Pest Control Starts with Recognizing the Culprits

Editor's note: This bimonthly column provides technical assistance on management, preservation, and conservation matters. We invite you to submit questions of interest to your organization; they will be directed to staff of the Minnesota Historical Society for reply. This month's question is answered by Paul Storch, MHS objects conservator.

Q: We suspect that our historic house is infested with bugs. What are the signs of infestation? And what should we do about it?

There are several species of insects that feed and nest in the organic materials commonly found in buildings, furnishings and clothing. In this article we will describe the main insect pests that infest wooden buildings. A future TechTalk will deal with pests that attack furnishings, carpets and clothing.

This will not be a how-to treatise on controlling pests. Due to the toxic nature of chemicals used, pest control is best left to professional exterminators. Rather, this article will tell you how to identify an infestation and what to look for in a pest control contractor.

Common Culprits

In the Upper Midwest, where many homes are built with hardwoods such as oak, maple, hickory and ash, the insects most likely to cause damage are powderpost beetles, carpenter ants and termites.

Powderpost beetles make small holes in unfinished wood such as joists, framing timbers and the underside of floor boards. They can damage painted surfaces, too, but will more commonly be found on the underside of painted buildings. The telltale sign of an active infestation is a fine, light-colored sawdust near the hole. Look for holes and small piles of sawdust on the ground under floor joists and outer beams.

Both adult beetles and feeding larvae bore tunnels into the wood and weaken it internally. Larvae are active when the wood is moist but become dormant during the winter season when the relative humidity drops.

Carpenter ants are common in Minnesota because they carry a chemical in their bodies that acts as a natural antifreeze and so enables them to withstand cold temperatures.

Houses most subject to attack by carpenter ants are frame buildings without basements or those with partial basements, low foundations or open, rambling porches and buildings of loose construction such as rustic cabins.

Ants prefer moist, rotting timber around foundations but will also infest dry wood. Structural members most likely to become infested are porch pillars and supporting timbers, sills, girders, joists, studs and casings.

One warning sign of an infestation is a swarm of winged ants emerging from the walls in early spring. Another clue: a faint rustling sound in walls, floors and woodwork. Look for droppings and debris near slitlike openings in wood surfaces under porches and in basements and dark closets.

Termites may occur in southern Minnesota. They nest in the soil...
and burrow up into wooden structural members of buildings. Termites feed on fungus, so conditions that support fungus growth will be conducive to termite infestations.

These insects are sometimes difficult to detect by nonprofessionals until the infestation causes severe structural damage. If you own a historic structure that has never been checked for termites, call a local pest control operator (PCO) for advice on whether or not you need an inspection.

**Tips for Prevention**

Because all three types of insects prefer moist environments, the best wave to prevent infestation is to control humidity in and under your building.

Beetles and ants also like wood that is high in starch content, so be cautious when introducing new lumber to your historic structure. If you are planning any new construction in or around your building, inspect the lumber for infestation at the point of purchase.

Carpenter ants can enter a building from trees and bushes that touch it. Keep nearby growth trimmed. Also remove any rotted stumps or firewood within 50 feet of the building. Eliminating wood/soil contact also is desirable but may not be practical with a historic building.

**What to Do If You Spot Trouble**

There are several ways to detect insects, from sticky traps and visual checks to electronic sensors and termite-sniffing dogs. Combine the first two methods for the most economical and efficient means of detection.

Sticky traps and pheromone (sexual attractant) traps are commercially available to aid in monitoring for insect activity.

Also conduct a thorough inspection of your building, both inside and out. Make notes about the affected areas and take photographs, if possible.

Try to collect specimens (live or dead) of the insects. Keeping them as intact as possible, place them in a small, tightly closed container such as a plastic pill bottle or film canister. Because different genuses and species of insects may require different means of control, it is important to have whole specimens.

All of these measures will serve as a record of your infestation and will help you describe the problem to a conservator or licensed PCO.

**How to Choose a Pest Control Operator**

When contracting with a PCO, make sure they are licensed with the state. Find out if they have worked on historic structures before. Ask if they are familiar with the procedures of Integrated Pest Management (IPM).

IPM is a state-of-the-art approach to pest control that emphasizes structural and behavioral methods of eliminating pests before resorting to chemical means.

Even if chemicals prove to be the best solution for your problem, you will want to adopt an IPM program for your building after treatment to guard against reinfection.

**Treatment Methods**

Consult your PCO or a conservator for information on available treatment methods and their appropriateness for your particular problem.

The least toxic means of pest

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Pest Control

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control is temperature modification (heating or freezing) but this is not practical for whole structures.

Chemical treatment of infestation usually involves spraying an insecticide around the perimeter of the building and in interior spaces such as basements and attics.

Be certain that your PCO follows the application instructions carefully. To protect textiles, leather items and other sensitive materials from accidental spraying, move all furniture and objects away from the walls and cover them with polyethylene.

Sometimes more drastic treatment – whole-building fumigation – is necessary. This involves tenting the entire structure in polyethylene sheeting and introducing gaseous fumigants such as methyl bromide or sulfuryl fluoride into the tented space.

Both of these chemicals are being phased out for environmental reasons and replaced will) less toxic fumigants such as carbon dioxide/phosphine, which may or may not he available yet in your area.

Most fumigants, including less toxic ones, can adversely affect materials such as leather and rubber. Consult an objects conservator before proceeding.

Some final words of advice for dealing with this and other threats to the well-being of your Historic building: Don’t panic. Investigate thoroughly. And proceed with caution.

For More Information

• Bio-Integral Resource Center (BIRC). P.O. Box 7414, Berkeley, CA 94707, (415) 524-2567. This is the main center for the Integrated Pest Management approach to pest control. Individual or institutional membership entitles you to the BIRC journal, bulletins and advice hot-line.
• Canadian Conservation Institute, 1030 Innes Road, Ottawa, Ontario, Canada K1A OC8. The CCI recently published several useful bulletins oil pest control in cultural and historic properties.
• For more information on the subject contact Paul Scorch in the John and Martha Daniels Objects Conservation Laboratory. Minnesota History Center, 345 Kellogg Blvd. W., St. Paul, MN 55102-1906, (612) 297-5774 or fax (612) 296-9961.

Send Us Your Questions

Need advice on a conservation or preservation matter? We’ll pass along your question to an MHS staff person with the expertise to help you solve your problem. Send inquiries to Interpreter Editor, Minnesota Historical Society, 345 Kellogg Blvd. W., St. Paul, MN 55102-1906.