

### Sleutel tot de *Sphegina* soorten van België

- 1 - Achterrand van het metasternum bijna rechthoekig; eerste sterniet niet of nauwelijks ontwikkeld. Komt in België louter voor in de Hoge Venen (VERLINDEN & DECLEER, 1987) ..... *Sphegina sibirica* STACKELBERG, 1953
- Achterrand van het metasternum hoekig of boogvormig ingesneden; eerste sterniet ontwikkeld ..... 2
- 2 - Onderste helft van het gezicht witachtig-geel (of licht vaal-geel) ..... 3
- Gezicht volledig zwart, de mondrand en/of een strook langs de mondrand soms donkerbruin doorschijnend ..... 4
- 3 - Humerale calli geel of bruinachtig geel. Vleugel: r-m dwarsader ter hoogte van het uiteinde van de subcosta. Mn.: surstyli kort en breed, aan de binnenzijde, ongeveer in het midden, met een scherpe tand; uiteinden met een kleinere, naar binnen gerichte tand ..... *Sphegina kimakowiczi* STROBL, 1897.
- Humerale calli donker. Vleugel: r-m dwarsader voorbij het uiteinde van de subcosta. Mn.: surstyli lang met proximaal een breed gedeelte, dat plots smaller wordt, eindigend in relatief scherpe, donkere, naar binnen gebogen punten ..... *Sphegina clunipes* (FALLÉN, 1817)
- 4 - Vleugel: r-m dwarsader (soms weinig) voorbij het uiteinde van de subcosta. Mn.: surstyli lang, bijna recht, van het begin tot het einde geleidelijk versmallend. Eindpunten scherp, niet verdonkerd en niet naar binnen gebogen ..... *Sphegina nigra* MEIGEN, 1822  
(= *S. clavata* SCOPOLI, 1763 s. THOMPSON)
- Vleugel: r-m dwarsader ter hoogte van het uiteinde van de subcosta. Mn.: surstyli relatief kort, breed en recht, stomp eindigend ..... *Sphegina verecunda* COLLIN, 1937

Ik dank de Heer L. VERLINDEN, die mij aanvullende literatuur verschafte.

### Literatuur

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8. Dhr. M. POLLET doet de volgende mededeling.

### A contribution to the knowledge of dolichopodid flies (Dolichopodidae, Diptera) in Belgium. I. The Dolichopodidae fauna of a garden at Schoten (Prov. Antwerpen)

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### Summary

In the framework of a larger sampling campaign, Dolichopodidae were collected by means of a Malaise trap in a garden habitat at Schoten during the period 6.III-31.XII.1983. A total of 922 flies were caught, belonging to 40 species. Among these, *Hercostomus aerosus* was by far the most abundant. Dolichopodid species characteristic for woodlands and fenlands as well as eurytopic species were noticed, whereas *Rhaphium penicillatum* and *Chrysotus pulchellus* are of special faunistic interest for the Belgian fauna. Furthermore, nearly the whole flying activity is concentrated to the summer period. Finally, it is proposed to use different sampling techniques in order to estimate the dolichopodid fauna of a study site.

### Introduction

Some years ago, a large sampling campaign was started by the « Koninklijk Belgisch Instituut voor Natuurwetenschappen » in order to investigate the dipteran fauna of Belgium. The primary aim is to get as many data as possible about the geographical distribution of some fly families in our country (in particular Syrphidae, Empididae, Dolichopodidae). The sampling technique used is the Malaise trap, a very efficient recipient for collecting flying insects.

In this paper, we will present the results for the Dolichopodidae, collected by means of a Malaise trap during approximately a whole year cycle in a garden habitat at Schoten (Prov. Antwerp).

### The study site

The sampling plot was situated in a suburban garden at Schoten (Prov. Antwerpen; U.T.M.: FS08), some miles north from Antwerpen city. The studied garden which covers an area of approximately 500 m<sup>2</sup>, is divided in two main parts: a more or less unkept woodland and a more conventional garden. The woodland consists mainly of native trees, while a few are introduced. The open spaces are covered with lower herbs.

The actual garden consists of a central lawn bordered by flowerbeds and shrubberies of which many are introduced. Due to the lack of extensive weeding and management also many native plants could penetrate in the garden. Some others are adventive plants. Two parts of the garden are worth mentioning. The first is a small pool (+ 20 m<sup>2</sup>), which is bordered by a swampy vegetation. A second interesting part is a small orchard, with a few ornamental shrubs scattered between the trees.

Furthermore, we have to mention that the garden is situated in a rather moist environment due to the presence of a brooklet, which has her course through the garden, and the canal Schoten-Turnhout at the back of the study site.

### Material and methods

As earlier mentioned, to sample the dolichopodid flies a Malaise trap was used. This trap, based on the type described by TOWNES (1972), consists of a black vertical nylon net (width 2m, height 2m at the highest point), bordered on the upper side with a small nylon roof. The collecting jar was filled with 75 % alcohol. The trap was emptied weekly during the period 6.III-31.XII.1983.

To increase the trapping capability of the trap, the position was chosen in a row of *Phlox* spp. which separates the main garden and the orchard. Because the plants were cut off, an apparently open space was created in the edge of the *Phlox* plants.

The Dolichopodidae caught were identified by means of D'ASSIS FONSECA (1978), PARENT (1938) and NEGROBOV (1974a,b, 1979).

### Results and discussion

Table 1 presents the data of the dolichopodid species collected during the year cycle and separated per weekly interval. Only periods during which dolichopodid flies were found, are mentioned. The species are ranged according to MEUFFELS & GROOTAERT (1987). A total of 922 flies were caught belonging to 40 species. Three females of *Medetera* sp. could not be identified to species level. By far *Hercostomus aerosus* was collected in the largest numbers, followed by *Chrysotus gramineus*, *Chrysotimus molliculus* and *Hercostomus brevicornis*. Nevertheless, most species were found in small numbers, which is illustrated by the fact that in 26 species, less than 10 specimens were gathered.

#### 1. Habitat selection and faunistics

Several woodland inhabiting species were noted such as *Sciapus platypterus*, *Hercostomus brevicornis*, *Rhaphium appendiculatum* and *Argyra diaphana*. Earlier, POLLET et al. (1986) found that *A. diaphana* showed a positive response on high soil humi-

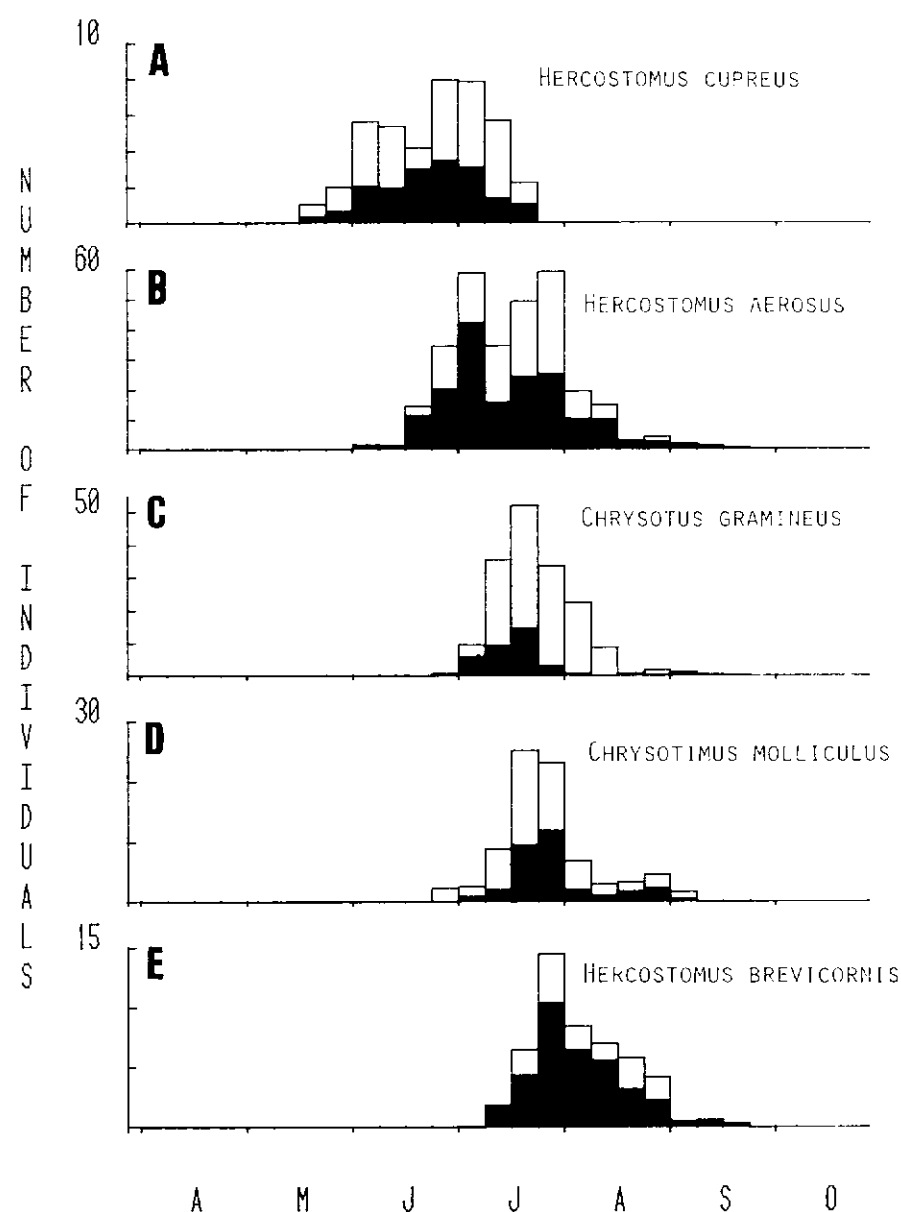


Figure 1. Seasonal activity distribution in some abundant Dolichopodidae. A: *Hercostomus cupreus* (n = 42), B: *Hercostomus aerosus* (n = 300), C: *Chrysotus gramineus* (n = 167), D: *Chrysotimus molliculus* (n = 81), E: *Hercostomus brevicornis* (n = 50); males: black columns, females: white columns.

dity/poorly developed litter layer, whereas in *H. metallicus* a preference for an undeveloped litter layer only was noticed. Also some species characteristic for the borders of oligotrophic fens were collected: *Diaphorus nigricans* and *Chrysotus pulchellus*. Contrary to the species mentioned above, *Dolichopus unguatus*, *D. plumipes*, *Chrysotus gramineus*, *Campsicnemus curvipes* and *Sympycnus pulicarius* are among the most common Dolichopodids in our country and occur in very diverse habitats. Although in general *Hercostomus cupreus* is said to be equally common, it seems to be more or less restricted to woodland areas. The occurrence of the relatively high number of *Medetera* spp. as well as two *Sciapus* spp. in this wooded garden is not so surprising: both genera consist mainly of arboreal species. Finally, *Rhaphium penicillatum* and *Chrysotus pulchellus* are of special faunistic interest and can be termed rare for the Belgian fauna. For the Netherlands also, MEUFFELS (1978, 1981) mentions only few records.

## 2. Seasonal activity

Figure 1 gives the seasonal activity patterns of the most frequently found dolichopodid species. Therefore, the field collected data were extrapolated into periods of 7.6 days.

As can be seen in Table 1, flying activity in dolichopodid species is almost completely restricted to summer (July-August), when more than 90% of the individuals were collected (cfr. WAGNER, 1982). Exceptions on the rule are species of the genus *Campsicnemus* (*C. curvipes* and *C. scambus*). In this regard, D'ASSIS FONSECA (1978) even postulates in *C. curvipes*, records are known for every month of the year, which is in agreement with the findings of POLLET et al. (1986), although these authors found only females in winter.

The most numerous found species are most probably univoltine, since only one peak in seasonal activity was observed and no freshly emerged flies were found (Fig. 1). Comparing the three *Hercostomus* spp., *H. cupreus* obviously appears as the first during the second half of May. Activity in *H. aerosus* and *H. brevicornis* starts a fortnight and almost two months later resp. Both *Chrysotus gramineus* and *Chrysotinus molliculus* reach their activity peak half June and their flying activity is almost restricted to summer. Finally, the relatively high mobility in females of *C. gramineus*, as compared to the males, seems to be a general phenomenon when sampling by means of Malaise traps (unpub. data). These seasonal activity patterns correspond very well with literature data. Nevertheless, for *H. brevicornis*, D'ASSIS FONSECA (1978) found flies from May till August, whereas in our study, this species appears at first in the beginning of July.

## Conclusions

It is very difficult to interpret Malaise trap catches in order to determine the relative abundance of different dolichopodid species in a particular habitat. It is evident that numbers of soil-dwelling species such as many representatives of the genera *Campsicnemus* and *Syntormon* and arboreal Dolichopodidae will be underestimated using this sampling technique only. In this respect, also the sex-ratios found are undoubtedly affected by the type of collecting device used. Therefore, as for most of the investigated fly families (VERLINDEN, pers. comm.), one should use different sampling methods such as sweeping and collecting by Malaise and water traps to get a reliable idea of the dolichopodid and other fly communities of a particular habitat (POLLET & GROOTAERT, in prep.)

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Table 1. Dolichopodidae collected by a Malaise trap in a garden habitat at Schoten during the period 6.III-31.XII.1983 (males/females)

	10-17.	15-22.	29.	05.	12.	20.	26.	03.	10.	17.	24.	31.	07.	14.	21.	28.	04.	11.	Total
IV.	V.	V.	V.	VI.	VI.	VI.	VI.	VII.	VII.	VII.	VII.	VII.	VIII.	VIII.	VIII.	VIII.	IX.	IX.	X.
Sciapus plicyterus (FABRICIUS, 1805)	-	-	-	-	-	1/1	2/	3/3	5/2	1/	1/2	-	1/	-	-	-	-	-	12/10
Sciapus pseudomaculatus (FALLEN, 1823)	-	-	-	-	-	-	-	-	1/	-	-	-	1/	-	-	-	-	-	1/2
Medetera androsena (FALLEN, 1827)	-	-	-	-	-	-	-	1/	-	1/1	-	1/3	-	-	-	-	-	-	2/4
Medetera ampifera (COLLIN, 1941)	-	-	-	-	-	-	-	-	1/	-	-	-	-	-	-	-	-	-	1/
Medetera lacus (FALLEN, 1823)	-	-	-	-	-	-	-	-	-	2/1	-	-	-	-	-	-	-	-	2/1
Medetera pallipes (ZETTERSTEDT, 1843)	-	-	-	-	-	-	1/	-	-	-	-	-	-	1/	-	-	-	-	1/2
Medetera sp. (MEIGEN, 1824)	-	-	-	-	-	-	-	-	2/	1/	-	1/	-	-	-	-	-	-	1/2
Chrysotus ciliipes (MEIGEN, 1824)	-	-	-	-	-	-	-	2/	1/5	1/4	-	-	-	1/	1/	-	-	-	6/17
Chrysotus femoratus (ZETTERSTEDT, 1834)	-	-	-	-	-	-	-	-	-	-	-	1/	-	-	-	-	-	-	1/
Chrysotus gramineus (FALLEN, 1823)	-	-	-	-	-	-	1/	7/4	9/27	14/35	3/29	1/22	1/11	-	1/2	1/	1/	-	35/132
Chrysotus neglectus (WIEDEMANN, 1817)	-	-	-	-	-	-	1/3	1/1	2/1	1/2	1/1	-	-	-	-	-	-	-	4/8
Chrysotus palchellus (KOMARZ, 1874)	-	-	-	-	-	-	1/	1/2	1/2	1/2	-	-	-	1/	1/2	-	-	-	1/10
Diaperus nigricans (MEIGEN, 1824)	-	-	-	-	-	-	-	-	1/	-	-	-	-	-	-	-	-	-	1/
Argyra glaphana (FABRICIUS, 1775)	1/	-	2/	-	-	1/	-	-	-	-	-	-	-	-	-	-	-	-	4/
Argyra leucoccephala (MEIGEN, 1824)	-	-	-	-	-	-	-	-	1/	-	-	-	-	1/	-	-	-	-	2/1
Rhaphium appendiculatum (ZETTERSTEDT, 1849)	-	-	-	-	-	-	-	-	-	1/	-	-	-	-	-	-	-	-	1/
Rhaphium pendiciliatum (LOEW, 1830)	-	-	-	-	-	-	-	-	-	-	-	-	2/	1/	-	-	-	-	4/
Rhaphium ruficollum (MEIGEN, 1824)	-	1/	1/	-	-	1/	-	1/	-	-	-	-	-	1/	-	-	-	-	4/1
Aneptomyia flaviventris (MEIGEN, 1824)	-	-	-	-	-	-	1/4	-	1/	-	-	-	-	-	-	-	-	-	1/5
Campsicnemus curvipes (FALLEN, 1823)	-	-	-	-	-	-	2/	-	-	1/	-	1/	-	1/	1/	1/2	1/	-	6/3
Campsicnemus scambus (FALLEN, 1823)	-	-	-	-	-	-	-	-	1/	-	-	-	-	-	-	-	-	-	1/
Chrysotimus mollicollis (FALLEN, 1823)	-	-	-	-	-	-	1/3	1/1	2/7	9/15	12/11	2/5	1/2	1/1	3/2	1/2	-	-	37/49

	10-17.	15-22.	29.	05.	12.	20.	26.	03.	10.	17.	24.	31.	07.	14.	21.	28.	04.	11.	Total
IV.	V.	V.	VI.	VI.	VI.	VI.	VI.	VII.	VII.	VII.	VII.	VII.	VIII.	VIII.	VIII.	VIII.	IX.	IX.	X.
Sympyctus pulicarius (FALLEN, 1823)	-	1/	-	3/6	-	-	1/1	-	-	1/	1/	1/	1/1	1/1	2/3	1/4	1/1	1/2	15/21
Syntocentrus latitatus (ZETTERSTEDT, 1843)	1/	-	-	-	-	-	1/2	1/	1/1	1/1	1/	-	1/	-	-	-	1/	-	5/5
Xanthochlorus urticatus (HALLIDAY, 1832)	-	-	-	-	-	-	1/	-	-	-	-	-	-	-	-	-	-	-	1/
Xanthochlorus tenellus (WIEDEMANN, 1817)	-	-	-	-	-	-	-	-	1/	1/	2/	1/	-	-	-	-	1/	-	6/
Dolichopus brevicornis (MEIGEN, 1824)	-	-	-	1/	1/	-	-	-	-	-	-	-	-	-	-	-	-	-	3/
Dolichopus latilabatus (MACQUART, 1827)	-	-	-	-	-	-	-	-	-	1/	-	-	-	-	-	-	-	-	1/
Dolichopus longicornis (STANNIUS, 1831)	-	-	-	-	-	-	-	-	1/	1/	-	-	-	-	-	-	-	-	2/1
Dolichopus plumipes (SCOPOLI, 1763)	-	-	-	1/	-	-	1/2	-	-	-	-	-	1/	-	1/1	-	-	-	1/7
Dolichopus signatus (MEIGEN, 1824)	-	-	-	-	-	1/1	1/6	2/	2/1	1/1	-	-	-	-	-	-	-	-	7/10
Dolichopus simplex (MEIGEN, 1824)	-	-	-	1/	-	-	-	-	-	-	-	-	-	-	-	1/3	1/2	-	1/6
Dolichopus unguilatus (LINNAEUS, 1758)	-	-	-	-	-	-	5/3	1/4	6/6	6/6	1/	1/1	-	1/	-	-	-	-	19/20
Hercostomus vicosus (FALLEN, 1823)	-	-	2/1	-	19/5	17/17	44/14	10/18	23/73	75/34	9/9	17/16	2/	2/2	3/1	-	-	-	170/130
Hercostomus brevicornis (STAEGER, 1842)	-	-	-	-	-	-	-	-	2/	4/2	10/4	6/2	6/1	3/2	3/3	1/	-	-	36/14
Hercostomus ceter (MEIGEN, 1824)	-	-	-	-	-	-	1/2	-	1/	-	-	-	-	-	-	-	-	-	2/2
Hercostomus cupreus (FALLEN, 1823)	-	1/2	-	4/1	-	5/2	7/5	3/4	1/4	1/1	-	-	-	-	-	-	-	-	17/25
Hercostomus metallicus (STANNIUS, 1831)	-	-	-	-	-	1/	1/	-	1/1	-	1/1	-	-	-	-	-	-	-	2/4
Poecilobothrus nobilitatus (LINNAEUS, 1767)	-	-	-	-	-	-	-	1/	1/	1/	6/	1/1	2/	2/2	1/	-	-	-	14/4