

The Lowly Dermestid Lurks in the Bedroom and the Pantry

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Carpet beetles, hide beetles, skin beetles, and dermestids. All these names describe members of the insect family Dermestidae. The meaning of *Dermestidae* gives a pretty good idea of the habits of these insects. *Derma* means *skin*; *este*, means *to consume*; and *idae* refers to *members of the family*. We can surmise dermestids are members of a family of insects that consume skin. How gruesome indeed!

In the U.S., there are about 120 species of dermestid beetles.

Outdoors, the larvae of some dermestid species help clean up the environment. Being scavengers, they feed on animal protein: mummified skin and flesh, hair, fur, feathers and even dead insects. Very few organisms feed on hair or fur because keratin, the protein in hair and feathers, is very stable and indigestible. But, carpet beetles have enzymes in their digestive tract which digest keratin. This makes them very unusual in the animal world.

Sometimes dermestids can help with criminal investigations. Forensic entomologists will look for dermestid beetles at crime scenes when trying to determine the time of death. Dermestids generally show up late in the decomposition process, when the corpse begins to dry out.

Museum curators know dermestid beetles all too well. Because dermestids can devour museum specimens, precautions must be taken to prevent damage to museum collections. But, their habit of feeding on animal protein can also be useful, as colonies of dermestids are used to clean the flesh and hair from bones and skulls.

Identification. Adult beetles are small and oval, and have knobbed antennae. They range in size from 1/16 inch (varied carpet beetle) to 3/8 inches (larder and hide beetles). Some species have brightly-colored scales on their body.



Varied carpet beetle — adults (above) and larvae (below) (highly magnified)



Larder beetle — adult (above) and larva (below) (highly magnified)



Hide beetle — adult (above) larvae (below) (highly magnified)



Dermestid larvae usually have a wedge-shaped body covered with hairs, sometimes with longer tufts of hair (setae) on the back end. Size depends on each species, but they are usually less than 1/2-inch long.

Life Cycle

Adults typically overwinter in cracks and crevices and become active in springtime.

Females may enter homes or structures seeking food to lay eggs on. After hatching, larvae develop through 5–16 instars, depending on species. Cast skins from larval development are often found near the food source and may be the only signs of dermestids when damage to fabrics is noted. Pupation occurs in their last larval skin. Adults that emerge must feed on pollen,

so beetles trapped indoors are often found in window sills or attracted to lights, perhaps because they are trying to get outdoors.

Feeding Habits

A few dermestid larvae have expanded their food preference and feed on plant proteins. They are often found feeding on flour, grains, nuts, seeds, and spices.

Some even feed on silk and cotton.

Because they can digest wool and silk, dermestids can be a real nuisance in the home, where they may chew holes in sweaters and blankets. In Nebraska, dermestids damage wools more often than clothes moths. In more humid states, clothes moths are a more common problem. Dermestids are often found in the bedroom, where hair accumulates in and around the bed or in the closet where woolen garments are stored. It is usually the larva or cast skins that are found. When people are checking bedrooms for bed bugs, dermestids are the most likely (non-bed bug) insects found.

Because dermestids feed on accumulated pet hair and feathers, they may be found in areas where pets sleep and be more of a problem when families have indoor pets.

Where Do They Come From?

Carpet beetles are exceptionally common indoors and some species are so small, they enter through window screen. Common reservoirs for dermestids are bird and rodent nests and old bee and wasp nests, where dermestid larvae feed on hair, feathers, and/or dead insects.

Management

The primary way to manage dermestids is to reduce their presence or potential food by regular sanitation practices. Regular, thorough vacuuming, and cleaning of bedrooms and closets where wools are hanging, can be helpful. Damage to wools usually occurs in the summertime, so removing wools from closets in the spring, dry cleaning them, and storing them with moth crystals will be helpful until fall. In the pantry, throw away infested foods and clean shelves to remove particles of food. Keep flour and other food items, including spices, in sealed, glass containers.

The Odd Beetle

I sometimes joke that entomologists aren't very clever when they name insects. The names of many insects describe something obvious about the insect. But, what is so odd about the odd beetle? Yes, there is actually an insect with that common name.

The odd beetle (*Thyodrias contractus*) is a bizarre member of the dermestid family. The adults look completely different from other dermestid beetles, which makes them hard to identify. Another oddity is that males and females are sexually dimorphic and do not resemble each other.

Males are about 1/6-inch long and are elongated with long, slender, filiform antennae and legs. Males have elytra (wing covers), but the hind wings are

of variable size or completely lacking.

The wingless, larviform females are brownish in color, but differ from the males so much they don't even look like the same species. Female odd beetles resemble the larvae, but have antennae. Very odd, indeed.

The larvae *do* resemble dermestid larvae, but do not have any hairs on their posterior. These larvae have similar feeding habits as other dermestids and feed on dry animal protein (hair, dead insects, silk). It is rarely a serious pest problem.

It has been reported that odd beetle larvae can live three to four years without food. This unusual insect has not been studied very thoroughly; so much about its biology and behavior is unknown.



Odd beetle adult male (above), adult female (center), and larva (below) (highly magnified)



Wanted Dead or Alive: Head Lice

Extension has had a request for head lice specimens to enhance the teaching collection at University of Nebraska-Lincoln. The first three people who bring lice specimens will receive a new LiceMeister comb.

Please place specimens in a sealed plastic bag and drop them off at the Lancaster Extension Education Center, 444 Cherrycreek Road, Suite A, Lincoln, during office hours (Monday-Friday, 8 a.m.-4:30 p.m.).

Extension Educator Barb Ogg is also offering to help pick lice and nits out of hair during office hours until she has collected a sufficient quantity. If you want her help with this, please make an appointment by calling 402-441-7180.

Master Conservationist Entries Due Feb. 1

The Master Conservationist program was established in 1983 to recognize those who have excelled in soil and water conservation. The program has been expanded from production agriculture to residential, community, and youth categories. Anyone can submit nominations, including self nominations.



Deadline for nominations is Feb. 1. More information about the Master Conservationist Awards, along with submission forms, can be found at <http://owh.com/section/OWH0901>.

Sponsored by the Omaha World-Herald and the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln

earth wellness festival needs volunteers

Volunteers are needed for the 2012 earth wellness festival on Monday, March 26 and Tuesday, March 27 at Southeast Community College in Lincoln. Approximately 3,000 fifth-graders participate in this annual event which involves students in creative and innovative environmental education activities.

Each year, over 250 volunteers take part in earth wellness festival activities as classroom escorts, bus greeters, presenters, and registration assistants. Volunteers are essential to the success of this event.

You may choose to volunteer one or both days. In return, you receive the opportunity to participate in a rewarding volunteer experience, a festival T-shirt, coffee, rolls, and lunch. For more information, contact Tonya Bernadt at tbernadt5@unl.edu or 402-472-2712.

