

Guide to Dalgety Bay Bumblebee Identification: Dick Alderson

Introduction

Although though they can sting, Bumblebees very rarely do so, they are too busy finding the pollen and nectar that they need to sustain their brood to be bothered with stinging people who take an interest in looking at them, even very closely. But if you catch one in your hand you can expect to get stung and, unlike honey-bees, they do not have a barbed sting so it will not remain in you and the bumblebee will not die.

The first Bumblebees appear in very early spring, and will be seen from early April onwards, with some appearing on warm days in March or earlier. The first to appear are Queens but it is the smaller workers that will be the majority of bees that you see in high summer.

The life cycle is very simple. The Queens, which will have mated at the end of the previous summer, hibernate over the winter and when they emerge in the spring their task is to find a suitable nest site and set up home. Once a suitable site is located, they store honey in a simple wax cell and pollen in a ball on which they lay the first eggs. Like a bird they will “incubate” the eggs, keeping them warm by drinking the honey and then vibrating the wing muscles to generate heat by burning the sugar. Once the larvae from the first hatched eggs have grown up, pupated and emerged as worker bees it is they who take over the tasks of gathering more pollen and nectar to feed subsequent broods of eggs laid by the queen. Towards the end of summer the queen lays eggs that through either their genetics or their feeding will become males or new potential queens. These will leave the nests and males will find queens from other nests to mate with; the males then die and the queens hibernate until next spring. The last generation of workers also die off after raising the males and queens.

One thing that is very striking about Bumblebees is that, like mammals, they are furry. The reason for this is that, in common with mammals, they need the fur to help them to keep warm. Mammals operate at a very precise body temperature of around 37 deg C; Bumblebees are less precise but for activity they try and maintain a body temperature of around 30 deg C. This makes them very vulnerable to getting caught out in spring if there are sharp cold rain showers when they are out foraging. If they do not have any energy reserves at this time they often cannot fly and will be found crawling around in the grass looking rather bedraggled, and this kills some of them.

Getting a good start in the spring is the key to success and for this they need access to flowers that will provide nectar and pollen and sufficient warm days to collect what they need. They can range up to 2 km to find these resources and, once located, a patch of suitable flowers will be visited several times and by several different bees. Not all emerge from hibernation at the same time with individuals within species having a spread of dates and different species having different average dates. For each

species this spreads the risk and helps to ensure that in our variable climate at least some queens will be successful in establishing a nest and raising a brood.

Guide to Identification (There are only 6 species that you are likely to see)

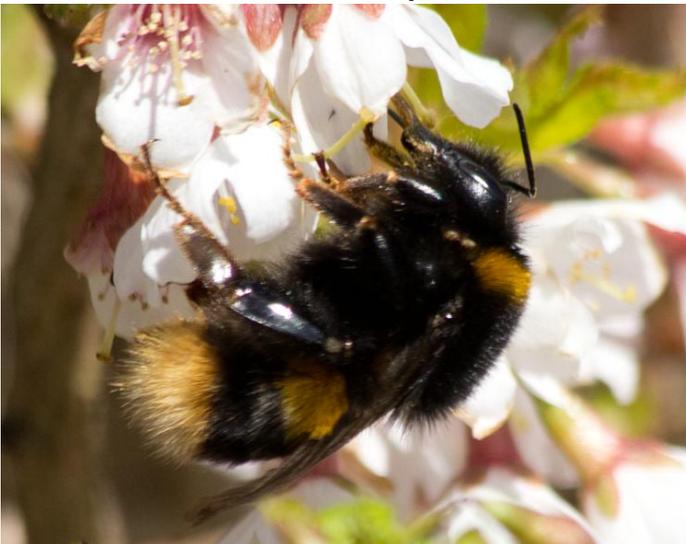
1. Black Yellow and White Bumblebees

These are the ones that everyone associates with the name “Bumblebee” and it is the large queens of one of these species (Buff-tailed) that are a conspicuous feature of warm early spring days as they fly heavily around searching for nest sites and flowers.

1.1. Buff-tailed and White-tailed (*Bombus terrestris* and *B. lucorum*)

These are the most commonly seen and, except as Queens, are almost impossible to distinguish.

Buff-tailed Queen April



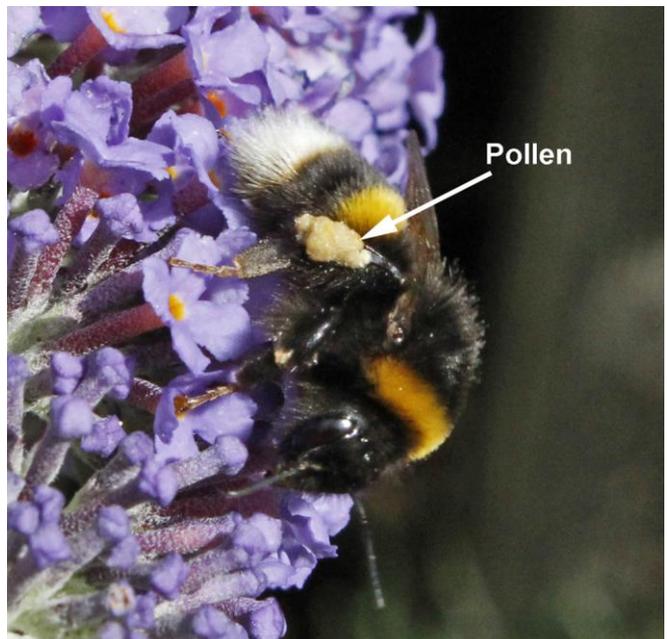
White-tailed Queen April



Buff-tailed Worker



White-tailed Worker



Note the pollen collected on the leg of the White-tailed worker, the legs of the queens and workers are specially adapted to be able to carry large clumps of pollen. The photos below of White-tailed workers show them laden with black pollen collected from oriental poppies.



1.2. Garden Bumblebees (*Bombus hortorum*)

Superficially similar to the Buff- and White-tailed, but very different in the flowers they use and in appearance (when they are still enough to see).



This new queen at the end of summer shows the main differences; the very long tongue which allows it to get nectar from honeysuckle and foxglove; and the much broader middle yellow band. This is in reality two bands as shown in the photo below of a Garden worker visiting foxglove.

The workers of this species also tend to be quite large when compared to Buff- and White-tailed workers



Any black, yellow and white Bumblebee visiting foxglove will be of this species. The only other species that can access the nectar through the flower opening is the very different Common Carder shown later.

2. Bumblebees with red tails

2.1. Red-tailed Bumblebee (*Bombus lapidarius*)



The queen and workers of this species are very distinctive being all black with a red/orange tail. This fades with age but is still distinctive enough to differentiate them from any of the others.

They are seen in significant numbers a bit later in the year than other bumblebees. They also have a distinct liking for knapweed flowers which appear in August, so look for these purple flowers and you will probably find Red-tailed Bumblebees if they are in the area.

While the workers and queens are just black and red, the males also have some yellow on them.



This male Red-tailed Bumblebee shows the yellow hair on various parts of the thorax and head. Yellow hairs on the face are a good marker for male bumblebees. (These cannot sting and are very docile, spending warm summer afternoons on nectar laden flowers, often in company with other males, the equivalent of the local bar)

2.2. Early Bumblebee

As the name implies this is a species that is abundant and foraging earlier in the year than the others; seen in May and June and virtually absent by mid-July. It is also much smaller than the others and can be more efficient at visiting small flowers, raspberry is one of the favourites, but a range of flowers are visited. The ones shown below are collecting pollen from an early flowering garden variety blackberry with very large flowers.



The red of the tail is a paler, more orange/pink colour and is just at the tip of the abdomen. Also, unlike the Red-tailed, there is a yellow band behind the head. There is another yellow band on the abdomen, shown better in the picture on the right, but this is quite variable.



In males, abundant from the end of June, the yellow banding is much greater in extent and the face also has yellow hair.

3. Orange/Brown Bumblebees

3.1. Common Carder Bumblebee (*Bombus pascuorum*)

This is the only species that fits this description and that we are likely to see in Dalgety Bay.

Queen on White Dead-nettle



Worker with blackberry pollen



4. Other Bumblebees

You may, very rarely, see “bumblebees” that do not fit the pattern of those shown above. These may be cuckoo bumblebees that, as the name implies, take over the nest of one of the common species, kill the queen and get the workers to feed and raise the offspring of the cuckoo species.

Conclusion

I hope this note may stimulate you to look more closely at the Bumblebees that you see visiting flowers in the garden or when you are out walking. They are harmless, fascinating, and very valuable for their pollination services.