

## **LITTLE BUGS POSE BIG PROBLEMS FOR INDOOR COMFORT**

***By Jonathan Miller***

*One black bug bled blue-black blood,  
The other black bug bled blue.*

Over the course of a few weeks, 5-year-old Duncan, whose surname has been withheld to protect his family's identity, developed small red lesions on his torso, legs and arms. First, there were just a few. As each day passed, there were more. Duncan's father, Andy, a surgeon in the U.S. Army, thought the lesions were an allergic reaction. Duncan was tested and came up positive for a wheat allergy. His mother, Caroline, was distraught by the diagnosis, but relieved that her son's illness could be controlled.

That night, however, Duncan's 2-year-old brother, Ian, woke up screaming.

When they flicked on the lights, Andy and Caroline were aghast at what they found – about a dozen tiny, brown insects scattering into the dark recesses of Ian's bedding. The boy's back was speckled with tiny dots of fresh blood.

Big brother Duncan's mild wheat allergy wasn't the problem in the house. The problem was bed bugs. It's common knowledge that bed bugs are a household pest, tiny insects that live in our beds and feed on our blood. But after nearly being completely eradicated in middle of the 20th century, leaving them more the subject of nursery rhymes than a detriment to indoor comfort, bed bugs are back – and in a big way.

The common bed bug (*Cimex lectularius*), the particular species best adapted to human hosts, can be found in any temperate environment around the world. Its relationship with mankind goes back to the beginning of history. The tiny (4–5 mm), reddish-brown oval insect feeds on blood, primarily human. Nocturnal, it attacks most often in the hours just before dawn, attracted by warmth and the carbon monoxide in exhaled air. It feeds by inserting two hollow tube-like mouth parts, one of which injects anesthetics and anticoagulants while its partner sucks blood. After feeding, the bed bug returns to its hiding place, usually in upholstery seams or cracks in a nearby wall.

A bite may not be noticed for hours after the fact due to the injected agents, and some people only react after repeated bites, but once the skin reacts, the resultant red welts can be extremely painful and irresistibly itchy. The most common targets are the lower limbs as these are the most likely to be exposed during sleep, and several bites in a row or cluster are common as the insect may be disrupted while feeding.

### **Pest Control Takes Notice**

According to a fact sheet on the National Pest Management Association's Web site,

bed bugs have finally reached attention-grabbing levels for pest control companies – association members have reported bed bug calls 50 times more frequent than in previous years.

Statistics provided to IE Connections by Cindy Mannes, NPMA vice president, from a national survey show 47.9 percent of pest control companies offered bed bug control in 2006, a 33.4 percent increase from 2005. The largest percentage occurred in the Northeast, where 72.9 of companies reported offering bed bug control service.

Although no figures were provided for any previous period, the percentage of pest management professionals reported bed bug-related calls between 2000 and 2005 increased 71 percent. “Many are getting 10–50 and more a week,” Mannes wrote.

Research conducted by NPMA-member professionals between 2004 and 2005 showed hotels and motels to be the most frequent sources of calls – 37.2 percent – while apartments were responsible for 23 percent and single family dwellings 21.6. The “Other” category registered 16.2 percent, with college dormitories rating last at 2 percent.

Most calls – 52.3 percent – came from cities, with suburban areas accounting for 14.8 percent of calls. “Other,” which, according to Mannes, “could be anything from movie theaters to airplanes,” yielded 16.1 percent of calls. Vacation spots and resorts were responsible for 13.4 percent. Rural areas with low population density accounted for only 3.4 percent of calls.

Although bans on such pesticides as DDT are simple explanations for the insect explosion, experts point to recent changes in lifestyle among Americans, most notably greater international travel – 56.7 percent of respondent professionals believed this to be the case, whereas 25.1 percent believed new targeted treatment methods were simply exposing a problem long thought dormant.

In the past, insect invasions in the home would frequently be solved with the use of aerosol pesticides, spreading powerful poison agents throughout the treated area, including out-of-reach spaces. But when DDT and other such pesticides were deemed illegal and the health effects of residual spray application became known, exterminators and pest control professionals turned to other means, such as gel-based insecticides, to treat infestations.

While such measures work well against cockroaches and other pests, inducing them to voluntarily eat the substance of their own demise, bed bugs and other blood suckers are immune by virtue of one simple fact: they are incapable of eating gel.

In lieu of professional treatment, people can take remedial action on their own. Results vary unpredictably, but simple measures can alleviate and a small infestation in the short term.

Steam cleaners on mattresses and box springs and using high-temperature washers and dryers for bedclothes can kill individual insects and their eggs, even within the body of a mattress. Barrier methods, such as placing bed legs in cups of water or surrounding them with strong double-sided tape, or ensuring bedclothes do not touch the floor, are simple means by which bed bugs can be prevented from re-entering the bed itself. Spraying individual bugs with rubbing alcohol will kill them, but only to facilitate a short-term fix. Covering mattresses and box springs with

plastic and sealing the edges can prevent the spread of bed bugs into treated space. Even with all those efforts, a pet or human guest can inadvertently reintroduce bed bugs simply by sitting on a treated bed.

To attain permanent extermination, professional treatment is advised.

### **Perception and Misconception**

Public awareness is growing, perhaps feeding the increases in call volume as much as the actual incidences of infestation. A campaign initiated in 2005 by an advocacy group founded by the NPMA, the Professional Pest Management Alliance, that warned of the growing presence of bed bugs in homes yielded news media coverage around the country, including major network news stories. Although the efficacy of PPMA's work on consumers is unknown, NPMA's surveys demonstrate a public more concerned than informed.

In comparison to other types of pest infestation, such as rodents or cockroaches, 60.2 percent of pest control customers reported feeling "more upset" at the news, 35.7 percent the "same" and only 4.1 percent "less upset" in NPMA's survey. Additionally, 11 percent of female homeowners felt bed bugs were "a threat to their families' health." When asked for words to describe their feelings, customers most often used terms such as "disgusted," "panic," "shame," "dismay," "sanitation," and "thought they were a myth."

These responses point to common misconceptions about bed bugs. The hard survey data point to the chief cause of bed bug infestation – dense living conditions, in which a single pregnant female bed bug can birth thousands of progeny capable of searching hundreds of feet for hosts. One or a small group of individuals inadvertently carried in a person's clothing or luggage can lead to a serious problem back home.

Although a stigma of uncleanness is attached to such problems, messiness, which provides the insects safe quarters for rest, is a much greater cause of widespread bed bug infestation. But keeping tidy is no guarantee of respite – bed bugs, which prefer close proximity to their hosts, can find safe haven in walls, gaps in molding or holes in furniture.

Despite the ability of bed bugs to carry viruses such as hepatitis and plague after a blood meal, there is no evidence they pass such infections on to their hosts. Aside from discomfort, the greatest health dangers posed by bites are infections and subsequent loss of immune-system function in the skin.

### **A Public Problem**

People outside the pest control industry, like Andy and Caroline, are taking notice. It can be difficult not to notice rows of itchy red welts.

Radhika, whose surname has likewise been withheld, suspected some sort of biting insect when welts began appearing on her arms and legs shortly after moving into a new apartment building in May. Despite the building's age, the unit was newly renovated and carpeted, and because neither her husband nor cats displayed any bite symptoms, she assumed an allergic reaction or mild, stress-induced illness. Near some of her bites, Radhika noticed other rashes. It wasn't until several months later, when she discovered a small, round, dark-colored insect crawling on her bedroom wall, that she performed her own research.

"I knew they were bed bugs before I did my research," Radhika said, citing the insect's appearance and a prior inspection ordered by the apartment building's management. This was particularly alarming to Radhika and her husband – the inspection, performed in August, revealed no signs of infestation.

"I wonder why he [the inspector] didn't find it earlier. I'd been being bitten for months – I just didn't know I was being bit." She noted that it was shortly after her discovery that her husband reported painful, itchy welts on his ankles.

After taking up the issue with building management, another inspection was ordered. Following the advice of friends and some Internet resources, Radhika and her husband took short-term remedial action to at least halt the bugs' spread. They used a commercial insecticide on bedroom surfaces and furniture outside the bedroom, and encased their mattress and box spring in plastic covers to prevent any further bed bug spread throughout their apartment. In the process, they discovered several individual insects in the box spring's seams and bagged them for analysis by the inspector.

According to Radhika, the inspector felt no need to further inspect their home after seeing the bags. "He said, 'Yep, you have bed bugs,'" she related. After informing Radhika that the apartment would be treated, with arrangements to be made through the building's management, the inspector left.

Having educated herself about bed bugs prior to the inspection, Radhika described her feelings as "annoyed and pissed." "They [the bed bugs] were clearly there for the first inspection." She pointed out bites evident on her arms in photos from the couple's recent wedding.

"We think they're only in the bedroom, though," she said with relief.

And despite being glad the apartment would be treated, she expressed worry about the possibility of temporary relocation and reiterated her frustrations. "We clearly didn't bring them here. We didn't have them before." Radhika wondered about the possibility of building overcrowding as a cause. She also allowed that the unit's renovation, including carpeting over floors that had previously been hardwood, may have contributed.

"But I'm just glad I'm not sick," she said.

Caitlin Heller, writer of The Bedbug Blog, has been chronicling her own problem with bed bugs for over two years while providing a forum for others suffering from infestation.

After enduring a long bout of bed bug infestation in her home, Heller began blogging, as she explains in the blog's first post, "to document my experience should I ever need the information (god forbid) in a court case or to request compensation for my losses, and also to try to help others who are dealing with a similar problem ..." after first sharing her experiences on her other personal blog.

From its outset, The Bedbug Blog recounted Heller's up-and-down path to a bed bug-free home. Shortly after the initial post, she believed her ordeal to be over and planned to put the blog on hiatus, posting updates and information for readers.

Heller stated in one post, "I can only assume that there will be a reinfestation someday, being that the original infestation was so widespread in my apartment building to begin with." She was right – a few weeks later, bites began to reappear.

Since then, Heller has endured repeated infestation relapses, each time furnishing accounts of discovery, treatments and hope. A growing readership of well-wishers and fellow sufferers led to posts of bed bug information and news, including advice on remedial action.

The Bedbug Blog's most recent post, dated August 19, reflects Heller's accumulated knowledge: "The exterminator came on Wednesday last week and I think that we've seen the last of the bedbugs in this apartment for a long, long time.

"Contributing to the quick and painless process this time around was the fact that I caught the signs early and I found a live one right away, after only three bites. I had an exterminator in exactly two weeks after getting the first bite and he was exceptionally thorough. We did all the laundry, even though it was only for three bites. And now it has been nearly a week and a half since I last got any bites.

"I'm crossing my fingers that this is it once and for all, but I'm grateful that it didn't get to be as bad as the first time. It says a lot for being informed and getting a professional in to do the job as soon as possible."

### **Aftermath**

Since the pest control inspector's evaluation of their apartment, Radhika and her husband have tried to create as normal an environment as possible for themselves and their cats. But as of press time, they are yet to be informed of their building's plan to exterminate the pests.

"I don't know when it might be," Radhika said, "but I hope they can do it when we go away next week." She noted that the family pets, for their safety, will make the trip as well.

Until an extermination is carried out, Radhika and her husband plan on using plastic covers, commercial pesticides and basic remedial actions, such as isolating their bed from the rest of the room, to curb any bed bug activity in their home.

Andy and Caroline have been aggressively fighting their infestation for more than two months. After an initial treatment, which required them to clear the house for 24 hours, failed, they ordered a stronger dose of chemicals and vacated to a hotel for 10 days. They also threw away thousands of dollars' worth of bedding, mattresses and upholstered furnishings.

During their extended hotel stay, the lesions on Ian and Duncan healed. But since returning home in mid-September, the family has consistently found live bed bugs. Caroline told IE Connections, "We are on a program where our house will be treated every few weeks, and we have to evacuate at least one night each time because the chemicals are strong. This will last several months. It has cost us dearly, but we just want our clean home back."