

Zygaena (Zygaena) nevadensis gerrysila Efetov & Tarmann, a new subspecies from Calabria, Italy (Lepidoptera: Zygaenidae, Zygaeninae)

K. A. Efetov & G. M. Tarmann

Abstract

A new subspecies, *Zygaena (Zygaena) nevadensis gerrysila* Efetov & Tarmann, subsp. n. is described from southern Italy (Calabria, La Sila).

KEY WORDS: Lepidoptera, Zygaenidae, Zygaeninae, *Zygaena*, *Z. nevadensis gerrysila*, new subspecies, La Sila, Calabria, Italy.

Zygaena (Zygaena) nevadensis gerrysila Efetov & Tarmann, una nueva subespecie de Calabria, Italia
(Lepidoptera: Zygaenidae, Zygaeninae)

Resumen

Se describe una nueva subespecie *Zygaena (Zygaena) nevadensis gerrysila* Efetov & Tarmann, subsp. n. del sur de Italia (Calabria, La Sila).

PALABRAS CLAVE: Lepidoptera, Zygaenidae, Zygaeninae, *Zygaena*, *Z. nevadensis gerrysila*, nueva subespecie, La Sila, Calabria, Italia.

Introduction

This article is a continuation of a series of authors' publications devoted to the Zygaenidae of the Palaearctic and adjacent territories (CAN *et al.*, 2019; CAN CENGIZ *et al.*, 2018; EFETOV, 1996a, 1996b, 1997a, 1997b, 1998, 1999, 2001a, 2001b, 2006, 2010, 2018; EFETOV *et al.*, 2004, 2006, 2011, 2014a, 2014b, 2014c, 2015a, 2015b, 2016, 2018, 2019a, 2019b; EFETOV & HAYASHI, 2008; EFETOV & KNYAZEV, 2014; EFETOV & SAVCHUK, 2009, 2013; EFETOV & TARMANN, 1999, 2013a, 2013b, 2014a, 2014b, 2016a, 2016b, 2017a, 2017b; KNYAZEV *et al.*, 2015; RAZOV *et al.*, 2012; SUBCHEV *et al.*, 2016; VRENOZI *et al.*, 2019).

Zygaena nevadensis Rambur, 1858, is the only *Zygaena* species that is distributed from North Africa (Morocco) throughout southern Europe as far as the Northern Caucasus. It has a disjunct distribution with several local populations. Its currently known range is Morocco, Portugal, Spain, south-eastern France, southern Italy, Serbia, Albania, Macedonia, Greece, Bulgaria, Romania, Turkey and the Northern Caucasus in Russia (EFETOV *et al.*, 2011; EFETOV & SHCHUROV, 2007; COUTSIS *et al.*, 2014; HOFMANN & TREMEWAN, 1996, 2017, 2020; MICEVSKI *et al.*, 2018; NAHIRNIĆ & BESHKOV, 2018). This species was unknown from Italy until 2010. The old record of *Z. nevadensis* by ROCCI (1918: 144) from the outskirts of Genova at Quezzi has to be referred to *Z. romeo* Duponchel, 1835 (RACHELI, 1990: 42). BERTACCINI & FIUMI (1999) also included *Z. nevadensis* in their book on the bombycids and sphingids of Italy because they considered that

isolated locations for the species in Piemonte were possible. FREINA & WITT (2001) cite “Piemonte” for the species, but do not provide any provenance for this record. The careful examination of Witt’s collection in Munich failed to prove that he had a specimen from Piemonte.

During our field work in Calabria in June 2010 K. A. Efetov, G. M. Tarmann and W. G. Tremewan collected two males of *Z. nevadensis* in the Sila Mountains (EFETOV *et al.*, 2011). In 2011 further attempts by the same entomologists did not lead to any more successful results. However, in 2005, the Austrian neuropterologists H. and R. Rausch had already collected a single male by sweeping the vegetation also in La Sila but in another locality. This specimen was donated to Tiroler Landesmuseen, Ferdinandeum in Innsbruck and was determined in 2013 by G. M. Tarmann. In 2014, G. M. Tarmann and W. G. Tremewan revisited La Sila and found 8 additional males and 2 females in the locality discovered by H. and R. Rausch. With this series it became clear that this population represents an undescribed subspecies. In 2018 G. M. and M. Tarmann together with S. Scalercio and S. Greco collected three additional males and one female.

On the base of the above mentioned available material we describe here a new subspecies *Z. nevadensis gerrysila* Efetov & Tarmann, subsp. n.

Variability within the populations of *Zygaena nevadensis* is low and division into subspecies is often only supported by the isolation of the well-separated population groups that form slightly larger or smaller specimens with more or less fragmented streaks on the wings and a variable breadth of the hindwing margin. In this species there is no indication that its nowadays isolated populations that are spread over a territory from North Africa to the Caucasus (Fig. 8) have mixed with each other or with former relic populations during their migration into their present habitats in near history (see also HOFMANN & TREMEWAN, 2017).

***Zygaena (Zygaena) nevadensis gerrysila* Efetov & Tarmann, subsp. n.** (Figs 1, 2)

Material: Holotype ♂ (Fig. 1): ITALY, Calabria, Cosenza, La Sila Graeca, La Fossiata, 1315 m, 1-VI-2018; leg. G. M. & M. Tarmann, S. Scalercio & S. Greco (Coll. Sammlungs- und Forschungszentrum der Tiroler Landesmuseen, Ferdinandeum, Hall in Tirol, Austria). Paratypes 13 ♂♂ (Fig. 2), 3 ♀♀: ITALY, Calabria, Cosenza, La Sila Graeca, La Fossiata, 1315 m, 1-VI-2018, 2 ♂♂, 1 ♀, leg. G. M. & M. Tarmann, S. Scalercio & S. Greco, coll. Sammlungs- und Forschungszentrum der Tiroler Landesmuseen, Ferdinandeum, Hall in Tirol, Austria; Italy, Calabria, Cosenza, La Sila Graeca, La Fossiata, 2 km E, 1310-1360 m, 17-VI-2005, 1 ♂, leg. H. & R. Rausch, coll. Sammlungs- und Forschungszentrum der Tiroler Landesmuseen, Ferdinandeum, Hall in Tirol, Austria; Italy, Calabria, Cosenza, La Sila Graeca, La Fossiata, 2 km E, 1310-1360 m, 16-VI-2014, 3 ♂♂, leg. G. M. Tarmann & W. G. Tremewan, coll. Staatliches Museum für Naturkunde Stuttgart; Italy, Calabria, Cosenza, La Sila Graeca, La Fossiata, 2 km E, 1310-1360 m, 15-VI-2014, 2 ♀♀, leg. G. M. Tarmann & W. G. Tremewan, coll. Staatliches Museum für Naturkunde Stuttgart; Italy, Calabria, Cosenza, La Sila Graeca, La Fossiata, 2 km E, 1310-1360 m, 16-VI-2014, 4 ♂♂, leg. G. M. Tarmann & W. G. Tremewan, coll. Sammlungs- und Forschungszentrum der Tiroler Landesmuseen, Ferdinandeum, Hall in Tirol, Austria; Italy, Calabria, Cosenza, La Sila Graeca, La Fossiata, 2 km E, 1310-1360 m, 17-VI-2014, 1 ♂, leg. G. M. Tarmann, W. G. Tremewan & P. Brandmayr, coll. Sammlungs- und Forschungszentrum der Tiroler Landesmuseen, Ferdinandeum, Hall in Tirol, Austria; Italy, Calabria, Cosenza, Sorgente del Saluto, 3 km E Spineto, Lago Ampollino W, 1370-1390 m, 14-VI-2010, 1 ♂, leg. G. M. Tarmann, coll. Sammlungs- und Forschungszentrum der Tiroler Landesmuseen, Ferdinandeum, Hall in Tirol, Austria; Italy, Calabria, Cosenza, Sorgente del Saluto, 3 km E Spineto, Lago Ampollino W, 1370-1390 m, 14-VI-2010, 1 ♂, leg. K. A. Efetov, coll. K. A. Efetov, Crimean Federal University, Simferopol, Russia.

The holotype and the paratypes have been supplied with printed pin-labels on red paper: “HOLOTYPUS [or PARATYPUS] male [or female] *Zygaena nevadensis gerrysila* Efetov & Tarmann, 2022.”

Description: Habitus of male and female similar. Length of body: male 9.1-9.2 mm, female 8.8 mm; length of forewing: male 9.2-10.0 mm, female 10.1 mm; breadth: male 3.1-3.2 mm, female

3.0 mm; length of hindwing: male 6.1-6.2 mm, female 7.2 mm; breadth: male 3.1-3.2 mm, female 3.1 mm; length of antenna: male 4.9-5.3 mm, female 6.0 mm. Head, thorax and abdomen black, covered with hair-like scales. Forewing black with three streaks, streak 3+5 narrower in the central part and can be even divided into separate spots 3 and 5. Hindwings red, with black margin, broader near apex.

Differential diagnosis: From the nominotypical subspecies *Z. nevadensis gerrysila* differs by its smaller size and darker, but more translucent black parts of the forewing. The dark margin of the hindwing is approximately as broad as in the nominotypical subspecies of central and southern Spain. The red colour of the forewing spots and the hindwing is darker than in *Z. nevadensis nevadensis* (Fig. 3). From all other subspecies (Figs 4-6) *Z. nevadensis gerrysila* differs especially in its smaller size and translucent appearance.

This subspecies is completely isolated on La Sila in southern Italy. The nearest population is *Z. nevadensis pelisterensis* Reiss, 1976, on the other side of the Ionian Sea on the Balkan Peninsula. Specimens of *Z. nevadensis pelisterensis* are significantly larger than those of *Z. nevadensis gerrysila*. This applies also for the nearest populations in the North in southern France, viz. *Z. nevadensis interrupta* Boursin, 1923, and *Z. nevadensis gallica* Oberthür, 1898.

Bionomics: Flight of imagines in June. Males fly very low over the ground and are difficult to spot. They rest low in the vegetation, mainly on grass. Females were found flying around various Fabaceae, but no oviposition could be observed. It seems clear that the larval host-plant is one of the Fabaceae species occurring in the habitats of this species, e. g. *Lathyrus* sp. or *Vicia* sp. (EFETOV *et al.*, 2011). The habitats are flowery and grassy areas on moist ground (Fig. 7).

Etymology: After the death of our friend Dr Gerald (Gerry) W. Tremewan in 2016 who wanted to be a co-author of this taxon we decided to name it in his memory. The word “gerrysila” consists of two parts: the name of our friend (Gerry) who collected a part of the type series in his 83rd year of life, and the name of the mountain La Sila. Moreover, the word “sila” in Russian language means “strength”, so “gerrysila” can be translated also as “strength of Gerry”.

Distribution: As far as is known *Z. nevadensis gerrysila* is endemic to La Sila in southern Italy (Fig. 8).

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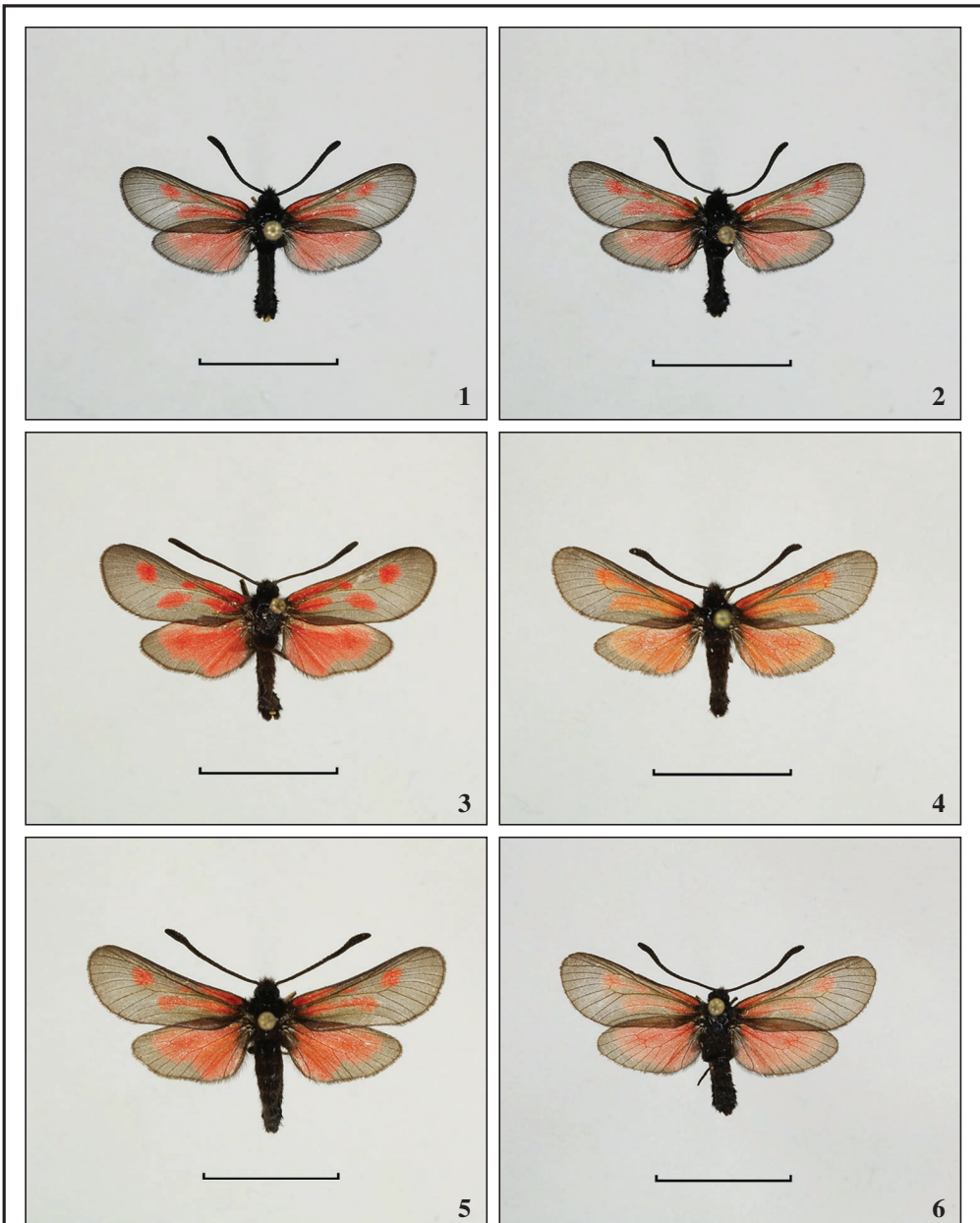
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Figures 1-6.– 1-2. *Zygaena nevadensis gerrysila* Efetov & Tarmann, subsp. n. 1. Holotype male. 2. Paratype male with the same label data as holotype. 3. *Zygaena nevadensis nevadensis* Rambur, 1858. Male specimen from southern Spain. 4. *Zygaena nevadensis gallica* Oberthür, 1898. Male specimen from southern France (Var). 5. *Zygaena nevadensis interrupta* Boursin, 1923. Male specimen from southern France (Alpes-Maritimes). 6. *Zygaena nevadensis pelisterensis* Reiss, 1976. Male specimen from northern Greece. Scale - 10 mm.

