

## First record of the horse chestnut moth *Pachynemina hippocastanaria* (HÜBNER, [1799]) (Lepidoptera, Geometridae, Ennominae) in Romania

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**Summary:** Based on a specimen of the Aurelian Popescu-Gorj collection, housed at the “Grigore Antipa” National Museum of Natural History, Bucharest, the horse chestnut moth *Pachynemina hippocastanaria* (HÜBNER, [1799]) is reported for the first time in south-western Romania. This new occurrence improves the knowledge on the distribution of this species in south-eastern Europe.

**Rezumat:** Pe baza unui exemplar din colecția Aurelian Popescu-Gorj, aflată la Muzeul Național de Istorie Naturală “Grigore Antipa”, București, *Pachynemina hippocastanaria* (HÜBNER, [1799]) este semnalată pentru prima dată din sud-vestul României. Această nouă descoperire îmbunătățește cunoașterea distribuției acestei specii în sud-estul Europei.

**Key words:** distribution, horse chestnut moth.

### Introduction

The horse chestnut moth *Pachynemina hippocastanaria* (HÜBNER, [1799]) is a west-palaearctic species, its distribution range extending from northwest Africa, Iberian Peninsula, France, Belgium, the Netherlands, southern England, southern Scandinavia and Latvia through central and southern Europe to southern Russia, the western Caucasus and Asia Minor (EBERT 2003, SKOU and SIHVONEN 2015, SINEV 2019). It has a relative disjunct occurrence in Europe (SKOU and SIHVONEN 2015), but its distribution tends to be rather scattered towards the eastern limit of its European range, from Latvia and Poland to the western Hungary. In south-eastern Europe, starting with the first half of the 20th century, the presence of *Pachynemina hippocastanaria* (HÜBNER, [1799]) is well documented in Albania (REBEL and ZERNY 1931, MOUCHA 1963, URBAHN 1966, BESHKOV and MISJA 1994, BESHKOV *et al.* 1996), Croatia – where the horse chestnut moth is a common presence along the coastal region (ZERNY 1920, SCHWINGENSCHUSS and WAGNER 1927, HABELER 1976) – Greece (SKOU and SIHVONEN 2015) and the European part of Turkey (CEBECI and ACER 2007). Nevertheless, only few, relative recent records (DODOK 1997, DODOK 2006, BESHKOV 2009) are documenting the presence of this species for the rest of the Balkans. Up to now, there are no published records of this species for Romania (RÁKOSY and GOIA 2021, SZÉKELY 2010). Information on the biology of this species in south-eastern Europe is also sporadic and inconsistent.

A shrub specialist, the horse chestnut moth's habitat in southern Europe seems to consist mainly

of warm and dry heaths, meadows and valleys with mandatory presence of different heather species (*Calluna vulgaris* (L.) Hull, *Erica arborea* L., *E. manipuliflora* Salisb., *E. scoparia* L. etc), rosemary (*Salvia rosmarinus* Spenn.), etc (EBERT 2003, SKOU and SIHVONEN 2015, BESHKOV 2009). All these species are recorded as foodplants for the caterpillars which, despite the species name, has nothing to do with the horse chestnut, *Aesculus hippocastanum* L. The horse chestnut moth can climb up to about 1400 m altitude in the Alps (FORSTER and WOHLFAHRT 1981), 1600 m in Italy (FLAMIGNI *et al.* 2007) and 1800 m in Spain (REDONDO *et al.* 2009). However, it was not recorded above 950 m in Mount Tara, western Serbia (DODOK 1997, DODOK 2006). Little if nothing is known regarding the peculiarities of the biology of this species in south-eastern Europe.

All these are highlighting the need for a deeper knowledge of the distribution as well as the identification of the peculiarities of the biology of this species in the south-eastern part of its distribution area.

### Material and methods

Examined material: 1♂, 2.VIII.1974, Pecinișca, Caraș-Severin County, Romania (Fig. 1); the abdomen of the specimen is missing, despite that there is no label attached to its pin to mention it was dissected in order to examine its genitalia.

Currently in the Aurelian Popescu-Gorj collection, the “Grigore Antipa” National Museum of Natural History, Bucharest, this male was captured by Hans Pelits, a keen lepidopterist from Timișoara. In 1990,



Fig. 1. *Pachycnemia hippocastanaria* (HÜBNER, [1799]) – ♂, 2.VIII.1974, Pecinișca, Caraș-Severin County, Romania, leg. Hans Pelits, coll. Aurelian Popescu-Gorj (bottom left, the collecting label).

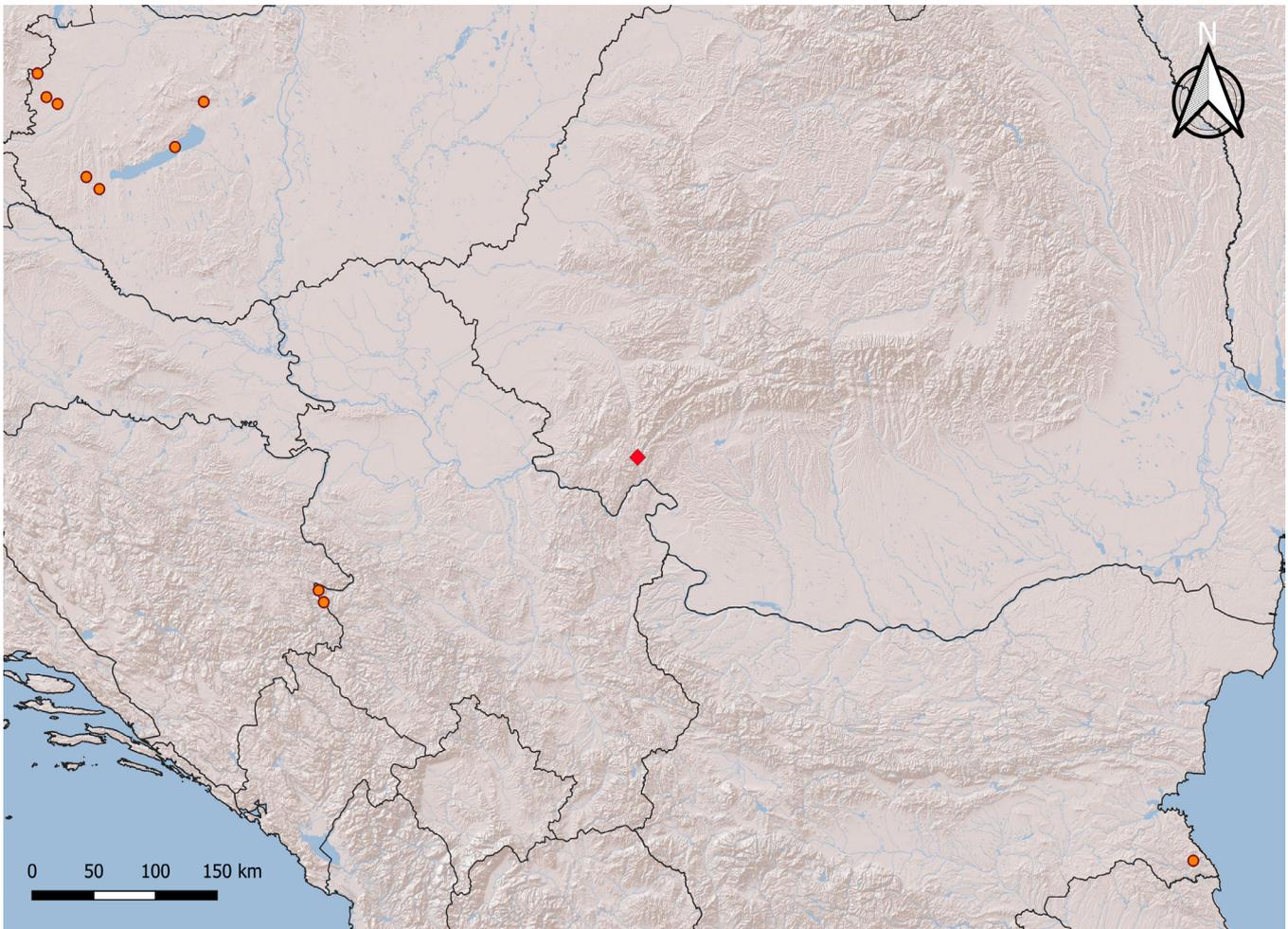


Fig. 2. *Pachycnemia hippocastanaria* (HÜBNER, [1799]) – current report from Pecinișca, Romania (red diamond) and previous records in Romania's neighbouring countries (orange dots).

Pelits donated his collection to the Banat Museum. Nevertheless, several series of specimens sent for identification remained in the Aurelian Popescu-Gorj's collection and are currently at the "Grigore Antipa" National Museum of Natural History, Bucharest.

Several attempts to collect this species from neighbouring Băile Herculane and Mehadia during the late summer of 2021 and 2023 went unsuccessfully.

### Results and discussions

In Romania's neighbourhood (Fig. 2), the horse chestnut moth has been reported in western Hungary, where it has a sporadic distribution in Vas (Tanakajd and Kőszeg-Szombathely region), Veszprém (Várpalota and Tihany peninsula) and Zala counties (Kis-Balaton and Pacsa; VOJNITS 1980). It is also mentioned by PASTORÁLIS *et al.* (2016) and TÓTH (2019), without further details on its distribution. In Serbia it is known from western Tara Mountains, near the border with Bosnia and Herzegovina (Jagoštica – DODOK 1997; Zaovine – DODOK 2006). These records are at the lowest distance from where the species was caught in Romania. Also, the habitat in the Tara Mountains is somehow similar to that found in south-western Romania.

There is a single record of the horse chestnut moth from south-eastern Bulgaria, where it was caught during 2008 at Kosti, "Pirena" protected area, "Strandzha" Natural Park (BESHKOV 2009).

According to these data, the south-western Romanian record is relatively isolated from the other populations of this species found in Central and south-eastern Europe. This raises additional problems regarding the long-term viability of this population and its survival under increasing anthropogenic impact and regional climate change.

### Conclusions

The new report from south-western Romania improves the known distribution of the horse chestnut moth in south-eastern Europe, a region for which records of this species are particularly scattered and sporadic. It also increases the knowledge on the Romania's Lepidoptera fauna, raising the number of the Geometridae reported from this country from 480 (RÁKOSY and GOIA 2021) to 481. Likewise, the presence of this species in south-western Romania certifies the status of Băile Herculane and the surrounding region as a valuable biodiversity hotspot, still in need for effective conservation measures despite being part of the Domogled-Cerna Valley National Park.

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