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Mining Bees & Ground Nesting Wasps

Mining, or digger bees nest in burrows in the ground. Unlike the honey bee, mining bees are “solitary” bees. They do not form long-lived colonies, or live inside a single, well-defended nest controlled by one queen bee. Instead, each mining bee female usually digs her own individual burrow to rear her own young. Large numbers of these bees may nest close together if soil conditions are suitable.

Mining bees are not aggressive and seldom, if ever, sting. The presence of numerous bees flying close to the ground, however, may constitute a nuisance for some people. Sometimes large numbers of males will fly about the same spot for several days in a mating display.

Mining bees range in size from about the size of honey bees to much smaller. The larger bees are furry and usually darker in color than honey bees. Some are brightly striped, while others are a shiny metallic green. Mining bee burrows may be located wherever there is exposed soil and good drainage. They are frequently found nesting in banks, such as along road cuts or any type of excavation, but may also be in level ground as well. The holes are about one quarter inch (or less) in diameter. They are sometimes surrounded by a small mound of soil that the bee has brought up to the surface. Burrow structure varies according to species, but often there is a vertical tunnel with smaller side tunnels that terminate in a single cell.

The female mining bee stocks each cell with pollen and nectar she collects from flowers and then deposits an egg on the food mass. The larva will hatch and consume the stored pollen and nectar. When mature it becomes a pupa or resting stage and finally becomes an adult bee. The adult bees overwinter below ground in the burrow site. During the next spring or early summer the adults emerge, mate, and the females begin burrow excavation. Bee populations can fluctuate dramatically from one season to the next.

Ground Nesting Wasps

Many species of wasps are also solitary and nest in the ground. They have a life cycle similar to that of the mining bees. After preparing a burrow, the female wasp stocks it with provisions

(which consist of insect prey rather than pollen and nectar), lays one or more eggs in it, seals it and departs. Some species don't permanently seal the nest but return repeatedly with additional prey as their larvae grow. These wasps range in size from extremely small forms to the large, fearsome looking “cicada killers”.

Cicada Killer Wasps

Cicada killers resemble large yellowjackets. They are mostly black with pale yellow markings on the abdomen, and are about 2 inches long. Despite their appearance, these insects are inoffensive and usually will not bother people even when provoked.

Their sting is meant for paralyzing their prey, and normally does not cause a reaction in humans. They are considered beneficial because they reduce cicada populations. However, they may cause lawn damage if there are large numbers of them nesting in close proximity to each other.



Cicada Killer

Scoliid Wasps

Another group of ground nesting wasps are the digger or Scoliid wasps. Scoliid wasps are about 5/8 inch long, blue-black, with blackish purple wings. There are two yellow stripes, one on each side of the abdomen. Their bodies are fairly hairy



Scoliid

and the back part of the abdomen is covered with reddish hairs. They are generally seen flying over the lawn during the day, leaving in early evening. Scoliids are beneficial wasps parasitic on grubs. They are not aggressive and generally do not attack people. They disappear at the end of the season and help control the beetle grubs. Adults are often seen visiting golden rod flowers in late summer.

Control

It must be stressed that mining bees are extremely beneficial insects, of considerable importance in the pollination of many different types of plants. Their burrowing does not harm vegetation and may actually be of service in overturning the soil. Furthermore, the activity of species is extremely brief, with the adult bees flying for only 2 to 4 weeks. In some instances, the bees observed are males flying about their territories; males cannot sting nor do they make burrows.

If control is deemed necessary, use an insecticide registered for the purpose. There are wasp, hornet and bee aerosols available from garden centers, hardware stores, etc. These are not very efficient on mining bees and represent an expensive means of control. Individuals can be sprayed as they go about their activities and individual burrows can be sprayed. Repeat application will be necessary.

A better means of control would be to apply a dust or liquid solution of one of various insecticides sold for lawn insect control. Apply the material at the recommended rate in the lawn area where the mining bees are nesting and then disturb the soil with a hoe or back of a rake trying to disrupt as many tunnel openings as possible. Then apply the spray or dust again. As the mining bees attempt to repair the damage and construct or repair tunnels, they should contact the insecticide and be killed. Repeat applications are usually necessary. It is virtually impossible to eliminate mining bees in a single season.

Adapted from: Mining Bees, Entomology Leaflet #104, Albert Greene and Dewey M. Caron, Extension Specialists, Maryland Cooperative Extension, Department of Entomology, University of Maryland, College Park, MD 20742

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