



Australian
Honey Bee
INDUSTRY COUNCIL



Who's who in the bee colony

Honey bees are social insects, living together in large and very well-organised colonies of between 10,000 and 80,000 bees. There is one Queen, hundreds of male drones and thousands of female worker bees. They cannot survive on their own and work with each other by dividing tasks to ensure the survival of the colony.



1 Queen Bee



100s Drone Bees



**Up to
80,000** Worker Bees



The Queen

The Queen is the largest bee and the only fertile female in the colony. She rules the hive and is the mother of all the bees which live there.

The Queen can live for up to three to five years. She mates early in life and is capable of producing more than 1,500 eggs each day. Her body is specially formed for egg-laying-so that the eggs can be placed at the bottom of the cells in the honeycomb. Before depositing her eggs, she inspects each cell to be sure it has been properly cleaned by the workers.

When the colony needs a new Queen, extra royal jelly (a rich food worker bees make using a gland in their head, which helps larvae to grow strongly) is fed to chosen larvae in the cells. The first young Queen to emerge from the cell destroys all other developing Queens, then sets out on her mating flight after five to twelve days.

After mating, the young Queen returns to the hive and is closely surrounded by worker bees who feed and groom her. She lays the eggs, which will develop into new honey bees.



The Drones

Drones are fertile male bees and are shorter in length than the Queen, however they are larger than workers. Their primary role is to mate with prospective Queens to ensure the survival of future generations and to create new colonies.

Drones cannot make wax and are unable to collect pollen or nectar. They have no sting, and rarely feed themselves, and instead, hold out their tongues for a worker bee to place food on it.

During mating season, drones leave the hive and congregate together waiting for the young Queen to emerge. She flies from the hive to join the drones, and the swiftest drones will catch her and mate with her, and then fall to the ground and expire. They have helped to bring new life to the colony and their work is complete. The remaining drones return to the hive and are driven out to die either during the winter or when a shortage of food occurs.



The Workers

Worker bees are infertile females and make up most of the hive population. They are shorter and thinner than drones and are responsible for all the work in the colony. They clean, feed the Queen and drones, nurse the larvae, scout and forage for pollen, nectar and water, and build the wax.

Worker bees have two heavy spoon shaped jaws which work sideways to collect pollen and chew wax. Their wax glands are special cells on the underside of the last four segments of the body, which discharge wax in tiny scales. This is then molded and used to build honeycomb and cap the cells. They also have a sting, which if used on a mammal will cause the bee to die.

Worker bees' hind legs have special spines for holding pollen or propolis (a kind of gum) and their centre legs provide their main support. All six legs are equipped with brushes, combs and spurs, which they use to brush pollen from the eyes, clean antennae, wipe dust from the wings and pack pollen spines.

The tongue and jaws are used to lick and collect pollen grains from the anthers of flowers, moistening them with honey and enabling them to stick together. The pollen is then transferred to the hind legs and held firmly until the worker enters the hive, where it is packed in cells in the honeycomb.

Life in the hive

In her lifetime, the Queen can produce more than one million eggs. After the eggs are hatched, all the larvae are fed on royal jelly by the worker bees who have assumed the nursing role. After three days, the diet is changed mainly to pollen and nectar, however larvae that will grow into a potential Queen will continue to be fed on royal jelly.

On the eighth day, the larvae spins itself a silken cocoon within the cell and during the next week or two makes the great change from pupa to adult. It gnaws its way out of its cell and, as it gains strength, joins the workers in their task of foraging or engineering, nursing the young, converting nectar into honey, cleaning the hive and waiting on the Queen.



Did you know?

Bees cannot talk and use vibration as their language. A worker bee scouting for pollen uses an audible code of buzzes, on a 200 cycle per second note with a pulse rate of 35 to the second. On returning to the hive, she will conduct a figure-eight tail wagging 'waggle' dance. The length of time this dance takes and the number of pulses of sound in each buzz indicate distance to the food source.

Australian Honey Bee Industry Council

The Australian Honey Bee Industry Council (AHBIC) is the national representative body for the honey bee industry. AHBIC works to protect the long-term economic viability, security and prosperity of the sector and promote the important link between the honey bee and healthy Australians.

AHBIC advocates for its members, including seven state and three national associations, which represent individuals and businesses from across the supply chain.

Become a friend of AHBIC

Bees, and beekeepers, play an invaluable role in producing what the world eats. Honey bees are at the heart of a healthy Australia, however the industry does have challenges it must manage to grow its prosperity and resilience, protect the health of the species and ensure nutritious foods continue to be produced to nourish communities across the country. To become a friend of AHBIC, and support this critical industry, visit www.honeybee.org.au



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