

Dermestid Beetles

Order: Coleoptera (Beetles)

Family: Dermestidae (Hide and Carpet Beetles)

Identification and Descriptive Features:

Dermestid beetles have a rounded to broadly oval body form and range from about 3-9 mm. Most are dark colored but some have distinctive patternings with white, yellow, brown, and orange patches. The body of dermestid beetles are characteristically covered with scales or hairs and the antennae are clubbed.

Dermestid beetle larvae are hairy with particularly long hairs typically protruding from the hind end. Many common species are elongate bodied with a tapering hind end. Others have an oval body form. Colors range from dark reddish brown to pale yellow-brown.



Figure 2. Dermestid beetle larvae (*Attagenus* sp.)



Figure 1. Dermestid beetle (*Dermestes* sp.)

Distribution in Colorado: Dermestid beetles occur throughout the state, both indoors and outside. Several species are nearly worldwide in distribution as they are commonly carried with stored food products. At least 38 species of dermestid beetles have been reported from the state (Table 1).

Life History and Habits: Dermestid beetles are scavengers. Most feed on materials of animal origin, including dried meat, skin, feathers, hair, dried pet foods/animal feed, or dairy products.

Other dermestids, notably those of the genus *Trogoderma*, primarily feeds on seeds, nuts, spices and other products of plant origin.

Several species of dermestid beetles commonly occur in Colorado homes. Most limit feeding to collections of dead insects, debris among spider webs, household lint, pet hair, and other debris normally present in buildings. Abandoned insect, bird and rodent nests are also common areas where large numbers of dermestid beetles may develop. Occasionally there are problems with dermestid beetles infesting pantry items or damaging items such as fur, feathers, or wool. The



Figure 3. Larva of a *Dermestes* sp.

former importance of some species on woolen items, such as wool carpets, has led to some being known as “carpet beetles”. This term is usually applied to species in the genera *Anthrenus* and *Attagenus*. Those species normally associated with dried meats and carrion (*Dermestes* spp.) are often termed “hide beetles”.

Details in the life history and habits among the dermestid beetles present in Colorado vary, particularly among the different genera:

Dermestes species are those most commonly associated with carrion. They can be damaging to dried meats, dried fish or furs. Collections of dead insects are a common food sources if these occur in and around homes. These are moderate-sized (6-10 mm) beetles of oblong form. Most are generally dark colored but one common species known as the larder beetle, *D. lardarius*, has a wide yellow band with dark spots across the wing covers. The larvae are dark reddish-brown with a tapered body form. When full-grown they usually wander from the food source and tunnel to produce a pupation chamber. They have strong jaws and have been known to excavate wood beams during this stage. The overwintering stage is normally an adult and they are strong flying insects that are most commonly seen in late spring and early summer.

Some *Dermestes* spp. are used by museum zoology departments and taxidermists to clean flesh from bones. Because of their association with dry remains in late stages of decomposition they may also be useful in forensic investigations.



Figure 4. Black carpet beetle adult and larva. Photograph courtesy of Clemson University and IPM Images.

Attagenus is a genus best represented by *Attagenus unicolor unicolor*, the black carpet beetle, which is one of the most common dermestids found in homes. Adults are golden tan to dark brown, oval-form, and about 3-5 mm in length. The larvae are quite active but avoid light and will curl up and play dead when disturbed. Outdoors they feed on various types of animal-produced debris and are frequently associated with animal nests. Indoors they may be feeding on lint of dead skin flakes, hair, dead insects and similar materials. There is one generation produced per year and the overwintering stage is a late instar larva. Pupation occurs with the last larval skin.

The smallest dermestid beetles found in homes are in the genus *Anthrenus*. These are

typically about 2-3 mm long and have a round body form. Most have colorful body patterning produced by scales of yellow, browns and white. The larvae are very spiny with a blunt body that is slightly narrower at the head end than at the posterior. Several species are very commonly encountered in buildings including the varied carpet beetle (*Anthrenus verbasci*), furniture carpet beetle (*Anthrenus flavipes*), and common carpet beetle (*Anthrenus scrophulariae*).

The larvae feed on a wide variety of plant and animal products and are common in abandoned bee and wasp nests. They are not very active and generally feed in a limited area so accumulations of larval skins are often observed. Adults are most common in late spring and can be seen feeding on nectar and pollen of small flowers such as *Spirea*, *Viburnum* and spurge. They are strong fliers and usually enter buildings in spring, often colonizing attics and upper floor areas where they may sustain themselves on dead insects. One generation is usually produced annually with winter spent as a late stage larva or pupa in diapause.



Figure 5. Furniture carpet beetle adult and larvae. Photograph courtesy of Clemson University/IPM Images.



Figure 6. Old skins of an *Anthrenus* sp. dermestid beetle.



Figure 7. An adult and larva of a *Trogoderma* sp. dermestid beetle.

Dermestid beetles in the genus *Trogoderma* are also general scavengers but are often develop on plant materials such as seeds, nuts, herbs, spices, and cocoa. Some are important pests of stored foods. Adults are oblong bodied, about 3-4 mm long and generally dark bodied. Wavy bands or faint patches mark the wing covers of some species. Larvae are elongate bodied and tend to be lighter colored than most other dermestids. Like most dermestids, the life cycle can be highly varied due to diet and temperature but *Trogoderma* species may continuously develop and produce more than one generation annually.

Organisms of Similar Appearance: Duff millipedes (*Polyxenes* spp.) are unusual millipedes with a stout, very hairy body that are sometimes mistaken for larvae of *Anthrenus* spp. dermestids. However, they can be differentiated



by their smaller size (1 mm), flattened fans of hairs protruding from the hind end and, on very close inspection, several more legs than the three pair present on beetle larvae. Duff millipedes are typically found in forested areas where they feed on fungi, lichens and decaying plant matter.

Figure 8. Duff millipedes. These are sometimes mistaken for dermestid beetle larvae.

Table 1. Checklist of the Dermestidae recorded from Colorado¹. Species that are particularly common and important in the state are marked with an *.

Dermestes ater* DeGeer (black larder beetle**)

Dermestes caninus Germar

Dermestes carnivorus Fabricius

Dermestes fasciatus LeConte

Dermestes frischii Kugelann

Dermestes lardarius* Linnaeus (larder beetle**)

Dermestes maculatus* DeGeer (hide beetle**)

Dermestes marmoratus Say

Dermestes rattus rattus LeConte

Dermestes signatus LeConte

Dermestes talpinus Mannerheim

Dermestes undulatus Brahm

Attagenus bicolor Harold

Attagenus unicolor unicolor (Brahm) (**black carpet beetle**)

Novelis horni (Jayne)

Anthrenus castanae Melsheimer

Anthrenus chiton Beal

Anthrenus flavipes LeConte (**furniture carpet beetle**)

Anthrenus fuscus Olivier

Anthrenus lepidus LeConte

Anthrenus scrophulariae* (Linnaeus) (carpet beetle**)
Anthrenus verbasci* (Linnaeus) (varied carpet beetle**)
Cryptorhopalum apicale (Mannerheim)
Cryptorhopalum brooksi Beal
Cryptorhopalum pruddeni Casey
Cryptorhopalum reversum Casey
Cryptorhopalum uteanum Casey
Trogoderma glabrum* (Herbst) (glabrous cabinet beetle**)
Trogoderma inclusum* LeConte (larger cabinet beetle**)
Trogoderma simplex Jayne
Trogoderma sinistrum Fall
Trogoderma sternale
Trogoderma teukton Beal
Trogoderma variabile Ballion (**warehouse beetle**)

Megatoma cylindrica (Kirby)
Megatoma kaliki (Beal)

Thylocladius contractus Motschulsky (**odd beetle**)

Orphilus subnitidus LeConte

¹ List confirmed from: Beal, R.S., Jr. 2003. Annotated Checklist of Nearctic Dermestidae with Revised Key to the Genera. *The Coleopterists Bulletin* 57 (4) 391-404.