

MODERN BUILDINGS AND THE TERMITE PROBLEM.

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A recent paper on the subject "Termites Modify Building Codes"* by Dr. T. E. Snyder, has called to our attention the modifications in building codes which have been brought about by the continued and enormous damage of termites in all sections of the United States, but especially the south and southwest. He has stressed three principal points—the insulation of untreated woodwork from the ground by means of proper foundations and proper mortar, metal termite shields to shut off the shelter tubes or tunnels composed of earth, and treatment of interior woodwork and furniture with preservatives. This new building program will undoubtedly bring about decided changes in both the type and permanence of buildings in many parts of the country due to new methods, materials, and new treatments of wood which is used in construction. Such a modification should reduce greatly the more important infestations and losses.

If we confine our attention entirely to the modern building where for the most part the normal precautions for termites have been observed we still find a high percentage of infestation. It is the general opinion even of the average entomologist that the termite should be a factor of minor importance in buildings with modern construction especially in the north, but it is surprising how many buildings are infested and how severe these infestations frequently become. In view of the fact that so many of these have come to the writer's attention during the past few years and many attempts have been made to control them, it might be well to state briefly certain conditions found and problems encountered, all of which are in keeping with the conditions mentioned by Dr. Snyder except that the infestations that are cited here are found in the modern homes in some of the newest and most exclusive subdivisions of Columbus. The building cost of these structures will range from \$20,000 to \$60,000 at least, and the most modern methods of construction and best materials have apparently been used as

**Jour. Econ. Ent.*, Vol. 20, p. 316. April, 1927.

far as possible. The proportionate losses are naturally not so great but the termite remains a problem even here and continued losses are suffered.

The subterranean termites have been found to be the type concerned in all infestations observed. These are able to attack wood only by maintaining contact with the earth in order to obtain moisture which is necessary for their survival. If they cross brick or concrete foundations in order to reach wood sills or other timber they construct earthen shelter tubes.

Observations have shown that houses constructed chiefly of brick, stone or concrete, are frequently infested and it is just as easy to find such a modern structure infested as it is to find a modern frame house, with a good brick or concrete foundation, which is infested.

The usual locations of termite infestation, as observations would indicate, in a house constructed chiefly of brick or similar materials, is the hardwood floors. A large number of such infestations have been seen in Columbus where the floor was damaged to the extent that only a very thin shell of wood remained above and eventually some one would walk upon this and it would easily break through. This condition is found especially in corners or other parts of the room where furniture is placed over certain portions of the floor and remains there for some time so that no one walks upon these places for a considerable length of time. It is therefore necessary to replace whole sections of hardwood floors or in many cases boards here and there throughout the room. In either case refinishing of the entire floor is usually necessary. The sub-floor and joist are sources of infestations in many cases. Frequently the whole floor becomes perforated with emergence holes. Other common places of infestation in the modern house are the door sills and door and window frames and casings, large wooden supporting beams, studding and similar structures.

In attempting to trace the source of these infestations it was found that in some cases termites were entering through crevices where the mortar had cracked or crumbled away, or had been removed apparently by these insects forming small passageways between the bricks of the foundation so they could enter here. The termites after entering were working up the brick or concrete wall inside then following a large beam or some wooden structure to the center of the building and working up into the floor and other portions of the building

from this point. Attention should probably be called to the conditions which usually favor such a source of infestation. As a rule after excavating for a building and constructing the foundation, a sort of trench remains for some time outside the foundation while the super structure is being constructed. Wooden refuse of all kinds, but composed chiefly of small pieces which have been sawed off and dropped into this trench and are later covered with dirt when the surroundings are graded and landscaped. This forms an ideal condition for termites and is a common source of infestation for the home, as excavations have demonstrated, for they come through the walls frequently below the outside surface or ground line. Antique and other furniture frequently contain termites which destroy the wood and consequently the value of these articles within a short time. In addition, evidence would indicate that this is probably the source of infestation for woodwork and other portions of the household in a few cases where such articles of furniture have been brought into the home.

Probably the most extreme and striking examples of termite infestations are in modern fire-proof buildings. A few such structures are known to be infested in Columbus, although the source of infestation, in many cases, is rather difficult to ascertain. These infestations are found in buildings of brick or concrete construction, finished with metal lath, composition floors and baseboards, metal and glass doors throughout, the only wooden portions being the door casings which are infested and the interior window frames. The losses here of course are comparatively slight as a rule but these are good examples of the extreme conditions under which termites occur in modern buildings.

As a specific example of an infestation of this type and one showing a loss of several thousands of dollars I might cite the recent discovery of termites in large numbers in the basement of the Ohio State University Library. This building was erected in 1913 at a cost of approximately \$250,000 (it would cost \$400,000 to duplicate it now) and constructed entirely of reinforced concrete, stone and similar materials. No wooden structures of any kind are found in the basement except some tables, chairs and temporary shelves for sets of old periodicals. Upon investigation it was found that when the concrete was poured for the floor of the basement, very minute pores or openings were occasionally left around the wall and supporting

pillars where the sand and cement had not entirely filled these openings between the gravel. The termites had come through these openings then had built their mud tunnels up the walls and concrete pillars, worked into the wood shelves then had destroyed many sets of older periodicals which were stored here temporarily. An enormous amount of labor, extra construction, new shelves and replacement of many sets of periodicals have been necessary. This specific example is typical of many similar infestations and losses which could be cited.

If these pests could be easily controlled the problem would not be so serious, but economic control is difficult to accomplish after they are once established and they frequently become established in the modern home as previously indicated. The superheating process in an infested house seems to be the only sure method and this is very hard to accomplish in most buildings because of lack of sufficient heating equipment to raise the temperature to the necessary degree without danger of fire. Fumigation with cyanide and other gases is not successful in many cases since it seems to be impossible to penetrate these inside burrows with gas until after the emergence holes have been made in the wood. Therefore the termite infestation in the house of modern construction still is a problem although the degree of damage has been reduced.

BOOK REVIEW.

THOMAS SAY, EARLY AMERICAN NATURALIST. By HARRY B. WEISS AND GRACE M. ZIEGLER. Published by Chas. C. Thomas, Springfield, Ill., 1931.

We have in this volume a most welcome addition to the literature on early American Entomology as the authors have succeeded in bringing together a very interesting collection of incidents concerning the life of this famous naturalist, much of it hitherto inaccessible or unknown to the entomological fraternity. The book includes a sketch of what could be learned about the Say family, accounts of Say's various travels and explorations and copies of his letters to friends, especially to the Melsheimer's, on entomological matters. There is also a vivid picture of his connection with the community at New Harmony, Indiana, of which he was a part. The illustrations include, beside two portraits of Say, those of Mrs. Say, McClure and LeSeuer, and reproductions of letters, scenes in Philidelphia, New Harmony, etc.

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