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October 15, 2012

Cimex Lectularius=Bed Bugs

THOMAS JEFFERSON UNIVERSITY HOSPITAL

Objectives

- State the definition of Cimex Celularius-Bed Bud
- Describe characteristics in appearance of a bed bug
- Explain the life cycle of a bed bug
- State two behaviors of bed bugs

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A History of Bed Bugs

- Bed bugs have plagued humans for thousands of years
- Present in literature as far back as 400 B.C.
- Originally introduced to U.S. with the early colonists
- Thought to be gone from the U.S. after 1960
- Several theories to explain comeback:
  - Never really went away
  - Increase in international travel
  - Pest control treatments have become more targeted and less toxic

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Family Cimicidae : The bed bugs

- **About 91 species in 22 genera**
  - **12 genera only parasitize bats**
  - **9 genera only parasitize birds**
  - **3 species parasitize humans**
    - ***Cimex lectularius* (worldwide)**
    - ***Cimex hemipterus* (tropics)**
    - ***Leptocimex boueti* (West Africa)**
  - **Other species of concern (may bite people)**
    - **Bat bug (*Cimex adjunctus*)**
    - **Swallow bug (*Oeciacus vicarius*)**
    - **Chimney Swift Bug (*Cimexopsis nyctalis*)**
- **Question of origin**
  - **Humans in caves**
  - **Bats in homes**

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Decline of Bed Bugs

Three major factors:

- **DDT use in 1950s**
- **Improved vacuum cleaners**
- **Changes in home construction**

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Bed-bug Infested Cities

- **Philadelphia** took the top spot from New York City, which held the title for two years.
- **The 2012 most bedbug-infested cities include:**
- 1. Philadelphia
- 2. Cincinnati
- 3. New York City
- 4. Chicago
- 5. Detroit
- 6. Washington, D.C.
- 7.Columbus, Ohio
- 8. San Francisco
- 9. Denver
- 10. New Haven, Conn.
- 11. Dallas
- 12. Houston
- 13. Indianapolis
- 14. Miami
- 15. Cleveland

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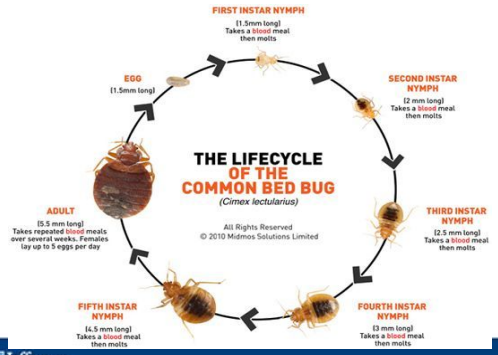
Life Cycle of Bed Bug



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Mating Behavior

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Life Cycle

Egg

- Female can lay 1-7 eggs per day
- Deposited on rough surfaces, cracks, crevices, anywhere
- Hatch in 6 days

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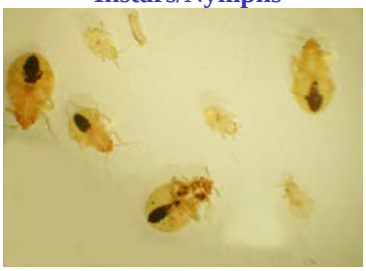
Life Cycle
Instars/Nymphs



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Life Cycle
Engorged Nymphs

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Feeding - Several Instars

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Engorging Adults

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Feeding Adult

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Life Cycle

Adult

- May live for 12-18 months
- Adults can survive for more than a year without Food !

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Identification

- Adults 1/4 to 3/8" long
- Brown to reddish brown
- Oval shaped
- Flattened
- Beak-like mouthparts
- Small, stubby, nonfunctional wing pads
- "Obnoxiously sweet" odor

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Habits

- External parasites that feed on blood
- Humans are the preferred host !
- However - also feed on birds, rodents, bats, pets
- Feed during the night with peak activity occurring just before dawn
- Seek refuge during daylight in dark, protected areas
- Prefer dry fabric, wood, and paper surfaces
- Fast-moving

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Injury

- Painless bite
- Reaction to the injected saliva (individual variability)
  - Swelling
  - Rows of welts
  - Severe itching (hours to days)
  - No conclusive evidence of disease transmission
  - ? Hepatitis B
  - Chagas Disease
  - Anxiety

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Immediate Bite Reactions

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Delayed Reactions (> 24 hrs.)

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OTC Treatment

- Cortisone cream
- Calamine lotion
- Oral anti-histamine like Benadryl
- Gel from Aloe plant
- Antibiotic ointment like Neosporin

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"I can't come to work today. I'm in bed with some kind of bug."

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