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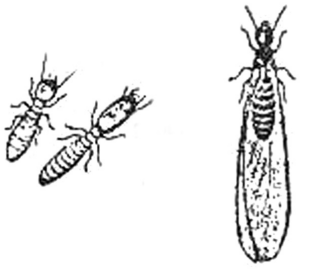
Termites



Termites, termites, everywhere and how true that is. Termites, along with decay fungi, play an important role in the forest by recycling wood back to the soil for use by future generations of plant life. If it weren't for their work, the forest would be an impenetrable mass of fallen trees and stumps. The critical role termites play in enriching the soil by breaking down cellulose in wood is a very important part of the natural recycling process.

In other words, termites were here first, long before our arrival. We moved into their territory and replaced the fallen trees they fed on with the finished lumber of our houses. What's the difference? None as far as the termites are concerned. All they need is a convenient entryway and guess who's coming to dinner! In Rockland County, at least 50 percent of homes may be infested at any given time.

To survive, the subterranean termites common here must have warm and moist conditions. For moisture they must maintain a direct link with the soil unless a leaking pipe, roof, or other moisture source provides the conditions they require. If they are in contact with dry air for too long, they will dry up and die.

Termites often create tunnels out of soil (shelter tubes) to protect themselves from the elements. Temperature control, along with protection from predators, is an important reason for the termites' underground lifestyle. Termites are "cold-blooded" animals that have difficulty functioning when it is cold. If it gets too cold, they will die. Therefore, termite colonies must find some way to escape the cold of winter. They do this by staying close to heated foundations or slabs or by moving deeper into the soil where temperatures are warmer.

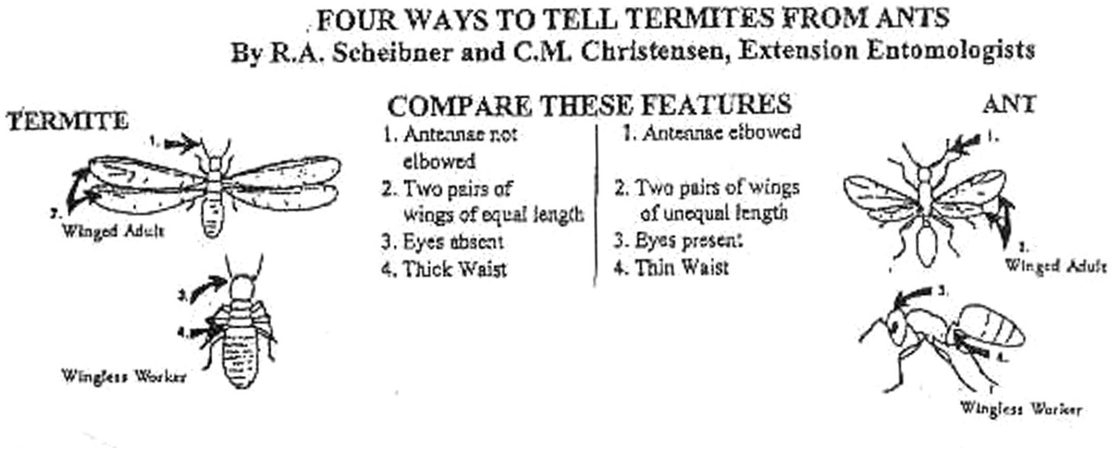
Subterranean termites cause more than one problem. Their feeding on wood fiber weakens wood structurally. In addition, the moisture and fungi in the soil they use to build protective mud tubes and tunnels hastens wood decay.

Life Cycle

Termites are social insects. This means they work together for the benefit of the entire colony. Each colony is made up of three forms or castes: reproductives (swarmers), workers and soldiers. Each termite passes through three stages of growth: egg, nymph and adult. The adult workers and soldiers are wingless, grayish white and similar in appearance. Soldiers have much larger heads and longer mandibles (mouth parts) than workers. The reproductive swarmers, or sexual adults, are black with two pairs of silvery transparent wings of equal size about $^{3}/_{8}$ inch long.

The flights or swarms of the winged reproductives frequently occur in the warm days of spring, often after a rainfall. They may also occur at almost any time during the spring and summer or even the fall. The reproductives are attracted by strong lights and often emerge within a building, gathering on windows. Reproductives shed their wings soon after emergence, and mated pairs try to return to the soil to find a suitable location for starting a new colony. Most perish, but some pairs survive. A successful female lays eggs once she is secure in a new nest. She is now queen of the colony and can live for 35 years. At first, egg laying is at low numbers but after the first two or three years it becomes more rapid. Secondary reproductive forms (without wings) also develop and lay eggs. A colony five or six years old may contain a royal pair (the queen and king), secondary reproductives, soldiers and thousands of workers. The workers are the ones who venture into buildings to forage for food (wood) to bring back to the colony.

Termites may be distinguished from ants in that their bodies are shaped somewhat like a hotdog, having no defined neck or waist. Their wings are two to three times longer than their bodies and all four wings are equal in length. Ants have two long and two short wings and their bodies have skinny necks and waists.



Management

The termite management specialist may use a number of techniques to stop or prevent subterranean termite infestations. Termite management may be based on the creation of a chemical barrier to prevent the termites from moving from their nests in the soil into wooden structures, on baits, which affect colonies directly, or both.

Barriers

Barriers may be created in many ways, but regardless of method, there are three basic areas to consider:

-Soil/foundation treatment
-Wood treatment
-Mechanical treatment

Any given termite situation may call for one or all of these treatments. The professional termite management specialist must evaluate the infested building and decide which would be the most advantageous. The intent is usually not to destroy the termite colony, but to prevent the insects from gaining access to the building. Barriers must be complete in order to be effective. Termites can squeeze through a gap in the barrier as small as $^{1}/_{32}$ inch. Monitoring is suggested after treatment, as roots that grow through a treated area will provide termites with a pathway to the structure.

Soil/Foundation Treatment

Soil treatment consists of the application of insecticides to the soil under and around a building to create a barrier that the termites will not breach. Soil treatment is most effective if done while the building is under construction. It is much more difficult to treat a structure post-construction. Soil chemical barriers should be established along the inside and outside of foundations, under concrete slabs, around utility entrances and other points of entry. These must be applied by a New York State Certified Pesticide Applicator.

There are additional concerns that should be considered before termite treatment. One is the location of the heating system in the house. If the house is on a slab and there are heating ducts/pipes within or under the slab, the structure may be treated on the outside perimeter of the slab only, by vertical rodding, trenching or the excavation/treated backfill method. Alternatively, the heating system may be completely disabled and filled in before drilling through the slab. Then a new heating system can be installed afterward.

Vertical rodding is a method of injecting termiticide into the soil. Trenching involves digging a narrow trench in the soil around the building and flooding it with insecticide. The excavation/treated backfill method involves removing soil to a leak-proof tarp or container, treating the soil with insecticide and returning the treated soil to its original location.

Another concern is the proximity of a well or cistern to the structure treated. To prevent the contamination of groundwater, if the well or cistern is within 10 feet of the pesticide application area, termiticide may be applied using only the treated backfill method, unless you abandon the well according to NYS Department of Environmental Conservation approved procedures. A new well should be placed at least 25 feet away from the building. If a well or cistern is located between 10 and 25 feet from the building, the soil within four feet above and beside the water supply pipes must be treated by the excavation/backfill method, unless the well is abandoned.

Wood Treatment

When building or repairing wooden structures such as walls and floors, especially where the threat of termites exists, you may use "treated lumber." This lumber has been treated with chemicals to give it insect and decay protection. Certain insecticides, such as borate products, used by professionals may also be injected into wood for termite protection under certain circumstances while complete termite protection work is being done.

Mechanical Alteration
Mechanical alteration of a building, to make it more resistant to termite infestation, may take many forms. In many cases this may mean replacing wooden structural supports that are in contact with the soil with supports made from concrete. In other cases, the alterations may include the removal of wood and other cellulose debris from beneath the house. The structure may be altered in ways that will help to control moisture problems.

In some cases, mechanical alteration can mean extensive reconstructive work. This situation arises when there is a lot of termite damage that seriously affects the structural integrity of the building. Poor design and construction techniques are most often responsible for this type of serious damage.

Termite Baits
Introduced in the mid-1990s, baits are an alternative or adjunct to barrier termite management. Baits are placed at regular intervals around a structure and occasionally on the termites' shelter tubes. The baits are then monitored on a regular basis. The premise is that termites will find and forage on the bait and bring the active ingredient to the colony. The bait is then passed from insect to insect, eventually suppressing or eliminating the colony. Baits kill termites either by preventing them from molting or by interfering with their metabolism. Baits must work slowly, so the termites do not learn to avoid them. It may take four months to over a year for the full effects to be realized.

The termiticide in bait stations is enclosed and baits contain much less active ingredients than is applied when barrier treatments are used. Baits may be used in situations where barrier treatments are prohibited. They are often used in conjunction with barriers.

When termite problems are suspected, you are advised to contact several professional termite management companies for estimates.

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Resources: *The Pesticide Applicators' Guide to Termite Control Regulations in New York State*, *Third Edition*, Cornell University; New York State Department of Environmental Conservation, 2000
Rules and Regulations Relating to the Applicator of Pesticides, Part 325, December 2009. (www.dec.state.ny.us/website/regs/325.htm)

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