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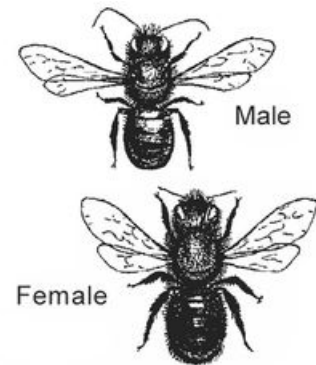


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# Orchard Mason Bees



The orchard mason bee (*Osmia lignaria*) is a gentle beneficial insect that has potential as a pollinator of apples, cherries, and other tree fruits. It is found throughout most of North America, particularly in wooded areas but often around homes in towns and cities.

Homeowners sometimes become concerned when they see the bee entering cavities under shake siding or investigating nail holes or other cavities in wood during April, May and June. These are not destructive insects, since they do not excavate holes in the wood. Therefore, no controls are recommended, although holes may be filled with caulking to prevent the bee from nesting.

The orchard mason bee is slightly smaller than a honeybee and is shiny dark blue in color. Males are smaller than females and have longer antennae and an additional tuft of light colored hairs on the face. Females have hairs on the underside of the abdomen adapted for carrying pollen.

## NESTING HABITS

The female uses existing holes in wood for a nest. She chooses holes slightly larger than her body, usually  $\frac{1}{4}$  to  $\frac{3}{8}$  inches in diameter. The bee first places a mud plug at the bottom of the hole, then brings in 15 to 20 loads of nectar and pollen which she collects from spring flowers, including apples and other fruits. If you watch the bee closely as she enters the nest, you can see the pollen on the underside of her abdomen.

When the female has provided a sufficient supply of food for the larva, she lays an egg and then seals the cell with a thin mud plug. She then provisions another cell and continues in this fashion until the hole is nearly full. Finally the bee plasters a thick mud plug at the entrance. Some wasps and leaf-cutter bees also build nests in such holes but their nests can be distinguished from the orchard mason bee nests by characteristics of the plug. The plug of the mason bee is always rough while the wasp prepares a smooth plug. Leaf-cutters seal the holes with chewed-up leaves.

The female orchard mason bee lives for about a month and can produce one or two eggs each day. The larva hatches from the egg after a few days and begins to eat its provisions. When the pollen-nectar mass is completely eaten in about 10 days, the larva spins a cocoon and pupates within the cell.

Near the end of the summer the bee transforms to the adult stage but remains in the cocoon throughout the winter. In the spring, when the weather has warmed up sufficiently, the males begin to emerge by chewing their way out of the cocoons and through the mud plugs. The females, which are almost always in the interior cells of the tunnels, emerge a few days later. One or two weeks may be required for all the bees to emerge during cool weather.

Females mate soon after emerging, and then begin nesting in 3 to 4 days. The bees forage on a number of different flowers. In wooded areas, they seem to prefer ballhead waterleaf. In urban areas, dandelion and Oregon grape are commonly visited, in addition to cherries and apples.

### **THIS BEE IS GENTLE**

The orchard mason bee is non-aggressive and will sting only if handled roughly or if it should be trapped under clothing. It is less objectionable than the honey bee as a pollinator in urban areas and should be encouraged. Efforts are being made experimentally to develop large populations of these bees to use as a supplement to honey bees for fruit pollination, much as the alfalfa leaf-cutting bee was developed for alfalfa seed pollination.

### **COLLECTING ORCHARD MASON BEES**

If you wish to develop populations for pollinating a home or commercial orchard, you can set out trap nests to collect the bees. Trap nests can be made by drilling holes  $\frac{1}{4}$  to  $\frac{3}{8}$  inches in diameter and 3 to 6 inches deep in pine or fir 4x4's. A brad-point bit leaves a nice, smooth hole. Alfalfa leaf-cutting bee boards with hole diameters of a least  $\frac{1}{4}$  inch can also be used. Attach the boards to a house or other structure where you have seen the bees. Some protection from rain is desirable. You may also place boards on dead trees or posts in wooded areas near streams where there is a good supply of mud for nest construction and wild flowers on which to forage.

Position boards where they will receive morning sunlight. Put the nests up in March before the bees begin nesting and remove them in early to mid-summer when nesting is completed. If the boards are stored outdoors over winter (under cover to protect them from rain and snow) the bees will emerge in April. They should forage for pollen during the period of apple bloom and afterwards if sufficient other flowers are available to them.

Blue Orchard Mason Bee  
*Osmia lignaria*



Mason Bee  
*Osmia rufa*

