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The ABCs of Bees

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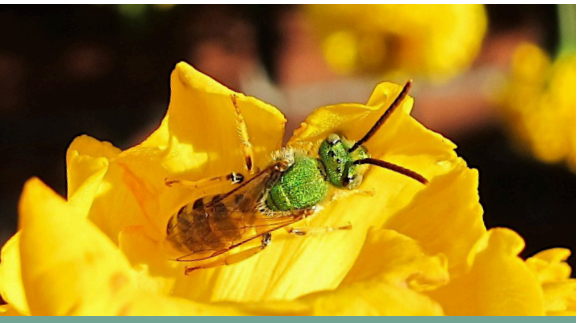

Sweat bee, Agapostemon sp. (Halictidae).

Sweat bees, a type of solitary bee, are said to get their name from a tendency to drink salty perspiration. Some species have metallic green or bluish coloring, as pictured here. These solitary bees are common in residential flower gardens.

When a new honey bee queen matures and leaves an existing nest, a large portion of the hive follows her. When the new queen stops to rest, worker bees will gather around her, forming a swarm cluster that is sometimes seen hanging from a tree or ledge. Swarm clusters are temporary, lasting a few hours to a few days. Beekeepers are often able to remove them.

(Above left) Honey bee swarm cluster, Apis mellifera.
(Above right) Bumble bee, Bombus sp. (Apidae).

Bumble bees are native, social bees. Their hives are often found in abandoned bird boxes, or among thick vegetation at ground level. These large, recognizable bees are reluctant to sting, but may do so in defense.

Bees are important pollinators of food crops that comprise about 30% of our diet. These agricultural products bring billions of dollars into our national economy each year. Bees are also pollinators in flowerbeds and backyard gardens. Unfortunately, bees in school environments can be a pest problem. With education and awareness, bee problems in schools can be reduced.

BEE BASICS

Bees have three body segments: a head with strong mouthparts (mandibles), a thorax with six pairs of legs and two sets of wings, and an abdomen. Bees are vegetarians—they frequent flowering plants (including shrubs and trees) to gather nectar, and use their branched body hairs to gather pollen. Bees are often mistaken for wasps, and vice versa, but there are many physical and behavioral differences between bees and wasps (also see PNW Pest Press on wasps).

In North America, the European honey bee has become so recognized that native bees are often overlooked. However, there are actually over 4,000 native (or "wild") bee species in the United States. These native bees are vital to the production of cranberries, blueberries, grapes, and cherries, among many other crops.

Many of our wild bee species are easy to miss because they are non-aggressive and solitary. Solitary bees are often reluctant to sting, or they may be incapable of stinging. They are often mistaken for flies or small wasps. Common solitary bees include sweat bees, mason bees, digger bees, and leafcutter bees. Solitary bees nest in a hole, such as a cavity in wood, stone, or sandy soil. Each female is a queen who lays a single egg in a chamber of her nest hole, provides a ball of pollen and nectar (called bee bread) for the young to eat after hatching, and seals the chamber. The queen continues in this manner until her entire nest hole is filled with segregated chambers of future bees. She is not particularly prone to defending her nest, and she does not linger to learn of its fate.

Honey bees and a small proportion of native bees, such as bumble bees, are social. Social bees live cooperatively in colonies (hives), which include a queen and a worker caste to defend the nest and provision for the

FACTS ABOUT BEES

- Specific roles for worker bees in a colony include nurses, guards, janitors, nannies, and construction workers, among others.
- Male bees are called drones. Drones are produced for only a brief period for the purpose of mating. At any given time, the majority of individual bees are female.
- Honey bee hives may suffer from colony collapse disorder (CCD). The cause of CCD is still being researched, but appears to be due to a combination of issues: mites, pesticides, disease, and stress from hive relocation.
- The extent to which native bees pollinate Washington and Oregon crops, and even how many types of bee species are involved, is still being explored.
- You can make a nest for native bees out of hollow plant materials (e.g., small bamboo or reeds) tied in a bundle and hung in a sheltered area. For more ideas on native bee houses, see the Xerces Society's website.
- There are no Africanized honey bees in Oregon or Washington.

queen and young. Social bees are more likely to sting in defense of their hive or themselves. While social bees comprise a very small minority of the bee species that we encounter, they are the most recognizable due to their tendency to sting.

WHAT CAN YOU DO?

Physical reactions to bee stings vary based on circumstances, including the individual's response to the venom. Help reduce bee stings while maintaining pollinators on your campus with the following:

1. Avoid wearing bright colors (especially bright blue and yellow) and using perfumed lotions or soaps when bees are present.
2. Do not swat a bee; this may be perceived as a threat, and could incite the bee to sting. Instead, remain calm and back away slowly.
3. To remove a bee that has landed on your skin, gently brush it off, or slide a piece of paper underneath it.
4. Keep bees outside by keeping windows and doors shut—especially on warm, sunny days when bees are more active.
5. Be vigilant when in grassy areas. Avoid blooming clover, dandelion, or other turf weeds in bloom to which bees may be attracted.
6. Report heavy bee activity to your school district's pest manager. In the case of a honeybee hive, suggest they contact a local beekeeper or association to relocate and preserve the colony.
7. Plant a variety of blooming shrubs and garden flowers to attract native pollinators, but keep them away from areas of high foot traffic.

FOR MORE INFORMATION

- *The Xerces Society for Invertebrate Conservation. http://www.xerces.org/*
- *Moisset, Beatriz and Stephen Buchmann. 2011. Bee Basics: An Introduction to Our Native Bees. USDA Forest Service. Found at https://pollinator.org/books.htm.*
- *Centers for Disease Control and Prevention. Workplace Safety and Health Topics: http://www.cdc.gov/niosh/topics/insects/.*
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit http://npic.orst.edu.*

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