

NEW DATA ON THE DISTRIBUTION OF THE CHAPMAN'S BLUE (*Polyommatus thersites* (Cantener, 1835) (Lepidoptera: Lycaenidae) IN CROATIA

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Previously there were several known finding sites of Chapman's Blue (*Polyommatus thersites* (Cantener, 1835)) in Croatia. In summer 2005 the Chapman's Blue was found on Mt Kamešnica, southern Croatia. In this paper we discuss the distribution and the biology of the species as well as the need for complete distribution and habitat characteristics determination.

Chapman's Blue, *Polyommatus thersites*, distribution, habitat, Croatia

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Vrsta *Polyommatus thersites* (Cantener, 1835) je dosad zabilježena na nekoliko lokaliteta u Hrvatskoj. Terenskim istraživanjem faune danjih leptira na Kamešnici u ljeto 2005. pronađen je primjerak te vrste. U radu se raspravlja o rasprostranjenosti vrste u Hrvatskoj, njezinoj biologiji kao i potrebi utvrđivanja stvarnog statusa, rasprostranjenosti i karakteristika staništa vrste u Hrvatskoj.

***Polyommatus thersites*, rasprostranjenost, stanište, Hrvatska**

Introduction

The Lycaenidae family is the most numerous family in Croatia, represented with 53 species, 51 compiled by Lorković & Milošević (Van Swaay & Warren, 1999) and two newly found in 2005 *Lycaena ottomanus* (Lefèbvre, 1830) (Mihoci et al., 2005) and *Polyommatus damon* (Denis & Schiffermüller, 1775) (Mihoci et al., in press). According to the systematics of Karsholt & Razowski (1996) the *Polyommatus* subgenus in Croatian butterfly fauna is represented by the species *escheri* (Hübner, 1823), *dorylas* (Denis & Schiffermüller, 1775), *amandus* (Schneider, 1792), *thersites* (Cantener, 1835), *icarus* (Rottemburg,

1775) and *eros* (Ochsenheimer, 1808) (Van Swaay & Warren, 1999). The species *P. thersites* Cant. and *P. icarus* Rott. are morphologically very similar but can be distinguished according to several characteristics: in both sexes the forewing underside is lacking the black cell-spot (this characteristic is not applicable for the form *icarinus* Scriba of *P. icarus*), the last two ocelli in the post-discal wing-area on the forewing underside are orientated more or less to the interior area of the previous ocelli and are aligned more or less vertically as opposed *P. icarus* f. *icarinus* (Figure 1), the wing upper side in the male of *P. thersites* is coloured matt violet-blue by contrast to the light blue in *P. icarus*. Then, the male of *P. thersites* has on the forewing upper side a visible androconial patch. And finally, the male genitalia uncus in *P. thersites* is lacking a pothole unlike that of *P. icarus* (Hesselbarth et al., 1995a; Hesselbarth et al., 1995b; Lafranchis, 2000; Lepidopterologen-arbeitsgruppe, 1987; Tolman & Lewington, 1997).

According to Varga (1977) and Sijarić et al. (1984) in terms of biogeographical classification *P. thersites* is a western Palearctic species distributed from Morocco (Atlas Mt), southern Portugal, Spain, France and north-eastwards to 51°N in Germany to European Turkey (Tolman & Lewington). The species is also absent from the Mediterranean islands except Sicily (Tolman & Lewington, 1997). The Chapman's Blue is extinct in Belgium and according to IUCN-status vulnerable in Germany and rare but with stable populations in Poland (Van Swaay & Warren, 1999). According to Carnelutti (1992) the Chapman's Blue is considered rare in Slovenia, although Čelik & Rebeušek (1996) have proposed that existing IUCN-category be changed to vulnerable.

P. thersites is a bivoltine butterfly with adults from first generation flying from April till June and a second generation from June till September (Lafranchis, 2000; Tolman & Lewington, 1997). According to Tolman & Lewington (1997) the species larval host-plants are *Onobrychis* spp. frequently *O. viciifolia* and *O. caput-galli*. On the other hand according to Lepidopterologen-arbeitsgruppe (1987) and Sijarić (1991) the Chapman's Blue is strictly monophagous depending only on the availability of *O. viciifolia*. The species hibernates as a small larva, attended by the ants *Lasius alienus* and *Myrmica scabrinodis*.

Material and methods

Butterflies were observed and collected with an entomological net at the locality Gornja Korita, 990 m a.s.l on Mt. Kamešnica, southern Croatia. A

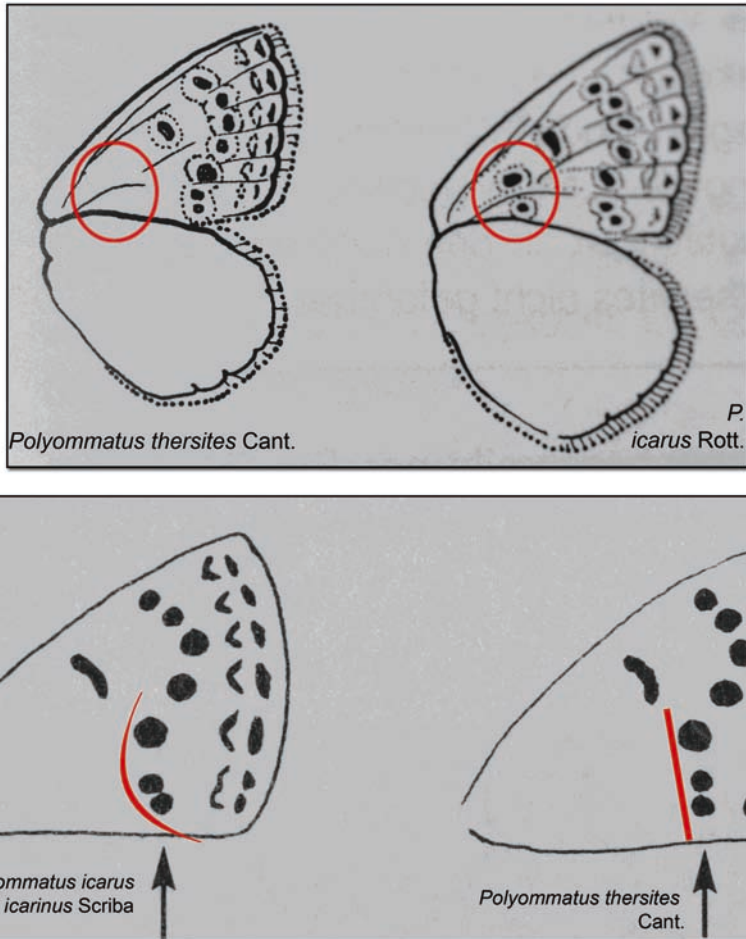


Figure 1. Main distinguishing morphological features between taxa *Polyommatus icarus* (Rottemburg, 1775), *Polyommatus icarus* f. *icarinus* Scriba and *Polyommatus thersites* (Cantener, 1835) (according to Lafranchis, 2000 and Lepidopteren-Arbeitsgruppe, 1987).

specimen of *P. thersites* was collected on September 2nd 2005 (Figure 2). The specimen is kept in the collection of the Department of Zoology of the Croatian Natural History Museum, Zagreb. For systematic classification we have used



Figure 2. *Polyommatus thersites* (Cantener, 1835), ♂, collected on the Kamešnica Mountain (leg. I. Mihoci) (fore-wing and hind-wing upper and under sides).

Karsholt & Razowski (1996) and taxonomic determination was done by the wing morphology according to Hesselbarth et al. (1995a), Hesselbarth et al. (1995b), Lafrancis (2000), Lepidopterologen-arbeitsgruppe (1987) and Tolman & Lewington (1997).

Results and discussion

On September 2nd 2005 during a field trip on Mt Kamešnica we collected one specimen of the Chapman's Blue (leg. I. Mihoci). Among other Lycaenid species, the Chapman's Blue was the least abundant, with only one specimen observed and collected.

The presently known distribution of *P. thersites* in Croatia is shown in fig. 3. Probably, the first record of *P. thersites* was published by Mann (1869) but without any exact date or locality for the finding of the specimen(s), also it was originally determined as var. *thersites* Bd. After Mann, Stauder (1923) published the presence of the "...*thersites* Gerh. für eine von *icarinus* Scriba zu trennende Form..." on the Dalmatian islands and Adriatic coastal area but also without any exact locality (the distribution was presented together with species *P. icarus*). According to Lorković & Mladinov (1971) *P. thersites* was found in a valley in the upper course of the Kupa River. In June 1970, Lidija Mladinov collected three specimens of the Chapman's Blue on the Croatian-Slovenian border in Osilnica (Slovenia) and Hrvatsko (Croatia). A few years later Mladinov (1973) published



Figure 3. The distribution of the Chapman's Blue *Polyommatus thersites* (Cantener, 1835) in Croatia. Numbers follow chronological order of publishing finding sites of the species: 1-Hrvatsko (Lorković & Mladinov, 1971), 2-Podsused (Mladinov, 1973), 3-localities according to Jakšić's provisional distribution maps (Jakšić, 1988), 4-Punat (Habeler, 1989), 5-Knin, Raljevac, Strana (Hafner, 1994), 6-Gornja Korita on the Kamešnica Mt (our data).

the presence of *P. thersites* in Podsused, central Croatia, with a specimen from the Central Butterfly Collection of CNHM in Zagreb that was collected by Grund in 1901 (det. Lorković). According to Habeler (1989) *P. thersites* was detected in Punat on the island Krk, northern Adriatic. In 1994 Hafner published the presence of *P. thersites* in the Knin area and surroundings, collected in the years 1934 (Knin, 1♂, leg. Uglešić), 1935 (Raljevac, 1♂, leg. Hafner jr.) and 1938 (Strana, 1 specimen, leg. Hafner) (Hafner, 1994).

From one locality in northern Croatia, one on the northern Adriatic coast, one on the middle Adriatic coast and one on the island of Hvar we have only dots from the provisional distribution map from Jakšić (1988) (Figure 3). Although dots on the provisional maps mainly follow Jakšić (1983) bibliography of the Rhopalocera of Yugoslavia, the sources for marking the finding localities on a distribution map of *P. thersites* could not be determined from his list of references on *P. thersites*. In defining the distribution of the species, Jakšić used some unpublished data, field notes of various entomologists and private butterfly collections (Jakšić, 1988), which are not available for our inspection.

The finding of *P. thersites* at the locality of Gornja Korita presents a complement in the continuity in the range of the distribution of the species in the Balkans; due to its distribution from Croatian-Slovenian border Hrvatsko and Osilnica (Lorković & Mladinov, 1971), Gornja Korita on Mt Kamešnica (Croatia-Bosnia and Herzegovina), Mt Igman and Mt Trebević (Bosnia and Herzegovina) (Sijarić, 1991) to Serbia (Jakšić, 2003), Montenegro (Sijarić et al., 1984) and Macedonia (Schaidler & Jakšić, 1988).

The *P. thersites* collected on Mt Kamešnica was found near a freshwater spring surrounded by a cascade of thermophilous meadows in open woodland. According to Sijarić (1991) *P. thersites* is a monophagous species dependent on the availability of its larval host-plant *Onobrychis viciifolia*. *O. viciifolia* has an Atlantic geographical distribution so it is usually found in thermophilous grassland habitats similar to the one in Gornja Korita.

Future investigations should be focused on the determination of complete distribution of the Chapman's Blue in Croatia, defining habitat characteristics as well as establishing the number and abundance of populations. All knowledge collected will contribute to an easier determination of the status (possible threat status) of this species in Croatia.

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