A new locality of the violet copper *Lycaena helle* ([Denis et Schiffermüller], 1775) on the Balkan Peninsula

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Abstract: In the present article we summarised all known information on the species *Lycaena helle* ([Denis et Schiffermüller], 1775) from the Balkan Peninsula. A new locality of the species is given, where it is syntopic and synchronic with *Clossiana eunomia* (Esper, [1799]).

Keywords: distribution, *Lycaena helle*, new record, Serbia, Western Stara Planina Mts

Introduction

The violet copper, *Lycaena helle* ([Denis & Schiffermüller], 1775), was reported for the first time for the Balkan Peninsula recently (Popović et al., 2014), after specimens and observations on both sides of the Serbian-Bulgarian border in Western Stara Planina Mts. Shortly after that a special book on the butterflies of the Serbian part of the mountain was published (Popović & Đurić, 2014) followed by two more articles containing data about the species (Kolev & Shtinkov, 2015; Langourov, 2019).

The species is of interest as a glacial relict and one of the priority species for protection. *Lycaena helle* is a threatened butterfly of high conservation importance in Europe, included in Annexes II and IV of the Council Directive 92/43/EEC (Council of the European Communities, 1992) and listed as Endangered (EN) in Europe (Van Swaay et al., 2010). Outside the Balkan Peninsula it has a disjunctive distribution from Eastern Pyrenees, Central and Northern Europe across Siberia and Dzhungarsky Alatau Mts to the southern parts of the Far East, Northern Mongolia and Northern China (Tuzov et al., 2000; Tshikolovets, 2011; Tshikolovets et al., 2009, 2016).

Material and methods

During our survey, coordinates and altitudes were obtained in the field with GPS (Garmin nüvi 2597 LMT). Photographs were taken with an Olympus E-M1 Mark11 camera.

Butterflies are listed following the nomenclature of Tshikolovets (2011) (modified after Tshikolovets et al., 2016, 2018).

Results and discussion

During a field survey on 15.vi.2022 in the midday one nectaring male specimen was observed and photographed by the second author at Markova Livada, Babin Zub Region (Fig. 1). The locality is a mountain wet meadow with many flowering plants and it has coordinates 43.37321°N, 22.62235°E and an altitude
of 1580 m (Fig. 2). In the vicinity occurs in good number the larval host plant – common bistort (*Bistorta officinalis* Delarbre). Here the species flies together with *Clossiana eunomia* (Esper, [1799]), *Lycaena candens* (Herrich-Schäffer, [1844]), *L. phlaeas* (Linnaeus, 1761), *Polyommatus eros* (Ochsenheimer, [1808]), *P. semiargus* (Rottemburg, 1775), *Callophrys rubi* (Linnaeus, 1758), *Cupido minimus* (Fuessly, 1775), *Coenonympha rhodopenesis* Elwes, 1900, *Erebia orientalis* Elwes, 1900, *E. medusa* ([Denis & Schiffermüller], 1775), *E. oeme* (Hübner, [1804]), *Lasionommata petropolitana* (Fabricius, 1787), *Issoria lathonia* (Linnaeus, 1758), *Melitaea athalia* (Rottemburg, 1775), *Aglais urticae* (Linnaeus, 1758), *Colias croceus* (Geoffroy in Fourcroy, 1785), *Erynnis tages* (Linnaeus, 1758), *Pyrgus malvae* (Linnaeus, 1758), *Ochlodes sylvanus* (Esper, [1779]).

For the first time from the Balkan Peninsula, despite the research conducted so far (Popović et al., 2014; Kolev & Shtinkov, 2015; Langourov, 2019), a syntopy and synchrony of *Lycaena helle* and *Clossiana eunomia* – species, sharing the same habitats and food plant, has been reported. At the same time, it is the westernmost locality of the species in the Balkans so far (Fig. 3). The biological characteristics of the species indicate that it is a specimen from an isolated local population, and future studies should be done to clarify the exact parameters of this population.

**Fig. 1.** *Lycaena helle*, male nectaring on *Thymus* sp.
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Fig. 2. Habitat where the specimen was observed.

Fig. 3. Map of all known localities of *Lycaena helle* on the Balkan Peninsula (blue – published records on the Bulgarian side, white – Serbian side records, pink – the new locality).
References


