West Virginia University
Extension Service

6005

Carpenter Bees

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Spring is the season when homeowners begin to notice large round holes in their wooden porch trim. The same people just might happen to mention being dive-bombed by a large bumble bee. These two seemingly unrelated events can mean only one thing: carpenter bees.

Identification

The common carpenter bee in West Virginia, *Xylocopa virginica*, does look like a large bumble bee. Like bumble bees, carpenter bees are black and yellow and about 1 inch in length. If you get close enough, you can tell the two apart by looking at their abdomens. The abdomen of a bumble bee is fuzzy, while the carpenter bee's is shiny black and hairless.

Male carpenter bees often exhibit defensive behavior by flying around the heads of people who approach their nests. Male bees have no stinger and are harmless. Although female carpenter bees have stingers, they are usually only seen flying in and out of nest holes, paying no attention at all to people, and having no desire whatsoever to sting anyone.

Biology and Habits

Carpenter bees are solitary bees, unlike bumble bees which live in colonies underground. Carpenter bees often return to same nest site each year. They typically nest in softwoods like pine. Carpenter bee entrance holes are almost perfectly round and 1/2-inch in diameter. Carpenter bees do not eat wood but only nest in it, feeding instead on pollen and nectar. They usually build their nests only in horizontal wood members, such as roof trim, siding, steps, decks, and porch railings.

Nesting by a single pair of carpenter bees will normally cause only cosmetic damage to wood. Repeated nest building by many bees in the same area can cause structural damage. Damage also may occur if moisture enters the wood through the holes or if woodpeckers drill the wood trying to get the insects.

Adult carpenter bees spend the winter in their tunnels. They emerge and mate in the spring. After mating, the female bee starts a new brood tunnel in which to lay her eggs. She may use the same tunnel that she emerged from, with or without enlarging it, or bore a new one. If she starts a new tunnel, she begins by using her jaws to bore against the grain of the wood. She tunnels to a depth of about an inch before turning at a right angle and continuing with the wood grain. She hollows out the tunnel with her mandibles, at a rate of about 1 inch per week. Average gallery length is 4 to 6 inches, but up to 10 feet is possible in galleries used by several bees.

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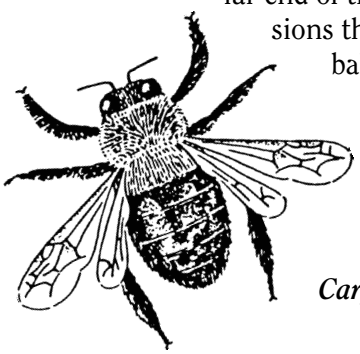
The female carpenter bee lays an egg at the far end of the tunnel and provisions the cell with a pollen ball. She seals the cell with a wall of chewed wood and proceeds



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to build more cells for more eggs, with up to seven per tunnel. It takes from one to three months for an egg to develop into an adult. Larvae develop in reverse order from which the eggs were laid, meaning that the last egg laid becomes the first bee to reach adulthood. The bee closest to the tunnel entrance is thus able to exit the tunnel first.

A coat of paint or varnish may discourage the bees from future nesting in the same area.

Prevention Methods

Carpenter bees prefer to tunnel in unfinished wood. Therefore, a heavy coat of paint or varnish may discourage them from nesting. Since the bees tend to nest only in horizontal pieces of wood, it stands to reason that one may need to varnish only the horizontal wood members in susceptible areas.

Control Strategies

Control of carpenter bees involves spraying or dusting a less toxic insecticide, like boric acid dust or pyrethrin aerosol, into the tunnels. Wait 24 hours after application before sealing the holes with putty or doweling. If the holes are sealed before all the bees are killed, the bees will bore new holes to escape.

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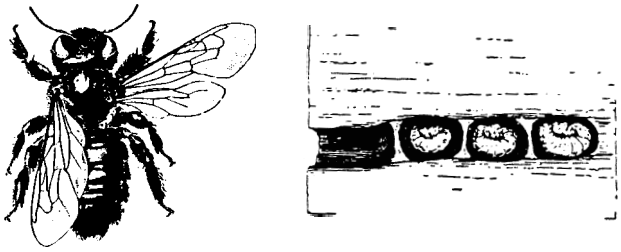

A carpenter bee and a series of brood cells.

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