



Pests and Pesticides in Child-serving Facilities: An IPM Newsletter—The Itchy Issue

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Eek! Bird Mites!

By Karen M. Vail

What are bird mites? Bird mites are bloodsucking ectoparasites that are normally found on birds or in their nest. When a bird dies, the fledglings fly, or the nest is otherwise abandoned, the mites may migrate into buildings. Heavy rains may also cause mites to migrate into homes. Rain may flood nests built in eaves or gutters and kill the nestlings. Once their host is dead or gone, the mites seek an alternate food source. It's often the itching and irritation caused by these bites that alerts the building's occupants to the mites' presence. However, these mites are visible with the naked eye. They are often described to be as large as a period at the end of a sentence. Some bird mites are loosely related to rodent mites and can only be distinguished by a trained taxonomist.

Bird mite. Photo by Steve Powell & David Cook

How do I control bird mites? To control bird mites, the bird, droppings and nest should be removed. Care must be taken to avoid inhaling dust from bird droppings and to avoid exposing students to the droppings, birds, ectoparasites and pesticides. If practical, this should be done on a Friday, after the school has been vacated for the weekend. Lightly moisten the droppings prior to removal to prevent the fungus causing histoplasmosis and other disease-causing agents from becoming airborne. A respirator and gloves should be used when removing nests, droppings and birds. The Centers for Disease Control and Prevention provide guidance to safely remove guano (<http://www.cdc.gov/niosh/docs/2005-109/>). Nests are often found in attics, chimneys, leaves, rafters and gutters or down spouts. Details on removing and excluding birds from structures can be found in PB1624, *Controlling Pesky Critters Around Your Home* (<http://www.utextension.utk.edu/publications/pbfiles/pb1624.pdf>). Once the nest is removed, the area can be dusted (synthetic pyrethroids or silica aerogel) or sprayed with a residual insecticide (synthetic pyrethroids). Carefully apply insecticides so the school occupants will not be exposed. Actually, it may be better to apply pesticides around the nest before it is moved, but the site to be treated must be listed on the label. Mites seen crawling along interior surfaces can be removed with a vacuum, or moistened cloth. Place vacuum bag or cloth in a ziploc bag and seal before discarding in outdoor dumpster.

Fabrics can be washed in warm/hot water and put through a hot dryer cycle to kill mites that are present. A dry, low vapor steam can also be used to clean upholstered furniture, sofas and similar items. Bird mites can survive several days to several months without feeding, so an effective control strategy is necessary to prevent building occupants from being bothered by these little critters. However, reproduction, or egg-laying, is limited when the mites are away from a viable host.

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In May 2008, I received an inquiry about bird mites in a school. The teacher had heard birds in the false ceiling for some time, but the pest management professional was not informed until after the mites started to disperse. Fortunately, it was near the end of the school year so the children were moved to another area of the school while insecticides were applied into the ceiling void and as needed elsewhere, and the room was cleaned. If the teacher had reported the bird problem before the birds fledged, the birds could have been removed before the mites dispersed.

Care should be taken to avoid labeling clients as having “delusory parasitosis” when they complain of itching this time of year, although April and May are peak months for this condition (Vail 2006, see article below) Poor eyesight may limit their ability to see these mites. Suggest a hand lens or magnifying glass to aid detection. Placing glue boards around edges of walls and other possible areas of mite infestation may allow the occupant to obtain a sample. The publication, *Invisible Itches: Insect and Non-insect Causes* available at <http://www.ca.uky.edu/agc/pubs/ent/ent58/ent58.pdf> has an extensive discussion on many of the causes of itches. I refer you to this article to help you determine your school occupants causes of itches - whether they are insect related or not!

Modified from:

Potter, Mike. June 6, 1999. Birds, bugs and buildings. Kentucky Pest News Number 849, University of Kentucky.

Vail, K. 1006. “Rash” of delusory/illusory parasitosis cases – can use of a TV monitor in the identification process help? *What’s Happening?* Entomology & Plant Pathology - EPP #60

University of Tennessee Extension. May 4, <http://eppserver.ag.utk.edu/Whats/wh2006/Issue-3-2006.htm>

“Rash” of Delusory/Illusory Parasitosis Cases

By Karen M. Vail

We’ve recently experience a “rash” of inquiries that appear to be cases of delusory (DP) or more appropriately illusory (IP) parasitosis. Most were middle-aged women complaining about itching from an unseen insect, mite, or other very small organism. For cases where samples were submitted to our lab, we did not find any parasites. This is not unusual.

“Delusory parasitosis (DP) is a false, unshakable belief that tiny organisms, such as mites, fleas, or worms, live in or on the skin, or within the body” (Bione and Hinkle 2006, Hinkle 2000). Some of our cases appear to be illusory parasitosis which means that the individual will accept an explanation that the cause of itches is something other than insects or other parasites. DP/IP sufferers tend to be disabled or “retired”, female and middle-aged to 80 yrs old. Patients with DP typically report “insects” invading their skin, ears, nose, eyes, and other areas of their body. These “creatures” frequently disappear and reappear, but can’t be caught, and may change colors while being observed.



Examples of specimens suspected of causes itching that were submitted to the UT Urban IPM lab. Fibers twisted around themselves or skin often resemble insects or mites.

Specimens brought in for identification usually consist of bits of dead skin, hair, lint, fibers and miscellaneous debris. The skin of the individual is often severely irritated and sometimes infected from desperate scratching, excessive bathing and application of ointments/insecticides. While these occurrences may seem bizarre to persons who are not affected, they are frighteningly real to the patient. Delusory parasitosis, as well as other suspected emotional or medical conditions, should be brought to the attention of a physician.

Because the cause of itches cannot be seen in many cases, folks conclude that insects or mites are responsible and apply an insecticide. Unfortunately, insecticides seldom work in these situations and they may even cause further irritation and additional health problems. In addition, the medical community will too often prescribe medication for scabies or lice without even examining the patient. They fear the facility will be infested during the examination and get the patient out of the office as soon as possible. One person informed me the health care professional met them in their car to prevent infesting the waiting room. Recently, I've heard of physicians prescribing scabies medication over the phone. Unfortunately, this adds to the delusion as well as unnecessarily medicates and exposes the patients directly to pesticides and may further irritate the skin.

There are many possible causes of itches and irritations other than pests. Allergies, cosmetics, medications and environmental contaminants can result in reactions similar to insect bites. Just because an insect, mite or other parasite is not present does not mean the individual is not experiencing these symptoms. Keep an open mind to the possibility of non-insect causes of such reactions. An attempt should be made to rule out all potential sources of irritation. The Hinkle (2000) reference listed in the sources at the end of this article is one of the most thorough and informative articles written on delusory parasitosis and other causes of itching/rashes. I often dispense the Potter (1997) article to suspected IP/DP cases to help them determine the causative agent (or to better understand IP/DP).

The following can be used as a checklist to aid clients in determining the cause of an itch (modified from Potter 1997):

I. Obscure Biting Arthropods

(Many of these pests are large enough to be seen without magnification EXCEPT those indicated with an *. One should also consider the possibility of delayed irritation such as from bites obtained while outdoors.)

bird and rodent mites (tiny, dark specks that move); scabies* (burrows into the skin – often found on fingers, elbow, knee, and shoulder blades; can be identified by a doctor via a skin scraping); lice (head and other hairy areas of the body); fleas (usually bite people around the ankles); chiggers * (constriction between skin and clothing, ankles, knee, or waistline); biting midges/mosquitoes; ticks; bedbugs (1/4 inch, oval, flattened bugs which are becoming more abundant, bites resemble a mosquito bite and often are in areas of the body that were exposed during sleep); hairs from stinging caterpillars

II. Household Products

detergents (especially phosphate-based); soaps; cosmetics/hair products; ammonia-based cleaners; medications; printing inks (e.g., carbonless); clothing (especially fire retardant)

III. Environmental Factors

A. Physical irritants

paper, fabric, or insulation fibers; low humidity; seasonal changes in temperature; static electricity

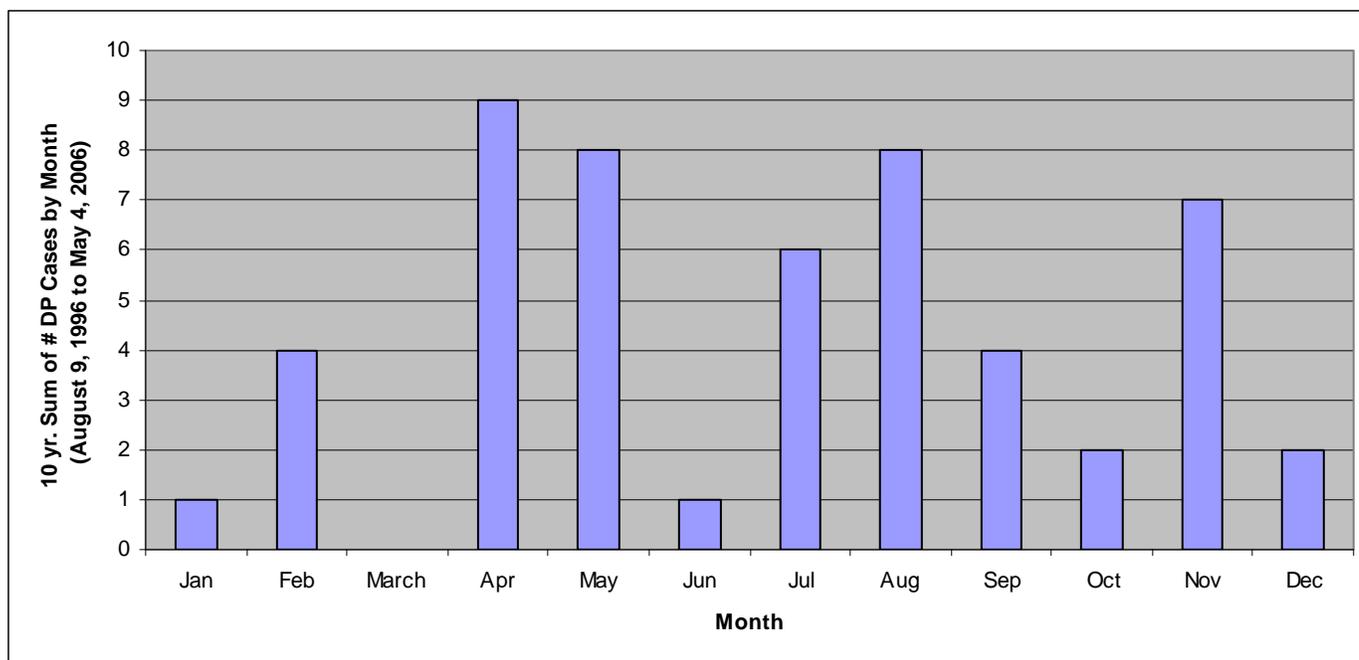
B. Chemical irritants

formaldehyde (e.g., from particle board, wall and floor coverings); ammonia; solvents/resins associated with paints and adhesives; tobacco smoke; volatiles from asphalt and tar installation

IV. Health-Related Conditions

Pregnancy; communicable diseases (e.g., chicken pox, measles); stress (home, work, death or prolonged illness of a loved one); diabetes, liver, or kidney disorders; food allergies; insect phobias; many others

When should you expect to receive calls pertaining to IP/DP? Well, I used to expect an increase in calls pertaining to itches in July/August and November. I assumed it was due to a decrease in humidity caused by heat or air-conditioning that caused the skin to dry and itch. Dry skin contacted by electrically charged items, such as coarse fibers from carpets and upholstery or small shards of paper, could lead to a rash, itch and irritation very similar to an insect bite. After a rash of calls in the spring of 2006, I decided to plot all suspected IP/DP cases based on my lab records from August 1996 to May 2006. This does not include phone conversations. I now realize we have an even higher peak of IP/DP calls in April/May than experienced in August.



If DP or IP is suspected, one of the first steps should be an inspection of the premises to determine if a parasite is present. If a person believes that the insects are too small to be seen crawling over his or her skin, strips of clear cellophane tape may be patted over the affected area as the "crawling" sensation is occurring. Most small biting arthropods move slowly and will stick to the tape if present. Tape samples should be carefully attached to a white index card, so as not to crush any specimens and labeled to indicate from where they were collected. Glue boards can also be placed against edges of the structure's surfaces where insects are suspected.

In the UT Extension Urban IPM Lab, the microscope has a digital camera which feeds to a TV monitor. Many of the county Extension offices also have a microscope with digital camera (<http://web.utk.edu/~extepp/ddtrain/equipped-counties-web.jpg>). When suspected parasite samples are viewed under this microscope, the client can observe the specimens also. The images, often of fibers, can be saved and printed. The client leaves with printed evidence that insects are not the probable cause of their symptoms. I believe, using this technique, we have been successful in showing people have illusory parasitosis when they were originally believed to be suffering from delusory parasitosis. At least they appear this way when they leave the lab and they don't contact us any further. As you handle these cases, remember, you are not a health care professional and any dermatitis should be referred to a doctor or other health care professional. UT Extension entomologists are not health care professionals; therefore, our labs do not accept body fluids, scabs, blood products or any substance originating from the body, including clothing or products that may have come in contact with these substances, for identification. These types of products should be sent to a health care professional. If they isolate and preserve an insect, we will then aid in the identification process.

I've made it a policy in my lab to examine specimens from a suspected DP or IP case once and only once. I suggest that they bring all of their glue boards or pieces of tape. But I will not look at any other specimens from this client pertaining to this problem. It has been suggested that examining specimens more than once will further support the delusion.

Even if pressured by the client, pest management technicians should not spray any pesticide if no pests are present. Often the client has already misapplied and over-applied over-the-counter products. Inform them of the inspection results. The technician should indicate that pesticide applications are not necessary and that it is the client's welfare that is of concern. Findings of no insects should be documented and all appropriate company personnel informed.

Sources:

Bione, S.E.D. and N. C. Hinkle. 2006. [Public Health Issue] Invisible Bugs. Pest Control Technology <http://www.pctonline.com/articles/article.asp?ID=2640>

Hinkle, N.C. 2000. Delusory parasitosis. American Entomologist 46: 17-25.(This provides very thorough coverage of the subject).

Potter, M. 1997. Invisible Itches: Insect and Non-Insect Causes by Mike Potter. University of Kentucky Cooperative Extension. (excerpted) <http://www.ca.uky.edu/agc/pubs/ent/ent58/ent58.pdf>

Potter, M.F and G. M. Beavers. 1995. Public Health Pest Management a Training Guide. University of Kentucky Cooperative Extension. (excerpted)

Vail, K.M., G. Burgess, R. Gerhardt and C. Harper [eds.]. 2001. PB1673 General Pest and Rodent Control Pesticide Applicator Licensing Manual (GRC). pp. 130. University of Tennessee Extension <http://eppserver.ag.utk.edu/psep/secondlevel/thirdlevel/GRC/pdf/chapter05.pdf>.

Vail, K.M. 2006. "Rash" of Delusory/illusory Parasitosis Cases – Can Use of a TV Monitor in the Identification Process Help? "What's Happening?" University of Tennessee Extension E&PP Info Note #60, Volume 25, Issue 3,

Vail, K. 2008. "Rash" of Delusory/Illusory Parasitosis Cases. "What's Happening?" University of Tennessee Extension E&PP Info Note #60, Volume 24, Issue 13 <http://eppserver.ag.utk.edu/Whats/wh2008/WHvol24issue13EPP779.pdf>

Vail, K. 2009. Will the Poor Economic Situation Increase the Number of Delusory/Illusory Parasitosis Cases? "What's Happening?" University of Tennessee Extension E&PP Info Note #60, Volume 25, Issue 3, <http://eppserver.ag.utk.edu/Whats/wh2009/Issue-3-2009.pdf>

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For more information about IPM in Tennessee schools and other facilities, or to view past issues of *Pests and Pesticides in Child-serving Facilities*, please visit schoolipm.utk.edu or utyeah.utk.edu

National IPM INFORMATION
National School IPM
schoolipm.ifas.ufl.edu/

IPM in Schools Texas
schoolipm.tamu.edu/resources.htm

IPM Institute of North America
www.ipminstitute.org/

School IPM PMSP—all schools IPM by 2015
http://www.ipminstitute.org/school_ipm_2015.htm

National Pest Management Association IPM
www.whatisipm.org/

EPA schools
www.epa.gov/pesticides/ipm/schoolipm/index.html

For further information about the IPM program at your school or in your county, contact your county Extension Agent or the school IPM Coordinator. For county agent contact information, please visit www.agriculture.utk.edu/personnel/districts_counties/default.asp

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**Comments or questions on this newsletter?
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Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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