

ECOLOGICAL AND TAXONOMIC CONSIDERATIONS ABOUT THE MOTHS (INSECTA, LEPIDOPTERA) IN THE TINCA AREA (BIHOR COUNTY, ROMANIA) DURING 2018-2022

Aurelian Leonardo ILIE^{1#}, Mariana MARINESCU²

¹“Nicolae Jiga” Highschool, Republicii Street, 36A, Tinca, Bihor, Romania

²Teacher Training Department, University of Oradea, Universitatii Street, 1, Oradea, Bihor, Romania

RESEARCH ARTICLE

Abstract

In this work are presented taxonomical and ecological data about the moths (Insecta, Lepidoptera) from Tinca area, Bihor county during 2018 -2022. There were identified 277 species belonging to 27 families and 215 genera, 1 subspecies and 1 form, the dominant ones being those belonging to Noctuidae, Geometridae, Erebidae families. *Ephestia woodiella* Rich. & Thom and *Anarsia innoxia* Greg. & Kars. are mentioned for the first time in the Bihor county. In terms of categories and degrees of danger (IUCN, 2000 -2001), the following have been identified: 9 vulnerable species, 30 near threatened species, 1 endangered species, 1 data deficient species, 3 critical endangered species. There were obtained ecological data of these species, unknown in the scientific literature. *Proserpinus proserpina* Pall is a Natura 2000 protected species.

Keywords: nocturnal, lepidoptera, Tinca, Bihor.

#Corresponding author:

INTRODUCTION

The Tinca area is located in the south-western part of Bihor county, belonging to the historical province of Crişana, in the north-western part of Romania. The climate is temperate – continental, the average altitude is 110 m. The hydrographical network is various: the Crişul Negru river, some lakes. The vegetation belongs to the oak stage having a predominant central – European origin (BERINDEI et al., 1972). The disappearance of species or the diminution of their population, the emergence of new species, either accidental in territory, insufficient faunal data, observing some ecological aspects not published in the scientific literature are just a few reasons that make it absolutely necessary to publish the faunal data observed in nature. Data about the fauna of nocturnal lepidoptera from Tinca area were published by different authors (PEIU, 1971; ILIE et al., 2018; ILIE, 2019; ILIE et al., 2019; 2020a, 2020 b; 2021a, 2021 b).

MATERIAL AND METHOD

The researches were carried out in the period 2018 – 2022 in different ecosystems in the area and the surroundings of Tinca. The insects were collected with the entomological net both day and night (at light traps) or by hand (the caterpillars). For the identification of the species were used different sources (Rakosy, 1996; Szekely, 2010; pyrgus.de; lepiforum.de; en.m.wikipedia.org). The classification of the species according to the degree of endangerment was done according to a single source (Rakosy, 2003) and the systematic classification of the species was done according to fauna-eu.org; lepiforum.de.

RESULTS AND DISCUSSIONS

During the period 2018 – 2022, the following species were identified:

Sphingidae Family Latreille, 1802

Agrius convolvuli (Linnaeus, 1758)

Acherontia atropos (Linnaeus, 1758) – VU

Macroglossum stellatarum (Linnaeus, 1758)

Hyles euphorbiae (Linnaeus, 1758) – NT

Deilephila porcellus (Linnaeus, 1758)
Proserpinus proserpina (Pallas, 1772) - VU

Adelidae Family Bruant, 1851

Cauchas fibulella (Denis & Schiffermuller, 1775)

Nemophora fasciella (Fabricius, 1775)

Adela reamurella (Linnaeus, 1758)

Adela croesella (Scopoli, 1763)

Coleophoridae Family Bruand, 1850

Coleophora anatipenella (Hubner, 1796)

Tineidae Family Latreille, 1810

Euplocamus anthracinalis (Scopoli, 1763)

Triaxomera parasitella (Hubner, 1796)

Monopis monachella (Hubner, 1796)

Zygaenidae Family, Latreille, 1809

Jordanita globulariae, (Hubner, 1793)

Jordanita notata (Zeller, 1847)

Pterophoridae Family Zeller, 1841

Stenoptilia pterodactyla (Linnaeus, 1761)

Pterophorus pentadactyla (Linnaeus, 1758)

Emmelina argoteles (Meyrick, 1922)

Emmelina monodactyla (Linnaeus, 1758)

Cnaemidophorus rhododactyla (Denis & Schiffermuller, 1775)

Crambidae Family Latreille, 1810

Pyrausta purpuralis (Linnaeus, 1758)

Pyrausta despicata (Scopoli, 1763)

Pyrausta sanguinalis (Linnaeus, 1767)

Pyrausta aurata (Scopoli, 1763)

Patania ruralis (Scopoli, 1763)

Chrysocrambus craterellus (Scopoli, 1763)

Chrysocrambus linetella (Fabricius, 1781)

Diasemia reticularis (Linnaeus, 1761)

Cydalima perspectalis (Walker, 1859)

Anania hortulata (Linnaeus, 1758)

Anania coronata (Hufnagel, 1767)

Anania verbascalis (Denis & Schiffermuller, 1775)

Anania fuscalis (Denis & Schiffermuller, 1775)

Dolicharthria punctalis (Denis & Schiffermuller, 1775)

Agriphila selasella (Linnaeus, 1767)

Agriphila brioniellus (Zerny, 1914)

Agriphila inquinatella (Denis & Schiffermuller, 1775)

Agriphila straminella (Denis & Schiffermuller, 1775)

Agriphila geniculea (Haworth, 1811)

Agriphila tristella (Denis & Schiffermuller, 1775)

Catoptria falsella (Denis & Schiffermuller, 1775)

Catoptria pinella (Linnaeus, 1758)

Ostrinia nubilalis (Hubner, 1796)

Sitochroa palealis (Denis & Schiffermuller, 1775)

Sitochroa verticalis (Linnaeus, 1758)

Pediasia contaminella (Denis & Schiffermuller, 1775)

Uresiphita gilvata (Fabricius, 1794)

Loxostege sticticalis (Linnaeus, 1761)

Udea ferrugalis (Hubner, 1796)

Scoparia subfusca (Haworth, 1811)

Thysanotia chrysonuchella (Scopoli, 1763)

Eudonia lacustrata (Panzer, 1804)

Eudonia mercurella (Linnaeus, 1758)

Crambus lathoniellus (Zincken, 1817)

Chrysoteuchia culmella (Linnaeus, 1758)

Calamotropha paludella (Hubner, 1824)

Cataclysta lemnata (Linnaeus, 1758)

Paratalanta pandalis (Hubner, 1825)

Aporodes floralis (Hubner, 1889)

Nomophila noctuella (Denis & Schiffermuller, 1775)

Platytes cerusella (Denis & Schiffermuller, 1775)

Gracillariidae Family Stainton, 1854

Parectopa robiniella (Gustafsson, 1973)

Gelechiidae Family Stainton, 1854

Carpatolechia fugitivella (Zeller, 1839)

Sitotroga cerealella (Olivier, 1789)

Acompsia cinerella (Clerck, 1759)

Stomopteryx hungaricella (Gozmany, 1957)

Neofaculta ericetella (Geyer, 1832)

Helcystogramma rufescens (Haworth, 1828)

Nothris lemnisellus (Zeller, 1839)

Anarsia innoxia (Gegersen & Karsholt, 2017)

Saturniidae Family Boisduval, 1837

Saturnia pavonia (Linnaeus, 1758) - VU

Saturnia pyri (Denis & Schiffermuller, 1775) - VU

Notodontidae Family Stephens, 1829

Ptilodon capucina (Linnaeus, 1758)

Nolidae Family Bruand, 1847

Earias clorana (Linnaeus, 1761)

Nola aerugula (Hubner, 1793) – NT
Meganola albula (Denis & Schiffermuller, 1775) - NT
Nycteola siculana (Fuchs, 1899) – VU

Tortricidae Family Latreille, 1803

Syricoris lacunana (Denis & Schiffermuller, 1775)

Celypha striana (Denis & Schiffermuller, 1775)

Celypha rufana (Scopoli, 1763)

Acleris variegana (Denis & Schiffermuller, 1775)

Philedone gerningana (Denis & Schiffermuller, 1775)

Notocelia udmanniana (Linnaeus, 1758)

Agapeta zoegana (Linnaeus, 1767)

Agapeta hamana (Linnaeus, 1758)

Cydia pomonella (Linnaeus, 1758)

Cydia amplana (Hubner, 1799)

Aethes triangulana (Treitschke, 1835)

Hedya pruniana (Hubner, 1799)

Cnephasia asseclana (Denis & Schiffermuller, 1775)

Epiblema foenella (Linnaeus, 1758)

Eudemis profundana (Denis & Schiffermuller, 1775)

Eucosma obumbratana (Lienig & Zeller, 1846)

Grapholita funebrana (Treitschke, 1835)

Pandemis heparana (Denis & Schiffermuller, 1775)

Phalonidia contractana (Zeller, 1847)

Lasiocampidae Family Harris, 1841

Macrothylacia rubi (Linnaeus, 1758)

Malacosoma neustria (Linnaeus, 1758)

Poecilocampa populi (Linnaeus, 1758)

Eriogaster rimicola (Denis & Schiffermuller, 1775) - VU

Lasiocampa trifolii (Denis & Schiffermuller, 1775) - EN

Cnephasia asseclana (Denis & Schiffermuller, 1775)

Hedya pruniana (Hubner, 1799)

Syndemis musculana (Hubner, 1799)

Pyalidae Family Latreille, 1809

Oncocera semirubella (Scopoli, 1763)

Hypsopygia costalis (Fabricius, 1775)

Eurhodope rosella (Scopoli, 1763)

Pyalis farinalis (Linnaeus, 1758)

Aglossa caprealis (Hubner, 1809)
Aglossa pinguinalis (Linnaeus, 1758)

Endotricha flammealis (Denis & Schiffermuller, 1775)

Emateudes punctella (Treitschke, 1833)

Plodia interpunctella (Hubner, 1813)

Episcythrastis tetricella (Denis & Schiffermuller, 1775)

Phycita roborella (Denis & Schiffermuller, 1775)

Homoeosoma inustella (Ragonot, 1884)

Homoeosoma nebulella (Denis & Schiffermuller, 1775)

Synaphe punctalis (Fabricius, 1775)

Phycitodes albatella (RAGONOT, 1887)

Phycitodes binaevella (Hubner, 1813)

Acrobasis consociella (Hubner, 1813)

Acrobasis advenella (Zincken, 1818)

Ephestia woodiella (Richards & Thomson, 1932)

Drepanidae Family Meyrick, 1809

Thyatira batis (Linnaeus, 1758)

Clix glaucata (Scopoli, 1763)

Watsonalla binaria (Hufnagel, 1767)

Elachistidae Family Bruand, 1851

Agonopterix arenella (Denis & Schiffermuller, 1775)

Lecithoceridae Family Le Marchand, 1947

Lecithocera nigrana Duponchel, 1836

Scythrididae Family Rebel, 1901

Scythris sinensis (Felder & Rogenhofer, 1875)

Scythris scopolella (Linnaeus, 1767)

Hepialidae Family Stephens, 1829

Triodia sylvina (Linnaeus, 1761)

Plutellidae Family Guenee, 1845

Plutella xylostella (Linnaeus, 1758)

Micropterigidae Family Herrich -

Schaffer, 1885

Micropterix calthella (Linnaeus, 1761)

Oecophoridae Family Bruand, 1851

Esperia oliviella (Fabricius, 1794)

Chimabachidae Family Heinemann, 1870

Diurnea fagella (Denis & Schiffermuller, 1775)

Erebidae Family Leach, 1815

Prodostis stolidia (Fabricius, 1775)

Euplagia quadripunctaria (Poda, 1761)

Phragmatobia fuliginosa (Linnaeus, 1758)

Schrankia costaestrigalis (Linnaeus, 1758)
 - NT
Hyphenodes humidalis (Doubleday, 1850) -
 DD
Diaphora mendica (Clerck, 1759)
Polypogon tentacularia (Linnaeus, 1758)
Spilosoma lubricipeda (Linnaeus, 1758)
Eilema caniola (Hubner, 1808) - NT
Leucoma salicis (Linnaeus, 1758) - NT
Lygephila cracca (Denis & Schiffermuller,
 1775)
Scoliopteryx libatrix (Linnaeus, 1758)
Catephia alchymista (Denis &
 Schiffermuller, 1775) - NT
Laspeyria flexula (Denis & Schiffermuller,
 1775)
Hypena rostralis (Linnaeus, 1758)
Hypena proboscidalis (Linnaeus, 1758)
Diacrisia sannio (Linnaeus, 1758)
Orgyia antiqua (Linnaeus, 1758)
Euproctis similis (Fussli, 1775)
Catocala hymenaea (Denis &
 Schiffermuller, 1775) - NT
Catocala sponsa (Linnaeus, 1758) - NT
Catocala conversa (Esper, 1787) - CR
Catocala promissa (Denis & Schiffermuller,
 1775) - NT
Catocala elocata (Esper, 1787) - NT
Paracolax tristalis (Fabricius, 1794)
Chelis maculosa (Gerning, 1780) - VU
Euclidia glyphica (Linnaeus, 1758)
Hyphantria cunea (Drury, 1773)
Amata phegea (Linnaeus, 1758)
Atolmis rubricollis (Linnaeus, 1758)
Dysgonia algira (Linnaeus, 1767) - NT
Herminia tarsicrinalis (Knoch, 1782) - NT
Lymantria dispar (Linnaeus, 1758)

Geometridae Family Deach, 1815

Epione rependaria (Hufnagel, 1767) - NT
Ennomos quercinaria (Hufnagel, 1767) -
 NT
Selenia dentaria (Fabricius, 1775) - NT
Orthostixis cribraria (Hubner, 1799) - VU
Aplasta ononaria (Hubner, 1823) - VU
Xanthorhoe fluctuata (Linnaeus, 1758) &
 Schiffermuller, 1775)
Xanthorhoe montanata (Denis &
 Schiffermuller, 1775)
Lythria purpuraria (Linnaeus, 1758)
Cyclophora annularia (Fabricius, 1775) -
 NT
Cyclophora linearia (Hubner, 1799)
Cyclophora suppunctaria (Zeller, 1847) -
 CR
Timandra comae (Schmidt, 1931)

Scopula immorata (Linnaeus, 1758)
Scopula rubiginata (Hufnagel, 1767)
Scopula floslactata (Haworth, 1809) - NT
Scopula virgulata (Denis & Schiffermuller,
 1775)
Scopula ornata (Scopoli, 1763)
Scopula caricaria (Reutti, 1853) - NT
Scopula subpunctaria (Herrich - Schaffer,
 1847) - NT
Scopula marginepunctata (Goeze, 1781)
Ematurga atomaria (Linnaeus, 1758)
Idaea seriata (Schrank, 1802)
Idaea muricata (Hufnagel, 1767)
Idaea aversata (Linnaeus, 1758) -
 remutata form and typical form
Idaea politaria (Hubner, 1799)
Idaea degeneraria (Hubner, 1799)
Idaea rusticata (Denis & Schiffermuller, 1775) -
 NT
Operophtera brumata (Linnaeus, 1758)
Lycia hirtaria (Clerck, 1759) - NT
Hipoxistis pluviana (Fabricius, 1787) - NT
Ectropis crepuscularia (Denis &
 Schiffermuller, 1775)
Peribatodes rhomboidaria (Denis &
 Schiffermuller, 1775)
Cosmorhoe ocellata (Linnaeus, 1758)
Chiasmia clathrata (Linnaeus, 1758)
Costaconvexa polygrammata
 (Borkhausen, 1794) - NT
Colostygia pectinataria (Knoch, 1781)
Chlorissa cloraria (Hubner, 1813) - NT
Chlorissa viridata (Linnaeus, 1758)
Isturgia arenacearia (Denis &
 Schiffermuller, 1775) - NT
Ligdia adustata (Denis & Schiffermuller,
 1775)
Penthophtera morio (Linnaeus, 1767) - NT
Hypomecis punctinalis (Scopoli, 1763)
Synopsia sociaria (Hubner, 1799)
Macaria alternata (Denis &
 Schiffermuller, 1775)
Camptogramma bilineata (Linnaeus,
 1758)
Opisthograptis luteolata (Linnaeus, 1758)
 - NT

Noctuidae Family Latreille, 1809

Helicoverpa armigera (Hubner, 1808)
Melanchnra persicariae (Linnaeus, 1761)
Leucapamea ophiogramma (Esper, 1794)
Deltote deceptaria (Scopoli, 1763)
Deltote bankiana (Fabricius, 1775)
Macdunnoughia confusa (Stephens, 1850)
Noctua pronuba (Linnaeus, 1758)
Noctua comes (Hubner, 1831)

Brachionycha nubeculosa (Esper, 1785)
Acronicta rumicis (Linnaeus, 1758)
Acronicta tridens (Denis & Schiffermuller, 1775)
Euxoa aquilina (Denis & Schiffermuller, 1775)
Ochropleura plecta (Linnaeus, 1761)
Ponometia candefacta (Hubner, 1831)
Eucarta virgo (Treitschke, 1835)
Autographa gamma (Linnaeus, 1758)
Apamea monoglypha (Hufnagel, 1766)
Elaphria venustula (Hubner, 1790)
Lacanobia oleracea (Linnaeus, 1758)
Lacanobia suasa (Denis & Schiffermuller, 1775)
Emelia trabealis (Scopoli, 1763)
Cosmia affinis (Linnaeus, 1767)
Trachea atriplicis (Linnaeus, 1758)
Spaelotis ravidata (Denis & Schiffermuller, 1775) - NT
Conistra rubiginosa (Scopoli, 1763)
Conistra erythrocephala (Denis & Schiffermuller, 1775)
Phlogophora meticulosa (Linnaeus, 1758)
Aedia leucomelas (Linnaeus, 1758)
Mythimna albipuncta (Denis & Schiffermuller, 1775)
Mythimna ferrago (Fabricius, 1787) - subsp. argyristis
Hoplodrina blanda (Denis & Schiffermuller, 1775)
Hoplodina ambigua (Denis & Schiffermuller, 1775)
Agrotis segetum (Denis & Schiffermuller, 1775)
Agrotis cinerea (Denis & Schiffermuller, 1775)
Agrotis ipsilon (Hufnagel, 1766)
Agrotis clavis (Denis & Schiffermuller, 1775) - NT
Agrotis exclamationis (Linnaeus, 1758)
Agrotis puta (Hubner, 1803)
Eupsilia transversa (Hufnagel, 1766)
Valeria oleagina (Denis & Schiffermuller, 1775)
Actinotia polyodon (Linnaeus, 1761)
Oligia strigilis (Linnaeus, 1758)
Oligia fasciuncula (Haworth, 1809) - VU
Oligia latruncula (Denis & Schiffermuller, 1775)
Tyta luctuosa (Denis & Schiffermuller, 1775)
Hecatera dysodea (Denis & Schiffermuller, 1775)
Cerastis rubricosa (Denis & Schiffermuller, 1775)
Acontia trabealis (Scopoli, 1763)
Hadula trifolii (Hufnagel, 1766)

Mesogona oxalina (Hubner, 1803)
Peridroma saucia (Hubner, 1803)
Caradrina clavipalpis (Scopoli, 1763)
Caradrina morpheus (Hufnagel, 1766)
Xilena vetusta (Hubner, 1813)
Talpothila matura (Hufnagel, 1766)
Anarta trifolii (Hufnagel, 1766)
Dysgonia algira (Linnaeus, 1767) - NT
Cryphia algae (Fabricius, 1775)
Amphipyra berbera (Rungs, 1949)
Polyphaenis sericata (Esper, 1787) - CR
Mamestra brassicae (Linnaeus, 1758)
Hadena capsincola (Denis & Schiffermuller, 1775)

Legend - VU - vulnerable species; NT - near threatened species; EN - endangered species; DD- data deficient species; CR - critical endangered species.

There were identified 277 species belonging to 27 families and 215 genera, 1 subspecies and 1 form, the dominant ones being those belonging to Noctuidae - 62 species (22.38 %), Geometridae - 46 species (16.60 %), Crambidae - 41 species (14.80 %), Erebidae - 33 species (11.91 %) families, followed by other families: Tortricidae, Pyralidae - 19 species (6.85 %), Lasiocampidae, Gelechiidae - 8 species (2.88 %), Sphingidae - 6 species (2.16 %), Pterophoridae - 5 species (1.80%), Nolidae, Adelidae - 4 species (1.44 %), Tineidae, Drepanidae - 3 species (1.08 %), Zygaenidae, Saturniidae, Scythrididae - 2 species (0.72 %), Oecophoridae, Gracillariidae, Hepialidae, Micropterigidae, Elachistidae, Coleophoridae, Chimabachidae, Lecithoceridae, Notodontidae, Plutellidae - 1 species (0.36 %).

Ecological observations: - *Operophtera brumata* L. - one female specimen, December 13-15, 2018, t = 0-3^o C (day), t = -6^o C (night). In this species, the adults appear in nature in September - October, and the females are apt and climb to the canopy of the trees for laying eggs, the wintering takes place in the egg stage. So, the existence of the female on this date and on the ground is surprising!

- *Hyles euphorbiae* L. - one specimen, September 8, 2018; October 12, 2018; November 7, 2018, t = 20^o C; November 13, 2018, t = 17^o C. According to literature (SZEKELY, 2010) in this period the species must be in the stage of pupa, the flight period is August - first week of September (the second generation), therefore the period of flight was extended with two months.

- *Polygogon tentacularia* L. - one male specimen, February 15, 2018, t = 5^o C; one female specimen, November 22, 2018, t = 5^o C; three male specimens, December 8, 2018, t = 4^o C; November 23, 2019, t = 16^o C. According to literature (RAKOSY, 1996), the flight period is May 15 – July 15.

- *Chelis maculosa* Gern. - one male specimen, April 2, 2019, t = 21^o C, presence earlier with one month than normally (SZEKELY, 2010).

- *Proserpinus proserpina* Pall. - one female specimen, October 22, 2019. According to the literature (Szekely, 2010), the species was supposed to be at this time in the pupae stage (nymph) by April next year. In this case, it is either an additional generation or the usual flight period (May - June) has been extended by four months due to the very high temperatures from July to October. Also, the literature (SZEKELY, 2010) states that the species flies at dusk of the sun! This observation shows that there may be exceptions, the female specimen was collected flying at noon (11.40 AM); one female specimen, Tinca, April 1-2, 2020, t = 9 – 11^o C (the flight period is earlier with one month).

- *Stenoptilia pterodactyla* L. - one specimen, January 7, 2020, t = 7^o C (very surprising appearance at this date!); one specimen, April 17, 2020 (early appearance, because the high temperatures, the flight period is: the end of June – August).

- *Macroglossum stellatarum* L. - one specimen, February 28, 2020, t = 8^o C (very strange appearance, the flight period became in the second half of May (SZEKELY, 2010); one specimen, Tinca, April 12, t = 12^o C; one specimen, April 10, 12, t = 20^o C; one specimen, Tinca, March 25,26, 2022, t = 17^o C; one specimen, Tinca, September 30, 2020. Note its presence during a torrential rain visiting the flowers, feeding on their pollen. This fact is not observed in diurnal butterflies, perhaps very fast flight does not affect the scales of the wings during the rain!; one specimen flying during the drizzle to look for flower pollen, Tinca, October 2, 2020; one specimen flying, Tinca, March 20,

CONCLUSIONS

During 2018 – 2022, in the Tinca area there were recorded 277 moth species, belonging to 27 families and 215 genera, 1 subspecies and 1 form. Data were obtained on the feeding behavior of *Macroglossum*

2022, t = 1^o C. The flight of the species at this temperature is surprising! According to the literature (Szekely, 2010), this species has two annual flight periods: mid-May – mid-June and August-November. The observations made in the Tinca area in the period 2020-2022 highlighted the existence of the third flight period: April – May. *Oenothera speciosa* Nutt through the internal structural peculiarities of its flowers works as a real trap, sometimes deadly from *Macroglossum stellatarum* L.- one specimen, Tinca, August 6, 2022. This plant is native to North America and was introduced to Europe for decorative purposes. If this plant is cultivated on ever-larger areas, it will have a dramatic impact on the populations of this lepidoptera (ZLATKOV et al. ,2018). - *Diacrisia sannio* L.- one specimen, Tinca, April 23, 2022; May 22, 2022. According to the literature (pyrgus.de) the flight period is June – July and the second generation in August. Other scientific source (lepiforum.de) mentions the flight period during May – July. In these cases, the species appeared earlier due to high temperatures in April and May. - *Platytes cerusella* Den. & Schiff. - one specimen, Tinca, September 1,2022. According to the literature (lepiforum.de; ukmoths.org.uk/species/platytes-cerusella), the adult moths fly in May – July. The presence in this period can be explained either by the existence of an additional annual generation or by the extension of the flight period of the first generation..Both of these likely situations are certainly duo to climate changes that have occurred in recent years.

In terms of categories and degrees of danger (IUCN, 2000 -2001), the following have been identified: 9 vulnerable species, 30 near threatened species, 1 endangered species, 1 data deficient species, 2 critical endangered species.

Proserpinus proserpina Pall is also a Natura 2000 protected species. *Ephestia woodiella* Rich. & Thom and *Anarsia inoxiella* Greg. & Kars. are mentioned for the first time in the Bihor county and probably in the Romanian fauna.

stellatarum L., in unfavorable weather conditions, unpublished in the scientific literature. This species has three annual generations in the Tinca area. *Oenothera speciosa* Nutt is a real deadly trap for *Macroglossum stellatarum* L. In some species premature flights, prolongation of the flight

period or even flight at very low temperatures have been observed. In terms of categories and degrees of danger (IUCN 2000 – 2001), 33 species have been identified. *Proserpinus proserpina* Pall is a Natura 2000 protected species. *Ephestia woodiella* Rich. & Thom and *Anarsia innoxia* Greg. & Kars. are mentioned for the first time in the Bihor county.

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Moths from the Tinca area (photos by ILIE A.L.)



Macroglossum stellatarum L on *Oenothera speciosa* Nutt. flower



Acronicta rumicis L – larva



Hyles euphorbiae L.



Actinotia polyodon L.



Ephestia woodiella Rich. & Thom.



Anarsia innoxia Greg. & Kars.