: 13.4-15.5 mm. Head, antenna, thorax and abdomen black, hairy. Posterior parts of patagia mixed with white hair-like scales in some females. Black ground colour of forewings with weak bluish sheen. Forewing spots red, narrowly edged with yellowish white in females, edging of spots in males practically absent. Spots 1+2a+2b forming a large basal blotch (spot terminology follows the system of HOFMANN & TREMEWAN, 2017). Spots 3 and 4 confluent in females, but often separated in males. Spots 5 and 6 confluent and forming a reniform blotch. In males spots 1+2a+2b, 3+4 and 5+6 usually separated one from another, in females they are more or less connected. Hindwing red, with small hyaline area near base and with narrow black border (broader at apex). Abdominal cingulum absent.

Differential diagnosis: *Z. sedi cimmerica* Efetov, subsp. n. differs from the nominotypical subspecies by darker background of the forewings and reduced yellowish white edging of the forewing red spots, especially in males.

Ovum: Ovoid, pale yellow. Deposited on a leaf in a batch consisting of a single layer arranged in a row, the eggs slightly overlapping each other.

Larva (Figs 4, 5): Full-fed 14-16 mm long. Head and thoracic legs black; thorax and abdomen light green, with a narrow, whitish mediodorsal line; a small black dorsal spot in anterior part of each segment from second thoracic to eighth/ninth abdominal, a yellow spot beneath and in posterior part of each segment from second thoracic to seventh abdominal (on eighth abdominal segment this spot is white). Black anterior dorsal spots slightly stand out against the background of a dark grey dorso-lateral stripe. Spiracular stripe dark grey. Dorso-lateral and spiracular stripes represented by blackish suffusion below the cuticle. Peritreme of spiracles black. Setae white. Abdominal prolegs yellowish green. From middle of June to middle of May. After diapause the larvae can be found during sunny weather sitting on the young shoots at the top of the host-plant, feeding on the young leaves and flower buds.

Pupa and cocoon: Head, thorax, wings and appendages of pupa shining, black; abdomen emerald green with dark grey bands laterally, caudal region blackish, peritreme of spiracles black. Cocoon (Fig. 6) fusiform, yellow or light green, surface slightly wrinkled. Emergence of imago 11-14 days after the construction of the cocoon.

Biology: Host-plant (Fig. 7), in the Crimea the larvae are feeding on *Vicia tenuifolia* Roth (= *V. dalmatica* A. Kerner; = *V. elegans* auct. non Guss.) (Fabaceae) (EFETOV, 1996; YENA, 2012). Univoltine subspecies. Moths on the wing from late May to early July. Inhabits relatively dry bushy slopes covered with *Vicia* where it flies actively in sunshine. *Z. sedi* has already been recorded by us as a pollinator of the orchid *Anacamptis pyramidalis* (L.) Rich. in the Crimea (NAZAROV & EFETOV, 2000). Pairs of hemipollinaria can be easily seen on the moth's proboscis (EFETOV, 2005; NAZAROV & EFETOV, 1993).

Distribution: In the Crimea distributed only in the eastern part of the Southern coast of the peninsula

(Fig. 1). This species has been found in the Crimea at Mt. Karadag (NAUMANN & NAUMANN, 1980), in surroundings of Sudak (EFETOV, 1996), Rybach'ye (EFETOV, 2005), Verkhnyaya Kutuzovka (EFETOV, 2005) and Alushta (EFETOV, 1989).

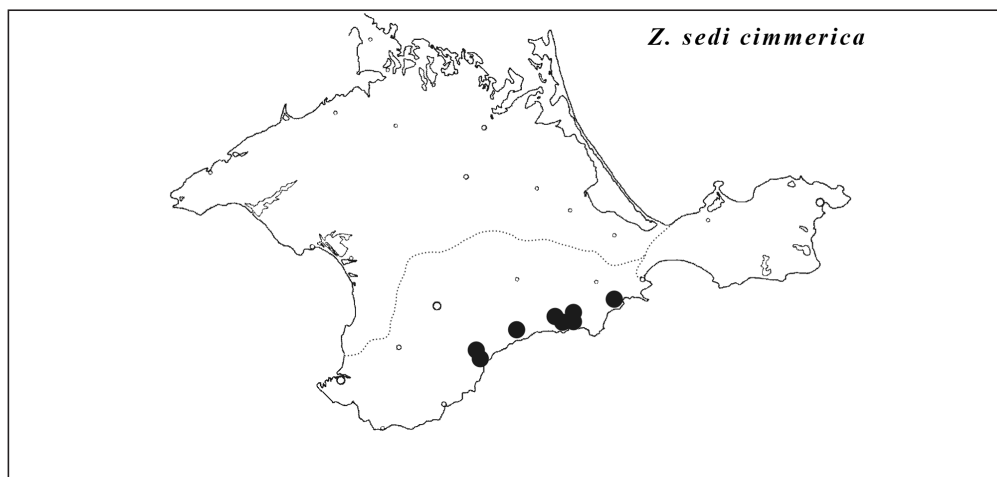


Figure 1.— Distribution of *Z. sedi cimmerica* Efetov, subsp. nov.

Etymology: Cimmeria is an ancient name of the Crimea, in a poetic tradition this name is attributed to south-eastern part of the peninsula.

Range of all subspecies of *Zygaena sedi*

Greece, Bulgaria, Turkey, Crimea, south of European part of Russia: area of lower Volga (ANIKIN *et al.*, 2000; EFETOV, 1989, 1996, 1998a, 1998b, 2004b, 2005; HOFMAN & TREMEWAN, 1996; NAUMANN *et al.*, 1984, 1999).

Z. sedi sedi Fabricius, 1787. Area of lower Volga (Saratov Region, Volgograd Region, Astrakhan' Region).

Z. sedi cimmerica Efetov, subsp. n. Eastern part of Southern coast of the Crimea.

Z. sedi sliwenensis Reiss, 1933. Bulgaria. Whitish edging of forewing spots pronounced, though usually somewhat suffused (NAUMANN *et al.*, 1999).

Z. sedi dellabrunai Dujardin, 1981. North-western Greece. Forewing spots lacking suffused confluence, with 1+2+2a separate from 3+4+5+6, the latter only weakly connected, patagia and tegulae variably intermixed with red (NAUMANN *et al.*, 1999).

Z. sedi roxana Naumann & Naumann, 1980. Turkey. Similar to subspecies *Z. sedi sedi*, but confluence of forewing spots much more pronounced (NAUMANN *et al.*, 1999).

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