

PLANT PATHOLOGY

# Elm Disease Entered America Under Bark of Veneer Logs

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

**D**UTCH 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

**C**OSMIC 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

**W**HAT 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

his head—of work and dress very extraordinary, and altogether different from that of these realms. And connected with this room there are also corridors very well worked of stone with very large pillars which are so strong that they are still standing; and for over four and even six leagues around the proud edifices there is a great amount of worked stone; from which it appears that there were in these parts a people of great intelligence, industry, and courage, and great cities, which long ages swallowed up or turned into what our Spaniards found when they made the discovery.”

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## PUBLIC HEALTH

## Black Rat Horde Menaces England With Black Death

**B**LACK rats can at any moment loose the Black Death upon England. All that is needed is for one plague-infected rat to elude the anti-rat precautions in the Port of London and make its landing from some ship from an oriental city where the bubonic plague is still common.

This warning was issued by M. A. C. Hinton, deputy keeper in zoology of the British Museum and one of the world's leading authorities on rats.

Black rats, Mr. Hinton declared, now swarm in London. They have largely supplanted the brown or Norway rats, which were formerly the dominant species in the rodent population. This change was attributed by Mr. Hinton to the development of modern buildings, which with their open skylights and their network of cables are ideal homes for the black rat, which was formerly a tree-dwelling species. The brown rat, a denizen of the sewers, is pretty effectually excluded from the buildings of present-day London. Man has thereby unwittingly aided a deadly enemy, for the fleas harbored by the black rat carry bubonic plague from rat to rat, and finally from rat to man.

Mr. Hinton strongly advocated a government campaign to eradicate rats and to make buildings really rat-proof. Such a drive, he said, would be like taking out an insurance policy on the whole nation.

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Sand flies, which bite so viciously, are best controlled by destroying their breeding places, says the Department of Agriculture.

## PHYSICS

## New Physics Troubled by Confusion in Nomenclature

### Electron, With Its Negative Charge, Seems Misnomer Since Discovery of Its Opposite Twin, the Positron

**P**HYSICISTS are engaged in a family row over what the babies should be named. The botanists no longer stand alone as a scientific tribe that fights over names and classification. But the physicists can blame no one but themselves for having brought confusion into their speech. It all arose from their tremendous activity within the last two years of prying out several new particles from the chemical entity of matter, the atom.

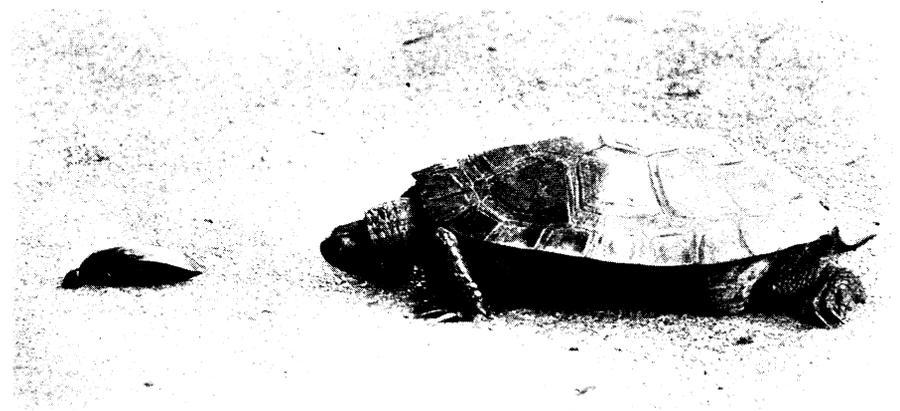
Now that they have isolated these particles and have proved their existence they are in a quandary over what to christen them. The one that is stirring up the biggest argument is the new unit of positive electricity, found by Dr. Carl D. Anderson at the California Institute of Technology just a year ago. It appears to have the same electrical charge and mass as the electron, the unit of negative electricity, which has been known for many years.

Dr. Anderson has suggested that the new positive particle be called the "positron" and the old electron be rechristened to "negatron." This was to avoid confusion with the name "electron" that was originally devoid of significance regarding polarity.

Immediately many scientists objected to the rechristening and also to the disregard of mythology inherent in the word "positron." Prof. Herbert Dingle of Imperial College of Science and Technology in South Kensington, England, suggested the name "orestron" for the new positive particle. This is mythologically correct for Orestes was the brother of Electra.

The English physicists had in the meantime contributed to the confusion, but not in such a serious manner. The discovery of the positive particle had been made from an examination of curved tracks made by cosmic rays in plowing through a box filled with water vapor and placed between the poles of a magnet. Some of the tracks were bent in the wrong way. This could be explained only by having a new positive particle. But the sporting Englishmen immediately thought of cricket and the peculiar hops that the ball takes on bouncing in front of the wicket. These are called "googlies," so the new tracks and thus the particles became "googlies" also, in English laboratory slang.

A similar argument has arisen about the names to be given to the two varieties of hydrogen. The strict way of



## LEADEN-FOOTED CHASE

*Cornelia Clarke Photo.*

*Only a turtle pursuing a beetle; but isn't there something in this scene that is reminiscent of those nightmare dreams wherein you find yourself pursued by a monster, and discover that your feet are made of lead and can barely be moved; or (shifting to the turtle's viewpoint) where you are striving after a keenly desired and nearly attained goal, only to find yourself struggling against the same unconquerable lethargy?*