

Observations on Lepidoptera from “Herghelia Lucina”, Moldova-Sulița, Suceava County

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Abstract: The “Herghelia Lucina” is located in northern part of Romania, Suceava County, within the administrative boundaries of Moldova-Sulița commune. A significant portion of the surrounding grasslands are included in the ROSCI0086 Găina-Lucina Natura 2000 Site of Community Importance. These grasslands, placed in the central part of the Mestecăniș Ridge (Eastern Carpathians), are found at elevations ranging between 1200 and 1400 meters. The area experiences a typical montane climate, characterized by short, cool summers, long, cold winters, and an average annual precipitation of 900–1100 mm.

The first scientific records of Lepidoptera from this area date from 1–6 July 1993 and 1–3 August 1995. Monitoring activities resumed between 2013 and 2022, primarily during the second half of the summer season, and were further extended into June for the years 2023 and 2024. Intensive surveys were conducted from 21 to 24 June 2024, during an entomological field camp organized with the support of the Association for Sustainable Development OPTIM, aiming to assess the local lepidopteran fauna.

During the course of these field studies, a total of 240 Lepidoptera species were recorded, most of which belong to the macrolepidoptera group. The most species-rich superfamilies identified in the study area were Noctuoidea (70 species), Geometroidea (62 species), and Papilionoidea (59 species).

In wet meadows dominated by *Bistorta officinalis*, robust populations of *Lycaena helle* and *Boloria eunomia* were observed. *Lycaena helle* was recorded for the first time in the area on 10 June 2023, and *Boloria eunomia* was identified on 22 June 2023. Thus, Herghelia Lucina (Lucina Stud Farm) represents the second known locality in Romania where *Boloria eunomia* has been observed, following a prior record from the Călimani Mountains in 2022.

Among the species protected under Romanian Law No. 49/2011, the following were identified:

- *Lycaena dispar* and *Lycaena helle*: Annexes 3 and 4A.
- *Parnassius mnemosyne* and *Phengaris arion*: Annex 4A.
- *Eumedonia eumedon*, *Lycaena hippothoe*, *Coenonympha tullia* and *Plusia putnami gracilis*: Annex 4B.

Other notable species recorded include: *Pharmacis carna*, *Hepialus humuli*, *Lycaena alciphron*, *Brenthis ino*, *Hydrelia sylvata*, *Venusia cambrica*, *Rheumaptera subhastata*, *Eupithecia succenturiata*, *Arctia plantaginis carpathica*, *Callimorpha dominula*, *Panthea coenobita*, *Cucullia lucifuga*, *Photedes captiuncula* and *Photedes minima*.

It is proposed that *Lycaena dispar* and *Lycaena helle* to be included in Section 3.2 of the Standard Data Form for ROSCI0086 Găina-Lucina (species listed in Article 4 of Directive 2009/147/EC and Annex II of Directive 92/43/EEC). Furthermore, the inclusion of *Parnassius mnemosyne*, *Phengaris arion*, *Eumedonia eumedon*, *Lycaena hippothoe*, *Coenonympha tullia*, and *Plusia putnami gracilis* is recommended under Section 3.3 (other important flora and fauna species).

Keywords: “Herghelia Lucina”, Lepidoptera, protected species, *Lycaena helle*, *Boloria eunomia*.

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