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**FIRST RECORD OF A MOUNTAIN GEOMETRID SPECIES
PSODOS QUADRIFARIA (SULZER, 1776) (LEPIDOPTERA:
GEOMETRIDAE) IN CROATIA**

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Abstract - The first finding of a mountain geometrid *Psodos quadrifaria* (Sulzer, 1776) in the fauna of Croatia is described. Many specimens of this diurnal moth were observed and collected in June 2009 on the Snježnik Mountain, Gorski Kotar, Croatia. This record fills the gap in the known distribution of the species between the Alps in Slovenia and the mountains in Albania.

KEY WORDS: geometrid moths, Gorski Kotar, Snježnik

Izvešček - PRVA NAJDBA GORSKEGA PEDICA *PSODOS QUADRIFARIA* (SULZER, 1776) (LEPIDOPTERA: GEOMETRIDAE) NA HRVAŠKEM

V članku je opisana prva najdba gorskega pedica *Psodos quadrifaria* (Sulzer, 1776) na območju Hrvaške. Veliko osebkov tega podnevi aktivnega pedica smo opazovali in ujeli v juniju 2009 na gori Snježnik v Gorskem Kotarju na Hrvaškem. Ta podatek zapolnjuje vrzel v znani razširjenosti vrste med slovenskimi Alpami in gorovjem v Albaniji.

KLJUČNE BESEDE: pedici, Gorski Kotar, Snježnik

Most papers dealing with moths, especially geometrid moths of Croatia, were published in the end of 19th century and the first half of 20th century (e.g. Abafi-Aigner *et al.* 1896, Abafi-Aigner 1910, Mann 1857, Stauder 1929) with only a small number of papers published in the last few decades (e.g. Kučinič *et al.* 1993, Kranjčev 1985, Mladinov 1980, Habeler 2003). For most moth families no distribution maps or even

checklists exist, rendering it difficult to check the reliability and significance of new records. So it can be concluded that the moth fauna of Croatia is not sufficiently explored and known.

During a short field trip to the Snježnik Mountain, Gorski Kotar (Fig. 1) in June 2009, an interesting geometrid moth, *Psodos quadrifaria* (Sulzer, 1776) was recorded (Fig 2). Moths were observed flying during the day, at an altitude of approximately 1350 m a.s.l. Many specimens of this moth were observed and four were collected and placed in a private moth collection (Koren, Pazin). The species identification was done using Leraut (2009).

This diurnal flying moth has a scattered distribution across mountains in Europe and Asia (Novak & Severa, 1980). According to Leraut (2009) it is present in Spain, France, Germany, Poland, Czech Republic, and Switzerland. According to the Web portal Fauna Europaea (2010) it is also present in Slovenia, Austria, Hungary and Albania. Its larva feeds on various low-growing plants like *Hypocrepis*, *Coronilla* and *Taraxacum* (Leraut 2009). It inhabits low and mid-mountain areas (Leraut 2009). Adults fly from June to August, and the larval stage hibernates (Novak & Severa 1980).

By consulting identification key for geometrid moths (Leraut 2009), all recently published and available literature regarding the family Geometridae in Croatia, sys-



Fig. 1: Finding site of *Psodos quadrifaria* (Sulzer, 1776) in Croatia.



Fig. 2: *Psodos quadrifaria* (Sulzer, 1776) from Snježnik.

tematic list of moths and butterflies of Europe (Karsholt & Razowski 1996) and WEB portals containing identification or species distribution (Fauna Europea 2010, Mazzei *et al.* 1999) no data about the presence of *P. quadrifaria* in Croatia was found. Stauder (1929) reports that this highly alpine species is missing from the fauna of Dalmatia and surrounding areas (Croatia). In the checklist of butterflies and moths of Gorski Kotar (Kucinic *et al.* 1993) this species was not listed. Although no published records exist, another specimen originating from the collections of the Croatian Natural History Museum was sequenced in the BOLD system (Barcode of Life Data Systems) (Ratnasingham & Herbert, 2012).

So probably in the future this species will be recorded in other parts of the country, but until then, this finding can be considered as the first confirmed record of this species in Croatia. This record also partially fills an existing distribution gap of this species between the Alps in Slovenia and the mountains in Albania. As it was recorded in Gorski Kotar, it is possible that it will be recorded in some other Croatian mountains like Velebit or Dinara in the future. In the changing environment of today, insect species are becoming more and more vulnerable. This is especially true for the mountain and alpine species. Due to that, each record and each known habitat of those species is important for possible future conservation purposes. As neither moths nor butterflies of Snježnik were studied in the past, more interesting findings are to be expected.

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