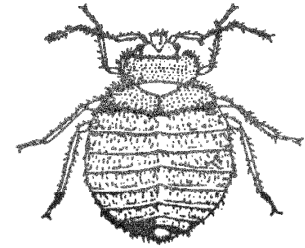


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Bed Bugs

Bed bugs (*Cimex lectularius*) feed exclusively on blood. Bedbugs mostly feed on humans, but they are also known to bite bats or other animals, including rabbits, rats, guinea pigs and domestic fowl, especially animals that are housed in laboratories. Bed bugs have sharp beaks that are used to pierce the skin of the host, injecting a fluid that helps to obtain food. This fluid causes the skin to become swollen and itchy. Bed bugs feed mainly at night, usually biting people who are asleep or resting. Where infestations are severe, bedbugs will bite at any time. An offensive odor may also be present in large infestations. This comes from an oily liquid emitted by the bugs.



Actual Size = 3/8 "

Description

A mature bed bug is a flattened, wingless, oval-bodied insect, brown to reddish-brown in color. Unfed bugs are one-quarter to three-eighths inch long, and as flat as a credit card. The upper surface of the body of an unfed bug has a crinkled appearance. A bug that has recently fed is engorged with blood, elongated and swollen, and dull red in color. Eggs are white and are about $\frac{1}{32}$ inch long. Newly hatched bugs are tan, but nearly colorless.

Life Cycle

Bed bugs mature gradually – the young (called nymphs) resemble the adults. Since bed bug mating is a violent process, older females may move away from the infestation to escape injury. Under ideal conditions (temperatures above 70° F) eggs are deposited in batches of 10 to 50 in crevices of bed frames, floors, walls and similar household sites. Eggs are not laid at temperatures lower than 50° F.

When fresh, the eggs are coated with a sticky substance that causes them to adhere to any object on which they are deposited. Eggs hatch in six to seventeen days but may take as long as twenty-eight days in cool conditions. The nymphs begin to feed as soon as they can locate a host. Nymphs molt five times in a period that lasts about six weeks before reaching maturity. There may be up to three generations per year.

Bed bugs feed for a period of three to five minutes; after this time they are engorged and drop off the host. They crawl into a hiding place and remain there for several days while the meal is digested. When hungry again, the bugs emerge from the hiding place and search for a host. New nymphs may live without food for several weeks in warm weather, or several months in cool weather. Older bugs may go for two months or longer without food.

Management (Eradication)

Once bedbugs have been discovered, services of a pest management company are recommended. Over the counter pesticides are rarely effective, and may cause the infestation to spread. Choose a company that has experience with bed bug eradication. The pest manager should give you instructions on how to prepare the area in advance of a treatment. Proper preparation of a room is crucial for successful treatment. In order to contain the infestation, treatment should begin at the perimeter of a room and move toward the center.

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Monitoring

An important aspect of bed bug management is finding places where the bed bugs hide after they feed and cleaning these sites as thoroughly as possible. Where are bed bugs found? Look for black or brown spots of dried insect excrement on surfaces where the bugs rest. The spots may be bumpy on a hard surface, but appear as dark stains on fabric. Eggs, eggshells and cast skins may also be found in resting places. Early in an infestation, bed bugs are likely to be found only on the seams, tufts or folds of mattresses or daybed covers, but later they spread to crevices in the bedsteads. In severe infestations they may be found in dressers, bedroom sets and other furniture, electronics, behind baseboards, switch plates and electrical outlets, inside walls, window and door casings, pictures and picture frames, loosened wallpaper or cracks in plaster. Clothing, shoes, luggage, toys and other personal items may also be infested.

Homeowners should focus on mechanical methods in conjunction with professional treatments. Vacuum, remove or seal loose wall surfaces (wallpaper, paint, etc.), caulk cracks, crevices and other potential hiding places. Thorough cleaning may need to be repeated a number of times, as eggs may be missed, or bugs may be well hidden. Persistence is key to bed bug eradication. Vacuum the mattress, paying special attention to tucks and along seams. Take care that all bugs you dislodge are caught by the vacuum. Be sure to remove, seal and discard the vacuum cleaner bag immediately after cleaning. Be sure to inspect the vacuum and its components to be sure it is clean before moving it to another room. Steam cleaning may be effective if done properly. Use an industrial steam cleaner, and move it **very slowly** over your mattress or other surface.

Launder any suspect bedding and other washable materials at the hottest temperature recommended and place them in the dryer on a high setting for at least 20 minutes. Pack any items intended for storage in tightly closed bags to prevent reinfestation. Do not return cleaned items to an area until bedbugs have been eradicated.

It is not necessary to discard your mattress. If you bring a new mattress into your home before the bed bugs have been eradicated, it may become infested. You may encase your mattress with a zippered mattress cover, such as is used for dust mites. Tape over the zipper to trap any bugs inside. Bed bugs cannot chew their way out. The effectiveness of this method depends on the thoroughness with which the slats, springs and frame are cleaned. If bedbugs are still in the frame, they may crawl over the mattress cover to reach a host. If they are trapped in the cover, and none are left on the frame or other places in the room, biting should cease. Bed bugs can live a long time without a meal, so it is best to leave the cover on the mattress for at least a year.

After a thorough cleaning, be sure the bed is moved so it does not touch walls. Remove dust covers, and keep bed covers and blankets up off the floor.

Prevent the Spread of Bed Bugs

Do not pick up discarded furniture. If you must buy used furniture, make sure that it has been inspected and guaranteed to be free of bugs. If a company delivers bedding or furniture, insist that separate trucks are used for pick up and delivery.

Whenever you travel, inspect your room and bedding thoroughly. Be sure to check bedside furniture, headboards, mattresses and box springs. If you find evidence of an infestation, request another room. Do not place your luggage on the bed or floor. When you return home, launder your clothes as described above and clean your luggage thoroughly before placing it in storage.

If you must work in an area that is infested with bedbugs, do not carry personal belongings or bags; bring as little as possible to the site. Carefully inspect and shake out your clothes (into a bag that can be tightly sealed) before you return to your car. Alternatively, bring a change of clothes and shoes – after you leave an infested site, remove and bag your clothes before entering an uninfested area. Keep the bag tightly sealed until your items are laundered.

Bags that dissolve in the laundry are available.

Check often!

References: Frishman, A. 2000. Bed Bug basics and control measures. Pest Control 68: 24; Harlan, Harold 2001. Personal Correspondence. NPMA; Krueger, L. 2000. Don't get bitten by the resurgence of bed bugs. Pest control 68: 58-64; USDA leaflet number L-453 entitled "How to Control Bed Bugs." Taisey, Allison, Carolyn Klass and Jody Gangloff-Kaufmann, "How to Talk to Callers about Bed Bugs" NYS IPM Program, 2008.

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The information on pest management for New York State contained in this publication is dated October 2008. The user is responsible for obtaining the most up-to-date pest management information. Contact any Cornell Cooperative Extension county office or PMEP (<http://pmep.cce.cornell.edu/>), the Cornell Cooperative Extension pesticide information website. The information herein is no substitute for pesticide labeling. The user is solely responsible for reading and following manufacturer's labeling and instructions.

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