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NOCTUIDS (*LEPIDOPTERA, NOCTUIDAE*) COLLECTED ON THE MOIST MEADOW AT CHYLICE (MAZOVIAN LOWLAND)

ABSTRACT

Twenty-nine species were reported from the moist meadow at Chylice. The most abundant species were: *Autographa gamma, Amathes xanthographa* and *Amphipoea fucosa*.

The *Noctuidae* fauna of the studied meadow was in 85% made up of species prefering open areas (polyphages feeding on aboveground and underground parts of herbaceous plants) and in 15% — of forest species. Species of wide zoogeographical ranges (Holarctic and Euro-Siberian) accounted for 85% of the *Noctuidae* fauna, whereas the remaining 15% was contributed by Euro-West-Asiatic species.

INTRODUCTION

Meadows are environments where many species of the family *Noctuidae* occur, their larvae and imagines, however, having a different status in the biocoenotic structure of grasslands (Tischler 1971). Larvae of many noctuid species, feeding on roots and other underground plant parts, cause much agricultural damage in periods of their increased abundances. The destructive pest species include, e.g., *Cerapteryx graminis* and *Apamea monoglypha*.

Data on the species composition of *Noctuidae* species in various open areas are very scanty, notwithstanding the fact that the family in question includes many pests of agricultural, horticultural and forest crops. Although Polish literature provides a number of agricultural works on *Noctuidea* fauna, yet they supply information on several noxious species only. The noctuids which are not destructive pests have not been given any thorough research so far.

In other countries alike, no works have been so far published dealing with *Noctuidae* communities of open environments. In some European studies only scanty information on the subject may be found (Boness 1953, Doskočil, Hůrka 1962).

The present paper presents the findings of the research on the *Noctuidae* fauna occurring on the moist meadows of the Mazovian Lowland. The studies were carried out in a few research sites (Chylice, Klembów, Zbroszki) in 1981–1983. Aboveground fauna was sampled by means of an entomological sweep-net, Moericke traps placed in the grass and attached to pegs 50 cm above the ground, Malaise traps and window traps (Bańkowska 1989). Although sweeping with an entomological net was practised on all the research sites, yet it turned out completely uneffective for noctuid sampling (no noctuid imagines were sampled). The remaining methods were employed solely on the meadow at Chylice. They turned out scanty material as regards quantity (little over 100 individuals of imagines), yet fairly abundant as regards the number of species.

The meadow at Chylice is a mown meadow of about 7 ha in area. It has been exploited for the last 30 years; it is intensively fertilized and mown 2–3 times a year. The meadow abuts on an intensively grazed pasture, farm settlements and a road, while in the south it adjoins an ash-alder carr (Kotowska, Okołowicz 1989).

The *Noctuidae* species reported from the moist meadow at Chylice are listed in Table 1. For each species a world occurrence range (according to Hruby 1964) was provided along with the environment of occurrence and nutritive preferences (according to Hruby 1964 and the author's observations).

CHARACTERISTICS OF THE *NOCTUIDAE* FAUNA

Single individuals of 29 *Noctuidae* species were recorded on the studied meadow at Chylice. More than 10 individuals were sampled only of the three following species: *Amathes xanthographa*, *Amphipoea fucosa* and *Autographa gamma*.

The most abundant was *Autographa gamma*. Specimens of this species accounted for over 50% of all the material sampled on the meadow. *A. gamma* is a very common insect in Poland. Several generations of this species occur since spring till late autumn. There are no local populations of *A. gamma* in Poland as the species does not undergo winter diapause. Every year new generations appear. *A. gamma* comes to Poland from Africa. Caterpillars of this species feed on herbaceous plants and are often destructive agricultural and forest plants pests.

The other two species in question, i.e. *A. xanthographa* and *A. fucosa*, occur on open areas. The former prefers arid grasslands (being of a steppe origin) and its larvae feed on herbaceous plants. The latter occurs on moist and humid meadows and its larvae live in grass roots and shoots.

A. xanthographa, *A. fucosa* and *A. gamma* were all reported from the Mazovian Lowland to occur on vegetation of a linden-oak-hornbeam forest habitat (Winiarska in press). *A. gamma* is a dominant on vegetation of urbanized areas, whereas in natural linden-oak-hornbeam forest it occurs in minimal num-

Table 1. List of species of *Noctuidae* caught on a moist meadow at Chylice with their brief description. ES — Euro-Siberian, H — Holarctic, EWA — Euro-West-Asiatic

No.	Species	Zoogeographical elements	Environment	Larvae food preferences
1	2	3	4	5
1	*Scotia segetum* (Schiff. et Den.)	H	open	polyphage (grass roots)
2	*Scotia exclamationis* (L.)	ES	open (steppe)	polyphage (grass roots)
3	*Ochropleura plecta* (L.)	H	open (steppe)	polyphage
4	*Diarsia mendica* (Fabr.)	ES	forest	polyphage (herbaceous plants)
5	*Amathes c-nigrum* (L.)	H	open (steppe)	polyphage (herbaceous plants)
6	*Amathes baja* (Schiff. et Den.)	H	forest	polyphage (herbaceous plants)
7	*Amathes xanthographa* (Schiff. et Den.)	EWA	open (steppe)	polyphage (herbaceous plants)
8	*Discestra trifolii* (Hufn.)	H	open	polyphage (herbaceous plants)
9	*Mamestra suasa* (Schiff. et Den.)	H	open (steppe)	polyphage (herbaceous plants)
10	*Mamestra oleracea* (L.)	ES	open	polyphage (herbaceous plants)
11	*Cerapteryx graminis* (L.)	ES	open (meadows)	polyphage (grass roots)
12	*Mythimna pallens* (L.)	H	open (meadows)	polyphage (herbaceous plants)
13	*Cucullia umbratica* (L.)	ES	open (steppe)	oligophage (on *Asteraceae*)
14	*Cirrhia gilvago* (Schiff. et Den.)	ES	forest	polyphage
15	*Rusina tenebrosa* (Hbn.)	EWA	open	polyphage
16	*Dipterygia scabriuscula* (L.)	H	forest	polyphage
17	*Mesapamea secalis* (L.)	ES	open	oligophage (on *Poaceae*)
18	*Luperina testacea* (Schiff. et Den.)	EWA	open	oligophage (on *Poaceae*)
19	*Amphipoea fucosa* (Frr.)	ES	open (meadows)	polyphage (herbaceous plants)
20	*Trachea atriplicis* (L.)	ES	open	polyphage (herbaceous plants)
21	*Athetis palustris* (Hbn.)	ES	open	polyphage (herbaceous plants)
22	*Miana furuncula* (Schiff. et Den.)	ES	open	polyphage (herbaceous plants)
23	*Hoplodrina respersa* (Schiff. et Den.)	EWA	open (steppe)	polyphage (herbaceous plants)
24	*Chloridea viriplaca* (Hufn.)	ES	open (steppe)	polyphage (herbaceous plants)

1	2	3	4	5
25	*Axylia putris* (L.)	ES	open (steppe)	polyphage (herbaceous plants)
26	*Chrysaspidia festucae* (L.)	ES	open (meadows)	polyphage (herbaceous plants)
27	*Autographa confusa* (L.)	ES	open (steppe)	polyphage (herbaceous plants)
28	*Autographa gamma* (L.)	H	open (steppe)	polyphage (herbaceous plants)
29	*Ectypa glyphica* (L.)	ES	open (meadows)	polyphage (herbaceous plants)

bers. The two other species are fairly numerous on city greens, yet, like *A. gamma*, they are scarce in linden-oak-hornbeam forests.

The *Noctuidae* fauna of the studied moist meadow was composed not only of the open area species, though they accounted for as much as 85% of the total number of species (25% being made up of typically meadow species and 45% — of those occurring on arid grasslands), but also 4 forest species were identified in the sampled material, namely *Diarsia mendica*, *Amathes baja*, *Cirrhia gilvago* and *Dipterygia scabriuscula*. Larvae of *A. baja* feed on blackberries (*Vaccinium* sp.), *C. gilvago* — on poplar catkins and, later, on low herbaceous plants, *D. scabriuscula* and *D. mendica* — on herbaceous plants.

Forest species were reported from a natural linden-oak-hornbeam forest on the Mazovian Lowland (unpublished data) and except for *A. baja*, also from greens of urbanized environments (Winiarska in press). In both environments they ranked among scarce species.

A substantial part of the fauna of the moist meadow at Chylice included species of wide zoogeographical ranges: Euro-Siberian (55% of the total number of species) and Holarctic (30%). Only 4 species represented the Euro-West-Asiatic fauna.

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SÓWKI (*LEPIDOPTERA, NOCTUIDAE*) ODŁAWIANE NA ŁĄCE ŚWIEŻEJ W CHYLICACH NA NIZINIE MAZOWIECKIEJ

STRESZCZENIE

W latach 1981–1983 badano faunę łąk świeżych na Nizinie Mazowieckiej. Na łące świeżej w Chylicach zebrano ponad 100 imagines *Noctuidae* z 29 gatunków. Najliczniej występowały: *Autographa gamma* (L.) — gatunek dominujący w zieleni miejskiej Warszawy, a nieliczny w naturalnych lasach grądowych, oraz *Amathes xanthographa* (Schiff. et Den.) i *Amphipoea fucosa* (Frr.) — dość liczne w środowisku zurbanizowanym, a nieliczne w naturalnych lasach grądowych na Nizinie Mazowieckiej.

Fauna *Noctuidae* badanej łąki świeżej składała się w 85% z gatunków terenów otwartych (zarówno typowo łąkowych, jak i stepowych). Stwierdzono tylko 4 gatunki leśne. Larwy wszystkich gatunków żerowały na podziemnych lub nadziemnych częściach roślin zielnych.

Gatunki o szerokich zasięgach zoogeograficznych (holarktyczne i eurosyberyjskie) stanowiły 85% fauny sówek na badanej łące świeżej w Chylicach, a tylko 15% — gatunki eurozachodnio-azjatyckie.

СОВКИ (*LEPIDOPTERA, NECTUIDAE*) СВЕЖИХ ЛУГОВ МАЗОВЕЦКОЙ НИЗМЕННОСТИ

РЕЗЮМЕ

На свежем лугу в Хылицах констатировано 29 видов *Noctuidae*. Наиболее многочисленными были *Autographa gamma*, *Amathes xanthographa* и *Amphipoea fucosa*.

На исследованном свежем лугу фауна *Noctuidae* в 85% состояла из видов, предпочитающих открытые пространства (полифаги, питающиеся наземными и подземными частями травянистых растений), и в 15% из лесных видов. С точки зрения зоогеографии 85% видов составляли совки с широким географическим ареалом (голарктические и евпроейско-сибирские), и только 15% видов относилось к западноевропейско-азиатским.