

grubs. When these first worker wasps emerge, they eventually take over most of the queen's duties, except for egg laying. Wasp colonies increase rapidly in size. In just a few weeks, populations of 20,000 are perfectly possible.

Adult wasps feed on nectar or, in fact, anything sugary. They feed their larvae on insect prey and are rewarded with a drop of sugary liquid. In the garden, they may be seen visiting some flowers for nectar. They may also be seen catching and killing garden pests to feed to their offspring.

In fact, they are really much more beneficial to us than most people would believe. One worker wasp can collect over 100 aphids per day.

Wasps cause the greatest problems to us when the adults are searching for their own food. When colonies become large, the normal sources are not sufficient and adults turn to sources such as ripening fruit, jam and beehives, for honey. Wasps do not store food in their nests, nor do they swarm like honeybees. The nest, which grows as the colony grows, is the nursery of the colony.

Unless a wasps' nest has been threatened or disturbed, wasps will tolerate quite close observation by humans. However, any disturbance of the nest is likely to result in extensive and determined defence, which is so great that at times there seems little to distinguish it from aggression.

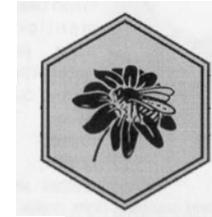
Nesting sites can be in hollow trees, roof spaces, compost heaps, rockeries, hedgerows, trees or shrubs. A successful nest produces fertile males and females and the mated females hibernate while the rest of the colony dies out by the onset of winter.

All have their part to play and, with a little tolerance by us, can be accepted and welcomed into our gardens

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The British Beekeepers Association



The Bees and Wasps in your Garden

In British gardens, you can see **honey bees**, **bumble bees** and **social wasps**. All of these form colonies ranging in size from, say 50 in the case of bumble bees to 50,000 for honey bees.

You can also see **solitary bees**. Britain has about 200 of such species. They tend to be smaller than honey bees and are of various shapes and colour. Each individual builds its own nest and does not depend on others for help.

Vital Roles

These insects perform vital roles in the environment. All types of bees feed on nectar and pollen. As they forage amongst the flowers their furry bodies pick up pollen and pass it from flower to flower. This results in the formation of seeds and fruit. One third of the food we eat relies on pollination by bees. The main food source for wasps is insects. They too are beneficial in the garden since they feed on aphids and other insect pests.

Bumble Bees



When bees are mentioned, many people automatically think of bumble bees. Their round, furry bodies, with football jersey-like striped coats and bumbling flight, make them easy to identify. Many think that this is the bee that is kept in beehives. Nothing could be further from the truth. 'Queen' bumble bees hibernate as separate individuals, having mated the previous autumn. These queens are large and fly about in the spring looking for suitable nesting sites, ranging from a disused mouse or bird nest in a nesting box, to a compost heap. There they rear their first offspring which are always very small compared to their mother. It is not immediately obvious

that the large queen and these first tiny workers are the same species. From this point in its life cycle, the bumble bee is social. With the help of her brood, this queen rears the next batch of worker bumble bees, which are larger. The colony grows in numbers, never totalling more than a few hundred individuals. During late summer and autumn, bumble bee nests produce fully fertile males and females. These mate and the fertilised females hibernate until the next year. Bumble bees have a sting but rarely use it.

There are about 25 species on the British list, but only about six are at all common. As their nesting habitats disappear, so do they. Recently, however, colonies have been produced commercially to pollinate greenhouse crops

Honey Bees



Honey bees are kept by beekeepers but are also capable of living wild in hollow trees or, more inconveniently, in chimneys and hollow spaces in houses. They are very similar in size to wasps but are mostly black in colour with light tan banding in some cases. They form large colonies of workers, headed by a queen. They are always found as colonies. Individuals cannot live alone.

In your garden, the workers can be seen visiting flowers for nectar and pollen - their food. Honeybees might also visit your garden pool or a wet area by a dripping tap. Bees need to drink like any other creature. In each case, honey bees are harmless and will fly away if disturbed. The most spectacular garden visitation is that of a swarm. Perhaps 20,000 honeybees may arrive in flight and cluster on a tree branch, for example. The noise can be alarming - but the danger is not very great. Just stay out of their way and contact a local beekeeper, if you know one. If not, try your local Environmental Health Department, or the police. They will know someone who will come and collect the swarm.

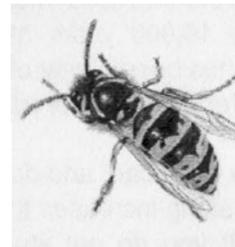
Honey bees convert the nectar to honey to provide food for the colony to survive the winter. They benefit the environment by their ability to pollinate a wide range of flowers and crops. They produce delicious honey, of course, but in addition, they are the only source of beeswax.

Beeswax has many and various uses in polishes, cosmetics, and in the food industry. It was the traditional material for church candles. In the 10,000 years mankind has kept bees, there has been plenty of time to find a variety of uses for honeybee products.

Honey bees can, and do, sting. The likelihood of being stung increases the closer you get to their hive. If you do get stung, scratch rather than pull the sting out, and move away from the hive as quickly as possible.

Solitary Bees

There are about 250 species of solitary bees in Britain. Some tunnel into sandy soil or the soft mortar in old houses. Some use existing holes and construct cells from mud or pieces of leaf. Each of the cells is stocked with pollen, only slightly moistened with nectar, if at all. An egg is laid on this and the cell sealed over. The larva which hatches from the egg only has that food supply. It eats the pollen, pupates and emerges the next year. Males emerge first and mate with females that appear later. All the work of cell construction is then carried out by the females. The males play no further part and die after a few weeks. Many of the solitary bees look like honeybees. They often nest near to each other in 'villages' and beekeepers receive many 'swarm calls' that turn out to be solitary bees in a lawn or wall. They are all valuable pollinators and only sting if handled roughly. One or two species, like leaf-cutter bees, have been used commercially to pollinate crops such as lucerne (alfalfa).



Wasps

There are seven species of social wasps found in the British Isles. They are all superficially alike in appearance, being different only in size and minor details of colour patterning. All common wasps have sharp, tapered abdomens, striped in black and yellow. Their heads and thoraxes are mostly black. The exception to this is the hornet, the largest of our wasps, with a reddish-brown and black patterned thorax. All wasps have a great reputation for stinging.

Mated queen wasps hibernate during the winter and emerge around April, when many insects begin to stir. The queens find a suitable nesting site according to their species' preference and begin to build a nest made from a kind of paper, composed of chewed wood fibres. The queen lays eggs and feeds her larvae on insect prey. The insect bodies are chewed into a liquid which is fed to the