

INSECT ARCHITECTURE

CARPENTER ANTS



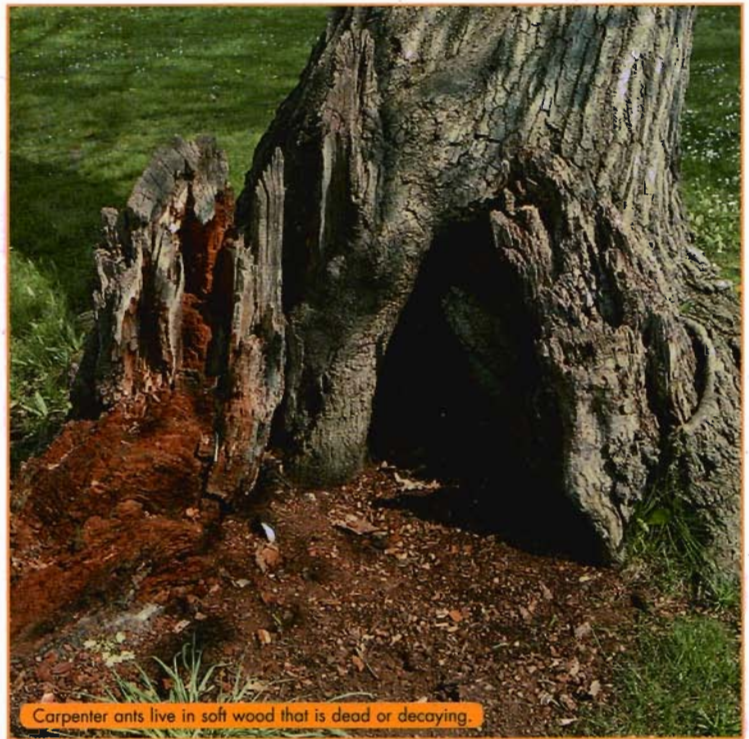
CARPENTER ANT

Carpenter ants (order Hymenoptera, family Formicidae, genus *Camponotus*) are some of nature's recyclers. They help to break down dead wood such as stumps and fallen trees and return them to the soil. Of course, if the dead wood happens to be your front porch, you may not want it recycled just yet. That just goes to show that humans classify an insect as a pest when we think it is doing its job in the wrong place.

Carpenter ants are social insects. They live and work together in large, complex groups called colonies. The work of the colony is divided among three different types of ants: the queen, the males, and the worker ants. Each looks different from the others, and each has a specialized job.

The construction of the tunnel, or gallery, is begun by the queen carpenter ant after her mating flight. With her powerful jaws (called mandibles), she carves out the first series of galleries, and lays her eggs within them. Later, the worker ants emerge and take over the job of making the galleries larger. The queen's only job then becomes to lay eggs. The sterile female workers now do all the rest. They feed the larvae, care for the pupae, and see to the needs of the queen. And what about the males? They die after *swarming and mating with the queen*.

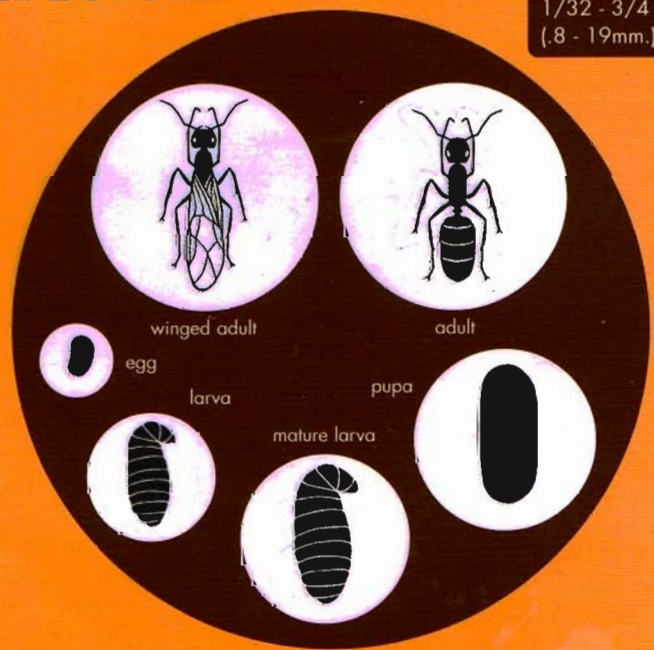
Carpenter ants do not eat the wood they excavate. They leave it behind in telltale heaps of wood dust outside their galleries. The carpenter ants' diet includes liquids that are high in sugar. For example, they feed on the sugary liquid secreted by another insect called the aphid, and on sap and nectar found in plants. Sometimes they eat other insects for protein. Indoors they may be attracted to sweets such as honey, jam, or ripe fruit.



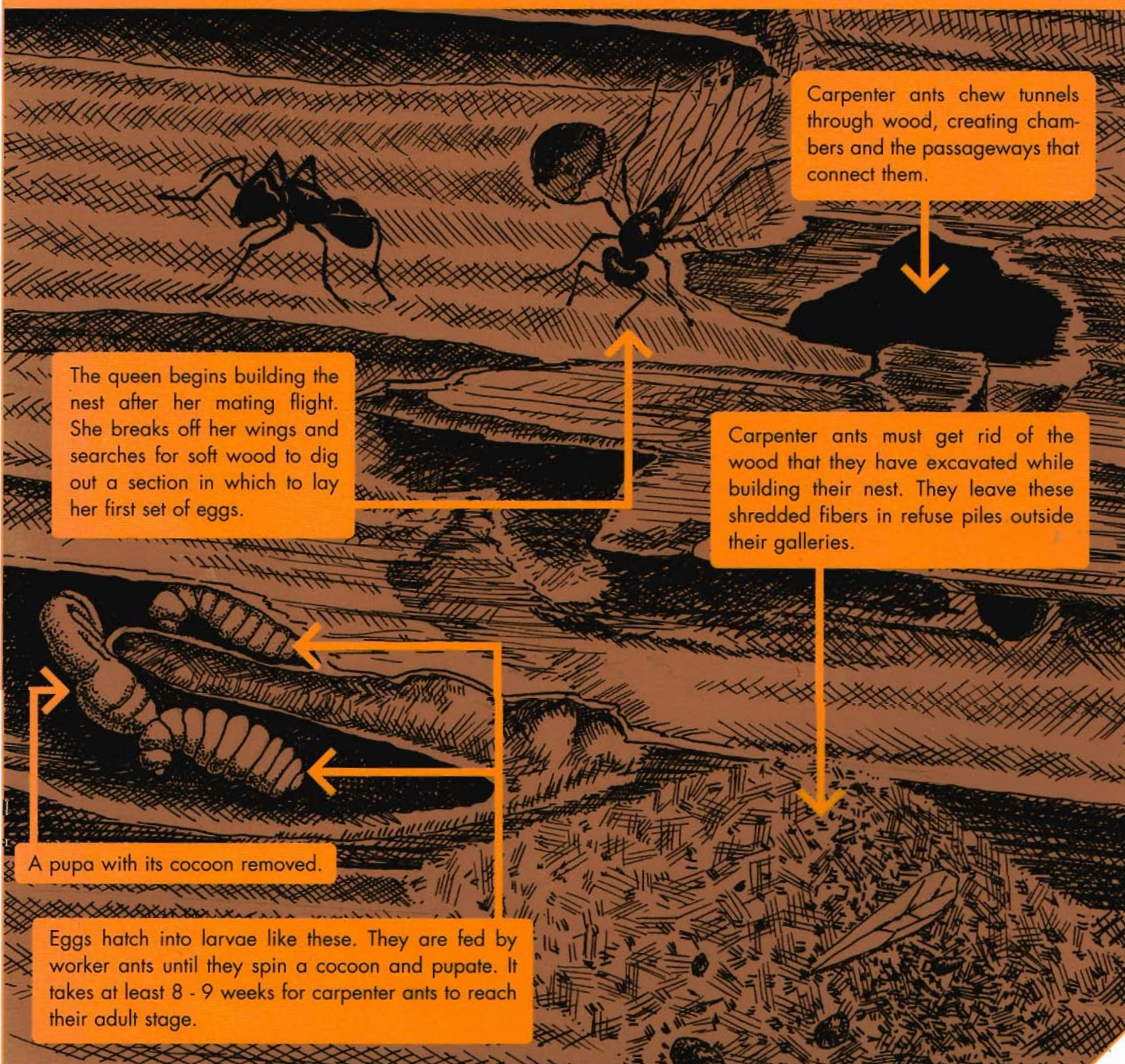
Carpenter ants live in soft wood that is dead or decaying.

LIFECYCLE

ADULT SIZE:
1/32 - 3/4 in.
(.8 - 19mm.)



CARPENTER ANT GALLERY



Carpenter ants chew tunnels through wood, creating chambers and the passageways that connect them.

The queen begins building the nest after her mating flight. She breaks off her wings and searches for soft wood to dig out a section in which to lay her first set of eggs.

Carpenter ants must get rid of the wood that they have excavated while building their nest. They leave these shredded fibers in refuse piles outside their galleries.

A pupa with its cocoon removed.

Eggs hatch into larvae like these. They are fed by worker ants until they spin a cocoon and pupate. It takes at least 8 - 9 weeks for carpenter ants to reach their adult stage.



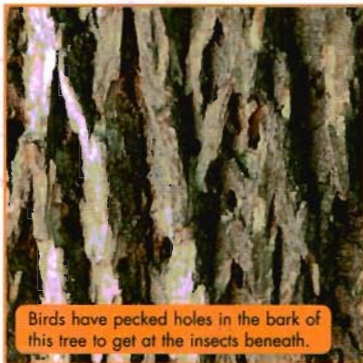
Look for carpenter ants anywhere that there is wood for them to build their nests.



Carpenter ants are considered pests by humans when they construct their galleries in wooden buildings like this garage.



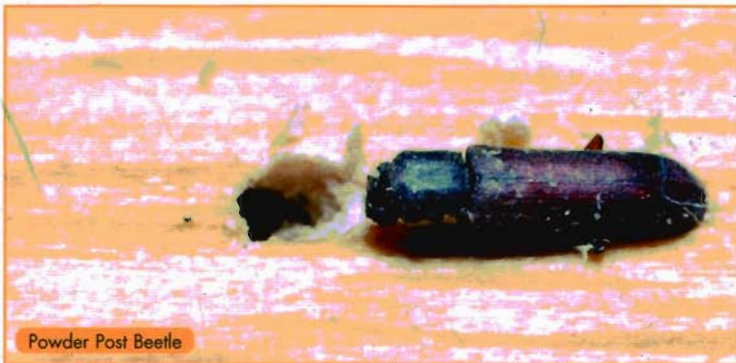
Asian Long-horn Beetle



Birds have pecked holes in the bark of this tree to get at the insects beneath.



Fallen trees in forests provide good homes for carpenter ant colonies.



Powder Post Beetle

WHERE TO FIND THEM

Carpenter ants live in most parts of North America. They prefer soft wood that they can easily dig out, so look for their galleries in weathered, dead, rotting, moist and decayed wood.

Try investigating tree stumps, fallen logs, and abandoned wooden buildings. If you do find evidence of carpenter ant activity, take time to observe these interesting social insects. What are the workers doing? Do you see any eggs, larvae, or pupae? How big do you think their colony is?

PHOTOGRAPHY / ILLUSTRATION CREDITS

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OTHER WOOD-BORERS

There are lots of insects that live in or eat wood. Like carpenter ants, termites also chew chambers in dead or decaying wood. Unlike carpenter ants, termites actually eat the wood they excavate. They can cause significant damage to buildings.

There are numerous kinds of beetles that are wood-borers, too. Powderpost beetles get their name from the powdery dust they leave behind.

Carpenter bees make their nests in the outer surfaces of wood. Carpenter bees look very similar to bumblebees. How can you tell the difference? The top of the abdomen of a carpenter bee is bare and shiny black, while that of a bumblebee is hairy.