
Kalotermes minor Hagen in Oklahoma

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The termites commonly found in Oklahoma are the subterranean forms that must have a constant source of moisture. This they generally obtain from the soil by maintaining constant contact with it. Under certain environmental conditions, however, they may obtain the required moisture from sources other than the soil. If a water supply is not available, a colony cannot maintain itself or extend its activities. The amount of moisture required by various species of subterranean termites is variable, but for each colony it must be constant and ample. A portion of the moisture can, of course, be obtained from products on which they feed and from their metabolic processes. These sources, however, are not sufficient to establish and maintain the colony. Because of the moisture requirement, subterranean termites establish new colonies in the soil and not directly in wood unless it is in direct contact with the soil. When this contact is not direct, tunnels are constructed that will serve as an access route leading to the wood. This tunnel also provides individuals of the colony with housing and protection as well as a means of diffusing the available soil moisture through all of the working area. Still another function is to aid in maintaining the termite's environmental moisture. It is also claimed that within certain limits, the tunnels are useful in regulating the temperature of the environment of the termite.

Control of subterranean termites consists of: (1) constructing the building in such a manner that they will be unable to gain access to the wood timbers of the structure, (2) making the wood itself unsuitable as a food by impregnating it with some repellent or poisonous chemical, and (3) establishing a barrier around and under the building in such a manner that it presents an impenetrable barrier to the termites. The last method of procedure is most frequently used in the control of established termite colonies.

In contrast to the habits of the subterranean termites, the non-subterranean species or dry wood termites may establish a colony in any of the wood parts of a building to which they can gain access. They may enter the wood timber by burrowing directly into the flat surface or they may enter some crack or joint before the burrowing begins. The larger termites in the United States are found among the non-subterranean forms.

Normally, the dry-wood species are found more frequently in the tropics and sub-tropics. In the United States, their distribution is reported to include an area in the western half of California from the 40th parallel southward to Mexico, then eastward in a similarly wide strip across the United States to the Gulf of Mexico, thence northward to the North Carolina-Virginia border.

In the United States, these termites have been observed outside of the foregoing area only on rare occasions. On June 21, 1957, Mr. Fred Sills, a pest control operator, called the Oklahoma State University Department of Entomology and reported a very unusual termite infestation in a Guthrie home, which he assumed could be caused by a species of dry-wood termites. On June 24, I made an examination of the infested house and collected several wingless specimens together with some wings and pellets found in the tunnels. This material was brought to the laboratory, where it was verified as one of the species of dry-wood termites. The specimens were later identified as *Kalotermes minor* Hagen by Dr. T. E. Snyder of the Insect Identification and Parasite Introduction Laboratory, Beltsville, Maryland. The known range of this termite indicates that it is a western species recorded from Washington, California, Utah, Arizona, and West Mexico. Insofar as is known, this is the first time that *Kalotermes minor* has been recorded in Oklahoma.

It is not known how or when the infestation was established in the Guthrie house. The house is a three bedroom rental property and the infestation showed up in the floors of the three bedrooms. The house was built about twelve years ago and since that time has had a number of occupants. The present occupants had lived there about four months at the time the termites were identified. One can only speculate on their origin. It is possible that the original termites were brought to the house in furniture by one of its earlier occupants. Another possibility is that some of the lumber used in the construction of the house came from an infested area of the Pacific Coast and that the insects were brought in with the lumber. Unfavorable environmental conditions probably prevented the colony from reaching its present size sooner. The house had been treated several years previously for subterranean termites by a different operator. It is entirely possible that the present infestation was present even then, and that the operator at that time failed to recognize it as a dry-wood species.

The control of this termite is entirely different from that employed against the subterranean forms. Control of the non-subterranean species involves fumigation of the entire building after it has first been enclosed under a gas-proof cover. The control of this infestation was undertaken as a cooperative project by members of the Oklahoma Pest Control Association as the active participants. The Oklahoma State Department of Agriculture and the Department of Entomology of the Oklahoma State University provided technical assistance. On August 2, 1957, the house was covered with plastic-treated canvas and fumigated with 150 pounds of methyl bromide. When it was uncovered and after aeration on August 5, the floor in the bedroom showing the greatest damage was taken up together with a portion of one of the side walls. Examination of the tunnels in the removed timbers revealed only dead specimens and it appears that the first and only known infestation of *Kalotermes minor* Hagen in Oklahoma has been completely eradicated.