

... where is thy sting?' (Cor. 15:55)

In the insect world, bees and wasps are very close relatives. They have four wings and a sting, and (together with ants) are collectively known as the aculeate Hymenoptera. Everyone is very aware of the **social** 'aculeates' as they form colonies and can be a painful nuisance. They include the common wasps, hornets, honeybees, bumblebees and ants. However, less well known are the **solitary** bees and wasps: even though a great many of them visit our gardens. This is because they go about their business solitarily and without bothering (or stinging) anyone.

Diversity

There are very many more species of bee and wasp to be seen in the countryside and in our gardens, than most people realise. In total, there are nearly 500 species of bee and wasp in Britain (mostly solitary), and amazingly well over a third of

these have been recorded around Shotover over the last century.

It is the sandy soil and wild flora that attracts such a good diversity of species, and this is the reason why Shotover and many of the region's old pits and quarries are excellent places for bees and wasps.



Black Borer Wasp
Trypoxylon figulus, ♀ (6-10mm)

100 years of records

In the early years of the 20th century Oxford University Entomology department worked extensively on Shotover Hill and there are many insect specimens from Shotover stored at both the Oxford and London Natural History Museums. This early work is summarized in the Victoria County History of Oxfordshire (1939), and has been the inspiration for many subsequent studies. In the 1980s several eminent entomologists visited Shotover to record bees and wasps, and in recent years, members of *Shotover Wildlife* have worked towards a comprehensive appreciation of just how special the hill's aculeate Hymenoptera are.

Bees and Wasps on Shotover

By 1939, about 140 species had been recorded on Shotover, yet about half of these have not been seen in recent years. This result can mostly be explained by the overall changes of habitat from grass pasture to a mixture of woodland and mown grass. In addition, some species that are now rare in Britain may have been more common in the 1930s: the countryside being so very different now, from how it was then. Perhaps more surprising is the number of new species (about 60) that have been added to the Shotover list by our recent work. Notwithstanding the northward movement of some species over recent years, habitat change may also account for new arrivals. Our analysis so far indicates an increase in the species that prefer scrub woodland, and a decrease in soil nesting species.

BEE S & WASPS
Shotover Wildlife

Rarities

More than 10% of the bees and wasps recently recorded on Shotover are *officially* listed as scarce or rare in Britain. However, the status of some species can change quite quickly. For

example, in 2002 we found a 'rare' species of wasp (with the wonderful name, The Bee Wolf), which in 1990 was only known from a few places on the south coast of Britain. Our Shotover record in 2002 was then only the second sighting in Oxfordshire. Now the Bee Wolf has spread over southern Britain and become much less scarce.

Some rare species are found in particular places around the hill. Some need special nesting sites, like dry dead trees with beetle holes, or the cracks that form in dried clay. Others must have pollen from only one family or species of plant, for example, from willow trees. Shotover also has a lot of bees that need just one other species of bee to prey on, and these also tend to be rather more rare. We even have a bee (*Epeolus cruciger*) that needs the bee (*Colletes succinctus*) that needs the heather pollen to feed on!

Clearly, Shotover Hill is still an important area for aculeate Hymenoptera. However, bees and wasps are generally under-recorded in Oxfordshire and it is not easy to say which species



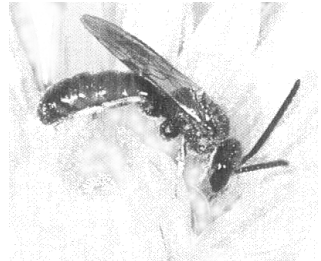
Yellow-legged Mining Bee
Andrena flavipes, ♀ (10-13mm)

are doing OK, and which are declining. As the work of *Shotover Wildlife* extends to other sites in the county it will be interesting to see the importance of Shotover in its true regional context.

So where are these bees and wasps?

For **wasps**, the best time to look is on a hot sunny day in July or August, and 2-3 hours either side of midday. Most **bees** are not so fussy about such hot weather, and some begin to emerge much earlier in the year (April).

Solitary bees can look like small honeybees or large flying ants. They are usually quite hairy, and can be found most easily on tall sun-lit dandelion-like flowers. They can be recognised by their distinct antennae, and a tiny 'waist' between the two main parts of the body. Unlike a fly, its wings will be folded down flat along its back.



Lasioglossum albipes, ♂, (a bee ~8mm)

The best place to see a **solitary wasp** is around the tiny holes and minute 'mole hills' that appear on sandy paths. If you wait a while, a wasp (often beautifully glossy black and yellow) will arrive, hover around and then disappear down a hole ...

... and she won't bother to sting you!

Talks and courses on bees available from Ivan Wright

Shotover is a sandy hill east of Oxford with habitats ranging from heath and ancient woodland, to pasture and arable fields. On the southern slopes is Brasenose Wood and Shotover Hill Site of Special Scientific Interest (SSSI). The SSSI status is because of the fine mosaic of interacting natural habitats and the diversity of associated wildlife. The SSSI habitats include marsh, coppice woodland, meadow and one of the largest areas of lowland heath in Oxfordshire.

The diversity of habitats is important for mobile species such as insects, which can move around to find their optimum niche. Research by members of *Shotover Wildlife* is accumulating knowledge on those aspects of Shotover that are of value for insects and many other species groups, e.g. birds, butterflies and flora.

Shotover Wildlife is a voluntary organisation founded to research and communicate the importance of Shotover Hill for wildlife

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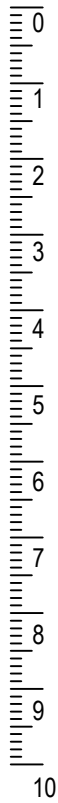
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BEES AND WASPS

on SHOTOVER



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Measuring scale in centimetres