

2. Dhr. F. VEN doet de volgende mededeling.

**Lesser Dung fly species (Diptera; Sphaeroceridae)  
new to the Belgian fauna**

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**Abstract**

*From May 1990 to January 1991 Sphaeroceridae were collected at two localities, the natural reserve "Hobokense Polder", and a garden at Schoten. The sphaerocerid flies were sampled with Malaise traps, coloured water traps and pitfall traps. 12 species turned out to be new to the Belgian fauna.*

**Samenvatting**

*Van mei 1990 tot en met januari 1991 werden Sphaeroceridae verzameld in twee gebieden, het natuurreservaat "Hobokense Polder" en een tuin te Schoten. Hierbij werd gebruik gemaakt van Malaise vallen, verschillend gekleurde watervallen en bodemvallen. 12 soorten worden voor de eerste maal vermeld voor België.*

**Introduction**

Faunal and ecological studies concerning Belgian Sphaeroceridae are very scarce. Except for three work exclusively dealing with Sphaeroceridae (BONDROIT, 1909; VANSCHUYTBROECK, 1942, 1943), almost all known Belgian records were published in general surveys of the Belgian Diptera fauna (eg. JACOBS, 1906; MEUNIER, 1911; MARÉCHAL, 1930; COLLART, 1934; LERUTH, 1936; GOETGHEBUER, 1942; LELEUP, 1948; LECLERCQ, 1952). Since the beginning of the 1950's only two additional studies have been published (DEBRY, 1978; FASSOTTE & GROOTAERT, 1981).

The family Sphaeroceridae consists of very common, small to very small, generally saprophagous flies. The larvae develop in a wide range of decaying organic matter such as dung (mainly from mammals), carcasses of animals, refuse heaps, grass cuttings, etc... (PITKIN, 1988).

In the scope of a M.Sc. thesis (VEN, 1991), a faunistical survey of the sphaerocerid fauna in Belgium was carried out. Flies were collected in the natural reserve "Hobokense Polder" and a suburban garden at Schoten. In the present paper the species, new to the Belgian fauna are discussed.

**Material & Methods**

The sampling plot at the Hobokense Polder (ES.97) consisted of a humid grassland of about 0,5 ha, surrounded by a brushwood of willows. The vegetation can best be classified as an overgrown grassland influenced by the adjacent willow brushwoods, reed beds and some smaller and larger ponds.

The second collecting site at Schoten (FS.08) was a conventional, residential, suburban garden. The flies were collected in the vicinity of a kitchen refuse heap on which vegetable as well as meat refuse was dumped. For a more detailed characterization of the vegetation in the two habitats we refer to VEN & DE BRUYN (1992).

The flies were collected with several types of traps. At Hoboken, one Malaise trap, five coloured water traps (green, blue, red, white and yellow), and 6 pitfalls were applied between 18.V.1990 and 11.I.1991. At Schoten, only one white and one yellow water trap were used during the period 18.V.1990 - 10.V.1991. For a more detailed description of the trapping techniques we refer to VEN & DE BRUYN, 1992) The traps were emptied at weekly intervals.

**Results**

In the present study, Sphaeroceridae belonging to 3 subfamilies, 22 genera and 59 species were collected (Table 1) of which 12 species are new to the Belgian fauna. The latter are discussed more in detail.

**Subfamily Sphaerocerinae**

***Sphaerocera monilis* HALDAN, 1836**

*S. monilis* is a terricolous species, mainly preferring woodlands. There it can be found under leaf litter or on decaying fungi. It can also be encountered frequently in gardens under grass compost. (ROHÁČEK, 1984; FLORÉN, 1989). The flies were caught in the coloured traps at Schoten from March to August.

*S. monilis* is a European species. Until now, it was only recorded from Finland, Sweden, Hungary and Czechoslovakia (ROHÁČEK, 1987; FLORÉN, 1989; PAPP, 1990).

**Subfamily Limosininae**

***Coproica hirticula* COLLIN, 1956**

The biology of this common species is primarily coprophagous (LAURENCE, 1955; HAYASHI, 1986; PITKIN, 1988). In Central Europe, *C. hirticula* is found mainly on dung-hills, less often on isolated droppings (PAPP & ROHÁČEK, 1987). Additionally, it has also been collected on carcasses and

decaying vegetation (FLORÉN, 1989). During the present study, *C. hirticula* was caught in the red and green traps at Hoboken and in the yellow trap at Schoten.

According to FLORÉN (1989) *C. hirticula* is probably a cosmopolitan species. This species has been recorded from Europe, Asia (HAYASHI, 1986, 1989), the Middle East (PAPP & ROHÁČEK, 1987) and Oceania (introduced in Australia: RICHARDS, 1973; PAPP & ROHÁČEK, 1987).

***Elachisoma pilosum* (DUDA, 1924)**

*E. pilosum* is a coprophagous species (CARLES-TOLRÁ, 1990), often found together with *Elachisoma aterrimum* (FLORÉN, 1989).

It is considered to be a rare species in Europe (CARLES-TOLRÁ, 1990) although it has been recorded from many European countries (Czechoslovakia: ROHÁČEK, 1987; Great Britain: PITKIN, 1988; Sweden: FLORÉN, 1989; Hungary: PAPP, 1990; Spain: CARLES-TOLRÁ, 1989, 1990). We caught one male in the yellow water trap near the kitchen refuse heap at Schoten.

***Minilimosina parvula* (STENHAMMAR, 1854)**

This species seems mainly to be associated with decaying fungi, but has infrequently also been collected from carcasses, animal droppings and decaying vegetable matter (ROHÁČEK, 1983). According to FLORÉN (1989) they can also be found in birds nests. *M. parvula* was caught in the coloured water traps both at Hoboken (blue, yellow, green, red) and Schoten (white, yellow).

According to ROHÁČEK (1984) and CARLES-TOLRÁ (1990), *M. parvula* has a Holarctic distribution, but published records are only known from Europe (United Kingdom, Czechoslovakia, Spain, Denmark, Finland, Sweden and Hungary).

***Opalimosina collini* (RICHARDS, 1929)**

*O. collini* is strictly coprophagous. In all probability the larvae develop only in the excrements of large mammals (LAURENCE, 1955; PAPP, 1985). This species was caught in the water traps (blue, white, green) and pitfalls of Hoboken and both coloured traps at Schoten.

Until now, *O. collini* has only been collected in Europe (ROHÁČEK, 1983). Records are known from Finland, Sweden, United Kingdom, Czechoslovakia, Hungary, Italy and Spain (HACKMAN, 1980; ROHÁČEK, 1987; PITKIN, 1988; MUNARI, 1988; FLORÉN, 1989; CARLES-TOLRÁ, 1989, 1990; PAPP, 1990).

***Telomerina pseudoleucoptera* (DUDA, 1924)**

*T. pseudoleucoptera* is a rather rare species, seemingly associated with the excrements of larger herbivores, such as cow droppings in pastures (LAURENCE, 1955). It is more common at higher altitudes (ROHÁČEK, 1983).

We captured this species with the Malaise trap and red water traps at Hoboken and both coloured traps at Schoten.

Formerly *T. pseudoleucoptera* has only been recorded from Europe (ROHÁČEK, 1983). Data are available from Finland, Sweden, Norway, United Kingdom, Czechoslovakia, Hungary and Spain (HACKMAN, 1980; ROHÁČEK, 1987; PITKIN, 1988; FLORÉN, 1989; CARLES-TOLRÁ, 1989, 1990; PAPP, 1990).

***Trachyopella bovilla* COLLIN, 1954**

*T. bovilla* has been found on many different kinds of decaying organic matter such as excrements of cows, carcasses, rotting grasses and fungi, leaf litter and compost (ROHÁČEK & MARSHALL, 1985), which indicates it is a polysaprophagous species. According to the same authors this species is strongly psychrophilous. *T. bovilla* was only caught in the traps near the kitchen refuse heap at Schoten.

*T. bovilla* has been found both in Europe (Austria, Sweden, Norway, Iceland) and North-America (USA, Canada). Probably it is more widespread in higher latitudes of the Holarctic Region (ROHÁČEK & MARSHALL, 1985).

***Trachyopella folkei* ROHÁČEK, 1990**

This species has only been described recently based on a single male specimen (ROHÁČEK, 1990). Nothing is known about the biology of *T. folkei*, except that the male fly was captured with a pitfall near a grass refuse heap. We captured two additional males and one female with the water traps at Schoten, near a kitchen refuse heap.

This is the first time *T. folkei* is recorded outside Sweden.

***Trachyopella kuntzei* (DUDA, 1918)**

Hitherto, on the basis of collected material, it seems *T. kuntzei* is associated with decaying vegetation such as rotting hay and grass cuttings. Some flies were also collected on compost heaps and horse or sheep dung (ROHÁČEK & MARSHALL, 1985). The flies captured during our study were only found in the traps at Schoten.

So far *T. kuntzei* has only been recorded from the European countries Germany, Czechoslovakia, Hungary and Sweden and Canada (ROHÁČEK, 1985; ROHÁČEK & MARSHALL, 1985; FLORÉN, 1989; PAPP, 1990).

***Trachyopella leucoptera* (HALIDAY, 1836)**

*T. leucoptera* has a largely polysaprophagous mode of life (ROHÁČEK & MARSHALL, 1985). Adults were reared on dung and boiled grasses (PAPP, 1975; OKELY, 1974). Flies were also collected from excrements (horse, cattle, pig, sheep), rotting vegetation and fruits and compost heaps (DUDA,

1938; ZUSKA & LAŠTOVKA, 1969). We collected the flies with the water traps at Schoten.

*T. leucoptera* is widely distributed but not very common (ROHÁČEK & MARSHALL, 1985). Due to its synantrophic biology *T. leucoptera* is probably a cosmopolitan species. Records are available from Europe (United Kingdom, Finland, Denmark, Sweden, Italy, Spain, Hungary, Czechoslovakia), Asia (Afghanistan) and Africa (Zaire). However, due to earlier misidentifications, all non-Holarctic records need to be revised (ROHÁČEK & MARSHALL, 1985).

#### *Trachypella lineafrons* (SPULER, 1925)

*T. lineafrons* tends to have a synantrophic life history, especially on compost heaps and comparable circumstances in the vicinity of human activities (ROHÁČEK & MARSHALL, 1985). This is confirmed by our data where *T. lineafrons* was only collected in Schoten near the compost heap. *T. lineafrons* is most frequently found on decaying vegetation, but because it was also collected on carcasses, excrements, manure and rotting fungi, it can be considered to be a polysaprophagous species.

Until 1985 no records of *T. lineafrons* were known from Europe, due to the fact that thus far she had been wrongly identified as *T. atoma* (RONDANI). According to ROHÁČEK & MARSHALL (1985) *T. lineafrons* is even the more common species. Nowadays, *T. lineafrons* is considered to be widely distributed in the Holarctic Region (ROHÁČEK & MARSHALL, 1985).

#### *Trachypella minuscula* COLLIN, 1956

So far, little has been published on the biology of *T. minuscula*. Only ROHÁČEK & MARSHALL (1985) reported this species was collected on a compost heap. We collected *T. minuscula* with the Malaise trap and the pitfalls at Hoboken, where no compost heap was present. This may indicate species feeds on decaying vegetable matter in general.

The distribution area of *T. minuscula* is restricted to Europe (ROHÁČEK & MARSHALL, 1985). Records are known from Hungary, Sweden and the United Kingdom (PITKIN, 1988; FLORÉN, 1989; PAPP, 1990).

#### Acknowledgments

We wish to express our gratitude to the "WHOP" (Werkgroep Hobokense Polder) for allowing us to place the traps and to collect insects in the nature reserve "Hobokense Polder", and Arlette LEMOUCHE and Jens VERWAERDE for the identification and characterisation of the vegetation. The second author is a senior research assistant of the Belgian National Fund for Scientific Research.

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Table 1. List of the sphaerocerid species collected during this study. Species marked with \* are new to the Belgian fauna.

species	Hoboken ♂♂, ♀♀	Schoten ♂♂, ♀♀
SPHAEROCERINAE		
<i>Ischiolepta pusilla</i> (FALLÉN)	1,0	158,258
<i>Sphaerocera curvipes</i> (LATREILLE)		17,15
* <i>Sphaerocera monilis</i> HALIDAY		36,21
COPROMYZINAE		
<i>Borborillus nitidifrons</i> (DUDA)		0,1
<i>Copromyza equina</i> FALLÉN	2,0	1,1
<i>Copromyza similis</i> (COLLÉN)	2,0	
<i>Copromyza stercoraria</i> (MEIGEN)	3,6	0,3
<i>Crumomyia fimetaria</i> (MEIGEN)		5,6
<i>Lotophila atra</i> (MEIGEN)	4,4	
LIMOSININAE		
<i>Apteromyia claviventris</i> (STROBL)	1,0	10,4
<i>Chaetopodella scutellaris</i> (HALIDAY)	5,4	3,8
<i>Coproica acutangula</i> (ZETTERSTEDT)	1,0	
<i>Coproica ferruginata</i> (STENHAMMAR)	2,2	
* <i>Coproica hirticula</i> COLLIN	1,1	1,3
<i>Coproica hirtula</i> (RONDANI)		0,2
<i>Coproica lugubris</i> (HALIDAY)	5,4	
<i>Coproica pusio</i> (ZETTERSTEDT)		0,2
<i>Coproica vagans</i> (HALIDAY)	1,1	
<i>Elachisoma aterrimum</i> (HALIDAY)	0,1	2,1
* <i>Elachisoma pilosum</i> (DUDA)		1,0
<i>Hermiosina bequarti</i> (VILLENEUVE)		0,2
<i>Leptocera caenosa</i> (RONDANI)	0,1	27,37
<i>Leptocera fontinalis</i> (FALLÉN)		3,6
<i>Leptocera fuscipennis</i> (HALIDAY)	1,0	
<i>Leptocera limosa</i> (FALLÉN)	3,1	
<i>Leptocera lutosa</i> (STENHAMMAR)	5,11	
<i>Leptocera lutosoidea</i> (DUDA)	4,11	
<i>Leptocera nigra</i> OLIVIER	40,21	
<i>Limosina silvatica</i> (MEIGEN)		2,1
<i>Minilimosina fungicola</i> (HALIDAY)		10,15
* <i>Minilimosina parvula</i> (STENHAMMAR)	1,4	1,3
<i>Minilimosina vitripennis</i> (ZETTERSTEDT)	4,3	0,1
<i>Opacifrons coxata</i> (STENHAMMAR)	7,3	1,3
<i>Opacifrons humida</i> (HALIDAY)	30,20	
* <i>Opalimosina collini</i> (RICHARDS)	5,1	0,4
<i>Opalimosina liliputana</i> (RONDANI)		14,9
<i>Opalimosina mirabilis</i> (COLLIN)		21,24
<i>Pteremis fenestralis</i> (FALLÉN)	3,0	
<i>Pullimosina antennata</i> (DUDA)	10,8	0,4