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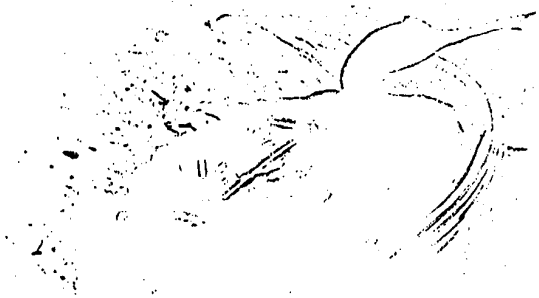

OUR ECOLOGICAL CRISIS

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MONS 031951

DDT was used extensively during the war against mosquitoes and body lice, with great success. And thousands upon thousands of tons have been used since then, on forests, on farms, and to control household pests. Many an area has been freed at last from malaria.

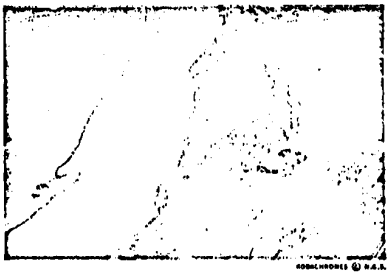
But one of the compound's most attractive features—the fact that it remains active long after application—has had unpleasant ramifications, too. In the past decade it has become increasingly evident that creatures in water, in air, and on land—including man himself—have built up concentrations within their bodies. Sharp reductions in numbers of ospreys and other birds are attributed to DDT and its derivatives (pages 758-9).*

The pesticide has traveled through the ocean chain. Even penguins in the Antarctic, where DDT has never been used, have accumulated traces of the compound.

Another senior scientist at Woods Hole Oceanographic Institution, biologist Dr. H. L. Sanders, told me more about the problem.

"It has become apparent that DDT and the other chlorinated hydrocarbon insecticides aren't selective. They are toxic to many forms of animal and marine life. When a fish eats food organisms contaminated with the insecticides, the compound builds up in its fatty tissues. When a larger fish eats him, that predator will end up with the insecticide."

*See "The Osprey, Endangered World Citizen," by Roger Tory Peterson, NATIONAL GEOGRAPHIC, July 1969.



Red means hot! A color-coded three-dimensional heat picture (left) shows how heated water from the Atomic Energy Commission's Hanford plutonium-producing plant flows into the Columbia River near Richland, Washington. The AEC uses such remote sensing as part of its long-range studies of the effects of hot water on river ecology.

In the heat image, which covers much of the area shown above, steaming tanks of water that cooled a reactor glow orange. Square pond and long trench also receive the coolant. Submerged pipes discharge in midriver, where warmest surface temperatures show as red mountains that flatten into a green plateau amid the blue and purple of cooler water.

MONS 031952

Dr. Sanders is also concerned about another group of toxic chemical compounds—the polychlorinated biphenyls, called PCB's.

"The PCB's have been around for 25 years or so," he told me. "But, until recently, we weren't too conscious of them. They are used in the manufacture of plastics, paints, and a great many other things—so they're present in a lot of the industrial waste that ends up in our rivers and oceans. When scientists began analyzing fish samples in a chromatograph to track DDT through the food chain, PCB's kept showing up.

"We've found that they act on marine life much as DDT does, traveling through the food chain. Their toxic effects, alone or in combination, are still largely unknown. Research is just beginning."

I left Woods Hole with a new attitude about those boundless seas of ours.

Last year Americans threw away 50 billion empty cans, 30 billion glass containers, 4 million tons of plastics, and more than a million television sets. Where did it all go?

Into the ground, mostly, in open dumps or into "sanitary landfill." Incineration posed problems: Much of the refuse was unburnable. Also, some burning plastics produce toxic smoke, plus fumes that damage an incinerator's pollution-trapping devices.

Trash Mountain Provides Ski Slopes

Landfill poses problems, too. Leaching chemicals sometimes pollute ground water. Rotting garbage can generate methane gas. Dumping sites for a city's trash are getting more and more difficult to find.

Du Page County, Illinois, just west of Chicago, is trying out a creative solution. Its people are turning a mountain of refuse into a

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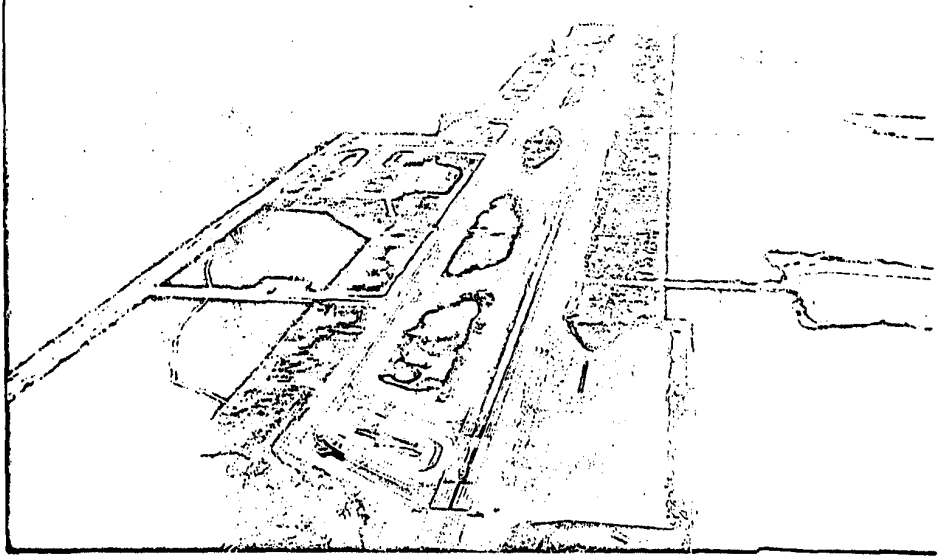

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