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EC1558 Termite Control in Nebraska

Jack W. Lomax

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TERMITE CONTROL

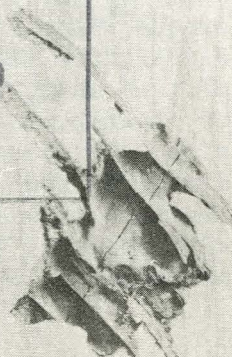
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COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE, AND THE UNITED
STATES DEPARTMENT OF AGRICULTURE COOPERATING, W. V. LAMBERT,
DIRECTOR, LINCOLN.



SOIL TREATING FOR TERMITES

Jack W. Lomax

Primarily this bulletin is designed to suggest control of termites already in a house. Many infestations in Nebraska homes can be satisfactorily taken care of by the home owner. Before starting, however, something of the insect and its habits should be known.

HOW TO RECOGNIZE SUBTERRANEAN TERMITES

Subterranean termites are social insects that live in nests, or colonies, in the ground. Each colony is made up of three forms or castes--reproductives, workers, and soldiers. During their lifetime the individuals of each caste pass through three stages -- egg, nymph, and adult. The adult workers and soldiers are wingless, grayish white, and similar in appearance, except that the soldiers have much larger heads and longer mandibles, or jaws, than the worker. Both workers and soldiers live concealed within their tunnels in wood and soil. The reproductives, or sexual adults, have brown or black bodies and two pairs of long, whitish, opaque wings of equal size. They differ from the reproductive forms of true ants, which have two pairs of transparent wings of unequal size. Termites may also be easily distinguished from true ants by their thick waistline, in contrast with the very small waistline that is characteristic of all ants.



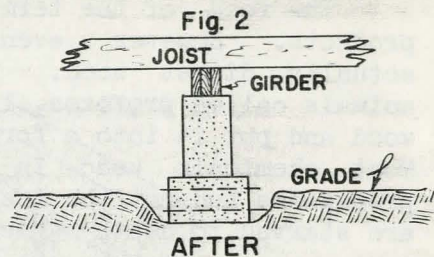
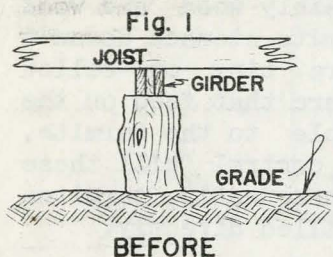
Winged Adult



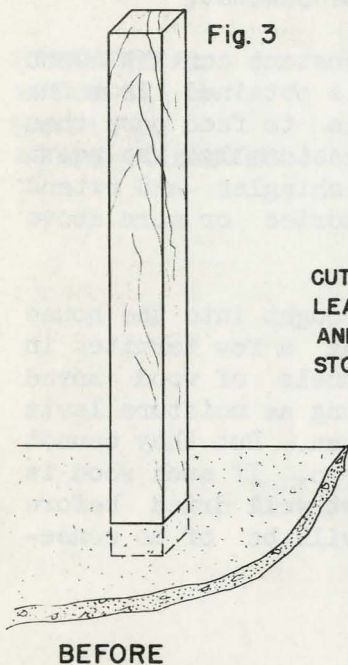
Worker Termite



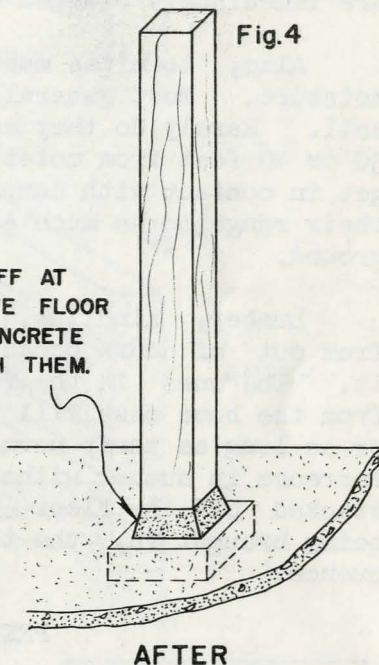
Soldier Termite



REPLACE WOODEN SUPPORTS WITH CEMENT
OR BRICKS. ALSO TREAT SOIL AROUND NEW
SUPPORT.



CUT PILLARS OFF AT
LEAST 6" ABOVE FLOOR
AND PUT A CONCRETE
STOOL BENEATH THEM.



PILLARS & SUPPORTS

Termites gain easy entrance to the house by way of wooden structures which go through the concrete floor.

The food of the termite is mainly wood and wood products. However, even the termite stomach doesn't actually digest wood. There are tiny one-celled animals called protozoa, living there that feed on the wood and put it into a form available to the termite. Most chemicals used in termite control kill these protozoans and not the insect. Consequently, termites are starved to death rather than killed directly.

Light in any form is repellent and lethal to termites. The insects build tubes to crawl through if it is necessary for them to come out of wood. Even holes accidentally eaten through the surface of wood are immediately plugged with mud or sawdust.

Also, termites must have constant contact with moisture. Most generally this is obtained from the soil. Rarely do they make tunnels to feed more than 30 or 40 feet from moisture. Occasionally the pests get in contact with damp, wooden shingles and extend their range to as much as three stories or more above ground.

Lumber, kindling, etc., brought into the house from out of doors occasionally has a few termites in it. The ones in the feeding tunnels of wood moved from the home nest will live as long as moisture lasts or as long as their normal life span. But they cannot increase in number without the queen. If such wood is stacked off the floor or at least well dried before being brought in, the termites will be of no consequence.

PREVENTION

Preventive measures are cheapest in the long run. Plenty of windows in a basement allow enough air and light to enter to keep things dry. A good sound foundation will not let termites work inside cracks or openings in foundation stones or cement blocks. The use of non-corroding metal shields all around the house between the foundations and base-plate will stop

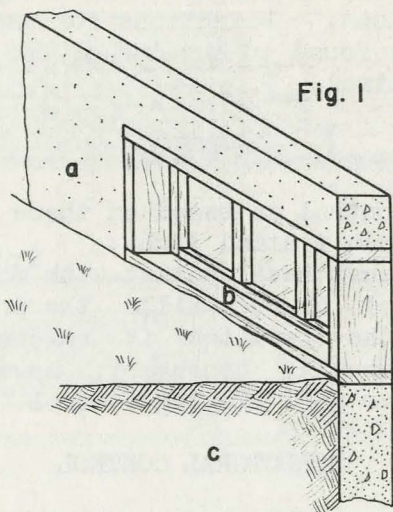


Fig. 1

BEFORE

FOUNDATION - a
WINDOW SILL - b
EARTH FILL
AROUND FOUNDATION - c

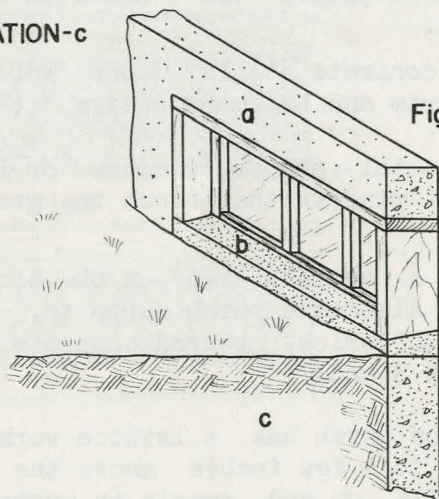


Fig. 2

AFTER

BASEMENT WINDOWS

Replace wooden sill with concrete wherever it has a chance to touch the soil.

those extra hardy termites that move in despite the other precautions. Directions for use of the metal shield will be found in any one of the USDA bulletins on termite control.

CONTROL

Termite control is based on these known facts:

- (1) termites can't stand light;
- (2) termites must have contact with moisture.

The chemical, of course, kills the protozoans in the stomachs of the termites it reaches. Structural changes are usually necessary, however, to aid the chemical to give more lasting control.

STRUCTURAL CONTROL

In the first place, all contact of wood and soil must be broken.

(1) Put concrete stools under wooden basement pillars, supports and basement stairs. (Page 3)

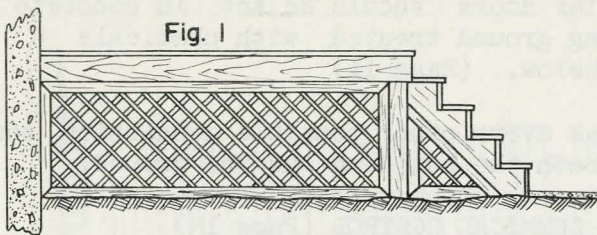
(2) Use metal casement windows or lay concrete around basement windows that touch the ground. (Page 5)

(3) Use a concrete step as the bottom step on all porches. Also make porch supports, or at least the footings, of brick, poured concrete, or cement blocks. (Pages 3 and 7)

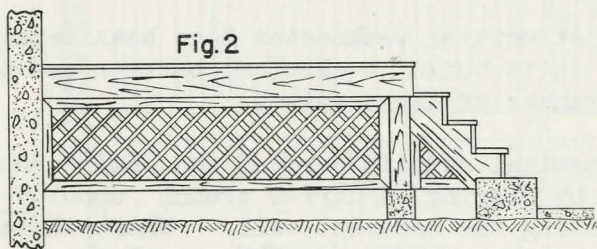
(4) If the porch has a lattice work around the bottom, raise it a few inches above the soil and do not let dirt pile up and remain in contact with the wood. (Page 7)

(5) Where fence posts are sunk into the ground and nailed to the house, either saw the post off well above ground or replace it with a metal one. (Page 9)

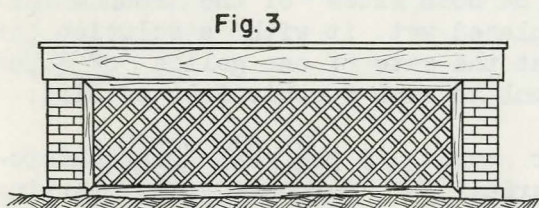
(6) Remove lumber piles that are against the house, or raise them with cement blocks.



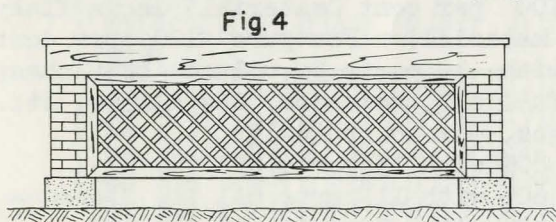
BEFORE



AFTER



BEFORE



AFTER

PORCH AND STEPS

Replace bottom step and porch supports with concrete. Raise lattice at least 6" off the ground, and do not allow leaves and debris to fill this gap.

(7) Cellar doors should be set in concrete or the surrounding ground treated with chemicals - see instructions below. (Page 11)

(8) Break every other possible connection where wood touches both the building and the ground.

CHEMICAL CONTROL (Page 13)

When all structural weaknesses have been repaired the next step is to build a chemical barrier and plug all other entrances of the termites.

Make a chemical curtain around the entire house. This is done by digging a narrow trench about 2-1/2 feet deep exposing the basement wall. Where there is no basement, a complete job can be obtained only by digging the trench on both sides of the foundation. As the soil is replaced wet it with a solution of PENTACHLOROPHENOL at the rate of one gallon of 5 per cent pentachlorophenol to each 5 cubic feet of dirt.

(Directions for making 5 per cent pentachlorophenol: The material is purchased at varying strengths. Pure 100 per cent material is a flaky brown crystalline material. For pure 100 per cent chemical, mix it with 19 parts by volume of a cheap light oil such as fuel oil, kerosene, distillate, etc. For lower percentages, mix accordingly:

1 part 80% with 15 parts oil

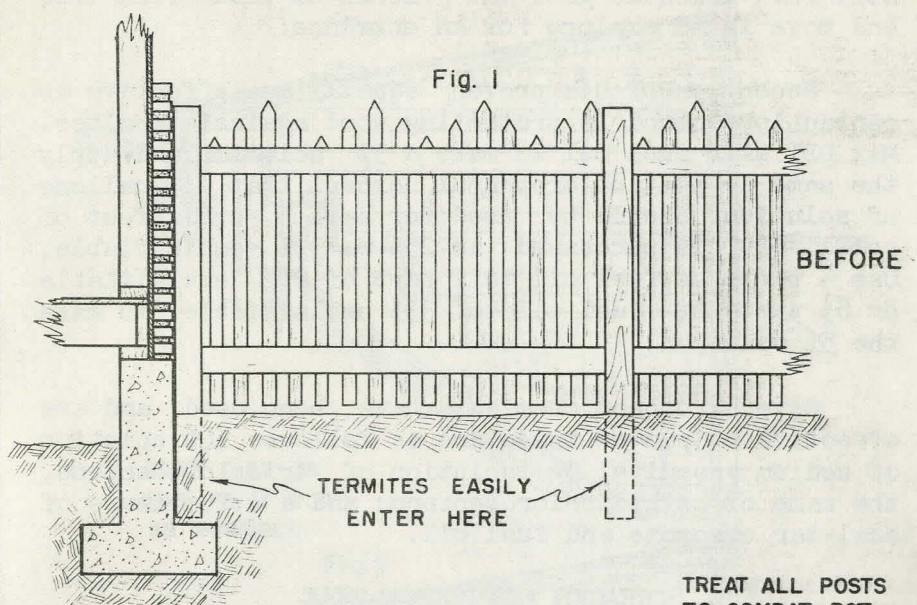
1 part 60% with 11 parts oil

1 part 40% with 7 parts oil

If 5 per cent chemical is purchased, use it straight.)

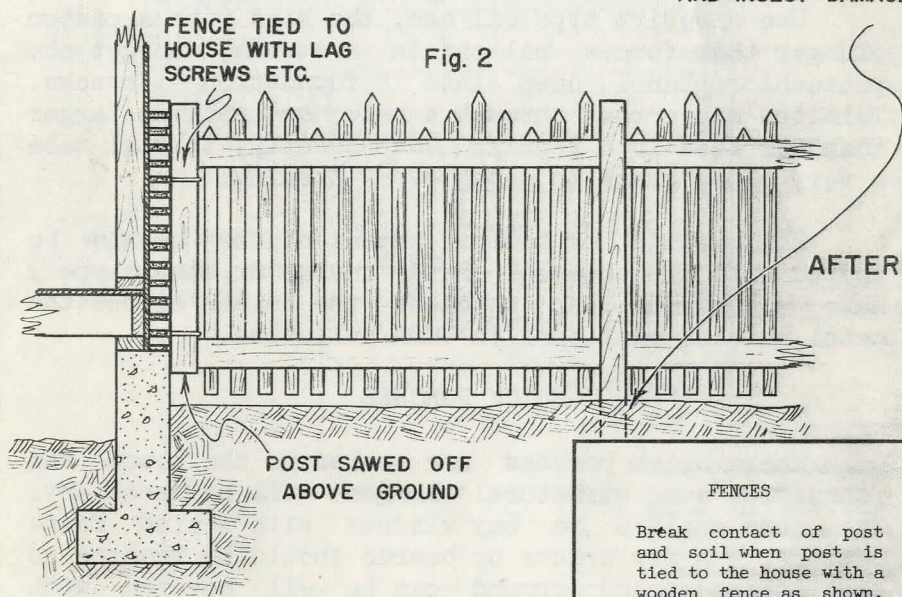
Put in a layer of dirt and pour a little chemical over it. Mix the two and tamp them down. Repeat until the trench is refilled. Use caution around shrubs, hedges, etc. This chemical is poisonous to plants. To protect plants, place a piece of tar paper between the treated soil and the plant roots. Do not cover the trench with a couple of inches of untreated

Fig. 1



TREAT ALL POSTS
TO COMBAT ROT
AND INSECT DAMAGE.

Fig. 2



FENCES

Break contact of post and soil when post is tied to the house with a wooden fence as shown. Better yet, put a sheet of tin between the post and house.

soil for grass to grow in. Termites will find this and move in to explore for an entrance.

Recently DDT has proven equally as effective as pentachlorophenol in protecting wood against termites. Mix DDT with fuel oil to make a 5% solution and apply the same as pentachlorophenol except that $1\frac{1}{4}$ gallons of solution should be used for each 5 cubic feet of soil. DDT is purchased as 25% or 33% emulsifiable. Use 4 parts of fuel oil to 1 part of 25% emulsifiable or $6\frac{1}{2}$ parts of fuel oil to 33% emulsifiable to make the 5% solution.

Several other chemicals have been used and are effective. Some of these are as follows: 10% solution of sodium arsenite; 5% solution of trichlorobenzene, the same of orthodichlorobenzene; and a 1:2 mixture of coal-tar creosote and fuel oil.

CRACKS AND HOLLOW TILE

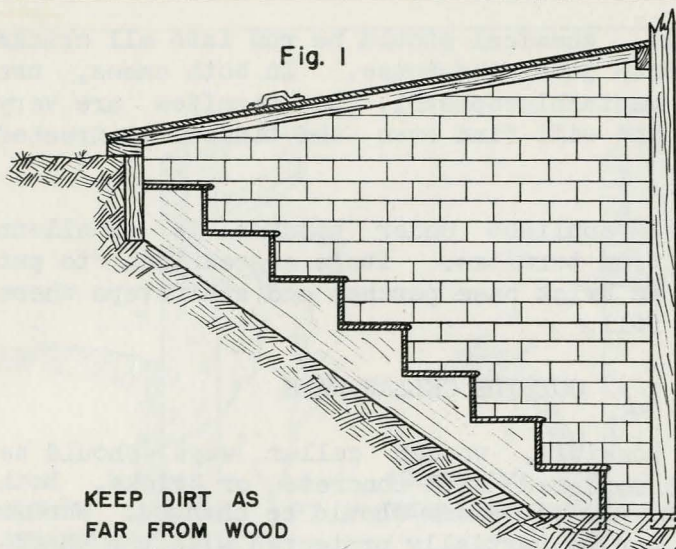
Use a squirt type oil can, the kind with a piston plunger that forces oil out in a stream, to get the pentachlorophenol deep into foundation cracks. Termites can crawl through a hole or crack no larger than the lead in a pencil. Consequently, it will take a very close check to catch every opening.

Hollow tile or hollow cement blocks should be coated with the chemical on the inside or else capped. Make a concrete cap to close the holes or use the metal shields mentioned in USDA bulletins.

BRICK PORCHES

Where brick porches are sealed to the house and foundation some structural changes will be necessary. The same applies to bay windows with sealed foundations. A few bricks or boards should be removed so that the exposed ground can be well covered with chemical. A knapsack sprayer is excellent to get a lot of material in places that are difficult to work in. Where the porch is filled in and concrete poured

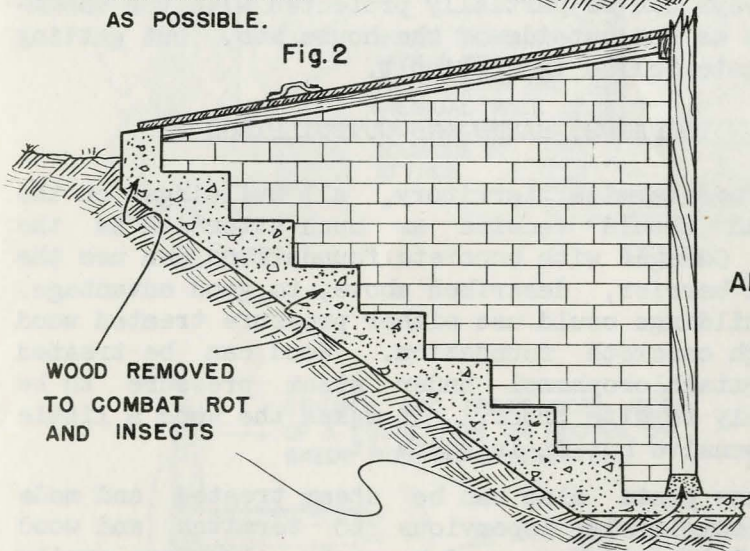
Fig. 1



BEFORE

KEEP DIRT AS
FAR FROM WOOD
AS POSSIBLE.

Fig. 2



AFTER

WOOD REMOVED
TO COMBAT ROT
AND INSECTS

OUTSIDE-CELLAR-ENTRANCES

Remove all wood that contacts the soil and replace it with concrete. If the sides of the stairwell are wooden, replace them with brick or concrete blocks.

over the fill, chemical should be run into all cracks where the porch joins the house. In both cases, use plenty of pentachlorophenol, as termites are very persistent and will find even the tiniest untreated place.

Air and sunlight under porches is excellent protection from termites. It is a good idea to put ventilators in brick base porches and stairsteps where there is no fill.

OUTSIDE CELLAR WAYS

Where possible, wooden cellar ways should be removed and replaced with concrete or bricks. Both the steps and the pit sides should be changed. Wooden cellar ways can be partially protected with the chemical just as the outside of the house was, but getting enough material on is difficult.

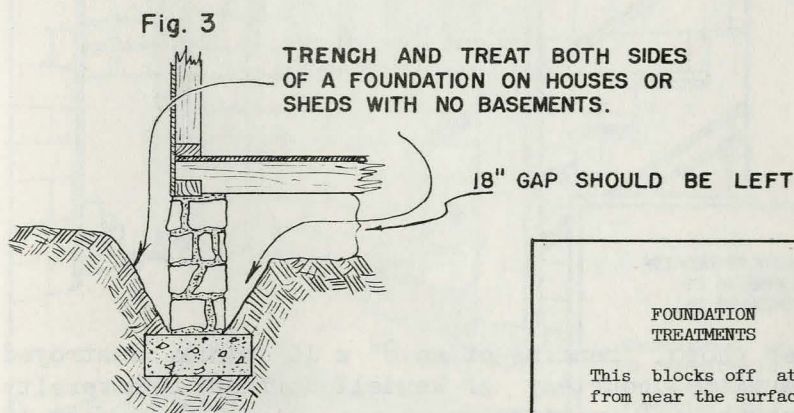
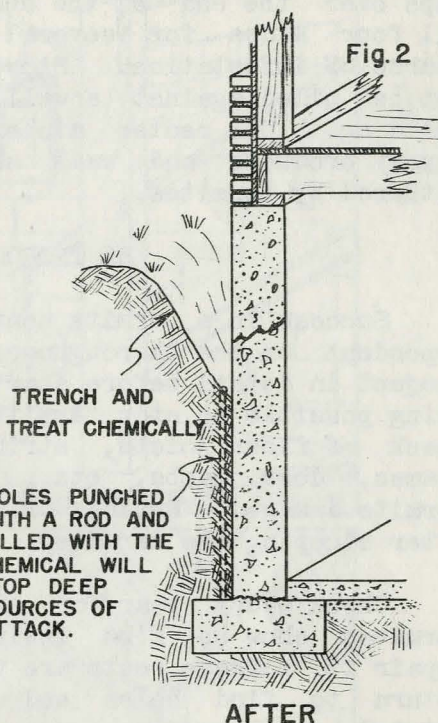
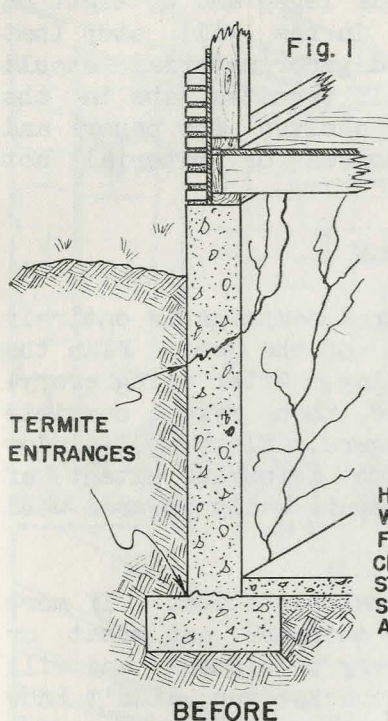
GARAGES, BARNS AND OUTBUILDINGS

In bad termite territory, all buildings on the farmstead should receive as much attention as the house. Garages with concrete foundations can use the chemical barrier, described above, to good advantage. Other buildings could use either pressure treated wood or a high concrete foundation. Wood can be treated with pentachlorophenol under steam pressure to be absolutely termite proof. It makes the wood a little more expensive but it is worth it.

Fence posts also can be steam treated and made almost completely impervious to termites and wood rots. Bridge timbers and supports also are easily protected with pentachlorophenol.

STORAGE SHELVES

Occasionally, wooden racks and shelves in brick and concrete buildings become infested with termites. Stored paper also can become infested. Usually when this happens, it can be found that the termites are



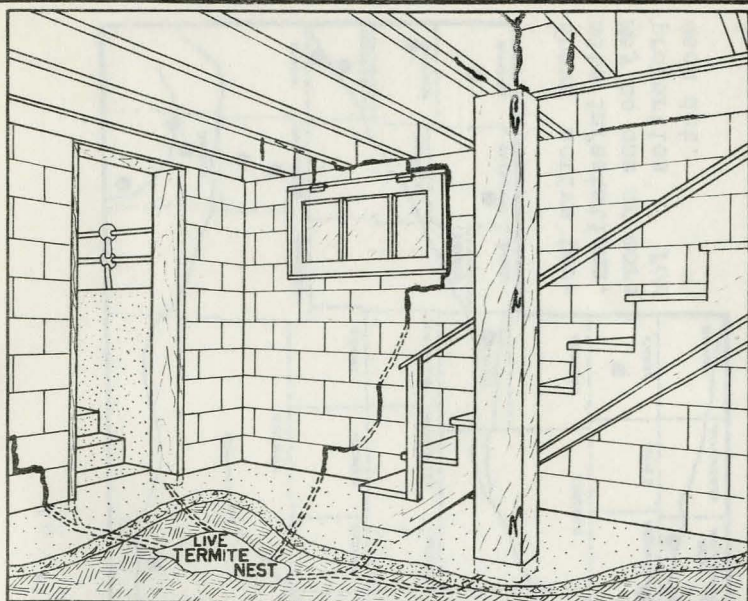
coming through a crack in the floor or wall. Metal caps over the end of the shelf legs and up tight on all four sides for several inches will stop that source of infestation. Stored paper material should not be piled against a wall if termites are in the building. Use center aisle shelves for paper and paper products and wall shelves for material not bothered by termites.

BE THOROUGH

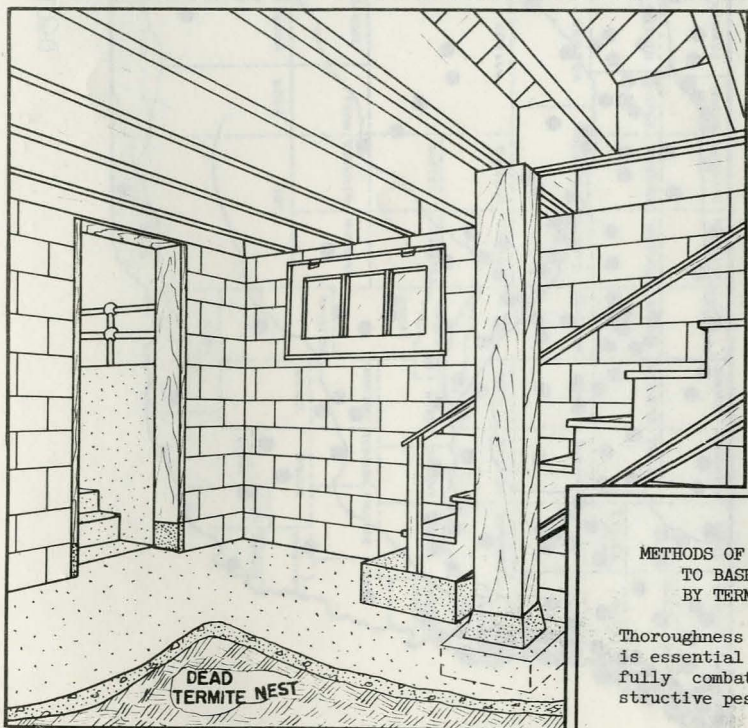
Success in a termite control campaign is entirely dependent on the thoroughness of the job. Plan the project in detail before starting. After doing everything possible to stop termites, then make a complete check of floor joists, stringers, flooring, window frames, door jambs, etc., to determine extent of termite damage. Replace or repair badly injured wood after stopping the termite.

Check every year for a reinfestation. If more termites show up find their entrance and treat or repair it. These pests are very persistent and will return to find holes and cracks you didn't know existed.

(Cover photo, remains of an 8" x 10" plank destroyed by termites, courtesy of Wendell Hoffman, University of Nebraska. Drawings on pages 3, 7, 9, 13, and 15 modified from drawings furnished by the Antimite Co., St. Louis, Missouri.)



BEFORE



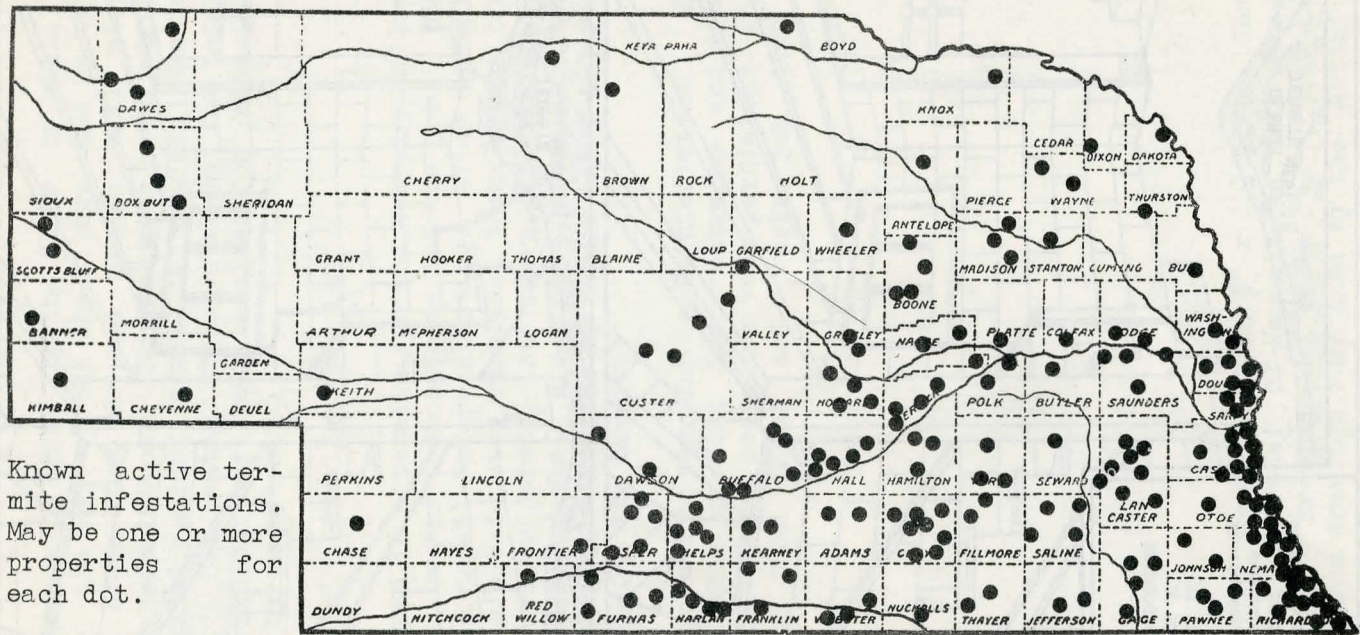
AFTER

METHODS OF ENTRANCE
TO BASEMENT
BY TERMITES

Thoroughness of attack
is essential to success-
fully combat this de-
structive pest.

Termite Distribution in Nebraska

As of 1950



- Known active termite infestations. May be one or more properties for each dot.

Information gained from survey of commercial operators, personal contact, and the economic letter file in the Department of Entomology at the University of Nebraska, College of Agriculture.