

Next, rodent parasites such as fleas, lice, mites and ticks should be destroyed by spraying or dusting the rat pathways with DDT and other prescribed chemicals.

Third, sanitation measures must be taken around the home and farm. This means establishing sanitary methods of storing, collecting and disposing of garbage. Galvanized steel containers or trash cans have been recommended by PHS.

Granaries, storerooms, bins, cans or other structures in which food is stored or handled must be rat-proof.

Fifth, the use of anticoagulant poisons for a period of 14 days is one of the most potent ways of killing rodents. These poisons, mixed with cornmeal or rolled oats, are tasteless and odorless to the rodents and kill them without pain.

The final step in Dr. Scott's rodent control program is to continue all five preceding steps until the rats have been effectively controlled or exterminated.

The destructiveness of a rat is not measured only by the amount of food it destroys and contaminates but also by the damage it produces in getting to the food.

Because their incisor teeth grow at the rate of five inches each year, rats are compulsive gnawers. The four front teeth grow so fast that the rats constantly are grinding and filing them down by gnawing. That is why rats have been known to gnaw through lead pipe, work through three inches of concrete, cut through oak planks or sun-dried bricks and damage an incalculable amount of property.

Rats Start Fires

Rats are responsible for starting many fires by gnawing through insulation on electric wiring. About 25% of all fires of undetermined origin may be started by gnawing rats.

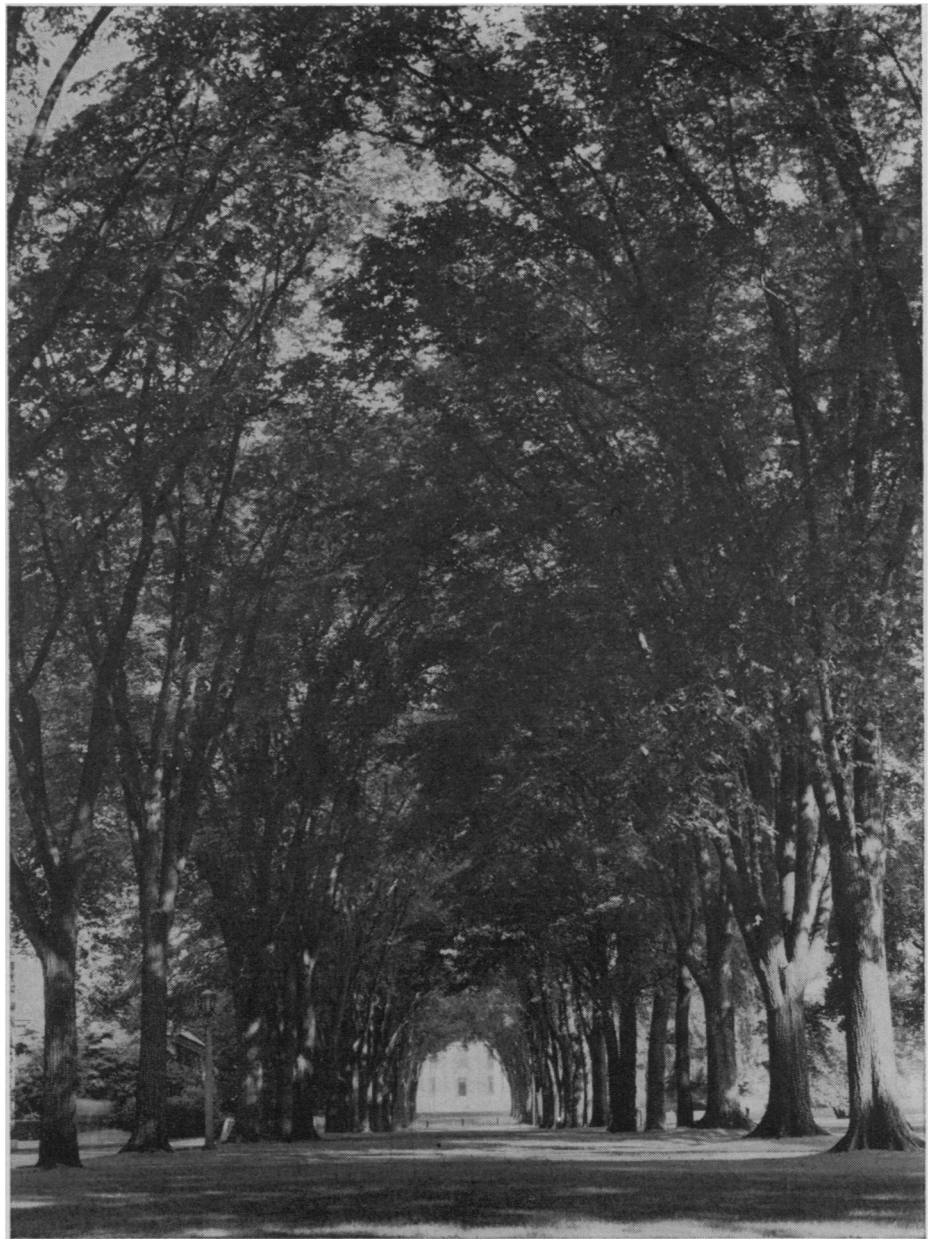
Newly constructed buildings should incorporate rodent proofing and older buildings should install adequate equipment. Modern municipal ordinances have been prepared for this purpose by the PHS, as well as ordinances for the removal of garbage.

Although rats have won much of their ill repute as terrorists of the tenements and slum areas, they also show no respect for the wealthy sections of town and are found wherever people are careless in storing food or disposing of garbage.

Large cities, like New York, Chicago and Los Angeles, have high concentrations of people and a correspondingly high concentration of rats. New York's rat population has been estimated to be six million.

Fighting this rodent in crowded cities is very difficult because a successful program requires the cooperation of hundreds of thousands of individual tenants and thousands of property owners, in addition to municipal authorities.

• *Science News*, 89:318 April 30, 1966



Pennsylvania State University

LIVING AMERICAN ELMs

CONSERVATION

Rare American Elms Saved by Pruning

► ON A PENNSYLVANIA campus, traditional American elm trees have been saved from the destructive Dutch elm disease by a simple rule of keeping the trees healthy.

Vigorous pruning and spraying with common sprays have saved more than 400 rare elm trees at Pennsylvania State University, University Park, reported Lewis E. Barr, head of the division of landscape maintenance.

Since it was first discovered in Ohio in 1930, Dutch elm disease has been killing the stately trees throughout the northeast and westward as far as the Rocky Mountains. All American elms are vulnerable.

The disease is caused by a fungus, carried on the feet of a small brown elm-bark beetle. The female beetle lays her eggs under the rough bark of a vulnerable section of the tree, usually a newly dead limb. The fungus, left on the eggs and bark, migrates into the living limb and cuts off its supply of sap. The limb dies and the disease spreads to other limbs. An entire tree can die of the disease within a few years.

Frequent, careful pruning limits the opportunities for the beetle to attack the elms, said Mr. Barr. Trees are constantly checked for sick and dead limbs which are quickly trimmed and burned. Each spring, a fog-type spray of 25% DDT solution in a xylene base, mixed with equal parts of water, is applied on windless nights with the aid of spotlights for full coverage.

• *Science News*, 89:319 April 30, 1966