

LEPIDOPTERA (INSECTA: LEPIDOPTERA) IN THE COLLECTION OF EUGEN WORELL FROM NATURAL HISTORY MUSEUM OF SIBIU, COLLECTED FROM "DUMBRAVA SIBIULUI" FOREST

**LEPIDOPTERE (INSECTA: LEPIDOPTERA) DIN COLECȚIA LUI
EUGEN WORELL EXISTENTĂ LA MUZEUL DE ISTORIE NATURALĂ
DIN SIBIU ȘI COLECTATE DIN PADUREA "DUMBRAVA SIBIULUI"**

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Abstract. In the present work was studied the Lepidoptera collection of Eugen Worell, and the paper presents a systematic list of species collected Macrolepidoptere since 1907-1958 in Forest "Dumbrava Sibiu". This paper can be considered a tribute and memory of Eugen Worell entomologists, who through his collection has contributed substantially to the knowledge of this group of insects. The data obtained and to join the collections of personal data between 2000-2011 we intend to achieve a more comprehensive study, which will be subject to further research on the evolution Macrolepidoptera over more than 104 years of research in the area of Forest "Dumbrava Sibiu".

Key words: Eugen Worell collection, Macrolepidoptera, oak forest "Dumbrava Sibiului", Natural History Museum of Sibiu.

Rezumat. Lucrarea de față prezintă lista sistematică a speciilor de Macrolepidoptere colectate în intervalul 1907-1958 din Padurea "Dumbrava Sibiului", specii existente în Colecția de lepidoptere a lui Eugen Worell. De asemenea, lucrarea poate fi considerată un omagiu adus memoriei entomologului Eugen Worell, care prin colecția sa a contribuit substanțial la cunoașterea acestui grup de insecte. Datele obținute se alătură datelor personale colectate în intervalul 2000-2011. În viitor ne propunem realizarea unui studiu cat mai amplu care va avea ca obiectiv al cercetarilor evoluția Macrolepidopterelor începută în urmă cu 104 ani în Padurea "Dumbrava Sibiu".

Cuvinte cheie: colecția lui Eugen Worell, Macrolepidoptere, pădurea Dumbrava Sibiului, Muzeul de Istorie Naturală din Sibiu.

INTRODUCTION

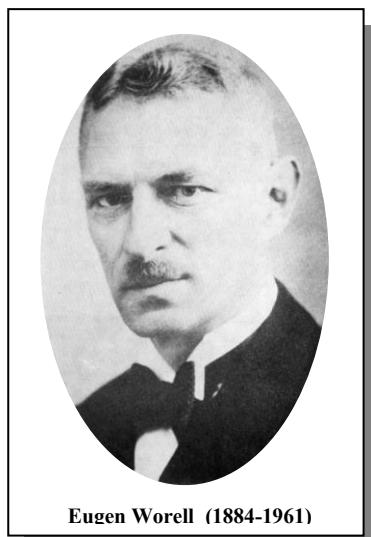
Butterflies (Insecta:Lepidoptera) belong to the best studied group of invertebrates in Romania. Data about their distribution appear in many papers concerning particular parts of the country, especially national and landscape parks, nature reserves, and other areas which are attractive as far as nature is concerned, as well as in the vicinity of cities (Schneider-Binder, E., 1973, Stancă Moise C., 2002, 2003, 2004, 2005, 2006, 2007, 2010). In the present investigation was studied and indexed collection above mentioned species were caught only from

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Forest "Dumbrava Sibiului" in 1900-1958 in Sibiu. Research has been conducted on the material currently existing in the collection of Lepidoptera from Eugen Worell collection which is located at the Natural History Museum in Sibiu. Besides the analyzed material was walking and literature and all the papers published by Worell scientific papers in the volume of the museum "Verhandlungen und Mitteilungen des siebenbürgischen Vereins für Naturwissenschaften zu Hermannstadt" (Popescu-Gorj A., 1970).

Dr. Eugene Worell was born on 15 October 1884 at Râşnov. After graduating High School in Kosice (where his father was a military doctor) falls to law school in Vienna, shortly after it entered the medical school and continuing her family tradition (Ungar, 1981). In 1908, the doctor is called the Adriatic port of Pula. As a physician has the opportunity to travel, where they return with a rich and lepidopterists entomological material.

In 1919 Sibiu comes to the Military Hospital where he is appointed



Eugen Worell (1884-1961)

director, and since 1920 active member of the Transylvanian Society of Natural Sciences, was appointed curator of the entomological collections of beetles and Lepidoptera, is considered one of the largest collectors and hobbyists entomologists the country during the two world wars. The material is collected across the country, and collected from Transylvania Sibiu and its surroundings. The "Collection of Dr. Eugene Worell Lepidoptera" is not only the great number of copies of which contribute to the knowledge instead of collecting a large number of species spread, but also that it includes rare, less known but also new scientists from all over Transylvania. The collection was donated to the Museum of Natural Sciences

of Sibiu in 1958. Part of the entomological collection is also at the Natural History Museum "Grigore Antipa" in Bucharest and one in Ploiești.

MATERIAL AND METHOD

The material presented comes from the entomological collection of Eugen Worell preserved in the Natural History Museum in Sibiu. The 6646. three specimens were collected during the years 1900-1958 by Eugen Worell from Transylvania, around Sibiu specifically from the Forest Grove area of Sibiu. After consulting the collection, the determination was made after the copyright material, some species being updated bibliographic material and works by Koch M.(1991), Popescu-Gorj A.(1980), Laszlo Rakosy (200), and reference works in Romania, which includes Catalog butterfly Laszlo Rakosy, Marian Goia, Zoltan Kovacs (2003).

After studying and inventorying the Collection of Eugene Worell was prepared following list is included only species systematically collected from Forest "Dumbrava Sibiu":

SYSTEMATIC LIST OF SPECIES IN
THE COLLECTION OF EUGEN
WORELL MACROLEPIDOPTERE
COLLECTED FROM FOREST
"DUMBRAVA SIBIULUI"

CLASA INSECTA
(HEXAPODA)*

Order LEPIDOPTERA

SupraFamily BOMBYCOIDEA

Family LASIOCAMPIDAE

Genus *Malacosoma* Hübner, [1820]

(sin. *Trichodia* Stephens, 1827; *Clisiocampa* Curtis, 1828)

1. *Malacosoma neustria* Linnaeus, 1758: (18.VII.1955)

FAMILY DREPANIDAE

Genus *Drepana* Schrank, 1802

(*Drepania* Hübner, [1819]; *Syssaura* Hübner, [1819])

2. *Drepana falcataria* Linnaeus, 1758: (1 ♂ 21.V. 1939; 2 ♀♀ 1.VI.1938)

Family SPHINGIDAE

Genus *Acherontia* Laspeyres, 1809

(sin. *Brachyglossa* Boisduval, [1828])

3. *Acherontia atropos* Linnaeus, 1758: (2♂♂ 10.VIII.1938)

Genus *Hyloicus* Hübner, [1819]

4. *Hyloicus pinastri pinastri* Linnaeus, 1758: (6♂♂ 15.VIII.1938)

Genus *Deilephila* Laspeyres, 1809

5. *Deilephila porcellus* Linnaeus, 1758: (2♂♂ 15.V.1938)

Family ARCTIIDAE

Genus *Setina* Schrank, 1802

(*Endrosa* Hübner, [1819]; *Philea* Zetterstedt, [1839])

6. *Setina irrorella* Linnaeus, 1758: (2♂♂, 2.VII.1932; 2♂♂ și 2♀♀, 8.VIII.1940)

Genus *Eilema* Hübner, [1819]

(sin. *Systropha* Hübner, [1819]; *Piesta Billberg*, 1820; *Ilema* Hampson, 1900; *Colinia Agenjo*, 1977, nec *Cossmann*, 1906, nec *Nuttall*, 1832)

7. *Eilema complana* Linnaeus, 1758: (1 ex.; 20.VI.1953)

Genus *Atolmis* Hübner, [1819]

(*Gnophria* Stephens, 1829)

8. *Atolmis rubricollis* Linnaeus, 1758: (1 ex.; 13.VI.1938)

Genus *Cybosia* Hübner, [1819]

(sin. *Ecteina* Rambur, 1866)

9. *Cybosia mesomella* Linnaeus, 1758: (1 ♂, 2.VI.1932; 5♂♂, 7.VI.1945, 1 ♀ 8.VI.1938)

Genus *Miltocrista* Hübner, [1819]

(*Calligenia* Duponchel, 1844)

10. *Miltocrista miniata* Forster, 1771: (1 ♂ 6.VII.1953; 1 ♀ 6.VIII.1939; 2 ♀♀, 12.VIII.1940)

Genus *Spilosoma* Curtis, 1825
(*Spilarctia* Butler, 1875)

11. *Spilosoma menthastris* Denis &

Schiffermüller, 1775: (2♂♂, 15.V.1938)

Genus *Callimorpha* Latreille, 1809

(*Euplagia* Hübner, 1820; *Panaxia* Tams, 1939)

12. *Callimorpha quadripunctaria* Poda, 1761: (16.V.1939, 10.VI.1945; 13.VI.1938, 27,28.VII.1953, 17.VIII.1953)

Family Ctenuchidae

(sin. SYNTOMIDAE ; AMATIDAE)

Genus *Syntomis* Ochsenheimer, 1808

(sin. *Glaukopis* Hübner, [1809], nec *Gmelin*, 1788; *Amata* auct.)

13. *Syntomis phegea orientalis* Daniel, 1951: (2 ex.; 7.VII.1908, 9.VII.1907)

Family NOCTUIDAE

Genus *Agrotis* Ochsenheimer, 1816

(sin. *Scotia* Hübner, [1821]; *Agronomia* Hübner, [1821]; *Georyx* Hübner, [1821];

Noctua Boisduval, 1828, nec Linnaeus, 1758; *Psammophila* Stephens, 1850)

14. *Agrotis segetum* Denis & Schiffermüller, 1775: (21.VIII.1938)

Family HESPERIIDAE

Genus *Carcharodus* Hübner, 1819

(sin. *Spilothyrus* Duponchel, 1835;

Reverdinus Ragusa, 1919; *Lavatheria* Verity, 1940)

15. *Carcharodus laevataerae laevataerae*

Esper, 1783: (6♂♂ 20.V.1953; 3

♂♂ 6.VII.1953; 1 ♂ 27.VII.1952)

16. *Carcharodus laevataerae laevataerae*

Esper, 1783: (6♂♂ 20.V.1953; 3

♂♂ 6.VII.1953; 1 ♂ 27.VII.1952)

Genus *Hesperia* Fabricius, 1793

(sin. *Pamphila* Fabricius, 1807; *Urbicola* Tutt, 1905; *Augiades* auct.)

17. *Hesperia comma comma* Linnaeus, 1758 : (1.IX.1939)

Family P A P I L I O N I D A E

- Genus *Papilio* Linnaeus, 1758
(sin. *Pterourus* Scopoli, 1777; *Aernauta* Berge, 1842)
- 18. *Papilio machaon machaon*** Linnaeus, 1758 : (1♂ 17.V.1939; 9.VII.1904; 1♂ 25.VII.1939)
- Genus *Iphiclides* Hübner, 1819
- 19. *Iphiclides podalirius podalirius*** Scopoli, 1763 : (1♀ 27.V.1925)
- Genus *Colias* Fabricius, 1807
(sin. *Zerene* Hubner, [1819]; *Euryalus* Horsfield, nec. Rafinesque, 1815)
- 20. *Colias crocea crocea*** Geoffroy in Fourcroy, 1785
(sin. *C. edusa* Fabricius, 1787):
(23♂♂, 2 ex. 2.VIII; 6.VIII; 3 ex. 9.VIII; 2 ex. 11.VIII; 7 ex. 18.VIII; 22.VIII; 26.VIII; 18.IX.1953)
- 21. *Colias crysotheme*** Esper, 1780 : (8.IX.1947)
- Genus *Gonepteryx* Leach, [1815]
(sin. *Rhodocera* Duponchel & Leconte, [1830]; *Earina* Speyer, 1839; *Goniapteryx* Westwood, 1840 nec. Perty, 1833)
- 22. *Gonepteryx rhamni transiens*** Verity, 1913 : (13♀♀, 7.IV; 16.IV; 2 ex. 1.V; 3 ex. 5.V; 26.V; 29.VI.1948)
- Family N Y M P H A L I D A E**
- Genus *Apatura* Fabricius, 1807
(sin. *Aeola* Billberg, 1820)
- 23. *Apatura ilia ilia*** Denis & Schiffermüller, 1775 : (1♀ 1.VII.1950)
- Genus *Nymphalis* Kluk, 1802
(sin. *Scudderia* Grote, 1873, nec. Stål, 1873; *Euvanessa* Scudder, 1889)
- 24. *Nymphalis xanthomelas*** Denis & Schiffermüller, 1775 : (9.VI.1947)
- Genus *Inachis* Hübner, [1819]
- 25. *Inachis io io*** Linnaeus, 1758 : (23.VI.1953)
- Genus *Vanessa* Fabricius, 1807
(sin. *Pyrameis* Hübner, [1819])
- 26. *Vanessa atalanta atalanta*** Linnaeus, 1758 : (5♀♀, 10.V; 27.V; 2 ex. 15.VII; 15.VIII.1951)
- 27. *Vanessa cardui*** Linnaeus, 1758 : (1.IX.1952)
- Genus *Aglaia* Dalman, 1816
(sin. *Ichnusa* Reuss, 1939)
- 28. *Aglaia urticae urticae*** Linnaeus, 1758 : (4.VI.1941)

Genus *Polygonia* Hübner, [1819]

(sin. *Eugonia* Hübner, [1819])

- 29. *Polygonia c-album c-album*** Linnaeus, 1758 : (17.VIII.1953; 27.IX.1953)

Genus *Argynnis* Fabricius, 1807

SubGenus *Mesocatidia* Reuss, 1926

- 30. *Argynnis (Mesocatidia) aglaja aglaja*** Linnaeus, 1758

(sin. *M. charlotta*)

Haworth, 1803): (2.VII.1953; 13.VII.1953; 6, 10.VIII.1938)

SubGenus *Fabriciana* Reuss, 1920

- 31. *Argynnis (Fabriciana) addipe addipe***

Denis & Schiffermüller, 1775

(12.VII.1938; 16.VII.1956; 12.VIII.1938; 25, 29.VIII.1938; 25.VIII.1940; 29.VIII.1948)

- 32. *Argynnis (Fabriciana) niobe niobe***

Linnaeus, 1758: (2.VIII.1938)

SubGenus *Argynnis* Fabricius, 1807

- 33. *Argynnis (Argynnis) paphia paphia*** Linnaeus, 1758: (29.VI.1948; 22.VII.1953; 31.VII.1952; 17.VIII.1953)

Genus *Pandoria* Warren, 1942

- 34. *Pandoria pandora pandora*** Denis & Schiffermüller, 1775

(sin. *P. maja* Cramer, 1775)

24.VII.1953; 17.VIII.1953; 18.IX.1953

Genus *Issoria* Hübner, [1819]

(sin. *Rathora* Moore, [1900])

- 35. *Issoria lathonia lathonia*** Linnaeus, 1758

(sin. *Argynnis lathonia* Linnaeus, 1758):

(25.VIII.1938)

Genus *Melitaea* Fabricius, 1807

(sin. *Schoenis* Hübner, [1819]; *Cinclidia*

Hübner, [1819]; *Didymaformis*

Verity, 1950; *Melicta* Billberg, 1820, parti)

- 36. *Melitaea athalia athalia*** Rottenburg, 1775: (1♀, 16.VI.1953; 3♀♀, 2.VII.1953)

- 37. *Melitaea didyma didyma*** Esper, [1779]:

(1♀, 10.VI.1954; 2♀♀, 10.VII.1938, 1948; 1♂, 16.VII.1953)

Family S A T Y R I D A E

Genus *Melanargia* Meigen, [1828]

(sin. *Agapetes* Billberg, 1820, nom. reject. 1956)

- 38. *Melanargia galathea scolis*** Fruhstorfer, 1917: (4♀♀, 10.VI.1948; 2♂♂, 25.VI.1938)

Genus *Pararge* Hübner, [1819]

- 39. *Pararge (Pararge) aegeria tircis*** Butler, 1867: (16.V.1948; 22.V.1938; 6.VIII.1939)

SubGenus *Lasiommata* Humphreys & Westwood, 1841

- 40. *Pararge (Lisiommata) megera megera***
Linnaeus, 1758: (4♂♂1.V; 8.V; 15.V;
16.V.1939)
Genus *C a e n o n y m p h a* Hübner,[1819]
(sin. *Chortobius* Dunning & Pickard, 1858;
Sicca Verity,1953)
- 41. *Caenonympha pamphilus pamphilus***
Linnaeus, 1758: (12.VIII.1940)
- 42. *Caenonympha arcania arcania***
Linnaeus, 1761 (sin. *C. amyntas* Poda,
1761): (15.VI.1938; 3♀♀, 1.VII.1954; 2♀♀,
6.VII.1953)
- SubFamily LYCAENINAE**
Genus *L y c a e n a* Fabricius, 1807
(sin. *Heodes* Dalman, 1816; *Chrysophanus*
Hübner, 1816, *Palaeochrysophanus*
Verity,1943;)
- 43. *Lycaena phlaeas* Linnaeus, 1761:**
(4♂♂,24.VII.1952; 2♂♂, 1♀, 25.VII.1938;
26.VII.1953)
- 44. *Lycaena virgaureae virgaureae***
Linnaeus, 1758: (1♂,27.VII.1953)
- 45. *Lycaena argiades* Pallas,1771:**
(1♂,10.VII; 1♀, 8.VII.1938; 2♀♀,
8.VIII.1940)
- SubFamily PLEBEJINAE**
Genus *Glaucopsyche* Scudder, 1872
(sin.*Apelles* Hemming,1931)
- 46. *Glaucopsyche alexis alexis* Poda, 1761**
(sin. *Lycena cyllarus* Rottenburg,
1775): (17.VII.1940; 19,20.VI.1938)
Genus *M a c u l i n a* von Ecke, 1915
(sin.*Argus* Boisduval, [1832], nec
Scopoli,1763)
- 47. *Maculinea alcon* Denis &**
Schiffermüller,1775 : (12.VIII.1940)
- 48. *Maculinea arion* Linnaeus, 1758: (3♂♂,**
12.VIII.1840)
Genus *P o l y o m m a t u s* Latreille,1804
- 49. *Polyommatus icarus icarus* Rottenburg,**
1775: (27.VII,2.X.1952)
Genus *P h i l o t e s* auct.
- 51. *Philotes baton baton* Bergsträsser, 1779:**
(1♂șii 1♀,14.V; 21.V.1939; 27.VII.1943;
2♂♂,28.VII.1938)

RESULTS AND DISCUSSIONS

Data processing and their centralization in the form of systematic list of species collected in the past Macrolepidoptere perimetral existing forest and now as a museum collection was the purpose of this paper. By centralizing alert fauna species in the forest since 1900-1958, which will add the personal collections are studying a further communication, this paper updates the state of knowledge of this group of insects around Sibiu and is aimed at achieving a "Red List" endangered and extinct species in the forest area of Sibiu Grove. Also on bibliography, add new data on these species Macrolepidoptere area around Sibiu.

The paper contains a systematic list of species collected Macrolepidoptera Forest Grove area of Sibiu, which are grouped into 11 Families 50 species and 184 copies respectively. For each species, besides the systematic in Gender and Family, are the year, month and day of collection.

The oldest copy coming from Sibiu and Forest Grove in the collection of Eugene Worel was collected in 1907 and is *Syntomis phegea orientalis* Daniel, 1951: (2 ex.; 7.VII.1908, 9.VII.1907).

CONCLUSIONS

The high level of diversity of Lepidoptera fauna in Romania is reflected not only by different published studies, but also by the collections kept in the Natural History Museum in Sibiu of Romania. Collection of Eugene Worell with other collections of Lepidoptera is a valuable source of documentation for current and future research. You must remember once again that the vast majority of the

thousands of collection of this data collection are unpublished. Therefore in this paper we have continued research work, helping their publication and thus being able to get to reach all those interested in this group of insects. Beside common species, the collection of Lepidoptera preserved in Natural History Museum also contains rare and endemic species for Romanian fauna. These taxa are very important from scientifical and biogeographical point of view.

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