

CODIT And The Shigometer Work In The South

By ALEX L. SHIGO

CODIT: What's that? Shigometer: What's that?

CODIT is an acronym for Compartmentalization Of Decay In Trees. It's a concept, a way of explaining and understanding how decays start and develop in living trees.

The Shigometer* is an electrical device that can be used to determine the location and extent of decay in trees or timbers.

Used together, CODIT the concept and Shigometer the device, can help the forester and lumberman judge the quality of the timber they deal with.

Dr. George Hepting observed in

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CODIT

1935 that stem decay associated with fire wounds was confined to the tissues present at the time of wounding. Thus he was the first to observe and report compartmentalization of decay in trees. Robert Hartig, the father of forest pathology, had shown compartmentalization of decay in several of his publications at the end of the 19th century, but he made no special mention of the phenomenon.

Dissection of thousands of trees in the Northeast has given us additional new information about compartmentalization of decay in trees. Conifers in the Northeast and North-

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west, and tropical species in Puerto Rico, were also dissected.

In the South, Dr. Walter Shortle, working with Dr. Ellis Cowling, showed that compartmentalization of decay in several species of Southern hardwoods was similar to that in Northern hardwoods.

When decay develops in a tree, it is confined (compartmentalized) in the tissues present at the time of wounding. The wood that forms after wounding is not infected unless additional wounds are inflicted at a later time. The CODIT system for explaining decay development in trees is based on two major points:

1. A tree is a highly compartmented plant.

2. After wounding, the defense system of a tree is geared to confining or compartmentalizing the infected tissues.

This concept of compartmentalization has been described in a number of publications by the author.

The Shigometer

The Shigometer is a light-weight battery-powered electrical device that sends out a pulsed electric current that can be used, by measuring resistance (up to 500 thousand ohms), to detect the difference between sound wood and decayed wood.

It works this way: With a battery-powered drill, a thin hole is bored deep into the tree. A twisted wire probed, connected to the meter, emits a pulsed electric current. As the probe is pushed into the hole, moving through sound wood into decayed wood, an abrupt decrease in resistance is recorded on the meter.

It takes some skill and practice to use the meter effectively. But, once an operator learns how to use it, he can determine the internal condition of the tree with great accuracy.

A common concern over new tools is that they may be applicable on some trees in some areas, but not in other trees in other areas. To find out whether CODIT and the Shigometer work in the South on Southern trees, two tests were arranged by John Thompson and Robert Nobles of the U. S. Forest Service

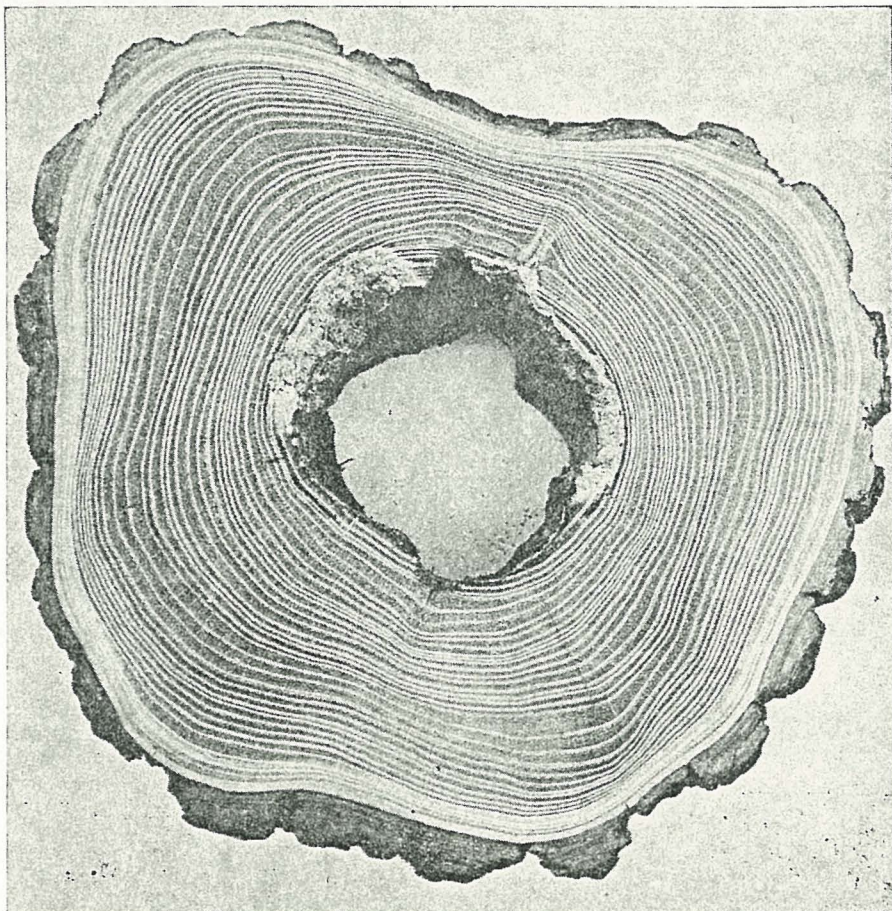


FIGURE 1.—Compartmentalization of decay in a locust tree. The diameter of the defect was the diameter of the tree when it was wounded. Note that the decay fungi did not invade the clear new wood surrounding the hole. It is because of compartmentalization that we have holes in trees.

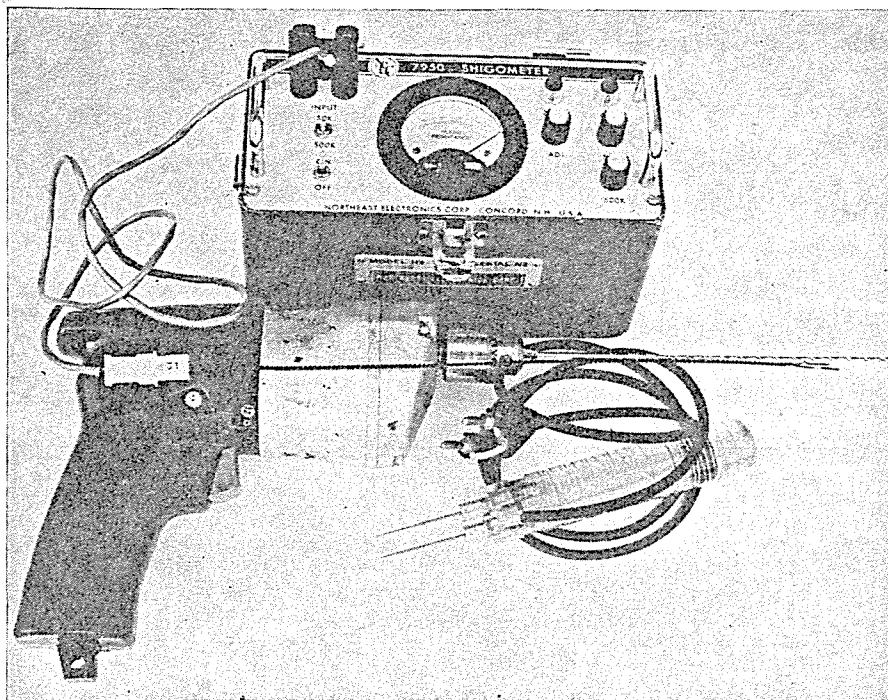


FIGURE 2.—The Shigometer, battery powered drill, twisted—wire probe, and needle probes for making electronic readings in trees and in the cambial zone. The equipment can be easily carried in the forest.

State and Private Forestry unit, with headquarters in Atlanta, Georgia.

Tests In The South

esters met in a forested area in At-

In the first test, a group of forlanta. A brief discussion was followed by some tree probing. After the trees were probed, they were cut and dissected to see how accurate the method was. One large pine had an old open basal wound. The probing indicated that the defect was well compartmentalized, and that the internal decay was almost the same as the obvious external limits of the wound indicated. Dissection proved this was true.

An oak that had only a small open wound was probed next. The probing indicated that a large pocket of decay was present. Dissection showed that this was so.

In Asheville, an outdoor session with another group was followed by a day in the forest. Many conifers and hardwoods were probed and several were cut and dissected. The method worked here too.

Needle probes can also be attached to the meter. Pushed into the cambial zone of the tree, the needles make it possible to determine relative vigor of some trees. Cambial readings were made on trees near a recreation area. The readings showed that some of the obviously weakened trees had very different readings from the more vigorous ones.

CODIT and the Shigometer will

not do all things for all people all the time. But this new tool and this new way of explaining decay may be used to help foresters and lumbermen judge the value of the tree.

Change In Ownership

SUNNYVALE, Ca., Dec. 28.—ASI, a principal supplier of process control equipment for the forest products industry, today announced that it has become the only fully independent company devoted exclusively to its field.

Vito A. DiMucci, ASI president and chief executive officer, said a group comprised of himself, key employees, and other investigators have acquired the former subsidiary of Simlog Corporation, Seattle, Washington. "As a result of capitalization enhancements and the new measure of control, ASI is now uniquely positioned to intensify services to the industry," DiMucci said. Early introduction of further product improvements and new, complementary products from ASI can be expected, he added.

ASI currently manufactures a series of yield-enhancement systems used by sawmills to control and record electronically the measuring and processing of raw timber into lumber. Founded in 1969, the company states that its North American installations now exceed 50% of all timber process control systems currently operational.

Mr. DiMucci said that no changes in management or other personnel are anticipated, and company headquarters will remain in Sunnyvale.

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