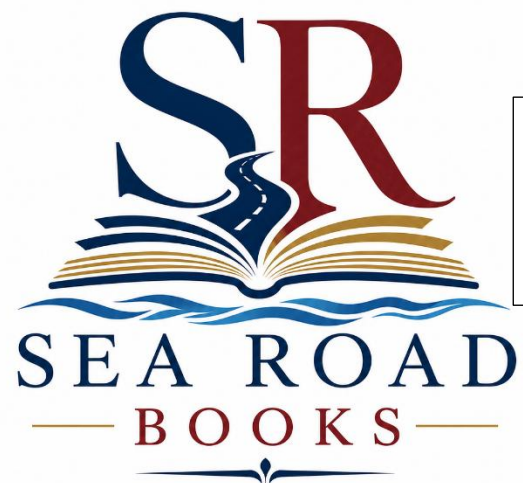




BEE INFORMATION

BUMBLEBEE ANATOMY

Key parts of a bumblebee (Bombus spp.)



Bumblebees are pollinators
Each part of their body helps them find food, build nests, and keep colonies thriving.

ANTENNAE

Used for sensing smell, touch, humidity and detecting flowers.

COMPOUND EYE

Provides vision and helps detect movement, light and colours.

MANDIBLES

Strong jaws used for chewing, shaping wax, and manipulating nest materials and food.

PROBOSCIS (TONGUE)

Long tongue used to reach nectar deep inside flowers.

THORAX

The middle section that anchors the wings and legs; houses powerful flight muscles.

WINGS (2 PAIRS)

Transparent and lightweight; the front pair provides lift, the rear pair stability during flight.

ABDOMEN

Houses vital organs and the honey stomach (for nectar storage). The queen has a stinger at the tip.

STINGER (QUEEN ONLY)

Located at the end of the abdomen. Used for defence. Workers do not have stingers.

FORELEG

Used for walking, grooming (cleaning antennae and eyes) and handling food.

MIDLEG

Used for walking and carrying pollen.

HIND LEG (POLLEN BASKET)

Has a pollen basket (corbicula) on the outer side of the tibia to carry pollen back to the nest.



UK BEES: ANATOMY & DIVERSITY

Different bees share the same basic body plan, but have evolved different features to collect pollen, build nests and survive in their habitats.

1. GENERAL BEE ANATOMY (BASED ON A BUMBLEBEE)

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2. TWO MAIN POLLEN-CARRYING METHODS

A. POLLEN BASKET (CORBICULA)

On the hind leg (seen in bumblebees and a few other bees).



Pollen is packed into the basket and carried back to the nest.

B. SCOPA (POLLEN HAIRS)

On the legs or underside of the abdomen (seen in many solitary bees).



Pollen hairs (scopa) on legs



Pollen hairs (scopa) on underside of abdomen



Pollen is held in dense hairs and brushed or pressed off at the nest.

3. MINING BEE (*Andrena* spp.)



Slender, hairy body adapted for ground nesting.



Nests in the ground; females dig burrows in bare or sparsely vegetated soil.



Pollen carried on scopa hairs (legs or abdomen).



Need sunny bare soil, early spring flowers, and undisturbed ground.

4. LEAFCUTTER BEE (*Megachile* spp.)



Cuts circular pieces of leaves to build nests.



Nests in hollow stems, drilled wood or cavities.



Carries pollen on scopa hairs on the underside of the abdomen.



Need soft leaves, abundant summer flowers, and minimal disturbance.

5. MASON BEE (*Osmia* spp.)



Nests in pre-existing holes in wood or walls.



Uses mud to seal nest cells.



Carries pollen on scopa hairs (underside of abdomen).



Need spring flowers, mud for nest sealing, and warm, sheltered sites.

6. CUCKOO BEE (*Various* spp.)



Often sleek and wasp-like in appearance.



No pollen-carrying structures.



Parasites that lay eggs in the nests of other bee species.



Depend on healthy host populations, diverse habitats and low pesticide use.



ALL BEES ARE IMPORTANT POLLINATORS.

WILDFLOWERS, NESTING SITES AND LOW PESTICIDE USE HELP BEES THRIVE.

PROTECT BEES, PROTECT BIODIVERSITY.





BEE PARASITES: HOW THEY GET INSIDE



Some bees don't build their own nests. Instead, they sneak into other bees' nests, lay their eggs, and let others do the work. These are called cleptoparasites (parasites that steal).

HOW BEE PARASITES GAIN ACCESS TO NESTS

1 FIND A HOST NEST

Female parasite bees search for active nests of their preferred host species.



2 ENTER THE NEST

They wait for the host to leave, then quickly enter the nest. Some can push past the host if challenged.



3 LAY AN EGG

The parasite lays her egg in one of the host's brood cells, often on the pollen provision or next to the host egg.



4 DEVELOP AT THE HOST'S EXPENSE

The parasite larva hatches first, eats the pollen and the host egg or larva, then grows using the host's hard work.



5 EMERGE AND REPEAT

The adult parasite emerges from the nest, leaving no help for the host's young, and the cycle begins again.



THE IMPACT ON HOST BEES



Lost offspring and wasted pollen provisions.



Parasites reduce the reproductive success of their host species.



High parasite pressure can threaten small or rare bee populations.

COMMON BEE PARASITES IN THE UK

Melecta albifrons
(Melecta cuckoo bee)



Hosts: Mining bees (*Andrena* spp.)

Strategy: Enters host nests in the ground. Lays eggs in cells provisioned by *Andrena* females. Larvae eat the host egg and pollen.

Often active in early spring, emerging around the same time as *Andrena* hosts.

Nomada flavoguttata
(Nomada cuckoo bee)



Hosts: *Andrena*, *Halictus* and other ground-nesting bees

Strategy: Slips into host nests in the soil. Fast-moving and wasp-like in appearance. Lays eggs in host cells.

Look for its distinctive yellow-spotted abdomen and quick, darting behaviour.

Sphecodes ephippius
(Blood bee)



Hosts: *Halictus* (sweat bees)

Strategy: Enters host nests in the ground. Lays eggs in cells. Larvae consume the host provisions.

Often found where sweat bees nest on bare or sparsely vegetated soil.

Epeolus variegatus
(Epeolus cuckoo bee)



Hosts: *Colletes* (plasterer bees)

Strategy: Waits at nest entrances of *Colletes* bees. Enters while the host is out and lays an egg.

Bold yellow and black patterns. Active in summer on dry, sunny sites.

Stelis punctulatisima
(Masked bee)



Hosts: *Comia* (mason bees)

Strategy: Enters nests in hollow stems or holes in wood. Lays eggs in cells provisioned by *Osmia*.

Females have a conspicuous white 'mask' of hairs on the face.

Coelioxys inermis
(Sharp-tailed bee)



Hosts: *Megachile* (leafcutter bees)

Strategy: Cuts neat holes in leaves or petals to gain access to host nests in hollow stems. Lays an egg in a host cell.

Look for round holes in leaves near nests – a tell-tale sign of this parasite.

HOST NESTS: COMMON ENTRY POINTS



GROUND NESTS

Parasites enter burrows in the soil when the host bee is out foraging.



HOLLOW STEMS

Parasites wait at the entrance of stems or wooden holes and slip inside.



LEAF NESTS

Some parasites chew their own entry holes in leaves used by leafcutter bees.



TIP: SUPPORT HOST BEES

Healthy, flower-rich habitats with undisturbed nesting sites help host bees thrive—and better withstand parasitism.

A NATURAL PART OF THE ECOSYSTEM



Bee parasites play a role in keeping bee populations in balance. A healthy environment supports both host and parasite species.



Plant diverse flowers for bees all season.



Provide nesting habitats: bare soil, hollow stems, wood.



Avoid pesticides that harm bees and their habitats.



Leave some areas wild and undisturbed.

WHAT YOU CAN DO

LEARN MORE. PROTECT MORE.



Understanding bee parasites helps us protect all pollinators and the habitats they depend on.



