BED BUGS
Life Cycle and Identification

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BED BUGS: LIFE CYCLE AND IDENTIFICATION

Understanding the lifecycle of bed bugs enables proper identification during all stages
Stages in the Life Cycle
bar indicates 5mm scale
EGGS

Eggs are 1 mm in length and produced with a glue to help them stick where they are placed.

Empty egg cases on mattress surface.
1st Instar

Once laid, the eggs hatch within 10-14 days. The newly hatched nymph is light in color. After one hour, the 1st instar nymph darkens. After feeding the nymphs appear red in color.
Molting

Shed Skins of 5th instar nymphs (dorsal and ventral views)

Top - adult female (one hour older below) with shed skin still attached. Bottom - adult female, recently molted, dark region is digested blood in the gut.
An initial waste product is a uric acid secretion, not feces, that is light in color.
BED BUGS: IDENTIFICATION

The following slides show detailed views of bed bugs for identification purposes.
Details of head and rostrum

Ventral view of head

Fig. 6-3. - Details of head and rostrum, *Cimex lectularius* (Snodgrass 1944).
Adult Bed bugs - dorsal & lateral views

Adult bed bugs – unfed (L.) and fed (R.) – dorsal view

Engorged adult bed bug – lateral view
Adult bed bug – ventral view
Feeding leads to engorgement and a more swollen appearance.
Bed bugs do not truly exist in colonies. They survive independently from one another, but they do harbor together.
A bed bug harborage contains droppings, eggs, egg shells, shed skins, and insects in various stages of the life cycle.
DETECTION OF INFESTATIONS

The following images of bed bug infestations give examples of the range of locations in which they can be found.
Edge of Matress
On underside of mattress tab - not visible from above
On a wall molding
In a CD collection
Adult, nymphs and eggs and droppings visible on wood
German cockroach nymph and bed bug nymphs, mixture of feces
Feces showing evidence of infestation on door hinge
Bed bug infestations can be transferred from one bed to another in one household through bedding being briefly used on both beds.
Bed bugs can harbor in the chandelier base and also drop from the ceiling
Electric and cable conduits can serve as an entry route and harborage area.
The following slides give examples of some of the products that can be used to monitor for bed bug infestations.
Examples of Sticky Tape Monitors
Catchmaster Bedbug Detection System
Examples of “climb-into” monitors
BB ALERT® monitoring system has been developed to exploit the Bed Bug’s biology and behavior.
CO₂ Monitor
Dr. Changlu Wang, Rutgers University
Dry Ice Detector Device
(Now produced by Bed Bug Central)
Bed Bug Beacon
Expired metrocards used to aid in detection in crevices.