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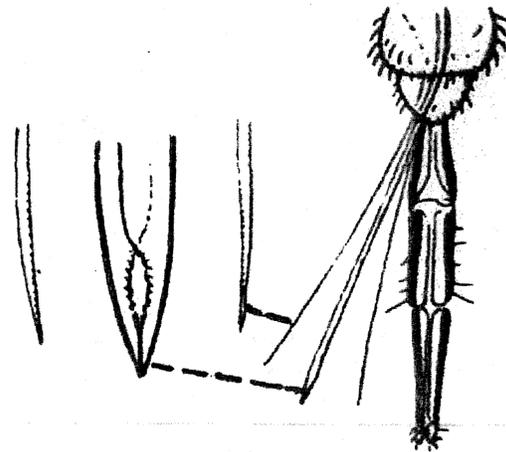
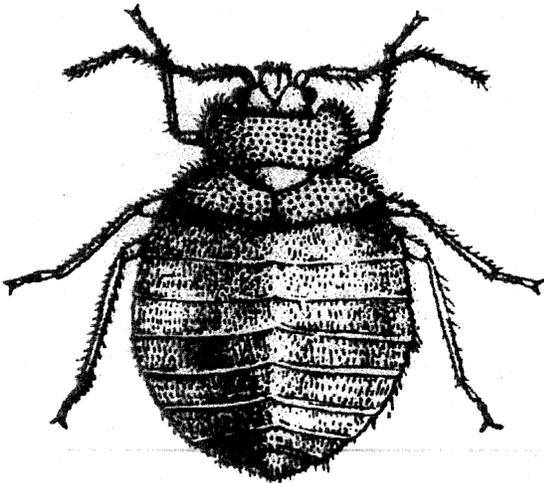
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# Battling BED BUGS

## Bed bug, *Cimex lectularius* L.

It is an oval, flattened insect about 4 mm to 5 mm long. It hides in cracks and crevices where humans live. It has a four segmented beak hidden under the head. Bed bugs are brownish-red, but may be bright red immediately after feeding. They usually feed at night while the host is sleeping.

(Cimicidae)



(----) Actual Length

Detail of bed bug mouth parts



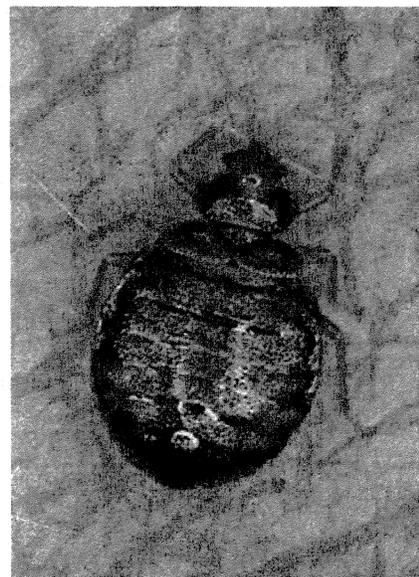
# **BED BUGS**

## **Bed Bug Facts**

- Adult bed bugs are about 3/16-inch long with reddish-brown, oval flattened bodies. The nymphs resemble the adults but are smaller and somewhat lighter in color.
- Bed bugs feed solely on the blood of animals. The common bed bug, *C. lectularius*, prefers feeding on humans, but will also bite other warm-blooded animals, including pets.
- They feed by piercing the skin with an elongated beak. The person seldom knows they are being bitten. Bite symptoms vary from an itchy welt or localized swelling to little or no reaction.
- Bed bugs are active mainly at night. During the daytime they prefer to hide close to where people sleep.
- Although they can harbor pathogens in their bodies, disease transmission by bed bugs to humans is considered highly unlikely.
- Bed bugs do not fly but can move rapidly over floors, walls ceilings and other surfaces. If necessary, they will crawl more than 100 feet to obtain a blood meal.
- Female bed bugs lay their eggs in secluded areas, depositing up to five a day up to 500 during a lifetime.
- The eggs are whitish and hard to see on most surfaces without magnification. Individual eggs are about the size of a dust speck. When first laid, the eggs are sticky, causing them to adhere to substrates.
- Newly hatched nymphs are no bigger than a pinhead. As they grow, they shed their skin five times before reaching maturity. A blood meal is needed between each successive molt.
- Under favorable conditions (70°F to 90°F), the bugs can complete development in as little as a month, producing three or more generations per year.
- Nymphs can survive months without feeding and the adults for more than a year. Infestations are therefore unlikely to diminish by leaving premises unoccupied.
- Bed bugs do not have nests like ants or bees but do tend to congregate in habitual hiding places. Typically these areas are marked by dark spotting and staining, and some times are accompanied by sweetish odor. Also present will be eggs and eggshell, and molted skin from maturing nymphs.

### **How do bed bugs invade a home?**

Because bed bugs readily hide in small crevices, they may accompany (as stowaways) luggage, furniture, clothing, pillows, boxes, and other such objects when these are moved between apartments, homes, and hotels. Used furniture, particularly bed frames and mattresses, are of greatest risk of harboring bed bugs and their eggs. Thus, one should carefully scrutinize and consider the history of any used furniture. Because they readily survive for many months without feeding, bed bugs may already be present in apparently "vacant" and "clean" apartments. Bed bugs can wander between adjoining apartments through voids in walls and holes through which wires and pipes pass.



### **How can you tell if the residence is infested?**

Bed bugs should be suspected if residents complain of bites that occurred while sleeping. The bedroom and other sleeping areas should be carefully examined for bed bug and signs of bed bug activity. Folds and creases, seams and tufts of mattresses and box springs, in particular, may harbor bed bugs or their eggs. They may be also found within pleats of curtains, beneath loose areas of wallpaper near the bed, in corners of desks and drawers, within spaces of wicker furniture, behind cove molding, and in laundry or other items on the floor or around the room. Sometimes, characteristic dark brown reddish fecal spots of bed bugs are apparent on the bed linens, mattress or walls near the bed. A peculiar coriander-like odor may be detected in some heavily infested residences. Adhesive-based traps used for sampling insects or rodents are not particularly effective for trapping bed bugs.

## **What should you do if you find bed bugs?**

Because several different kinds of insects resemble bed bugs, specimens should be carefully compared with good reference images (such as those in this document) to confirm their identity. Any questions regarding the identity of your samples, will be submitted and identified by an entomologist.

Once their identity is confirmed, a careful plan should be devised to eliminate the bed bugs in a manner that promotes success while limiting unnecessary costs and exposure to insecticides. Don't discard furniture and don't treat until and unless you have a plan.

## **What can you do to manage bed bugs?**

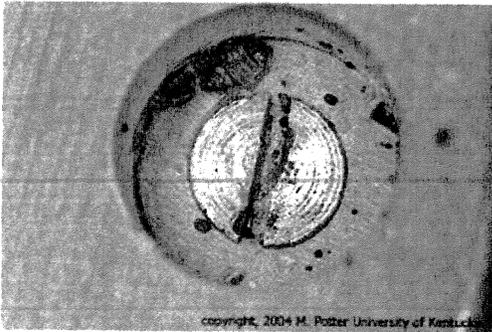
**Reduce clutter** to limit hiding places for bed bugs.

**Thoroughly clean** the infested rooms as well as others in the residence. Scrub infested surfaces with a stiff brush to dislodge eggs, and use a powerful vacuum to remove bed bugs from cracks and crevices. Dismantling bed frames will expose additional bug hiding sites. Remove drawers from desks and dressers and turn furniture over, if possible, to inspect and clean all hiding spots.

Mattresses and box springs can be permanently encased within special mattress bags. Once they are installed, inspect the bags to ensure they are undamaged; if any holes or tears are found, seal these completely with permanent tape. Any bugs trapped within sealed bags will eventually die.

To prevent bed bugs from crawling onto a bed, pull the bed frame away from the wall, tuck sheets and blankets so they won't contact the floor, and place the frame legs into suitable cans or cups of mineral oil.

Caulk and seal all holes where pipes and wire penetrate walls and floor, and fill cracks around baseboards and cove molding to further reduce harborages.



Bed bugs hidden beside a recessed screw under a nightstand. (M. Potter, Univ. of Kentucky)

Upholstered chairs and sofas should be checked carefully, including seam tufts, skirts, and crevices. Sofas can be major bed bug hotspots, especially when used for sleeping.

### **What shouldn't you do?**

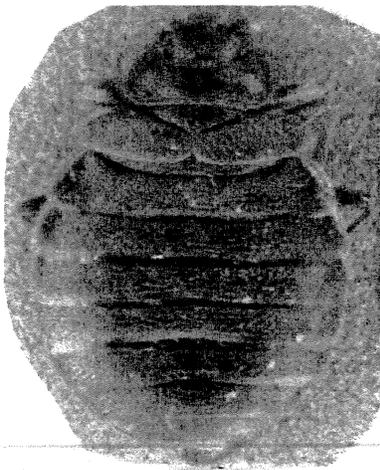
Don't panic. Although bed bugs can be annoying, they can be battled safely and successfully by your pest control specialist.

Do not apply pesticides unless you fully understand what you are applying and the risks involved. You are legally liable if you misapply a pesticide, or apply it without a license. Generally, landlords, owners and building managers cannot legally apply pesticide. They should, instead, hire a licensed pest control operator to confirm the infestation and to develop an integrated pest management plan.

Do not dispose of furniture that is useful. Infested furniture can be cleaned and treated. Placing infested furniture (particularly mattresses) into common areas or on the street may simply help spread bed bugs to the homes of other people. Officials in some municipalities affix to potentially infested furniture a label to warn of bed bugs. To reduce opportunities of infested furniture re-entering their building, building managers should ensure that any disposed furniture is locked within a dumpster or immediately carted away to a landfill or waste facility.

### **How can you have specimens examined?**

Specimens suspected of being bed bugs should be collected into small break-resistant containers (Such as a plastic pill bottle or zipper-lock plastic bag). They may also be secured to a sheet of white paper using clear packaging tape. Have the specimen identified by a pest control company so a successful control plan is accomplished.



Hatchling bed bugs are about the size of a poppy seed, and adults are about 3/16 of an inch in length. They are oval in shape, and are very flat unless filled with blood.

### **What might you do when returning from a visit to an infested residence?**

Travelers increasingly encounter bed bugs during their stays away from home. If signs of bed bugs were observed or suspected, consider the possibility that you may have unwittingly transported bed bugs or their eggs in your luggage and other personal effects. Clothing should be laundered in a manner to kill bugs and their eggs before or as soon as these items are brought back into the home. Suitcases should be carefully inspected, scrubbed with a stiff brush, and thoroughly vacuumed. Leaving such luggage for several hours in a closed vehicle in full summer sun may render the items bug free.



**Methods - IPM** ( Integrated Pest Management) Intensive Inspection

**Modes – Steam Heat – Vacuum Dislodging/Mechanical Removal – Flushing and Residual Insecticides, and Sealing/Caulking Harborage Areas.**

**Items – Beds, Head Boards, Sofas, Chairs, Foot Stools, Dressers, Tables, Fixtures, Pictures, Lamps, Appliances. Removal of Box Spring Dust Cover and Bagging of Mattress.**

**Areas – Inspect floor to ceiling, wall perimeter, any and all cracks & crevices, walls to ceiling, cove trim, light fixtures, wall switches & outlets, carpeting, carpet tack strips, under base boards, into loose wall cover materials.**

**Follow-Up – 7 Days** after the first application there will be a return visit for re-application if necessary.

**Further Control Efforts – Following the 21 Day follow-Up visit a determination will be made if further efforts are required**

# ***Bed Bug Technical Release***

## ***Customer Responsibilities***

1. Remove all clutter off the floor & closet areas.
2. Launder, Dry Clean, or Discard clothing if not able to heat treat in a dryer.
3. Only apply insecticides that are permitted by the Company.
4. Loose items (toys, knick-knacks, etc.) can be bagged in clear plastic for treatment.
5. Vacuum carpets and baseboard areas and discard the vacuum bag in a sealed trash bag and into an outdoor trash bin. Clutter provides safe-spots for bed bugs.....Read again #1.
6. Input from you to the pest control applicator. Tell him what you are seeing and/ or experiencing..... Especially on the return visit (7) three days after the initial service.