

**Syrphidae and Stratiomyidae collected during a three year survey
with a Malaisetrapp in Viesville (prov. Hainaut)**

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Summary

Syrphidae and Stratiomyidae were collected for three seasons from 15.IV.2009 till 18.X.2011 with a Malaise trap in a marshland in Viesville (prov. Hainaut). Eighty nine species of Syrphidae and nineteen species of Stratiomyidae are listed. This study revealed the presence of an important diversity in wetland species for this area. We give comments on the most interesting species of this list.

Keywords: Syrphidae, Stratiomyidae, Malaise trap, Viesville.

Résumé

Des Syrphidae et des Stratiomyidae ont été collectés au piège Malaise entre le 15.IV.2009 et le 18.X.2011, dans le marais de Viesville (prov. Hainaut). Au total, 89 espèces de Syrphidae et 19 de Stratiomyidae ont été trouvées. Cette étude a révélé la présence d'une importante diversité pour des espèces des milieux humides. Les espèces les plus intéressantes sont commentées.

Samenvatting

Van 15.IV.2009 tot 18.X.2011 werden Syrphidae en Stratiomyidae met een Malaiseval ingezameld in een moerasgebied te Viesville (prov. Henegouwen). 89 soorten Syrphidae en 19 soorten Stratiomyidae werden gevonden. Deze studie bewijst het grote belang en de aanwezigheid van een waardevolle gemeenschap typisch voor moerassen in deze regio. We bespreken hier de interessantste soorten.

Introduction

The distribution of Diptera in Belgium remains relatively poorly studied, even for more popular families such as Syrphidae and Stratiomyidae. For Syrphidae, distribution maps for all species were produced by VERLINDEN & DECLEER (1987). However, the distribution of several species might have changed over the last decades due to habitat alteration and climate change. Recently, a catalogue of Belgian Syrphidae was published based on 140.000 records (VAN DE MEUTTER, 2012), a number low compared to for example the Netherlands (with more than 300.000 records, REEMER *et al.*, 2009). Therefore, any inventory - especially in under recorded areas like Viesville- may be of great help to clarify the extend and change of distribution of Belgian Syrphidae and Stratiomyidae. This study reports the results of a faunistic survey during three consecutive years in a marshland in the area near Charleroi using a Malaise trap.



Fig. 1. Habitat of the trap in 2009. The trap was located just next to the dead poplar (photo Pol Limbourg).



Fig. 2. Habitat of the trap in 2010 and 2011 (photo Pol Limbourg).



Figs 3-4. Viesville marsh (photos Pol Limbourg).

Material and methods

The study area in Viesville (N 50.4792861, E 4.3932666) is situated in a marshy river valley. The trap was installed next to a row of old poplars (*Populus* sp.) in an area with many fallen and standing dead wood. The slopes are heavily forested with mainly old *Alnus* and *Quercus*. West of this marshland, a more open, managed area is present with old willows (*Salix* sp.) and dead poplar (*Populus* sp.). A Malaise trap was placed in this marshland during the first year (15.IV.2009 till 18.X.2009) (Fig. 1). The vegetation is an assemblage of high grasses and shrubs (*Filipendula*, *Lysimachia*, *Iris*, *Carex*, *Equisetum*). During the following two years it was placed higher, at a less humid location in the valley (23.V.2010 till 10.X.2010 and 1.IV.2011 till 23.IX.2011) (Fig. 2). The principal vegetation consisted of *Salix* and *Alnus* shrubs and lower herbs like *Typha*, *Juncus*, *Iris* and *Stachys*.

Each year the trap was made inactive for a short period during summer. The Syrphidae and Stratiomyidae were sorted out and sent to the first author who identified all the specimens. All specimens are stored in the collection of RBINS except some specimens which are still under study by the first author, due to possible oncoming taxonomic changes (e.g. *Dasysyrphus venustus* see SPEIGHT *et al.*, 2008).

Results

In 2009, a total of 1.469 individuals belonging to 64 species Syrphidae and 13 species Stratiomyidae were collected. In 2010, a total of 608 individuals belonging to 40 species Syrphidae and 15 species Stratiomyidae were collected, and finally in 2011, a total of 449 individuals belonging to 36 species Syrphidae and 10 species Stratiomyidae were collected. In total 2.526 individuals, spread over 89 species of Syrphidae and 19 species of Stratiomyidae were caught (Appendix 1-3).

Discussion

Syrphidae

Syrphidae of the area around Viesville are poorly known. In the Belgian Database only 52 records of 22 species from the UTM 5x5km grid cell ER99D, around the sampling site are present (pers. com. Frank van de Meutter). Now, a total of 2.579 specimens distributed over in 91 species are listed for this UTM 5km grid cell. For a marsh area, this is a more realistic and even a high number of species and specimens.

The area is inhabited by many dead wood species of which larvae are linked with dead wood (*Criorhina asilica*, *Brachypalpoidea lentus*, *Criorhina berberina*, *Temnostoma vespiforme*, *Temnostoma bombylans*, *Xylota segnis*, *Xylota sylvorum*). Further, most typical hygrophilic Syrphidae were present (eg. species from *Anasimyia*, *Neoascia* and *Parhelophilus*). Habitat indications by REEMER *et al.* (2009) indicated nearly half of the species to be linked to forests: 37% to deciduous forest and 15% to forests in general (both coniferous and deciduous) (see Fig. 5). This can be explained by the presence of dead wood (of mainly poplars) in the neighbourhood. Most other species are species of which their larvae require water or moist conditions for development (most Syrphidae and practically all Stratiomyidae). A fifth of all species are strictly linked to open and humid areas (16%).

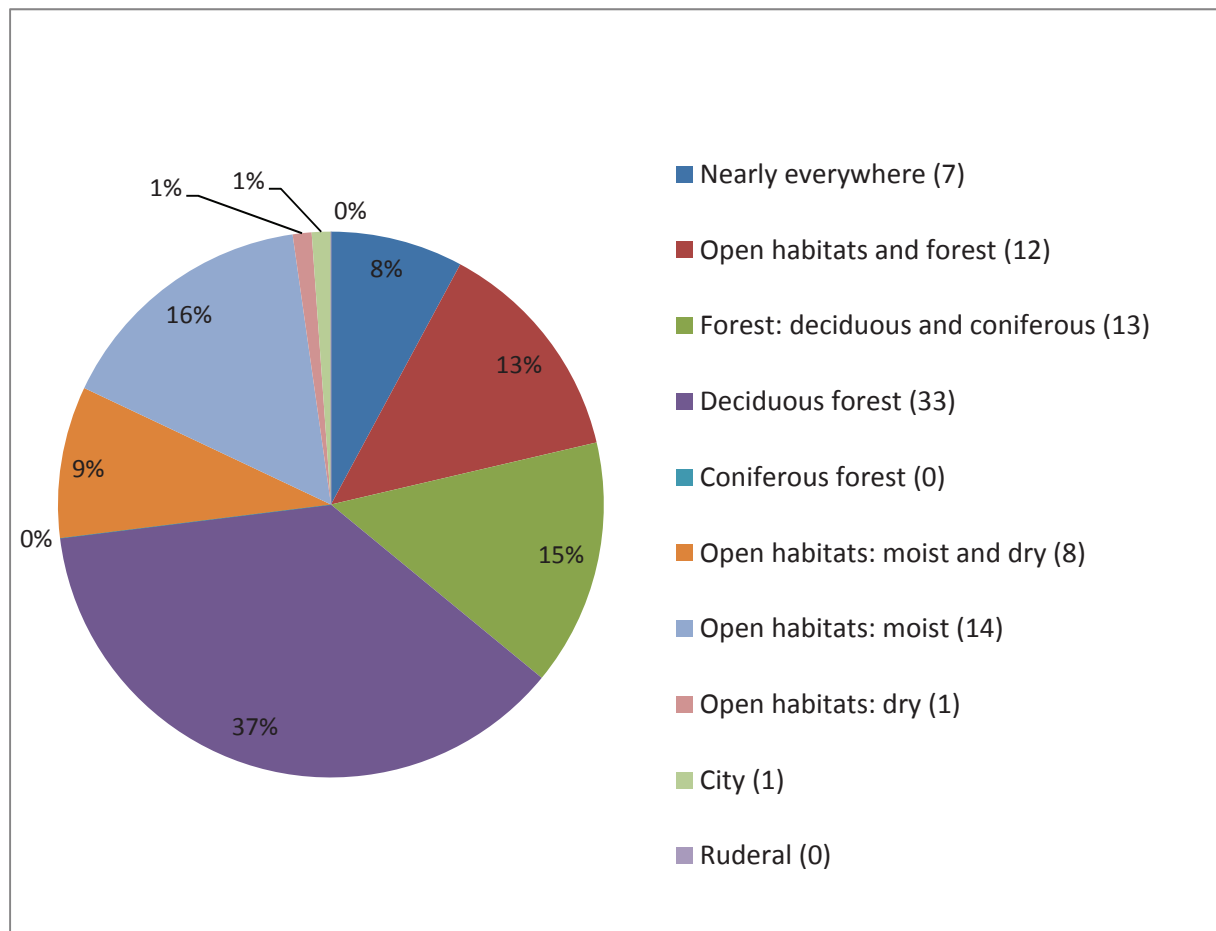


Fig 5. Diagramm of 89 Syrphidae species according to the categories of REEMER *et al.* (2009) who listed typical habitats for each species. Next to the habitats, the absolute number of species is given.

A remarkable species is *Platycheirus splendidus*. This species has only recently been described (ROTHERAY, 1998) and separated from two morphological very similar species: *Platycheirus scutatus* and *Platycheirus aurolateralis*. Differences between the three species are conspicuous and they can be distinguished with certainty by checking dust spots on face and frons, a protuberance on the second coxa and the shape and setulation of tibia two (VAN VEEN, 2006). At first sight *P. splendidus*

resembles a dark *P. scutatus*. In Scotland only one generation occurs, and in the rest of Europe two generations occur (SPEIGHT, 2008). The specimen we collected suggests a second generation individual as we collected it between 26 July and 16 August. Adults of *P. splendidus* occur in forests/hedgerows, moist, eutrophic deciduous forest of *Quercus/Ulmus* with clearings and other open areas (SPEIGHT, 2008). The species is more restricted to moist areas than *P. scutatus*. Larvae live in moist eutrophic deciduous forest. From Belgium, the species is now known from thirteen localities and sixteen observations (Belgian Syrphidae Database). The actual distribution of the species is probably more widespread, but not all specimens from the *Platycheirus scutatus*-group (*Platycheirus scutatus* / *splendidus* / *aurolateralis*) present in the collections of RBINS and Gembloux have been checked so far. Only four specimens are from a second generation, in contrast, twelve specimens are from a first generation. Observations in the Netherlands confirm this pattern (REEMER *et al.*, 2009). The species seems to be present in Belgium for a while. The oldest specimen in the collection of the RBINS, is from 1911 (see table 1).

Table 1. Belgian observations of *Platycheirus splendidus* in the Belgian Syrphidae database (M=male; F=female and * = second identification was done by Frank van de Meutter, data partially from VAN DE WEYER, 2002).

Locality	M	F	Unknown	Date	Observation
Knokke	1	0		9/VI/1911	Goetghebuer M. *
Luik	1	0		13/V/1979	Pauly A. *
Niel	0	0	1	18/VII/1987	Van de Weyer G.
Niel	0	0	1	14/IV/1988	Van de Weyer G.
Schelle	0	0	1	30/IV/1990	Van de Weyer G.
Dorstveld	1	0		IV/1997	van de Meutter F.
Hemiksem	0	0	1	31/III/1998	Van de Weyer G.
Dorstveld	1	0		2/V/1999	van de Meutter F.
Marche-les-Dames	0	0	1	10/V/2001	Van de Weyer G.
Testelt	0	0	1	2/V/2004	Van de Weyer G.
Kluisbergen	0	0	1	23/VIII/2004	Geiregat N.
Huise	0	1		12/IX/2004	Geiregat N.
Kluisbergen	0	0	1	15/V/2005	Geiregat N.
Viesville	1	0		26/VII-16/VIII/2009	Mortelmans J.
Breedhout	1	0		18/IV/2010	Decrick L.
Rechterbach	1	0		16/V/2013	van de Meutter F.

For many species the sampling yielded large numbers of individuals during the summer months July and August, mainly caused by a small set of common summer migrants (e.g. *Episyrphus balteatus*). Furthermore, the high abundance in flowers with nectar easily available for Syrphidae (e.g. umbellifers) in marshlands are present mainly during summer.

Stratiomyidae

For Stratiomyidae, no records were known for the area. Counting 19 species suggests this area is now the most species rich area in Belgium for Stratiomyidae although it probably is the only locality monitored in this extend for Stratiomyidae in Belgium.

Some of the collected species are very particular in use of habitat or are only rarely caught. *Oxycera analis* is rare throughout Europe with only a handful known observations. The species flies from beginning of June, till half of July (STUBBS, 2001). Our data correspond with this period. The species seems to occur in streams fed by sources in calcareous soils, often within forested areas (STUBBS, 2001; BRUGGE, 2002). BRUGGE (2002) mentions only 4 locations for *O. analis*, GEIREGAT (2006) mentions the species also from the area around Oudenaarde 'Vlaamse Ardennen'. *Oxycera nigricornis* occurs in this kind of streams as well, and is a rare species in Belgium and neighbouring countries too. *Vanoyia tenuicornis* is another very interesting species. The species was only known from Mons (1905) and De Panne (1961), but recently Nico Geiregat discovered the species from seven

new localities in the Vlaamse Ardennen (GEIREGAT, 2004; 2006). This set of records would indicate the Vlaamse Ardennen as a hotspot for *Vanoyia*, but in fact, several additional records were communicated since: from the Torfbroek (Jean-Yves Bagnée pers. comm.), the Kaaimeersen (Ruud van der Weelde & Marc Pollet pers. comm.), Kieldrecht (Frank van de Meutter pers. comm.). We can add four additional localities: Zottegem, Destelbergen, Tintigny and Viesville (Jonas Mortelmans, unpublished data). Where historic records would indicate *Vanoyia* as a rare species, the species is apparently presented in a large area in Belgium, although the species seldom reaches high densities. A wide set of habitats is used from fen (Tintigny) to dune slacks (De Panne). Most Belgian records are areas with seepage water. Although its ubiquity in Flanders, it is remarkable that the species has not been found in the Netherlands yet (BEUK, 2002).

A similar phenomenon is true for *Oxycera leonina* which was only known from four localities (BRUGGE, 2002). In contrast to the small *Vanoyia*, *Oxycera leonina* is a large colourful fly, easy to spot and often photographed by enthusiastic photographers. Thanks to the online platform www.waarnemingen.be huge amounts of observations are now available. Recent knowledge on the distribution of both *Vanoyia* and *O. leonina* indicate that Stratiomyidae were in fact neglected in previous studies and were only seldom collected. With rather little effort additional localities for several species can be discovered.

The distribution and phenology of many Stratiomyidae species in Belgium is not known. All Stratiomyidae found in this survey, appeared to be new records for the area near Viesville. This set of new data, together with GEIREGAT (2006) could motivate other dipterologists to continue Stratiomyidae research in Belgium. Stratiomyidae records are currently not stored in a database and maybe this could be an interesting challenge for Belgian dipterologists in the near future.

Conclusions

This survey shows that the use of Malaise traps is interesting for collecting many Syrphidae and Stratiomyidae. Although the process of emptying and sorting samples is time consuming, the results can be impressive. Moreover the phenology of species can be easily understood and visualised thanks to the two-weekly systematic catching. Another advantage of the use of Malaise traps, is that collected specimens can directly be preserved in 90% ethanol and hence they can be used for molecular analyses when they are well preserved. A large number of Empidoidea in these traps were successfully sequenced for the Biodiversity for Two Wings-project, which tries to barcode a great deal of Empidoidea (eg. NAGY *et al.*, 2013).

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Bibliography

- BEUK P., (eds.), 2002. - *Checklist of the Diptera of the Netherlands*. KNNV Uitgeverij, 448 pp.
- BRUGGE B., 2002. - *Wapenvliegen tabel*. Jeugdbondsuitgeverij, 94 pp.
- GEIREGAT N., 2004. - *Wapenvliegen (Stratiomyidae) van de Vlaamse Ardennen*, unpublished documents, 9 pp.
- GEIREGAT N., 2006. - *Wapenvliegen (Stratiomyidae) van de Vlaamse Ardennen*, unpublished documents, 13 pp.
- NAGY Z.T., SONET G., MORTELMANS J., VANDEWYNKEL C., GROOTAERT P., 2013. - Using DNA barcodes for assessing diversity in the family Hybotidae (Diptera, Empidoidea). *In*: NAGY Z.T., BACKELJAU T., DE MEYER M., JORDAENS K. (eds.), 2013. *DNA barcoding: a practical tool for fundamental and applied biodiversity research*. *Zookeys*, 365: 263-278.
- REEMER M., RENEMA W., VAN STEENIS W., ZEEGERS T., BARENDREGT A., SMIT J.T., VAN VEEN M.P., VAN STEENIS J. & VAN DER LEIJ L.J.J.M., 2009. - *De Nederlandse zweefvliegen*. Nederlandse Fauna 8, Nationaal Natuurhistorisch Museum Naturalis, EIS-Nederland & KNNV uitgeverij, 450 pp.
- ROTHERAY G., 1998. - *Platycheirus splendidus* sp. n. from Britain formerly confused with *Platycheirus scutatus* (Diptera: Syrphidae). *Entomologist's Gazette*, 49: 271-276.

- SPEIGHT M.C.D., 2008. - *Species accounts of European Syrphidae (Diptera)*. In: SPEIGHT M.C.D., CASTELLA E., SARTHOU J.-P., MONTEIL C. (eds.) *Syrph the Net, the database of European Syrphidae*. Syrph the Net publications, Dublin, 262 pp.
- STUBBS A., 2001. - *British soldierflies and their allies*. British Entomological and Natural History Society, 528 pp.
- VAN DE MEUTTER, 2012. - An annotated catalogue of the hoverflies (Diptera, Syrphidae) of Belgium. *Studia Dipterologia*, 18: 55-57.
- VAN DE WEYER G., 2002. - Enkele nieuwe en merkwaardige zweefvliegen voor de Belgische fauna (Diptera: Syrphidae). *Phegea*, 30(2): 48-54.
- VAN VEEN M.P., 2006. - *Hoverflies of northwest europe*. Koninklijke Nederlandse Natuurhistorische Vereniging, 254 pp.
- VERLINDEN L., 1991. - *Fauna van België: Zweefvliegen (Syrphidae)*. Koninklijk Belgisch Instituut voor Natuurwetenschappen, 298 pp.
- VERLINDEN L. & DECLEER K., 1987. - The hoverflies (Diptera, Syrphidae) of Belgium and their faunistics: frequency, distribution, phenology. *Studiedocumenten van het Koninklijk Belgisch Instituut voor Natuurwetenschappen*, 39, 170 pp.

Appendix 1

Syrphidae 2009	15 Apr- 1 May	1 - 15 May	MISSING	29 May - 5 Jun	5 - 12 Jun	12 - 26 Jun	26 Jun -10 Jul	10-26 Jul	26 Jul-16 Aug	16 - 30 Aug	30 Aug - 13 Sep	13 - 24 Sep	24 Sep - 18 Oct
<i>Anasimyia interpuncta</i> (Harris 1776)	2	6											
<i>Baccha elongata</i> (Fabricius 1775)	1	1			1		1	3		2	4	4	1
<i>Brachyopa pilosa</i> Collin 1939		1											
<i>Brachypalpoides lentus</i> (Meigen 1822)									1				
<i>Chalcosyrphus nemorum</i> (Fabricius 1805)	3	10		8	1	32	20	16	8	2			
<i>Cheilosia albipila</i> Meigen 1838		3											
<i>Cheilosia illustrata</i> (Harris 1780)									1				
<i>Cheilosia pagana</i> (Meigen 1822)								1	2				
<i>Cheilosia carbonaria</i> Egger 1860										1			
<i>Chrysogaster solstitialis</i> (Fallen 1817)							1						
<i>Chrysotoxum arcuatum</i> (Linnaeus 1758)					1								
<i>Chrysotoxum bicinctum</i> (Linnaeus 1758)									1				
<i>Criorhina asilica</i> (Fallen 1816)		1											
<i>Criorhina berberina</i> (Fabricius 1805)		8		1									
<i>Dasysyrphus venustus</i> (Meigen 1822)		2			1								
<i>Epistrophe melanostoma</i> (Zetterstedt 1843)		1											
<i>Episyrphus balteatus</i> (De Geer 1776)						9	45	70	131	15			
<i>Eristalis horticola</i> (De Geer 1776)				1			18	1	2				
<i>Eristalis intricaria</i> (Linnaeus 1758)						1							
<i>Eristalis nemorum</i> (Linnaeus 1758)					1					1			
<i>Eristalis pertinax</i> (Scopoli 1763)	6	10		4	1	5	3	2	2			1	
<i>Eristalis tenax</i> (Linnaeus 1758)								1					
<i>Eupeodes bucculatus</i> (Rondani 1857)							1						
<i>Eupeodes corollae</i> (Fabricius 1794)						1			4				
<i>Eupeodes latifasciatus</i> (Macquart 1829)									1				
<i>Eupeodes luniger</i> (Meigen 1822)		1											
<i>Helophilus hybridus</i> Loew 1846				2				1					
<i>Helophilus pendulus</i> (Linnaeus 1758)	3	10		5	5	6	13	1	8	8	1	2	
<i>Lejogaster metallina</i> (Fabricius 1781)						2							
<i>Leucozona lucorum</i> (Linnaeus 1758)						1							
<i>Melanogaster hirtella</i> (Loew 1843)													
<i>Melanogaster nuda</i> (Macquart 1829)													
<i>Melanostoma mellinum</i> (Linnaeus 1758)							4	4	3	1		1	3
<i>Melanostoma scalare</i> (Fabricius 1794)		2		4		3	15	9	12	18	26	1	
<i>Meliscaeva auricollis</i> (Meigen 1822)								1	1				
<i>Meliscaeva cinctella</i> (Zetterstedt 1843)										1			
<i>Neoascia interrupta</i> (Meigen 1822)						1	1						
<i>Neoascia meticulosa</i> (Scopoli 1763)	8	9		5		6	3	3	8				
<i>Neoascia podagrica</i> (Fabricius 1775)						3	1	3	8	2			
<i>Neoascia tenur</i> (Harris 1780)				2		3	9	17	10				
<i>Orthonevra geniculata</i> (Meigen 1830)		3											
<i>Parhelophilus frutetorum</i> (Fabricius 1775)				14	1	20	13						
<i>Pipizella spec.</i> Rondani 1856								1					
<i>Platycheirus albimanus</i> (Fabricius 1781)		2		5		6	13	7	25	20	13	7	
<i>Platycheirus angustatus</i> (Zetterstedt 1843)							1	1					
<i>Platycheirus clypeatus</i> (Meigen 1822)								5					
<i>Platycheirus europaeus</i> Goeldlin de Tiefenau <i>et al.</i> 1990								2					
<i>Platycheirus occultus</i> Goeldlin de Tiefenau <i>et al.</i> 1990							4						
<i>Platycheirus peltatus</i> (Meigen 1822)		4					1	2	75	52	12	2	3
<i>Platycheirus scutatus</i> (Meigen 1822)								1	2		1		
<i>Platycheirus splendidus</i> Rotheray 1998									1				

Syrphidae 2009	15 Apr- 1 May	1 - 15 May	MISSING	29 May - 5 Jun	5 - 12 Jun	12 - 26 Jun	26 Jun - 10 Jul	10-26 Jul	26 Jul-16 Aug	16 - 30 Aug	30 Aug - 13 Sep	13 - 24 Sep	24 Sep - 18 Oct
<i>Pyrophaena rosarum</i> (Fabricius 1787)								4	2		2		
<i>Rhingia campestris</i> Meigen 1822		4		1		1			1	6	4		
<i>Sphaerophoria scripta</i> (Linnaeus 1758)									1				
<i>Sphaerophoria spec</i> Le Peletier & Serville 1828										2			
<i>Sphegina clunipes</i> (Fallen 1816)							3		2				
<i>Sphegina elegans</i> Schummel 1843				1	2	1	5	2	2				
<i>Syrphus ribesii</i> (Linnaeus 1758)		2					1		1				
<i>Syrirta pipiens</i> (Linnaeus 1758)										1			
<i>Temnostoma bombylans</i> (Fabricius 1805)				10	8	11	3						
<i>Temnostoma vespiforme</i> (Linnaeus 1758)				5	2	14	7	1					
<i>Volucella bombylans</i> (Linnaeus 1758)				1					1				
<i>Volucella pellucens</i> (Linnaeus 1758)							1						
<i>Xylota florum</i> (Fabricius 1805)				1									
<i>Xylota segnis</i> (Linnaeus 1758)		13		5	1	5	4	2	6	3	1	1	
<i>Xylota sylvarum</i> (Linnaeus 1758)				1		7	5	2	4				
specimens (total 1265)	23	93	0	76	25	135	190	155	333	145	64	19	7
species (total 64)	7	20	0	19	12	20	27	27	30	17	9	8	3
Stratiomyidae 2009													
<i>Beris morrisii</i> Dale 1841						1	5	1					
<i>Beris vallata</i> (Forster 1771)		4				2	2						
<i>Microchrysa flavicornis</i> (Meigen 1822)								1	1				
<i>Microchrysa polita</i> (Linnaeus 1758)							3	5	2				
<i>Nemotelus nigrinus</i> Fallen 1817				1									
<i>Oplodontha viridula</i> (Fabricius 1775)						1		1					
<i>Oxycera analis</i> Wiedemann 1822				1		4	5						
<i>Oxycera leonina</i> (Panzer 1798)								2					
<i>Oxycera nigricornis</i> Olivier 1812						6	57	9					
<i>Oxycera trilineata</i> (Linnaeus 1767)							1						
<i>Pachygaster leachii</i> Curtis 1824							1						
<i>Solva marginata</i> (Meigen 1820)				11		36	34	7					
specimens (total 204)	0	4	0	13	0	50	108	26	3	0	0	0	0
species (total 12)	0	1	0	3	0	6	8	7	2	0	0	0	0

Appendix 2

Syrphidae 2010	23 - 30 May	30 May - 6 Jun	6 - 13 Jun	13 - 20 Jun	20 - 25 Jun	25 Jun - 3 Jul	3 - 9 Jul	9 - 18 Jul	SUMMER GAP	5 - 12 Sep	12 - 19 Sep	19 - 26 Sep	26 Sep - 3 Oct	3 - 10 Oct
<i>Anasimyia interpuncta</i> (Harris 1776)	1						3	1						
<i>Anasimyia transfuga</i> (Linnaeus 1758)						1								
<i>Chalcosyrphus nemorum</i> (Fabricius 1805)		1			1	4	5	1						
<i>Cheilosia albitarsis</i> (Meigen 1822)				1										
<i>Cheilosia chloris</i> (Meigen 1822)	1													
<i>Cheilosia pagana</i> (Meigen 1822)							1							
<i>Cheilosia variabilis</i> (Panzer 1798)	4	1												
<i>Chrysotoxum bicinctum</i> (Linnaeus 1758)								1						
<i>Criorhina berberina</i> (Fabricius 1805)			1				1							
<i>Dasysyrphus venustus</i> (Meigen 1822)	1						1							
<i>Epistrophe flava</i> Doczkal & Schmid 1994		1												
<i>Epistrophe nitidicollis</i> (Meigen 1822)	1													
<i>Episyrphus balteatus</i> (De Geer 1776)							4	12					1	
<i>Eristalis arbustorum</i> (Linnaeus 1758)												1		
<i>Eupeodes corollae</i> (Fabricius 1794)								2						
<i>Helophilus pendulus</i> (Linnaeus 1758)		2	3	2		1	1			4	7	1	2	2
<i>Melanogaster hirtella</i> (Loew 1843)	4	6	3			1								
<i>Melanogaster nuda</i> (Macquart 1829)	1		1											
<i>Melanostoma mellinum</i> (Linnaeus 1758)						1	15	17		2	5	2		
<i>Melanostoma scalare</i> (Fabricius 1794)	1						3	5		1	1	1		
<i>Neoascia geniculata</i> (Meigen 1822)	1													
<i>Neoascia meticulosa</i> (Scopoli 1763)	1	3	1	2	4									
<i>Neoascia podagrica</i> (Fabricius 1775)	1	2			1			3		2	1	1		
<i>Neoascia tenur</i> (Harris 1780)			1		1		15	19		1				1
<i>Orthonevra brevicornis</i> (Loew 1843)	2													
<i>Pipizella spec.</i> Rondani 1856			1											
<i>Platycheirus albimanus</i> (Fabricius 1781)	1	2	1	1				1		7	1	1	2	
<i>Platycheirus peltatus</i> (Meigen 1822)	2	2	1				2	3		5	4			
<i>Platycheirus scutatus</i> (Meigen 1822)										2				
<i>Platycheirus scutatus</i> (Meigen 1822)-groep (v)		2		2							1			
<i>Pyrophaena granditarsa</i> (Forster 1771)			1											
<i>Pyrophaena rosarum</i> (Fabricius 1787)					3	8	23	1		1	4	1	1	1
<i>Rhingia campestris</i> Meigen 1822	1				1					3	2			
<i>Sphaerophoria scripta</i> (Linnaeus 1758)							1	1			1	1		
<i>Sphaerophoria spec</i> Le Peletier & Serville 1828								2		2	1			1
<i>Syrphus ribesii</i> (Linnaeus 1758)	1										1			
<i>Syrphus vitripennis</i> Meigen 1822														
<i>Temnostoma bombylans</i> (Fabricius 1805)			8	1	3	6								
<i>Temnostoma vespiforme</i> (Linnaeus 1758)								1						
<i>Volucella bombylans</i> (Linnaeus 1758)		3					2						1	1
<i>Xylota segnis</i> (Linnaeus 1758)	1	1			1					1				
<i>Xylota sylvarum</i> (Linnaeus 1758)						1				1				
specimens (total 350)	19	26	27	8	12	28	77	70	0	32	29	9	7	6
species (total 40)	11	15	13	6	7	10	14	15	0	13	12	8	5	5

Stratiomyidae 2010	23 - 30 May	30 May - 6 Jun	6 - 13 Jun	13 - 20 Jun	20 - 25 Jun	25 Jun - 3 Jul	3 - 9 Jul	9 - 18 Jul	SUMMER GAP	5 - 12 Sep	12 - 19 Sep	19 - 26 Sep	26 Sep - 3 Oct	3 - 10 Oct
<i>Beris chalybata</i> (Forster 1771)	3	3	1											
<i>Beris morrisii</i> Dale 1841						1		1						
<i>Beris vallata</i> (Forster 1771)			2	7	10	35	12	1						
<i>Chloromyia formosa</i> (Scopoli 1763)							1	1						
<i>Microchrysa polita</i> (Linnaeus 1758)	1				1									
<i>Microchrysa flavicornis</i> (Meigen 1822)						1								
<i>Nemotelus pantherinus</i> (Linnaeus 1758)				1		1								
<i>Nemotelus nigrinus</i> Fallen 1817			1											
<i>Oxycera leonina</i> (Panzer 1798)							1							
<i>Oxycera nigricornis</i> Olivier 1812							5	2						
<i>Oxycera trilineata</i> (Linnaeus 1767)						1								
<i>Pachygaster leachii</i> Curtis 1824								1						
<i>Solva marginata</i> (Meigen 1820)		1	3	5	22	58	48	26						
<i>Sargus flavipes</i> Meigen 1822						1								
<i>Vanoyia tenuicornis</i> (Macquart 1834)						1								
specimens (total 259)	4	4	7	13	33	99	67	32	0	0	0	0	0	0
species (total 15)	2	2	4	3	3	8	5	6	0	0	0	0	0	0

Appendix 3

Syrphidae 2011	1 - 8 Apr	8 - 14 Apr	14 - 22 Apr	22 - 30 Apr	30 Apr - 6 May	6 - 14 May	MISSING	20 - 21 May	21 - 27 May	27 May - 3 Jun	3 - 11 Jun	11 - 18 Jun	18 - 24 Jun	24 Jun - 1 Jul	1 - 8 Jul	8 - 15 Jul	15 - 30 Jul	30 Jul - 5 Aug	5 - 14 Aug	14 - 20 Aug	20 - 28 Aug	28 Aug - 4 Sep	4 - 11 Sep	MISSING	18 - 23 Sep	
<i>Baccha elongata</i> (Fabricius 1775)																										
<i>Brachypalpus laphriformis</i> (Fallén 1816)				1																						
<i>Chalcosyrphus nemorum</i> (Fabricius 1805)		1	2	2																						
<i>Cheilosia albipila</i> Meigen 1838	1																									
<i>Cheilosia albitarsis</i> (Meigen 1822)			1																							
<i>Cheilosia bergenstammi</i> (Becker 1894)			2																							
<i>Cheilosia chloris</i> (Meigen 1822)			9	2																						
<i>Cheilosia fraterna</i> (Meigen 1830)					1																					
<i>Cheilosia himantopus</i> (Panzer 1798)	1																									
<i>Cheilosia pagana</i> (Meigen 1822)			1											1												
<i>Criorhina floccosa</i> (Meigen 1822)				1																						
<i>Dasysyrphus venustus</i> (Meigen 1822)			1		1																					
<i>Epistrophe nitidicollis</i> (Meigen 1822)					1	1		1																		
<i>Episyrphus balteatus</i> (De Geer 1776)									1					2	2	1		1								
<i>Eristalis arbustorum</i> (Linnaeus 1758)								1																		
<i>Eristalis similis</i> (Fallén 1817)								1																		
<i>Eumerus strigatus/sogdianus (female)</i>																				1						
<i>Eupeodes bucculatus</i> (Rondani 1857)			1																							
<i>Eupeodes corollae</i> (Fabricius 1794)											2		1													
<i>Eupeodes latifasciatus</i> (Macquart 1829)																1										
<i>Ferdinandea cuprea</i> (Scopoli 1763)			2																							
<i>Helophilus pendulus</i> (Linnaeus 1758)			3					1	1	1				2	1											
<i>Heringia heringi</i> (Zetterstedt 1843)					1																					
<i>Leucozona lucorum</i> (Linnaeus 1758)					1																					
<i>Melanostoma mellinum</i> (Linnaeus 1758)	1	1											3	13	12	2	7		1		2				1	
<i>Melanostoma scalare</i> (Fabricius 1794)				1										1												
<i>Merodon equestris</i> (Fabricius 1794)								1																		
<i>Neoscasia podagrica</i> (Fabricius 1775)																							2			
<i>Platycheirus europaeus</i> Goeldlin de Tiefenau et al. 1990																	1									
<i>Platycheirus scutatus</i> (Meigen 1822)																					1					
<i>Orthonevra nobilis</i> (Fallén 1817)				1																						
<i>Pipiza bimaculata</i> Meigen 1822			1																							
<i>Sphaerophoria scripta</i> (Linnaeus 1758)														1												
<i>Sphaerophoria spec</i> Le Peletier & Serville 1828											1	1														
<i>Syrphus ribesii</i> (Linnaeus 1758)					1															1						
<i>Syrphus vitripennis</i> Meigen 1822			1					1																		
<i>Temnostoma bombylans</i> (Fabricius 1805)								2		1																
<i>Temnostoma vespiforme</i> (Linnaeus 1758)													1													
Specimens (total 123)	3	1	25	8	6	1	0	3	7	1	4	1	7	20	15	3	7	1	3	0	4	2	0	0	1	
Species (total 36)	3	1	12	6	6	1	0	3	6	1	3	1	4	6	4	2	1	1	3	0	3	1	0	0	1	
Stratiomyidae 2011																										
<i>Beris chalybata</i> (Forster 1771)				8	1	1									2											
<i>Beris morrisii</i> Dale 1841										1				1												
<i>Beris vallata</i> (Forster 1771)													2	2	2	1	1	1								
<i>Chloromyia formosa</i> (Scopoli 1763)								1	1	3				1	2											
<i>Microchrysa flavicornis</i> (Meigen 1822)								2	1	3				1		2		1								
<i>Microchrysa polita</i> (Linnaeus 1758)								15	8	32	13		2	1	13	36	42		12	2	4	20	1		1	
<i>Pachygaster atra</i> (Panzer 1798)															2											
<i>Pachygaster leachii</i> Curtis 1824															4					1						
<i>Sargus bipunctatus</i> (Scopoli 1763)																										1
<i>Solva marginata</i> (Meigen 1820)										18	7	25	1	13	1	7	6		1							
Specimens (total 327)	0	0	0	8	1	1	0	15	11	53	23	25	6	19	25	44	51	1	15	2	4	20	1	0	2	
Species (total 10)	0	0	0	1	1	1	0	1	3	5	3	1	4	5	7	3	4	1	4	1	1	1	1	0	2	

We would like to invite you to send your *Syrphidae* observations to the *Syrphidae*-database. Please, contact Frank.VandeMeutter@bio.kuleuven.be for more information.