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CONTRIBUTION TO THE STUDY OF THE FAUNA OF LEPIDOPTERA OF SERBIA, UNREGISTERED SPECIES OF BUTTERFLIES IN THE FAUNA OF SERBIA

ABSTRACT: During several years of exploration of the butterfly fauna in the area of Sombor (Vojvodina, Serbia), 330 species of butterflies have been collected. Having studied the literature I have found that 11 species have not been recorded in published materials to testify that those species had been previously found in the Republic of Serbia. Those species are: *Meganola albula* (D. n. and S. c. h. i. f. f.), from the family *Nolidae*; *Eilema griseola* (H. b. n.), *Rhyarioides metelkanus* (L. e. d.), and *Thumata senex* (H. b. n.) from the family *Arciidae*; *Gluphisia crenata* (E. s. p.), from the family *Notodontidae*; *Eutrix potatoria* (L.), from the family *Lasiocampidae*; *Meliana stenoptera* (S. t. g. r.), *Archanara geminipuncta* (H. a. w.), and *Cucullia fraudatrix* (F. v.) from the family *Noctuidae*; and *Scopula flaccidaria* (Z. e. l. l.), and *Philerne vetulata* (D. e. n. and S. c. h. i. f. f.) from the family *Geometridae*.

KEY WORDS: Fauna, *Insecta*, *Lepidoptera*, lepidoptera

INTRODUCTION

The fauna of Vojvodina, except the area of Fruška Gora, has not been explored enough. That is why I have undertaken the task to examine the butterfly fauna of Sombor and its surroundings first and later of whole Vojvodina, so that the gap evident for this area could be filled up.

The fauna of butterflies of Vojvodina had been studied by: Z i n k e n (1817), K o l l a r (1846), N e n d v i t c h (1846) and H a b e r m a n n (1850), but their results were out of my reach (J a k š i ć pers. comm.). The first attainable data were by A b a f i (1907). Writing about Hungary of those days, he gave information for Vojvodina, too. These information were usually generalized without statements exact localities, which caused problems in my work. The area of Novi Sad and Fruška Gora have been explored by Rogulja M. His list contains 517 species, but it has not been published (Z e č e v i ć pers. comm.). Only day butterflies from that collection have been analyzed (J a k š i ć, 1993). Deliblatska peščara was explored by a number of authors: P e t r i k (1958), gave data for 104 species; G r a d o j e v i ć (1963) for 193 species of butterflies. V a s i ć (1969 and 1975) for 174 species of *Noctuidae* and T o m i ć (1987) for 89 *Geometridae*. Apart from these, there are publications of smaller scope offering data about species

that have been mentioned in the fauna of Serbia for the first time. The authors are: Petrik and Jovanić (1952), Jovanić and Kosovac (1963) and Hadžistević (1969). They mostly worked in Novi Sad, Zrenjanin and Zemun studying harmful species of butterflies.

In the area of Sombor and its surroundings 330 species of butterflies have been registered so far. Eleven species from that list have not been found in the lists of other authors, so they can be considered new in the butterfly fauna of the Republic of Serbia.

MATERIAL AND METHODS

In collecting and preparing butterflies for this work, standard methods were used. Most of the analyzed butterflies here were caught near Lugovo. In the UTM net (Military Survey, Ministry of Defense, UK, 1969) Lugovo is in a square marked by number CR 56. Lugovo is situated in the middle of an agrobiocenosis cut by irrigation canals along which small or big belts of natural vegetation grow. That is why even small areas have a few biotopes. Bački Monoštor, that lies in the square marked CR 47 in the UTM net, has vegetation with woods – steppe characteristics on one side. The woods consist mostly of oak and scattered black locust. Inside the woods there are meadows with preserved steppe – salt land vegetation as well as the vegetation of swampy pools. On the other side of Bački Monoštor there are frequently flooded woods. Sombor is in a square marked by CR 56 and CR 57 in the UTM net.

Determination and systematic order have been done according to key of Forester and Wohlfahrt (1980, 1981 and 1984). When it was necessary the names of some species have been changed in order to fit the latest systematic given by Freyna and Witt (1987–1989) and Hacker (1988).

RESULTS

Family: *Nolidae*

Meganola albula (Denis and Schiffermüller, 1775)

The butterflies were caught round Lugovo in the last decade of July and the first half of August. Móczár (1969) says that this species is not rare at wet places, while earlier it was found only at Prešov (Slovakian), Szent-Gotthárd (Hungary) and Lipik (Croatian) (Abafi, 1907). Forster (1984) stated that this species was found locally in central Europe. Caterpillars feed on *Rubus* spp., *Fragaria* spp., *Potentilla* spp. and *Mentha aquatica*.

Area: Europe, Minor Asia, Iraq, eastern Asia to Japan.

Family: *Arctiidae*

Eilema griseola (Hübner, 1803)

Three samples were caught near Lugovo, two on 23rd July 1986 and one on 15th August 1988. According to Forster (1984) they are usually found in middle Europe on wet meadows and marshes, on other places only locally and rarely. This in compliance with the old data saying that this species can be found in all parts of the country, but at a small number of places (Abafi, 1907). Caterpillar feeds on lichen that grows on *Quercus* spp., *Populus* spp. and other deciduous trees.

Area: from western Europe to China and Japan.

Rhyarioides metelkanus (Lederer, 1861)

A caterpillar, found at the mouth of the river Plazović into the canal Bezdán-Vrbaš on 10th April 1988, started to make a white soft cocoon in a few days. A butterfly eclosed on 3rd July 1988. Forster (1984) classified it as a species of central Hungary where it is locally spread in marshes. Abafi (1907) writes about it as a species living on sandy places in plains. König (1975) observed it in the area surrounding Temišvar. Caterpillars of these species were found around Čoka and Senta some 20 years ago (leg. Radovanović S.). Adult insects eclosed from them (col. Zečević M.), but this fact has never been published (Zečević M., pers. comm.). That is why I consider it a new species for the fauna of butterflies of Serbia. This species has been registered in the Red Book of Hungary, because it is believed that its most convenient habitat, fresh water marshes, are endangered (Rakonczay, 1990). The caterpillar feeds on *Caltha palustris*, *Taraxacum* spp. and *Euphorbia* spp.

Area: from the western border in Belgium and France it spreads through middle Europe, southern Russia to the eastern Asia and Japan.

Thumata senex (Hübner, 1808)

syn: *Comacla auct.*, *Nudaria rotunda* Haworth, 1809

In Lugovo, during July and August, several samples were caught in a day. Forster (1984) says that it has wide distribution, but localized on marshy meadows and in marshy woods. No records have been found in Serbia so far, so I consider it as a new species in the fauna. Caterpillar feeds on moss *Jungermannia* (=Haplozia) spp. which is found only in hill forests.

Area: In Europe, but without the most southern parts of Spain; middle and the south of Italy; Greece and southern Europe. To the east to Ural and middle Turkey.

Family: *Notodontidae*

Gluphisia crenata (Esper, 1785)

Butterflies were caught only at Lugovo in the year 1987 in the second half of July and one sample on 19th August. All samples belong to spp. *vertuneae* (det.

Zečević M.). Abafi (1907) noted that the species was recorded at many places, Móczár (1969) writes that it is widely spread. So does Forster (1984), adding that it is always individual and rare and that the butterflies always live in the crowns of old poplars. The species is not found in higher hilly places. The caterpillar feeds on *Populus* spp.

Area: Europe, Southern Russia, and from eastern Asia to Japan.

Family: *Lasiocampidae*

Eutrix potatoria (Linnaeus, 1758)

syn: *Odonestis* Stephens, 1829, nec German, 1811; *Philudoria* Kirbi, 1829

The butterflies were caught in Sombor and Lugovo in the second half of July. In May 1992 a caterpillar was found near Bački Monoštor. I have not found published data that it had been found in Serbia, although it is present in the surrounding countries. So, I consider it as a new species for the fauna of Serbia. The caterpillar feeds on *Dactylis glomerata*, *Phragmites communis*, *Carex* spp., *Calamagrostis* spp., *Prunus* spp., ...

Area: In Europe, except in the southern parts of Spain, Italy, Greece and the northern parts of Sweden and Norway. In the east Asia, all the way to Japan.

Family: *Noctuidae*

Meliana stenoptera (Staudinger, 1871)

Individual butterflies were caught near Lugovo in the second half of July and at the beginning of August. According to Forster (1980), this species lives on large territories covered with reeds on the southern boundaries of the Alps and in Hungary. The species is new for the butterfly fauna of Serbia (Det. checked by Vasić K.)

Archanara geminipuncta (Haworth, 1809)

Syn: *Nonagria* auct.

The species was recorded near Lugovo and in Sombor in July and August 1986, 1990. and 1992. There were several samples every year, although Abafi (1907) refers to it as rare species. According to Forster (1980) it is localized on places overgrown with reeds, mostly found in the north of Europe, but rarely or never in more southern parts. Caterpillars feed on *Phragmites communis*. As I have not found this species among registered butterfly species on the territory of Serbia, consider it a new species for its fauna.

Area: This is a Mediterranean – Asian species. Its habitat is central and southern Europe and eastern Asia.

Cucullia fraudatrix (Eversmann, 1837)

The butterflies were caught in July 1986, 1987, 1992 and 1994 near Lugovo. Forster (1980) refers to it as a local and rare species of north-eastern Ger-

many, Brandenburg, Schlesia, eastern Austria and Hungary, which has been spreading towards the west in the last decade. Abafi (1907) says that this species is quite rare, and has been recorded at few places. König (1975) writes that it has been found near Temisvar. Vasić (pers. comm.) mentioned that these butterflies had been found in other parts of Serbia. The caterpillar feeds on *Artemisia vulgaris*.

Area: This is a Euro-Asian species. Lives in central and eastern Europe, northern Asia and eastern Asia to Japan.

Family: *Geometridae*

Scopula flaccidaria (Zeller, 1852)

A number of samples were caught in July and August near Lugovo. Forster (1981) located it in Southern Austria, Burgenland (=Gradišće) and Hungary. Abafi (1907) says it is widely spreaded but rare; and Móczár (1969) speaks of it as of a frequent species of Hungary. As there have been no previous record in Serbia I consider it new for its fauna.

Philerme vetulata (Denis and Schiffermüller, 1775)

Only one sample was caught in Sombor on 15th June 1994. Abafi (1907) and Móczár (1969) refer to it as a frequent and common species, while Forster (1984) says it is a locally frequent species; but impossible to find in the vicinity of the places where it is frequently found. The species exists in the collection of Gradojević M., but as this fact has not been published so I consider it as a new one in the fauna of Serbia.

Area: middle and north Europe, Spain, middle and north Italy, southwestern France, northern part of Balkan, southern Russia, eastern Sibir and area of Amur.

DISCUSSION

Apart from these, other seven species of butterflies have been also found and could be considered as new ones in the butterfly fauna of Serbia, but they have not been included in this study. The late Vasić found those species in other places in Serbia. Those species will be included in a work that is being prepared.

In the surroundings of Sombor some species, in literature usually referred to as rare, have also been found: *Laelia coenosa* Hübner, 1828; *Proserpinus proserpina* Pallas, 1772; *Gastropacha populifolia* Esper, 1781; *Mythimna obsoleta* Hübner, 1800-1808; *Plusia chryson* Esper, 1789...

The data presented in this study indicate that the area of Sombor with its surroundings is a very interesting in respect of its fauna which should be more thoroughly explored in the future.

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ПРИЛОГ ПОЗНАВАЊУ ФАУНЕ LEPIDOPTERA СРБИЈЕ НЕРЕГИСТРОВАНЕ ВРСТЕ ЛЕПТИРА У ФАУНИ СРБИЈЕ

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Резиме

Од 330 врста лептира сакупљених у околини Сомбора у раду је обрађено 11 врста за које у литератури нисмо нашли податке да су нађене у Републици Србији. То су:

Meganola albula (Denis and Schiffermüller 1775) – лептири су сакупљени код Лугова у последњој декади јула и првој половини августа.

Eilema griseola (Hübner, 1803) – код Лугова су сакупљена само три примерка и то два примерка 23.07.1986. и један примерак 15.08.1988.

Rhyarioides metelkanus (Lederer, 1861) – један примерак добијен из гусенице нађене код ушћа реке Плазовић у канал Бездан – Врбас.

Thumata senex (Hübner, 1808) – лептири су забележени код Лугова, појединих дана и по више примерака у јулу и августу.

Gluphisia crenata (Esper, 1785) – лептири су сакупљени код Лугова 1987. године у другој половини јула и један примерак 19. августа.

Eutrix potatoria (Linnaeus, 1758) – забележена је у више примерака лептира у другој половини јула у Сомбору и Лугову и једна гусеница у мају код Бачког Моноштора.

Meliana stenoptera (Staudinger, 1871) – појединачни лептири су хватани код Лугова у другој половини јула и почетком августа.

Archanara geminipuncta (Haworth, 1809) – лептири су забележени код Лугова и у Сомбору, у јулу и августу.

Scopula flaccidaria (Zeller, 1852) – скоро сваке године се забележи више примерака у јулу и августу на целом истраживаном подручју.

Philerme vetulata (Denis and Schiffermüller 1775) – само један лептир је ухваћен у Сомбору 15.06.1994.