

LEPIDOPTERA SPECIES OF COMMUNITY INTEREST FROM GALAȚI COUNTY (ROMANIA)

CRISTESCU Mihaela

Abstract. The present study was achieved in Galați County, in areas like: The Nature Reserve Breana Roșcani Forest, The Natural Park of the Lower Prut Flood Plain and the buffer zone area of the Park, Buciumeni Forest, and The Botanical Garden of The Natural Sciences Museum Complex Galați. The research was made during a period of 3 years (2009, 2010, 2012). During the period of study, there were identified a number of 7 species from 4 families of diurnal and nocturnal lepidopterans that are protected by the European legislation (Habitats Directive, Bern Convention) and Romanian legislation (Order no.1198/2005). The most common species were *Heteropterus morpheus* (Pallas, 1771) and *Lycaena dispar rutila* (Werneburg, 1864). The paper also includes the past mentions of protected species like *Euplagia quadripunctaria* (Poda, 1761), *Erannis ankeraria* (Staudinger, 1861) and *Paracossulus thrips* (Hubner, 1818). The final list of protected Lepidoptera species from Galați County has 10 lepidoptera species from 7 families.

Keywords: Lepidoptera, protection status, Galați county.

Rezumat. Specii de lepidoptere de interes comunitar de pe teritoriul județului Galați (România). Acest studiu a fost realizat în patru zone din județul Galați: Rezervația Naturală Pădurea Breana Roșcani, Parcul Natural Lunca Joasă a Prutului Inferior și zona tampon pentru Parc, Pădurea Buciumeni, precum și Grădina Botanică a Complexului Muzeal de Științele Naturii. Cercetarea s-a desfășurat pe o perioadă de 3 ani (2009, 2010, 2012). Pe perioada studiului au fost identificate 7 specii de lepidoptere diurne și nocturne ce aparțin la 4 familii. Acestea sunt specii de interes comunitar, protejate de legislația europeană (Directiva Habitate și Convenția de la Berna) și de legislația românească (Ordin no.1198/2005). Cele mai comune specii au fost *Heteropterus morpheus* (Pallas, 1771) și *Lycaena dispar rutila* (Werneburg, 1864). Lucrarea include, de asemenea, mențiunile din trecut ale unor specii protejate, precum *Euplagia quadripunctaria* (Poda, 1761), *Erannis ankeraria* (Staudinger, 1861) și *Paracossulus thrips* (Hubner, 1818). Lista finală a lepidopterelor protejate de pe teritoriul județului Galați numără 10 specii de fluturi ce aparțin la 7 familii.

Cuvinte cheie: Lepidoptera, statut de protecție, județul Galați.

INTRODUCTION

Habitats Directive and Council Directive 92/43/EEC on the conservation of natural habitats, wild flora and fauna was adopted in 1992 and has as main objective the preservation of fauna, flora and natural habitats within the Member States of the European Union.

Order no. 1198/2005 updated the Annexes 2, 3, 4 and 5 to the Government Emergency Ordinance no. 236/2000 regarding protected natural areas, conservation of natural habitats, wild flora and fauna within Romania.

In Romania, there live 73 insect species of Community interest of which 28 are Lepidoptera species. Our research in Galați County led to the identification of 7 protected species of Lepidoptera. These were noticed both in natural ecosystems that are protected areas (The Nature Reserve Breana Roșcani Forest, The Natural Park of the Lower Prut Flood Plain) and also in anthropogenic habitats, located in Galați city (The Botanical Garden of The Natural Sciences Museum Complex Galați).

Past research in Galați County made by ALEXINSCHI et al., (1967) and OLARU & NEMEȘ (1969) at Gârboavele Forest and Tecuci, mentioned other 3 protected species of Lepidoptera: *Euplagia quadripunctaria* (Poda, 1761), *Erannis ankeraria* (Staudinger, 1861) and *Paracossulus thrips* (Hubner, 1818).

MATERIALS AND METHOD

The butterflies were collected with the insect net and the nocturnal lepidoptera were collected with light traps placed in The Botanical Garden of The Natural Sciences Museum Complex Galați. The field research was undertaken during a 3 year period: 2009, 2010 and 2012 in favorable seasons.

RESULTS AND DISCUSSIONS

During the research period, there were identified 7 species of butterflies belonging to 4 families: Sphingidae, Hesperidae, Lycaenidae and Nymphalidae. These are species of Community interest, protected by the European legislation (Habitats Directive, Bern Convention) and Romanian legislation (Order no.1198/2005).

The list of the investigated areas and the period of study. Some of these areas are declared SCI:

- The Botanical Garden of The Natural Sciences Museum Complex Galați (2009-2012);
- Nature Reserve Breana Roșcani Forest (2009-2010): ROSCI0139;
- The Natural Park of the Lower Prut Flood Plain (2009-2010): ROSCI0105. It includes the sites named Tuluțești, Mața Rădeanu, Pochina, Vlădești, Vlășcuța, Cotul Chiului;

- The buffer zone of the Natural Park of the Lower Prut Flood Plain (2012). It includes the site named Dig Bădălan;
- Buciumeni Forest: ROSCI0334;
- Gârboavele Forest: ROSCI0151;
- Tecuci, Galați.

The Natural Park of the Lower Prut Flood Plain is situated to the South - East of Galați County. The river flows into the Danube, near Reni, East of Galați city. The vegetation includes wet meadows, swampy meadows, willow forests and gallery forests.

The buffer zone of the Park is located near the Prut and the Danube rivers and it is dominated by ruderal vegetation and a poplar and willow forest.

The Nature Reserve Breana Roșcani Forest is located within the village Băneasa, situated in NE of Galați. The reserve has forest and botanical character; here, it is met the Romanian peony *Peonia peregrina* var. *romanica*, declared a natural monument.

Buciumeni Forest is located in the north part of Galați. It contains Dacian forests of oak and hornbeam.

Gârboavele Forest is situated 12 km from Galați city. It is a nature reserve with a botanical character, because here it can be found *Quercus pubescens* and *Quercus pedunculiflora*.

The Botanical Garden of The Natural Sciences Museum Complex Galați is an urban ecosystem, situated near the confluence of the Siret River with the Danube.

Tecuci city is located in Galați County, in the North - Western part.

The protected lepidoptera species identified is listed below:

I. Cossidae Family

1. *Paracossulus thrips* (Hubner, 1818)

Collected material, 2 specimens: July 7, 1965 Gârboavele Forest; July 21, 1965 Gârboavele Forest (OLARU & NEMEȘ, 1969).

Ecology: It is a localized species, linked to *Artemis* sp. It is a steppic species.

Geographical distribution: Transylvania, Moldova, Dobrogea.

Protection status:

National: Vulnerable (SZÉKELY, 2008).

European: Habitats Directive (Annex 2 A, 4A).

II. Sphingidae Family

2. *Hyles hippophaes* (Esper 1785)

Collected material, 3 specimens: 1 spec.: July 23, 2009 Botanical Garden Galați; 1 spec.: August 3, 2009 Botanical Garden Galați; 1 spec.: July 21, 2010 Botanical Garden Galați (CRISTESCU, 2011a; b).

Ecology: It is a species characteristic to steppe areas.

Geographical distribution: the Danube Delta, Dobrogea, Muntenia, Moldova (SZÉKELY, 2008).

Protection status:

National: Vulnerable (RÁKOSY et al., 2003)

European: Habitats Directive (Annex 3A).

III. Hesperidae Family

3. *Heteropterus morpheus* (Pallas 1771)

Collected material, 17 specimens: 3 specs.: June 25, 2009 Tulucești; 1 spec.: June 7, 2012 Dig Bădălan; 6 specs.: June 12, 2012 Dig Bădălan; 7 specs.: August 6, 2012 Dig Bădălan (CRISTESCU, 2011a; b).

Ecology: It is a species found in wet meadows, swampy forests and forest edges.

Geographical distribution: Transylvania, Banat, Crișana, the Danube Delta, N Dobrudja (SZÉKELY, 2008).

Protection status:

National: Endangered (RÁKOSY, 2013), Order No. 1198/2005 (Annex 3B).

IV. Lycaenidae Family

4. *Lycaena dispar rutila* (Werneburg 1846)

Collected material, 15 specimens: 3 specs.: September 4, 2009 Mața Rădeanu, Pochina; 5 specs.: September 18, 2009 Vlădești; 2 specs.: May 27, 2010 Vlădești; 1 spec.: June 6, 2010 Vlășcuța; 1 spec.: June 8, 2010 Mața Rădeanu; 3 specs.: May 20, 2012 Dig Bădălan (CRISTESCU, 2011a; b).

Ecology: It is a localized species, linked to wet habitats and hygrophile vegetation.

Geographical distribution: It is distributed throughout the country (SZÉKELY, 2008).

Protection status:

National: Vulnerable (RÁKOSY, 2013)

European: Habitats Directive (Annex 2A, 3A).

5. *Phengaris arion* (Linnaeus, 1758)

Collected material, 2 specimens: June 3, 2012 Buciumeni Forest.

Ecology: It inhabits bush areas, grasslands and meadows.

Geographical distribution: Transylvania, Banat, N Oltenia, N Moldova, N Muntenia (SZÉKELY, 2008).

Protection status:

National: Near threatened (RÁKOSY, 2013).

European: Habitats Directive (Annex 2A, 3A, 4A), Bern Convention.

V. *Nymphalidae* Family6. *Apatura metis* (Freyer, 1829)

Collected material, 8 specimens: 2 specs.: June 25, 2009 Tuluțești; 4 specs.: June 25, 2009 Sivița; 2 specs.: June 12, 2009 Cotul Chiului (CRISTESCU, 2011a, b).

Ecology: It inhabits wet clearings, willow forests, gallery forests.

Geographical distribution: the Danube Delta, S Moldova, S Muntenia, S Oltenia and S Banat (SZÉKELY, 2008).

Protection status:

National: Vulnerable (RÁKOSY et al., 2003)

European: Habitats Directive (Annex 3A, 3B, 4A, 4B), Bern Convention.

7. *Euphydryas maturna* (Linnaeus, 1758)

Collected material, 2 specimens: June 10, 2010 Breana Roșcani Forest (CRISTESCU, 2012).

Ecology: It is met in wet meadows, forest edges and bush areas.

Geographical distribution: S Dobrogea, S Muntenia, N Moldova, Banat, Crișana and Transylvania.

Protection status:

National: Vulnerable (RÁKOSY, 2013).

European: Habitats Directive (Annex 2A, 4A), Bern Convention.

8. *Neptis sappho* (Pallas, 1771)

Collected material, 1 spec.: June 10, 2010 Breana Roșcani Forest (CRISTESCU, 2012).

Ecology: It is found in bush areas, forest edges and forest clearings.

Geographical distribution: It is distributed throughout the country (RÁKOSY, 2013).

Protection status:

National: Vulnerable (RÁKOSY, 2013).

European: Habitats Directive (Annex 3B, 4B).

VI. *Geometridae* Family9. *Erannis ankeraria* (Staudinger, 1861)

Collected material, 8 specimens: 5 specs.: April 6-21, 1933 Tecuci (Alexinschi in OLARU, 1971); 3 specs.: March 16-25, 1933 Tecuci (Alexinschi in OLARU, 1971).

Ecology: It is found in bush areas, forest edges linked to *Quercus pubescens*.

Geographical distribution: Muntenia, Moldova.

Protection status:

National: Deficient Data (RÁKOSY et al., 2003).

European: Habitats Directive (Annex 2A, 4A).

VII. *Erebidae* Family10. *Euplagia quadripunctaria* (Poda, 1761)

Collected material, 2 specimens: August 31, 1964 Gârboavele Forest (ALEXINSCHI et al., 1967)

Ecology: It is found in bush areas, forest edges and forest clearings.

Geographical distribution: It is distributed throughout the country (SZÉKELY, 2008).

Protection status:

National: Least concern (SZÉKELY, 2008).

European: Habitats Directive (Annex 2A).

CONCLUSIONS

The paper presents a contribution to the knowledge of protected Lepidoptera species identified in Galați County. In this part of the country, there were not undertaken many studies, so that many areas remained unstudied. Galați lepidoptera fauna is poorly studied, so further research can bring new butterfly/moth species on the list of Community interest insects.

28 species of the protected Lepidoptera species are mentioned from Romania, of which 10 species were identified in Galați County.

The species *Euplagia quadripunctaria* (Poda, 1761), *Erannis ankeraria* (Staudinger, 1861) and *Paracossulus thrips* (Hubner, 1818) were identified many years ago by ALEXINSCHI et al. (1967) and OLARU & NEMEȘ (1969) and there was not any reconfirmation of their presence in Galați.

REFERENCES

- ALEXINSCHI A., OLARU V., GIERLING A., CĂRUNTU V., CRISTEA V., CONSTANTINESCU E. 1967. Contribuții la cunoașterea lepidopterelor din Sudul Moldovei (Pădurea Gârboavele), studiul sistematic și zoogeografic (nota 1). *Lucrări. Științifice*. Institutul Pedagogic. Galați. **1**: 166-176.
- CRISTESCU MIHAELA. 2011a. Lepidoptere sfingide (Lepidoptera - Fam. Sphingidae) identificate în Grădina Botanică Galați (România). *Volumul de lucrări al Simpozionului „Biodiversitatea și Managementul insectelor din România”*. Silvic.usv.ro. Suceava: 63-69.
- CRISTESCU MIHAELA. 2011b. Preliminary data about diurnal lepidoptera (Lepidoptera, Rhopalocera) from The Natural Park of the Lower Prut Flood Plain in *Actual problems of protection and sustainable use of the animal world diversity. International Conference of Zoologists, Institut of Zoology, Academy of Sciences of Moldova*. Chișinău: 97- 99.
- CRISTESCU MIHAELA. 2012. Data concerning the butterflies (Lepidoptera, Rhopalocera) from The Forest Nature Reserve Breana Roșcani, Galați (România). *Buletinul științific al Muzeului Național de Etnografie și Istorie Naturală a Moldovei. Fascicula Științele Naturii*. Chișinău. **16** (29): 55-60.
- OLARU V. 1971. Studii asupra familiei Geometridae în Sud-Estul României din punct de vedere biologic, ecologic, economic și sistematic. *Teză de doctorat*. Univ. „Al. I. Cuza”. Iași. 262pp
- OLARU V. & NEMEȘ I. 1969. Contribuții la studiul lepidopterelor din Pădurea Gârboavele (nota 3). *Lucrări științifice*. Institutul Pedagogic. Galați. **3**: 126-135
- RÁKOSY L., GOIA M., KOVACS Z. 2003. *Catalogul lepidopterelor României. Verzeichnis der Schmetterlinge Rumäniens*. Societatea lepidopterologilor români. Cluj-Napoca. 446 pp.
- RÁKOSY L. 2013. *Fluturii diurni din Romania. Cunoaștere, protecție, conservare*. Edit. Mega. Cluj Napoca. 352 pp
- SZÉKELY L. 2008. *The Butterflies of Romania/ Fluturii de zi din Romania*. Brastar Print Brasov. 262 pp.
- ***. 1979. *Bern Convention - Convention for the conservation of wildlife and natural habitats in Europe adopted at Bern on 19 September 1979*. <http://conventions.coe.int/Treaty/EN/Treaties/Html/104.htm>. (Accessed: March 2, 2017).
- ***. 1992. *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)*. <http://europa.eu.int/comm/environment/nature/hab-an5en.htm>. (Accessed: March 2, 2017).
- ***. 2000. *Ordinul nr.1.198/25 noiembrie 2005, pentru actualizarea Anexelor nr. 2, 3, 4, 5 la O.U.G. nr. 236/2000 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice. Monitorul Oficial nr. 625/4 dec. 2000; O.U.G. nr. 57/2007*.

Cristescu Mihaela

Natural Sciences Museum Complex Galați, Regiment 11 Siret Street, 6A, 80340, Galați, Romania.
E-mail: miih100@yahoo.com

Received: March 20, 2017
Accepted: June 6, 2017