

## FIRST RECORD OF *PYRGUS CINARAE* (LEPIDOPTERA: HESPERIIDAE) IN SERBIA

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### Abstract

*Pyrgus cinarae* (Rambur, 1839) is currently known from eastern Spain, Albania, Macedonia, Greece, Bulgaria, Ukraine and Russia. At the end of June and beginning of July 2014 it was recorded in Serbia for the first time, expanding its known area of distribution in the Balkan Peninsula northwards. These records point out that southern Serbia may include several additional Mediterranean and Submediterranean species, and call for more systematic study and protection of butterflies in the region. The list of butterfly species recorded in Serbia has increased to a total of 199.

KEY WORDS: Pčinja, Preševo, PBA, butterflies, distribution

### Introduction

*Pyrgus cinarae* (Rambur, 1839) is one of the easily recognizable skippers (Hesperiidae), so its distribution is fairly well known. Apart from isolated occurrence in eastern Spain it is locally distributed in Ukraine, southern Russia and the southern Balkan Peninsula, where it is known from Albania, Macedonia, Greece and Bulgaria (TOLMAN & LEWINGTON, 2008; TSHIKOLOVETS, 2011). It is considered locally extinct in Turkey (VAN SWAAY *et al.*, 2011). Despite being local, the remaining colonies appear to be stable, with no dramatic changes recorded; thus the species is not listed as threatened in Europe (VAN SWAAY *et al.*, 2011).

The surveyed region is situated in the very south of Serbia and includes Preševo basin in the vicinity of the Miratovac and Pčinja river valley between Trgovište and the Prohor Pčinjski monastery. Mild climate influences coming from Macedonia enabled the survival of many Mediterranean and Submediterranean taxa, as shown in the phytogeographic analysis of flora (ZLATKOVIĆ, 2011). This region has been relatively well studied in terms of ornithofauna (PUZOVIĆ *et al.*, 2009; RADIŠIĆ *et al.*, 2009; RUŽIĆ *et al.*, 2011; RUŽIĆ *et al.*, 2012) and herpetofauna (CRNOBRNJA-ISAILOVIĆ & ALEKSIĆ, 1999; CRNOBRNJA-ISAILOVIĆ *et al.*, 2004; TOMOVIĆ

*et al.*, 2004; RISTIĆ *et al.*, 2006; RALEV *et al.*, 2013), but less so for other groups of animals. Preliminary studies in recent years have already shown that the region is entomologically very interesting and yielded a discovery of several newly recorded insects for Serbia, including the record of *Anthocharis gruneri* Herrich-Schäffer, 1851 butterfly (ĐURĐEVIĆ & ĐURIĆ, 2011; POPOVIĆ & MILENKOVIĆ, 2012). Here, we describe the first observation of *Pyrgus cinarae* in Serbia and give a short note on the conservation status of the region.

## Material and Methods

Butterflies of Preševo and Pčinja were studied during a few short field surveys since 2012. Special attention was given to the open habitats and rocky terrains recognized using Google Earth satellite images. Butterflies were observed, netted and photographed and only a few individuals were taken in order to confirm the records. Identification was checked using available field guides (TOLMAN & LEWINGTON, 2008; HAAHELA *et al.*, 2011).

*Pyrgus cinarae* was recognized straight away in the field, since authors became familiar with this taxon during their field trips to Macedonia and Albania. A single male specimen was collected and preserved in the second author's collection.

## Results and Discussion

During the end of June and the beginning of July we recorded *Pyrgus cinarae* in five localities (Tab. I, Fig. 1).

The first specimen of *P. cinarae* was spotted on June 27<sup>th</sup>, at the start of the road to Baraljevac village. On the same day dozens of butterflies were found in the vicinity of Šaprance village, close to Trgovište. These records were followed by observations of three individuals near the Prohor Pčinjski monastery and several individuals above Vogance village (Tab. I). The geological composition of the terrain varies from one habitat to another, but habitats generally consist of dry rocky pastures with limited vegetation that includes sparse bushes and trees (Fig. 2). Butterflies were often found feeding on flowers of different plants, but were also observed mud puddling. Few individuals were spotted flying close to the forest edge.

On July 4<sup>th</sup>, another four specimens of the same species were recorded near Preševo (Fig. 3). Habitats here are somewhat different due to a different geological substrate, consisting of serpentinites (Fig. 4). The vegetation is even more limited, with meadows and pastures dispersed in a generally rocky landscape. The entire area is also interspersed with small bushes and trees. Butterflies were observed taking water and minerals near Suva Reka stream. They never strayed far from that only source of humidity on a hot day.

This discovery extends the known borders of *P. cinarae* distribution in the Balkan Peninsula slightly northwards. Although effects of global warming cannot be neglected, the species was most likely present here for a long time, but due to a lack of surveys of this area has been only recently discovered. Eight new butterfly species recorded in Serbia in the last 10 years proves that this country is still not well-studied (MILJEVIĆ & POPOVIĆ, 2014; JAKŠIĆ *et al.*, 2007; DINČA *et al.*, 2010; POPOVIĆ & MILENKOVIĆ, 2012; GASCOIGNE-PEES *et al.*, 2012 and references therein; POPOVIĆ *et al.*, 2014a; POPOVIĆ *et al.*, 2014b), and more new species could be expected, especially in the southern part of the country. This discovery brings the list of Serbian butterflies to a total of 199 species: Papilionidae 6, Hesperidae 23, Pieridae 22, Riodinidae 1, Lycaenidae 55 and Nymphalidae 92 (MILJEVIĆ & POPOVIĆ).

Table I. Location of new records of *Pyrgus cinarae* in southern Serbia.

	Location explored	Coordinates	Altitude	Date of visit
1	Road to Baraljevac	21.965622° E; 42.378693° N	572 m	27.6.2014.
2	Šaprance	21.998636° E; 42.390073° N	614 m	27.6.2014.
3	Šaprance	21.981419° E; 42.383764° N	543 m	5.7.2014.
4	Prohor Pčinjski	21.894195° E; 42.328767° N	487 m	28.6.2014.
5	Vogance	21.919155° E; 42.346653° N	544 m	28.6.2014.
6	Preševo, Miratovac	21.650954° E; 42.272424° N	564 m	4.7.2014.

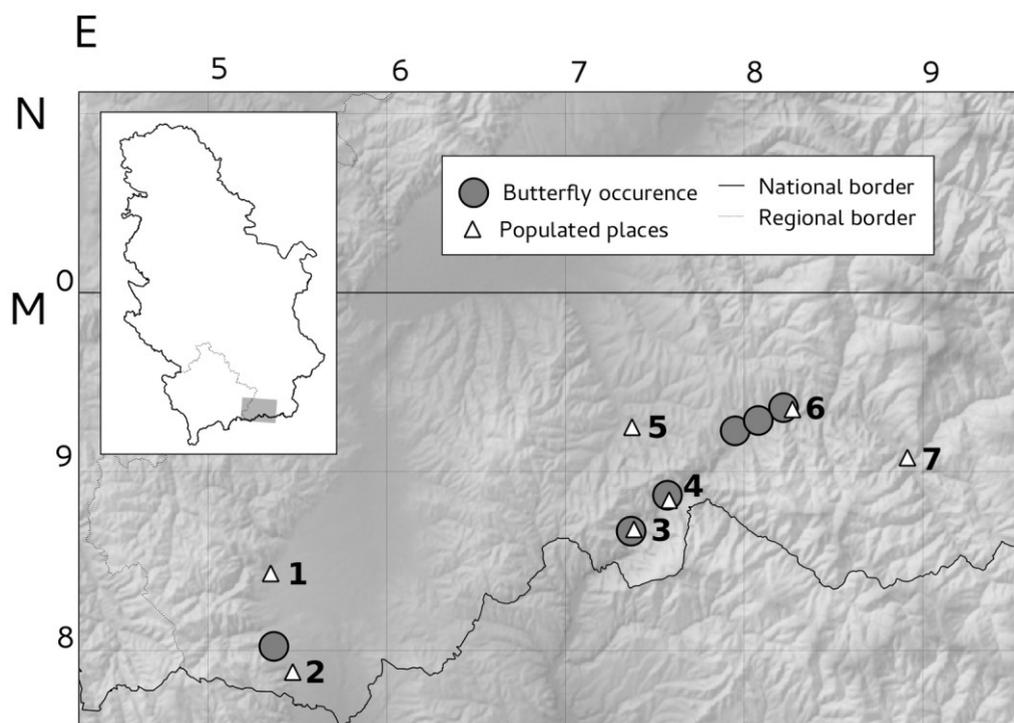


Figure 1. Observations of *Pyrgus cinarae* plotted on UTM 10x10km map of southeast Serbia. The locality names are given as numbers: 1 Preševo; 2 Miratovac; 3 Prohor Pčinjski monastery; 4 Vogance; 5 Baraljevac; 6 Šaprance; 7 Trgovište. (na slici izmeniti occurrences u occurrences)

The larval food plant of *P. cinarae* in South-east Europe is known to be *Potentilla recta* L. (VAN SWAAY *et al.*, 2011). However, this species is not listed in a detailed floristic study of Pčinja valley (ZLATKOVIĆ, 2011), and the butterfly is more likely to develop on some of the following species: *Potentilla detommasii* Ten., *P. inclinata* Vill., *P. laciniosa* Waldst. & Kit. ex Nestleris, *P. pedata* Willd., *P. sulphurea* Lam. Since *P. sulphurea* belongs to the *P. recta* group, it is the best candidate for a hostplant of this butterfly.



Figure 2. Habitat of *Pyrgus cinarae* close to Šaprance village in Pčinja valley. Photo: Miroslav Miljević, July 5<sup>th</sup> 2014.



Figure 3. Male specimen of *Pyrgus cinarae* resting on a flower. Photo: Miroslav Miljević, July 4<sup>th</sup> 2014, Preševo valley.

The most important butterfly species of Preševo and Pčinja are Submediterranean taxa such as *P. cinarae* and *Antocharis gruneri*, for they are recorded only in this small part of Serbia. Such specialist species with restricted geographic distribution and small populations are prone to extinction; thus the conservation of their habitats should be considered [RAPHAEL & MOLINA (eds.), 2007; SODHI & EHRLICH (eds.), 2010]. *P. cinarae* is probably more widespread in the region and the only threat factor in Pčinja valley is slow habitat overgrowing. However, this is unlikely to have significant impact in the near future. Parts of Pčinja valley are protected by national law, and borders of this area can be expanded in future to cover other important habitats up the Pčinja River to Trgovište village. On the other hand, the most important butterfly habitats in Preševo, including the single known habitat for *A. gruneri*, are in the border zone between Serbia, Macedonia and Kosovo, rarely visited in the last few decades because of ethnic clashes. The unstable political situation makes the protection of these habitats very difficult, but any disturbance of this area is not likely to occur in the near future. However, although not threatened at the moment, the entire region is very small and any local changes could significantly affect butterfly species. The discussed region was not included among Prime Butterfly Areas of Serbia [JAKŠIĆ (ed.), 2008], but it is obvious the outcome of that project was largely affected by insufficient data. Judged by what is known now, this area surpasses many selected ones both in number of target species and their significance, so should be considered a candidate once this list is revised.



Figure 4. Habitat of *Pyrgus cinarae* close to Miratovac village in Preševo plain. Photo: Miloš Popović, April 29<sup>th</sup> 2012.

We have once again proven that specific habitats at Preševo basin and Pčinja valley have extremely interesting butterfly fauna. A more systematic survey should be organized here in different seasons in order to get a more complete overview of the butterfly fauna. Also, many potentially interesting locations nearby are still waiting to be surveyed. Special attention should be given to open, dry, rocky habitats where the presence of some southern faunistic elements may be expected: *Pseudochazara anthelea*, *Erynnis marloyi*, *Tarucus balcanicus*, *Carcharodus orientalis* etc.

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## ПРВИ НАЛАЗ *PYRGUS CINARAE* (LEPIDOPTERA: HESPERIIDAE) У СРБИЈИ

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### Извод

*Pyrgus cinarae* (Rambur, 1839) је познат из источне Шпаније, Албаније, Македоније, Грчке, Бугарске, Украјине и Русије. Крајем јуна и почетком јула 2014. године по први пут је забележен у Србији крајем, чиме је његов ареал на Балканском полуострву проширен даље на север. Ови налази указују на потенцијално присуство медитеранских и субмедитеранских врста на југу Србије и позива на детаљнија истраживања и заштиту дневних лептира овог краја. Листа дневних лептира Србије овим је увећана на 199 врста.

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