

# A Mystery of the Tree Tops

Wherein the Forester is Forced to Do Some Sub-zero Detective Work

BY NEIL W. HOSLEY

**D**URING the past three winters, when the snow lay deep, many of the young plantations on the Harvard Forest were systematically injured by some unknown marauder. Terminal shoots, and often many lateral branches as well, were found cut off as though by a knife. The injury occurred as high as twenty feet above ground. No tracks of any kind could be found in the snow around the injured trees. By the detective's process of elimination we narrowed down the probable trespassers to birds, squirrels, and porcupines, and decided to set a careful watch to fix the guilt where it properly belonged.

A plantation of Scotch pine trees about twelve feet tall seemed to be the favored spot of the sly invaders, so I selected it as the most logical place to begin my Sherlock

Holmes operations. Partridges were in the area nearly every day; but I was unable to see them feeding on the pines. I finally resorted to a blind built among the trees and spent some long below-zero hours watching from it, but in vain. One afternoon, as I came quietly up to the stone wall bordering the plantation, I heard the partridges making short flights in the trees not far away. They were feeding. I dropped down behind

the wall, sure that at last I was to see them eating the buds. But they were wary and did not show themselves. Finally a branch shook, showing plainly that a bird must be on it, eating. It moved again, and up toward the top of the tree jumped the supposed partridge—a fat red squirrel. He perched at the tip of the limb, ate out the terminal buds, jumped down to a lower limb, stripped it of its buds, and then saw me. He disappeared like a flash, but I had the evidence I wanted. I examined the injury and found it to correspond exactly to that which had been done throughout the plantation. Curiously enough, there were no tracks of the squirrel around the tree or in the patches of snow lodged in the branches next to the trunk. He had come down to earth at the edge of the plantation, thus explaining why he had not before been suspected of the damage.

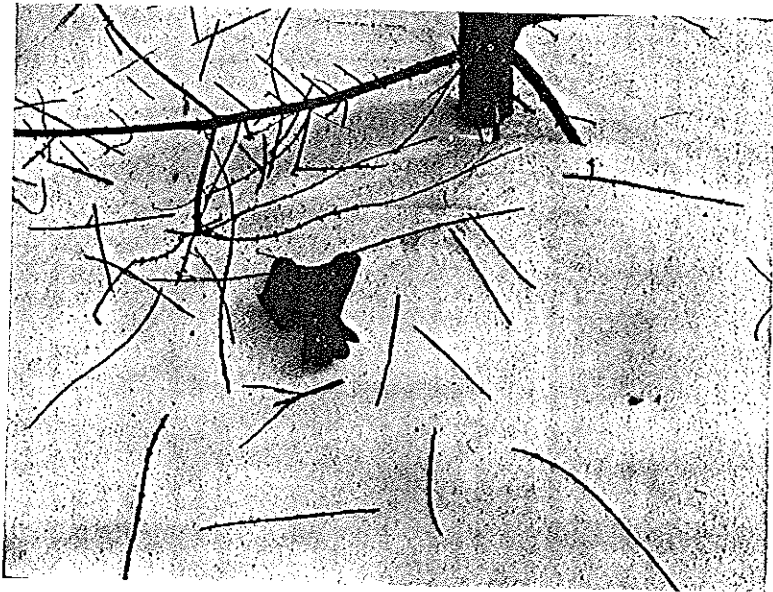
Nearly every nature-lover knows the red squirrel as a queer combination of characters. He is silent or explosive, happy-golucky or sulky, inquisitive or indifferent, pleasing or exasperating, according to his mood. Though one of the most interesting animals commonly found in the woods, he has the reputation of being a "bad actor." He has been found robbing birds' nests of both eggs and young, and



Photograph by A. C. Clize

## TWELVE-YEAR-OLD SCOTCH PINE—SCENE OF THE CRIME

Note the "brooms" on the terminals, and the side branches as well. Repeated attacks kept the foresters guessing until the "second-story man" was caught red-handed.



#### AFTER THE MEAL

European larch twigs that have been chewed off. The buds have already been eaten.

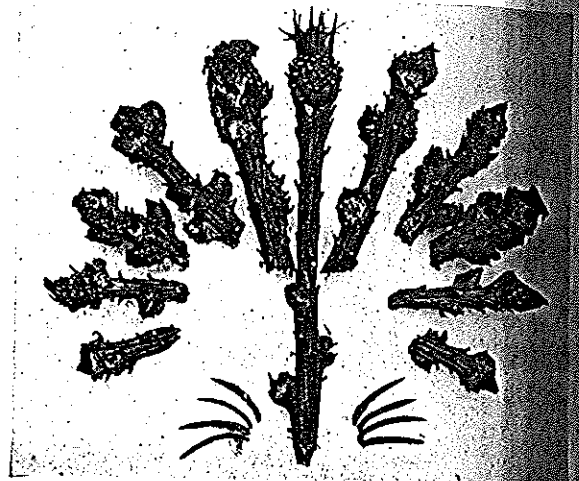
A. C. Cline

now I had caught him doing serious damage to plantations of forest trees.

The red squirrel seems to have a taste for imported tree delicacies. Red pine, white pine, pitch pine, or red spruce are ignored almost entirely. Only one red pine was found injured, out of several hundred examined. When his favorite food is scarce, white pine is occasionally sampled, but practically no damage is done to it. But just let Mr. Squirrel get up among the big Scotch pine buds and he is happy. He cuts them off, eats out the green tissue, and drops the sheaths to the ground, where they may be seen lying on the snow. But he seldom cuts off the twigs: they are too big to be easily cut, and the buds are all at the end, anyway; so what's the use? He usually eats every bud in the cluster; but the following spring the branch, instead of dying, sends out a large number of new

shoots just back of the injury. These form a "broom," and the branches so injured are malformed forever. When the process has been repeated on many of the upper branches for three or four seasons, as was often found to be the case, the tree looks more like a bush than a tall, straight-stemmed tree, such as the forester desires to grow.

Norway spruce is another species very much to the squirrel's liking. He employs an entirely different technique in eating this, though. The terminal bud is well armored with dozens of sharp, stiff needles. He would have a rather hard time getting at one of the buds from the top, so he drills in at the base of the needles, takes out the inside of the bud, and leaves it apparently normal. The upper branches have many buds along the twig tip, like so many small Brussels



NORWAY SPRUCE BRANCH TIPS WITH RIFLED BUDS.

J. E. Myer.



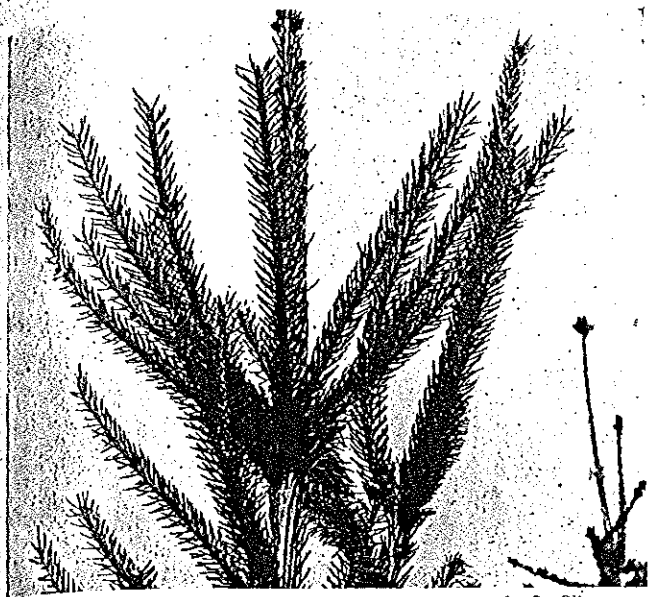
NORMAL AND INJURED SCOTCH PINE LEADERS

The leader on the right shows last winter's injury—all the buds have been eaten.

J. E. Myer.

sprouts. To avoid unnecessary effort in clinging to the slender twig to eat the buds, a tip end anywhere from one-half to five inches long is cut off and carried back toward the trunk, where it can be wedged into the needles of a larger branch and eaten at leisure. The side branches of Norway spruce seldom make any further growth after injury, but the tip usually sends out one or two strong shoots, which curve upward and take the place of the normal leader.

European larch injured by the squirrel shows still another set of conditions. It has many slender twigs along the main stem, and these are almost invariably all cut off clear to the top of the tree, leaving only short stubs. After the squirrel has done his work, many of these will be found lying around the base of the tree. Close examination will show that most of the buds have been hollowed out from the end. Furthermore, the main side branches are often



A. C. Cline.

**A VICTIM OF THE SQUIRREL'S APPETITE**

This is a young Norway spruce on which the tips of thirty branches have been nipped off.

pruned of their twigs, so that the whole tree appears to have been clipped.

The thoroughness of injury in a small plantation within reach of squirrels is remarkable. Evidently a pair or family of them will live entirely from such an area during periods of deep snow, year after year.

That the injury is general, at least in the region studied, is evidenced by the fact that, of nineteen plantations observed, only one, an area of thirteen-year-old Norway spruce, had escaped injury during the past three winters. Squirrel damage was found as much as thirty miles from the Harvard Forest; so, in all probability, it is general throughout the region frequented by red squirrels.

Reducing the number of squirrels around a plantation is not difficult. They can be caught in box traps or in steel traps baited with apples and set in enclosures too small for rabbits to enter. Shooting is generally too time-consuming to be practicable.

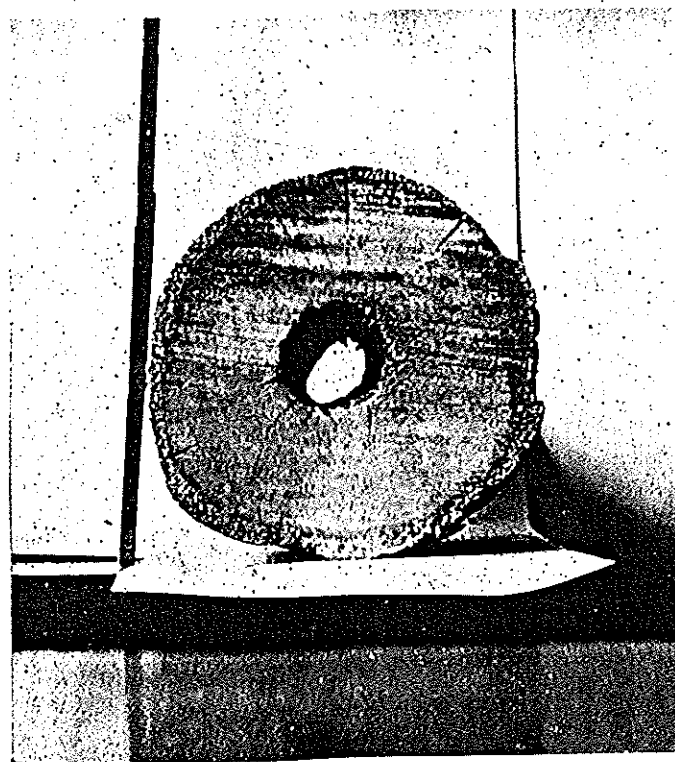
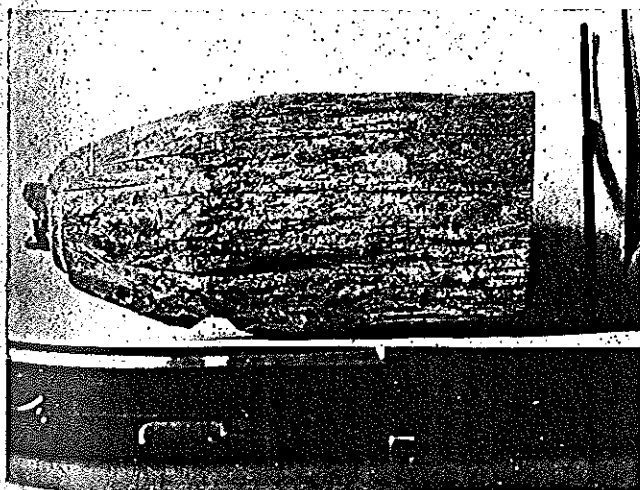
The red squirrel is a very interesting inhabitant of our forests, but, if you are trying to grow a plantation of one of the kinds of trees he likes, keep a good watch to see that he doesn't use their buds for an emergency ration when a deep snow comes next winter.

## A Relic of the 18th Century

By L. B. LODGE

THE accompanying photographs show a short section of an old white-pine water main which was dug up in Vesey Street just west of Greenwich Street, New York City, on July 27, 1923. This main was laid in 1799

time and the relatively low price which must have existed for white pine to permit of the use of logs of this size in this capacity. The photograph of the side view shows that the mortise-and-tenon system was employed in join-



by the Manhattan Company and was a part of New York's first water system. The system at this time consisted of 25 miles of mains to 2,000 homes south of City Hall. In 1842, when the Croton system was completed, the Manhattan Company ceased to operate as a water-supply system and the mains have since stood idle.

This particular section was removed from about four feet below the surface of the ground, during the course of new construction work, and was in a remarkable state of preservation. The main measured 14 inches in diameter, with a 3 3/4-inch bore. These dimensions clearly indicate the abundance of white-pine timber in the region at this

ing the sections. Although the wood apparently received no preservative treatment, only a slight amount of sap decay was noticeable on the outside.