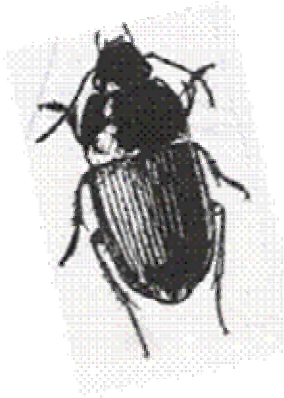


Ground Beetles

Ground beetles (family Carabidae) are important predators that can be found in most gardens and home grounds. They may be the most numerous predatory insect around the home. They vary in size from less than ¼" to over 1½" long. Adult ground beetles run quickly when disturbed, but they rarely fly.



The adults of most ground beetles are dark brown or black, shiny, and somewhat flattened, with slender legs for running. A few are iridescent blue or green. They are commonly found under leaves or debris, in cracks in the soil, or running along the ground (but not often in bright sunlight). Some species also climb into trees, shrubs, and crop plants looking for prey. They may wander indoors at ground-level entry areas.

Adult ground beetles are fierce predators that chew up their prey with large, sharp mouthparts. Common prey include caterpillars, grubs and adults of other beetles, fly maggots and pupae, earthworms, and other small soil dwellers. They can consume their body weight in food daily.

Adult females deposit eggs on objects above ground or in cavities made in the soil. Some ground beetles lay hundreds of eggs; other species may produce only a few. The three larval instars live in debris or in burrows in the soil. The larvae are usually also predaceous, although in some species the adult and larval foods are very different. A few species are not predaceous as larvae.

There is usually one generation per year; the larvae of larger-bodied species may require more than one year to complete development. Adults of larger species can live 2 to 4 years. The majority of species overwinter as adults in the soil or in sheltered sites.

Beetles in the genus *Calosoma* are called caterpillar hunters. They are among the largest in the family and both the adults and larvae are very active predators. *Calosoma sycophanta*, a large, bright, metallic-green beetle, was imported from Europe to New England for the biological control of the gypsy moth in 1905. The larva feeds day and night, consuming 50 caterpillars during its two-week developmental period. The adult will eat several hundred caterpillars during a life span of two to four years. There are also several native species of *Calosoma*.

Although ground beetles have been captured in large numbers during insect surveys, there is relatively little information on their actual impact on pest populations. Since they are so numerous and do consume many times their weight in prey, they probably provide significant pest control in many situations.

Ground beetles are not commercially available to augment those naturally present. These important natural enemies can be conserved by not using broad-spectrum soil insecticides or fumigants. Their survival will be enhanced by providing refuges and overwintering sites such as hedge edges or mulch for the adult beetles.