

Clearwing moths (Lepidoptera: Sesiidae) of Małopolska Province

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ABSTRACT. Twenty-four species of the family Sesiidae have been recorded from the Province of Małopolska. This constitutes ca 78% of all the species of this family present in Poland. The species *Paranthrene insolita*, *Synanthedon mesiaeformis*, *S. flaviventris*, *S. conopiformis*, *Chamaesphecia tenthrediniformis* have been recorded for the first time in this region. *Sesia bembeciformis* and *Synanthedon cephiiformis* have been recorded as new for the Pieniny Mts. The majority of adults were attracted with the use of synthetic sex pheromones.

KEY WORDS: Lepidoptera, Sesiidae, new records, pheromones, Małopolska Province, S Poland.

INTRODUCTION

Research into the Lepidoptera of the Kraków area was summarized by RAZOWSKI & PALIK (1969), and investigations of the Lepidoptera of the Tatra Mountains (BATKOWSKI et al. 1972, BUSZKO et al. 2000) and the Pieniny Mountains (BŁESZYŃSKI et al. 1965) have also been carried out. Despite the many years of studies of Lepidoptera in these regions by numerous lepidopterologists, there are still few data on clearwing moths. Moreover, the existing data are based mostly on accidentally caught specimens. The scarcity of data is due to the fact that Sesiidae are a specific group of moths which require specific catching

methods based on a detailed knowledge of their biology and ethology. Within the present boundaries of the Province of Małopolska, more advanced research into the Sesiidae has been done only in the vicinity of Miechów (BAKOWSKI 1996). The results of short-term studies on the Sesiidae of the Pieniny Mountains were presented by BAKOWSKI (2008). Moreover, a number of new localities of *Synanthedon andrenaeformis* have been reported from the Kraków area (BAKOWSKI et al. 2008). The present paper provides data on the Sesiidae from Małopolska.

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STUDY AREA AND METHODS

The main research was conducted in the Kraków area, in the Dulowska and Niepołomnicka Forests in the years 2008 to 2010. There are single records from the Beskid Makowski Mountains and the Pieniny Mountains. Literature data are included. In addition, unpublished, revised data from the collections of Mr. R. Szpor (Dzierżoniów) and Mr. E. Palik (Kraków) are given.

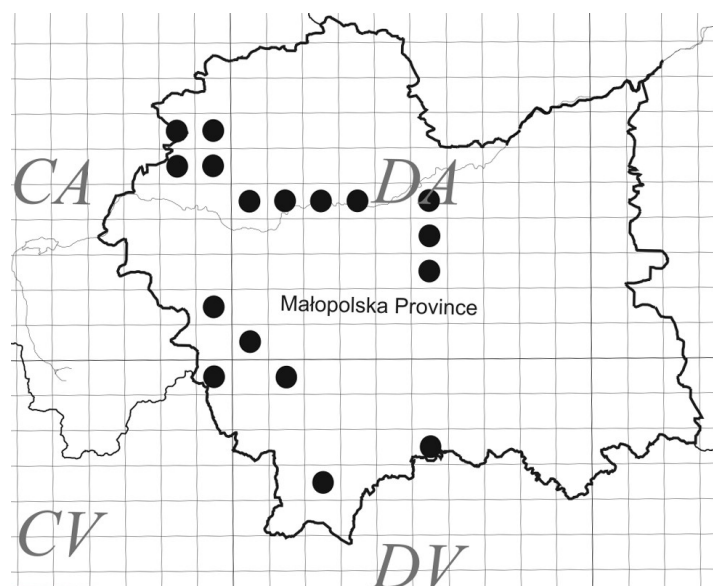


Fig. 1. Location of the UTM squares in which the study of Sesiidae was carried out in 2008-2010.

The following abbreviations are used: (MB) – M. Bąkowski, (RC) – R. Celadyn, (MH) – M. Hołowiński, (WZ) – W. Zajda, ISEA – Institute of Systematics and Evolution of Animals, Kraków, Poland, NHC – Natural History Collections, Faculty of Biology AMU, Poznań, Poland.

The codes in parentheses after the name of the localities refer to the UTM grid codes (Fig. 1).

The clearwing moths were reported on the basis of their characteristic feeding traces and preimaginal stages. Sesiidae males were caught by attracting them to sex pheromone baits placed in pheromone traps of the uni trap type. The pheromones were prepared at the Plant Research International, Wageningen, the Netherlands (PRI). Information on the attractive effect of pheromones on Sesiidae species recorded in Poland was summarized by BĄKOWSKI (2002). The chemical composition of the pheromones was given by PÜHRINGER & RYRHOLM (2000).

LIST OF SPECIES

Pennisetia hylaeiformis (LASPEYRES, 1801)

Kojszówka (DA00), 2 males, 14 VIII 2008; male, 29 VIII 2008; 3 males, 16 VIII 2009; male, 11 VIII 2010; 2 males, 22 VII 2010; 8 males, 1-25 VIII 2010; male, 5 IX 2010 (ca 100 males were observed) (WZ); 20 males, 2 VIII 2008 (RC); Sucha Beskidzka (CA91), 2 males, 15 VIII 2010; Toporzysko (DV19), 6 males, 7 VIII 2010; Zawoja (CV99), 2 males, 8 VIII 2009; Kraków – Bodzów (DA14), Kraków – Tyniec (DA14), Kraków – Las Wolski (DA14), numerous males observed in VIII 2008-2010; Kraków – Krzemionki (DA24), male, 29 VII 2009; Kraków – Nowa Huta (DA34), 6 males, 28 VII 2009; Niepołomska Forest (DA54), 2 males, 20 VIII 2008; 2 males, 18 VII 2009 (coll. ISEA); Stanisławice (DA53), male, 18 VII 2009; Sobolów (DA52), 3 males, VIII 2010; Brzoskwinia (DA04), 4 males, 1 VIII 2010 (WZ); Młoszowa (CA95), 2 males, 30 VII 2008; 5 males, 31 VII 2008; 6 males, 2 VIII 2008; 15 males, 3-6 VIII 2008; 7 males, 21 VIII 2008 (RC); Trzebinia – Siersza (CA96), 2 old feeding traces in *Rubus ideaus*, 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *P. hylaeiformis*.

Sesia apiformis (CLERCK, 1759)

Kojszówka (DA00), Kraków – Krzemionki (DA24), Kraków Kazimierz (DA24), Kraków – Nowa Huta (DA34), Niepołomska Forest (DA54), Toporzysko (DV19) – in all localities old feeding traces on *Populus* spp. (WZ); Chrzanów (CA85), 5 males, 30 VI 2008; Młoszowa (CA95), 20 old feeding traces, 26 VI 2008; Dulowa (CA95), male, 22 VI

2008; Trzebinia (CA95), 2 males, 20 VI 2008; 8 pupal shells, 20 VI 2008; female, 24 VI 2009; male, 21 VI 2008; male 22 VI 2008; 5 males, 24 VI 2008; male, 26 VI 2008; 18 males 30 VI 2008; 2 males 2 VII 2008; male, 20 VI 2008, 4 males 1 VII 2008 (RC); Trzebinia – Osadnik (CA95), 4 males, 28-29 VI 2008 (MB); Trzebinia – Wodna (CA85), numerous old feeding traces on *Populus* spp. 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *S. apiformis*. They flew to the baits until 10:00 hrs.

***Sesia bembeciformis* (HÜBNER, 1806)**

Zakopane – Księży Las (DV26), female and 5 pupal shells, 6 VII 1921 leg. Pluciński coll. NHC (NIESIOŁOWSKI 1929).

The Pieniny Mountains – Macelowa Góra (DV57), male and female, 7 VII 1975 leg. E. Palik (unpublished data) (coll. ISEA).

The record from the Pieniny Mountains is one of the last records of this species in Poland. It has also been reported from the following provinces: Pomorskie, Łódzkie, Świętokrzyskie (BAKOWSKI 2000).

***Sesia melanocephala* (DALMAN, 1816)**

Młoszowa (CA95), caterpillar, 23 VII 2008; caterpillar, 29 VI 2008 (MB), caterpillar, 12 I 2009; 2 feeding traces, 23 VII 2008 (RC).

In Małopolska, recorded in the Pieniny Mountains, among other localities (BŁESZYŃSKI et al. 1965).

***Paranthrene tabaniformis* (ROTTENBURG, 1775)**

Sucha Beskidzka (CA91), male, 24 V 2009; Kojaszówka (DA00), male, 23 V 2009; Kraków – Bodzów (DA14), male, 23 VI 2008; Kraków – Tyniec (DA14), 3 males, 14 V 2007; male, 22 V 2009; Kraków – Wolski Forest (DA14), male, 15 VI 2009; Kraków – Krzemionki (DA24), male, 13 V 2007; male 18 V 2007; male, 19 V 2007; Kraków – Nowa Huta (DA34), male, 12 V 2007; Niepołomicka Forest (DA54), male, 9 VI 2009; Stanisławice (DA53), male, 9 VI 2009; Sobolów (DA52), male, 10 VI 2010; Brzoskwinia (DA04), male, 7 VI 2010 (WZ); Chrzanów (CA85), 3 males, 31 V; 4 males, 4 VI; 12 males, 17-20 VI 2008; Młoszowa (CA95), 6 males, 3-6 VI 2008; Trzebinia – Czyżówka (CA96), 2 males, 30 V 2008; Trzebinia (CA95), 3 males, 7 VI – 1 VII 2008; 9 males, 25 V 2009 (RC); Trzebinia – Czyżówka (CA96), 3 feeding traces on the stumps of *Populus* spp. 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *P. tabaniformis*.

***Paranthrene insolita* (LE CERF, 1914)**

Kraków – Wolski Forest (DA14), a male was attracted at about 14:00 hrs to a pheromone designed for *Synanthedon flaviventris*, 15 VI 2009; Niepołomicka Forest (DA54), a male was caught in a trap with the pheromone composition specially designed for *Synanthedon tipuliformis* and *Synanthedon culiciformis*, 19 VI 2009 (WZ).

This is the first record of this species for Małopolska. So far, *P. insolita* has been recorded from Polesie Lubelskie region, Ponidzie Landscape Parks, Kozińska Forest, Silesia and the vicinity of Poznań (BAKOWSKI et al. 2009).

***Synanthedon scoliaeformis* (BORKHAUSEN, 1789)**

Dulowska Forest (CA95), caterpillar, 8 II 2008 (RC); numerous old feeding traces on *Betula* spp., 20 IV 2008 (MH); Trzebinia (CA95), male, 6 VI 2008; Bukowno ad Olkusz (CA96), 6 feeding traces, 20 VII 2008 (RC).

In Małopolska, it was recorded in the vicinity of Kraków – Wolski Forest and Dulowa (RAZOWSKI & PALIK 1969).

***Synanthedon mesiaeformis* (HERRICH-SCHÄFFER, 1846)**

Stanisławice (DA53), 5 males, 9 VI 2009; Niepołomicka Forest (DA54), 20 males (2 males in coll. ISEA), 9 VI 2009; 3 males, 19 VI 2009; 6 males, 28 VI 2009; 8 males and two pupae, 17 VI 2010 (WZ).

The males flew into the traps containing the pheromone composition specially designed for *Synanthedon flaviventris* and occasionally to a mixture of two pheromones made up for *Synanthedon scoliaeformis* and *S. culiciformis*. The mixture of 2E,13Z-18:OAc/3Z,13Z-18:OAc in the ratio 5:5 is recommended for *S. mesiaeformis* (KARALIUS & BŪDA 2006). The males are mostly active in the late afternoon: the optimal time of activity seems to be one hour before sunset. These are the first records of this species from Małopolska. It has already been recorded in central, eastern and southern Poland (BAKOWSKI 2000).

***Synanthedon spheciformis* ([DENIS & SCHIFFERMÜLLER], 1775)**

Stanisławice (DA53), male, 28 V 2009; Niepołomicka Forest (DA54), 3 males, 28 V 2009; 5 males (male in coll. ISEA), 9 VI 2009; 2 males (male in coll. ISEA), 28 VI 2009 (WZ); Chrzanów (CA85), male, 31 V 2008; Młoszowa (CA95), 3 males, 24-25 VI 2009; Trzebinia – Czyżówka (CA96), 2 males, 27 V-6 VI 2008; 6 pupal shells, 6 VI 2008 (RC); Trzebinia – Górna Bożeniowa (CA95), old feeding trace on *Betula verrucosa*, 20 IV 2008; Trzebinia – Siersza (CA96), 2 old feeding traces on *Alnus glutinosa* (MH).

Almost all the males were attracted to the pheromone composition specially designed for *Synanthedon tipuliformis*.

***Synanthedon stomoxiformis* (HÜBNER, 1790)**

Stanisławice (DA53), male, 19 VI 2009; Niepołomicka Forest (DA54), 6 males (2 males in coll. ISEA), 9 VI 2009; 3 males, 19 VI 2009; 2 males, 28 VI 2009 (WZ).

All the males were attracted to the pheromone composition specially designed for *Synanthedon myopaeformis*. They were flying between 14:00 and 17:00 hrs. In Małopolska, the species has so far been recorded in the Pieniny Mountains (SZADZIEWSKI et al. 1973) and Kraków – Podgórze (BAKOWSKI 1997).

***Synanthedon culiciformis* (LINNAEUS, 1758)**

Młoszowa (CA95), male, 5 V 2009; 3 males, 5-16 V 2009 (RC); Trzebinia – Siersza (CA96), old feeding trace on *Betula* sp. 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *S. culiciformis*.

***Synanthedon formicaeformis* (ESPER, 1783)**

Kojszówka (DA00), male, 23 VI 2009; Brzoskwinia (DA04), 6 males, 7 VI 2010; Kraków – Bodzów (DA14), male, 23 VI 2008; Kraków – Tyniec (DA14), 2 males, 14 V 2007; male, 22 V 2009; Kraków – Las Wolski (DA14), male, 15 VI 2009; Kraków – Krzemionki (DA24), male, 18 V 2007; male, 19 V 2007; Kraków – Nowa Huta (DA34), 2 males, 12 V 2007; Sobolów (DA52), male, 10 VI 2010; Stanisławice (DA53), male, 9 VI 2009; Niepołomicka Forest (DA54), 3 males (1 ex. in coll. ISEA), 9 VI 2009 (WZ); Młoszowa (CA95), male, 2 VI 2008; 17 males, 29 VI 2008, 10 males, 1 VII 2008, 9 males, 4 VII 2008 (RC); Trzebinia – Osadnik Górniczy (CA85), old feeding traces on *Salix caprea* 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *S. formicaeformis*.

***Synanthedon flaviventris* (STAUDINGER, 1883)**

Sucha Beskidzka (CA91), male, 22 VII 2009; Kojszówka (DA00), 5 males, 13-20 VII 2009; Niepołomicka Forest (DA54), male, 18 VII 2009 (in coll. ISEA) (WZ); Młoszowa (CA95), two old feeding traces on *Salix purpurata* 20 IV 2008 (MH).

The males were attracted mainly to the pheromone composition designed for *S. soffneri*

and occasionally to the pheromone for *S. flaviventris*. The mixture of 2E,13Z-18:OAc/3Z,13Z-18:OAc in the ratio 49:1 is recommended for *S. flaviventris* (KARALIUS & BUDA 2006).

These are the first records of this species from Małopolska (BAKOWSKI 2000).

***Synanthedon andrenaeformis* (LASPEYRES, 1801)**

Kraków – Bodzów (DA14), 2 males, 6 VI 2009 (1 male in coll. ISEA); Kraków – Tyniec (DA14), male, 6 VI 2009 (WZ); Młoszowa (CA95), 6 males, 13-20 VI 2008; 9 feeding traces, 1 II 2008; 38 males, 09-11 VI 2009 (RC); male 28-29 VI 2008 (MB); 3 feeding traces, male emerged 9 V 2008; 2 females emerged; 14 V 2008 (MH); Psary near Chrzanów (CA95), male, 17 VI 2008; Dulowa (CA95), 15 males, 17-26 VI 2008; 7 feeding traces, 3 II 2008; caterpillar, 3 II 2008; 42 males 9-18 VI 2009; Chrzanów (CA85), male, 20 VI 2008; Ciężkowice (CA86), male, 30 VI 2008; Trzebinia (CA95), 12 feeding traces, 9 II 2008; caterpillar, 9 II 2008 (RC); Ojcowski National Park (DA16), feeding traces, VI 2008; Trzebinia (CA95), several old feeding traces, 20 IV 2008 (MH).

Almost all the males were attracted to the pheromone composition specially designed for *S. vespiformis*. The only Polish records so far are from several localities in the vicinity of Przemyśl (BAKOWSKI & HOŁOWIŃSKI 2004) and Kraków (BAKOWSKI et al. 2008).

***Synanthedon soffneri* SPATENKA 1983**

Zawoja (CV99), male, 20 V 2009; Kojaszówka (DA00), male, 8-18 VI 2009 (WZ).

The males were caught in traps with a pheromone composition specially designed for *S. soffneri*. The traps were hung near its caterpillars' host plants (*Lonicera nigra*) (ZAJDA 2011). So far in Poland, it has been reported only from the western part of the Kłodzko region (KOKOT 2005).

***Synanthedon myopaeformis* (BORKHAUSEN, 1789)**

Kojaszówka (DA00), 10 males, 10-30 VI 2009; Kraków – Bodzów (DA14), male, 1 VII 2010; Kraków – Tyniec (DA14), male, 1 VII 2010; Kraków – Las Wolski (DA14), 2 males, 15 VI 2009; Kraków – Krzemionki (DA24), 2 males, VII 2009; Kraków – Nowa Huta (DA34), 2 males VII 2009; Sobolów (DA52), 2 males, 10 VI 2010; Stanisławice (DA53), male, 19 VI 2009; Niepołomicka Forest (DA54), male, 19 VI 2009 (WZ); Młoszowa (CA95), 2 males, 24 VI 2008; male, 29 VI 2008; male, 6 VII 2008; Trzebinia (CA95), 6 males, 30 VI 2008 (RC), 10 males, 28 - 29 VI 2008 (MB); Chrzanów (CA85), 35 males, 3-06 VIII 2008 (RC); Trzebinia – Wodna (CA85), numerous feeding traces on *Sorbus aucuparia*, 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *S. myopaeformis*.

***Synanthedon vespiformis* (LINNAEUS, 1761)**

Kraków – Tyniec (DA14), male, 6 VI 2009; Kraków – Las Wolski (DA14), male, 15 VI 2009; Niepołomicka Forest (DA54), 6 males (male in coll. ISEA), 9 VI 2009; 6 males, 19 VI 2009; 2 males, 28 VI 2009; 8 males were attracted to the pheromone for *S. loranthe*, 17 VI 2010; Stanisławice (DA53), male, 9 VI 2009 (WZ); Frywałd near Krzeszowice (DA04), male, 8 VII 2008 (RC); Czulów (DA04), numerous feeding traces in tubers caused by a fungus on oak trees *Quercus* sp., 20 IV 2008 (MH); Młoszowa (CA95), 3 males, 25 V 2009; male, 11 VI 2009; male, 18 VI 2010 (RC).

All the males were attracted to the pheromone composition specially designed for *S. vespiformis* and *S. loranthe*.

***Synanthedon conopiformis* (ESPER, 1782)**

Niepołomicka Forest (DA54), a male on the pheromone specially designed for *P. tabaniformis*, 17 VI 2010 (WZ).

The species is widespread in Poland, but has yet not been reported from Małopolska (BAKOWSKI 2000).

***Synanthedon tipuliformis* (CLERCK, 1759)**

Trzebinia (CA95), 4 males, 28 VI 2008; 2 males, 29 VI 2008; 3 males, 2 VII 2008; 10 males, 6 VII 2008; 8 males, 9 VII 2008 (RC); Młoszowa (CA95), 4 males 28-29 VI 2008 (MB); Zalas (DA04), 2 old feeding traces on *Ribes* sp. 20 IV 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *S. tipuliformis*.

***Synanthedon cephiiformis* (OCHSENHEIMER, 1808)**

The Pieniny Mountains – Macelowa Góra (DV57), 1 ex. 7 VII 1959 coll. R. Szpor det. (MB); the Pieniny Mountains – Trzy Korony (DV57), feeding traces on *Abies alba* VIII 2010 (MB); Kraków – Tyniec (DA14), male, 4 VII 1983; 2 males, 12 VII 1984 leg. E. Palik coll. ISEA.

These are the first records of *S. cephiiformis* from the Pieniny Mts.

***Bembecia ichneumoniformis* ([DENIS & SCHIFFERMÜLLER], 1775)**

Trzebinia (CA95), 3 males, 29 VI 2008; 2 feeding traces on *Lotus corniculatus*, 30 VI 2008; male, 2 VII 2008; 2 males, 6 VII 2008; male, 13 VII 2008 (RC); 2 males, 28-29 VI 2008 (MB); Trzebinia – Wodna (CA95), male, 11 VII 2008; 3 males, 22 VII 2008; 13 males, 26 VII 2008 (RC); Bukowno near Olkusz (CA96), 11 males, 20 VII 2008 (RC); Kojaszówka (DA00), male, 16 VII 2009; 2 males, 1 VIII 2010; Kraków – Bodzów (DA14), ex. 20 VII 2009; Kraków – Tyniec (DA14), ex. VII 2009, Kraków – Krzemionki (DA24), male, 25 VII 2009 (WZ).

All the males were attracted to the pheromone composition specially designed for *B. ichneumoniformis*.

***Pyropteron triannuliformis* (FREYER, 1845)**

Balin near Chrzanów (CA85), 5 males, 4 VII 2008; 15 males, 10 VII 2008; 4 males, 12 VII 2008 (RC); Trzebinia (CA95), 2 males, 28 VI 2008; 4 males, 29 VI 2008 (RC) 5 males, 28-29 VI 2008 (MB).

All the males collected in Trzebinia were attracted to the pheromone composition specially designed for *S. apiformis* (old apiformis pheromone). The males from Balin were caught near its caterpillars' host plant – *Rumex* spp. The only record for Małopolska so far is from Bukowno near Olkusz (BAKOWSKI 2000).

***Chamasphecia empiformis* (ESPER, 1783)**

Kojaszówka (DA00), numerous males attracted to the pheromone, from the end of June until the half of August 2007-2010, Sucha Beskidzka (CA91), male, 15 VIII 2010; Zawoja (CV99), male, 25 VI 2007; Brzoskwinia (DA04), 5 males, 7 VI 2010; Kraków – Bodzów, Kraków – Tyniec 2/V-1/VII locally frequent, Kraków – Wolski Forest (DA14), 15 VI 2009 male, Kraków – Krzemionki (DA24), 2/V-1/VII, locally frequent, Kraków – Nowa Huta (DA34), 2/V-1/VII locally frequent; Sobolów (DA52), male, 10 VI 2010; Stanisławice (DA53), male, 19 VI 2009; Niepołomicka Forest (DA54), male, 19 VI 2009; Toporzysko (DV19), male, 7 VIII 2010 (WZ); Chrzanów (CA85), 36 males, 31 V 2008; male, 6 VI 2008; Młoszowa (CA95), 3 males, 5 VI 2008; 10 males, 7 VI 2008; Psary near Chrzanów (CA95), 23 males, 1 VI 2008; 20 males, 17 VI 2008; Trzebinia (CA95), 4 males, 30 V 2008; 5 males, 24 VI 2008; 12 males, 4 VI 2008; 15 males, 7 VI 2008; male, 1 VII 2008; Trzebinia – Wodna (CA95), 11 males, 22 VII 2008; 13 males, 26 VII 2008; 13 males, 26 VII 2008; Trzebinia – Czyżówka (CA96), 39 males, 30 V 2008; Frywałd near Bukowno (CA96), 3 males, 20 VII 2008; Krzeszowice (DA04), 6 males, 13 VI 2008 (RC); Trzebinia (CA95), male, 28-29 VI 2008 (MB); Trzebinia – Czyżówka (CA96), 2 feeding traces with

parasites, 20 IV 2008; Trzebinia – Osadnik Górniczy (CA96), feeding traces collected 20 IV 2008, female ex. pupa 9 V 2008 (MH).

All the males were attracted to the pheromone composition specially designed for *S. apiformis* (old *apiformis* pheromone).

***Chamaesphecia tenthrediniformis* ([DENIS & SCHIFFERMÜLLER], 1775)**

Trzebinia (CA95), female on grass, in meadows with *Euphorbia esula*, 30 V 2008 leg. & coll. (RC), det. Z. Laštůvka.

This is the first record of the species from Małopolska. So far in Poland, it has been recorded from Węgierka near Pruchnik, the Ponidzie Landscape Parks and the vicinity of Poznań (BAKOWSKI 2000).

CONCLUSIONS

During the study, 24 of the 31 Sesiidae species present in Poland were reported. This is the highest number of clearwing moth species recorded from Poland. 22 species were reported in both the Kozieniecka Forest (BAKOWSKI et al. 2003) and the Polesie Region (BAKOWSKI & HOŁOWIŃSKI 2011). For comparison, 20 species were reported from the Ponidzie Landscape Park Complex (BAKOWSKI 2001), 19 in the Poznań region (BAKOWSKI 2000), and 17 in the Łódź Upland (ŚLIWIŃSKI & KOWALCZYK 1995). However, we have to bear in mind the fact that the Province of Małopolska is disproportionately larger in area compared to the other localities. On the other hand, our research was conducted mainly in the surroundings of Kraków, the Niepołomnicka Forest and the Beskid Makowski Mountains and in a relatively short period of time, i.e. mainly in the years 2008-2010. Only a few literature data have been included. It seems that the list of species could be expanded by 3 potential ones: *Synanthedon loranthe* (KRALICEK, 1966), whose host plant *Viscum album* subsp. *austriacum* is common on pine trees in the Niepołomnicka Forest; *Pyropteron muscaeformis* (ESPER, 1783) reported, in terms of places closest to Kraków, from the vicinity of Częstochowa and Radom; *Chamaesphecia leucopsiformis* (ESPER, 1800) reported, in terms of places closest to the Małopolska Province, from the Ponidzie Landscape Parks.

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