

CONTRIBUTIONS TO THE KNOWLEDGE OF THE MACROLEPIDOPTERA FAUNA OF HUNEDOARA COUNTY (ROMANIA)

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Abstract. The author presents The Macrolepidoptera species (Lepidoptera) recorded from the hillocky zones of Hunedoara County. Personal research was conducted in the hillocky area of Deva, Orăștie, Hunedoara, the Strei Couloir, the Mureș Couloir, Hațeg and Brad Depressions. There have been recorded 327 species from the hillocky zones of Hunedoara County. Some rare species or species with sporadic appearances in the area are presented.

Keywords: Macrolepidoptera, Hunedoara County, Romania.

Rezumat. Contribuții la cunoașterea faunei de Macrolepidoptere din județul Hunedoara (România). Autorul prezintă speciile de Macrolepidoptere (Lepidoptera) identificate în zonele colinare ale județului Hunedoara. Cercetările personale au fost efectuate în zona colinară a localităților Deva, Orăștie, Hunedoara, Culoarul Streiului, Culoarul Mureșului, Depresiunile Hațeg și Brad. 327 specii sunt semnalate în zonele colinare ale județului Hunedoara. Câteva specii rare sau cu apariție sporadică în județul Hunedoara sunt prezentate.

Cuvinte cheie: Macrolepidoptera, județul Hunedoara, România.

INTRODUCTION

Situated in the western part of Romania, Hunedoara County has a diverse relief. Even if the mountainous area is dominant, the hills are also widespread especially along the Mureș and the Strei Couloir and around Hațeg and Brad Depressions. For example, Hațeg Depression is bordered not only by the Retezat and Poiana Ruscă Mountains but also by hills with 600-800 m altitude. The calcareous hills of the south-western part of Hațeg depression are crossed by many tributaries of the Strei River and form spectacular gorges as Crivadia and Bănița Gorges. Brad Depression is bordered by hills with 500-600 m altitude. The Crișul Alb that crosses this depression has a large meadow with adler and willow associations, pastures and cultivated terrains. Only in the northern part of the depression, the tributaries, the Ribicioara stream and Uibărești stream, cross a calcareous area and form picturesque gorges.

The Mureș River, the most important river of Hunedoara County is bordered by hills that have in some place an arid character with a stepic flora (KÖNIG, 1983). Near Deva locality, the Mureș River has numerous meanders and forms dead branches and bogs with marsh vegetation. The largest part of riverside is very wide, with many pastures and cultivated areas, but near Zam locality, the Mureș River forms a spectacular couloir with steep hill slopes.

The Couloir of the Strei River, a tributary of the Mureș River has a hillocky zone (400-500 m altitude), represented by the Hills of Orăștie (in the western part) and The Hills of Hunedoara (in the eastern part of the couloir). These hills are covered by deciduous forests (oak and beech forests). At the edge of the forests, shrub associations as *Pruno spinosae-Crataegetum* were identified HUECK (1931).

Adler and willow associations border the river valley but in the riverside and on higher terraces, hygrophilous, mesohygrophilous and mesophilous pastures are widespread.

The climate of the hillocky area of Hunedoara County is temperate-continental with an average of temperature of 8-10°C and an average amount of precipitations of 600 mm.

Research studies about the Lepidoptera fauna of the hillocky area of Hunedoara County have been conducted by different authors. KÖNIG (1983) has published some general data about the Lepidoptera fauna of Hunedoara County. He has mentioned some rarities recorded from the hillocky area of Hunedoara County as *Colias chrysotheme* (in the piedmont area of the Mureș River), *Zerynthia polyxena* (within Brad Depression) and *Tyria jacobaeae* (at Vâlcan Peak – the Metaliferi Mountains). In the first decades of the 20th century, Adriano Ostrogovich also collected some specimens in the area of Hunedoara Hills (POPESCU-GORJ, 1964). BURNAZ SILVIA (1993, 1999, 2002) has studied different hillocky areas and published systematic lists of the species.

MATERIAL AND METHODS

Personal research regarding the Macrolepidoptera species characteristic to the hillocky zone of Hunedoara County was conducted between 1979 and 2009.

The specimens have been collected in various sites specific to the hillocky area of the Mureș River, the Strei River, the Crișul Alb River, Hațeg, Orăștie and Brad Depressions. The most studied sites are:

- The Hills of Deva town, situated in the north-western part of the locality; these hills are the last branches of the Poiana Ruscă Mountains and have an altitude of 400-500 m.
- The Hills of Orăștie town situated in the north-western part of the Șureanu Mountains;
- The Hills of Hunedoara town and especially Chizid Forest, one of the natural reserve;

the adults *Euphydryas aurinia* fly especially at the edge of the deciduous forests and in meso-hygrophilous pastures. In July and August, *Argynnis paphia*, *Argynnis adippe*, *Melitaea didyma*, *Maniola jurtina*, *Aphantopus hyperantus*, *Hesperi comma*, *Ochlodes venatus faunus*, and *Coenonympha pamphilus* are very common. In late autumn (November), we have collected *Colotois pennaria*, *Operophtera brummata*, *Erannis defoliaria*, and *Diloba caeruleocephala*.

Among rare or local species in the studied areas we mention:

SPHINGIDAE

Proserpinus proserpina (PALLAS 1772) - It is a rare species in Hunedoara County. One male was collected on June 20, 2008 in the neighbourhood of Călan locality, in the Strei Couloir. It is a species typical for xeric habitats (grasslands and rocks), but it was also collected at the edge of the deciduous forests. The adults fly in May-June. Larvae prefer *Oenothera biennis*, *Chamaenerion angustifolium*, and *Lythrum salicaria*.

NYMPHALIDAE

Euphydryas aurinia (ROTTEMBURG 1775) was recorded in the meso-hygrophilous meadows of the Mureş River, between Gurasada and Zam localities. It is a species with local occurrence in Romania. It is frequent especially in the western and south-western part of Romania. The adults fly in May. Larvae feed on *Scabiosa* sp.

GEOMETRIDAE

Hypomecis roboraria (DENIS & SCHIFFERMÜLLER 1775) – 3♂ collected on July 20, 2001 at Sarmizegetusa, in Hațeg Depression. This species is characteristic for oak forests but it is also recorded in mixed forests (beech and oak species). The adults fly in June-August. Larvae feed on different species of *Quercus*.

Cleorodes lichenaria (HUFNAGEL 1767) – This species is a relatively common species found in the oak area of Hațeg Depression (Slivuț Forest). The adults prefer the edge of the forests and bushes. The species was also found in the rocky areas of Deva Hills. The flight period of the adults is from July until August. Larvae feed on lichens on trees or stones.

NOCTUIDAE

Mythimna pudorina (DENIS & SCHIFFERMÜLLER 1775) - It is a hygrophilous species found in bogs and the dead branches of the Strei and the Mureş Couloirs. The adults fly in June-August. Larvae feed on *Phragmites communis* (RÁKOSY, 1996).

We also mention the presence of *Archana sparganii* (ESPER 1790), recorded from a bog habitat of the Mureş Couloir and *Archana geminipuncta* (HAWORTH, 1809) recorded from a bog situated near Călan locality, in the area of the Strei Couloir.

The adults of *Archana sparganii* fly in August-September. Larvae feed on *Typha* sp. and *Iris pseudacorus*. The second species, *Archana geminipuncta* flies in June-October. Larvae of these species feed on *Phragmites*.

Dysgonia algira (LINNAEUS 1767) – This xerothermophilous species prefers bush areas. The flight period is between June and September. Larvae feed on *Rubus*, *Genista*, *Salix* (RÁKOSY, 1996). 2♂, 1♀ were collected in Fortress Hill of Deva on September 9, 2004.

Catephia alchymista (DENIS & SCHIFFERMÜLLER 1775) – Individuals of these species were collected in Chizid Forest (Hunedoara) and Slivuț Forest (Hațeg). It is a species typical for oak forests. The flight period is between June and July. Larvae feed on *Quercus* sp.

Cryphia muralis (FORSTER 1771) – 1♂ collected on July 27, 2007, in the area of the Deva Fortress Hill. It is a rare species in Romania. The adults fly in June-September and prefer to rest on rocky places and walls with lichens. Larvae, oligophagous, feed on various species of lichens (RÁKOSY, 1996).

Polyphaenis sericata (ESPER 1787) - 1♂, 1♀ collected on July 20, 2006 at Orăştie Hills. It is a West-Asiatic Mediterranean species, with sporadic occurrence in Romania. The adults fly in June-July. Larvae feed on *Lonicera*, *Ligustrum*, *Cornus* (RÁKOSY, 1996).

ARCTIIDAE

Spiris striata (LINNAEUS 1758) – It is a rare species in Hunedoara County. The adults prefer grasslands with meadowxerothermophilous vegetation and fly in June-August. More specimens were seen in June in a small lawn situated near the Hill of Deva Fortress. Larvae feed on *Artemisia campestris*, *Calluna vulgaris*, *Hieracium pilosella*, *Salvia pratensis*, *Plantago lanceolata*. The species was also collected by us at Costești and Ohaba de Sub Piatră (Hunedoara County) (BURNAZ SILVIA, 2009).

CONCLUSIONS

The hillocky area of Hunedoara County has various habitats in which Lepidoptera species find optimal conditions of life. This situation is due to the mild climate with Mediterranean influences and rich vegetation. Some species are very rare in Hunedoara County as *Cryphia muralis*, *Polyphaenis sericata*, *Proserpinus proserpina*, and

Spiris striata. Protected by Romanian law are *Lycaena dispar rutila*, *Parnassius mnemosyne distincta*, *Euphydryas aurinia*, *Proserpinus proserpina*, *Maculinea arion*, and *Maculinea alcon*.

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