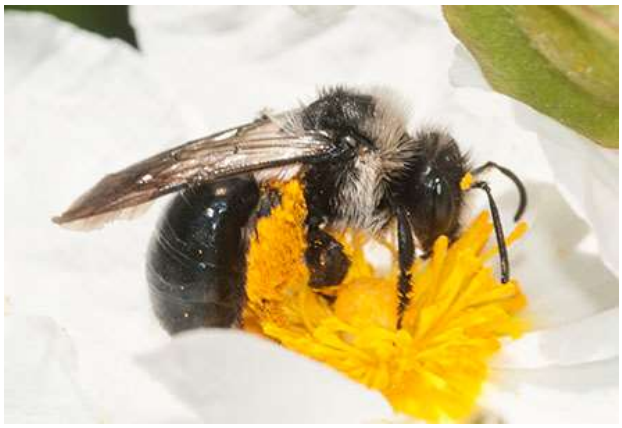
Visitors to *Cistus x hybridus* - the hybrid rock rose

When we moved into our house in the autumn of 2017, we knew nothing about the plants in the garden. We were not very enthusiastic about a rather boring looking low growing evergreen shrub at one end of the garden. With so many other more compelling tasks to undertake, we left dealing with this apparently unglamorous plant until the following spring. At the beginning of May the next year, it underwent a dramatic transformation, becoming a spectacular sight entirely covered with open white flowers with bright orange-yellow centres. The only minor drawback was that the flowers which opened in the morning began to shed their petals mid-afternoon, and by early evening all were gone. However, the next morning a fresh crop of flowers had opened and this daily cycle continued through until the first week in June. When in full bloom, the flowers attracted such a large array of insects collecting pollen and nectar that their buzzing was audible even to my rather deaf ears. Since no one seemed to recommend this shrub as encouraging pollinators, I began a personal project to photographically record the diversity of visitors.

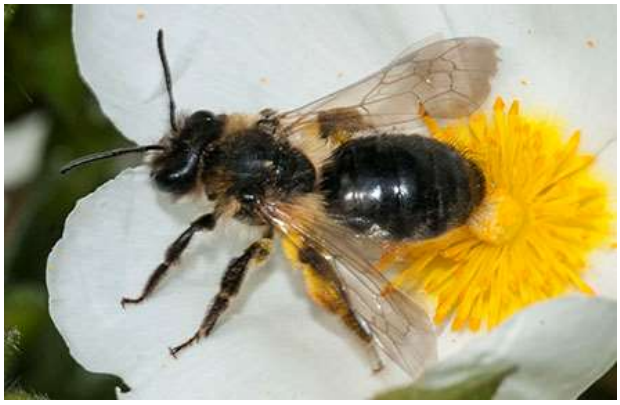
This article summarises the results of that study. Two interesting observations are that, as the flowers begin to drop their petals by mid-afternoon and have dropped them entirely by evening each day, the shrub appears to not be attractive to nocturnal pollinators or web weaving arachnids. As a result I recorded almost no moths or spiders on the plant. The majority of the visitors were instead insects collecting either nectar or pollen during daylight hours, with a few other species either preying on the others or merely eating the petals and the anthers.

Hymenoptera – bees and wasps

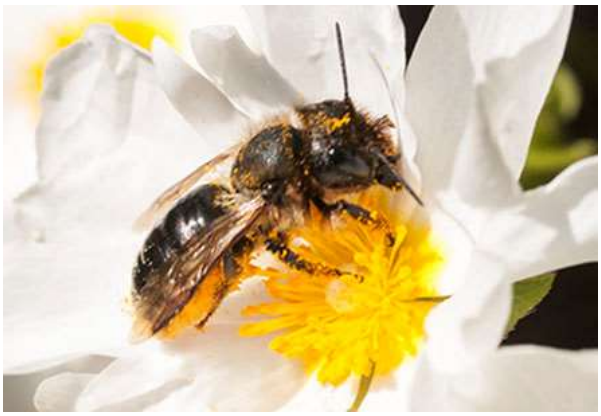
The pollinator most familiar to people is the honey bee *Apus mellifera*. Honey bees visit the *Cistus* for both nectar and the profuse quantities of yellow pollen produced by the ring of stamens at the centre of the flowers. The number of honey bees visiting was very much dependent on the weather but also on how close the nearest hives were to the garden and whether there were other rewarding flowers in other gardens along the flight path. Those that visited were collecting the pollen, which is used to provide essential protein to the developing grubs back in the hive. They pack the pollen into the pollen baskets on their hind legs, and the colour of the pollen in a bee's basket can be a good indicator of which types of flower the bee has been visiting. Bees could be seen hovering over the flower they had just been visiting, tamping down the pollen in the basket (as in the second photograph above).



Ashy mining bee *Andrena cineraria* is a distinctive large solitary mining bee that is quite common in the South of England. It is found in quite a range of habitats, but it prefers nesting in sandy soils with short turf on south facing slopes. It exploits a wide variety of species of spring flowers, and is one of the commoner of the solitary mining bees that excavate their nesting holes in lawns.

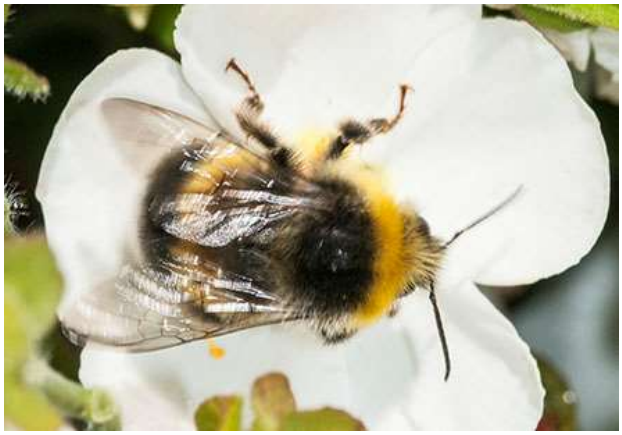


Big-headed mining bee *Andrena bucephala* is another of the mining bees that is only slightly smaller than a honey bee. This springtime bee is all black except for the characteristic clumps of white hairs on the rear corners of the thorax. It is predominantely a species of chalk or limestone countryside that exploits flowering hawthorn and field maple. Note how it is carrying pollen stuck to its hind legs, but not in pollen baskets as seen in honey bees.

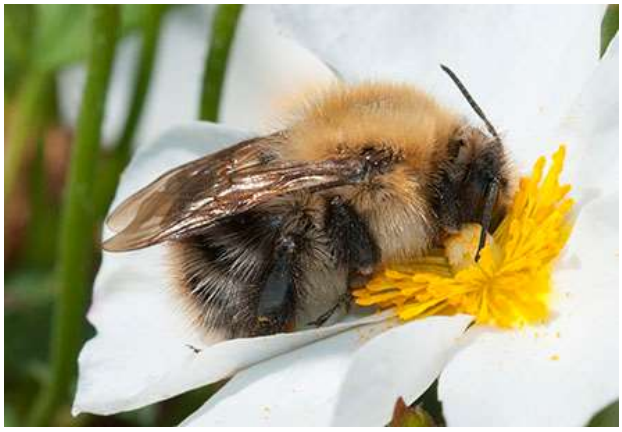


Chocolate mining Bee *Andrena scotica* is the most abundant mining bee in our garden. It nests in small aggregations in burrows it excavates in cracks in the concrete path along one side of our house. It hosts a cleptoparasitic bee *Nomada marshamella,* a colourful species which also ocassionally turns up on the *Cistus* flowers.

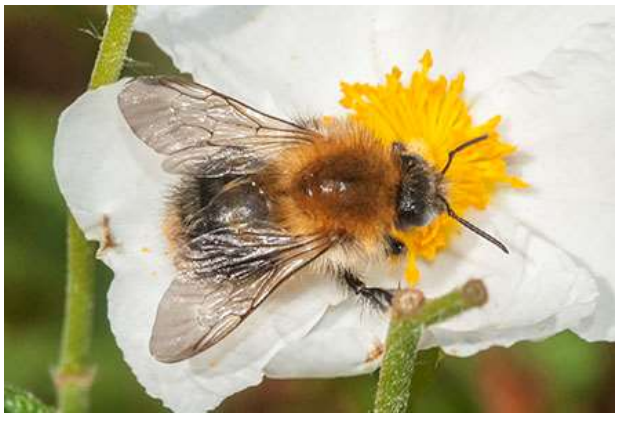
Buff-tailed bumblebee *Bombus terrestris* is one of the commonest bumblebees in Southern Britain and occurs throughout most of the British Isles. It is also one of the largest – queens are 18mm long and workers are 13mm. It is one of the earliest species to appear in February and persists into the autumn by producing two generations. It nests underground in large colonies, usually in old rodent burrows. It is an important pollinator.



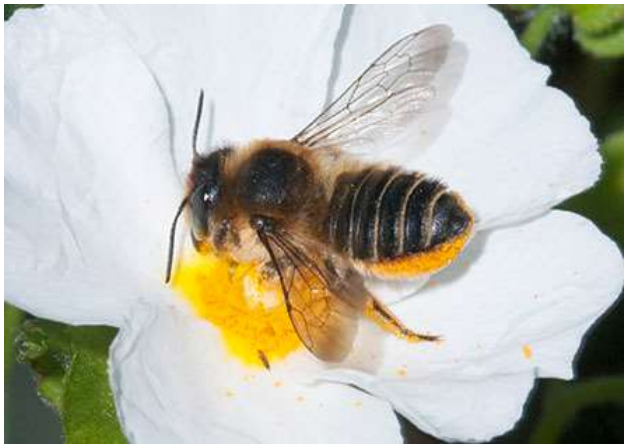
Vestal cuckoo bee *Bombus vestalis* is easily mistaken for a buff-tailed bumblebee of which it is a nest parasite. It is the commonest cuckoo bee in our area, and like their host species, occurs from March until late September. It does not have a pollen basket on the hind legs, since it relies on its host to feed its developing larvae.



Common carder bee *Bombus pascuorum* is another very common bumblebee in our garden and elsewhere in suburban and urban areas. The queens are 13mm long and start appearing towards the end of March and are still around into October. They usually nest on the ground in amongst grass tussocks but will take up residence in bird boxes. It is the main host of the field cuckoo bee *Bombus campestris.*



Tree bumblebee *Bombus hypnorum* is a medium-sized bumblebee that is immediately recognisable by its gingery thorax. It is a recent addition to the British fauna – first arriving in Britain in 2001, but has rapidly colonised England and Wales. Queens first appear in March and there are two generations a year. It nests above ground, in tree holes, old bird boxes and under the eaves of houses. They have become one of our more important pollinators.



Patchwork leaf-cutter bee *Megachila centuncularis* is a medium-sized leafcutter that has an orange halo of pollen hairs around the underside of its abdomen. Its flight season is mid-June to September so it only just coincides with the flowering season of the *Cistus*. They nest in wall cavities and bee hotels, lining them with semicircles of leaves they cut from a variety of plants, often rose bushes.

Common wasp *Vespula vulgaris* exploits the flowers both for pollen and nectar but also as a hunting ground for predating other insects. There are seven species of social wasp in England which can only be reliably identified if examined head-on. As predators they provide an important service of pest control in gardens, but can also be painful pests if you happen to cross their flight path. Common wasps nest underground, but other species may nest in houses and trees.

The flies – Diptera

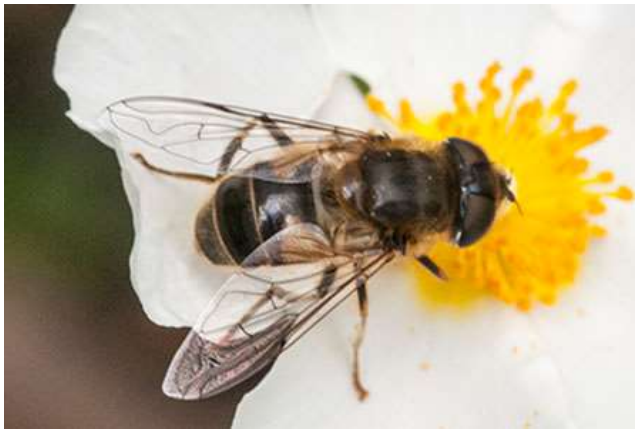
Flies have an evil reputation as vectors of disease, but flies also provide significant ecological services by cleaning up our environments – without them we would be knee deep in muck and rotting organic matter. They also provide other essential services such as the pollination of our flowers.

Hoverflies

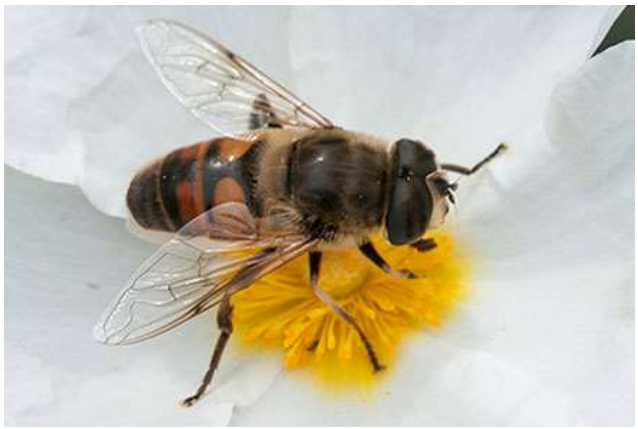
Many are good pollinators, and others are excellent pest controllers. Unfortunately a few such as the narcissus fly are considered as 'pests' by gardeners, as detailed below.

One of the smaller drone flies - *Eristalius nemorum* - are very common in our countryside and gardens. One behavioural trait that immediately identifies this species is that males hover 10-20cm above females feeding on flowers. Like all *Eristalis* this species has larvae that are rat-tailed maggots that live in organically rich slurries. They have telescopically extensible siphons which enable them to get oxygen from the air even in the most anoxic soups.

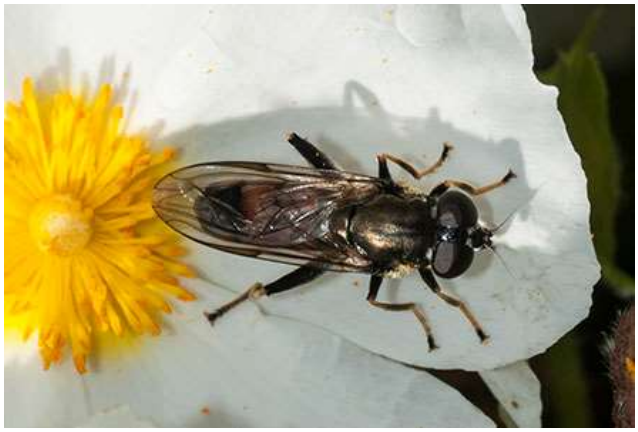
Hoverfly *Eristalis arbustorum* is another of the smaller drone flies that is common in gardens. It is a good pollinator of many types of flower. It too has a larva that is a rat-tailed maggot that can even live in cow-pats as well as highly polluted drains and ponds. The cross lines on the abdomen are brighter and clearer than other members of the genus.



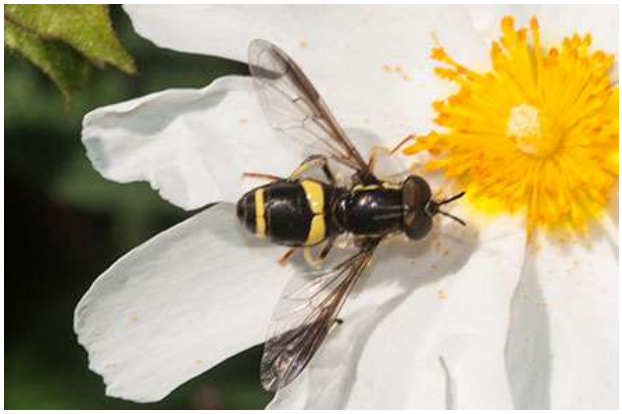
Hoverfly *Eristalis pertinax* is one of the larger species of drone fly. It is one of the earliest hoverflies to appear in the spring. When the *Cistus* comes into flower it is at its most abundant. It is easily distinguished from the other species by the tarsi (the end segments of its forlegs) which are entirely orange. Otherwise, like all the members of the genus, its body markings are very variable, so its identification is quite tricky.



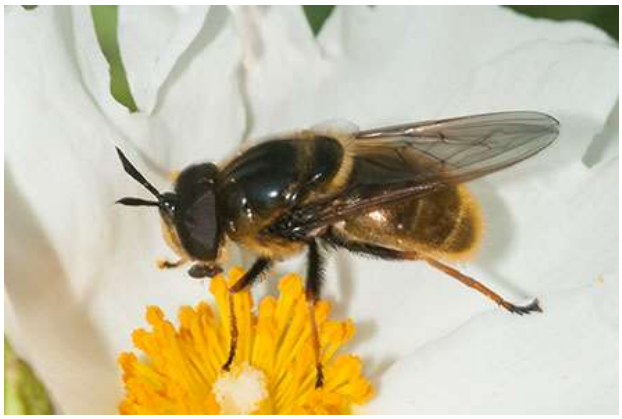
Hoverfly *Eristalis tenax* is another of the larger common species of dronefly. It is quite a good mimic of the honey bee and when it hovers its hind legs dangle and ressemble the pollen baskets of honey bees. Even in late autumn it can be quite an abundant fly, feeding on Michaelmas daisies. It will sometimes overwinter in houses and so can be encountered at almost any time of year.



Hoverfly *Cheilosia proxima* is one of the dark species of hoverfly that are extremely tricky to identify. In the UK there are nearly 40 species of the genus. Their larvae feed on plants; in this species the larvae feed on the roots of thistles.



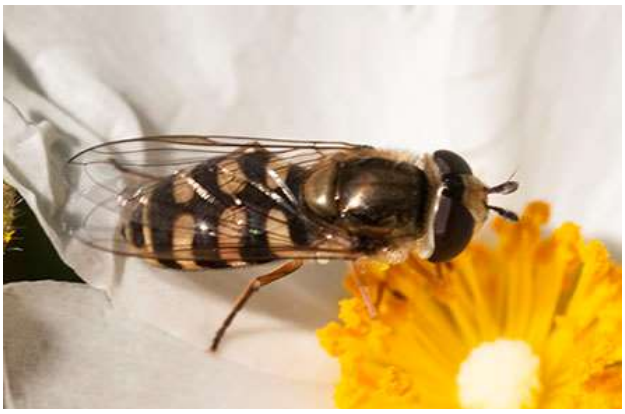
Hoverfly *Chrysotoxum bicinctum* is a widespread and quite common hoverfly. It is immediately recognisable because of its unique attribute of having just two yellow bands on its abdomen. There is the possibility that further study however may show there is more than one species with this attribute. Its larvae feed on root aphids. Note the long dark line on the front edge of the wings and the long antennae.



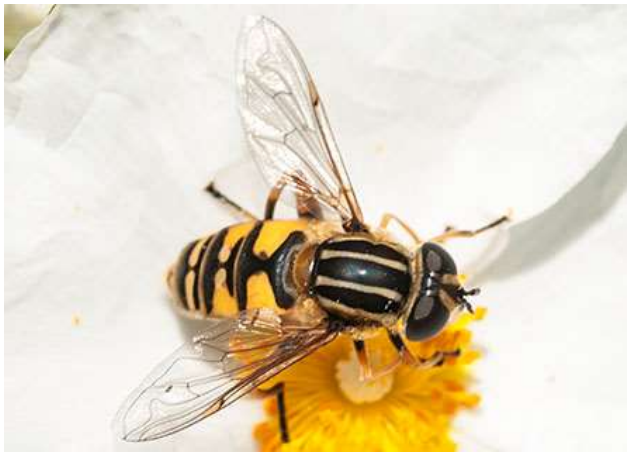
Hoverfly *Callicera aurata* is an uncommon hoverfly that breeds in water-filled rot-holes high up in trees. It has a resemblence to bees, but its long antennae are a give away. It is one of the less common hoverflies that has visited our *Cistus*.

Hoverfly *Criorhina floccosa* is a furry bumblebee mimic which is common in the south of England. The larvae are associated with rotting deciduous wood and adults are usually found in woodland with overmature trees. Adults are seen visiting flowers to feed.

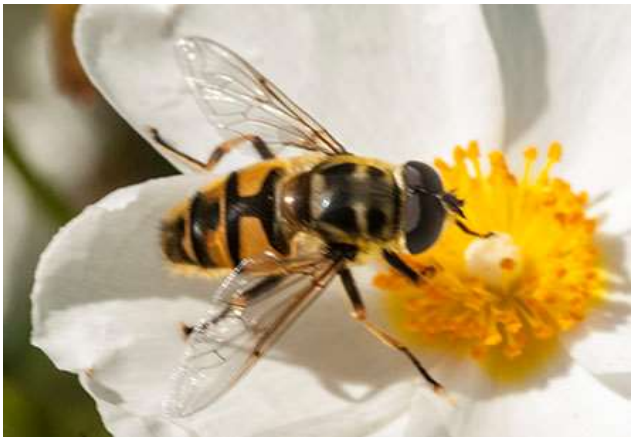
Hoverfly *Dasysyrphus venustus* is a common species with hooked yellow bands across the abdomen. Its face (frons) is entirely black and the black antennae are tipped with yellow. Their well-camouflaged spiky bodied larvae live on the twigs and branches of woodland trees, where they prey on aphids.



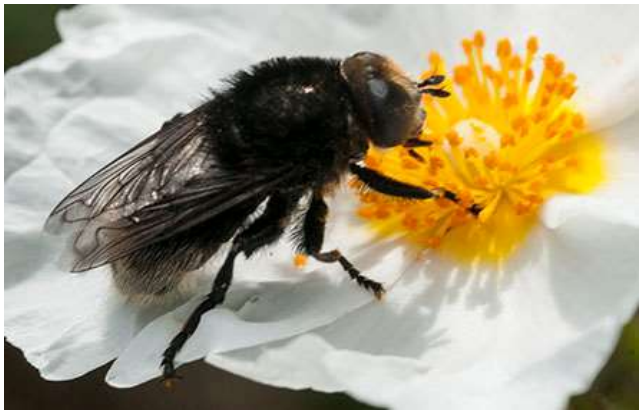
Hoverfly *Eupeodes corollae* is one of our most common hoverfly species whose population in most years is boosted by immigrants from mainland Europe. In some years there may be mass hatchings which boost the populations still further in midsummer. Its larvae eat ground-living aphids. The males differ from the females by having squarer abdominal yellow commas.



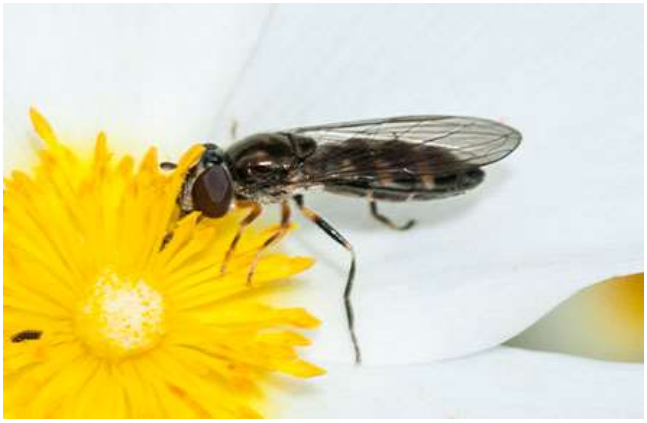
Hoverfly *Helophilus pendulus* is a widespread and common species around ponds and ditches, but it does wander a long way from water. It will be seen quite frequently sunning itself on the leaves of shrubs. There are three very similar species which are commonly known either as ‘footballers’ or as ‘tiger-flies’. Their larvae are found in water where they feed on plant debris.



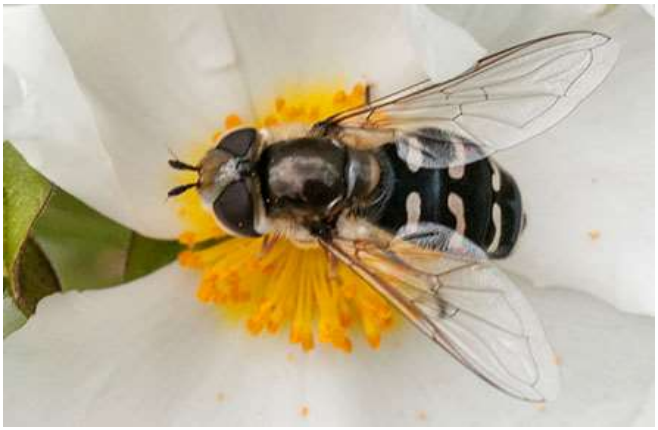
Hoverfly *Myathropa florea* is readily distinguished from *Helophilus* by the banding on the thorax being horizontal rather than longitudinal. It is another common species that is regarded as a wasp mimic. Its larvae occur in rot-holes in wood especially those filled with decaying leaves. The males will often hover one or two metres above the ground in sun-spots.



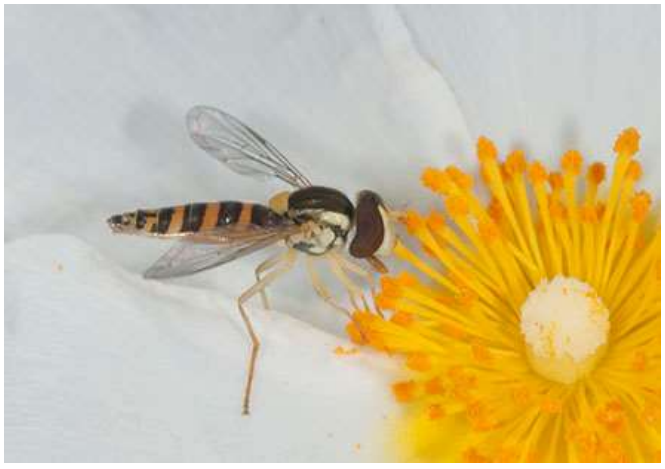
Large Narcissus fly *Meredon equestris* is a large very variable hoverfly that is most common in late spring/early summer. It is a large hairy bumblebee mimic which is very variable in colour depending on which bumblebee species it is mimicing. However, its legs are entirely black. It can be a serious horticultural 'pest' because its larvae attack the bulbs of daffodils and bluebells.



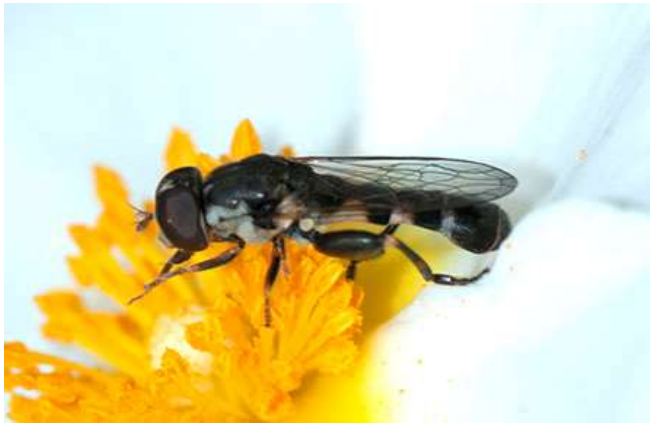
Hoverfly *Platycheirus* species - there are at least 22 species belonging to this genus in Britain which are very difficult to distinguish. *P. albimanus* is one of the most abundant in our woodlands and gardens. Its larvae are predators of aphids, and so are contributing to the natural control of some of our 'pest' species.



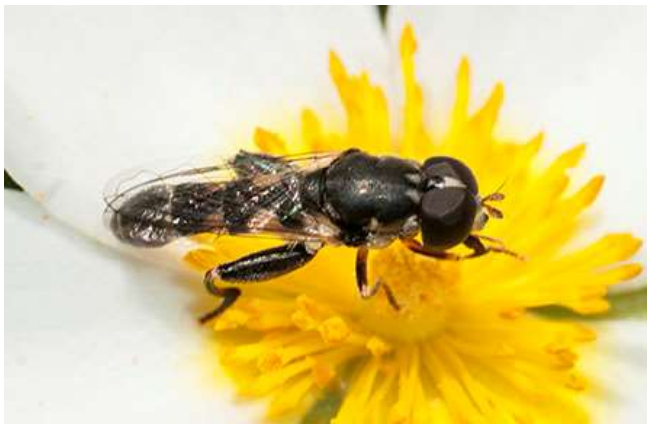
Hoverfly *Scaeva pyrasti* is a large conspicuous hoverfly whose abundance varies from year-to-year. It is not a resident species in this country but breeds here after it has migrated in from continental Europe, usually after the beginning of June. This means that in years like 2023 when the springtime winds are persistently northerly, it is not very abundant. The larvae are found preying on ground-layer aphids.



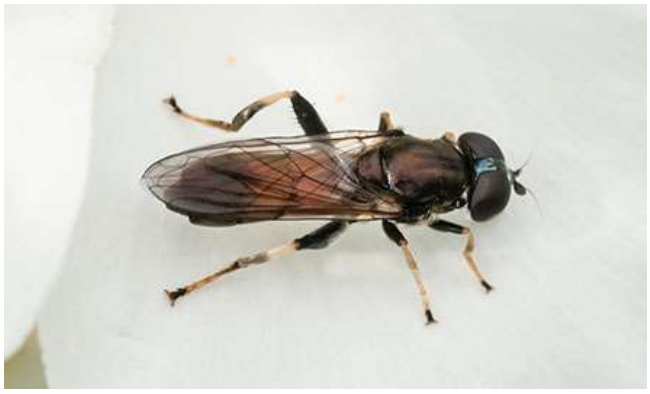
Hoverfly *Sphaerophoria* sp is a small slim easily recognised genus but which is challenging when it comes to identifying its thirteen or so species. A task made all the more difficult as more than one species may be flying together at the same time. This specimen pictured, with its wings shorter than the abdomen, is probably *S. scripta.* The larvae feed on ground dwelling aphids. Like many species, in most years the populations get boosted by migrations from continental Europe.



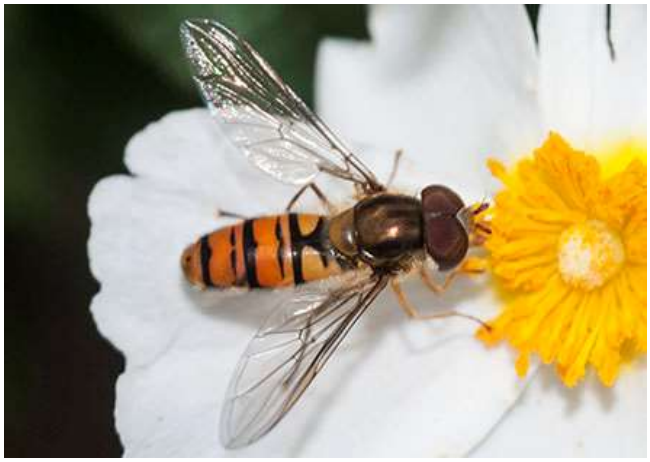
Hoverfly *Sphegina clunipes* is a species that prefers shade in woodland to sunlight in the open, hence it was unexpected to see it on our *Cistus*. Relatively few species of hoverfly have the narrowed waists and the swollen hind femurs that are typical of this genus. Its larvae are found under decaying bark feeding on the fermenting sap.



The thick-legged hoverfly *Syritta pipiens* is a widely dispersed species which has hind legs with swollen spiny femurs. The abdomen is parallel-sided with lateral orange patches. It breeds in compost heaps and other piles of rotting organic matter. They are common in urban areas as well as more natural environments.

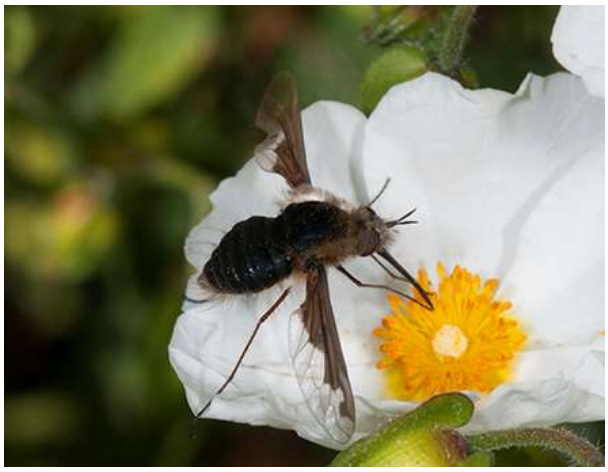


Hoverfly *Xylota segnis* is a familiar sight running over leaves and logs in woodlands and gardens. It is one of the species with enlarged but straight femurs on the hind limbs. The abdomen is parallel-sided and in this species has a reddish-orange belt. It breeds on wet rotten wood in woods, hedges and even gardens.



Marmalade hoverfly *Episyrphus balteatus* is probably the most widespread and common hoverfly in Britain. It can turn up in any month of the year, even in midwinter when the weather is mild. It is one of the few hoverflies that has a colloquial name. Populations of this hoverfly are regularly boosted by migrations from the continent. However, such migrations are highly susceptible to vagaries of the weather - in May 2022 there was a mass stranding of this species recorded on a beach in Southern France.

Other Flies

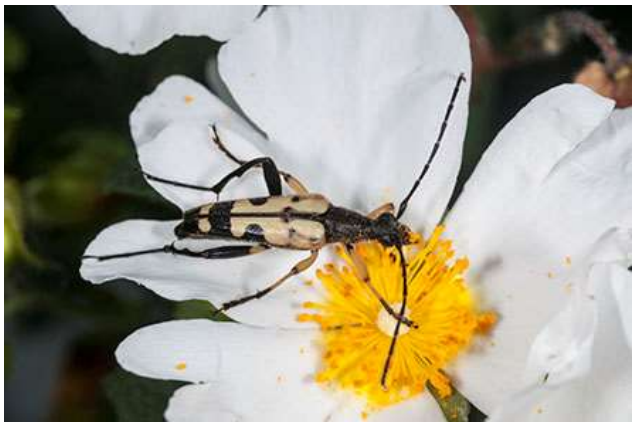


Bee fly *Bombylius major* is an early spring fly which is nearly at the end of its season by the time the *Cistus* flowers. Many people mistakenly identify its long proboscis as a sting, whereas it is used to suck nectar from tubular spring flowers such as primroses. It has a very curious life history. The female scatters her eggs near the entrance to bee nests. The larvae that hatch cling on to passing bees, gaining access to the nest. There it lives, feeding on debris in the nest. They are highly effective pollinators of spring flowers.

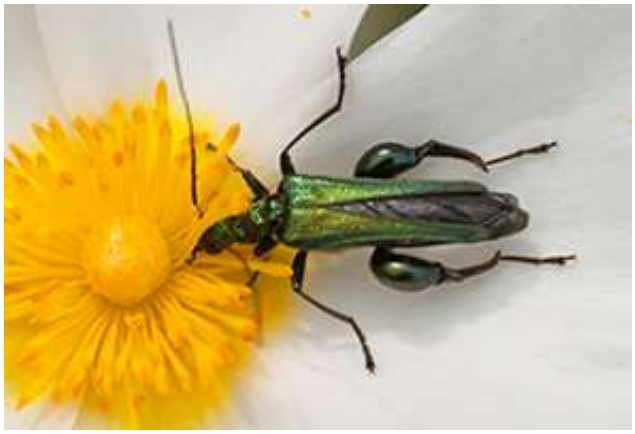
Black snipefly *Chrysopilus cristatus* is a widespread fly species in Britain. It is carnivorous, preying on other small insects. It is probably using the flower as an observation post for its hunting rather than exploiting it for nectar or pollen.

Dance fly *Empis tessellata* is another common predatory fly seen on garden plants. It preys on other insects, piercing them with its long dagger-like mouth part, which it also uses to suck nectar from flowers. Its larvae are also predaceous.

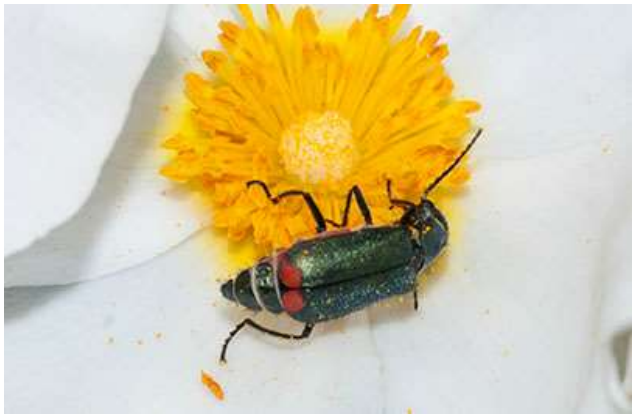
Beetles – Coleoptera



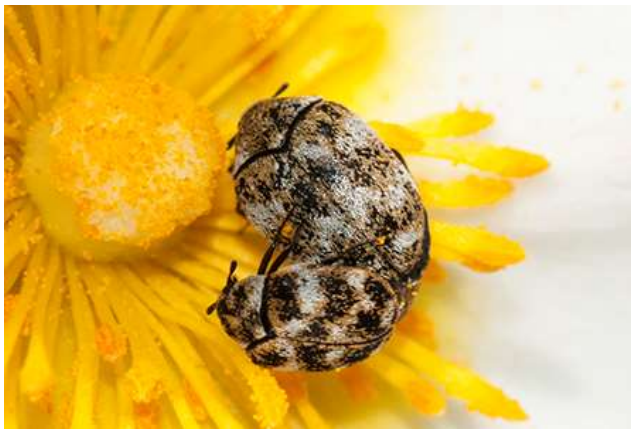
Black and yellow longhorn beetle *Rutpela maculata* is a common visitor to flowers in summer, especially to hogweed flowers, feeding on pollen and nectar. Like most longhorn beetles their larvae live in rotten wood and they take a couple of years to mature. There are a couple of other longhorn beetle species that superficially look similar in having black and yellow bodies and also feed on flowers but their colour patterns are different. Despite having 'warning' black and yellow colours they are quite harmless.



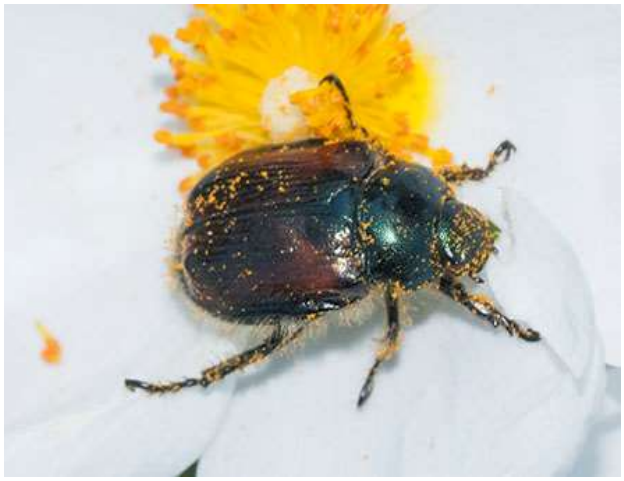
Thick-legged flower beetle *Oedemera nobilis* is a very common visitor to flowers throughout summer, visiting flowers and feeding on pollen. It is the males that have the swollen 'thighs'; the thighs of the females are unswollen. The larvae develop inside the stems of a variety of plants including thistles.



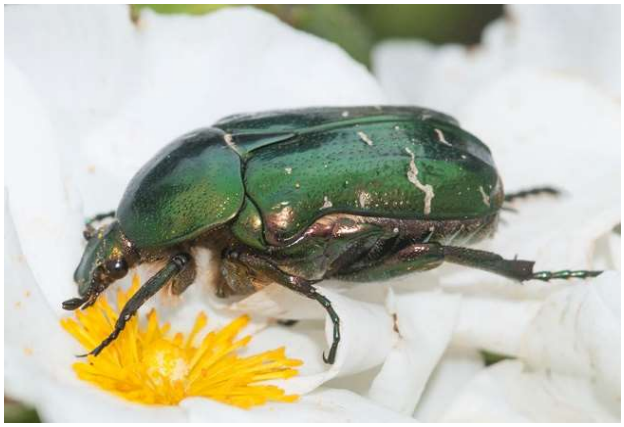
The malachite beetle *Malachius bipustulatus* is another common summertime visitor to flowers, feeding on pollen. The conspicuous two red spots on the end of the elytra are only seen on one other smaller beetle. They lay their egg in crevices in bark or in grass tussocks. The larvae are predaceous on other small insects.



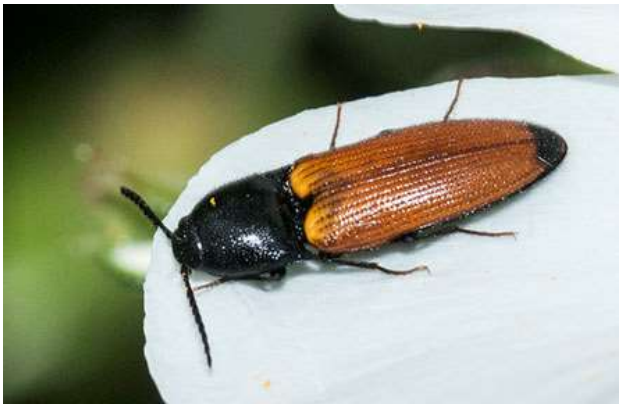
Demestid beetles *Anthrenus verbasci* are very common small beetles that feed on pollen. Unfortunately they will also enter houses where their larvae can become quite serious pests eating the natural fibres in carpets and underlays, hence they are called carpet beetles. In museums they can cause serious damage to the specimens on display. Their larvae are small (3-4mm long) furry grubs sometimes called wooly bears. They will be common visitors to your garden flowers.



Garden chafer *Phyllopertha horticola* is a very common small chafer whose larvae feed on the roots of grasses and often have mass hatchings from lawns. Their green thoraxes and bronzy elytras make them immediately recognisable. Along with all the flower-visiting beetles, they fly readily, especially on warm sunny summer days. Notice how this one has got covered with pollen.

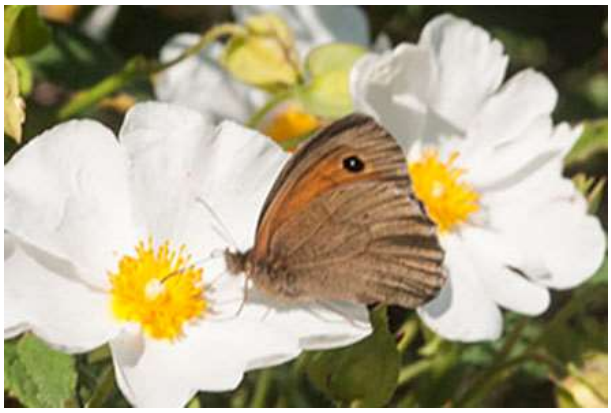


Rose chafer *Cetonia aurata* is a large spectacular chafer beetle that flies in sunshine on warm summer days. It is related to maybugs and has an evil reputation amongst rose growers. It certainly eats large holes in petals, reducing the saleability of the flowers, and this is used as an excuse to use insecticides. Their larvae live in compost heaps and take two years to mature. The shining green colour of the elytra is a structural colour and is produced like the colour of an oil film on water and is not by a pigment.



Click beetle *Athous haemorrhoidalis* is one of the commonest click beetles, so called because they can produce a loud click and leap into the air by flexing their abdomen against their thorax. Their larvae are wire worms. Some wire worms are predaceous but others are notorious for causing considerable damage to the roots of crops and unsightly brown patches in lawns. The adults are good fliers and are attracted to lights.

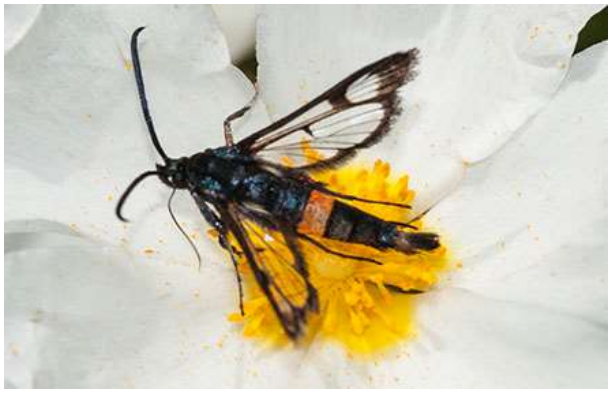
Lepidoptera – Butterflies



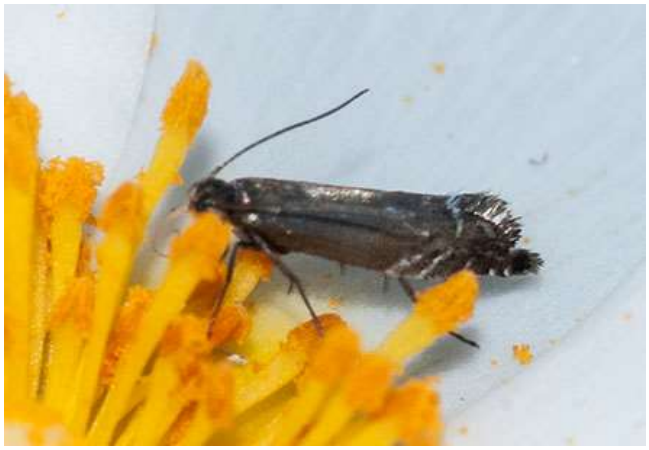
Meadow brown *Maniola jurtina* is a very common early summer butterfly that gets replaced by gatekeepers later in the summer. It usually appears in the second week of June and marks the beginning of the summer season. Rather surprisingly it is the only butterfly I have seen coming to the *Cistus.*

Lepidoptera – Moths

Relatively few moths are day flying and so only a small number of species will visit the *Cistus* flowers which lose their structure by the end of each day and are therefore not useful for night flying moths.



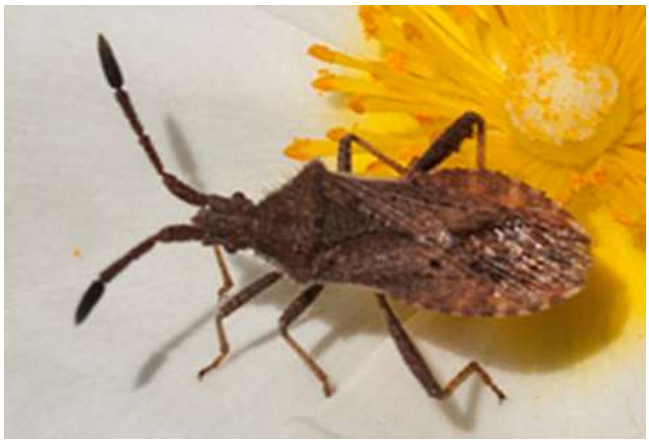
Red-belted clearwing *Synanthedon myopaeformis*. Clearwing moths are uncommon day-flying moths. They have larvae that live under the bark of trees that are damaged including apple, pear, hawthorn and rowan. This is a nationally scarce species which means it has been recorded in fewer than a hundred 10km squares. They are usually recorded by using pheromone traps, which use chemical attractants to draw in the moths.



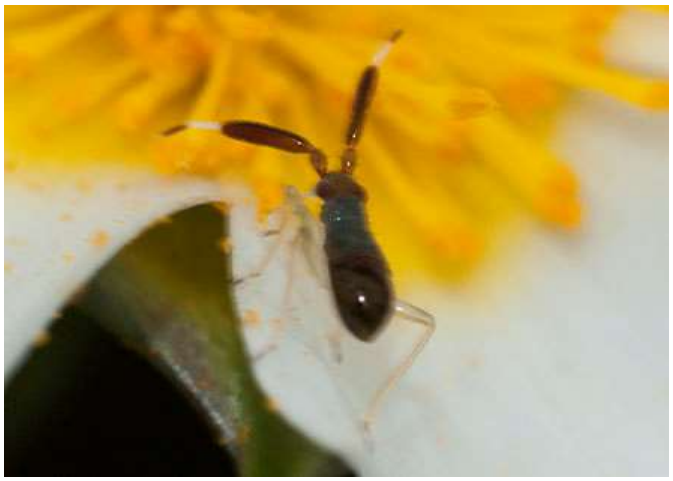
Cocksfoot moth *Glyphipteryx simpliciella* is a common tiny day-flying micromoth that is usually found in summer on buttercup and germander speedwell. Although it is widespread in Surrey it is probably under recorded because it is so tiny. Its caterpillars feed on the seeds of cocksfoot grass.

Bugs – Hemiptera

Dock bug *Coreus marginatus* is the most abundant large bug in our garden. Strictly speaking it is not a shieldbug because its antennae have four rather than five segments. The main peak in its abundance is in May when it can often be seen sunning itself on the leaves of shrubs, and mating pairs are common. Hemiptera have tubular mouthparts which they use to pierce plant tissue and suck up the sap. There are also several carnivorous species (especially in the tropics) that suck blood – one British example being the bed bug.



Coreid bug *Coriomeris denticulatus* is an uncommon bug in Surrey that is usually found on dry soils, so its occurrence in our clay-soiled garden was unexpected. It prefers the disturbed ground which the leguminose plants it feeds on can colonise. It flies readily and when it does there is a flash of red from its abdomen as it takes off.



Juvenile mirid bug *Heterotoma planicornis* with its characteristically out-sized antennae – is more usually found on nettles. At this juvenile stage it has not developed wings and cannot fly, so it must have hatched from an egg laid on the *Cistus.* It feeds not only on pollen but also other small insects. Adults occur in July, but I still have not identified any in the garden.

Arachnids – spiders

It is unsurprising that, with such a rich diversity of insects visiting the flowers, the *Cistus* also attracts predators which do not exploit the flowers' resources directly but instead their visitors. What is surprising is that there are not more of them however. This is possibly because the flowers are relatively ephemeral, hence most web-builders do not find sites worth investing in, nor do the flowers last long enough to attract the stalkers, like crab spiders.

Nursery web spider *Pisaura mirabilis* is a very common large spider that wanders over low vegetation. Later in the summer the females carry egg cocoons – hence their common name. They also like to sun-bathe. They stalk their prey and only use silk to hold their egg cocoons and to weave protective tents for their developing offspring.

Araneid spider *Mangora* acalypha is known as the cricket-bat spider. It is a common spider that is limited to the South of England. It occurs mainly in woodland and heathland. It weaves very tiny webs.

Cucumber spider *Araniella cucubitina* is a common small spider usually, but not always, found associated with oak trees. It too spins very small orb webs amongst leaves; a web maybe confined to the margins of a single leaf.