

Rat! Public Enemy No. 1!

Following man and his structures through the world, the disease-carrying rat is one of the most destructive pests—By Barbara Tufty

► THE POPULATION of the world's Number One pest can be controlled.

The only reason that an estimated 193 million rats are permitted to spread disease in the United States and annually cause about two billion dollars worth of damage is that most people and communities are too lazy or unwilling to take the few necessary steps to keep the rodents within bounds.

There are two principal ways to wage successful war on this wily, loathsome animal, according to the U.S. Public Health Service. One way is to deny him food and living quarters. The other way is to destroy him with the painless but effective chemicals called anticoagulant poisons.

An ordinary galvanized steel garbage can with a tightly fitting lid is one successful weapon in the war on rats because it is an inexpensive, fool-proof way to deny him one of his principal food sources—garbage.

Anticoagulants Thin Blood

Warfarin, fumarin and similar anticoagulant rodenticides thin the blood and cause fatal hemorrhage inside the animal's body. Unlike almost all other rat poisons, the anticoagulants do not arouse the rat's suspicion and fear so he eats them readily.

Despised and filthy, the rat has been one of mankind's most implacable and deadly enemies. Rat-borne diseases have killed more persons than all of the wars in history. The terrible Black Plague of Europe in the 14th century was spread by rats and killed one out of four of that continent's entire population—about 25 million persons. During the plague of 1665 in London, 100,000 persons died.

Typhus has been transmitted to man from the lice of rats for centuries. Amoebic dysentery, infectious jaundice and rabies are some of the other 35 diseases it spreads. Rat typhus was common in the southern United States not long ago.

During the years from 1898 to 1923, almost 11 million deaths in India were caused by the rat-borne plague. Relatively recent epidemics have broken out in Peru, Brazil, Senegal and other parts of the world. A case of bubonic plague was reported in California in 1963.

North America today is infested with several varieties of the long- and naked-tailed, pointed-nosed creatures.



Ewing Galloway

BRIGHT-EYED RAT—This clever rogue, one of man's most obnoxious pests, is thriving in crowded slums, storebins and backyard heaps throughout the world.

Some native rats were here before the white man arrived, and are inhabitants of the woods, plains, deserts and swamps. They live mainly upon the foods that grow naturally there, but when man is careless with his stored foods, these wild rats quickly develop a taste for it.

One variety of rat that has learned to live comfortably with man and has become a scourge to the nation is the Alexandrine rat, or roof rat, now confined largely to the southeastern areas of the United States. This rat may have landed during the American Revolution or possibly as early as the Pilgrims. The Alex, as he is nicknamed, is brown or gray, with a slender tail that is longer than his head and body combined. Another common species is *Rattus Rattus*, the black rat that frequents ships and docks but which has been driven away by his larger cousin, the Norway rat.

The rat fink of rats is probably the Norway rat. This rat settled in America about 1775. More powerful and about a third larger than the Alex, *Rattus Norvegicus* can weigh up to a

pound. It has a stubbier, shorter tail than the Alex, is a vicious fighter and now thrives everywhere except tropical and subtropical areas.

After arriving in American ports, these three destructive rat species spread inland, following the pioneers and settlers as they conquered the wilderness, raised food and built towns and cities across the nation. By 1920, rats had established themselves and their destructive habits in every state of the Union.

Rats Live on Farms

Today, half of the nation's 193 million rats live on farms, causing destruction to the ample crops of grain and corn. Rat populations as high as 2,000 have been estimated on a single farm.

In order to get rid of these pests, six basic steps must be taken, according to a booklet by Dr. Harold G. Scott of the Communicable Disease Center of PHS.

First, a survey should be made of the farm, house or area, to determine the number of rats and degree of infestation.

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.

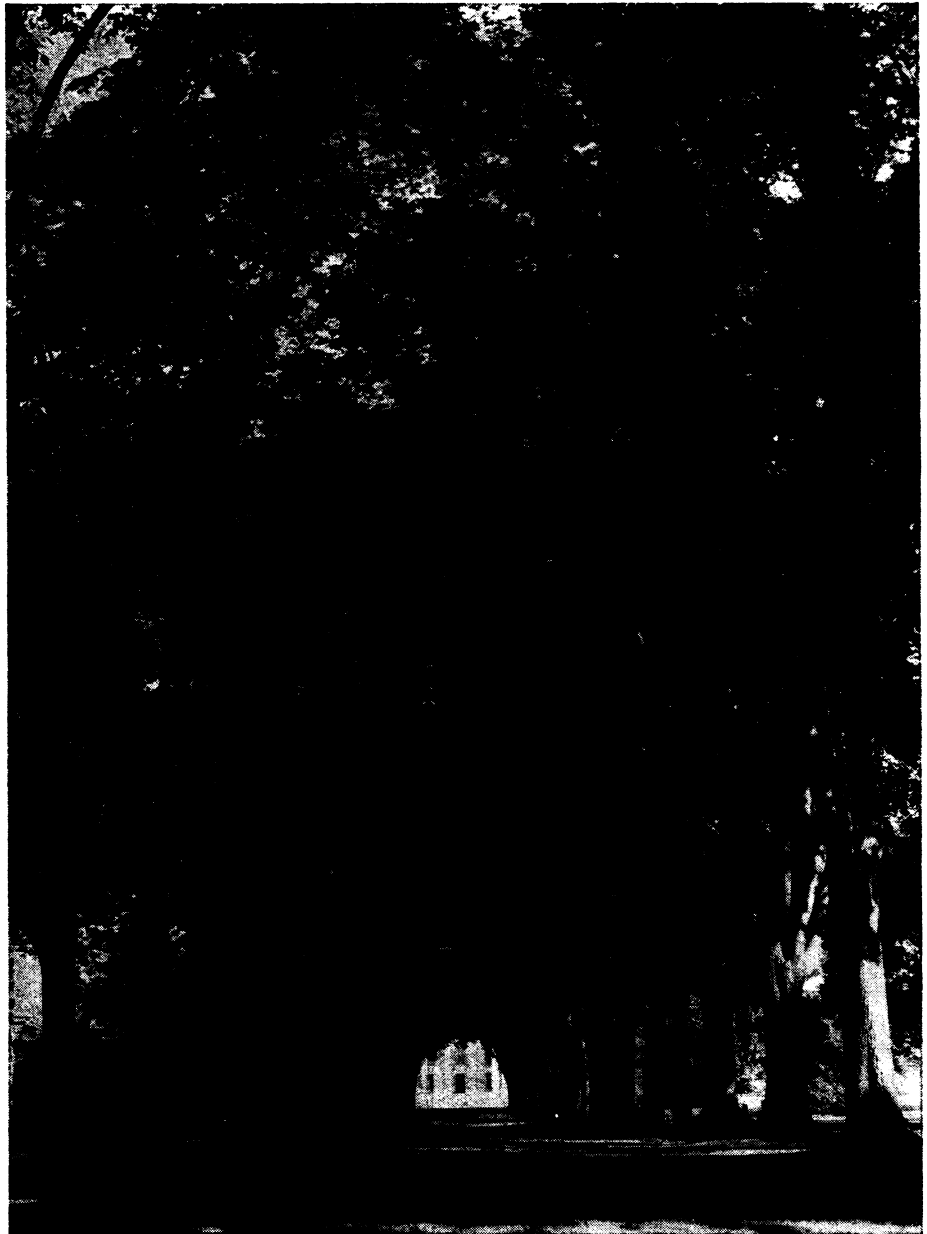
Newly constructed buildings should incorporate rodent proofing and older buildings should install adequate equipment. Modern municipal ordinances have been prepared for this purpose by the PHS, as well as ordinances for the removal of garbage.

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.

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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.

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