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THE HOVERFLIES (DIPTERA: SYRPHIDAE)

OF A LEICESTER GARDEN

by

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THE HOVERFLIES (DIPTERA: SYRPHIDAE) OF A LEICESTER GARDEN

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INTRODUCTION

I have been interested in garden wildlife for a number of years. When I became interested in hoverflies, my garden was one of the first places where I looked for them. The main advantage of studying hoverflies in the garden, rather than elsewhere, was that it was the only site that I could visit and observe on a daily basis without having to make any special arrangements for travelling etc.

THE SITE

The site at which these observations were made is my garden at Knighton in Leicester (SK 596014). The site is a mature urban garden approximately 650 square metres in area. It is managed in such a way as to encourage as wide a range of wildlife as possible. A small area of the lawn has been left to grow long as a mini-meadow. There are borders around the garden containing various flowering plants to attract hoverflies and other insects. There are numerous large trees in the neighbouring gardens and along the roadside.

The garden is situated just over 3km from the city centre at the junction of Welford Road and the ring road. Knighton Hall grounds and pond lie about 300m to the east. Knighton and Ashclose spinneys and Knighton Park lie about 1km to the south-east and the Washbrook runs in an arc about 400m away from the south through to the west.

During the time of the survey (1987-1988) there was in the area a paddock (probably a remnant of the original fields that existed in the area until the early part of this century), a small area of trees and a number of large mature gardens ideal for wildlife. Unfortunately, this has all been bulldozed to make way for a backland infill housing development.

METHODS

All the observations were made either by observing the hoverflies by eye or by hand-netting them for closer inspection. Nearly all were identified using Stubbs and Falk (1983) with a few from early 1987 being identified using Coe (1953). The nomenclature used in this report follows that of Stubbs and Falk (1983).

I tried to walk around the garden looking for hoverflies at least once a day when the weather was suitable.

RESULTS

The results shown are for the years 1987 and 1988. The only major gaps in the records are a week in July 1988 when I was on holiday and in October 1987 when observations were cut short, again because I was not at home. The large gap in June 1987 was due mainly to bad weather.

I have recorded 49 of the 256 British species in the garden over the survey period. Of these, 40 species were seen in 1987 and 45 in 1988.

The appended figures show the dates that each species was seen in the garden. In almost all cases the flight periods observed in the present study agreed with those reported by Stubbs & Falk (1983). The only exception was *Chrysotoxum festivum*. Stubbs & Falk give the flight period as June to October, but in the present study the species was noted in May (albeit May 31st!).

The diagrams appended can also be used to establish whether a species has two or more broods each year. This would show up as two separate bands of recording. However, this is not totally clear cut as the figures only show those species seen on a particular day and do not give an indication of numbers present.

In the 1988 records, both *Chalcosyrphus nemorum* and *Platycheirus scutatus* show two peaks, one in early June and another in late August. These dates agree with those given in Stubbs & Falk. The 1987 records, on the other hand, do not give such a clear division.

Other species show only one distinct peak and it is likely only one brood per year occurs e.g. *Merodon equestris* and *Volucella pellucens*.

Further recording in future years should clarify the situation.

BREEDING SPECIES

A few of the observed species are known to breed in, or near, the garden.

Several pupae have been found in the garden. An *Episyrphus balteatus* emerged from one, but the rest either failed to emerge or were parasitized by ichneumonid wasps.

At least two species of aphidophagous hoverfly larvae have been found eating aphids on an elder bush at the bottom of the garden. In addition, several rat-tailed maggots (*Eristalis/Helophilus* larvae) were in what used to be a birdbath.

A newly emerged *Platycheirus albimanus* was found sitting on a doorstep drying out its wings.

A female *Xanthogramma pedissequum* was seen laying eggs at

the bases of several rose bushes and other plants in 1988.

Both *Merodon equestris* and *Chalcosyrphus nemorum* have been seen mating in the garden.

Perhaps the most interesting record is that of *Volucella pellucens*. This species breeds in wasp's nests. In 1988 our nextdoor neighbours had a wasp's nest in their roof space. A *Volucella pellucens* was seen to land on the brickwork near the entrance to the nest and then slowly worked its way closer and closer to the entrance before finally going into the nest. Whilst it was on the brickwork, several of the wasps came across and looked at it but none of them attacked it or in any way impeded its progress towards the nest.

PREDATION

A number of species have been seen to prey on hoverflies. Mention has already been made of the two species of ichneumonids parasitising the pupae. In addition, the wasp *Vespa vulgaris* has been seen catching both *Episyrphus balteatus* and *Eristalis pertinax* before taking the remains to its nest.

A sphecid wasp (*Ectemnius cavifrons*) has been observed catching *Episyrphus balteatus*. While replacing part of the garage door frame an old nest was found containing the remains of *Episyrphus balteatus* and *Metasyrphus luniger*.

Examples of *Eristalis pertinax*, *Syrpitta pipiens*, *Chalcosyrphus nemorum* and a hoverfly larva have been found trapped in the web of the spider *Araneus diadematus*.

Melanostoma mellinum is often killed by entomophagous fungi. The dead insects can be seen fairly often either sitting at the tops of grass stems or on the flowers of ribwort plantain. In August 1988 14 dead hoverflies were found on a single plantain plant.

CONCLUSIONS

These observations have partially answered some questions such as which species can be found in a suburban garden and at which time of the year they are most likely to be present. On the other hand, they have posed some new questions and prompted ideas for further study. These include flower-visiting preferences, bee and wasp mimicry and breeding as well as a study of the predators of both the adult and larval stages.

REFERENCES

Coe, R.L. (1953). Diptera, family Syrphidae. *Handbooks for the Identification of British Insects*, 10(1).

Stubbs, A.E. & Falk, S.J. (1983). *British Hoverflies*. BENHS.

		April	May	June	July	August	September	October	November
<i>Baccha</i>	87								
	88								
<i>Baccha</i>	87								
	88								
<i>Melanostoma mellinum</i>	87								
	88								
<i>Melanostoma scalare</i>	87								
	88								
<i>Platycheirus albimanus</i>	87								
	88								
<i>Platycheirus angustatus</i>	87								
	88								
<i>Platycheirus clypeatus</i>	87								
	88								
<i>Platycheirus manicatus</i>	87								
	88								

| Definite record

| Probable record - either a specimen not caught for accurate identification
 - or a female unidentified beyond genus

		April	May	June	July	August	September	October	November
Platycheirus peltatus	87								
	88								
Platycheirus scutatus	87								
	88								
Chrysothoxum bicinctum	87								
	88								
Chrysothoxum festivum	87				"				
	88								
Chrysothoxum verrallii	87				"				
	88								
Dasysyrphus albo-striatus	87								
	88								
Epistrophe eligans	87								
	88								
Epistrophe grossulariae	87								
	88								

| Definite record

| Probable record - either a specimen not caught for accurate identification - or a female unidentified beyond genus

	April	May	June	July	August	September	October	November
<i>Episyrphus</i> 87								
<i>baiteatus</i> 88								
<i>Leucozona</i> 87								
<i>lucorum</i> 88								
<i>Melangyna</i> 87								
<i>cincta</i> 88								
<i>Meliscaeva</i> 87								
<i>auricollis</i> 88								
<i>Meliscaeva</i> 87								
<i>cinctella</i> 88								
<i>Meta-</i> <i>syrphus</i> 87								
<i>corollae</i> 88								
<i>Meta-</i> <i>syrphus</i> 87								
<i>luniger</i> 88								
<i>Scaeva</i> 87								
<i>pyrastis</i> 88								

| Definite record

| Probable record - either a specimen not caught for accurate identification - or a female unidentified beyond genus

	April	May	June	July	August	September	October	November
<i>Syrphus</i> 87								
<i>scripta</i> 88								
<i>Syrphus</i> 87								
<i>ribesii</i> 88								
<i>Syrphus</i> 87								
<i>torvus</i> 88								
<i>Syrphus</i> 87								
<i>vitripennis</i> 88								
<i>Xanthogramma</i> 87								
<i>pedissequum</i> 88								
<i>Cheilosia</i> 87								
<i>albitarsis</i> 88								
<i>Cheilosia</i> 87								
<i>vernales</i> 88								
<i>Rhingia</i> 87								
<i>campestris</i> 88								

Definite record

Probable record - either a specimen not caught for accurate identification
- or a female unidentified beyond genus

		April	May	June	July	August	September	October	November
<i>Eristalis</i>	87								
	arbus- orum 88								
<i>Eristalis</i>	87								
	intric- arius 88								
<i>Eristalis</i>	87								
	nemorum 88								
<i>Eristalis</i>	87								
	pertinax 88								
<i>Eristalis</i>	87								
	tenax 88								
<i>Helophilus</i>	87								
	hybridus 88								
<i>Helophilus</i>	87								
	pendulus 88								
<i>Myathropa</i>	87								
	florea 88								

| Definite record

| Probable record - either a specimen not caught for accurate identification
- or a female unidentified beyond genus

		April	May	June	July	August	September	October	November
Necascia	87								
podagrica	88								
Merodon	87								
equestris	88								
Merodon	87								
equestris	f.								
narcissi	88								
Merodon	87								
equestris	f.								
validus	88								
Neocnem-	87								
odon									
vitri-	88								
pennis									
Pipiza	87								
nostiluca	88								
Volucella	87								
pellucens	88								
Chalco-	87								
syrphus									
nemorum	88								

| Definite record

| Probable record - either a specimen not caught for accurate identification - or a female unidentified beyond genus

		April	May	June	July	August	September	October	November
Crio- rhina floccosa	87								
	88								
Syritta pipiens	87								
	88								
Xylota segnis	87								
	88								
	87								
	88								
	87								
	88								
	87								
	88								
	87								
	88								

Definite record

Probable record - either a specimen not caught for accurate identification
- or a female unidentified beyond genus