

# Love at first bite





# What are we going to cover?

- What are bed bugs
- History
- Resurgence
- Biology
- Signs
- Control
- Detection
- Disposal
- School
- Social impacts
- Chemical disasters



Anyone  
can accidentally  
acquire bed  
bugs





# What are bed bugs?

Blood feeding true bugs - order Hemiptera

Eggs hatch and immatures

go through

5 nymph stages

before

becoming

adults





Adults are about the size of  
an apple seed



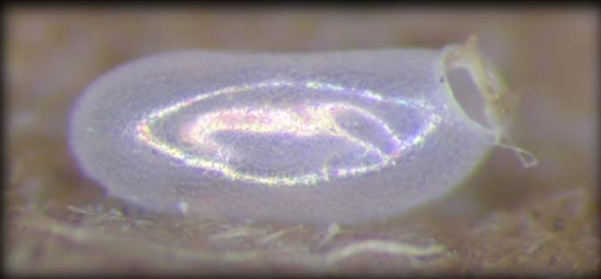




**BED BUGS ARE NOT KNOWN TO  
TRANSMIT DISEASE ORGANISMS**







# History

- 1910 -1940 bed bugs became a community-wide problem in US
- Infestations were worse in poorer, **overcrowded** communities, although wealthy households had problems as well

Fumigation with hydrogen cyanide



In 1943, three years before founding Insect Control Research, entomologist Eugene J. Gerberg (pictured above) was charged with helping the U.S. Army battle bed bugs on the home front.

- **Common pest in the US at the turn of the century**
- **Almost eradicated in 1940-50 due to DDT**
- **Resistance documented to DDT, malathion, carbamates and pyrethroids**



Spraying springs of bed with 5% DDT in kerosene for bed bugs. USDA photograph by Madeline Osborne



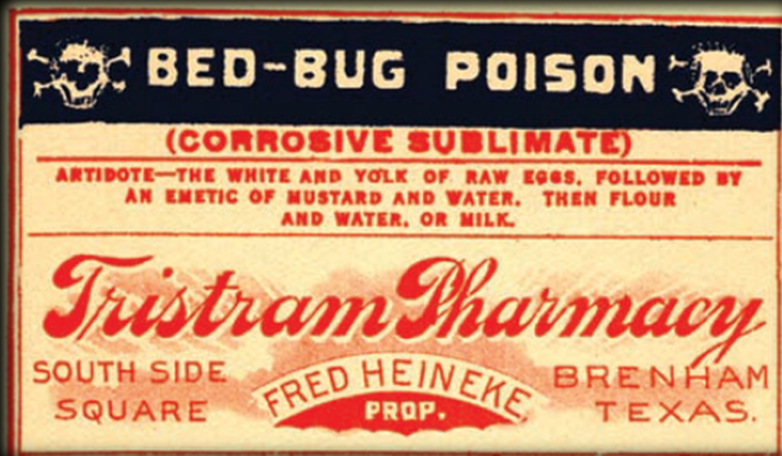
- Pull beds away from walls
- Place bed legs in pans of oil
- Application of pyrethrum powder (dried chrysanthemum flowers) dusted between the sheets of a bed
- Vigorous housecleaning, washing bedding/beds
- Dousing slats, springs, and crevices with boiling water or grease from salt pork or bacon



People  
resorted to  
extremely  
dangerous  
practices



Mercury  
chloride  
applied to  
the mattress  
using a  
feather



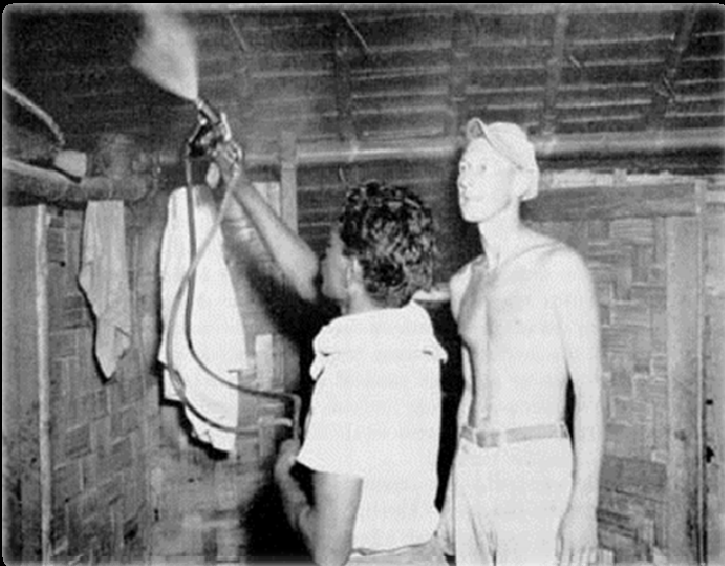
“Sometimes it is possible  
to destroy a light  
infestation by thorough  
soaking of the bed and  
other places with high-  
test gasoline”

Doner and Thomssen 1943

# Management relied upon

- Labor intensive
- Detailed work
- Constant monitoring

This is just as true today as it was then, despite technological advances





1947

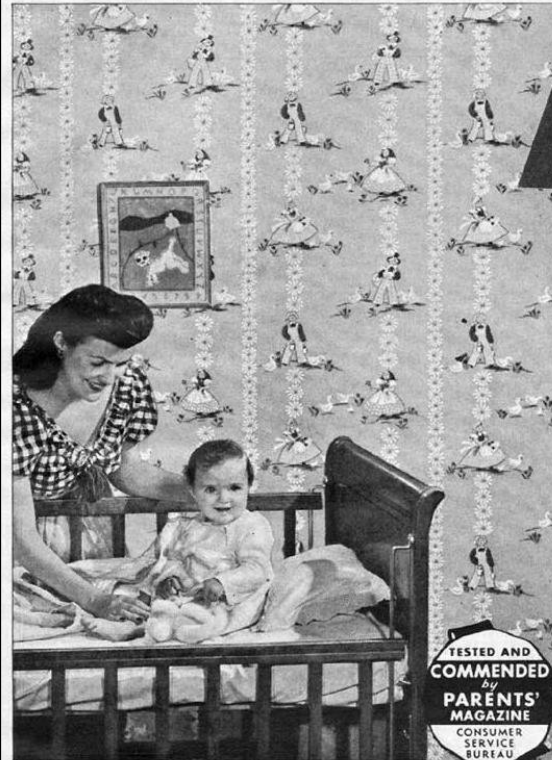
There was little understanding of chemical exposure risks



DDT impregnated wall paper

# PROTECT YOUR CHILDREN

## Against Disease-Carrying Insects!



**TRIMZ DDT**  
REG. U. S. PAT. OFF.  
**CHILDREN'S ROOM**  
**WALLPAPER** and Ceiling Paper

**KILLS FLIES, MOSQUITOS, ANTS**

... as well as moths, bedbugs, silverfish and other household pests after contact!

**MEDICAL SCIENCE KNOWS** many common insects breed in filth, live in filth and carry disease. Science also recognizes the dangers that are present when these disease-carrying insects invade the home. Actual tests have proved that one fly can carry as many as 6,600,000 bacteria! Imagine the health hazard—especially to children—from flies seriously suspected of transmitting such diseases as scarlet fever, measles, typhoid, diarrhea . . . even dread polio! Some types of mosquitos carry malaria and yellow fever. And *any* mosquito bite is painful and easily infected when scratched.

**NON-HAZARDOUS** to children or adults, to pets or clothes. Certified to be absolutely safe for home use. Tested and commended by *Parents' Magazine*.

**GUARANTEED** effective against disease-carrying insects for 1 year. Actual tests have proven the insect-killing properties still effective after 2 years of use.

**NO SPRAYS! NO LIQUIDS! NO POWDERS!** So convenient, so safe because the DDT is fixed to the paper. It can't rub off!

**BEAUTIFUL!** "Jack and Jill" or "Disney Favorites"—gay new patterns that protect as they beautify a child's room. **DDT CEILING PAPERS, TOO!** Extra protection for your children's room—for every other room in the house. Choice of two tints.



### READY-PASTED! Just Dip in Water and Hang!

Anyone can put Trimz Wallpaper up without help or previous experience. Millions have done it—proved it's quick, clean, easy! Nothing to get ready—no tools, paste or muss. Just cut strips to fit, dip in water and hang. It's dry in 20 minutes! Guaranteed to stick—guaranteed to please or money back. And so **INEXPENSIVE!** You can protect your child for \$8 to \$12—depending on size of room.



Just Dip in Water and Apply

Trimz DDT Children's Room Wallpaper, Trimz DDT Cedar Closet Wallpaper now available at Department, Chain, Hardware, Paint, and Wallpaper stores everywhere.

Many beautiful new patterns also available in regular Trimz Ready-Pasted Wallpaper at \$1.98, \$2.49, \$2.99 per box.

**TRIMZ** REG. U. S. PAT. OFF. **READY-PASTED WALLPAPER**

Another Product of TRIMZ CO., INC., Division of UNITED WALLPAPER



World's Leading Designer and Largest Manufacturer, Merchandise Mart, Chicago 54, Illinois

© 1947, TRIMZ CO., INC.

# Resurgence

2001 Arizona

Some communities remain unaware of chemical exposure risks

Beds in school dorms were sprayed with diazinon weekly

Diazinon registration for in-home use withdrawn by manufacturer in 2004





**BEDBUGAPOCALYPSE!** Overall increase of 20% between 2012 and 2013

1. Chicago
2. Los Angeles (+1)
3. Columbus, Ohio (+3)
4. Detroit (-2)
5. Cincinnati
6. Cleveland/Akron/Canton (+2)
7. Dayton (+4)
8. Washington D.C. (-1)
9. **Denver (-5)**
10. Indianapolis (+6)
11. Richmond/Petersburg, Va. (+1)
12. Raleigh/Durham/Fayetteville, N.C. (+3)
13. Dallas/Ft. Worth (-4)





40 bed bugs are  
in a 70°F room on  
May 2. By Nov 2  
how many are  
there? 5,905!





















# Why have bed bug infestations re-emerged in the developed world?

To a lesser extent:

- Immigration from third world countries
- Transient homeless during economic downturn
- Home transitions increased
- Loss of DDT? – Not likely!



# Why Bed Bugs Have Returned More significantly:

1. Changes in pest management strategies
  - Reduction in pesticide use indoors
  - Introduction and use of pest specific baits instead of liquid pesticides

Bed bugs don't eat baits!

# Why Bed Bugs Have Returned

## 2. Increase in global and domestic travel

- Introduction of bed bugs into U.S. by foreign travelers, and re-infestation by native bugs previously restricted
- Mobile society that can carry bed bugs to all corners of the U.S.

24 FRIDAY, DECEMBER 2, 2005 USA TODAY

## Bedbug boom blamed on increased foreign travel

### Hard to see, even harder to kill, bloodsuckers gain toehold in USA

By Tom Ichniowski  
USA TODAY

Bedbugs, the hematophagous nobody wants, are back in growing numbers across the USA, and haunting them from your bunk can be a lengthy, costly process.

Thirty years after near-eradication, the little bloodsuckers are invading homes and hotels from New York to San Diego. Why the outbreak? Increased world travel and changing pest-control practices.

"The bugs had become a myth," says Richard Pollock, an entomologist who runs a family pest control firm in Lanesville, N.J. "They were the measure in the class. People don't believe they're real. They're not, at night, if they're

Pollock, a researcher at the Harvard School of Public Health.

The re-emergence of bedbugs appears to have begun in the late 1990s. Cooper saw his first one in a motel in 1999.

That prompted him to start collecting reports from colleagues. From June 2000 until May 2001, Cooper surveyed exterminators in the Northeast, Florida and California. Near reported more than 22 bedbug calls. In 2004-05, bedbug complaints jumped to 335 in the Northeast, 285 in Florida and 240 in California.

"Now, we're out there dealing with bedbugs every day of the week, all-day long," Cooper says.

Cathy Minton of the National Pest Management Association says



Not actual size: Adult bedbugs are 1/4-inch long and feed on blood.

You might expect that the vermin would be found in cluttered bedrooms. They're wrong. The

"If you wake up at 2 a.m. and something's sucking on your ankle, that's a pretty good sign" that your home has bedbugs.

—Richard Pollock,  
Harvard School of Public Health

not had a problem since.

In San Diego, Herb Field, an entomologist with Lizard Pest Control, has treated everything from small condos to major mansions.

"Five years ago we might have had a dozen calls for bedbugs a year," he says. "Now we get the nasty 10 a week."

Pest control companies blame the bedbug boom on increased foreign travel, Minton says. The bugs are more common abroad, and they're happily hitch a ride in a suitcase. The 40 million travelers land-

those meals consist entirely of blood. Fortunately, they don't appear to spread disease, Pollock says.

There's speculation that the industry moved away from spraying pesticides on households has been a boon for bedbugs, he says. The practice has mostly been discontinued in favor of more targeted, less-toxic alternatives.

Whatever the reason, you may not realize you're living with bedbugs until your home is infested.

"If you wake up at 2 a.m. and something's sucking on your ankle, that's a pretty good sign," Pollock says. "But people generally don't see that, and they don't feel biting. They're mobile."

Bedbugs had been haunting on Brian Karem for some time before he discovered his West Orange, N.J., apartment was infested a year ago.

At first, he thought his laundry detergent had caused him to be bed out at night with Karem, 26, lived on

be them," he says. Despite four visits by an exterminator, the bedbugs refused to exit. It was Karem who moved to a new place.

Killing them is tough work, Cooper says. For starters, they're hard to find. They come out only at night, they're translucent until they fill up with blood, and hatchlings are so small they can pass through a stretch-hole in a mattress. Even as full-grown adults, they're only a quarter of an inch long, and their flat bodies allow them to slip into the cracks in furniture.

Pollock says a good exterminator will spend at least a half-hour examining furniture, headboards and mattresses. Several follow-up visits are required, too.

"It can cost thousands of dollars to get rid of them," he says.

Getting rid of them can require pesticides, powerful vacuums and sealing mattresses with impervious covers, Cooper says.

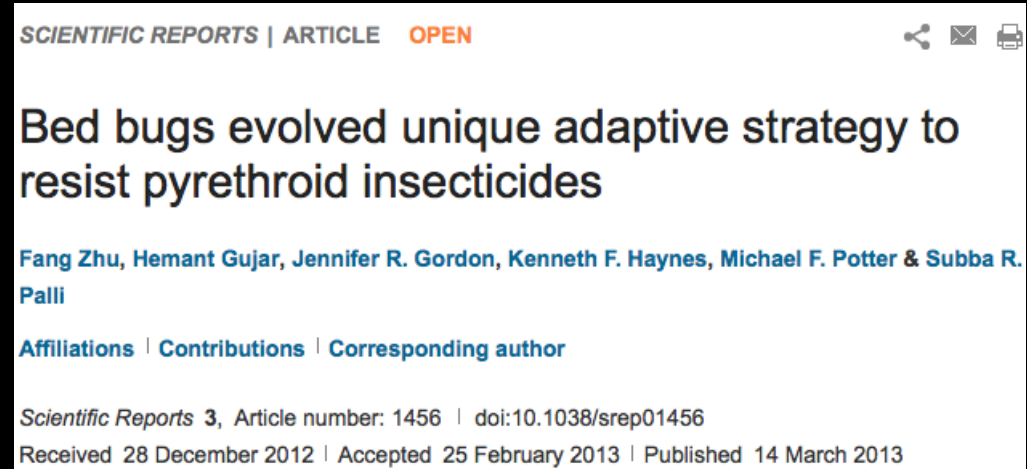
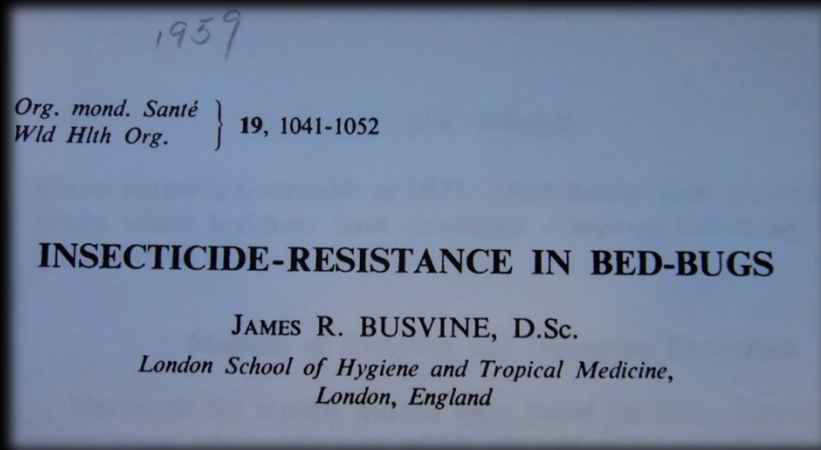




# Why Bed Bugs Have Returned

3. Bed bugs show increased resistance to insecticides that are widely used

- Metabolic enzymes
- Kdr mutations
- Cuticular proteins
- Abc transporters



## BED BUGS ARRIVE

### Passive

Bed bug is introduced hitchhiking on something:

- Furniture
- Mattress
- Things we carry or wear (purse, coat, shoes, backpacks)

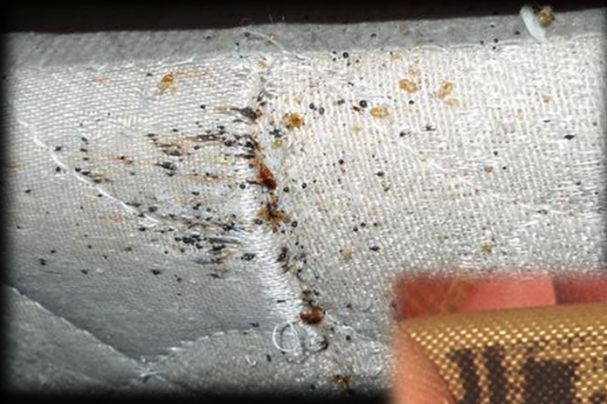
### Active

Bed bug moves by walking from an infested area:

- From one room to another
- From one apartment to another via pipes, telephone or cable wires
- Down a hallway after dropping of an item being discarded

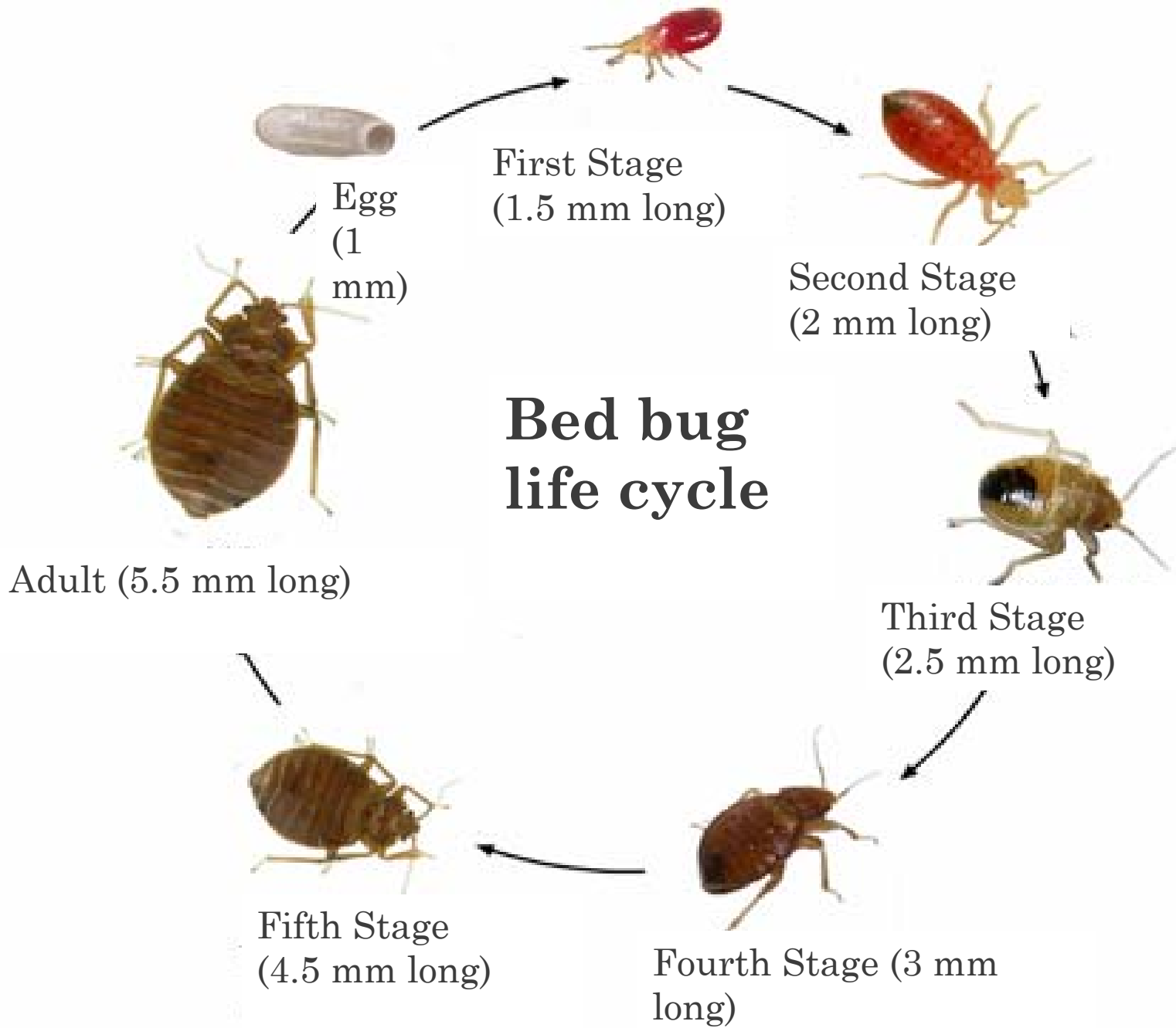
# BIOLOGY

Feeding



Hiding

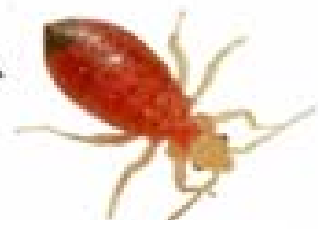




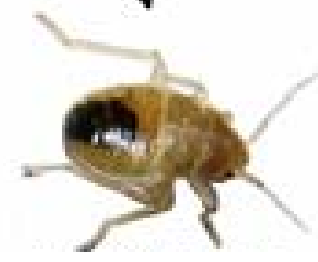
Egg  
(1 mm)



First Stage  
(1.5 mm long)



Second Stage  
(2 mm long)



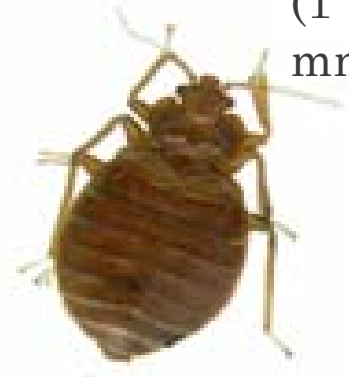
Third Stage  
(2.5 mm long)



Fourth Stage (3 mm long)



Fifth Stage  
(4.5 mm long)



Adult (5.5 mm long)

# Bed bug life cycle





- Bed bugs feed on the blood of humans, birds and mice
- Feed at night – mainly
- Saliva can cause a person to itch and cause swelling
- Scratching can lead to infected sores



- Bites may occur in lines  
- usually on exposed skin





- One study found 30% had a reaction
- Another study indicated 96% (of refugees in Sierra Leone) had reactions
- Reactions vary depending on your immune system and number of bites
- Bites do not confirm bed bug infestations



Saliva causes a “sensitivity” to bites

▪ 5 stages: no reaction; delayed reaction; both immediate & delayed; immediate reaction only; & finally, no reaction.

- True hypersensitivity can develop
- Anemia
- Asthma
- Skin lesions  
(multiple bites)





- Probe the skin to find a capillary space that allows the blood to flow rapidly
- May probe the skin several times before feeding
- Feed for 5-10 min
- After feeding, move to aggregations
- Bed bugs usually feed every 3-7 days

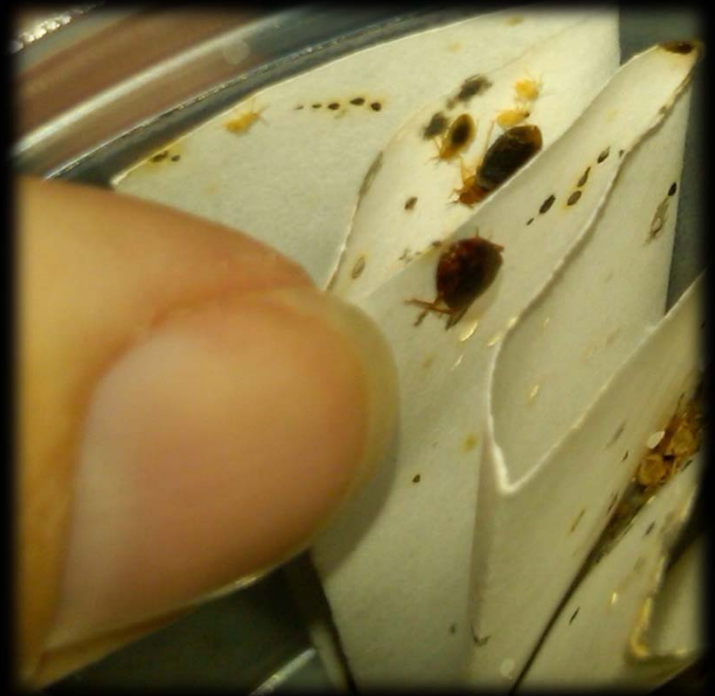


- After feeding adults become interested in mating
- They engage in traumatic insemination
- Females may be mated by many different males
- Females leave aggregations after being mated several times





- Females that mate only once will produce 25% more eggs than multi-mated females
- A single mated female can cause an infestation
- After taking a blood meal females produce 5-20 eggs over ~12 days
- Females produce ~143 eggs in a lifetime



- **Aggregate in cracks and crevices all day**
- **If hungry they become active between midnight and 5:00 am**
- **Stimulated by the increase of CO<sub>2</sub> in the room**
- **Travel many yards to get to host**
- **Bed bugs detect temperature, CO<sub>2</sub>, other chemicals**





## SIGNS

- Excreted digested blood
- Looks like cockroach feces but *feels* flat or smooth





- **Frass spots (bed bug poop)**
  - Mattress seams and on the tag
  - Wood frame of the box springs
  - Behind the head board
  - Along the tops of baseboards / the edge of carpeting
  - Ceiling / wall junctions behind pictures
  - Electrical outlets
  - In curtain seams





# FECAL CRUST





Blind resident in  
disabled public  
housing









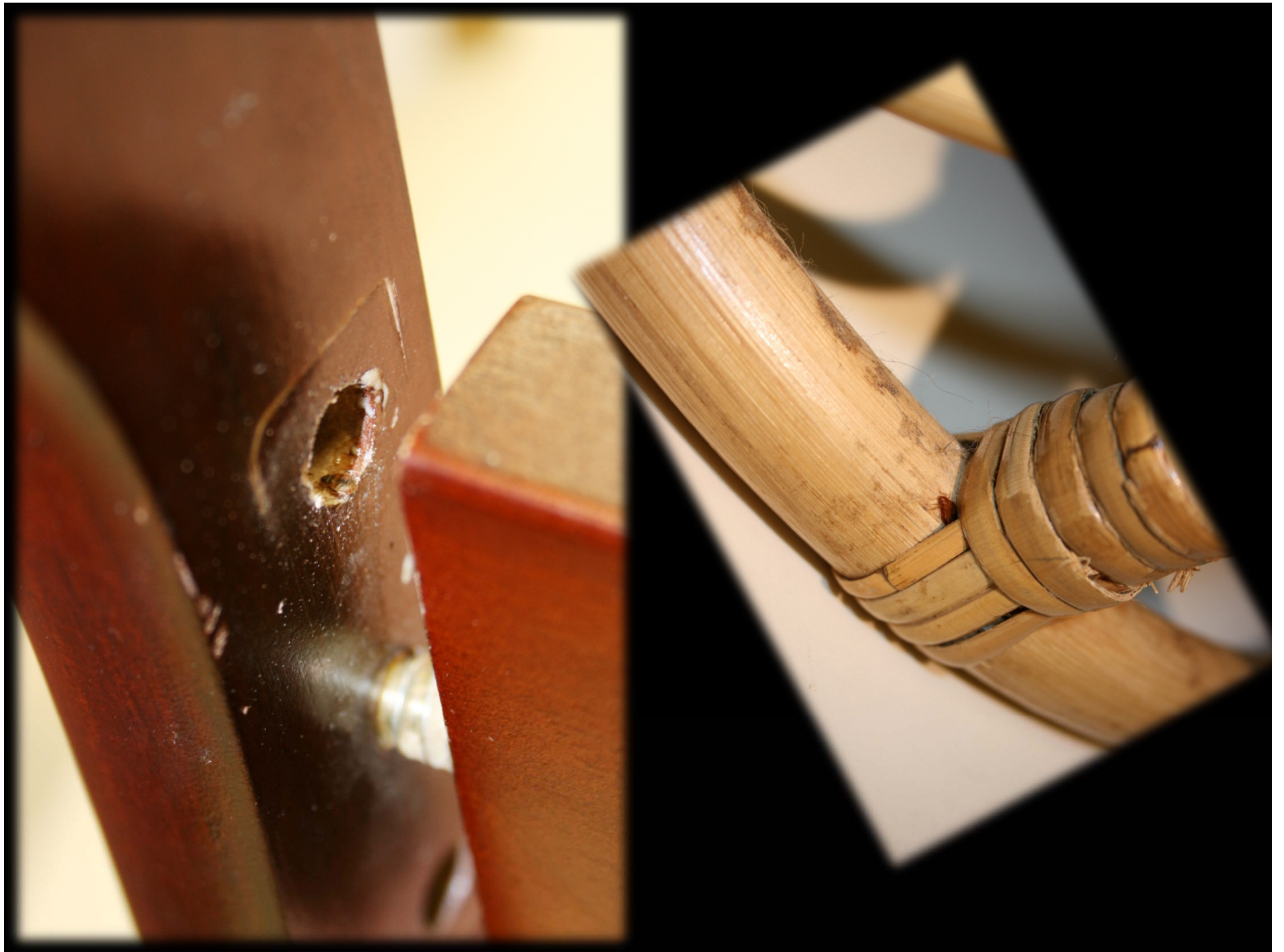




Not all aggregations are obvious







# MOLTED SKINS





# LESS OBVIOUS UNLESS YOU KNOW

- Looks like mold
- But are actually bed bug aggregations



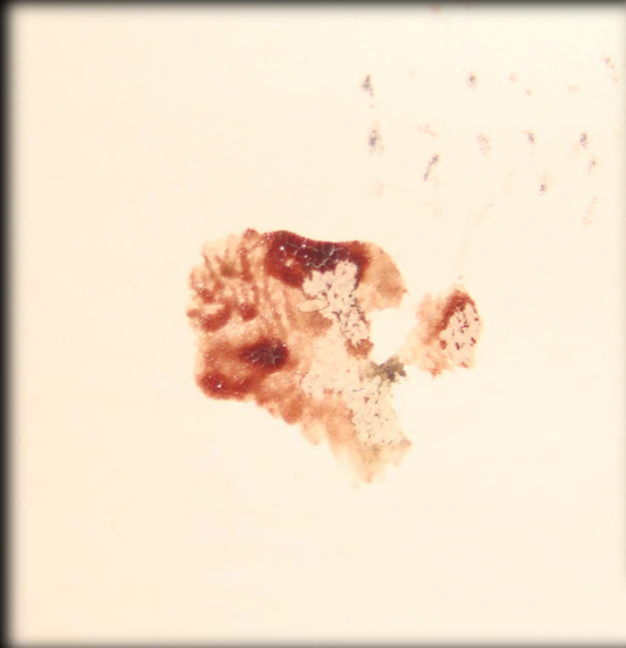




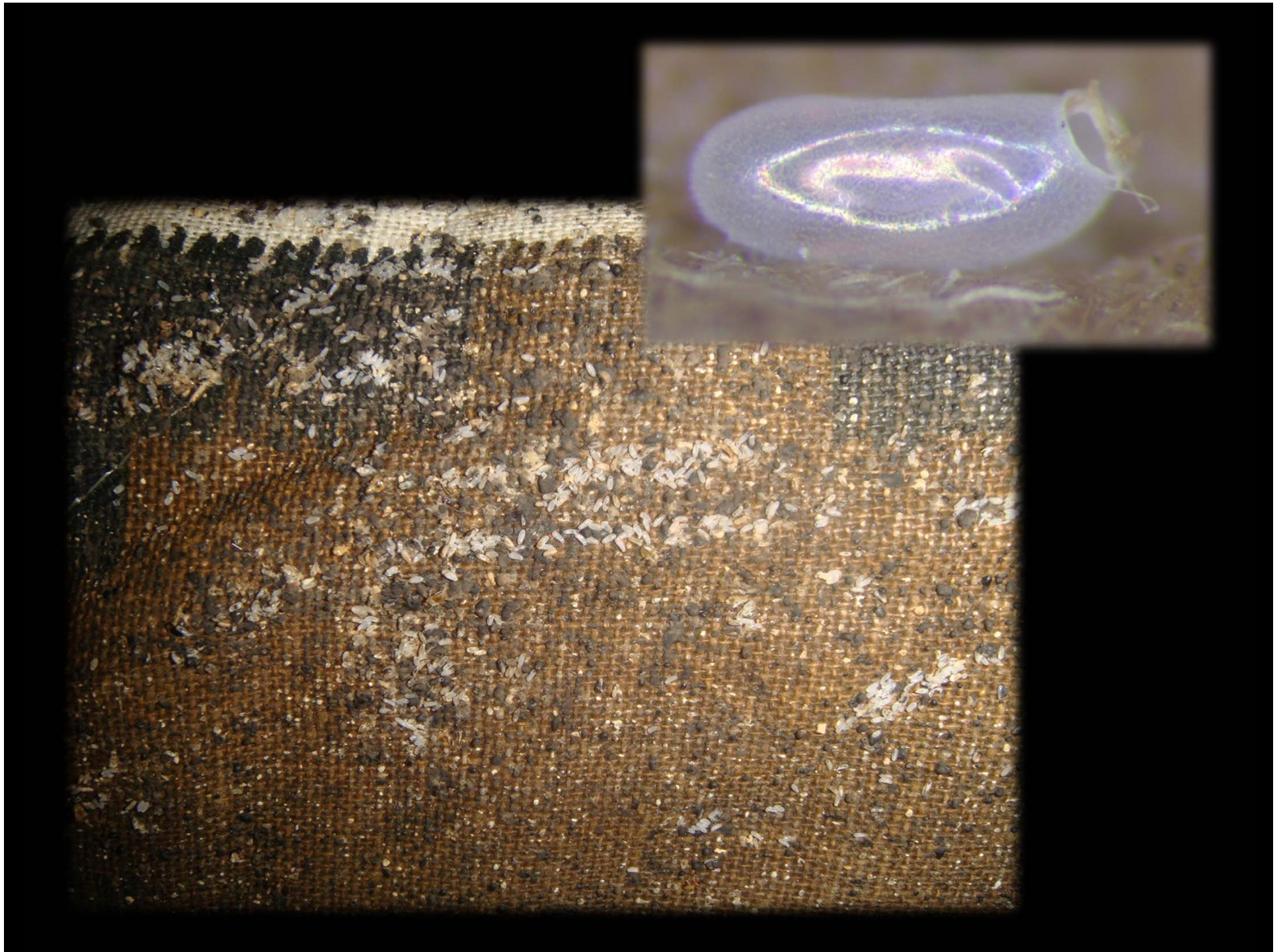


**BLOOD**

**SMASH  
AND  
DRAG**



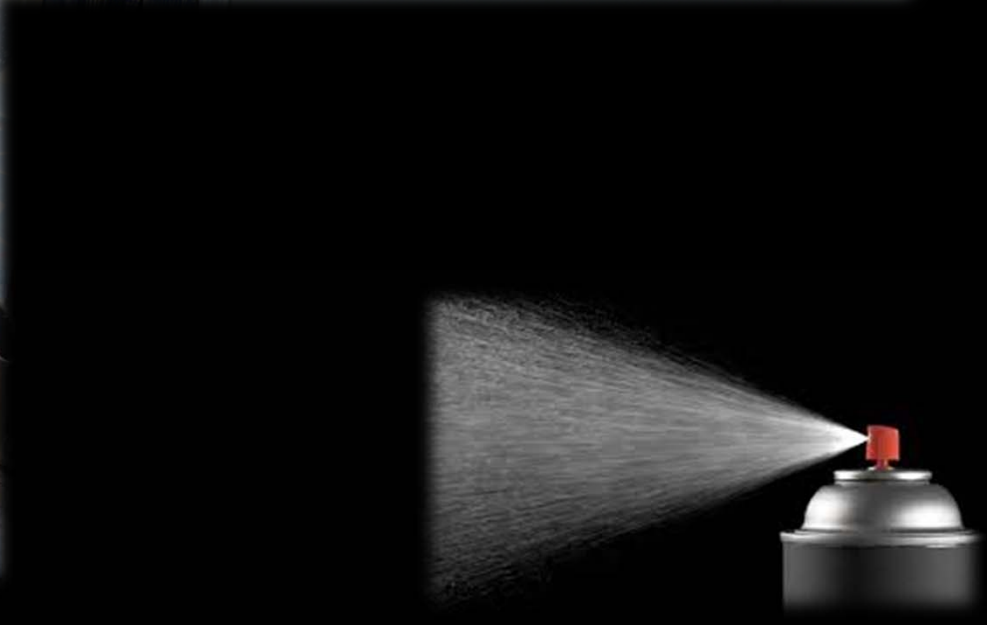


















- **Most products will kill some bed bugs**
- **Consumers do not realize that killing bed bugs *we can see* is not the problem**

1 exterior  
3 partial  
16 internal



# CONTROL

- Multiple applications of insecticides
- Crack and crevice applications
- Resistance to pyrethroid products is very high
- Not all populations are resistant to the same products
- Three general types of resistance occurring





# RESISTANCE

- **Metabolic enzyme cytochrome p450, helps to break down toxins – one gene variant that confers resistance enables the bed bug to produce large quantities of the enzyme**



# RESISTANCE

- Commonly used insecticides target an ion channel and cause nerves to fire continuously, paralyzing and quickly killing the insects - resistant bed bugs may carry a mutation in the ion channel that prevents the pesticide from binding

*kdr-type*





# RESISTANCE

- **Reduced cuticular penetration – thickening or remodeling of the bed bug cuticle may contribute to decreased insecticide penetration**



# MANY LEGITIMATE PRODUCTS

- Novel pesticide formulations
  - Temprid ( $\beta$ -cyfluthrin & imidacloprid)
  - Transport (bifenthrin & acetamiprid)
  - Tandam ( $\lambda$ -cyhalothrin & thiomethoxam)
- Chlorfenapyr
  - pyrolle; “pro-insecticide”
- Alpine Dust
  - Dinotefuran and DE
- CimeXa
  - Amorphous silica gel

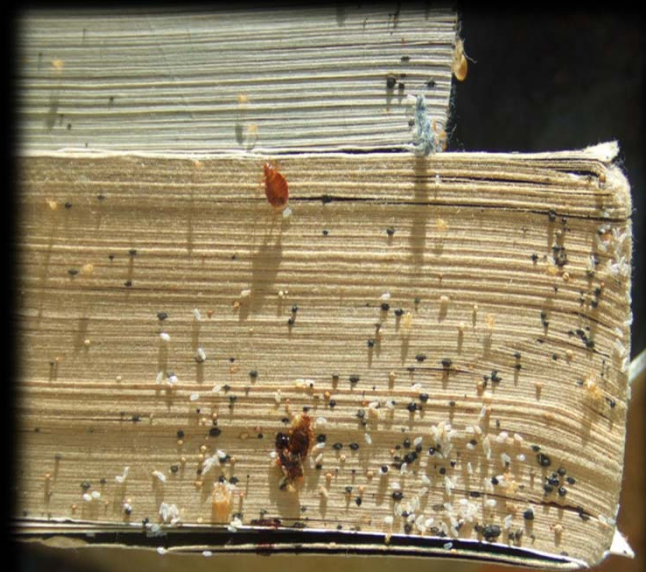




## NON CHEMICAL METHODS

- **Becoming the primary methods used in combination with chemical methods**

- Heat/Cold
- Vacuuming
- Mattress encasements
- Desiccant dusts
- Other



- Most PMPs provide preparation instructions
- Instructions make treatments easier for PMP
- Difficult for the resident: laundry bill
- Top complaint is lack of tenant cooperation

## TREATMENT PREPARATIONS



New way of thinking!  
Leave the infestation  
in place



- **Excellent detectors**
- **Can distinguish between live and dead bugs**
- **Good for lawsuit defense**
- **Expensive and require constant training**
- **Are only as good as their handler**

## **CANINE DETECTION**



- Training varies
- Verification differs
- Few third party certifications



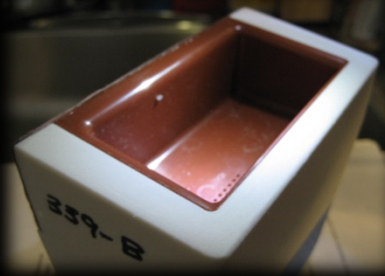


# ACTIVE MONITORS

NightWatch



Verifi



CDC 3000



2 Bed Bug First Response

BuggyBed

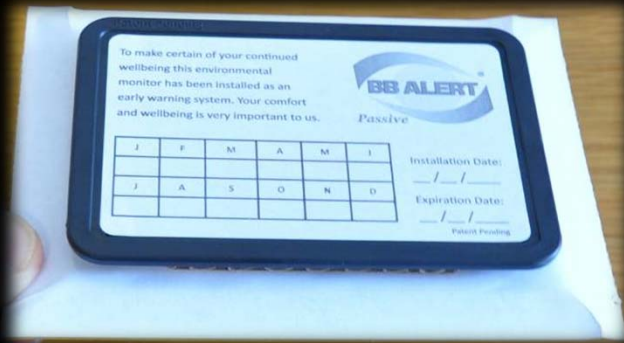
Bed Bug Beacon

# PASSIVE MONITORS/TRAPS

4 Climb Up Interceptors



4 Bed Moat



BB Alert

4 CVT BB Trap



6 BB Detection System



# VACUUMING

- The value of vacuuming is it makes inspections easier
- Large infestations, harborage areas are filled with live bed bugs, dead bed bugs, molted skins, hatched egg shells, and feces



# HEAT KILLS BED BUGS BEST OF ALL!

- Items can be placed in a hot dryer dry for 40 minutes after items are dry
- Washing only, does not kill bed bugs
- Heat box





Showering  
removes bugs  
from your  
person



- Steam temperature (at the bed bug) **must be** 130° F (54° C) or greater
- The steam head must be large
- Steam power will kill bed bugs and their eggs
- Steaming is slow and labor intensive

## STEAM CLEANING





# HEAT CHAMBERS



# WHOLE HOME HEAT

- Propane or electric
- Temperature ~140°F
- Time 4 hours





- **Bed bugs exposed to CO<sub>2</sub> snow at -42° C**
- **The snow is pressurized through a nozzle that forms vapors**
- **Snow freezes the cells of the bugs**
- **This system will not eliminate a bed bug infestation if used alone**

**CRYONITE®**



- Encasements for both mattress and **box springs!**
- Improved version has a zipper protector sewn in
- Traps bed bugs and eggs, bite proof and escape proof

## MATTRESS COVERS





# NOT ALL COVERS PROTECT



# DESICCANT DUSTS

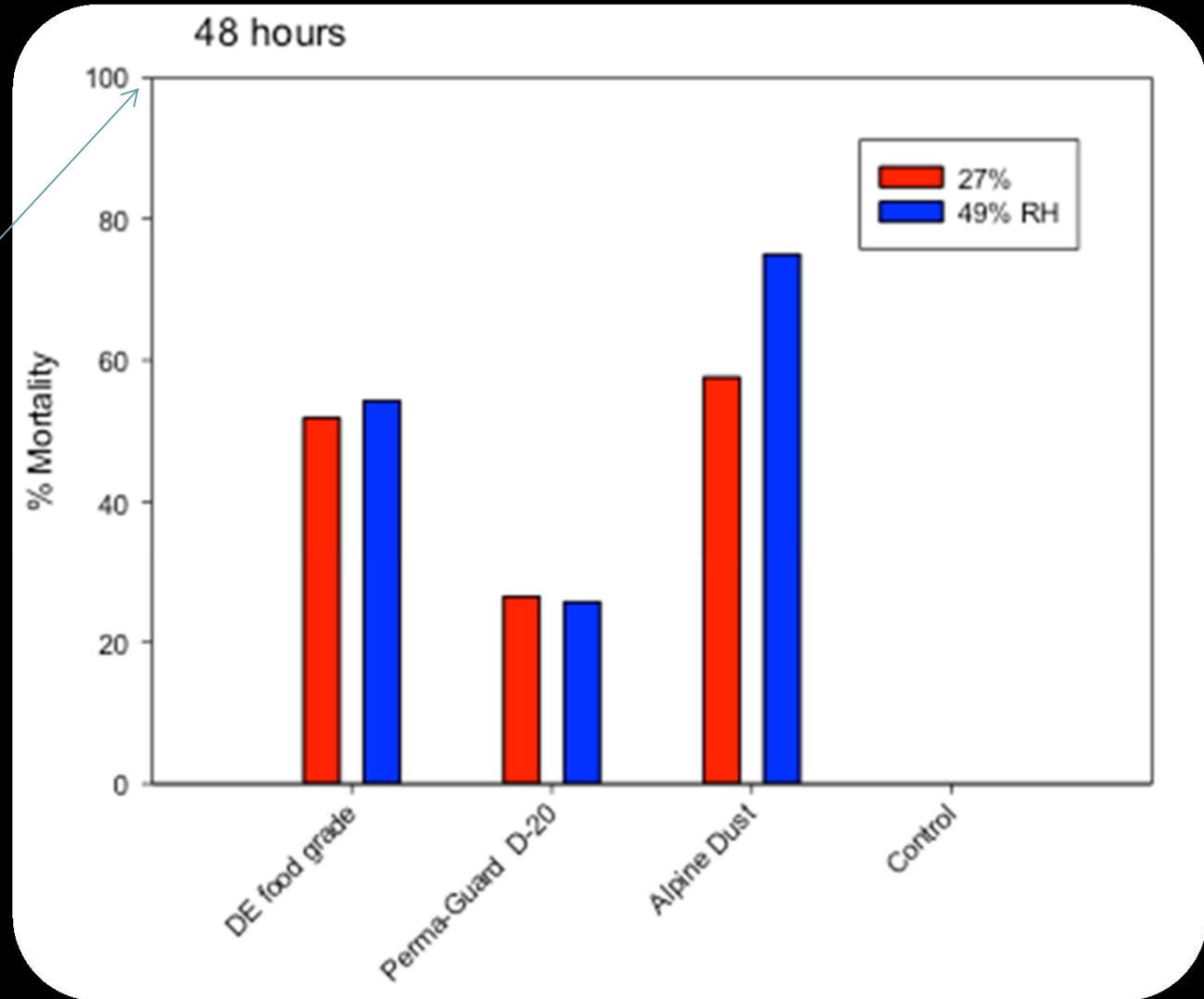
- Desiccant dusts are ultimately more effective than sprays
- Resistant strains died in ~36 hours
- Diatomaceous Earth
  - insecticide grade 2-3 days
- Silica dust
  - 2-3 days
- Lasts unchanged in wall voids for years in low humidity





# Desiccant dusts

Best  
So far

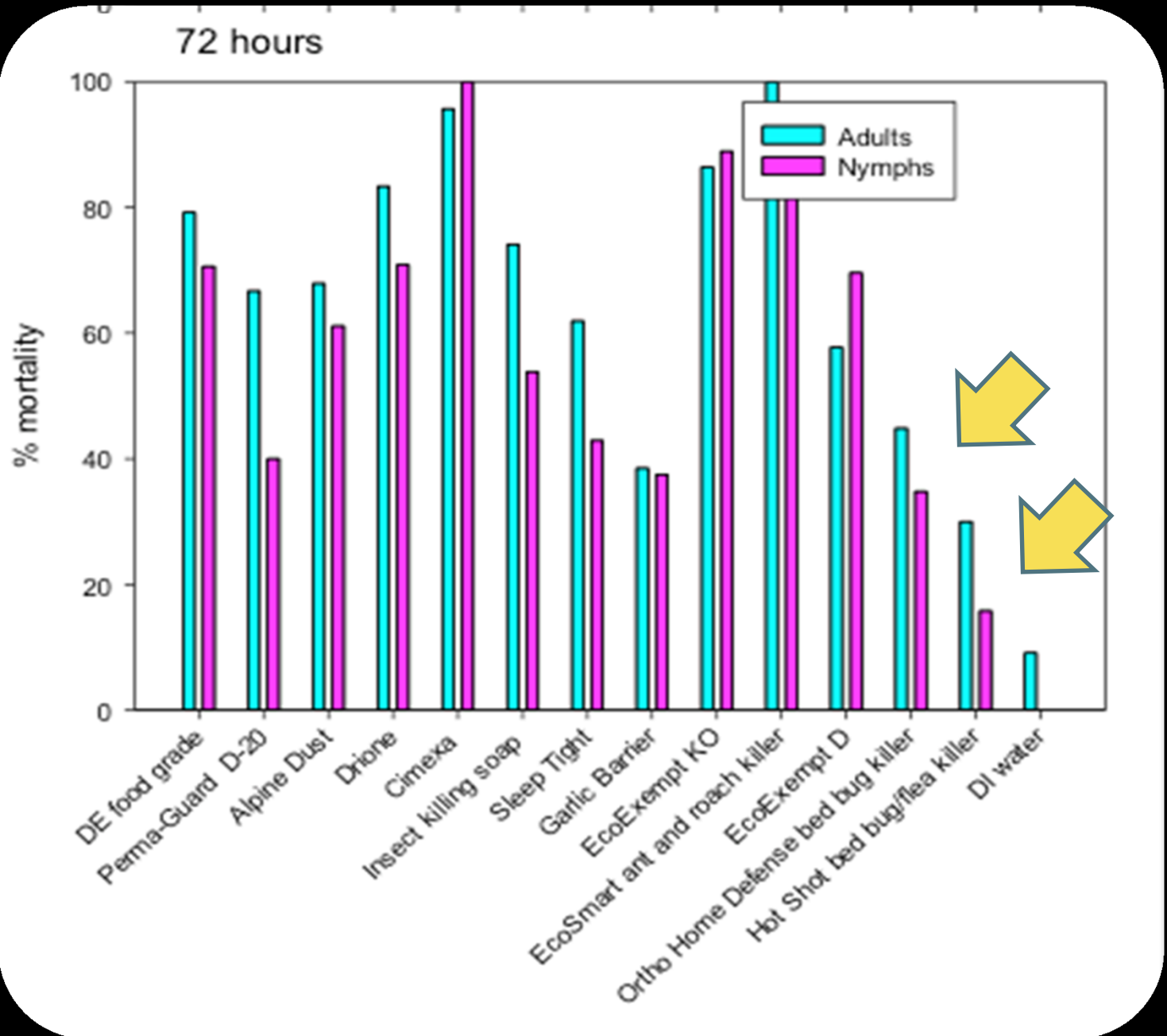


# FUMIGATION WITH VIKANE

- Fumigation is generally considered a last resort due to price
- Effective for multi-unit housing
- Residents moving to and from different units
- Sharing of belongings
- Large communal areas



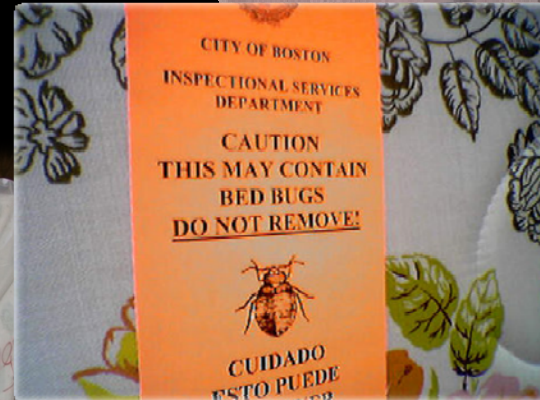
DIY  
stores  
are  
**not**  
helping





# DISPOSAL

- Wrap and mark items for disposal
- Organize solid waste pick-up









# WHY BED BUGS IN SCHOOL?

- Bed bugs are excellent hitchhikers
  - Clothing
  - Backpacks
  - Books
- Bed bugs are good runners





# ARTICLES FROM HOME



# UNHAPPY BED BUGS

- Schools **usually** lack a food source at night
- Boarding schools are the exception
- Backpacks, books, clothing, wheelchairs from home provide harborage and transport
- Schools can be transitional locations





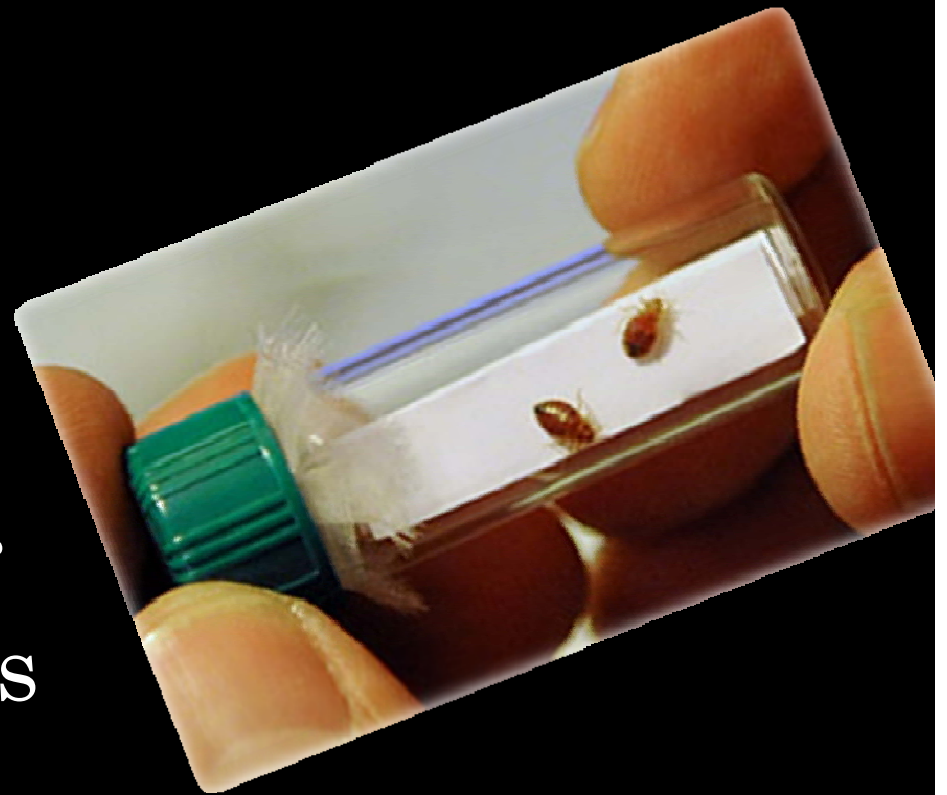


- In-school transfer can occur

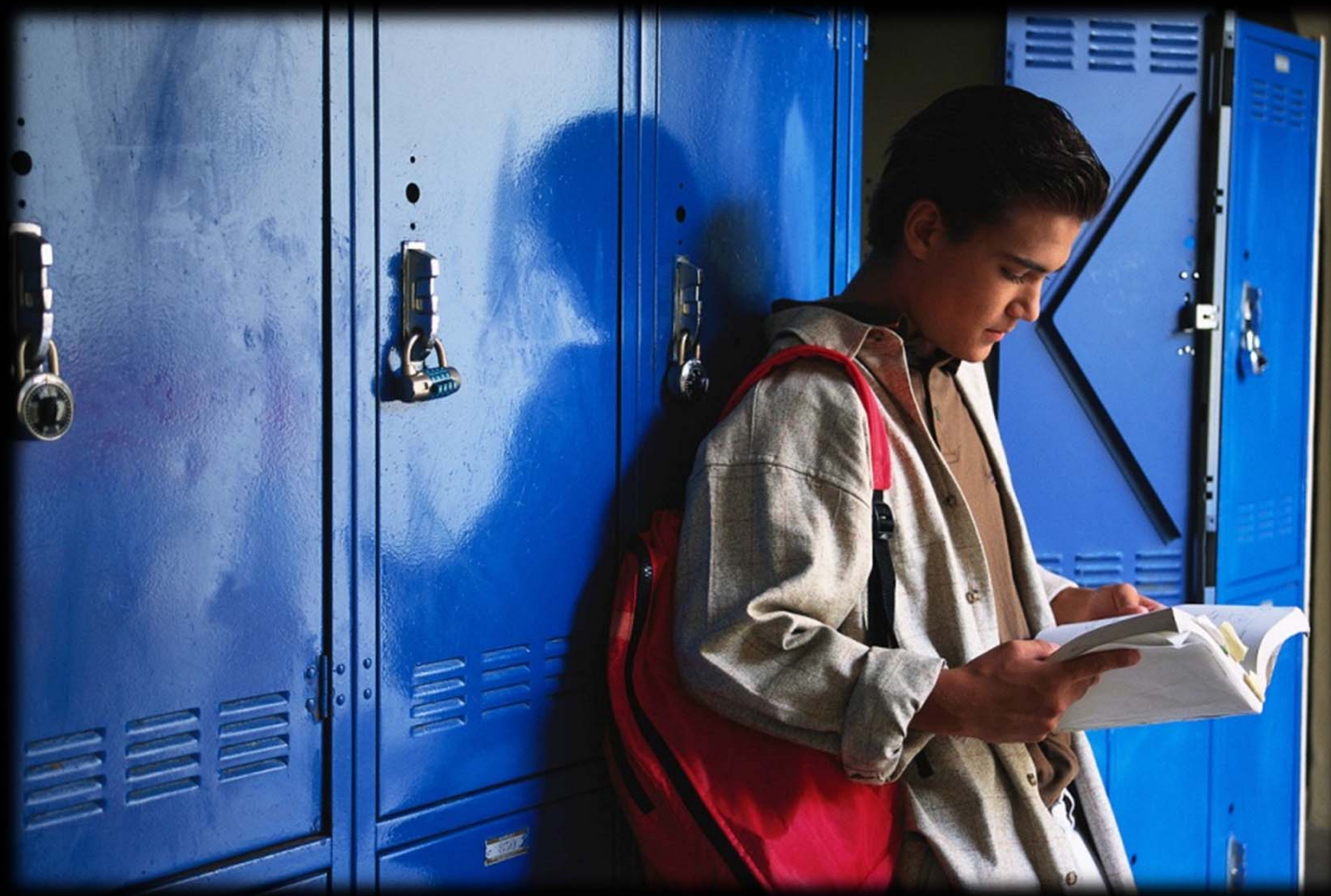




- Accurately identify all specimens
- Provide basic information
- Inspect room, monitor, careful cleaning and vacuuming
- Reduce clutter
- Isolate student belongings in clear plastic bags
- Usually no need for residual insecticides



- No good preventative solution until unmanaged reservoirs in homes or elsewhere are addressed



# Results:

Children missing school

Faculty and staff losing their jobs

Affected families  
move homes  
and schools

Extreme  
chemical use







Paradichlorobenzene  
Dichlorvos  
Naphthalene

## PARENTS

- Inform parents how to send students to school free of bugs
  - Launder clothes, dry heat for shoes, backpacks, etc.
  - Clothing items stored separated from bed bug areas in airtight bags





# IF A BED BUG IS DISCOVERED IN THE SCHOOL

- Do not panic or cause panic!
- Often it's a stray, single bug
- Collect it for proper ID
- Do not evacuate the classroom or office
- Thoroughly inspect the room





# SCHOOL PROTOCOL FOR “TREATMENT”

- Deep clean the affected area thoroughly
- Vacuum all floor and corner areas
- Wash desks and chairs
- Wash floors
- Temporarily remove rugs
- Steam clean rugs and furniture



- Shared articles can harbour bed bugs

- Wheelchairs
- Vacuums
- Medical equipment
- Electronics

- Games
- Clothing
- Toys





# Phoenix Union High School District – Bed Bug Policy

- Policy 2012-2013 school year
- 2013-2014 >75% reduction in roving bed bug sightings
- Cleaning and monitoring not “spraying”



# PARENT AND COMMUNITY EDUCATION



Centers for Disease Control and Prevention  
 CDC 24/7: Saving Lives. Protecting People.™

A-Z Index: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

## Parasites - Bed Bugs

Bed bugs, a problem worldwide, are resurging, causing property loss, expense, and inconvenience. The good news is that bed bugs do not transmit disease. The best way to prevent bed bugs is regular inspection for signs of an infestation.

Image: Bed bugs hiding in the ribbing of a mattress corner.

Explore

- Frequently Asked Questions**  
Most common questions answered...
- Publications**  
Related articles and journal entries...
- Resources for Health Professionals**  
What you need to know...
- Biology**  
Stages of parasite development...

Page last reviewed: November 2, 2010  
 Page last updated: November 3, 2010  
 Content source: Global Health - Division of Parasitic Diseases and Malaria

ARIZONA COOPERATIVE EXTENSION  
 AZ1563

ARIZONA PEST MANAGEMENT CENTER

THE UNIVERSITY OF ARIZONA  
 College of Agriculture and Life Sciences

May 2012

## WORKING THE BUGS OUT Bed Bug Control—What Landlords and Tenants in Multi-Family Housing Need to Know in Arizona

Dawn H. Geuge, Carl Olson, Al Fournier & Paul Baker

**LANDLORDS**

- Shall not enter into a lease agreement if an apartment is known to be infested with bed bugs.
- Shall provide educational materials on bed bugs to tenants.
- Also in statute ARS 32-2325 (1) and (2) to do structural pest control, a person must have a business license and qualifying party license, or be a licensed pest management professional employed by a company with a business license and qualifying party license. Employees of political subdivisions (e.g. City municipality workers) need only hold an applicator license, and are not required to meet the business license and qualifying party license requirements. Thus, the additional requirement that the Landlord shall utilize only licensed Pest Management Professionals to remediate infestations.

Landlords should consider having a clearly written Bed Bug Protocol included within lease agreements.

**Summary of the Arizona law**

- TENANTS** are required to notify landlords in writing or electronically of the presence of bed bugs.
- TENANTS** are prohibited from moving items into the building if they are known to be infested with bed bugs.
- LANDLORDS** Landlords are required to provide educational materials on bed bugs to existing and new tenants.
- LANDLORDS** are prohibited from renting homes known to have active bed bug infestations.

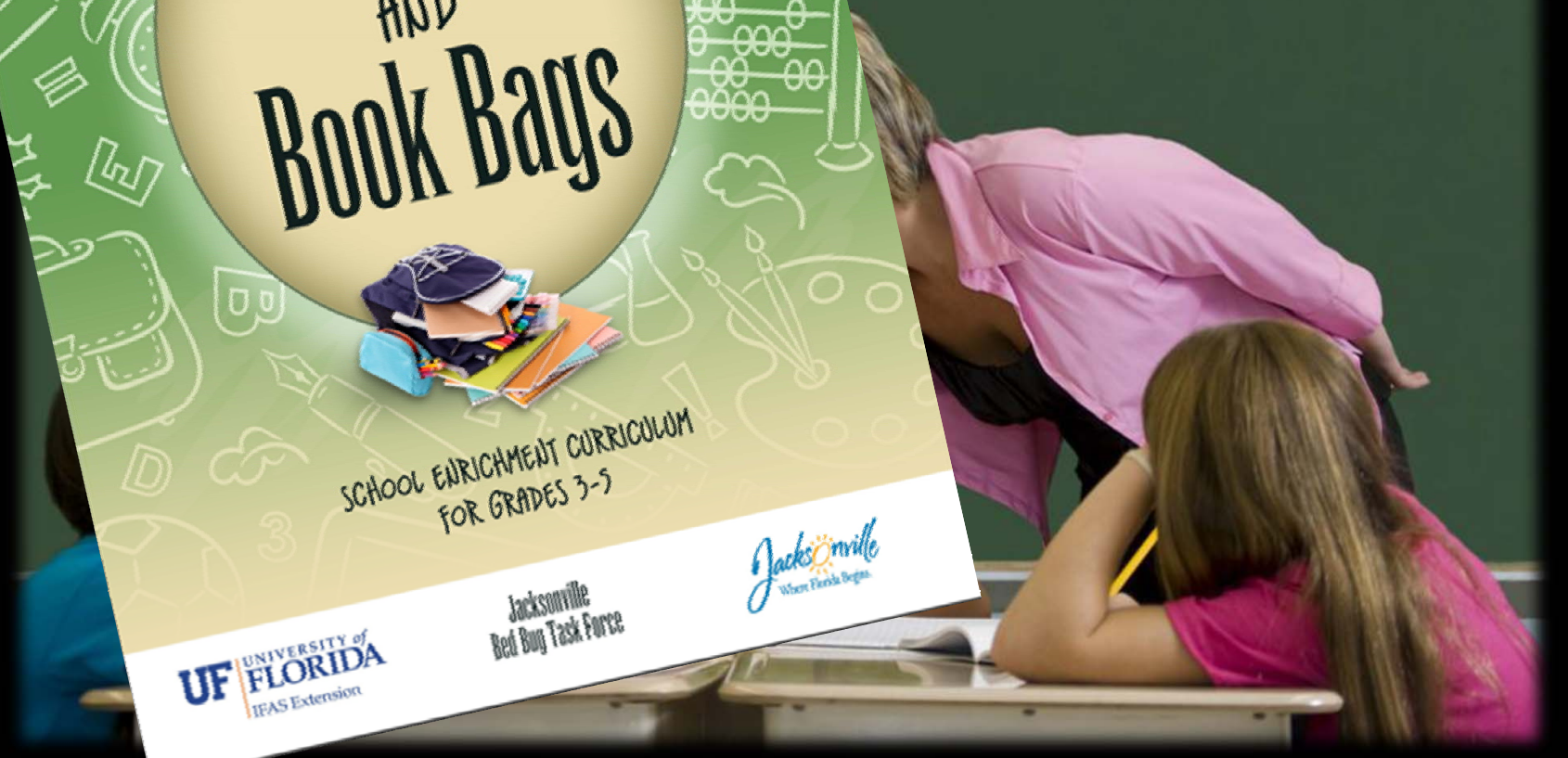
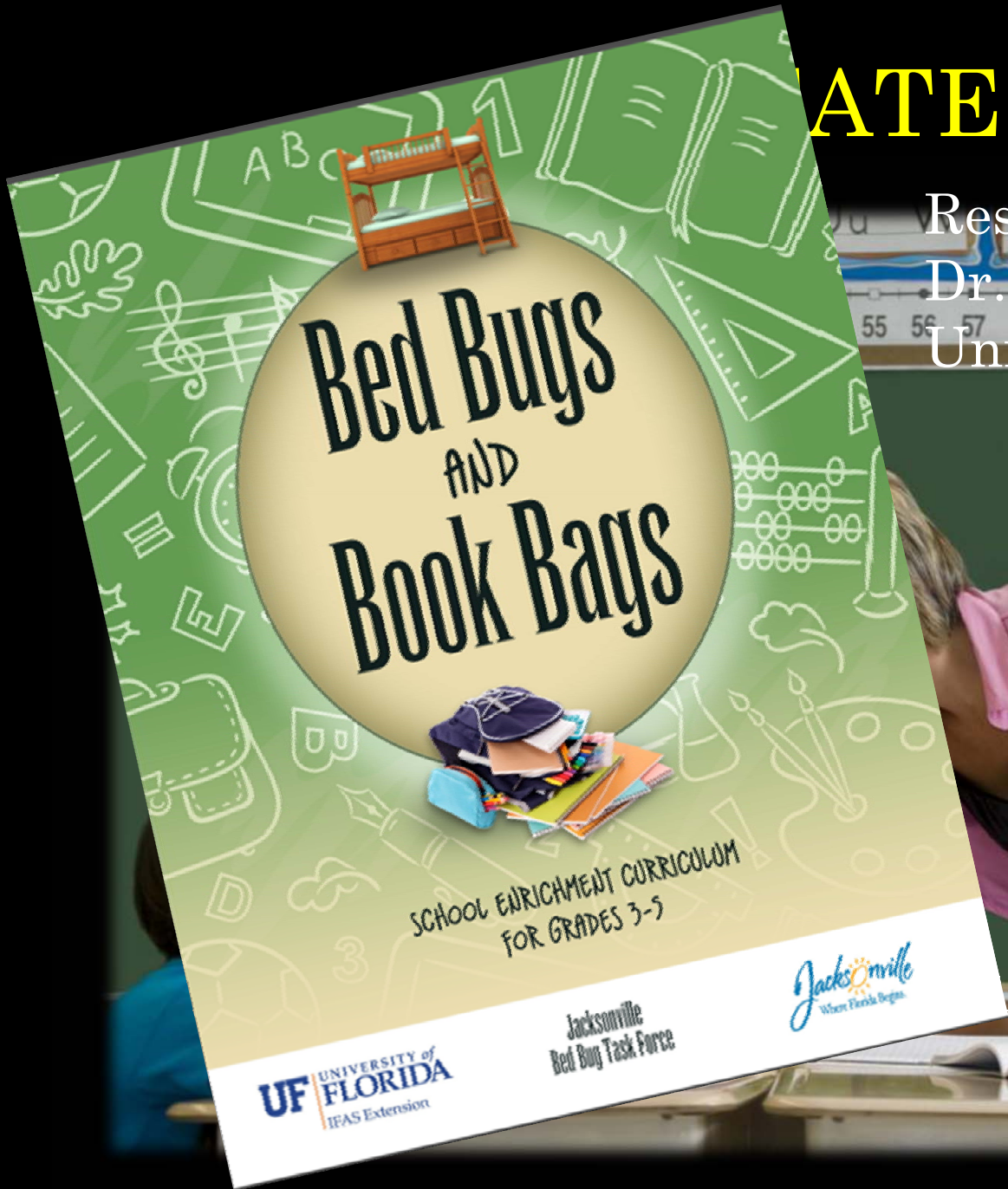
The Arizona bed bug legislation can be read at: [http://www.azleg.gov/FormatDocument.asp?InDoc=/legtext/52/leg1r/laws/0191.htm&Session\\_ID=102](http://www.azleg.gov/FormatDocument.asp?InDoc=/legtext/52/leg1r/laws/0191.htm&Session_ID=102)  
 Reflected in statute titles: 33-1319; 11-269.11; 9-500.31; 36-601

General pest management service contracts may not include bed bug remediation. It may be advisable to hire an experienced Pest Management Professional to manage properties you are responsible for and to verify that a bed bug detection dog service is used to verify that the...



# GRADE STUDENTS

Resource created by  
Dr. Rebecca Baldwin  
University of Florida



# SOCIAL IMPACTS

- 2007-2011 data from individuals calling by phone, sending written correspondence, or attending educational / outreach events



- Most commonly used pesticide choices for residents battling bed bugs was **total release foggers, & aerosol sprays**
- 9% of residents had applied gasoline on their bed (**one PHA training**)
- 19% of people had attempted non-chemical control  
31% had used more than two chemicals





- 42% people understand what behaviors put them at risk
- 89% indicated extreme stress, 100% indicated some anxiety
- 4.5% of residents attempted to seal cracks and crevices
- 8.9% had paid a company to remediate the infestation



- Few (>7%) people had no concerns when informed of average remediation costs
- 32% of specimens submitted as bed bugs or possible bed bugs were not bed bugs

\$400-5000



1. Fumigation
2. Heat treatments
3. Pesticides

The poor are  
at greatest risk

**Increased** number of  
people reporting long-  
term (beyond a year)  
bed bugs





# Socioeconomic risk



- Over the counter pesticides used in/on school backpacks
- Children missing school for more than 6 months
- Psychiatric patients refused admission to medical facilities
- Isolation from friends and family
- Bed bug detection dogs providing false positives



- Other observations

Doctors and PA's misdiagnose bed bugs based on bite reactions





Loss of:

- Home and/or belongings
- Financial stability
- Mental stability
- Partner
- Employment
- Health
- Children?



In 2012 we developed an on-line survey tool to methodically determine bed bug impacts and analyze the behavioral risk factors associated with bed bug infestations

### **2014 launch**

Bed Bug survey in English:

<http://www.surveymonkey.com/s/DGLQS52>

Bed Bug survey in Spanish:

<https://es.surveymonkey.com/s/F5NZXJK>



# Chemical disaster zones

12/17/2008







12/17/2008





# Malathion



Lab results:

Malathion 581.09 ug



# MISUSE – SEVIN DUST

- Grandparents used Sevin Dust to treat bed bugs ... “it worked for someone else”





Clean up  
procedures  
?







# DO NOT USE FOGGERS AND “BOMBS”








# Bed bugs everywhere not just homes

Bed bugs are **real**. You can pick them up **anywhere.**

503-988-BUGS  
BedBugsAreReal.org

Protect yourself.  MULTNOMAH COUNTY



Child Assessment





# IN A HOME, WHERE DO BED BUGS HIDE?

(CHOOSE THE TOP 3)

- a.) box springs
- b.) couches / chairs
- c.) mattresses
- d.) night stand / dresser
- e.) baseboards and moldings
- f.) head boards and bed frames
- g.) walls / ceilings
- h.) TV remotes
- i.) curtains / drapes
- j.) toilets





Even in the loo!





Modern Woman Digest

# Disinformation

## Disturbing New Trend: Kids Are Now Smoking Bed Bugs To Get High

“Just when us adults thought that the children of today couldn’t get any more stupid, they come up with a new and amazing way to get high, rewriting the definition of probably a bad idea.”

This fad originated in Arizona, where a group of kids thought up the bright idea of capturing bed bugs, crushing up the bodies, and inserting the pieces into “bongs”. The children then light the bongs and inhale the fumes.



Inhaling the smoke coming off of the bed bug pieces, they experience visual and auditory hallucinations. Bed bugs are known in the scientific community to secrete an active hallucinogenic chemical, that produces a feeling that resembles “walking on wet concrete.”

# Resources

<http://www2.epa.gov/bedbugs>

[http://www.epa.gov/oppfead1/cb/csb\\_page/updates/2013/fedstrat-bedbugs.html](http://www.epa.gov/oppfead1/cb/csb_page/updates/2013/fedstrat-bedbugs.html)

<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1563.pdf>

[http://www.azdhs.gov/phs/oids/training/documents/2011/Bed-Bugs\\_Gouge.pdf](http://www.azdhs.gov/phs/oids/training/documents/2011/Bed-Bugs_Gouge.pdf)

<http://webdoc.agsci.colostate.edu/ipm/Bed%20bug%20photos.pdf>

