

Historical overview of research on butterflies in Prešov city and its surroundings (Slovakia)

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Abstract

The aim of the study was to summarize data on the distribution of butterflies (Lepidoptera: Papilionoidea) in Prešov city (Košická kotlina basin, Slovakia). Although sufficient attention was paid in the past to butterfly research in this area, data are currently scarce. Therefore, intensive research on butterfly biodiversity is currently being carried out by the first author of this study. It will serve as a basis for further research in this area, i.e., confirm, refute or add new knowledge to the species list. Several faunistic data from this area have been presented in “*Prodromus Lepidopterorum Slovaciae*” (Hrubý 1964) and its supplements (Reiprich 1977; Reiprich & Okáli 1988, 1989a, b; Okáli 1997; Endel & Panigaj 2022), mainly due to several authors (e.g., Husz A., Abafi-Aigner L., Dahlström Gy.). The earliest records from Prešov city were found in 1876 in the study “*Enumeratio Macrolepidopterorum Hungariae*” (Horváth & Pável 1876). In total, for the older period, 151 (or 148) species belonging to 6 families were reported for Prešov city. In contrast, 42 species belonging to 5 families were confirmed for the more recent period (after 1990). This number represents 28.4% of the total number of species reported before 1990.

Keywords: Lepidoptera, historical data, urban areas

Introduction

In study “*Fauna Regni Hungariae*” (Abafi-Aigner et al. 1896), authors summarized data on the occurrence of butterflies from the Eastern Carpathians, without more precise localization (usually as Ung County). Among the first more comprehensive study summarizing the state of knowledge on the butterfly’s fauna in Slovakia was “*Prodromus Lepidopterorum Slovaciae*”, published by Hrubý (1964). In this study, the author lists all published and unpublished data, with known localities at that time, for all registered species of Slovak butterflies from 1772 to 1959. Later, this review was expanded with occurrence data from 1959 to 1972 in the studies “*Additions to the Prodrome Lepidoptera of Slovakia*” (Reiprich 1977) and “*Supplements to the Prodrome Lepidoptera of Slovakia*” which were published in 3 volumes (Reiprich & Okáli 1988, 1989a, b). In these supplements new data on butterflies of Slovakia for the period 1973 – 1984 were added. At the same time missing data at localities were filled in and corrections to previous works were given. In them, the authors list only those species in combination with locality that were not listed in the Prodrome. This is the reason why we do not find data in the appendices that could confirm some very interesting older records from the past. The missing bibliography for the years 1985 – 1995 has been added by Okáli (1997). Finally, literature from 1996 to 2000 were completed by Endel & Panigaj (2022).

The oldest records from Prešov city were found in 1876 in the study “*Magyarország nagypikkelyröpűinek rendszeres névjegyzéke (Enumeratio Macrolepidopterorum Hungariae)*” (Horváth & Pável 1876). Several faunistic data from this area were listed in above-mentioned studies by (Hrubý 1964; Reiprich 1977; Reiprich & Okáli

1988, 1989a, b), mainly due to several authors (e.g., Husz A., Abafi-Aigner L., Dahlström G. etc.). Moreover, the study (Hrubý 1964) also includes collection data mainly from the Hungarian National Museum in Budapest (see Moucha 1961) and the Podtatra Museum in Poprad as well as private collections. Later, several authors, when mentioning the butterfly fauna of Prešov, only took over already published older data (cf. in our overview the citations are given in square brackets).

Data on butterflies of the urban environment of Prešov city can be found in the bachelor’s theses (Mošková 2015). Two species were also listed by Csanády (2019). The last mentioned author, started in 2020 more intensive research on the fauna of butterflies in the urban and suburban environment of Prešov city and the data are presented in the overview as unpublished (cf. as „Csanády A. unpubl.“). In view of the mentioned lack of data, the idea to comprehensively summarize old and new knowledge about the butterfly fauna from the territory of Prešov arose. In addition, we considered the effort to summarize the existing information in one place to be beneficial, which will simplify the work with older literature in the future.

Material and methods

Study area

The Prešov city is located in eastern Slovakia, between 49°00’ north latitude and 21°15’ east longitude. It is part of the Košická kotlina basin and is surrounded by the Slanské vrchy Mts. to the east and the Šarišská vrchovina highland to the west. Its altitude is approximately 255 m above sea level. The Sekčov River flows through the town and flows into the Torysa River. Between 1970 – 1990 it also included

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Haniska village, Lubotice village and Šarišské lúky meadows (Ištók 1998), but at present they do not belong to the cadastral territory of the city of Prešov. Moreover, Šarišské lúky meadows are since 1990 part of the village

Lubotice. Therefore, the city currently it consists of four districts: Prešov, Solivar, Šalgovík and Nižná Šebastová. There are large green areas in Prešov made up of forests, but also urban greenery.

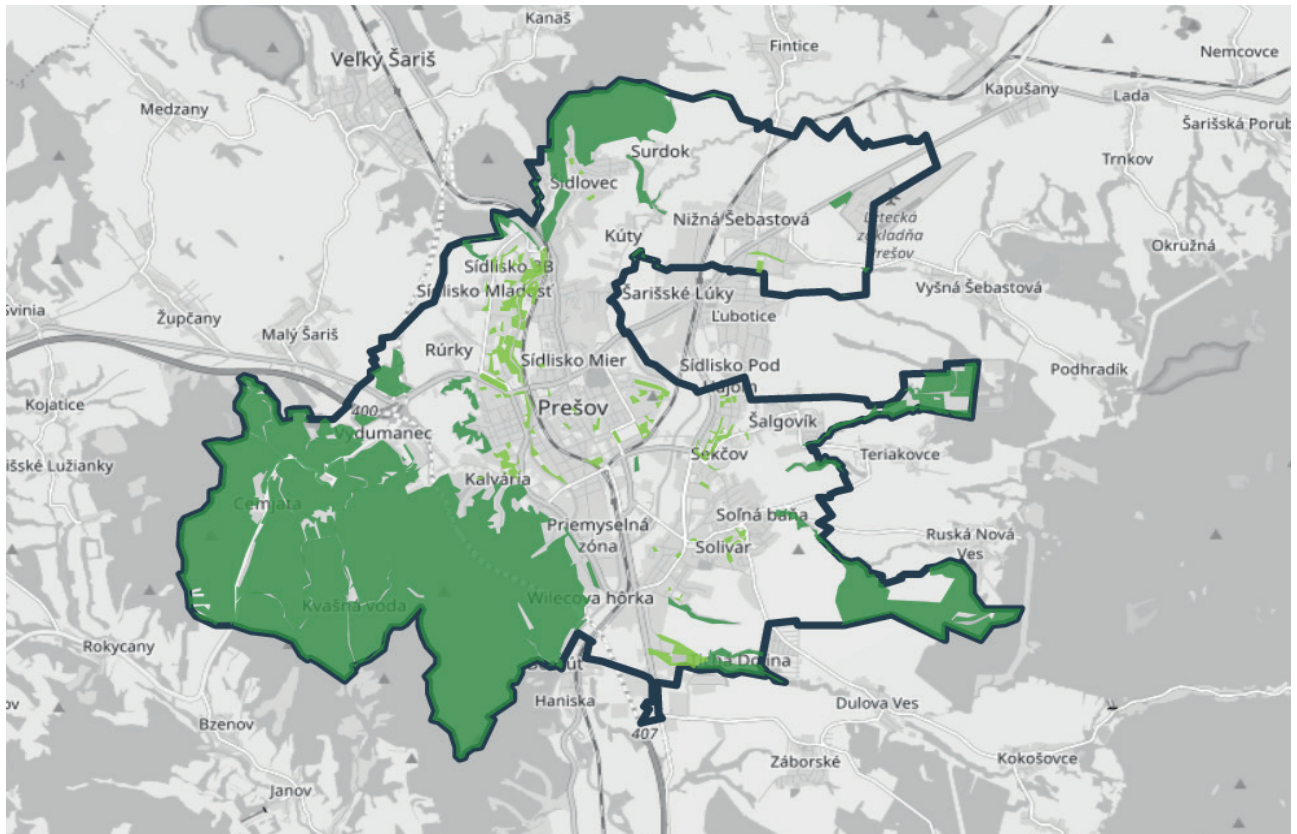


Figure 1. Current boundary of Prešov city with marked urban greenery (Source: <https://a-static.projektn.sk/2015/07/presov.html>).

- woodland:** suggesting an area with tree canopies that are taller than 5m. They do not show areas smaller than 1 ha and narrower than 10m.
- urban green zones:** include parks and gardens. They do not include cemeteries, private gardens and areas smaller than 0.25 ha or narrower than 10m.

It should be noted, that Hrubý (1964) in his summary lists the following localities of Prešov city and its surroundings: Prešov city, Solivar village, Prešovské hory Mts., Šalgovík village and the Torysa River valley. By studying the original study by Husz (1881a), it is evident that the following localities can also be distinguished. Prešov included the territory of the Prešov mountains (mainly Calvary and Wilec hôrka, the Haligrund mountains and their numerous valleys (mainly Cemjata, Kvašná voda, Veľký and Malý Borkut). Šalgovík village and Solivar village were originally independent municipalities, which were later annexed to Prešov. For the valley of the Torysa River the author mentioned three parts, with the upper part (from Šarišské Michaľany village to Prešov city) and the middle part (from Prešov city to Drienov village) being of particular importance for our overview.

Bibliographic research methodology

The bibliographic overview presents published and unpublished data on the occurrence of butterflies in the area of the Prešov city until 2022, classified not alphabetically, but according to the systematics presented by Pastorális et al. (2013) and Pastorális (2022). In its elaboration, the several literary sources were used (e.g., Horváth & Pável 1876; Husz 1881a, b; Abafi-Aigner et al. 1896; Dahlström 1897, 1900; Moucha 1961; Hrubý 1964; Reiprich 1977; Reiprich & Okáli 1988, 1989a, b; Mošková 2015; Csanády 2019; Gáborová 2021).

A very valuable source of data as well documentary specimens from Prešov city and its surroundings were also the collections deposited in the Hungarian National Museum in Budapest (cf. Moucha 1961; Hrubý 1964), the Podtatra Museum in Poprad (cf. Hrubý 1964), and finally, the East Slovak Museum in Košice (cf. Hogyová & Krišovský 2011; Krišovský & Panigaj 2017; Krišovský 2020). The

East Slovak Museum in Košice deposits an entomological collection of butterflies. A large part of the collections came from the territory of Prešov and its surroundings. In particular, these are the private collections by Jozef Petrašovič, Slavomír Bacher (see Hokyová & Krišovský 2011) and Milan Mihok (see Krišovský & Panigaj 2017; Krišovský 2020).

The collection of J. Petrašovič, concerning the group of butterflies, dates from the period 1958 – 1989. The butterflies (17 spp.) come from the city extravilan (Kvašná voda – Vydumanec i.e., urban part of Prešov, Borkut, Delňa and Šalgovík).

The collection of S. Bacher, dates from the period 1971 – 1985. The butterflies (18 spp.) come from the urban environment as well as the city's extravilan (Vydumanec, Borkut, Delňa, Cemjata and Solivar).

Finally, the collection of M. Mihok, dates from the period 1964 – 1997, while for the diurnal butterflies of Prešov city and its surroundings it is mainly the period 1968 – 1978. The butterflies (34 spp.) come from the urban environment of the city and extravilan (Kvašná voda – Vydumanec).

It should also be mentioned that other amateur collectors active in Prešov and its surroundings included Mr. Jozef Kyselý, Mr. Žembera and Mr. Belovodský (Panigaj L. and Jászay T. in verb.). However, data on the whereabouts of butterflies from their private collections are currently unknown.

For each species, the locality of occurrence is given, and authors who recorded each butterfly species, or a reference to the collection material. In cases where the listed authors have merely adopted a previously published record, the source of the citation is given in square brackets. For unpublished data, the author and the source of the citation is given (e.g., Reiprich A. in Hrubý (1964) – private collection; Csanády A. unpubl., Dahlström Gy., Hámori J. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice). The scientific nomenclature of butterflies and comments are given by Pastorális et al. (2013) and Pastorális (2022).

Bibliographic overview of butterflies and localities of occurrence in Prešov city

Summarization of published and unpublished older (until 1990) and new (after 1990) data showed that 152 species of butterflies belonging to 62 genera from 6 families were reported in the monitored area of Prešov. However, the existence of three species of the genus *Erebia* (*E. epiphron* Knoch, *E. pandrose* Borkh. and *E. oeme* Hübner) is doubtful, as they are high-altitude species and were probably poorly determined (see Hrubý 1964). In that case, the total number of butterflies was 149 species. For the families Papilionidae (5 species from 4 genera), Hesperiiidae (16 species from 8 genera), Pieridae (17 species from 7 genera), Riodinidae (1 species from 1 genus), Lycaenidae (45 species from 20 genera) and for the family Nymphalidae (68 or 65) species from 29 genera).

In total, for the older period, 151 (or 148) species belonging

to 6 families were reported for Prešov city. In contrast, 42 species belonging to 5 families were confirmed for the more recent period (after 1990). This number represents 28.4% of the total number of species reported before 1990. During period 1876 – 2022, five species of butterflies belonging to the family Papilionidae, belonging to four genera, were confirmed in the territory of Prešov city and its vicinity (cf. the locality “Prešovské hory Mts.”, Torysa River vallue). However, the occurrence of three species (*Zerynthia polyxena* Den. & Schiff., *Parnassius apollo* L. and *P. mnemosyne* L.) is currently questionable to unlikely. It should be noted that there are two specimens of *P. mnemosyne* L. from years 1968 and 1978 (leg. et det. Ing. Milan Mihok) in the collections of the East Slovak Museum in Košice. The remaining two species (*Iphiclides podalirius* L. and *Papilio machaon* L.) were also confirmed at present (Mošková 2015; Csanády A. unpubl.).

Until 2022, the family Hesperiiidae was recorded with 16 species of butterflies belonging to eight genera. It should be noted that for most species only older data (until 1990) are known. From the more recent period after 1990, occurrence has only been confirmed for the more common species, such as *Erynnis tages* L., *Pyrgus malvae* L., *Thymelicus lineola* Ochs., and *Ochlodes sylvanus* Esp. Therefore, intensive research in urban and suburban localities of Prešov city will be necessary to confirm the occurrence of other species.

Family Pieridae was represented by 17 species of butterflies belonging to seven genera. In the present period, only eight species have been confirmed, but the occurrence of several species is more than probable as they belong to relatively common species (e.g., *Pontia edusa* F., *Gonepteryx rhamni* L.). On the other hand, several listed species of the genus *Colias* are doubtful (cf. Hrubý 1964). Moreover, the occurrence of several species, such as *Leptidea sinapis* L., *L. juvernica* Will., *Colias hyale* L. and *C. alfajariensis* Rib. are also questionable and requires more detailed investigation with regard to the problematic determination.

One species of the family Riodinidae belonging to the genus *Hamearis* occurred on the territory of Prešov city between years 1876 – 2022. Nevertheless, in the current period it has not yet been confirmed.

During evaluated period (from 1876 to 2022), 45 species of Lycaenidae butterflies belonging to 16 genera were recorded. Pastorális et al. (2013) showed the species *Lycaena helle* Den. & Schiff. as a protected species of European importance and also as an extinct or missing species in Slovakia. They point out that the species *Plebejus optilete* Knoch and *Polyommatus damon* Den. & Schiff. are protected species of national importance and the species *P. damon* Den. & Schiff. is also, together with *Iolana iolas* Ochs. an extinct or missing species. The occurrence of several species, such as *Plebejus idas* L. and *P. argyrognomon* Brgstr. are also questionable and requires more detailed investigation with regard to the problematic determination.

In total, 68 (or 65) species of butterflies from the Nymphalidae family belonging to 26 genera were recorded in the territory of Prešov during evaluated period (1876 – 2022). Pastorális et al. (2013) noted the species *Boloria aquilonaris* Stich. as extinct or missing. *Nymphalis vaualbum* Den. & Schiff. as both a protected species of European importance and an extinct or missing species. *Neptis sappho* Pall. as a protected species of national importance, *Coenonympha oedippus* Fab. as a protected species of European importance. According to the authors, the occurrence of a permanent population of *Pyronia tithonus* L. in Slovakia is also very unlikely at present. In the current period, 18 species were confirmed. In conclusion, the presence of several species in evaluated area is questionable and validation of older data is very difficult (see Moucha 1961; Hrubý 1964; Pastorális et al. 2013).

These inconsistencies are already pointed out by Moucha (1961), who critically evaluates the butterfly collections stored in the Hungarian National Museum in Budapest, and concern in particular Dahlström's collection. The author stresses that clarification of this fact is very important for the understanding of the faunistics of Slovak research, because most of these erroneous data were reported in older literature (before 1960) and for many years were only passively cited.

He divided the erroneous data into two groups:

(a) unreliable are those species that actually occur in Slovakia, but the recorded localities do not correspond to their ecological conditions (e.g., several species of the genus *Erebia*).

b) erroneous records are those relating to species that do not occur in Slovakia.

For these reasons, it should be considered with reserve all other records from this author as well from further author (Husz A.). Their older data are often doubtful, because in addition to the alpine species they also mention other species, e.g. *Pyronia tithonus* L., *Coenonympha oedippus* Fab. and others occurring in the vicinity of Prešov (see below for several species in the overview).

The current confirmation of the occurrence of several notable species of the Red List of the Slovak Republic, as well as species of national or European importance (Kulfan & Kulfan 2001; van Swaay et al. 2010; Pastorális et al. 2013), only highlights the further need for intensive mapping, especially for the purposes of conservation of the species themselves and their habitats.

Familia: Papilionidae

***Iphiclides podalirius* (Linnaeus, 1758) – the Scarce Swallowtail**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; [Abafi-Aigner et al. 1896]; Abafi-Aigner 1897, 1898, [1907c]; Dahlström 1897, 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Papilio machaon* (Linnaeus, 1758) – the Swallowtail**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; Dahlström 1900; Abafi-Aigner 1906b; Mošková 2015; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Parnassius mnemosyne* (Linnaeus, 1758) – the clouded Apollo**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy., Hámori J., Issekutz. L. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Parnassius apollo* (Linnaeus, 1758) – the Apollo**

Localities: Prešov (Husz 1881a; Rebel & Rogenhoffer 1893; Váγγελ 1893, 1911; Abafi-Aigner et al. 1896; Stichel 1899, 1907, 1909; Abafi-Aigner 1900; Dahlström 1900; Pagenstecher 1909; Bryk 1914, 1915, 1918, 1922, 1935; Kertész 1922; Eisenhardt 1931; Bryk & Eisner 1932, 1934, 1939; Issekutz 1952; Pekarsky 1953; Eisner 1955; [Kříž 2011]; Dahlström Gy., Sándor A. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Husz 1881a; Rebel & Rogenhoffer 1893; Abafi-Aigner 1906b; Szent-Ivány 1938; Pekarsky 1953); Prešovské hory (Pax 1915; Fruhstorfer 1921; Slabý 1954); Šalgovík* (Szent-Ivány 1938).

Note: *We mentioned the locality Šalgovík in the list of localities, even though it was a separate village at the time of publication of the paper. Currently, Šalgovík village is part of the city of Prešov.

***Zerynthia polyxena* ([Denis & Schiffermüller], 1775) – the southern festoon**

Localities: Prešov (Abafi-Aigner 1907c).

Familia: HesperIIDae

***Carterocephalus palaemon* (Pallas, 1771) – the Chequered Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Ochlodes sylvanus* (Esper, [1777]) – the Large Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Hámori J. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

Note: in older literature referred to as *Ochlodes venatus* (Bremer & Grey, 1852), but according to recent research taxa *O. venatus* and *O. sylvanus* are two separate species, with *O. venatus* occurs only in the Far East in Asia (Devyatkin 1997; Pastorális et al. 2013).

***Hesperia comma* (Linnaeus, 1758) – the Silver-spotted Skipper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al.

1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Thymelicus acteon* (Rottemburg, 1775) – the Lulworth Skipper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

Note: in older literature referred to as *Adopaea acteon* (Rottemburg, 1775).

***Thymelicus sylvestris* (Poda, 1761) – the Small Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900; Hámori J. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

Note: in older literature referred to as *Adopaea sylvestris* (Poda, 1761).

***Thymelicus lineola* (Ochsenheimer, 1808) – the Essex Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J., Mihok M. in coll. East Slovak Museum in Košice).

Note: in older literature referred to as *Adopaea lineola* (Ochsenheimer, 1808).

***Spialia sertorius* (Hoffmannsegg, 1804) – the Red-underwing Skipper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Torysa River valley* (Husz 1881).

Note: in older literature referred to as *Pyrgus sertorius* (Hoffmannsegg, 1804). *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881).

***Spialia orbifer* (Hübner, [1823]) – the Orbed Red-underwing Skipper**

Localities: Prešov (Abafi-Aigner et al. 1896; [Paclt & Šmelhaus 1948]).

Note: in older literature referred to as *Pyrgus orbifer* (Hübner, 1823).

***Carcharodus alceae* (Esper, [1780]) – the Mallow Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900; Reiprich A. in Hrubý (1964) – private collection; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Carcharodus floccifera* (Zeller, 1847) – the Tufted Skipper**

Localities: Prešov (Abafi-Aigner et al. 1896; Dahlström 1900; [Paclt & Šmelhaus 1948]).

Note: in older literature referred to as *Carcharodus flocciferus* (Zeller, 1847)

***Erynnis tages* (Linnaeus, 1758) – the Dingy Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J., Mihok M. in coll. coll. East Slovak Museum in Košice).

***Pyrgus malvae* (Linnaeus, 1758) – the Grizzled Skipper**

Localities: Prešov (Husz 1881; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. coll. East Slovak Museum in Košice).

***Pyrgus carthami* (Hübner, [1813]) – the Safflower Skipper**

Localities: Prešov (Husz 1881a; Dahlström 1900).

***Pyrgus serratulae* (Rambur, 1839) – the Olives Skipper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Pyrgus armoricanus* (Oberthür, 1910) – the Oberthür's Grizzled Skipper**

Localities: Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Pyrgus alveus* (Hübner, [1803]) – the Large Grizzled Skipper**

Localities: Prešov (Husz 1881a; Abafi-Aigner et al. 1896; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Familia: Pieridae

***Leptidea morsei* (Fenton, 1882) – Fenton's Wood White**

Localities: Prešov (Lorković 1930, 1931; Moucha 1953a, 1959; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Leptidea juvernica* Williams, 1946 – the Cryptic Wood White**

Localities: Prešov (Csanády A. unpubl.).

***Leptidea sinapis* (Linnaeus, 1758) – the Wood White**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1900; Mošková 2015; Dahlström Gy., Hámori J. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

Note: on the basis of genetic analyses the occurrence of cryptic species in *Leptidea sinapis/reali* complex. The range of *L. reali* is restricted to the southern part of Western Europe. The taxon *L. juvernica* has been assigned a new status as a valid taxon occurring together with *L. sinapis* also in the territory of Slovakia (Dincă et al. 2011; Pastorális et al. 2013).

***Gonepteryx rhamni* (Linnaeus, 1758) – the common brimstone**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; Dahlström 1900; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Colias hyale* (Linnaeus, 1758) – the Pale Clouded Yellow**

Localities: Prešov (Husz 1881a, 1883; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1900; [Abafi-Aigner 1906b; Berger & Fontaine 1948; Reissinger 1959]; Csanády A. unpubl.; Dahlström Gy., Tomala N. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Colias alfacariensis* Ribbe, 1905 – the Berger's Clouded Yellow**

Localities: Prešov (Kovács 1954; coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Colias australis* (Verity, 1911). Moreover, *C. alfacariensis* together with *C. hyale* forms a kind of complex. Since the butterflies of both species develop many variations, the two species cannot be differentiated by morphology or on the basis of a genital examination. Information about the habitat and the geographical distribution provide only an indication of which of the two species may be involved. A safe distinction is possible only on the completely different caterpillars.

***Colias chrysotheme* (Esper, [1781]) – the Lesser Clouded Yellow**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

***Colias crocea* (Geoffroy in Fourcroy, 1758) – the Clouded Yellow**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

***Colias myrmidone* (Esper, [1781]) – the Danube Clouded Yellow**

Localities: Prešov (Husz 1881a; Abafi-Aigner et al. 1896; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; coll. Drnec M. in Hrubý (1964) – private collection); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

***Colias phicomone* (Esper, 1780) – the Mountain Clouded Yellow**

Localities: Prešov (Abafi-Aigner et al. 1896; Dahlström 1900; [Abafi-Aigner 1905, Megyesi 1935]).

Note: Hrubý (1964) lists all these data as doubtful, later unconfirmed („*Omnia istaindiciadubiosa, posteriorusanemine confirmata*“). In view of the above comment, it is included in our review only to supplement the historical records of the species' occurrence in the territory of Prešov city and its surroundings.

***Aporia crataegi* (Linnaeus, 1758) – the Black-veined White**

Localities: Prešov (Horváth & Pável 1876; Fritsch 1878; Husz 1881a; Dahlström 1900; Mihok M. in coll. East Slovak Museum in Košice).

***Pontia edusa* (Fabricius, [1777]) – the Eastern Bath White**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Reiprich A., Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

Note: in older literature referred to as *Pontia daplidicae* (Linnaeus, 1758). However, studies showed that the species of *P. daplidicae* and *P. edusa* are habitually identical and their distinction is only possible at the gene level (Geiger & Scholl 1982). However, they have different ranges *P. daplidice* is distributed in south-western and southern Europe, Southwest Asia to Afghanistan and Kazakhstan, whereas *P. edusa* is found in central, south-eastern and eastern Europe and in northern parts of Iran and Iraq through Siberia to the Sea of Japan (Pastoralis et al. 2013).

***Pieris brassicae* (Linnaeus, 1758) – the Large White**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Hámori J., Sándor A. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Pieris rapae* (Linnaeus, 1758) – the Small Shite**

Localities: Prešov (Husz 1881a; Dahlström 1900; Mošková 2015; Csanády A. unpubl.; Hámori J., Sándor A. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Pieris bryoniae* (Hübner, [1806]) – the Dark-veined White**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Moucha 1958; Dahlström Gy., Hámori J. in coll. Hungarian National Museum in Budapest).

Note: in older literature referred to as *Pieris bryoniae* (Ochsenheimer, 1808).

***Pieris napi* (Linnaeus, 1758) – the Green-veined White**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Mošková 2015; Csanády A.

unpubl.; Sándor A. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

***Anthocharis cardamines* (Linnaeus, 1758) – the Orange Tip**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Abafi-Aigner 1903; Mošková 2015; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

Familia: Riodinidae

***Hamearis lucina* (Linnaeus, 1758) – the Duke of Burgundy**

Localities: Prešov (Husz 1881a; Dahlström 1900; Abafi-Aigner 1906b, 1907c; [Stichel 1928]; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Familia: Lycaenidae

***Lycaena phlaeas* (Linnaeus, 1761) – the Small Copper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Abafi-Aigner 1909]; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

***Lycaena dispar* ([Haworth], 1802) – the Large Copper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Lycaena virgaureae* (Linnaeus, 1758) – the Scarce Copper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Abafi-Aigner 1909]; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

***Lycaena tityrus* (Poda, 1761) – the Sooty Copper**

Localities: Prešov (Husz 1881a; Dahlström 1900; [Abafi-Aigner 1909]; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Lycaena alciphron* (Rottemburg, 1775) – the Purple-shot Copper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Abafi-Aigner 1902; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Lycaena hippothoe* (Linnaeus, 1761) – the Purple-edged Copper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian

National Museum in Budapest).

***Lycaena thersamon* ([Esper, 1784]) – the Lesser Fiery Copper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

***Lycaena helle* (Denis & Schiffermüller, 1775) – the Violet Copper**

Localities: Prešov (Husz 1881a; Abafi-Aigner et al. 1896; Dahlström 1900; Megyesi 1935).

Note: in older studies it is referred to as *Lycaena amphidamas* (Esper, 1870). It is a species that had its population in Slovakia, but its presence has not been confirmed in recent decades. Therefore we consider it extinct or missing (see Pastorális et al. 2013).

***Thecla betulae* (Linnaeus, 1758) – the Brown Hairstreak**

Localities: Prešov (Husz 1881a; Dahlström 1897, 1899a, 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Favonius quercus* (Linnaeus, 1758) – the Purple Hairstreak**

Localities: Prešov (Husz 1881a; Dahlström 1899a, 1900; Husz A. in coll. Hungarian National Museum in Budapest). Note: in older studies it is referred to as *Neozephyrus quercus* L. or *Thecla quercus* L. (cf. Hrubý 1964; Patočka & Kulfan 2009).

***Callophrys rubi* (Linnaeus, 1758) – the Green Hairstreak**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Satyrrium w-album* (Knoch, 1782) – the White-letter Hairstreak**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy., Tomala N. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Strymon w-album* (Knoch, 1782).

***Satyrrium pruni* (Linnaeus, 1758) – the Black Hairstreak**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy., Tomala N. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Strymon pruni* (Linnaeus, 1758).

***Satyrrium spini* ([Denis & Schiffermüller, 1775]) – the Blue Spot Hairstreak**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; coll. Podtatra Museum in Poprad*).

Note: in older studies it is referred to as *Strymon spini*

(Fabricius, 1787).

*as District Museum of Local History in Poprad (cf. Hrubý 1964).

***Satyrium ilicis* (Esper, [1779]) – the Ilex Hairstreak**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy., Piso K. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Strymon ilicis* (Esper, 1779).

***Satyrium acaciae* (Fabricius, 1787) – the Sloe Hairstreak**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

Note: in older studies it is referred to as *Strymon acaciae* (Fabricius, 1787).

***Cupido minimus* (Fuessly, 1775) – the Small Blue**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Cupido osiris* (Meigen, [1829]) – the Osiris Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Megyesi 1935]).

Note: in older studies it is referred to as *Cupido serbus* (Boisduval, 1832).

***Cupido argiades* (Pallas, 1771) – the Short-tailed Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Abafi-Aigner 1907c, [1910]; Csanády unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Cupido decolorata* (Staudinger, 1886) – the Eastern Short-tailed Blue**

Localities: Prešov (Dahlström 1897, 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Cupido alcatas* (Hoffmannsegg, 1804) – the Provençal Short-tailed Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1900).

***Celastrina argiolus* (Linnaeus, 1758) – the Holly blue**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Pseudophilotes vicrama* (Moore, 1865) – the Eastern**

Baton Blue

Localities: Prešov (Husz 1881a; Dahlström 1900; [Abafi-Aigner 1910]; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Philotes vicrama* (Moore, 1865).

***Scoliantides orion* (Pallas, 1771) – the Chequered Blue**

Localities: Prešov (Husz 1881a; Dahlström 1900; [Abafi-Aigner 1910]).

***Glaucopsyche alexis* (Poda, 1761) – the Green-underside Blue**

Localities: Prešov (Husz 1881a; Dahlström 1897, 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Phengaris arion* (Linnaeus, 1758) – the Large Blue**

Localities: Prešov (Husz 1881a; Dahlström 1899a, 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Maculinea arion* (Linnaeus, 1758).

***Phengaris teleius* (Bergsträsser, 1779) – the Scarce Large Blue**

Localities: Prešov (Husz 1881a; Abafi-Aigner et al. 1896; Dahlström 1900; Ulbrich E. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Maculinea teleius* (Bergsträsser, 1779).

***Phengaris nausithous* (Bergsträsser, 1779) – the Dusky Large Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Szent-Ivány 1940]; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Maculinea nausithous* (Fabricius, 1787).

***Phengaris alcon* ([Denis & Schiffermüller], 1775) – the Alcon Large Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström in Moucha 1961; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Maculinea alcon* Den. & Schiff. (cf. Hrubý 1964). In addition, Dahlström in Moucha (1961) lists as *Maculinea rebeli* Hirsch. Moreover, according to Fric et al. (2007), there are no morphological or genetic differences between the species *P. rebeli* Hirsch. and *P. alcon* Den. & Schiff.

***Plebejus argus* (Linnaeus, 1758) – the Silver-studded Blue**

Localities: Prešov (Husz 1881a; Dahlström 1897, 1900; [Abafi-Aigner 1910]; Mošková 2015; Csanády 2019;

Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Plebejus idas* (Linnaeus, 1761) – the Idas Blue**

Localities: Šalgovík (Petrašovič J. in coll. East Slovak Museum in Košice).

***Plebejus argyrognomon* (Bergsträsser, 1779) – Reverdin’s Blue**

Localities: Prešov (Dahlström 1900; [Abafi-Aigner 1910]; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Aricia agestis* ([Denis et Schiffermüller], 1775) – the Brown Argus**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Abafi-Aigner 1910]; Mošková 2015; Csanády A. unpubl.).

Note: in older studies it is referred to as *Aricia astrarche* (Bergsträsser, 1779).

***Eumedonia eumedon* (Esper, [1780]) – the Geranium Argus**

Localities: Prešov (Husz 1881a, b; [Biró 1885; Abafi-Aigner et al. 1896]; Dahlström 1897, 1900; [Abafi-Aigner 1910; Megyesi 1935]; Petrašovič J. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Eumedonia chiron* (Rottemburg, 1775), *Aricia eumedon* (Esper, 1780).

***Cyaniris semiargus* (Rottemburg, 1775) – the Mazarine Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Polyommatus semiargus* (Rottemburg, 1775).

***Agriades optilete* (Knoch, 1781) – the Cranberry Blue**

Localities: Prešov (Abafi-Aigner et al. 1896; [Megyesi 1935]).

Note: in older studies it is referred to as *Vacciniina optilete* (Knoch, 1781), *Plebejus optilete* (Knoch, 1781).

***Lysandra bellargus* (Rottemburg, 1775) – the Adonis Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Polyommatus bellargus* (Rottemburg, 1775).

***Lysandra coridon* (Poda, 1761) – the Chalkhill Blue**

Localities: Prešov (Husz 1881a; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Polyommatus coridon* (Poda, 1761).

***Polyommatus dorylas* ([Denis & Schiffermüller], 1775) – the Turquoise Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Abafi-Aigner 1910]; Dahlström Gy., Husz A. in coll. Hungarian National Museum in Budapest; coll. Podtatra Museum in Poprad*).

Note: *as District Museum of Local History in Poprad (cf. Hrubý 1964).

***Polyommatus thersites* (Cantener, [1835]) – the Chapman’s Blue**

Localities: Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Polyommatus icarus* (Rottemburg, 1775) – the Common Blue Butterfly**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1900; [Abafi-Aigner 1910]; Mošková 2015; Csanády 2019, Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J., Mihok M. in coll. East Slovak Museum in Košice); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

***Polyommatus daphnis* ([Denis & Schiffermüller], 1775) – the Meleager’s Blue**

Localities: Prešov (Husz 1881a; Dahlström 1900; [Abafi-Aigner 1910]; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Meleageria daphnis* (Denis & Schiffermüller, 1775).

***Polyommatus damon* (Denis & Schiffermüller, 1775) – the Damon Blue**

Localities: Prešov (Husz 1881a; Dahlström 1900).

Note: It is a species that has had its population in Slovakia, but its presence has not been confirmed in recent decades. Therefore we consider it extinct or missing (see Pastorális et al. 2013).

***Iolana iolas* (Ochsenheimer, 1816) – the Iolas Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

Note: It is a species that has had its population in Slovakia, but its presence has not been confirmed in recent decades. Therefore we consider it extinct or missing (see Pastorális et al. 2013).

***Lampides boeticus* (Linnaeus, 1767) – the Pea Blue**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Uhryk 1903; [Warnecke 1933]).

Note: Pastorális et al. (2013) list this species as an “isolated, unrecorded record far from its range of permanent occurrence”. In view of the above comments, it is included in our review only to supplement the historical records of

the species' occurrence in the territory of the city of Prešov and its surroundings.

Familia: Nymphalidae

***Pararge aegeria* (Linnaeus, 1758) – the Speckled Wood**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Petrašovič J. in coll. East Slovak Museum in Košice).

***Lasiommata megera* (Linnaeus, 1767) – the Wall Brown**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Lasiommata petropolitana* (Fabricius, 1787) – the Northern Wall Brown**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

***Lasiommata maera* (Linnaeus, 1758) – the Large Wall Brown**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Husz A. in coll. Hungarian National Museum in Budapest).

***Lopinga achine* (Scopoli, 1763) – the Woodland Brown**

Localities: Prešov (Husz 1881a; Dahlström 1900).

***Coenonympha pamphilus* (Linnaeus, 1758) – the Small Heath**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Mošková 2015; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Coenonympha tullia* (Müller, 1764) – the Large Heath**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Megyesi 1935]).

***Coenonympha glycerion* (Borkhausen, 1788) – the Chestnut Heath**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

Note: the first records from Slovakia were published as *Coenonympha amyntas* (cf. Hrubý 1964), which is nowadays a synonym of *C. arcania* (Pastorális et al. 2013). In older studies it is referred to also as *Coenonympha iphis* (Denis & Schiffermüller, 1775).

***Coenonympha hero* (Linnaeus, 1761) – the Scarce Heath**

Localities: Prešov (Abafi-Aigner et al. 1896; [Baudis 1907; Megyesi 1935]).

***Coenonympha arcania* (Linnaeus, 1761) – the Pearly Heath**

Localities: Prešov (Husz 1881a; Dahlström 1900; Schwarz 1948; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

***Coenonympha oedippus* (Fabricius, 1771) – the False Ringlet**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Megyesi 1935; Troníček 1936]).

Note: Pastorális et al. (2013) state that the occurrence of a permanent population of the species in Slovakia is currently very unlikely.

***Erebia ligea* (Linnaeus, 1758) – the Arran Brown**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, b, 1900; Sándor A. in coll. Hungarian National Museum in Budapest).

***Erebia euryale* (Esper, 1805) – the Large Ringlet**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, b, 1900).

***Erebia epiphron* (Knoch, 1783) – the Small Mountain Ringlet**

Localities: Prešov (Abafi-Aigner et al. 1896; Dahlström 1900; [Megyesi 1935]).

Note: Hrubý (1964) states as quite doubtful (*omnino dubiosum!*). In view of the above comments, it is included in our review only to supplement the historical records of the species' occurrence in the territory of the city of Prešov and its surroundings.

***Erebia aethiops* (Esper, 1777) – the Scotch Argus**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy., Piso K., Tomala N. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Erebia aethiops* (Esper, 1779).

***Erebia medusa* ([Denis & Schiffermüller], 1775) – the Woodland Ringlet**

Localities: Prešov (Husz 1881a; Elwes 1889; [Abafi-Aigner et al. 1896]; Dahlström 1900; Abafi-Aigner 1907b; Slabý 1950; Csanády A. unpubl.; coll. Hungarian National Museum in Budapest); Solivar – Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy., Parlay Gy., Piso K. in coll. Hungarian National Museum in Budapest); Prešovské hory Mts. (Slabý 1950).

***Erebia pandrose* (Borkhausen, 1788) – the Dewy Ringlet**

Localities: Solivar – Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

Note: Hrubý (1964) states as impossible (*impossible!*). In view of the above comments, it is included in our

review only to supplement the historical records of the species' occurrence in the territory of Prešov city and its surroundings.

***Erebia oeme* (Hübner, 1804) – the Bright Eyed Ringlet**

Localities: Prešov (Abafi-Aigner et al. 1896; Dahlström 1900; Fruhstorfer 1917).

Note: Hrubý (1964) states as doubtful (*dubiosum!*). Pastoralis et al. (2013) state that the published data for this species were based on an incorrect determination. In view of the above comments, it is included in our review only to supplement the historical records of the species' occurrence in the territory of Prešov city and its surroundings.

***Aphantopus hyperanthus* (Linnaeus, 1758) – the Ringlet**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Hyponephele lycaon* (Rottemburg, 1775) – the Dusky Meadow Brown**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Maniola lycaon* (Rottemburg, 1775).

***Maniola jurtina* (Linnaeus, 1758) – the Meadow Brown**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1900; Mošková 2015; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J., Mihok M. in coll. East Slovak Museum in Košice).

***Melanargia galathea* (Linnaeus, 1758) – the Marbled White**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Minois dryas* (Scopoli, 1763) – the Dryad**

Localities: Prešov (Husz 1881a; Dahlström 1900; Abafi-Aigner 1906b, 1907a; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Satyrus dryas* (Scopoli, 1763).

***Brintesia circe* (Fabricius, 1775) – the Great Banded Grayling**

Localities: Prešov (Husz 1881a; Dahlström 1900); Solivar – Prešov (Husz 1881a; Dahlström 1900).

Note: in older studies it is referred to as *Hipparchia circe* (Fabricius, 1775).

***Chazara briseis* (Linnaeus, 1764) – the Hermit**

Localities: Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Hipparchia briseis* (Linnaeus, 1764).

***Hipparchia statilinus* (Hufnagel, 1766) – the Tree Grayling**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

Note: in older studies it is referred to as *Satyrus statilinus* (Hufnagel, 1766).

***Hipparchia semele* (Linnaeus, 1758) – the Grayling**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Eumenis semele* (Linnaeus, 1758).

***Hipparchia fagi* (Scopoli, 1763) – the Woodland Grayling**

Localities: Prešov (Husz 1881a; Dahlström 1900).

***Hipparchia hermione* (Linnaeus, 1764) – the Rock Grayling**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Abafi-Aigner 1908; Megyesi 1935]).

Note: in older studies it is referred to as *Hipparchia aelia* (Hoffmannsegg, 1804).

***Pyronia tithonus* (Linnaeus, 1767) – the Gatekeeper**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

Note: The occurrence of a permanent population of this species in Slovakia is currently considered highly unlikely (see Pastoralis et al. 2013).

***Argynnis paphia* (Linnaeus, 1758) – the Silver-washed Fritillary**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; [Abafi-Aigner 1907b]; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Argyronome paphia* (Linnaeus, 1758).

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

Localities: Prešov (Husz 1881a; Dahlström 1900; [Megyesi 1935; Moucha 1952, 1959]).

Note: in older studies it is referred to as *Pandoriana pandora* (Denis & Schiffermüller, 1775).

***Speyeria aglaja* (Linnaeus, 1758) – the dark green fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1899a, 1900; Abafi-Aigner 1906b, 1907b, c; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Fabriciana aglaia* (Linnaeus, 1758), *Brenthis aglaia* (Linnaeus, 1758), *Argynnis aglaja* (Linnaeus, 1758).

***Fabriciana adippe* ([Denis & Schiffermüller], 1775) – the High Brown Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1900; Hámori J. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Fabriciana adippe* (Denis & Schiffermüller, 1775), *Brenthis adippe* (Denis & Schiffermüller, 1775), *Argynnis adippe* (Denis & Schiffermüller, 1775).

***Fabriciana niobe* (Linnaeus, 1758) – the Niobe Fritillary**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Abafi-Aigner 1906b; Szent-Ivány 1939; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Torysa River valley* (Husz 1881a).

Note: *Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a). In older studies it is referred to as *Fabriciana niobe* (Linnaeus, 1758), *Brenthis niobe* (Linnaeus, 1758), *Argynnis niobe* (Linnaeus, 1758).

***Issoria lathonia* (Linnaeus, 1758) – the Queen of Spain Fritillary**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, 1900; [Abafi-Aigner 1907b]; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice).

***Brenthis ino* (Rottemburg, 1775) – the Lesser Marbled Fritillary**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

***Brenthis daphne* ([Denis & Schiffermüller], 1775) – the Marbled Fritillary**

Localities: Prešov (Csanády A. unpubl.).

***Brenthis hecate* ([Denis & Schiffermüller], 1775) – the Twin-spot Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1900).

***Boloria aquilonaris* (Stichel, 1908) – the Cranberry Fritillary**

Localities: Prešov (Abafi-Aigner et al. 1896; Abafi-Aigner 1907b).

Note: in older studies it is referred to as *Boloria alethea* (Hemming, 1934). According to Pastorális et al. (2013), *B. alethea* Hemm. is synonymous with *B. aquilonaris* Stich. in the older literature, whereas it is now at the subspecies level – *B. aquilonaris alethea* Hemm.

***Boloria euphrosyne* (Linnaeus, 1758) – the Pearl-bordered Fritillary**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, 1900; [Abafi-Aigner 1907c]; Dahlström Gy., Parlay Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Clossiana euphrosyne* (Linnaeus, 1758).

***Boloria selene* ([Denis & Schiffermüller], 1775) – the Small Pearl-bordered Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest); Petrašovič J. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Clossiana selene* (Denis et Schiffermüller, 1775).

***Boloria dia* (Linnaeus, 1767) – the Weaver's Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Boloria dia* (Linnaeus, 1767).

***Boloria titania* (Esper, 1793) – the Titania's Fritillary**

Localities: Prešov (Abafi-Aigner et al. 1896; [Abafi-Aigner 1907b; Matějková 1942]).

Note: Hrubý (1964) states as later unconfirmed (*posterius non confirmatum*). Pastorális et al. (2013) state that no documented specimens are available. In view of the above comments, it is included in our review only to supplement the historical records of the species' occurrence in the territory of Prešov city and its surroundings.

***Limenitis populi* (Linnaeus, 1758) – the Poplar Admiral**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900, 1901; Dahlström Gy., Parlay Gy., Ulbrich E. in coll. Hungarian National Museum in Budapest; Mihok M. in coll. East Slovak Museum in Košice East Slovak Museum in Košice).

***Limenitis camilla* (Linnaeus, 1764) – the White Admiral**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Limenitis camilla* (Linnaeus, 1758).

***Limenitis reducta* Staudinger, 1901 – the Southern White Admiral**

Localities: Prešov (Mihok M. in coll. East Slovak Museum in Košice)

Note: According to Pastorális et al. (2013), recent data are lacking, but the occurrence of the species in Slovakia is not excluded.

***Neptis sappho* (Pallas, 1771) – the Pallas' Sailer**

Localities: Prešov (Husz 1881a; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: Hrubý (1964) referred to as *Neptis hylas* (Linnaeus,

1758). *N. hylas* L. represents a distinct taxon that occurs in Southeast Asia (see Pastorális et al. 2013).

***Apatura ilia* ([Denis & Schiffermüller], 1775) – the Lesser Purple Emperor**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1901; Abafi-Aigner 1906a; Dahlström Gy., Parlay Gy., Szurdoky R. in coll. Hungarian National Museum in Budapest).

***Apatura iris* (Linnaeus, 1758) – the Purple Emperor**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1897, 1900; Abafi-Aigner 1906b; Parlay Gy., Simon A., Szurdoky R., Ulbrich E. in coll. Hungarian National Museum in Budapest; Petrašovič J., Bacher S. in coll. East Slovak Museum in Košice).

***Nymphalis antiopa* (Linnaeus, 1758) – the Mourning Cloak**

Localities: Prešov (Horváth & Pável 1876; Husz 1881a; Dahlström 1897, 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Nymphalis polychloros* (Linnaeus, 1758) – the Large Tortoiseshell**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J., Bacher S., Mihok M., leg. “?” in coll. East Slovak Museum in Košice).

***Nymphalis xanthomelas* ([Denis & Schiffermüller], 1775) – the Scarce Tortoiseshell**

Localities: Prešov (Husz 1881a; Dahlström 1897, 1900; Abafi-Aigner 1900; Dahlström Gy., Ulbrich in coll. Hungarian National Museum in Budapest; coll. Podtatra Museum in Poprad*); Torysa River valley** (Husz 1881a).
Note: in older studies it is referred to as *Nymphalis xanthomelas* (Esper, 1781).

*as District Museum of Local History in Poprad (cf. Hrubý 1964).

**Although the site is defined as the valley of the Torysa River, the captures were probably made near Prešov (cf. Husz 1881a).

***Nymphalis vaualbum* (Denis & Schiffermüller, 1775) – the Compton tortoiseshell**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1900).

Note: in older studies it is referred to as *Nymphalis L-album* (Esper, 1781). It is a species that has had its population in Slovakia, but its presence has not been confirmed in recent decades. Therefore we consider it extinct or missing (see Pastorális et al. 2013).

***Aglais urticae* (Linnaeus, 1758) – the Small Tortoiseshell**

Localities: Prešov (Husz 1881a; Dahlström 1900; Csanády A. unpubl.; Hámori J. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Aglais io* (Linnaeus, 1758) – the European Peacock**

Localities: Prešov (Husz 1881a; Hutten-Klingenstein 1882*; [Abafi-Aigner et al. 1896]; Dahlström 1899a, 1900; Mošková 2015; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Nymphalis io* L. (Hrubý 1964). *Hrubý (1964) stated this literature with “?”.

***Vanessa atalanta* (Linnaeus, 1758) – the Red Admiral**

Localities: Prešov (Horváth & Pável 1876; Fritsch 1878; Husz 1881a; Dahlström 1900; [Pillich 1922]; Mošková 2015; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Vanessa cardui* (Linnaeus, 1758) – the Painted Lady**

Localities: Prešov (Husz 1881a; Speyer 1881; Dahlström 1900; Mošková 2015; Csanády unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Polygonia c-album* (Linnaeus, 1758) – the Comma**

Localities: Prešov (Husz 1881a, Dahlström 1900; Csanády A. nepubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J., Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

Note: in older studies it is referred to as *Nymphalis c-album* (Linnaeus, 1758).

***Araschnia levana* (Linnaeus, 1758) – the Map**

Localities: Prešov (Husz 1881a; Dahlström 1899a, 1900; Abafi-Aigner 1906b, 1907c; Csanády A. nepubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Bacher S., Mihok M. in coll. East Slovak Museum in Košice).

***Melitaea cinxia* (Linnaeus, 1758) – the Glanville Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1900).

***Melitaea diamina* (Lang, 1789) – the False Heath Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1900; Tomala N. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Husz 1881a; Dahlström 1900).

Note: in older studies it is referred to as *Melitaea dictynna* (Esper, 1777).

***Melitaea phoebe* ([Denis & Schiffermüller], 1775) – the Knapweed Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1899a, 1900; Csanády A. unpubl.; Dahlström Gy., Tomala N. in coll.

Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Melitaea paedotrophos* (Bergsträsser, 1780).

***Melitaea didyma* (Esper, 1779) – the Spotted Fritillary**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, 1900; Abafi-Aigner 1906b, 1907c; Dahlström Gy., Husz A. in coll. Hungarian National Museum in Budapest).

***Melitaea trivia* ([Denis & Schiffermüller], 1775) – the Lesser Spotted Fritillary**

Localities: Prešov (Husz 1881a; Dahlström 1899a, 1900; Abafi-Aigner 1906b; Dahlström Gy. in coll. Hungarian National Museum in Budapest).

Note: in older studies it is referred to as *Melitaea fascelis* (Esper, 1784).

***Melitaea athalia* (Rottemburg, 1775) – the Heath Fritillary**

Localities: Prešov (Husz 1881a; [Abafi-Aigner et al. 1896]; Dahlström 1899a, 1900; Abafi-Aigner 1906b; Csanády A. unpubl.; Dahlström Gy. in coll. Hungarian National Museum in Budapest; Petrašovič J. in coll. East Slovak Museum in Košice).

***Melitaea aurelia* Nickerl, 1850 – the Nickerl's Fritillary**

Localities: Prešov (Husz 1881a; Dahlström Gy. in coll. Hungarian National Museum in Budapest); Solivar – Prešov (Dahlström Gy. in coll. Hungarian National Museum in Budapest).

***Melitaea britomartis* (Assmann, 1847) – the Assmann's Fritillary**

Localities: Prešov (Abafi-Aigner et al. 1896; Dahlström 1899a; [Weiss 1959]).

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