

ACULEATE SURVEY

During 2005 myself and Carl Clee, the Cheshire County Recorder for Aculeates (bees, wasps and ants) were asked to carry out a survey of the Reserve to determine species present. We were also interested in the particular habitats used by these species both for feeding and for nest sites so this information can be incorporated into site management.

The survey started in March when queens of most of the bumblebee species are actively searching for nest sites; all six of the common species were noted along with two species of the parasitic Cuckoo bumblebees. Spring is the main flight period for a number of the solitary bees, many of which nest in exposed sand, especially if south facing. The bank along the rear of the car park, parts of No. 4 and the south bank of No.2 bed were particularly productive.

Several visits were carried out throughout the spring and summer with a total of 31 species being recorded. However, as with most insects, aculeate activity depends on the weather so any visits on cool, overcast days produced few species. This year we have decided to run a malaise trap on the Reserve which will give a better representation of species present as well as artificial nest boxes for solitary bees and wasps.

Species list for 2005

Pompilidae

Anoplius nigerrimus

A spider-hunting wasp, 5-8mm in length, found in a fairly wide range of habitats and nesting in a variety of situations including under stones, in dry plant stems, in deserted burrows of other aculeates and in snail shells. Reported prey include Lycosidae, Gnaphosidae and Pisauridae. Widespread and fairly common.

Pompilius cinereus

A spider-hunting wasp found in sandy areas throughout Britain, but especially coastal. Preys on ground-dwelling spiders.

Evagetes crassicornis

A spider-hunting wasp which is a brood parasite in the nest of other species in the same family. It is most often encountered in dry, sandy habitats where potential host species are plentiful. Suggested hosts are *Arachnospila anceps* and possibly *Anoplius nigerrimus*, although these have not been confirmed. Widespread but rarely numerous throughout Britain.

Vespidae

Vespula vulgaris

Social wasp which typically forms large colonies underground. The nest is started in an existing cavity such as a mouse nest, in rockeries or in rubbish heaps, usually in a bank rather

than on flat ground. Ariel nests occur, but are always in enclosed spaces such as cavity walls, attics or hollow trees. Widespread and common.

Vespula germanica

A social wasp which typically nests underground at depths of up to 22cm, both in banks and in flat ground. Aerial nests are unusual and always in an enclosed space such as a cavity wall. In a season, a typical nest will produce 10000 wasps including 1200 queens and at the height of activity there would be 1500 workers present. It is common in England and Wales and extends into southern Scotland, but becomes scarcer in the northern part of its range.

Dolichovespula sylvestris

Despite its name, the tree wasp often constructs underground (20% of nests), although usually near the surface in a pre-existing cavity. Ariel nests are found up to 830cm, usually in enclosed spaces such as bird boxes, hollow trees, cavity walls etc., although exposed nests have been found in situations where they are under cover (eg. in a porch). Widespread and common.

Sphecidae

Crossocerus quadrimaculatus

A black and yellow sand wasp which nests in earth banks, especially amongst the roots of uprooted trees. The nest is stocked mainly with small flies, but small Lepidoptera and Trichoptera have also been recorded. Common in the southern half of Britain north to Cheshire and Mid-Yorkshire.

Crossocerus megacephalus

A common solitary wasp which nests in wood, often rotten wood, and usually utilising the borings of other insects such as beetles. Its prey consists of a variety of flies. It is found throughout the British Isles.

Ectemnius cavifrons

Large (11-16.5mm) black and yellow solitary wasp nesting in rotten wood or plant stems. Adults frequently seen on flowers, especially umbels, and preying mainly on Diptera, especially hoverflies. Wales and England north to Lincs. and Staffordshire. Common.

Crabro cribrarius

A large yellow and black solitary wasp which nests in sandy soil. Burrows are stocked with flies. Flies from a wide variety of families including Therevidae, Asilidae, Empididae, Syrphidae and Muscidae have been recorded as prey of this wasp. Widespread in open, sandy habitats in Britain north to Nairn and mid-Perthshire.

Apidae

Andrena clarkella

A beautiful and conspicuous solitary bee found in open woodland, chalk grassland, coastal areas and the fringes of heaths and moors. Sometimes nests in large compact aggregations formed on the edges of well trodden paths, but groups of 2-3 large burrows are more typical. Visits a wide range of flowers. Generally distributed and locally common in England and Wales, scarce and sporadic in Scotland.

Andrena fulva

A bee, one of the first to be found on the wing in the spring. Females are covered in tawny fur but the males are more drab. It builds nests in the ground, often producing a small mound of excavated earth around the opening.

Andrena haemorrhoa

A mining bee, common and widespread, found on short grassland, heathland and in open scrub. Widespread and common.

Andrena nigroaenea

A solitary bee which nests in bare sand in a variety of habitats including open sites and woodland. Visits a wide range of flowers, but shows some preference for dandelions. Common and widespread.

Andrena scotica

A common early spring bee, nesting in soil in a wide variety of habitats. Pollen is collected from many plants, especially *Crataegus*.

Lasioglossum calceatum

Small, ground nesting solitary bee usually nesting in steep banks. Widespread and common.

Lasioglossum albipes

A solitary bee, typically found in ruderal areas such as field edges. Widespread and common.

Lasioglossum morio

Osmia caerulea

A solitary bee. Nest burrows are generally dug in old posts and other dead wood, but also occasionally in hard banks or old walls. Described by Saunders (1896, *The Hymenoptera Aculeata of the Brit. Islands*, p.335) as 'Common and generally distributed, occurring from May to August'.

Osmia rufa

A tawny brown bee which nests in a variety of situations including dead trees.

Megachile willughbiella

A leaf cutter bee. The female cuts semi-circular sections from leaves and uses them to build a sausage shaped nest in woody plant stems, especially willows. Common in southern Britain, frequently occurring in gardens.

Nomada leucopthalma

Cuckoo bee which is a cleptoparasite on *Andrena clarkella* - a widespread solitary bee occurring in woodland and scrub. Widespread but local.

Nomada marshamella

A black and yellow solitary bee which is cleptoparasitic on the common solitary bee *Andrena scotica*, and also some of its scarcer relatives. Widespread and common.

Bombus lapidarius

A common bumblebee of gardens and hedgerows. It is mainly black with a red tail and the male has a broad yellow collar. The nests are often under stones. Only the young fertilized queen survives the winter, having hibernated in a protected place such as in a hole or under moss. She emerges in spring and starts up her own colony

Bombus lucorum

A common black, white and yellow bumblebee found in gardens and hedgerows. It often breeds in old vole nests. Only the young fertilized queen survives the winter, having hibernated in a protected place such as in a hole or under moss. She emerges in spring and starts up her own colony.

Bombus pascuorum

Widely distributed, common and often abundant bumblebee. The adult is a small, largely tawny insect with variable amounts of black. There are two forms occurring in the north and south, which overlap and interbreed in northern England and north Wales. The coat is thin and rather 'scruffy' looking. It is a surface-nesting bumblebee which constructs its nest in cavities such as old mouse runs and in tangles of vegetation

Bombus pratorum

A rather small black and yellow bumblebee with a red tail. On the wing quite early in the year and may be finished by the end of July. Sometimes there is a second brood later in the summer. The nest is often well above ground, in bird nests or nest boxes for example. Widely distributed and common.

Bombus terrestris

One of our commonest larger bumblebees and widespread and common north to the central lowlands of Scotland. It is black and golden in colour with a white or buff tail and nests below ground. Only the young fertilized queen survives the winter, having hibernated in a protected place such as in a hole or under moss. She emerges in spring and starts up her own colony.

Bombus bohemicus

A cuckoo bee, resembling the bumble bee *Bombus lucorum*, whose nest it parasitises. The eggs are laid in the bumble bee nest and the bumble bee workers rear the cuckoo bee larvae. A common species, particularly in the north and west of Britain.

Bombus vestalis

Cuckoo bee parasite in nest of the bumblebee *Bombus terrestris*. Uncommon in Northern England.

Apis mellifera

The common honey bee. It is a domesticated species, although occasional colonies may persist in the wild for a few years in hollow trees, etc.

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