Blue orchard Mason Bee

Osmia lignaria propinqua

Family *Megachilidae*

DISTINGUISHING FEATURES

- Slightly smaller than a honey bee
- Shiny dark blue color
- Female is larger than the males
- Females have hairs on their underside to carry pollen
- Females' antennae are short and thick, males' are longer
- Males have light colored facial hairs, which appear as a "white face"

CHARACTERISTICS

Non-aggressive Females have a stinger but will not sting unless squeezed, males do not have a stinger at all

Solitary Mason bees don't live in hives but in nesting tubes in close proximity to one another

Non-destructive They do not excavate holes but search out man-made nesting boxes, tubes, or any 5/16" diameter hole that is naturally occuring

Heavy pollinators Mason bees collect pollen from the nearest source regardless of plant species or family
Pollen is carried in scopa (rows of stiff hairs on the underside of their body)
Landing directly on the flower stigmas, the reproductive structure of the blossom, makes mason bees more efficient pollinators then honey bees, who land on the petals of flowers
They have a high bloom visitation rate - Each female is capable of visiting over 300,000 flowers during her lifetime

Healthy Resistant to parasites and diseases provided they have clean housing

Cold tolerant Mason bees are active above 54° F, returning to their nest sites at night and during cold snaps
Emergence coincides with the development of early blooming plants and most fruit trees, including apples, pears, and stone fruits
Mason bees remain active during cloudy or rainy weather

LIFE CYCLE

Spring

Bees emerge when temperatures reach approximately 54°F for five consecutive days. This normally corresponds with the swelling of flower buds on fruit trees. In the Pacific Northwest this is usually early March.

Male bees emerge first and wait near the hole entrances for the females to appear. This may take up to two weeks. They mate almost immediately upon females' emergence. The males spend this waiting and mating time foraging for food and then, their mission accomplished, they die.

Late spring

Female bees stay busy collecting pollen and nectar. In each nest hole, she regurgitates the nectar and places the pollen on it, repeating this procedure 15 to 20 times until she has collected enough to sustain a new larva. She locates the cell she is filling by marking it with her particular pheromone. The female then lays an egg on the top of the mixture, backs out of the hole a bit, applies a thin mud wall, and begins the next cell. Eggs laid in the rear 30% of a nest hole become female bees. The forward compartments contain the males. When a six inch nest straw is filled, holding about eight cells, the adult bee applies a thick layer of mud almost 3/16" thick to the entrance cell to protect against invaders. The adult female *Osmia lignaria* then goes on to the next straw and repeats the same process. She will live from four to eight weeks, laying between one and two eggs each day. The larvae hatch from their eggs in a few days.

Summer

During the summer the larvae consume the stored nectar and pollen, spin cocoons, pupate, and remain in their cocoons as adult Mason bees until it is time to emerge in the early spring. This is the season to avoid moving nesting boxes, as disturbed eggs or larvae might not survive being jostled.

Fall/Winter

Mason bees remain dormant throughout the winter. In late October/early November, mobile boxes can be safely moved to a sheltered area with a temperature ranging between 30° and 45°F. In the early spring boxes should be moved outside and hung on a south facing wall with an overhang to protect them against rain and hot sun.

REQUIREMENTS FOR ATTRACTING MASON BEES

- 5/16" holes drilled in any wood (except cedar or pressure treated), manufactured nesting straws or previously used holes
- Mud source for cell walls
- Early blooming fruit trees (peach, cherry, European plum, pear, quince, and apple)
- Flowering plants, especially those that are blue, purple, or yellow and that bloom during the entire lifespan of the Mason bees, particularly Pieris japonica
- Flowers should be single rather than double

REASONS FOR NON-EMERGENCE

- Housing absorbed moisture
- Moved box too early - eggs or larvae became dislodged from the food supply
- Winter storage temperature below 10°F
- Severe infestation by mites - especially in old nesting holes
- Overheating in summer

Compiled by Jane Henry for the Home Orchard Society; July, 2005

---

www.homeorchardsociety.org
masonbees@homeorchardsociety.org
Open year round from 9-3 pm on Tuesdays and Saturdays.
503.338.8479 (Tue-Sat 9 AM – 5 PM Pacific Time)
P.O. Box 607 Oregon City, OR 97045
Mason bees and nesting supplies available for purchase.

Home Orchard Society
ARBORETUM