



Distributed by:
Cape Cod Cooperative Extension
P.O. Box 367
Barnstable, MA 02630
508-375-6690
www.capecodextension.org

ohioline.ag.ohio-state.edu -- your Link to Information, News, and Education



FactSheet

Extension

Ohio State University Extension Fact Sheet

Entomology

1991 Kenny Road, Columbus, OH 43210-1000

Ground-Nesting Bees and Wasps

HYG-2143-95

William F. Lyon

In most situations it is best not to eliminate ground-nesting bees and wasps since they are valuable in agricultural production by either pollinating many different plants or serving as useful predators in controlling harmful pests. However, when nests are located in areas such as yards, gardens, flower beds or playgrounds, control may be justified to prevent the chance of being stung.

Common Name	Scientific Name
Bumble Bees	<i>Apidae</i>
Sweat Bees	<i>Halictidae</i>
Mining Bees	<i>Andrenidae</i>
Digger Bees	<i>Anthophoridae</i>
Leafcutting Bees	<i>Megachilidae</i>
Digger or Threadwaisted Wasps	<i>Sphecidae</i>

Bumble Bees

Bumble bees are stout-bodied, robust shaped insects with black or gray hairs variously tinged with yellow, orange or red. Adults have three submarginal (closed) cells in the front wings and the hind wings lack a jugal lobe. Also, there are spurs at tips of the hind tibiae and the abdomen is usually hairy. There are three castes, ranging in size from



1/3 to 1-3/8 inches long, consisting of large overwintering queens, smaller males and much smaller workers (undeveloped females). Both the queens and workers can inflict a painful sting. Only new queens, produced and mated in the fall, overwinter in loose bark, hollow trees or other dry protected places. They come out of hibernation in May, usually nest in old nests of field mice, holes in the ground, old stumps, abandoned mattresses, old bales of straw or hay in barns, cornhusks in corncribs, along foundations, etc. Colonies are annual, lasting only one summer. There are usually less than 200 individuals in a colony and nests are generally found in open grasslands. The queen establishes the nest site by lining an existing cavity with dry grass or moss. She collects a mass of pollen and moistens this with nectar to produce a stored food called "bee bread." The first brood of spring numbers 5 to 20, all workers, who enlarge the nest, gather food and feed the larvae. The queen continues to lay eggs throughout the summer and by late summer, reproductive males and females are produced. These mate during flight and fertilized females move to overwintering sites. Remaining males and workers in the colony die with frost or the first hard freeze. Nests can be detected by the presence of many males flying about the entrance. Stinging workers, sometimes called "dive bombers," can respond quickly when their territory is invaded. Easily irritated, workers will aggressively pursue an intruder attempting to escape. Bumble bees are extremely important pollinators of certain kinds of clover such as red clover due to their long tongues. Favored flowers are sunflowers, thistles, nettles, roses, partridge peas and certain clovers.

Sweat and Mining Bees

These bees (females) dig 1/4 to 1/2 inch diameter, cylindrical tunnels in loose soil in shady areas where the vegetation is sparse. Halictid bees, called "sweat bees," measure 3/16 to 5/6-inch long and are colored black with yellow, red or metallic markings. They frequently alight on sweaty hands and inflict a sting which is somewhat painful lasting for a half hour or more. These bees are common at flowers, gathering pollen and nectar to feed their young. Nests occur in cavities in weeds or shrubs, or in the ground. One species of sweat bee is small, shining black, 1/8-inch long with short white hair underneath, brown tipped legs and nests in ironweed. Andrenid bees, as Halictid bees, are solitary, short-tongued and nest in burrows in the ground, sometimes in large numbers, nesting close together where vegetation is sparse. They are gregarious and nest in groups. There is one female per nest.



Digger Bees

Also known as flower-loving bees, these robust bees usually go unnoticed as they feed by collecting nectar and pollen from many flowers in gardens and meadows. When solitary nests are built in certain areas, they become a nuisance to homeowners.



Covered densely with yellow and black hairs, these digger bees resemble carpenter bees. Wings are clear but smokey at the tip. The forewings have a small spot on the leading edge with the hind wings having a jugal lobe at the wing base.

Sand and clay banks lacking ground cover are attractive nest sites. The nest entrance is hidden by a down-slanted chimney composed of mud. Inner-branching mud-lined tunnels extend from this chimney partitioned into brood cells each containing one egg.

Adult bees place honey and pollen in each cell to provide food for the developing larva after egg hatch. Larvae overwinter in the brood cell, pupate and adults emerge in late spring.

Planting ground cover on embankments may discourage nest building.

Leafcutting Bees

Adults resemble honey bees, but are usually darker in color (black, dark blue, purple or green covered with white, yellow, reddish or brown hair) and have shiny blue-black bodies. These bees have two submarginal (closed cells in the front wings) and females have many long, stout hairs underneath the abdomen, forming a pollen basket usually loaded with pollen.



Unlike social honey bees, they are solitary (no colonies formed) with a

female nesting in the ground, in logs, in hollow stems, twigs or wood siding. They cut out oval or circular (dime size) areas, especially from leaf margins of rose, redbud, ash and other ornamental shrubs and trees. These cut out plant leaf discs are used to fashion thimble-like cells within the nest. An egg is laid in each cell after it is provisioned with pollen and nectar. Each cell is sealed over with pieces of leaves cut round and slightly larger than the cell diameter, permitting a tight fit to result. These bees do not defend their nest territory aggressively and are not a stinging hazard to humans. Nevertheless, they may frighten people.

Digger or Threadwaisted Wasps

Both the blue digger and golden digger wasp are beneficial, appearing in the morning and flying over the lawn all day, then leaving in early evening. Digger wasps are solitary wasps with each female working alone to produce her offspring instead of having the help of several workers as in social chambers or cells. These chambers are provisioned with food for the offspring. After the eggs are laid in or on the "provision," the offspring are on their own to live and grow to adults that emerge the following summer.



The blue digger about 3/4-inch long is shiny metallic blue on both the wings and body. This slender wasp provisions its nests with grasshoppers and crickets. Also, the inch-long golden digger wasp with shiny gold markings on the face and abdomen uses grasshoppers and crickets as stored food for their offspring. Often, wasps can be seen flying about a foot or less above the ground. Others may be perched on shrubs and trees.

Due to their large size, they are assumed to be extremely dangerous. Actually, they are not aggressive but curious and investigate persons and pets near their burrows. Stings are quite rare. One can walk safely through them as they hover over the lawn.

Control

If ground-nesting bees and wasps can be ignored and their tunnels tolerated, do so since they are valuable in agricultural production and helpful by controlling pests in nature. If nests are in locations undesirable and stinging is a great possibility, control is justified. During the day, carefully watch where the nest entrances are located. After dark, tunnels and the surrounding area can be treated with dusts of carbaryl (Sevin), or bendiocarb (Ficam D) when the nest is in the ground. Use pyrethrins, permethrin, resmethrin or propoxur (Baygon) when the nest is in the side of a building. Other lawn and garden insecticide sprays can also be used, but dusts have the advantage of not soaking into the soil. Those who are allergic to bee stings, should contact a licensed, professional pest control operator to perform the control job. Always read the label and follow directions and safety precautions.

All educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

TDD No. 800-589-8292 (Ohio only) or 614-292-1868
