

PLANT PATHOLOGY

Elm Disease Entered America Under Bark of Veneer Logs

Beetles That Carry Destructive Fungus Detected In Shipments Arriving at Several Atlantic Ports

DUTCH ELM disease, which federal and state scientists are fighting desperately in the area around New York harbor, came in as a stowaway in elm logs shipped from Europe for use in the production of veneered furniture. Conclusive evidence to this effect was presented before a Shade Tree Conference recently at the New York Botanical Garden by R. Kent Beattie of the U. S. Department of Agriculture. Mr. Beattie is in charge of the U. S. Government's share of the battle against the new invasion, which threatens complete destruction to the millions of beautiful elms that line the streets of practically all the cities of this country.

Dutch elm disease is caused by a fungus that saps the life of the tree. It is carried from one tree to another by a small beetle.

The logs in which the beetles have been detected, in at least three American ports of entry, are special "burl" logs, grown so as to provide a highly ornamental grain, similar to curly maple. Although most of them apparently come from France, the logs are for some reason known to the furniture trade as "Carpathian elm." The import trade in these logs is not large, relatively speaking, and apparently only about a dozen veneer plants in the country handle them.

The first discovery of the disease-carrying beetles in elm logs was made by L. M. Scott, Port Inspector of the Bureau of Plant Quarantine, in Baltimore. The beetles were identified by Dr. M. W. Blackman of the Bureau of Entomology, and representatives of the Division of Forest Pathology examined the logs and found the tell-tale symptoms of the disease. Subsequently other shipments of logs, landed at New York and Norfolk, Va., have been found to harbor both the fungus that causes the disease and the beetles that carry it.

Diseased elms in the New York harbor area were first detected by a park foreman in Maplewood, N. J. An infection had been found in a few trees

in Cleveland and Cincinnati, three years ago; but this outbreak was vigorously fought and is believed to have been nearly stamped out.

Importers of the logs cooperated willingly with Department of Agriculture scientists, once the danger to American elms was pointed out. Mr. Beattie stated. An attempt to free them from the infected beetles by a hot-water treatment was made, but this was not very successful. Even if successful, this treatment would not prevent the beetles from emerging from the logs before it could be used, and flying to the nearest elm trees in the port of entry, thereby establishing new centers of infection.

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PHYSICS

Cosmic Rays Observed In Depths of Salt Mines

COSMIC rays from celestial space that are four times as penetrating as those known before have been shown to exist. They can plow through half a mile of water without being completely absorbed.

Prof. W. Kolhörster, working in the cosmic ray laboratory of the Magnetic Meteorological Observatory in Potsdam, Germany, and at great depths below the earth in the salt mines at Strassfurt, has obtained evidence for these ultra-penetrating rays. Bombs filled with gas at high pressures served as the cosmic ray meters.

Half a mile of water or its equivalent thickness of earth was necessary to cut out these high frequency rays, Prof. Kolhörster reports in a communication to *Nature*.

Besides their great penetrating abilities these new rays have the property of maintaining the enormous negative electric charge of the earth which has been puzzling scientists for many years. The earth is charged with negative electricity to a voltage so high that it fairly bristles with the charge. The Depart-

ment of Terrestrial Magnetism states that in order to maintain this charge a positive electric current of 1500 amperes must be flowing continuously away from the earth. Something must maintain this negative charge and Prof. Kolhörster believes that the new hard cosmic rays can do this.

American physicists, principally at the California Institute of Technology and at the Bartol Research Foundation, have found that the most penetrating cosmic rays yet observed in this country could not serve to keep the earth negatively charged but would tend to discharge it. Experiments at Mexico City have shown definitely that the previously known cosmic rays were made up of both positively and negatively charged particles but there were more positive than negative particles. These would dissipate the earth's negative charge.

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ARCHAEOLOGY

1630 Text Describes "Immemorial" Maya Ruins

WHAT APPEARS to be the first description of the now world-famous Maya ruins in Yucatan has been found in the Vatican library.

It is part of a book on the inhabitants of the New World, written in Spanish by Vasques de Espinosa, who died in Seville, Spain, in 1630, presumably while his book was still in the making. With his death the publication stopped, and the book, with 80 pages in print and 500 still in manuscript, lay unnoticed in the Vatican library until Dr. Charles U. Clark, searching for material bearing on early American history for the Smithsonian Institution, came upon it.

The passage referring to the Maya ruins has been translated, as follows:

"Five leagues from this city, near the village of Coban, there are some proud buildings of time immemorial, the memory of which has been lost for ages. Among the ruins of them there are extraordinary and admirable things, among which is a beautiful room in the midst of which is a very large table, well worked in stone like alabaster, and about it are seated many effigies, well finished, with good faces and long beards, armed with their breast plates and espaliers and morions, and swords in belts, and with them another figure clothed in a pontifical with a mitre on