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Author-formatted, not peer-reviewed document posted on 14/12/2022

DOI: <https://doi.org/10.3897/arphapreprints.e98740>

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The biodiversity of the nymphalid family (Insect, Lepidoptera): species collected in Romania's fauna between 1887-1984

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Abstract

Background

This paper complements the data published thus far about species of the nymphalid family with data collected in Romania's eight regions between 1887–1984 and elsewhere in Europe (Austria, Croatia, the Republic of Moldova, and Serbia), including the date and the site of original collection. For the first time, this research presents the collecting information of the species held in the entomological collection of the Museum of Natural History in Sibiu. It identifies the species of the nymphalid family in six of the museum's lepidoptera collections. These collections are of extraordinary interest not least because they are associated with natural scientists of European renown such as Daniel Czekelius, Eugen Worell, Viktor Weindel, Rolf Weirauch, Heinrich Hann von Hannenheim, and Eckbert Schneider. The analysis, cataloguing, centralization, and updating of the nomenclature resulted in a number of 1.865 specimens from 49 species and fifteen genera (of the 90 referenced in Romania's fauna): *Aglais*, *Apatura*, *Araschnia*, *Argynnis*, *Brenthis*, *Boloria*, *Euphydryas*, *Inachis*, *Issoria*, *Libythea*, *Limenitis*, *Melitaea*, *Neptis*, *Nymphalis*, *Polygonia*.

New information

Data published in a previous article adds 101 specimens from the *Vanessa* genus. Most species originate regionally from the 9 counties of Transylvania followed by Oltenia and Moldova (3 counties each), Banat and Dobrogea (2 counties each), Crişana, Satu Mare, and Muntenia (1 county each), and the capital Buchrest. The species presented in this paper also include the extinct taxon *Polygonia egea*, Eugen Worrell collection and two species that are endemic to Romania: *Melitaea retyezatica*, Daniel Czekelius collection and *Boloria pales caprathomeridionalis*, both Viktor Weindel collection.

Keywords

Butterfly, conservation, collections, endemic, Museum of Natural History in Sibiu

Introduction

Tracing the historical evolution of butterflies from the nymphalid family requires updating the information on the species' long-term collection. Updating this information allows ascertaining in how far environmental and atrophic factors (Fox et al. 2019, Choi et al. 2021) have determined the temporal and spatial abundance and dominance of these species (Ștefanescu et al. 2021). In Romania, as in other European countries, the entomological material held at natural history museums is a valuable resource for researching declining or extinct populations of butterflies. In Romanian museums, the data collected throughout time originates from the entire country and the world and was obtained by exchanges between specialists or from collectors. The data pertaining to specimens of the nymphalid family thus offers information about the collection sites (Burnaz 2002, Capușe and Kovács 1987, Chimișliu 1989, Chimișliu 2010, Chimișliu 2006, Chimișliu 2011, Chimișliu 2012, Ciochia and Barbu 1980, Marcu and Rákósy 2002, Popescu-Gorj 1960, Popescu-Gorj 1964, Popescu-Gorj and Drăhăia 1964, Stănescu 2005). Since the nineteenth century, fauna research in Transylvania has been indebted to the work of numerous professional and amateur entomologists with great love for nature. The following natural scientists founded the collections studied in this paper and analyzed and determined the preserved material, thus bringing an important contribution to lepidopterae research: Daniel Czekelius (1856-1938, Sibiu); Arnold Müller (1884-1937, Sibiu); Eugen Worell (1884-1961, Sibiu), Viktor Weindel (1887-1966, Sibiu); Heinrich Hann von Hannenheim (1895-1971, Sibiu), Rolf Weirauch (1906-1984, Sibiu), Alexei Alexinschi (1899-1966, Iași); Hans Rebel (1861-1940, Viena); László Diószeghy (1877-1942, Arad); Aurelian Popescu-Gorj (1914-1997, București) and Eckbert Schneider (1927) (Székely 2008). A part of the Brukenthal National Museum Sibiu, the Natural History Museum opened in 1895. Owing to its priceless holdings, the Natural History Museum can be currently considered an archive of lepidoptera biodiversity in Transylvania. It therefore plays a significant role in Romanian and European entomological research.

The museum was founded by German-speaking Transylvanian-Saxon entomologists who collected material in the city of Sibiu, its surroundings, neighboring regions and other Transylvanian locations (Czekelius 1897, Czekelius 1898, Worell 1951, Székely 1996, Székely 2003, Székely 2004) as well as in other geographical regions of Romania. Throughout time, several generations of natural scientists have evaluated and continue to evaluate the data held in these collections (Caradja 1931, Moise 2011a, Moise 2011b, Moise 2011c, Chimișliu 1989, Niculescu 1965, Rákósy et al. 2003, Rákósy 2013, Schneider 1984, Schneider 1996). The lepidoptera collections are of central importance to the Natural History Museum's patrimony. To date, partial collecting data of the species have been published for the Daniel Czekelius, Eugen Worell, Viktor Weindel, Rolf

Weirauch, Heinrich Hann von Hannenheim, and Eckbert Schneider collections (Czekelius 1898, Stancă-Moise 2017, Stancă-Moise 2018, Stancă-Moise 2019, Stancă-Moise 2020, Stancă-Moise 2021, Stancă-Moise 2022, Török and Cuzepan 2014). The current paper evaluates unpublished data of specimens from the nymphalid family in order to assess this family's historical distribution in Romanian and European fauna.

Materials and methods

The material evaluated in this paper consists of specimens collected in Romania's eight regions (BT, CR, DB, OT, MT, SM, MD, and TR) between 1887–1984. The analysis has also identified specimens collected in Austria, Germany, Croatia, Switzerland, the Republic of Moldova, and Serbia. The species' nomenclature was reviewed by using (Rákósy 2013, Rákósy et al. 2003, Székely 2008) in conformity with the Fauna Europaea taxonomic system (Lampert 1923, Karsholt and Razowski 1996, Van Swaay and Warren 1999). Each species is listed indicating the examined material, collecting data (in the chronological order of years, months, and days), number of specimens, collection sites (including the Romanian county and region), and name of the collector. Question marks are used in cases where information is missing, incomplete, or the writing could not be deciphered. All data originates from museum labels; Romanian place names originally listed in German have been replaced with contemporary Romanian ones.

Abbreviations:

Collectors: Daniel Czekelius (DC), Eugen Worell (EW), Viktor Weindel (VW), Rolf Weirauch (RW), Heinrich Hann von Hannenheim (HH), Eckbert Schneider (ES).

Romanian regions: Banat (BT), Crișana (CR), Oltenia (OT), Muntenia (MT), Moldova (MD), Dobrogea (DB), Satu Mare (SM), Transilvania (TR)

Romania's counties: Arad (AR), Alba (AB), Bistrița-Năsăud (BN), Brașov (BV), Caraș-Severin (CS), Cluj (CJ), Constanța (CT), Covasna (Cv), Galați (GL), Gorj (GJ), Harghita (HR), Hunedoara (HD), Ilfov (IF), Maramureș (MM), Mehedinți (MH), Mureș (MS), Neamț (NT), Satu Mare (SM), Sibiu (SB), Timiș (TM), Tulcea (TL), Vâlcea (VL), Vrancea (VN), București (B).

Degrees of endangerment: Extinct (EX), Critically endangered (CR), Endangered (EN), Vulnerable (VU), Near threatened (NT), Least concern (LC), Endemic (EN).

Nymphalidae collected in Romania's fauna between 1887-1984

Libythea celtis (Laicharting, 1782)

Conservation status: EN

Distribution: Ro

Notes: ES

***Argynnis paphia* subsp. *paphia* (Linnaeus, 1758)**

Conservation status: NT

Distribution: Ro, Austria, Republica Moldova

Notes: DC, EW, VW, ES

***Argynnis paphia* f. *valensina* [Esper, 1798]**

Conservation status: NT

Distribution: Ro, Austria

Notes: EW

***Argynnis pandora* ([Denis & Schiffermüller], 1775)**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, VW, RW, ES

***Argynnis pandora* subsp. *dacica* Hormuzaki, 1892**

Conservation status: Endemic

Distribution: Ro

Notes: EW

***Argynnis aglaja* (Linnaeus, 1758)**

Conservation status: LC

Distribution: Ro

Notes: DC, EW, VW, RW

***Argynnis adippe* (Denis & Schiffermüller, 1775)**

Conservation status: NT

Distribution: Ro

Notes: DC, EW, VW,

***Argynnis niobe* f. *cleodoxa* Esper 1789**

Conservation status: NT

Distribution: Ro

Notes: VW

***Argynnis niobe* subsp. *niobe* (Linnaeus, 1758)**

Conservation status: NT

Distribution: Ro, Austria

Notes: DC, EW, VW, ES

***Argynnis niobe* var. *pelopia* Borkhausen, 1788**

Conservation status: NT

Distribution: Ro

Notes: DC

***Argynnis laodice* (Pallas, 1771)**

Conservation status: EN

Distribution: Ro

Notes: DC, EW, VW,

***Argynnis latonia* var. *hungarica* Aigner-Abafi, 1906**

Conservation status: LC

Distribution: Ro

Notes: DC

***Issoria lathonia* (Linnaeus, 1758)**

Conservation status: LC

Distribution: Ro

Notes: DC, VW, HH, ES

***Brenthis ino* Rottemburg, 1775**

Conservation status: VU

Distribution: Ro

Notes: DC, VW

***Brenthis daphne* ([Denis & Schiffermüller], 1775)**

Conservation status: VU

Distribution: Ro

Notes: DC, VW, ES

***Brenthis hecate* ([Denis & Schiffermüller], 1775)**

Conservation status: VU

Distribution: Ro

Notes: VW, HH, ES

***Boloria euphrosyne* (Linnaeus, 1758)**

Conservation status: VU

Distribution: Ro

Notes: DC, VW, HH, ES

***Boloria selene* ([Denis & Schiffermüller], 1775)**

Conservation status: NT

Distribution: Ro

Notes: DC, VW, HH, ES

***Boloria dia* subsp. *dia* (Linnaeus, 1767)**

Conservation status: LC

Distribution: Ro

Notes: DC, VW, HH, ES

***Boloria pales* subsp. *caprathomeridionalis* ([Denis & Schiffermüller], 1775) Crosson & Popescu-Gorj**

Conservation status: Endemic

Distribution: Ro

Notes: VW, HH

***Inachis io* (Linnaeus, 1758)**

Conservation status: LC

Distribution: Ro, Republica Moldova

Notes: DC, EW, VW, HH, RW, ES

***Aglais urticae* (Linnaeus, 1758)**

Conservation status: NT

Distribution: Ro, Republica Moldova

Notes: DC, EW, VW, RW, ES

***Polygonia c-album* (Linnaeus, 1758)**

Conservation status: NT

Distribution: Ro, Republica Moldova

Notes: DC, EW, VW, HH, RW, ES

***Polygonia egea* (Cramer, 1775)**

Conservation status: EX

Distribution: Croatia

Notes: EW

***Araschnia levana* (Linnaeus, 1758)**

Conservation status: NT

Distribution: Ro, Germania

Notes: DC, EW, VW, HH, RW, ES

***Araschnia levana* f. *porima* Ochsenheimer, 1807**

Conservation status: NT

Distribution: Ro

Notes: DC

***Araschnia levana* f. *prosa* Linnaeus, 1758**

Conservation status: NT

Distribution: Ro

Notes: DC, EW, VW

***Araschnia levana* f. *intermedia* Stichel, 1906**

Conservation status: NT

Distribution: Ro

Notes: DC,

***Nymphalis antiopa* (Linnaeus, 1758)**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, VW, HH, RW, ES

***Nymphalis polychloros* (Linnaeus, 1758)**

Conservation status: EN

Distribution: Ro

Notes: DC, EW, VW, RW, ES

***Nymphalis xanthomelas* (Esper, 1781)**

Conservation status: CR

Distribution: Ro

Notes: DC, EW, VW, RW

***Nymphalis vaualbum* ([Denis & Schiffermüller], 1775)**

Conservation status: CR

Distribution: Ro

Notes: DC, VW, RW

***Euphydryas maturna* (Linnaeus, 1758)**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, ES

***Euphydryas orientalis* (Herrich-Schaffer, [1851])**

Conservation status: CR

Distribution: Ro

Notes: RW

***Euphydryas aurinia* subsp. *aurinia* (Rottemburg, 1775)**

Conservation status: EN

Distribution: Ro

Notes: DC, EW, VW, ES

***Melitaea cinxia* subsp. *cinxia* (Linnaeus, 1758)**

Conservation status: NT

Distribution: Ro

Notes: DC, EW, VW, HH, RW, ES

***Melitaea phoebe* ([Denis & Schiffermüller], 1775)**

Conservation status: NT

Distribution: Ro, Republica Moldova

Notes: DC, EW, VW, RW, ES

***Melitaea trivia* subsp. *trivia* ([Denis & Schiffermüller], 1775)**

Conservation status: NT

Distribution: Ro, Republica Moldova

Notes: DC, EW, VW, ES

***Melitaea didyma* subsp. *didyma* (Esper, 1778)**

Conservation status: LC

Distribution: Ro, Austria

Notes: DC, EW, VW, HH, RW

***Melitaea didyma* subsp. *alpina* Staudinger, 1861**

Conservation status: VU

Distribution: Ro

Notes: EW

***Melitaea didyma* subsp. *occidentalis* Staudinger, 1861**

Conservation status: VU

Distribution: Ro

Notes: RW

***Melitaea didyma* subsp. *meridionalis* Staudinger, 1870**

Conservation status: VU

Distribution: Ro

Notes: EW

***Melitaea didymoides* Eversmann, 1847**

Conservation status: VU

Distribution: Republica Moldova

Notes: EW

***Melitaea dictynna* Esper, 1778**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, RW

***Melitaea aurelia* subsp. *aurelia* Nickerl, 1850**

Conservation status: VU

Distribution: Ro, Serbia

Notes: DC, EW, VW, HH, RW, ES

***Melitaea athalia* subsp. *athalia* (Rottemburg, 1775)**

Conservation status: NT

Distribution: Ro, Republica Moldova

Notes: DC, EW, VW, HH, RW, ES

***Melitaea athalia* subsp. *mehadiensis* Gerhard, 1822**

Conservation status: NT

Distribution: Ro

Notes: EW, RW

***Melitaea britomartis* Assmann, 1847**

Conservation status: NT

Distribution: Ro

Notes: RW

***Melitaea diamina* subsp. *alpestris* Fruhstorfer, 1917**

Conservation status: NT

Distribution: Ro

Notes: DC

***Melitaea nana* Rehfons, 1910**

Conservation status: VU

Distribution: Ro

Notes: DC

***Melitaea parthenie* Godart, 1822**

Conservation status: VU

Distribution: Ro

Notes: DC, EW

***Melitaea parthenie* var. *varia* Meyer-Dür, 1851**

Conservation status: VU

Distribution: Austria

Notes: EW

***Melitaea retzevatica* Diöszeghy, 1930**

Conservation status: Endemic

Distribution: Ro

Notes: DC

***Melitaea asteria* Freyer, 1828**

Conservation status: VU

Distribution: Ro

Notes: EW

***Melitaea athalia* subsp. *dictynnoides* Hormuzaki, 1898**

Conservation status: NT

Distribution: Ro

Notes: DC

***Limenitis populi* (Linnaeus, 1758)**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, VW, HH, RW

***Limenitis populi* var. *tremulae* Esper, 1800**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, VW, RW

***Limenitis camilla* subsp. *camilla* (Linnaeus, 1964)**

Conservation status: VU

Distribution: Ro

Notes: VW, RW

***Limenitis sibilla* Linnaeus, 1769**

Conservation status: VU

Distribution: Ro, Swiss

Notes: DC, EW,

***Limenitis reducta* subsp. *reducta* Staudinger, 1901**

Conservation status: EN

Distribution: Ro

Notes: RW

***Neptis aceris* sensu Lhomme, 1924**

Conservation status: VU

Distribution: Ro

Notes: DC, HH

***Neptis rivularis* (Scopoli, 1763)**

Conservation status: NT

Distribution: Ro

Notes: EW, VW, RW, ES

***Neptis rivularis* subsp. *ludmila* Nordmann, 1851**

Conservation status: NT

Distribution: Ro

Notes: VW

***Neptis sappho* Pallas, 1771**

Conservation status: VU

Distribution: Ro

Notes: VW, RW, ES

***Neptis lucilla* ([Denis & Schiffermüller], 1775)**

Conservation status: NT

Distribution: Ro

Notes: DC, EW, HH, RW, ES

***Apatura ilia* subsp. *ilia* ([Denis & Schiffermüller], 1775)**

Conservation status: VU

Distribution: Ro

Notes: DC, EW, VW, RW

***Apatura clytie* ([Denis & Schiffermüller], 1775)**

Conservation status: VU

Distribution: Ro

Notes: DC, VW, RW

Apatura ilia* var. *eos* Rossi, 1794*Conservation status:** VU**Distribution:** Ro**Notes:** DC, EW, HH, ES***Apatura iris* (Linnaeus, 1758)****Conservation status:** VU**Distribution:** Ro**Notes:** DC, EW, VW, HH, ES***Apatura metis* Freyer, 1829****Conservation status:** VU**Distribution:** Ro**Notes:** EW**Discussion**

The analysis of the six collections of lepidoptera under scrutiny in this article focused on 1,865 specimens collected between 1887–1984 and identified 49 species and subspecies of the 90 mentioned in Romania's fauna (Rákossy 2013). Earlier data regarding the *Vanessa* genus is based on 101 specimens, 52 specimens of *V. atalanta* and 49 specimens of *V. cardui* (Stancă-Moise 2022). The species' listing for each collection (Fig. 1) includes the following results: Daniel Czekelius's collection, 14 genera and 49 species (Table 1), Eugen Worrell's collection, 11 genera and 41 species (Table 2), Viktor Weindel's collection, 14 genera and 40 species (Table 3), Heinrich Hann von Hannenheim's collection, 11 genera, 19 species (Table 4), Rolf Weyrauch's collection, 11 genera and 28 species (Table 5), and Eckbert Schneider's collection with 14 genera and 30 species (Table 6). Daniel Czekelius's collection of lepidoptera is the oldest with specimens collected between 1887–1934 in the regions SM and TR, Sibiu County, and nearby locations. This collection consists of 14 genera and 49 species represented by a number of 271 specimens (Fig. 1) and is thus the most complex collection regarding the species' biodiversity. The oldest specimens are *Boloria selene* and *Nymphalis polychloros* and were collected 135 years ago. This collection also includes an endemic species, *Melitaea retyezatica* Diószeghy, 1930, represented by nine specimens collected by László Diószeghy in the Retezat Mountains (Southern Carpathians) between 1919 and 1922. The collectors specified on the labels are Daniel Czekelius, Béla Kiss, Arnold Müller, László

Diószeghy, Friedrich Deubel, Paul Tiltscher, Miklos Tútscher, Kimakowics, Adalbert Prall, Karl Alberti, Karl Petri, and Vincenz Kollar. The species in this collection represent the following degrees of endangerment: 18 taxons VU- 36,74%, 18 taxons NT- 36,74%, 6 taxons LC- 12,24%, 4 taxons EN-8,16%, 2 taxons CR-4,08%, and one endemic taxon, 2,04%.

Table 1

Eugen Worell's collection consists of 394 specimens of 11 genera and 42 species collected between 1888–1959 (Fig. 1). The species originate from Romania's five regions (BT, DB, OT, MD, MT, and TR) and other European countries (Austria, Croatia, Germany, the Republic of Moldova, and Switzerland). The oldest specimen is of the *Nymphalis polychloros* species and was collected in 1888. The collectors listed on the labels are Eugen Worell, Daniel Czekelius, László Diószeghy, Alexei Alexinschi. The results of the endangerment degree analysis of these species are: one species EX-2,38%, *Polygonia egea*, from the site Pula, Istria, Croatia, one species CR-2,38%, 3 species EN-7,15%, 19 species VU-45,23%, 15 species NT-35,71%, and 3 species LC-7,15% (Table 2).

Viktor Weindel's collection contains 385 specimens of 14 genera and 40 species of butterflies of the nymphalid family (Fig. 1). They were collected in the regions OT and TR between 1903–1958, from various sites in Sibiu County, and the Făgăraș Mountains. The oldest specimen was collected in 1903. The collection also contains an endemic species, *Boloria pales* ([Denis&Schiffermüller], 1775) *caprathomeridionalis* Crosson et Popescu-Gorj, that was collected in the Faragas Mountains. Viktor Weindel is the collector listed on the labels. The endangerment level of the specimens is the following: 2 species CR-5%, 3 species EN-7,5%, 15 species VU-37,5%, 15 species NT-37,5% and 5 species LC-12,5% (Table 3).

The fewest specimens are found in Heinrich Hann von Hanneenheim's collection consisting of 117 specimens distributed in 11 genera and 19 species (Fig. 1). The oldest specimen is *Bentis hecates* collected in 1928. The species were collected in BT, DB, and TR, and were determined by the collector himself whose name can be found on all labels. Their endangerment level is as follows: 9 species VU-47,37%, 6 species NT-31,58%, and 4 species LC-21,05% (Table 4).

Rolf Weihrauch's collection contains 258 specimens distributed in 11 genera and 28 species (Figure 1) collected from 1922 to 1978. The oldest specimen is *Euphydryas orientalis* collected in 1922. The information on the labels is unreadable. The species were collected in BT, DB, OT, MD, MT, and TR from the Southern Carpathians as well as in Austria. All species were determined by the collector whose name appears on all labels. The analysis of their endangerment level is as follows: 3 taxons CR-10,7%, 2 taxons EN-7,14%, 11 taxons VU-39,28%, 10 taxons NT-35,73%, and 2 taxons LC-7,14% (Table 5).

The newest is Eckbert Schneider's collection. It contains 440 specimens of 14 genera and 30 species (Fig. 1) collected between 1949 and 1984 in BT, CR, DB, OT, MD, and TR as

well as the Western Carpathians. The oldest specimen, was collected in 1949 and is the only *Lybetea celsis* species held by the museum. The endangerment level of the collection's specimens is as follows: 3 specimens EN-10%, 10 specimens VU-33,33%, 12 specimens NT-40%, and 5 specimens LC-16,67% (Table 6).

Fig. 1 represents data pertaining to genus diversity, species and existing specimen number present in each collection. The oldest collection (DC) displays the highest diversity of species. This collection contains 14 genera and 49 species. It is followed in chronological order by EW with 42 species and VW with 40, confirming that, at that time, natural scientists were interested in learning more about and studying the biodiversity of butterflies in SB, the neighboring localities as well as in other TR sites and Romanian regions. The species from the more recent collections (HH and RW) contain a lesser number of genera and species but include more specimens from the DB region. The newest collection (ES) re-confirms the presence of 30 butterfly species of the Nymphalid family captured in six Romanian regions (TR, BT, CR, MD, DB and OT) that are also represented by the largest number of collected specimens.

To facilitate national and international comparison, Fig. 2 represents data referring to the distribution of species by IUCN endangerment numbers (Rákossy 2013), revealing that the majority of the species of all six collections are potentially endangered taxa (NT) followed by non-endangered (LC), vulnerable (VU), critically endangered (EN) extinct (EX), and endemic taxa.

Fig. 3 represents the percentages of the *Nymphalid* family's zoological categories. The highest value (52,30%) pertains to potentially endangered taxa followed by critically endangered (26,23%), non-endangered (14,80), endangered (4,59%), vulnerable 1,18% as well as extinct (0,16%) taxa.

By synthesizing the data referring to the six lepidoptera collections (DC, EW, VW, RW, HH, and ES), I identified 157 sites where the butterflies of the *Nymphalid* family were collected between 1887 and 1984. The species were collected in all of Romania's eight regions, from 23 counties and the capital of Bucharest, i.e., on 56,1% of Romania's territory. I designed a map based on this data (Fig. 4) that reflects the distribution of species in eight regions whose counties are listed by collector: (1-DC), 7 counties, BN, BV, CJ, CV, HR, MS, SB, all in the TR and SM regions; (2-EW), 9 counties, BV, CS, CT, GL, GJ, IF, MS, VL, SB, from five of Romania's regions: BT, DB, OT, MD si TR; (3-VW), 7 counties, AB, BN, BV, HR, NT, VL, SB, from three regions: MD, OT, and TR; (4-RW), 16 counties, BN, BV, CJ, CS, CT, CV, GL, GJ, HR, HD, IF, MH, VL, SB, TM and Bucharest, from 6 of Romania's regions: BT, DB, MD, MT, OT, TR and Bucharest; (5-HH), 6 counties, AB, BV, CS, CJ, HR, SB, from two of Romania's regions: BT și TR; (6-ES), 16 counties, AB, AR, BN, BV, CS, CJ, CT, GJ, HD, MH, MS, VL, SB, TM, TL, VN, from six of Romania's regions: BT, CR, DB, OT, MD, TR.

Fig. 5 represents the species collected in other European countries, namely Austria, Croatia, Switzerland, Germany, the Republic of Moldova, and Serbia.

Romania's territory has a surface of 237.500 km² that comprises a variety of geographic forms, from Alpine meadows to the Danube Delta's hydrological profile. They are populated by a diverse fauna of lepidoptera containing over 200 diurnal butterfly species. Romania's South, especially the South-East and South-West (BT and DB) is the region with the highest diversity of lepidoptera in the country (Székely 2008) and at the same time the Northern limit of the distribution of their Balkan species in Europe (Ștefanescu et al. 2013, Wildman et al. 2022). Cazanele Dunării, the Danube's gorge, connects the Carpathian and Balkan Mountains. This geological formation has facilitated the entry of Balkan-type mountainous-subalpine elements into Romania, as far as the Retezat Mountains, for instance *Melitaea retyezatica* Diöszeghy. Given that the Carpathian Mountains do not exceed 2,500 m in height, their butterfly fauna is characterized mostly by subalpine, boreo-alpine, and boreo-montane species (Székely 2008). Most endemic species have formed in the isolated, high regions of the Carpathian Mountains. They were analyzed and included in the collections as follows: *Melitaea retyezatica* Diöszeghy, 1930, and *Boloria pales* ([Denis&Schiffermüller], 1775) *caprathomeridionalis* Crosson et Popescu-Gorj. The Romanian Catalogue of Lepidoptera records the presence of 90 species of which the Nymphalids are distributed as follows: BT (78 species), CR (60 species), TR (78 species), SM (66 species), OT (73 species), MT (77 species), MD (68 species), and DB (62 species) (Rákossy 2013). I have identified 49 species in the collections, which represent 54,44% of the species in Romania's fauna. These species are distributed by counties as follows: BT with the counties (CS and TM); CR (AR); DB (CT and TL), MD (GL, NT, and VR); MT (IF); OT (GJ, MH, and VL); SM (SM), TR (AB, BN, BV, CV, CJ, HR, HD, MS, SB) and the capital Bucharest. Based on synthesizing the collection data and on previously published data on species of this family (Stancă-Moise 2021), the present article presents 16 genera and 1966 specimens of the Nymphalid family collected in Romania since 137 years ago.

The article illustrates the biodiversity of the *Nymphalid* family and their historical evolution in Romania and Europe, thus bringing an important historical, scientific, and biogeographic Council Council Directive 1992 contribution to the study of butterflies. With the earliest data from 1887, my research complements current scholarship on the presence, diversity, and distribution of the *Nymphalid* family in Romania until 1984. Alongside other rare, extinct, or endangered species (Fig. 3), the presence of *Nymphalid* species with various endangerment levels in the patrimony of the Natural History Museum Sibiu enhances the scientific value of the museum's collections and confirms their significance for ascertaining the biodiversity and distribution of the species throughout time. Future research will include digitizing the museum's butterfly collection to facilitate the access to the collected specimens for specialists searching for historical data on the species.

References

- Burnaz S (2002) Fauna de lepidoptere diurne (Lepidoptera, Rhopalocera) a Județului Hunedoara Romania. Considerații Ecologice Biologice și Zoogeografice Buletin Informativ al Societății Lepidopterologice Române 13: 41-67. [In Romanian].

- Capușe I, Kovács A (1987) Catalogul colecției de lepidoptere László Diószeghy de la Muzeul Județean Covasna. Sfântu Gheorghe. Institutul de Speologie „Emil Racoviță”. București, 400 pp. [In Romanian].
- Caradja A (1931) Beiträge zur Lepidopteroфаuna Grossrumäniens für Jahr 1930. Academia Română Membrii Secției de Științe București 3: 22. [In Romanian].
- Chimișliu C (1989) Colecția de lepidoptere "M. Peiu" conservată la Complexul Muzeal Județean Dolj Oltenia. Studii și Comunicări Științele Naturii Muzeul Olteniei Craiova 7-8: 163-187. [In Romanian].
- Chimișliu C (2006) Lepidoptera (Insecta, Lepidoptera) from Romania preserved in the "Ion Firu" Entomological Collection from the Oltenia Museum Craiova. Entomologica Romanica Cluj-Napoca 11: 55-69. [In Romanian].
- Chimișliu C (2010) New data regarding the diversity of the Nymphalidae family (Insecta: Lepidoptera) in the Oltenia fauna. România (I). Biodiversitatea și Managementul Insectelor în Romania 1: 47-62. [In Romanian].
- Chimișliu C (2011) New data regarding the diversity of the Nymphalidae family (Insecta: Lepidoptera) in the Oltenia fauna, România (I). Volumul de lucrări al Simpozionului „Biodiversitatea și Managementul Insectelor din România” Suceava48-63. [In Romanian].
- Chimișliu C (2012) Noi date privind diversitatea familiei Nymphalidae (Insecta: Lepidoptera) în fauna Olteniei, România. Buletinul Științific al Muzeului Național de Etnografie și Istorie Naturală a Moldovei 16: 16-26.
- Choi JB, Win NZ, Han GY, Eun YC, Jinyong P, Jong KP (2021) Checklist of the family Nymphalidae (Lepidoptera: Papilionoidea) from Myanmar. Journal of Asia-Pacific Biodiversity 14 (4): 544-556. <https://doi.org/10.1016/j.japb.2021.06.010>
- Ciochia V, Barbu A (1980) Catalogul colecției de Lepidoptere "Nicolae Delvig" a Muzeului Județean Brașov. Cumidava. Seria Științele Naturii 149 pp.
- Council Directive (1992) Habitats Directive 19. Convenția de la Berna. Legea nr. 13 / 1993. URL: <https://legislatie.just.ro/Public/DetaliiDocumentAfis/3036>
- Czekelius D (1897) Kritisches Verzeichnis der Schmetterlinge Siebenbürgens. Siebenbürgischen verein für Naturwissenschaften zu Hermannstadt 47: 1-78.
- Czekelius D (1898) Beiträge zur Schmetterlingsfauna Siebenbürgens. Siebenbürgischen Verein für Naturwissenschaften zu Hermannstadt 48: 151-153.
- Fox R, Nigel AD, E.B. D, Heafeld RT, Maclean IM, Wilson RJ (2019) Opinions of citizen scientists on open access to UK butterfly and moth occurrence data. Biodiversity and Conservation 28: 3321-3341. <https://doi.org/10.1007/s10531-019-01824-6>
- Karsholt O, Razowski J (1996) The Lepidoptera of Europe a distributional checklist. Apollo Books, Stenstrup, 380 pp.
- Lampert K (1923) Die Grossschmetterlinge und Raupen Mitteleuropas Schreiber. Ed. 2. Esslingen und München 82-100.
- Marcu A, Rákossy L (2002) Catalogul colecției de lepidoptere Dr. Vladimir Olaru din Complexul Muzeal de Științele Naturii Galați. Societatea Lepidopterologică Română Cluj-Napoca, 172 pp. [In Romanian]. [ISBN 973-0-02877-X]
- Moise C (2011a) Lepidoptera (Insecta: Lepidoptera) in the collection of Eugen Worell from Natural History Museum of Sibiu, collected from "Dumbrava Sibiului" forest. Lucrări Științifice seria Horticultură "Ion Ionescu la Brad" Iași 54: 571-576. [In Romanian].
- Moise C (2011b) Lepidoptera (Insecta: Lepidoptera) in the collection of Daniel Czekelius from Natural History Museum of Sibiu, collected from "Dumbrava Sibiului" Forest,

- Romania. *Analele Universității din Oradea. Fascicula Biologie* 18: 104-110. [In Romanian].
- Moise C (2011c) Study on the Macrolepidoptera collected from the Dumbrava Sibiului forest existing within the collection of Dr. Viktor Weindel. Muzeul Olteniei Craiova. *Studii și Comunicări Științele Naturii* 27: 96-104. [In Romanian].
 - Niculescu EV (1965) Familia Nymphalidae (Insecta). 11. Editura Academiei RPR, București, 361 pp. [In Romanian].
 - Popescu-Gorj A (1960) Lépidoptères nouveaux ou rares pour la faune de la RPR. *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"* 4: 217-227.
 - Popescu-Gorj A (1964) Catalogue de la collection de lépidoptères "Prof. A. Ostrogovich" du Museum d'Histoire Naturelle "Grigore Antipa" București. Editura Muzeului "Grigore Antipa" Bucharest, 293 pp. [In Romanian].
 - Popescu-Gorj A, Drăhla I (1964) Noi cercetări privind fauna lepidopterelor din nordul Dobrogei. *Academia RSR. Studii și Cercetări Biologice și Zoologice* 16: 27-38. [In Romanian].
 - Rákossy L, Goia M, Kovács Z (2003) Verzeichnis der Schmetterlinge Rumäniens. Romanian Lepidopterological Society Press Cluj-Napoca, 446 pp. [ISBN 973-0-03125-8]
 - Rákossy L (2013) Fluturii diurni din România, cunoaștere, protecție, conservare. Editura MEGA Cluj-Napoca, 352 pp. [In Romanian]. [ISBN 978-606-543-427-1]
 - Schneider E (1984) Die Gross-schmetterlinge der Sammlung "Dr. V. Weindel" – Ein beitrag zur faunistik der lepidopteren südsiebenbürgens und angrenzender gebiete. *Studii și Comunicări Științele Naturii Muzeul Brukenthal Press Sibiu* 26: 289-316.
 - Schneider E (1996) Zur Schmetterlingsforschung in Hermannstadt in den Jahren 1945-1985. *Stapfia Press Viena* 45: 357-379.
 - Stancă-Moise C (2017) Study on the Macrolepidoptera collected from Păltiniș (Sibiu County), existing within the collection of Dr. Viktor Weindel. Museum of Oltenia Craiova. Oltenia. *Studies and Communications. Natural Sciences* 33 (2): 97-101.
 - Stancă-Moise C (2018) The species of macrolepidoptera collected from the Gușterița Hill, Sibiu, existing within the collection of dr. Viktor Weindel. Museum of Oltenia Craiova. Oltenia. *Studies and Communications. Natural Sciences* 34 (2): 131-136.
 - Stancă-Moise C (2019) The species of macrolepidoptera collected from Cîsnădioara and Cîsnădie, county Sibiu, existing within the collection of dr. Viktor Weindel. Museum of Oltenia Craiova. Oltenia. *Studies and Communications. Natural Sciences* 35 (2): 114-120.
 - Stancă-Moise C (2020) Forests and agricultural ecosystems pests (Lepidoptera), preserved in the entomological collections of the Natural History Museum In Sibiu (Romania). *The Annals of Oradea University. Biology Fascicle* 27 (2): 224-232.
 - Stancă-Moise C (2021) *Zerynthia polyxena* ([Dennis et Schiffermüller], 1775) and *Zerynthia cerisyi ferdinandi* Stichel, 1907 (Lepidoptera, Papilionidae), in the collections of the Natural History Museum in Sibiu Romania. *The Annals of Oradea University. Biology Fascicle* 71 (1): 117-123.
 - Stancă-Moise C (2022) Distribution of the genus *Vanessa* Fabricius, 1807 (Nymphalidae) in Sibiu (Romania) and its surroundings from 1904 to 1984. *The Annals of Oradea University. Biology fascicle* 29 (1): 38-47.

- Stănescu M (2005) The catalogue of the Ion Lăzărescu, collection of Lepidoptera (Insecta) from the "Grigore Antipa" National Museum of Natural History (Bucharest). Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" XLVIII: 213-288.
- Ștefanescu C, Páramo F, Åkesson S, Alarcón M, Ávila A, Brereton T, Carnicer J, Cassar LF, Fox R, Heliölä J, Hill JK, Hirneisen N, Kjellén N, Kühn E, Kuussaari M, Leskinen M, Liechti F, Musche M, Regan EC, Reynolds DR, Ryrholm N, Schmaljohann H, Settele J, Thomas CD, Van Swaay C, Chapman J (2013) Multi-generational long-distance migration in insects: studying the painted lady butterfly in the Western Palaearctic. *Ecography* 36: 474-486. <https://doi.org/10.1111/j.1600-0587.2012.07738.x>
- Ștefanescu C, Ubach A, Wiklund C (2021) Timing of mating, reproductive status and resource availability in relation to migration in the painted lady butterfly. *Animal Behaviour* 172: 145-153. <https://doi.org/10.1016/j.anbehav.2020.12.013>
- Székely L (1996) Lepidoptere (Fluturii) din sud-estul Transilvaniei (Romania). Editura Disz-Tipo Săcele, 78 pp. [In Romanian]. [ISBN 973-97290-5-3]
- Székely L (2003) Istoricul cercetărilor lepidopterologice din sud-estul Transilvaniei. Lucrările Celei de a 6-a Conferințe Naționale Pentru Protecția Mediului Prin Metode și Mijloace Biologice și Biotehnice și a Celei de a 3-a Conferințe Naționale de Ecosanogeneză 318-322. [In Romanian].
- Székely L (2004) Noutăți lepidopterologice din sud-estul Transilvaniei (Județul Brașov, Romania). *Buletin Informativ Entomologic* 14-15: 33-40. [In Romanian].
- Székely L (2008) The butterflies of Romania. Brastar Print Press Brașov, 304 pp. [ISBN 978-973-8424-59-]
- Török S, Cuzepan G (2014) Butterfly (Insecta: Lepidoptera) hot spots in Sibiu county (Tansylvania, Romania). *Brukenenthal Acta Musei* 9: 469-490.
- Van Swaay CA, Warren M (1999) Red data book of European butterflies (Rhopalocera). Nature and Environment. Strasbourg. Council of Europe Publishing, 260 pp.
- Wildman JP, Ollerton J, Bourn NA, Brereton TM, Moore JL, McCollin D (2022) The value of museum and other uncollated data in reconstructing the decline of the chequered skipper butterfly *Carterocephalus palaemon* (Pallas, 1771). *Journal of Natural Science Collections* 10: 31-44. https://doi.org/https://www.natsca.org/sites/default/files/publications/JoNSC-Vol10-Wildman_et_al_2022_0.pdf
- Worell E (1951) Contribuții la cunoașterea faunei coleopterelor și lepidopterelor din Transilvania, mai ales din împrejurimile orașului Sibiu. Academia Republicii Populare Romane. *Buletin Științific Secția Științe Biologice Agronomie Geologie Geografie București* 3: 533-54. [In Romanian].

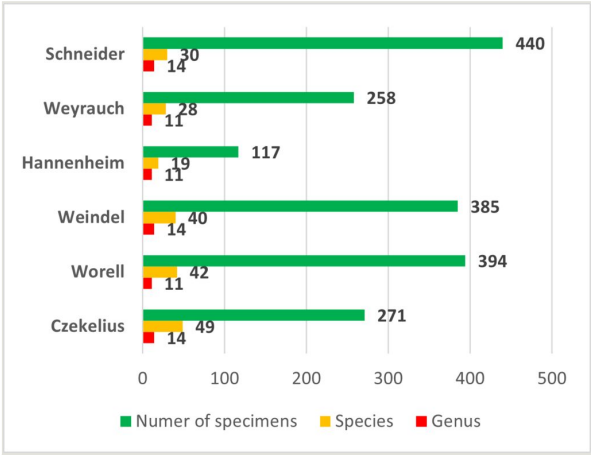


Figure 1.
Sistematic representation of the six collections by genera, species, and specimen number.

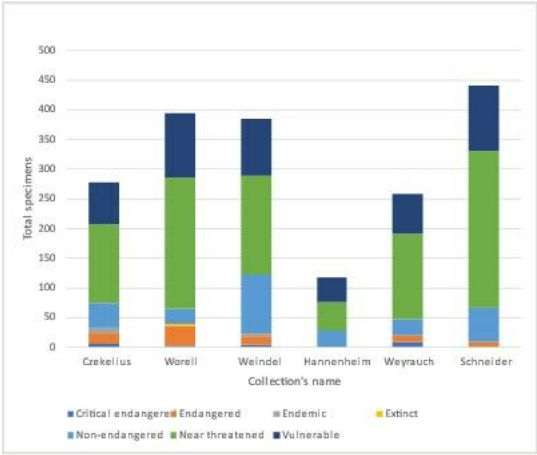


Figure 2.
The distribution of species from the collections by IUCN categories and degrees of endangerment.

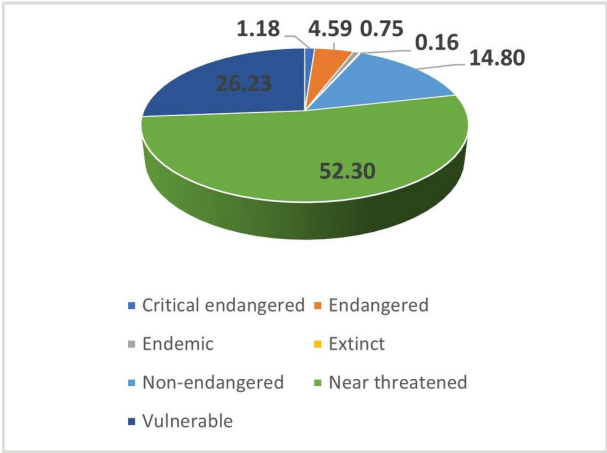


Figure 3.
Nymphalid species and their evaluation based on Romania's Red List

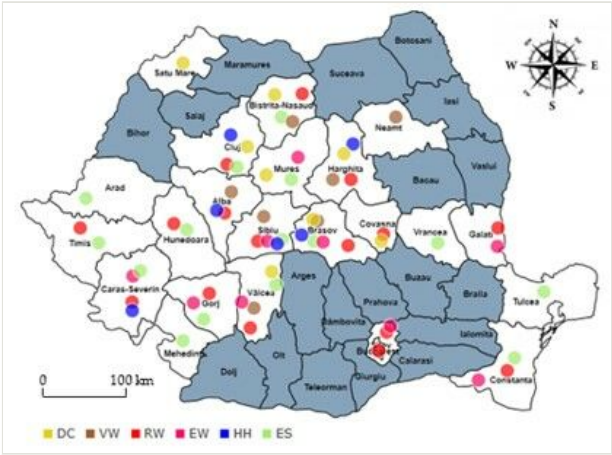


Figure 4.
Map of Romania with counties, marking sites on collectors.



Figure 5.
European countries from which butterfly species of the *Nymphalid* family have been collected.

Table 1.
Daniel DC's collection.

Genus	Species	Collection period	Collection site	Legit	County	Region	Specimen
Argynnis Fabricius, 1807	<i>Argynnis paphia paphia</i> (Linnaeus, 1758)	1911-1930	Braşov, Cisnădioara, Hodod, Păltiniş, Porumbacu, Retezat Mountain, Sibiu	DC, Diószeghy, Kiss, Prall	BV, SM, SB, Southern Carpathians	SM TR	16
	<i>Argynnis pandora</i> ([Denis&Schiffermüller], 1775)	no data	Cisnădioara, Porumbacu, Sibiu	DC, Prall	SB	TR	4
	<i>Argynnis aglaja</i> (Linnaeus, 1758)	1911-1930	Borsec, Colibiţa, Păltiniş	DC, Müller	BN, Hr, SB	TR	7
	<i>Argynnis adippe</i> ([Denis&Schiffermüller], 1775)	1906-1909	Bistriţa, Bv, Cisnădioara, Fedeleş, Hohod, Păltiniş, Mureş, Rodna, Sibiu	DC, Kiss	BN, BV, MS, SB	TR	14
	<i>Argynnis niobe niobe</i> (Linnaeus, 1758)	1904-1921	Borsec, Turnu Roşu	DC	Hr, SB	TR	3
	<i>Argynnis niobe</i> ab. <i>pelopia</i> Borkhausen, 1788	no data	Sibiu	DC	SB	TR	1
	<i>Argynnis laodice</i> (Pallas, 1771)	1908	Cibin, Hodod, Micăsasa	DC	SM, SB	SM TR	4
	<i>Argynnis eris</i> Meigen, 1829	1921	Bazna	DC	SB	TR	5
	<i>Argynnis latonia</i> ab. <i>hungarica</i> Aigner-Abafi, 1906	no data	Sibiu	DC	SB	TR	1
Issoria Hübner, 1819	<i>Issoria lathonia</i> (Linnaeus, 1758)	1911-1934	Borsec, Sibiu, Retezat, Tâlmaciu, Hodod	DC, Kiss	Hr, SM, SB	SM TR	6
Brenthis , Hübner, 1819	<i>Brenthis ino</i> Rottemburg, 1775	1912-1928	Sfântu Gheorghe, Pleeshortalgý (?)	DC, Tiltsdur	Cv	TR	2
	<i>Brenthis daphne</i> ([Denis&Schiffermüller], 1775)	no data	Hodod	Kiss	SM	SM	3
Boloria Moore, 1900 (Clossiana), Moore, 1900	<i>Boloria euphrosyne</i> (Linnaeus, 1758)	1908-1911	Braşov, Fedeleş, Vâlcele, Borse	DC, Deubel	Bv, Hr, Eastern Carpathians	TR	7
	<i>Boloria selene</i> ([Denis&Schiffermüller], 1775)	1887-1911	Bălea, Sibiu	DC, Kiss	SB	TR	5
	<i>Boloria dia dia</i> (Linnaeus, 1767)	1910-1922	Bazna, Sibiu, Şura Mică, Tâlmaciu,	DC, Kiss	SB	TR	6

Inachis Hübner, 1819	<i>Inachis io</i> (Linnaeus, 1758)	no data	Păltiniș, Sibiu	DC, Kiss	SB	TR	4
Aglais Dalman, 1816	<i>Aglais urticae</i> (Linnaeus, 1758)	1891-1932	Fedeles, Hodod, Sibiu, Retezat,	DC, Kimakowics, Kiss	Bv, SM, SB	SM TR	12
Polygonia Hübner, [1819]	<i>Polygonia c-album</i> (Linnaeus, 1758)	1908-1927	Hodod, Micăsasa, Sibiu, Retezat, Brașov	DC, Deubel, Dioszeghy, Kiss, Prall	SB, Bv, SM, Southern Carpathians	SM TR	16
Araschnia Hübner, 1819	<i>Araschnia levana</i> (Linnaeus, 1758)	1922	Copșa Mică, Sibiu	DC	SB	TR	3
	<i>Araschnia levana f. porima</i> Ochsenheimer, 1807	1912	Sfântu Gheorghe	Miklos Tütscher	Cv	TR	1
	<i>Araschnia levana f. prosa</i> Linnaeus, 1758	1908	Konzeshova (?)	DC	no data	no data	2
	<i>Araschnia levana f. intermedia</i> Stichel, 1906	1908	Brașov, Sibiu	DC	SB	TR	3
Nymphalis Kluk, 1802	<i>Nymphalis antiopa</i> (Linnaeus, 1758)	1909	Festebesch (?)	no data	no data	no data	2
	<i>Nymphalis polychloros</i> (Linnaeus, 1758)	1887-1923	Sibiu,	DC, Kiss, Borz3 N (?)	SB	TR	6
	<i>Nymphalis xanthomelas</i> (Esper, 1781)	no data	Păltiniș, Sibiu	DC	SB	TR	3
	<i>Nymphalis vaualbum</i> ([Denis&Schiffermüller], 1775)	1912	Sibiu	DC	SB	TR	3
Euphydryas , Scudder, 1872	<i>Euphydryas maturna</i> (Linnaeus, 1758)	no data	Hodod, Sibiu	Deuber, Kiss	SM, SB	SM TR	4
	<i>Euphydryas aurinia aurinia</i> (Rottensburg, 1775)	no data	Sibiu, Șura Mică	DC	SB	TR	3
Melitaea Fabricius, 1807	<i>Melitaea cinxia cinxia</i> (Linnaeus, 1758)	1907	Cluj, Hodod, Ocna Sibiului, Sibiu,	DC, Kiss, Müller, Prall	Cj, SM, SB	SM TR	8
	<i>Melitaea phoebe</i> ([Denis&Schiffermüller], 1775)	1911	Bistrița, Borsec, Sibiu, Ocna Sibiului	Alberti, DC, Kiss	Bistrița, Hr, SB	TR	9
	<i>Melitaea trivia trivia</i> ([Denis&Schiffermüller], 1775)	no data	Ocna Sibiului, Sâmbăta, Sibiu	DC, Kiss	Bv, SB	TR	4
	<i>Melitaea didyma didyma</i> (Esper, 1778)	1909-1912	Bălea, Cluj-Napoca, Hodod, Rășinari, Brașov, Sibiu	DC, Kiss, Müller	Bv, Cj, SM, SB	SM TR	17
	<i>Melitaea dictynna</i> Esper, 1778	1901-1928	Sibiu, Plecska (?)	DC	SB	TR	4
	<i>Melitaea aurelia aurelia</i> Nickerl, 1850	1911-1930	Bazna, Borsec, Brașov, Ocna Sibiului, Sibiu	Czekeliu	Bv, Hr, SB	TR	12

	<i>Melitaea athalia athalia</i> (Rottemburg, 1775)	1904-1934	Bălea, Braşov, Guşterişa, Hodod, Sibiu,	DC, Kiss	Bv, SM, SB	SM TR	26
	<i>Melitaea diamina alpestris</i> Fruhstorfer, 1917	no data	Hodod, Arpaş	DC, Kiss	SM, SB	SM TR	3
	<i>Melitaea nana</i> Rehfons, 1910	no data	Lands (?), Sibiu	DC,	SB	TR	2
	<i>Melitaea parthenie</i> Godart, 1822	no data	Hodod	Kiss	SM	SM	1
	<i>Melitaea retyezatica</i> Diöszeghy, 1930	1919-1922	Retezat Mountain	Diöszeghy	Southern Carpathians	TR	9
	<i>Melitaea athalia dictynnoides</i> Hormuzaki, 1898	no data	Sibiu	DC,	Sibiu	TR	4
Limenitis Fabricius, 1807	<i>Limenitis populi</i> , (Linnaeus, 1758)	no data	Păltiniş	DC,	Sibiu	TR	2
	<i>Limenitis ab. tremulae</i> Esper, 1800	1922	Păltiniş, Retezat	DC,	SB, Southern Carpathians	TR	2
	<i>Limenitis sibilla</i> Linnaeus, 1767	1915	Păltiniş, Cheile Turzii	DC, Müller	SB, Cj	TR	2
Neptis Fabricius, 1807	<i>Neptis aceris</i> sensu Lhomme, 1924	1911-1929	Bran, Şura Mare, Retezat, Sibiu, Tălmăciu, Hodod	DC, Diöszeghy, Kiss	Bv, SM, SB, Southern Carpathians	SM TR	10
	<i>Neptis lucilla</i> ([Denis&Schiffermüller], 1775)	1915-1924	Borsec, Păltiniş, Slămnice	DC, Müller	Hr, Sibiu	TR	4
Apatura Fabricius, 1807	<i>Apatura ilia</i> ([Denis&Schiffermüller], 1775)	1928-1929	Greliese (?), Cluj	Peterfi	Cj	TR	2
	<i>Apatura v. clytie</i> ([Denis&Schiffermüller], 1775)	1909-1933	Guşterişa, Hodod, Sibiu	DC, Kiss	SM, SB	SM TR	4
	<i>Apatura ab. eos rossi</i> Rossi, 1794	no data	Sibiu	DC,	SB	TR	2
	<i>Apatura iris</i> (Linnaeus, 1758)	1925-1926	Păltiniş, Hodod, Râu Sadului, Sibiu	DC, Kiss	SM, SB	SM TR	5

Table 2. Eugen Worell's collection.								
Genus	Species	Collection period	Collection site	Legit	County	Region	Specimens	Sta
Argynnis Fabricius, 1807	<i>Argynnis paphia paphia</i> (Linnaeus, 1758)	1932-1957	Carinthia Plocken, Chişinău, Sibiu, Lintz	Kolar EW	SB, Chişinău, Tirol	TR, Republica Moldova, Austria	4	NT
	<i>Argynnis paphia f. valnsina</i> [Esper, 1798]	1932-1953	Carinthia, Cozia, Eforie Sud, Ocna Sibiului, Sibiu,	EW Kolar	CT, SB	DB TR Austria	23	NT
	<i>Argynnis pandora</i> ([Denis&Schiffermüller], 1775)	1948	Cozia Montain	EW	VL	OT	7	VU
	<i>Argynnis pandora dacica</i> Hormuzaki, 1892	1930-1931	Tecuci, Retezat Mountain	Alexinschi Dioszegy	GL, Southern Carpathians	MD	3	VU
	<i>Argynnis aglaja</i> (Linnaeus, 1758)	1935-1953	Băile Herculane, Păltiniş, Sibiu	EW	CS, SB	BT TR	13	LC
	<i>Argynnis adippe</i> ([Denis&Schiffermüller], 1775)	1933-1952	Braşov, Cisnădioara, Măgura Cisnădiei, Guşteriţa, Sibiu	EW	BV, SB	TR	18	NT
	<i>Argynnis niobe niobe</i> (Linnaeus, 1758)	1921-1948	Bazna, Păltiniş Sibiu, SaliSBurg, Schlenken	EW	SB	TR Austria	12	NT
	<i>Argynnis laodice</i> (Pallas, 1771)	1938-1953	Sibiu	EW	SB	TR	17	EN
Inachis Hübner, 1819	<i>Inachis io</i> (Linnaeus, 1758)	1936-1953	Chişinău	EW	Chişinău	Republica Moldova	11	LC
Aglais Dalman, 1816	<i>Aglais urticae</i> (Linnaeus, 1758)	1937	Chişinău	EW	Chişinău	Republica Moldova	13	NT
Polygonia Hübner, [1819]	<i>Polygonia c-album</i> (Linnaeus, 1758)	1936-1952	Chişinău, Ocna sibiului, Sibiu	EW	SB, Chişinău	Republica Moldova	17	NT
	<i>Polygonia egea</i> (Cramer, 1775)	1910	Pola Istrien	EW	-	Croaţia	3	EX
Araschnia Hübner, 1819	<i>Araschnia levana</i> (Linnaeus, 1758)	1930	SaliSBerg	EW	-	Germania	2	NT

	<i>Araschnia prorsa</i> Linnaeus, 1758	1924-1957	Sibiu, Sighișoara	EW	SB, MS	TR	11	NT
<i>Nymphalis</i> Kluk, 1802	<i>Nymphalis antiopa</i> (Linnaeus, 1758)	1934-1955	Cisnădioara, Sibiu, Turnișor,	EW	SB	TR	14	VU
	<i>Nymphalis polychloros</i> (Linnaeus, 1758)	1888-1953	Sibiu	Umgebung EW	SB	TR	13	EN
	<i>Nymphalis xanthomelas</i> (Esper, 1781)	1939	Sibiu	EW	SB	TR	3	CR
<i>Euphydryas</i> , Scudder, 1872	<i>Euphydryas maturna</i> (Linnaeus, 1758)	1935-1942	Băile Herculane	EW	CS	BT	5	VU
	<i>Euphydryas aurinia aurinia</i> (Rottemburg, 1775)	1905	Râșnov	EW	BV	TR	3	EN
<i>Melitaea</i> Fabricius, 1807	<i>Melitaea cinxia cinxia</i> (Linnaeus, 1758)	1936-1983	Sibiu, Băile Herculane, Cernica	EW	CS, IF, SB	BT, MT, TR	15	NT
	<i>Melitaea phoebe</i> ([Denis&Schiffermüller], 1775)	1931-1939	Eforie Sud, Techirgiol, Sighișoara, Chișinău, Sibiu, Gușterița,	EW	Chișinău, CT, MS, SB	DB, TR, Republica Moldova	11	NT
	<i>Melitaea trivia trivia</i> ([Denis&Schiffermüller], 1775)	1935-1954	Gușterița, Sibiu, Chișinău	EW	SB, Chișinău	TR, Republica Moldova	34	NT
	<i>Melitaea didyma didyma</i> (Esper, 1778)	1938-1939	Guțterița, Sibiu	EW	SB	TR	2	LC
	<i>Melitaea didyma alpina</i> Staudinger, 1861	1938-1957	Sibiu	EW	SB	TR	10	VU
	<i>Melitaea didyma meridionalis</i> Staudinger, 1870	1945-1953	Sibiu	EW	SB	TR	10	VU
	<i>Melitaea aurelia aurelia</i> Nieckerl, 1850	1920-1956	Sibiu, Sighișoara	DC, EW	SB, MS	TR	7	VU
	<i>Melitaea athalia athalia</i> (Rottemburg, 1775)	1927-1953	Bularda, Păltiniș, Sibiu	EW Alexinschi	SB, Chișinău	TR, Republica Moldova	24	NT
	<i>Melitaea athalia mehadiensis</i> Gerhard, 1822	1938-1942	Băile Herculane	EW	CS	BT	4	NT
	<i>Melitaea didymoides</i> Eversmann, 1847	1934-1939	Buciumeni, Bularda	EW	GL, Chișinău	Moldova, Republica, MD	4	VU
	<i>Melitaea dictynna</i> Esper, 1778	1930-1956	Sibiu, Sighișoara, Tsimana	EW	GJ, MS, SB	OT TR	10	VU
	<i>Melitaea parthenie</i> Godart, 1822	1926-1953	Sibiu, Kaiserstuhl	EW	SB	TR	2	VU

	<i>Melitaea parthenie</i> var. <i>varia</i> Meyer-Dür, 1851	1927-1930	Tirol Rotmoostal, Tirol GaiSBergatal	Holik	Tirol	Austria	2	VU
	<i>Melitaea asteria</i> Freyer, 1828	1938-1958	Sibiu	EW	SB	TR	9	VU
<i>Limenitis</i> Fabricius, 1807	<i>Limenitis populi</i> , (Linnaeus, 1958)	1950	Sibiu	EW	SB	TR	2	VU
	<i>Limenitis</i> ab. <i>tremulae</i> Esper, 1800	1962	Băile Herculane	EW	CS	BT	2	VU
	<i>Limenitis sibilla</i> Linnaeus, 1767	1905-1939	Băile Herculane, Sibiu, Pontresina	EW	CS	BT, TR Swiss	7	VU
<i>Neptis</i> Fabricius, 1807	<i>1.Neptis rivularis</i> (Scopoli, 1763)	1936	Băile Herculane	EW	CS	BT	6	NT
	<i>Neptis lucilla</i> ([Denis&Schiffermüller], 1775)	1936-1952	Băile Herculane, Sibiu	EW	CS	BT, TR	26	NT
<i>Apatura</i> Fabricius, 1807	<i>Apatura metis</i> Freyer, 1829	no data	no data	no data	no data	no data	2	VU
	<i>Apatura ilia</i> ([Denis&Schiffermüller], 1775)	1939-1959	Sibiu	EW	SB	TR	6	VU
	<i>Apatura ilia</i> ssp. <i>eos</i> Rossi, 1794	1938	Sibiu	EW	SB	TR	2	VU
	<i>Apatura iris</i> (Linnaeus, 1958)	1927-1956	Palamea, Sibiu, Șercaia	EW	BV, SB	TR	5	VU

Table 3.
Viktor Veindel's collection.

Genus	Species	Collection period	Collection site	Legit	County	Region	Specimens	Status
Argynnis Fabricius, 1807	<i>Argynnis paphia paphia</i> (Linnaeus, 1758)	1903-1956	Cisnădie, Borsec, Cheile Bicazului, Ghiorghieni, Rîu Vadului,	VW	SB, HR, NT	TR	17	NT
	<i>Argynnis pandora</i> ([Denis&Schiffermüller], 1775)	1904-1955-	Cisnădioara, Sibiu, Râu Vadului, Cozia	VW	SB, VL	OT, TR	4	VU
	<i>Argynnis aglaja</i> (Linnaeus, 1758)	1903-1954	Borsec, Cisnădioara, Colibița, Gușterița, Sibiu	VW	BN, HR, SB	TR	14	LC
	<i>Argynnis adippe</i> ([Denis&Schiffermüller], 1775)	1903-1956	Cisnădie, Gușterița, Sibiu	VW	SB	TR	7	NT
	<i>Argynnis adippe adippe f. cleodoxa</i> Ochsenheimer, 1816	1906-1956	Cisnădie, Gușterița, Sibiu	VW	SB	TR	8	NT
	<i>Argynnis niobe niobe</i> (Linnaeus, 1758)	1904-1922	Cârțișoara, Sibiu	VW	SB	TR	4	NT
	<i>Argynnis laodice</i> (Pallas, 1771)	1907-1921	Cusnădioara, Gușterița, Saschiz	VW	SB	TR	3	EN
Issoria Hübner, 1819	<i>Issoria lathonia</i> (Linnaeus, 1758)	1903-1958	Gușterița, Borsec, Cisnădie, Păltiniș, Cozia, Paltin, Rîu Vadului	VW	SB	TR	14	LC
Brenthis Hübner, 1819	<i>Brenthis ino</i> Rottemburg, 1775	1921	Borsec	VW	HR	TR	4	VU
	<i>Brenthis daphne</i> ([Denis&Schiffermüller], 1775)	1954-1956	Păltiniș, Râu Vadului	VW	SB	TR	2	VU
	<i>Brenthis hecate</i> ([Denis&Schiffermüller], 1775)	1920-1956	Gușterița, Saschiz	VW	SB	TR	6	VU
Boloria Moore, 1900	<i>Boloria euphrosyne</i> (Linnaeus, 1758)	1904-1956	Cisnădie, Șura Mică, Sibiu	VW	SB	TR	10	VU
	<i>Boloria selene</i> ([Denis&Schiffermüller], 1775)	1903-1956	Cisnădioara, Gușterița, Șura Mică	VW	SB	TR	12	NT

	<i>Boloria dia dia</i> (Linnaeus, 1767)	1904-1958	Borsec, Cîsnădioara, Gușterița, Păltiniș, Șura Mică, Râu Vadului	VW	SB	TR	23	LC
	<i>Boloria pales</i> ([Denis&Schiffermüller], 1775) <i>caprathomeridionalis</i> Crosson et Popescu-Gorj	1957	Suru	VW	Făgăraș Mountain	TR	5	VU Endemic
Inachis Hübner, 1819	<i>Inachis io</i> (Linnaeus, 1758)	1904-1952	Cîsnădie, Sibiu	VW	SB	TR	14	LC
Aglaia Dalman, 1816	<i>Aglaia urticae</i> (Linnaeus, 1758)	1903-1930	Gulterița, Păltiniș, Sibiu	VW	SB	TR	10	NT
Polygonia Hübner, [1819]	<i>Polygonia c-album</i> (Linnaeus, 1758)	1904-1956	Borsec, Cîsnădie, Cîsnădioara, Cozia, Gușterița, Păltiniș, Sadu, Râu Vadului	VW	HR, VL, SB	OT, TR	20	NT
Araschnia Hübner, 1819	<i>Araschnia levana</i> (Linnaeus, 1758)	-	Sibiu	VW	SB	TR	2	NT
	<i>Araschnia levana</i> f. <i>prorsa</i> (Linnaeus, 1758)	1903-1958	Borsec, Colibița, Ghiorghieni, Păltiniș, Sibiu, Râu Sadului	VW	BN, HR, SB	TR	14	NT
Nymphalis Kluk, 1802	<i>Nymphalis antiopa</i> (Linnaeus, 1758)	1905-1955	Cîsnădioara, Gușterița, Păltiniș, Sibiu,	VW	VL, SB	OT, TR	24	VU
	<i>Nymphalis polychloros</i> (Linnaeus, 1758)	1903-1952	Gușterița, Păltiniș, Sibiu	VW	SB	TR	10	EN
	<i>Nymphalis xanthomelas</i> (Esper, 1781)	1904	Sibiu	VW	SB	TR	2	CR
	<i>Nymphalis vaualbum</i> ([Denis&Schiffermüller], 1775)	1908-1922	Cîsnădie, Păltiniș	VW	SB	TR	2	CR
Euphydryas Scudder, 1872	<i>Euphydryas aurinia aurinia</i> (Rottemburg, 1775)	1920	Saschiz	VW	SB	TR	2	EN
Melitaea Fabricius, 1807	<i>Melitaea cinxia cinxia</i> (Linnaeus, 1758)	1956	Șura Mică, Târnăvioara	VW	SB	TR	5	NT

	<i>Melitaea phoebe</i> ([Denis&Schiffermüller], 1775)	1903-1956	Gușterița, Sebeș, Sibiu	VW	AB, SB	TR	8	NT
	<i>Melitaea trivia trivia</i> ([Denis&Schiffermüller], 1775)	1920-1958	Gușterița, Prislop, Tâlmăciu, Târnăvioara	VW	SB	TR	14	NT
	<i>Melitaea didyma didyma</i> (Esper, 1778)	1903-1956	Cisnădioara, Cisnădie, Gulterița, Paltin, Turnu Roșu, Râul Vadului, Tâmpa	DC VW	BV, SB	TR	33	LC
	<i>Melitaea athalia athalia</i> (Rottemburg, 1775)	1903-1956	Borsec, Cisnădie, Cisnădioara, Colibița, Cozia, Cheile Bicazului, Șura Mică,	DC VW	BN, HR, NT, SB, VL	MD, OT, TR Serbia	37	NT
	<i>Melitaea aurelia aurelia</i> Nickerl, 1850	1907-1955	Gușterița, Vilele Sibiului, Polja	DC VW	SB	TR Serbia	13	VU
Limenitis Fabricius, 1807	<i>Limenitis populi</i> , (Linnaeus, 1958)	1904-1954	Cheile Bicazului, Sibiu	VW	HR, NT, SB	TR	5	VU
	<i>Limenitis populi populi</i> f. <i>tremulae</i> Esper, 1798	no data	no data	no data	no data	no data	1	VU
	<i>Limenitis camilla</i> (Linnaeus, 1964)	1954	Cheile Bicazului, Colibița	VW	BN, HR, NT	TR	7	VU
Neptis Fabricius, 1807	<i>Neptis rivularis</i> (Scopoli, 1763)	1904-1957	Făgăraș, Sibiu	VW	BV, SB	TR	6	NT
	<i>Neptis rivularis</i> ssp. <i>ludmila</i> Nordmann, 1851	1921-1954	Borsec, Tușnad	VW	HR, NT	TR	3	NT
	<i>Neptis sappho</i> Pallas, 1771	1907-1956	Gușterița, Șura Mică, Râu Vadului	VW	SB	TR	6	VU
Apatura Fabricius, 1807	<i>Apatura ilia</i> ([Denis&Schiffermüller], 1775)	1904	Sibiu	VW	SB	TR	2	VU
	<i>Apatura clytie</i> ([Denis&Schiffermüller], 1775)	1904-1905	Cisnădioara, Sibiu	VW	SB	TR	3	VU
	<i>Apatura iris</i> (Linnaeus, 1958)	1904-1954	Cisnădie, Colibița, Gheorghieni, Păltiniș, Sibiu	VW	BN, HR, SB	TR	9	VU

Table 4.
 Heinrich Hann von Hannenheim's collection.

Genus	Species	Collection period	Collection site	Legit	County	Region	Specimens	Status
Issoria Hübner, 1819	<i>Issoria lathonia</i> (Linnaeus, 1758)	1955-1963	Apoldul de Sus, Bărcaciu, Cislădioara, Tălmăciu, Sibiu, Șopa	HH	SB	TR	6	LC
Brenthis Hübner, 1819	<i>Brenthis hecate</i> ([Denis&Schiffermüller], 1775)	1928-1956	Galeș, Gușterița, Cluj, Sibiu	HH	CJ, SB	TR	5	VU
Boloria Moore, 1900	<i>Boloria euphrosyne</i> (Linnaeus, 1758)	1954-1964	Gușterița, Băile Herculane, Sibiu, Șopa	HH	CS, SB	BT TR	6	VU
	<i>Boloria selene</i> ([Denis&Schiffermüller], 1775)	1954-1964	Bungard, Gușterița, Sibiu	HH	SB	TR	8	NT
	<i>Boloria dia dia</i> (Linnaeus, 1767)	1954-1963	Gușterița, Obreja, Slimnic, Sibiu, Tălmăciu,	HH	SB	TR	10	LC
	<i>Boloria pales</i> ([Denis&Schiffermüller], 1775) caprathomerionalis Crosson et Popescu-Gorj	1963	Chica Pietrilor	HH	BV	TR	3	VU
Inachis Hübner, 1819	<i>Inachis io</i> (Linnaeus, 1758)	1955-1957	Păltiș, Sâmbata, Sibiu	HH	BV, SB	TR	4	LC
Polygonia Hübner, [1819]	<i>Polygonia c-album</i> (Linnaeus, 1758)	1954-1957	Gușterița, Păltiniș, Sebeș, Sibiu, Tălmăciu	HH	AB, SB	DB TR	13	NT
Araschnia Hübner, 1819	<i>Araschnia levana</i> (Linnaeus, 1758)	1954-1964	Gușterița, Slimnic, Sebeș, Sibiu	HH	AB, SB	TR	9	NT
Nymphalis Kluk, 1802	<i>Nymphalis antiopa</i> (Linnaeus, 1758)	1954-1955	Păltiniș	HH	SB	TR	3	VU
Melitaea Fabricius, 1807	<i>Melitaea cinxia cinxia</i> (Linnaeus, 1758)	1955-1957	Cislădioara, Gușterița, Slimnic	HH	SB	TR	3	NT

	<i>Melitaea didyma didyma</i> (Esper, 1778)	1955-1962	Apoldul de Sus, Sibiu, Tâlmaciu	HH	SB	TR	8	LC
	<i>Melitaea aurelia aurelia</i> Nickerl, 1850	1956-1965	Ocna Sibiului, Gușterița	HH	SB	TR	6	VU
	<i>Melitaea athalia athalia</i> (Rottemburg, 1775)	1954-1958	Apoldul de Sus, Gulterița, Sibiu, Tâlmaciu	HH	SB	TR	10	NT
<i>Limenitis</i> Fabricius, 1807	<i>Limenitis populi</i> , (Linnaeus, 1958)	1963-1964	Sibiu	HH	SB	TR	3	VU
<i>Neptis</i> Fabricius, 1807	<i>Neptis aceris</i> sensu Lhomme, 1924	1956-1958	Sibiu, Tâlmaciu	HH	SB	TR	4	VU
	<i>Neptis lucilla</i> ([Denis&Schiffermüller], 1775)	1954-1964	Sibiu, Sâmbata	HH	BV, SB	TR	5	NT
<i>Apatura</i> Fabricius, 1807	<i>Apatura ilia</i> ([Denis&Schiffermüller], 1775)	1954-1964	Prejmer, Sâmbata, Tușnad	HH	BV, HR, SB	TR	3	VU
	<i>Apatura iris</i> (Linnaeus, 1958)	1954-1964	Măgura Cisnădiei, Păltiniș, Sâmbata, Tușnad	HH	BV, HR, SB	TR	8	VU

Table 5.
Rolf Weihrauch's collection.

Genus	Species	Collection period	Collection site	Legit	County	Region	Specimens	Stat
<i>Argynnis</i> Fabricius, 1807	<i>Argynnis pandora</i> ([Denis&Schiffermüller], 1775)	1965-1978	Băile Herculane, Băneasa, Canaraua Fetii, Cozia, Hagieni, Iormac, Sibiu	RW	CS, CT, VL, B, SB	DB OT TR	15	VU
<i>Inachis</i> Hübner, 1819	<i>Inachis io</i> (Linnaeus, 1758)	1955-1971	Colibița, Cozia, Iormac, Praid, Sibiu, Vlădeasa	RW	BN, CT, HR, SB, VL	DB OT TR	9	LC
<i>Aglais</i> Dalman, 1816	<i>Aglais urticae</i> (Linnaeus, 1758)	1954-1977	Băile Herculane, Păltiniș, Someș, Tușnad, Vlădeasa	RW	CS, HR, SB	BT, TR, Western Carpathians	8	NT
<i>Polygonia</i> Hübner, [1819]	<i>Polygonia c-album</i> (Linnaeus, 1758)	1954-1977	Covasna, Gârbova, Domogled, Păltiniș, Sibiu	RW	CS, CT, CV, GL, SB	DB OT MD TR	16	NT
<i>Araschnia</i> Hübner, 1819	<i>Araschnia levana</i> (Linnaeus, 1758)	1954-1975	Băile Herculane, Covasna, Gușterița, Lugoj, Porumbacu, Tușnad, Negoi, Sibiu	RW	CS, CV, HR, SB, TM	Banat TR	31	NT
<i>Nymphalis</i> Kluk, 1802	<i>Nymphalis antiopa</i> (Linnaeus, 1758)	1951-1970	Colibița, Cozia, Covasna, Lotru, Păltiniș	RW	BN, CV, HR, VL, SB	DB OT TR	10	VU
	<i>Nymphalis polychloros</i> (Linnaeus, 1758)	1954-1971	Canaraua Fetii, Sibiu	RW	CT, SB	DB TR	7	EN
	<i>Nymphalis xanthomelas</i> (Esper, 1781)	1956	Domogled	RW	CS	BT	4	CR
	<i>Nymphalis vaualbum</i> ([Denis&Schiffermüller], 1775)	1942-1970	Căprioara, Poiana Mărului	Pelits, RW, Teleki	BV, CS	BT TR	3	CR

<i>Euphydryas</i> , Scudder, 1872	<i>Euphydryas orientalis</i> (Herrich-Schaffer, [1851])	1922	Batnita (?)	no data	no data	no data	2	CR
<i>Melitaea</i> Fabricius, 1807	<i>Melitaea cinxia cinxia</i> (Linnaeus, 1758)	1954-1975	Băile Herculane, Canaraua Feti, Domogled, Găneasa, Retezat	RW	CS, Constanța, IF, Southern Carpathians	DB MT	15	NT
	<i>Melitaea phoebe</i> ([Denis&Schiffermüller], 1775)	1954-1978	Băile Herculane, Domogled, Hagieni, Galați	RW	CS, CT, GL, MH, GJ	BT DB OT MD	24	NT
	<i>Melitaea didyma didyma</i> Esper, 1778	1954-1971	Băile Herculane, Domogled, Gușterița, Retezat, Sibiu, Tușnad	RW	CS, MH, GJ, SB	BT OT TR	18	LC
	<i>Melitaea didyma occidentalis</i> Staudinger, 1861	1943-1962	UlrichSberg Kärnten/ Karintia	Thurner	-	Austria	2	VU
	<i>Melitaea dictynna</i> Esper, 1778	1955-1977	Sadu, Someșu Rece	RW	CJ, SB	TR	4	VU
	<i>Melitaea aurelia aurelia</i> Nickerl, 1850	1952-1963	Băile Herculane	RW	CS	BT	5	VU
	<i>Melitaea britomartis</i> Assmann, 1847	1956-1974	Băile Herculane	RW	CS	BT	6	NT
	<i>Melitaea athalia athalia</i> (Rottemburg, 1775)	1950-1977	Avrig, Băile Herculane, Buila Vânturarița, Hagieni, Praid, Tușnad, Valea Vinului, Gioagiu, Someșul Rece	RW	BN, CS, CJ, CT, HR, HD, VL,	BT DB OT TR	12	NT
	<i>Melitaea nevadensis</i> Oberthür, 1904	1956-1967	Băile Herculane, Domogled	RW	CS, MH, GJ	BT OT	15	NT
<i>Limenitis</i> Fabricius, 1807	<i>Limenitis populi</i> , (Linnaeus, 1958)	1954-1964	Ceahlău, Hoghilag, Obreja, Tușnad	RW	CS, HR,	BT TR Eastern Carpathians	4	VU

	<i>Limenitis populi populi</i> f. <i>tremulae</i> Esper, 1798	1964-1976	Băile Herculane, Domogled	RW	CS, MH, GJ	BT OT	4	VU
	<i>Limenitis camilla camilla</i> (Linnaeus, 1764)	1954-1967	Domogle, Tușnad	RW	CS, HR, GJ, MH	BT OT TR	7	VU
	<i>Limenitis reducta reducta</i> Staudinger, 1901	1961-1971	Domogled, Miercurea Băi	RW	CS, MH, GJ, SB	BT OT TR	4	EN
Neptis Fabricius, 1807	<i>Neptis sappho</i> [Pallas, 1771]	1963-1969	Băile Herculane, Domogled, Sibiu	RW	CS, MH, GJ, SB	BT OT TR	6	VU
	<i>Neptis rivularis</i> (Scopoli, 1763)	1954-1974	Gușterița, Domogled, Someș	RW	CS, CJ, GJ, MH, SB	BT OT TR	9	NT
	<i>Neptis lucilla</i> ([Denis&Schiffermüller], 1775)	1962-1974	Gușterița, Domogled, Someș	RW	CS, CJ, GJ, MH, SB	BT OT TR	9	NT
Apatura Fabricius, 1807	<i>Apatura ilia</i> ([Denis&Schiffermüller], 1775)	1971	Canaraua Fetii	RW	CT	DB	1	VU
	<i>Apatura clytie</i> ([Denis&Schiffermüller], 1775)	1953-1963	Băile Herculane, Tușnad	RW	CS, HR	BT TR	8	VU

Table 6.
Eckbert Schneider's collection.

Genus	Species	Collection period	Collection site	Legit	County	Region	Specimens	S
Libythea Fabricius, 1807	<i>Libythea celtis</i> (Laicharting, 1782)	1949	Băile Herculane	ES	CS	BT	1	E
Argynnis Fabricius, 1807	<i>Argynnis paphia paphia</i> (Linnaeus, 1758)	1952-1978	Agnita, Lotrioara, Laita, Hamba, Mailat, Sighișoara, Sibiel, Sibiu, Zarand	ES	AR, BV, MS, SB, Western Carpathians	BT CR TR	13	N
	<i>Argynnis pandora</i> ([Denis&Schiffermüller], 1775)	1954-1979	Bestepe, Bruiu, Măcin, Hagieni, CARosetti, Sibiu	ES	CT, SB, TL	DB TR	8	V
	<i>Argynnis aglaja</i> (Linnaeus, 1758)	1973-1982	Hamba, Șura Mare, Cerna, Laita, Porumbacu	ES	BV, CS, MH, GJ, SB	BT OT TR	7	L
	<i>Argynnis niobe niobe</i> , (Linnaeus, 1758)	1952-1984	Agnita, Cislădie, Gușterița, Tomnatic, Beja, Șura Mare, Slimnic, Sighișoara, Tâlmăciu, Zarand	ES	SB, HD, MS, TM, Western Carpathians	BT TR	16	N
Issoria Hübner, 1819	<i>Issoria lathonia</i> (Linnaeus, 1758)	1955-1967	Iortmac, Slimnic, Șiria, Sibiu, Turda	ES	AR, CJ, CT, SB	CR DB TR	12	L
Brenthis Hübner, 1819	<i>Brenthis daphne</i> ([Denis&Schiffermüller], 1775)	1956-1960	Sibiu, Zarandului Mountain	ES	Western Carpathians	TR	8	V
	<i>Brenthis hecate</i> ([Denis&Schiffermüller], 1775)	1949-1976	Agârbiciu, Buia, Bruiu, Nocrich, Făget, Cincu, Gușterița, Șeica Mare, Șura Mare, Târnava,	ES	CJ, SB	TR	16	V
Boloria Moore, 1900	<i>Boloria euphrosyne</i> (Linnaeus, 1758)	1955-1969	Cozia, Rodna	ES	BN, VL, Eastern Carpathians	OT TR	4	V
	<i>Boloria selene</i> ([Denis&Schiffermüller], 1775)	1955-1984	Axente Sever, Bruiu, Cincu, Cislădie, Copșa, Hamba, Podu Olt, Porumbacu, Nocrich, Chiș-Chiș, Șura Mare, Slimnic, Rusciori, Porumbacu,	ES	BV, SB	TR	27	N

	<i>Boloria dia dia</i> (Linnaeus, 1767)	1952-1984	Agârbiciu, Avrig, Cincu, Clopotiva, Cluj Napoca, Copșa Mică, Gușterița, Făget, Hagieni, Podu Olt, Râu Vadului, Slimnic, Sibiu, Șiria, Șura Mare, Veseud	ES	AR, CJ, CT, HD, VL, SB,	CR DB OT TR	36	L
Inachis Hübner, 1819	<i>Inachis io</i> (Linnaeus, 1758)	1960-1976	Guțterința, Zarand	ES	SB, Western Carpathians	TR	2	L
Aglais Dalman, 1816	<i>Aglais urticae</i> (Linnaeus, 1758)	1964-1974	Hamba, Sibiu, Vrancea	ES	SB, VN	MD TR	4	N
Polygonia Hübner, [1819]	<i>Polygonia c-album</i> (Linnaeus, 1758)	1963-1975	Brașov, Cincu, Cîsnădie, Gușterița, Hamba, Rusciori	ES	BV, SB	TR	7	N
Araschnia Hübner, 1819	<i>Araschnia levana</i> (Linnaeus, 1758)	1967-1981	Făgăraș, Gușterița, Podu Olt, Sighișoara, Slimnic, Veștem	ES	BV, MS, SB	TR	11	N
Nymphalis Kluk, 1802	<i>Nymphalis antiopa</i> (Linnaeus, 1758)	1953	Sibiu	ES	SB	TR	2	V
	<i>Nymphalis polychloros</i> (Linnaeus, 1758)	1953-1983	Cașolț, Cornățel, Sibiu	ES	SB	TR	3	E
Euphydryas Scudder, 1872	<i>Euphydryas maturna</i> (Linnaeus, 1758)	1960	Chiș Chiș	ES			4	V
	<i>Euphydryas aurinia aurinia</i> (Rottemburg, 1775)	1960-1982	Gherdeal, Șercaia	ES	BV, VL	OT TR	5	E
Melitaea Fabricius, 1807	<i>Melitaea cinxia cinxia</i> (Linnaeus, 1758)	1954-1983	Cincu, Cornățel, Gușterița, Nocrich, Făget,Roșia, Șiria, Șiria, Șura Mare, Slimnic, Sibiu, Saschiz,	ES	AR, CJ, MS, SB	CR TR	29	N
	<i>Melitaea phoebe</i> ([Denis&Schiffermüller], 1775)	1952-1975	Axente Sever, Sibiu, Viile Sibiului, Nocrich, Făget, Gușterița, Hagieni, Hamba, Clopotiva, Chiș Chiș, Cincu, Merghindeal, Podu Olt, Zarand,	ES	CT, SB	DB TR, Southern Carpathians	44	N

	<i>Melitaea trivia trivia</i> ([Denis&Schiffermüller], 1775)	1970-1976	Axente Sever, Băile Herculane, Gușterița, Hagieni, Nocrich, Orlat, Sibiel, Sibiu, Slimnic, Șura Mare, Veștem,	ES	CS, CT, SB	BT DB TR	20	N
	<i>Melitaea didyma didyma</i> (Esper, 1778)	1952-1980	Agnita, Băile Herculane, Cenade, Cornățel, Făget, Gușterița, Hamba, Lotrioara, Orlat, Orșova, Podu Olt, Șiria, Slimnic, Șeica Mare, Șura Mare, Veștem,	ES	AB, AR, CS, CJ, MH, VL, SB	BT CR OT TR	55	N
	<i>Melitaea aurelia aurelia</i> Nickerl, 1850	1954-1984	Aiud, Axente Sever, Cenade, Clopotiva, Bruiu, Gușterița, Fărget, Moșna, Râu Vadului, Râșia, Șiria, Scărița Belioara, Nocrich, Șura Mare, Șeica Mare, Șercaia,	ES	AB, AR, CJ, BV, HD, VL, SB, Western Carpathians	CR OT TR	55	V
	<i>Melitaea athalia athalia</i> (Rottemburg, 1775)	1954-1982	Băile Herculane, Cincu, Chiș Chiș, Feldioara, Fărget, Gusu, Gușterița, Hamba, Mohu, Nocrich, Poplaca, Șercaia	ES	BV, CS, CJ, SB	BT TR	23	N
Neptis Fabricius, 1807	<i>Neptis rivularis</i> (Scopoli, 1763)	1974-1982	Arpășel, Făgăraș, Sibiu	ES	BV, SB	TR	8	N
	<i>Neptis lucilla</i> ([Denis&Schiffermüller], 1775)	1958-1974	Bejan, Gușterița, Șiria,	ES	AR, HD, SB	CR TR	8	N
	<i>Neptis sappho</i> Pallas, 1771	1970-1975	Bejan, Șeica Mare, Veștem	ES	HD, SB	TR	6	V
Apatura Fabricius, 1807	<i>Apatura ilia</i> ([Denis&Schiffermüller], 1775)	1968-1970	Sibiu, Șeica Mare	ES	SB	TR	2	V
	<i>Apatura iris</i> (Linnaeus, 1958)	1959-1982	Băile Herculane, Păltiniș, Șeica Mare	ES	CS, SB	BT TR	4	V