

Carpet Beetles

HANDOUT

Carpet beetles are in the Family Dermestidae and as a whole are referred to as dermestid beetles. Adults are about 1/16-1/8" long; oval in shape. Body black, and some have a pattern of whitish and orange/red scales. The head is more or less concealed from above.

Larvae are up to 1/4" long; stout, and widest posteriorly. Larvae are reddish brown, covered with blackish and/or brown hairs (setae); with tufts of spearheaded hairs (hastisetae) arising from membranous areas on sides of abdominal segments 5-6-7 pointing towards rear and converging towards center.

Damaged fabrics typically have extensive surface damage and irregular holes here and there. However in carpets tacked to the floor, they often eat slits following the floor cracks. Furs and brushes have mostly the tips of hairs damaged, leaving uneven areas. With museum insect specimens, the accumulation of fine powder/frass beneath the specimen is often the only indication of an infestation. Larval caste/molt skins are often present. Frass/droppings are minute (0.25 mm or less in diameter), irregular in form, and often the color of the material being eaten.

Females lay 30-60 whitish eggs on/in larval food material, typically during May and June. The eggs hatch in 10-20 days. The larva passes through 6 instars with the larval period lasting 60-80 days. The larva pupates in the last larval skin and pupation lasts 7-15 days. Developmental time (egg to adult) usually requires 77-110 days at room temperature, with a range of up to 439 days to 2 years. Upon emerging the adult beetle stays quiet in the old larval skin for about 18 days, and then becomes an active adult for about 4-31 days.

Outdoors or in unheated structures, about 25% overwinter as larvae which feed again the following spring, and then either pupate in the summer or pass the second winter as quiescent adults in the old larval skins. About 75% overwinter as quiescent adults in the old larval skins. In heated structures, adults may be active throughout the winter and the following spring.

One case of dermatitis (skin inflammation) is known from a several-year occupation of an infested dwelling. Inhalation of large quantities of the larval spearheaded hairs (hastisetae) may cause pulmonary irritation; *Anthrenus* spp. are known to cause this condition.

Common carpet beetle larvae feed on a wide variety of animal and plant materials. Animal-origin materials include woolens, hair, bristles, horn, feathers, silk, furs, and insect collections. Plant-origin materials include herbarium specimens (pressed plants), rye flour, and wheat. Their favored foods are carpets, clothing, and textiles.

On fabrics, larvae surface graze but often make irregular holes. On furs and bristles, they damage mostly the tips leaving uneven areas. On dead insects, they typically feed from within and the accumulation of fine powder/frass beneath the specimen is usually the only indication of their presence.

Adults are typically found outdoors May through July on flowers. Here they feed on pollen and nectar, and mate; apparently nectar and pollen are necessary to stimulate oviposition. Favorite flowers include those of *Spiraea* spp., *Ceanothus* spp., wild buckwheat, daisies, and wild asters which have white or cream-colored flowers. The females may then fly indoors to lay their eggs. Outdoors they have been found in the nests of chipmunks, birds, bees, in insect galleries, and on dead animals including birds.

The primary breeding areas are quite diverse and may include obscure or unused places such as wall/ceiling voids where yellowjackets, etc. lived or where cluster flies, etc. overwintered; rodent bait left in attics, crawl spaces, or basements; wasp and hornet nests in attics, under eaves, around windows, etc.; dead insects and spiders in attics or in light fixtures; behind baseboards where lint and hair accumulate; animal trophies or rugs;



insulation which contains animal hairs; dead animals in the chimney flue, etc. In such places, the larvae feed on the animal/plant material present.

Adults fly during the daytime. They are commonly brought indoors on cut flowers. Active larvae tend to run rather than crawl.

The key to controlling common carpet beetles is to find the primary source(s) of infestation and eliminate it/them. Besides the obvious carpeting, clothing, textiles, furs, and plant materials, it may be necessary to check for the more unusual places such as those listed above. Both current and past occurrences of flies in the winter, ladybird beetles, rodent problems, birds nesting on/in the building, etc. should be considered. A thorough inspection should be followed by good sanitation practices, and a pesticide application may be made when required. Commercial pest control companies should be well versed in handling carpet beetle infestations in the home.

John D. Hopkins, Ph.D.
Associate Professor and Extension Entomologist
Univ. of Arkansas, Coop. Exten. Service
2301 S. University Ave.
Little Rock, AR 72204
501-671-2217
jhopkins@uaex.edu