

### Meet the Pollinators: Mason bees

By Jill Eisenstein, MGV

As the first blooms open in earliest spring, small bees push out of their nest cavities after a long hibernation. Temperatures may hover in the mid-50s and snow may desperately cling to shady ground. Before now, these early pollinators have never seen daylight in their lives. They are in the genus *Osmia*, family of *Megachilidae*. 150 species can be found in North America with just 27 species east of the Mississippi River.

Remarkable, stout little bees, metallic-colored, they are sometimes mistaken for flies. Males emerge first; their only mission is to mate with the females that emerge in a few days to a week.

Once mated, the female bee gets right to work. She's in a hurry. Her life span is only about six to ten weeks and for those weeks, she is both queen and worker. This is the story of a solitary bee, so different from the

specialization found in colonizing bees. She forages for her own food, defends herself, makes her own nest, lays eggs, provides for the young, and then dies. *Osmia* means "odor" which refers to a unique lemony scent that each female uses to help locate her own nest.

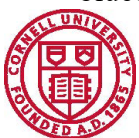
The female *Osmia* finds a cavity, often a pre-existing hole such as hollow stem or tube about the size of a pencil, but sometimes a crack, crevice, tunnel or other small opening, and lays about 15-20 eggs, provisioning each of them individually. The female lays one egg and packs each chamber with "bee bread," a mixture of pollen and nectar. She will make up to 2,000 flower visits to collect enough for a single egg, layering the pollen and nectar up to 25 times, but she rarely travels farther than 300 yards from the nest while she works.

*Osmia* have earned the common name of "mason bee" because the female uses mud (though some use chewed-up leaf pulp, too) to make partitions between the brood chambers. Starting at the back of the tube, she lays female eggs, and lays the male eggs in the front.

There are various types of mason bee, our most common being blue orchard bee (*Osmia lignaria*), blueberry bee (*Osmia ribifloris*), and hornfaced bee (*Osmia cornifrons*). Some *Osmia* species



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specialize in flowers of the rose family -- apples, plums, cherries, raspberries, strawberries, for example. But most are generalists and will visit a wide variety of flowers including dandelions, clover, and tube-shaped and asymmetrical flowers such as beardtongue, mints and flowers in the pea family.

The blue orchard bee (*Osmia lignaria*) is a superhero. In an apple orchard 250 to 300 of these pollinators can do the equivalent work of about 90,000 (two entire hives of) honeybees. The comparison shakes down to a 95% pollination rate for blue orchard bees, and a 5% pollination rate for honeybees. Part of their success is because they visit so many flowers per minute. They don't have time to be fastidious and careful like some other bees that neatly pack pollen in baskets on their legs. Instead, they kind of belly-flop quickly into the flowers, collecting pollen on specialized rows of hairs (*scopa*) on the underside of their abdomens, then hurry to the next one. Of course, some of the pollen brushes off on the next flower they rush into, making them very efficient pollinators indeed.

Over the course of the summer, the eggs hatch, the larvae eat the provisions left for them in their brood chambers, then spin cocoons. By August, the pupae for the next year are fully grown, but they hibernate until the following spring when they emerge as adult bees.

*Osmia* bees don't live in colonies, but they like to nest near others of the same species. Because they are early and efficient pollinators, too busy to be aggressive, and like to have neighbors of their own genus, many people have started putting up "mason bee houses." These can be made at home or purchased.

If you put up bee houses for *Osmia*, here are a few important reminders: mason bees usually nest in shaded areas, so keep them away from harsh sunlight. Be sure to clean the chambers after the adults emerge in spring to help deter disease. For more great information, [Become a Bee Rancher](#).



Photo: poppet with a camera, Flickr under CC

#### References:

[Native Beeology](#) accessed 2-27-22

[BeeHive Hero](#) accessed 2-16-22

[Fascinating Facts about Mason Bees](#) accessed 2-16-22

[Crown Bee: Mason Bee facts and ID](#) accessed 2-26-22