

Cornell Scientists Trace Decay of DDT

Cornell University scientists have used a series of unique laboratory experiments to establish a more complete biological model for tracing the pathway of DDT decomposition in nature. This study focuses on the ultimate fate of DDT in soil and water.

Identities of these decomposition products, and therefore their possible ecological hazards, are largely undefined, explained Prof. Martin Alexander of the N.Y. State College of Agriculture, Cornell. Research at Cornell has now revealed how, in biological models, this insecticide can be degraded.

A major aspect of this research was the identification of the critical chemical factors responsible for the resistance of DDT to destruction by microorganisms.

These findings were announced by Alexander and Dennis D. Facht, a former post-doctoral fellow at Cornell, in a recent issue of "Science" magazine, the journal of the American Association of the Advancement of Science.

Focht and Alexander note: "Despite the enormous concern with the persistence of DDT and its degradation products in nature, surprisingly little is known about the products of biological decomposition in natural ecosystems, wherein microorganisms are likely to be the chief agents of biodegradation."

The Cornell studies not only described breakdown products of DDT but also defined chemical barriers to decomposition within the DDT molecule.

Alexander and Focht stated that their experimental observations suggest that two features contribute to



Ward Swanson, superintendent of Plum Hollow Country Club, has been re-elected president of Michigan and Border Cities Golf Course Superintendents Association. The organization is made up of professional golf course maintenance men in the Detroit area. Other officers are from the left: Director — Robert Prieskorn of Western Golf and Country Club; new director — Al Kaltz of Maple Lane Golf Club; new director — Clem Wolfrom, superintendent of Detroit Golf Club; president — Ward Swanson; vice-president — Ted Woehrl, superintendent of Oakland Hills Country Club; new director — Dave Moote, superintendent of Essex Golf and Country Club, Windsor, Ontario; secretary-treasurer — Gerald Gill, Tam-O-Shanter Golf Club. Directors not pictured are Andrew Bertoni of Holly Greens Golf Course and William Madigan of Country Club of Jackson.

making DDT and related chlorinated hydrocarbons able to resist aerobic attack by bacteria.

They identified these two factors as the para-chlorine substitution and the kind of substituent on the carbon atom linking the two benzene rings. These chemicals are particular subunits of the DDT molecule.

In an interview Prof. Alexander remarked that it would be desirable to design a molecule that "would keep the pesticidal virtues" of DDT while eliminating those "things which make it resistant to degradation."

The finding of a short-lived chemical of the DDT class of insecticides would be aided by the identification of those factors that make DDT resistant to degradation.

The investigators emphasized that these studies predicted the fate of DDT under the carefully controlled conditions of the laboratory. Future experiments will show whether the same results can be obtained under field conditions.

Elms Found Resistant To Dutch Elm Disease

European trees with a resistance to Dutch elm disease have been found by Michigan State University and University of Wisconsin foresters. These trees could be the answer to the Dutch elm problem in the United States.

It is now possible to give a 75% guarantee that some types of elms will survive the disease for 40 years, report Gary Long and Jonathan W. Wright, MSU forestry researchers.

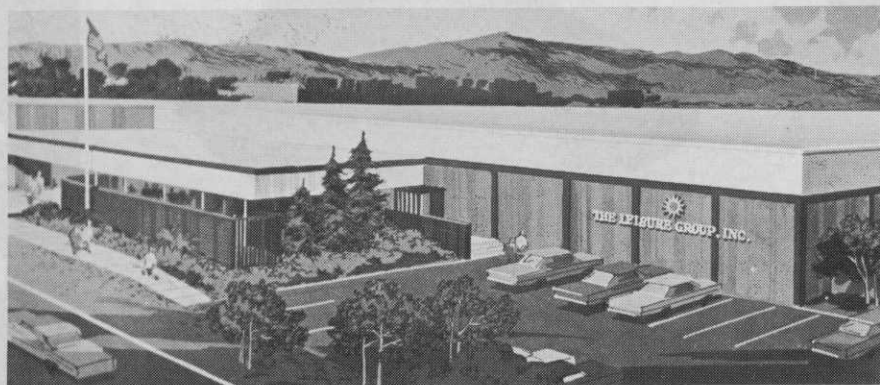
"This survival rate may be adequate for city foresters, but homeowners who plant only a couple of trees want practically a 100% survival guarantee," Wright said. "To get this, we'll have to conduct experiments for a much longer time."

But Long and Wright are optimistic. Several of the trees they've brought in from different parts of the world look promising.

While many researchers have concentrated on selecting the occasional American elms that escape the disease, the MSU researchers have concentrated on foreign species. By the end of the summer of 1968, they had received over 600 seedlots of elms from Japan, India, Rumania, Russia, Austria and other European and Asian countries.

Now two years old, the trees were inoculated with spores of the Dutch elm disease fungus early this June. Twenty-five thousand were inoculated.

First results from the inoculations have been obtained. Nearly all trees belonging to one European species died. Another European species, the smooth-leaved elm, showed much higher resistance. A Japanese species also showed considerable resistance.



The new lawn and garden products plant of The Leisure Group, Inc., will be located by the end of the year at Watson Industrial Center in suburban Los Angeles. The new 117,500-sq. ft. facility will consolidate manufacturing and distributing operations of Hayes and Big Andy spray guns, Black Magic garden products, Thompson and Rain Spray sprinklers.