

RESEARCHES ABOUT THE BUTTERFLIES (INSECTA, LEPIDOPTERA) FROM TINCA AREA (BIHOR COUNTY, NORTH-WESTERN PART OF ROMANIA)

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Abstract

*In this work there are presented data about the fauna of butterflies from Tinca area (Bihor, Romania) identified during 2000-2019. There were identified 114 species belonging to 6 families and 62 genera. Some species are very rare at national level, being protected: *Parnassius apollo jaraensis* Kert. (probably accidental or vagrant specimens in Tinca area), *Euphydryas aurinia* Rott., *Euphydryas maturna* L., *Lycaena dispar rutila* Wern., *Leptidea morsei major* Gr., *Maculinea arion* L., *Nymphalis vau-album* Den. et Schiff., *Parnassius mnemosyne* L., *Neptis hylas* L., *Arethusana arethusana* Schiff.*

Key words: butterflies, Tinca area, Bihor, Romania

INTRODUCTION

The Tinca area is located at the confluence of Miersiguluplain and Holodului depression, in the south-western part of Bihor county, Crişana region, in the north-western part of Romania. The average altitude is 110m, the climate is temperate-continental moderate. The drainage is represented by Crişul Negru river and his affluents: Valea Pustei, Valea Nouă, Rătăşel, and Rogoaze lake. The vegetation belongs to the oak s vegetative stage. Tinca village includes five villages: Tinca, Râpa, Gurbediu, Belfir and Girişu-Negru.

A synthesis about the butterflies at national level was published by different authors (Stănoiu et al., 1979; Rakosy, 2013; Szekely, 2008) and a book and data about the butterflies from Tinca area were published by Ilie (2013, 2014a, b, c, 2015, 2016, 2017).

MATERIAL AND METHODS

The researches about the butterflies from Tinca area were performed during 2000-2019. The collecting was performed with the entomological

net. For the identification of the butterflies we used different guides (Rakosy, 2013; Szekely, 2008). Some species were exactly identified after only the analysis of genitalia, using the guide of Rakosy (2013): *Carcharodus flocciferus* Zel., *Pyrgus alveus* Hubn., *Pyrgus armoricanus* Ob., *Cupido argiades* Pall., *Cupido decolorata* Staud., *Plebeius argus* L., *Plebeius idas* L., *Plebeius argyrognomon* Berg., *Melitaea aurelia* Nick., *Melitaea athalia* Rott., *Melitaea trivialis* Den. et Schiff., *Hipparchia fagi* Scop., *Hipparchia semele* L.

RESULTS AND DISCUSSIONS

During 2000-2019, there were identified the following species in Tinca area:

Hesperiidae family

Erynis tages Linnaeus, 1758 –Euro-Siberian species

Carcharodus alcae Esper, 1780 –Eurasian species

Carcharodus flocciferus Zeller, 1847 –Eurasian species

Pyrgus malvae Linnaeus, 1758 –Eurasian species

Pyrgus armoricanus Oberthur, 1910 –Eurasian species

Pyrgus alveus Hubner, 1803 –Palearctic species

Carterocephalus palaemon Pallas, 1771 –Holarctic species

Thymelicus lineola Ochsenheimer, 1808 –Holarctic species

Thymelicus sylvestris Poda, 1761 –Western-Palearctic species

Hesperia comma Linnaeus, 1758 –Holarctic species

Ochlodes sylvanus Esper, 1777 –Eurasian species

Papilionidae family

Zerynthia polyxena Denis et Schiffer, 1775 –Pontomediterranean species

Parnassius mnemosyne Linnaeus, 1758 –Eurasian species

Parnassius apollo jaraensis Kertész, 1922 –Eurasian species

Iphiclides podalirius Linnaeus, 1758-Eurasian species

Papilio machaon Linnaeus, 1758 –Holarctic species

Pieridae family

Leptidea sinapis Linnaeus, 1758 -European species

Leptidea morsei major Grund, 1907-Euro-Siberian species

Anthocaris cardamines Linnaeus, 1758-Palearctic species

Aporia crataegi Linnaeus, 1758-Palearctic species

Pieris brassicae Linnaeus, 1758-Euro-Siberian species

Pieris rapae Linnaeus, 1758-Palearctic species

Pieris napi Linnaeus, 1758-Holarctic species

Pontia edusa Fabricius, 1777-Eurasian species

Colias erate Esper, 1805-Euro-Siberian species
Colias croceus Fourcroy, 1785-Eurasian species
Colias hyale Linnaeus, 1758-Euro-Siberian species
Colias alfacariensis Ribbe, 1905-Eurasian species
Gonopteryx rhamni Linnaeus, 1758-Palearctic species Riodinidae family
Hamearis lucina Linnaeus, 1758-European species
Lycaenidae family
Lycaena alciphron Rottemburg, 1775-Eurasian species
Lycaena phlaeas Linnaeus, 1758-Holarctic species
Lycaena dispar rutila Werneburg, 1864-Euro-Siberian species
Lycaena virgaureae Linnaeus, 1758-Euro-Siberian species
Lycaena tityrus Poda, 1761-Eurasian species
Lycaena thersamon Esper, 1784-Eurasian species
Thecla betulae Linnaeus, 1758-Eurasian species
Neozephyrus quercus Linnaeus, 1758-Western –Palearctic species
Callophrys rubi Linnaeus, 1758-Palearctic species
Satyrium w-album Knoch, 1782-Euro-Siberian species
Satyrium pruni Linnaeus, 1758-Euro-Siberian species
Satyrium spini Fabricius, 1787-Western-Palearctic species
Satyrium ilicis Esper, 1779-Western-Palearctic species
Satyrium acaciae Fabricius, 1787-Southern-European species
Leptotes pirithous Linnaeus, 1758-Mediterranean-African-tropical species
Cupido minimus Fuessly, 1775-Euro-Siberian species
Cupido decolorata Staudinger, 1886-Eastern-European species
Cupido argiades Pallas, 1771-Euro-Siberian species
Cupido alcetas Hoffmannsegg, 1804-Euro-Siberian species
Celastrina argiolus Linnaeus, 1758-Holarctic species
Pseudophilotes schiffmuelleri Hemming, 1929-Eastern-Mediterranean-Western-Asian species
Scolitantides orion Pallas, 1771-Eurasian species
Glaucopsyche alexis Poda, 1761-Euro-Siberian species
Maculinea arion Linnaeus, 1758-Euro-Siberian species
Plebeius argus Linnaeus, 1758-Euro-Siberian species
Plebeius idas Linnaeus, 1758-Holarctic species
Plebeius argyrognomon Bergstrasser, 1779-Euro-Siberian species
Aricia agestis Denis et Schiffmuller, 1775-Palearctic species
Cyaniris semiargus Rottemburg, 1775-Euro-Siberian species
Polyommatus thersites Cantener, 1835-Euro-Western-Asian species
Polyommatus icarus Rottemburg, 1775-Palearctic species
Polyommatus daphnis Denis et Schiffmuller, 1775-Euro-Western-Asian species
Polyommatus bellargus Rottemburg, 1775-Euro-Western-Asiatic species
Polyommatus coridon Poda, 1761-Euro-Western-Asiatic species
Nymphalidae family
Argynnis paphia Linnaeus, 1758-Palearctic species
Argynnis pandora Denis et Schiffmuller, 1775-Southern-European-

Central-Asian species

- Argynnis aglaja* Linnaeus, 1758-Palearctic species
Argynnis adippe Denis et Schiffermuller, 1775-Palearctic species
Argynnis niobe Linnaeus, 1758-Palearctic species
Issoria lathonia Hubner, 1819-Eurasian species
Brenthis daphne Bergstrasser, 1780-Euro-Siberian species
Boloria euphrosyne Linnaeus, 1758 –Euro-Siberian species
Boloria selene Denis et Schiffermuller, 1775–Holarctic species
Boloria dia Linnaeus, 1767-Euro-Central-Asian species
Vanessa atalanta Linnaeus, 1758-Holarctic species
Vanessa cardui Linnaeus, 1758 –Cosmopolitan species
Inachis io Linnaeus, 1758-Euro-Siberian species
Aglais urticae Linnaeus, 1758-Eurasian species
Polygonia c-album Linnaeus, 1758-Palearctic species
Araschnia levana Linnaeus, 1758-Palearctic species
Nymphalis antiopa Linnaeus, 1758-Holarctic species
Nymphalis polychloros Linnaeus, 1758-Western –Palearctic species
Nymphalis xanthomelas Esper, 1781-Eastern –Palearctic species
Nymphalis vau-album Denis et Schiffermuller, 1775-Holarctic species
Apatura ilia Denis et Schiffermuller, 1775-Euro-Siberian species
Apatura iris Linnaeus, 1758-Eurasian species
Neptis hylas Linnaeus, 1758-Euro-Siberian species
Neptis rivularis Scopoli, 1763-Euro-Siberian species
Euphydryas maturna Linnaeus, 1758-European species
Euphydryas aurinia Rottemburg, 1775-Palearctic species
Melitaea cinxia Linnaeus, 1758-Eurasian species
Melitaea phoebe Denis et Schiffermuller, 1775-Palearctic species
Melitaea trivialis Denis et Schiffermuller, 1775-Eurasian species
Melitaea didyma Esper, 1778-Eurasian species
Melitaea aurelia Nickerl, 1850-Eurasian species
Melitaea athalia Rottemburg, 1775-Euro-Siberian species
Melitaea ornata Cristoph, 1893-Eurasian species
Pararge aegeria tircis Godat, 1821-Western-Palearctic species
Lasiommata megera Linnaeus, 1767-Western-Palearctic species
Lasiommata maera Linnaeus, 1758-Palearctic species
Lopinga achine Scopoli, 1763-Euro-Siberian species
Coenonympha arcania Linnaeus, 1767-European species
Coenonympha glycerion Borkhausen, 1788-Euro-Siberian species
Coenonympha pamphilus Linnaeus, 1758-Palearctic species

Pyronia tithonus Linnaeus, 1767-European species
Aphantopus hyperantus Linnaeus, 1758-Euro-Siberian species
Maniola jurtina Linnaeus, 1758-Palearctic species
Erebia medusa Denis et Schiffermuller, 1775-Euro-Siberian species
Melanargia galathea Linnaeus, 1758-Euro-Western-Asian species
Minois dryas Scopoli, 1763-Euro-Siberian species
Hipparchia fagi Scopoli, 1763-Euro-Western-Asian species
Hipparchia semele Linnaeus, 1758-European species
Arethusana arethusa Schiffermuller, 1775-Euro-Siberian species
Brintesia circe pannonica Fabricius, 1775-Eurasian species

There were identified 114 species belonging to 6 families and 62 genera. In Romania, the fauna of diurnal butterflies comprises 210 species (Rakosy, 2013). From these, in Tinca area there were identified 114 species (54.28%).

The butterflies identified in Tinca area belongs to six families (Rakosy, 2013): *Hesperiidae*-11 species (9.64%) compared to 23 species at national level (47.82%); *Papilionidae*-5 species (4.38%) compared to 10 species at national level (50%); *Pieridae*-13 species (11.40%) compared to 21 species at national level (61.90%); *Riodinidae*-1 species (0.87%) compared to 1 species at national level (100%); *Lycaenidae*-34 species (29.82%) compared to 60 species at national level (56.66%); *Nymphalidae*-50 species (43.85%) compared to 95 species at national level (52.63%).

Physical-geographic position and relatively small distance from Codru-Moma Mountains (30-35km) caused the existence of a rich and diverse butterfly fauna.

From the point of view of the zoogeographic spread, the following categories of species were identified: European – 7 (6.14%), Euro-Siberian 31 (27.19%), Eurasian-31 (27.19%), Holarctic – 13 (11.40%), Palearctic – 26 (22.80%), Pontomediterranean – 1 (0.87%), south-European – 1 (0.87%), Mediterranean-African-tropical – 1 (0.87%), east-Mediterranean-western-Asian – 1 (0.87%), south-European-central-Asian – 1 (0.87%), Cosmopolitan – 1 (0.87%).

The fauna of diurnal butterflies from Tinca area includes also rare or very rare species at national level, protected by legislation: *Euphydryas aurinia* Rott., *Euphydryas maturna* L., *Lycaena dispar rutila* Wern., *Leptidea morsei major* Grund., *Maculinea arion* L., *Nymphalis vau-album* Den. et Schiff., *Parnassius mnemosyne* L., *Parnassius apollo jaraensis* Kert.-one specimen,

Râpa village, May 20, 2015; one specimen (probably the same specimen), Râpa village, June 15, 2015; *Zerynthia polyxena* Den. et Sciff., *Arethusana arethusa* Schiff., *Neptis hylas* L.

Absence or fragmentation of habitats, pollution, intensive farming, deforestation, mechanical mowing, excessive grazing and the production of fires are causes of population decline or even the disappearance of butterfly species.

CONCLUSIONS

During 2000-2019, in Tinca area there were identified 114 species belonging to six families and 62 genera. Ten species are rare at national level being protected by legislation. Strong human impact is cause of population decline or even the disappearance of butterfly species.

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