

## Orchard Mason Bees

Have your fruit trees stopped producing? Does the thought of a swarm of large bees give you the willies? Consider inviting orchard mason bees to your yard. They emerge early in the spring to pollinate peaches, plums, and cherries, and then stick around for apple and pear season. They are small, easy to manage, do not swarm, and best of all, do not sting.

*Osmia lignaria* (Cresson) is the species known as the orchard mason bee or the blue orchard bee. Many orchardists and home gardeners have found it necessary to seek out the orchard mason bee because a varroa mite has decimated the native honey bee population.

The life cycle of the orchard mason bee begins when temperatures reach about 55°F, at which time the males chew their way out of the nest. The male eggs are always put at the end of the nest holes. The males stay close to the nest for several days until the females emerge. They immediately mate -- no courting, no flowers, no chocolates. The female then starts gathering pollen. This is the step that should interest you since that is how your fruit trees are pollinated. The female lays an egg on a lump of pollen in the nest. She then uses mud to build a partition and then lays another egg on a lump of pollen. She will continue this until she lays all of her eggs or until she dies.

These eggs hatch in summer and the larva feed on the lump of pollen. The larva then spins a cocoon and pupates. By fall, the larva has developed into an adult bee. It remains in the cocoon until next spring and the cycle starts again.

In order to encourage or keep orchard mason bees in your yard, you need to provide three basic necessities - food, mud and nesting sites. The best food is pollen from fruit trees. If the bees cannot find sufficient food in your yard, they will go to your neighbors. Loyalty is not in their vocabulary. Never spray flowering trees or nearby flowers with any pesticide or you will kill the bees before they have done their job. If you must spray the non-flowering trees and there is grass around the trees, mow down any flowering weeds before spraying.

Providing mud is generally not a problem in the Pacific Northwest. Dig a shallow hole 6 to 12 inches wide very close to the nest. Rough up the sides of the hole and make sure there is loose soil available for the bees. Keep a milk jug filled with water nearby and sprinkle the hole with water every time you walk by if it hasn't rained.



Drilling holes in a block of wood makes an effective nest. This nest is placed in a protected area so no rain shelter is needed



A section of a plastic fence post makes a convenient holder for a nest. The slanted opening keeps the rain out.

Providing the nest will require the most work on your part. Orchard mason bees need small dry nesting holes with only one entrance. In natural settings, they will use holes left by woodpeckers or beetles. If you do not provide enough nests, they will find the cracks in your siding, the drain holes in your window screens, or even your keyholes. One of the most common and attractive nests can be easily built by drilling 5/16-inch diameter holes into a block of wood. Cedar is a good choice of wood for the Pacific Northwest. Choose a block that will allow the holes to have a depth of 6 to 8 inches. Orchard mason bees will make nests in shallow holes but since male eggs are deposited at the end of each hole, the deeper the hole, the more females you will get. Remember, the females are the ones pollinating your trees. Remove all debris and splinters from the drill holes. Remember not to drill the holes all the way through the block as

the bees want only one entrance. Build some kind of shelter over the block to protect the nests from rain. A slanted cedar roof can be built on top of the block or the entire block can be slipped into a plastic container. If using a container, drill some drainage holes in the bottom. A nesting block can also be purchased. Other nesting options exist so do some research and find the solution best for you.

Now you need to place your nest in the yard close to the food source. The bees will travel up to 200 feet or further to find their food but the closer the nest, the more time they spend in your trees and the less time flying around. You also want to be sure to place the nest closer to your trees than your neighbor's trees. If you have a lot of fruit trees, you may also want to consider several nesting blocks sprinkled around your yard. It is best to face the nest east or south. Orchard mason bees will not come out when temperatures dip below 55°F. If their nest is facing into the sun, it will warm up faster and they will spend more time in your trees. Basically, any direction to face the nest is better than north. Mounting the nest on the side of a building will also help to keep it warm. It should be about 5 feet off the ground. This height will allow you to observe the bees and learn their habits.

Now you have the nest, the fruit trees and the mud. How do you get the bees? You can wait for them to find you and hope there are already some in the close vicinity. Or you can buy straws that have cocooned bees in them. Many nurseries and bird shops carry them. Your local Home Orchard Society is also a good bet. Most of these sources will also sell nesting blocks. If you protect the straws from rain, the bees will also reuse them as a nesting site and they will last at least a few years before disintegrating.



A simple and inexpensive PVC shelter will prolong the life of your straws. Notice the slanted angle to keep the rain out and the holes drilled in the bottom to provide drainage. (This shelter was empty at the time the picture was taken.)

You will need to do some occasional maintenance on your nesting block. You can bring it in to a cool garage over the winter but be sure to get it back outside by at least March. If you choose to leave the nest outside over the

winter, watch to make sure that woodpeckers or other birds have not found your nest and helped themselves to mason bee appetizers. You can protect the nest from this threat by wrapping it with 1" diameter chicken wire, keeping the wire 2" from the front of the nest. Orchard mason bees are also susceptible to parasitic wasp and mite infestations. If you start to notice a decline in the number of bees, it may be a good idea to build a new block and either discard or clean and disinfect the old one once your new block is occupied.

Orchard mason bees really are a delight to have around and watch. Even the most bee-phobic gardener can learn to love them!

## Resources

Cphoon, Sharon. Befriend Bees. *Sunset Magazine*, May 2005, pages 94-95.

Dogterom, Margriet. *Pollination with Mason Bees*. Canada: BeeDiverse Books, 2002.

Home Orchard Society. [Mason Bee Supplies](#). Retrieved January 8, 2006.

Roach, John, (2004, October 5) [Bee Decline May Spell End of Some Fruits, Vegetables](#). Retrieved January 9, 2006.



Birds helped themselves to these bee cocoons.