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Persistent PCBs

Industrial Pollutants May Be Worse Threat Than DDT to Ecology

They Linger Longer and Are Toxic at Lower Levels Than Had Been Thought

Sick Monkeys, Minks & Men

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NEW YORK—A group of industrial pollutants that seemed to be coming under control a few years ago is currently emerging as a more serious threat than the insecticide DDT.

The ubiquitous pollutants—a chemical family derived from benzene and called polychlorinated biphenyls, or PCBs—are stirring concern for a variety of reasons. They have caused severe human ailments, including a skin disease and liver problems, and researchers are finding evidence that PCBs are toxic at far lower levels than previously thought. In laboratory experiments, PCBs fed to monkeys have resulted in a high incidence of miscarriages and sickly infants, while rats have developed liver cancer. Evidence is accumulating that PCBs may harm some wildlife — particularly ocean-feeding birds—and even the entire ecological food chain.

Furthermore, PCBs are far more resistant than even DDT to degradation by natural forces. In many places the accumulation of PCBs in the environment either has exceeded or may soon exceed that of DDT.

But because of their advantages—chemical stability, fire resistance and electrical insulating properties—PCBs are important to the safe operation of many electrical transformers and capacitors. They also have been used in such varied products as lubricants, waterproofing chemicals and "carbonless" duplicating paper.

Used Longer Than DDT

PCBs have been in use since 1929, more than a decade longer than DDT. But it wasn't until the late 1960s, several years after the late Rachel Carson's book, Silent Spring, focused attention on the widespread contamination by DDT and its danger to birds, that scientists began to worry about PCBs, too. But the federal government wasn't worried enough to curb use of PCBs, as it did with DDT in 1972.

Evidence of contamination now is being discovered far from industrial plants. "It's all over the place—we find PCBs everywhere we look," says Glenn E. Schweitzer, director of the office of toxic substances of the U.S. Environmental Protection Agency. Worrisome quantities of PCBs have been detected in fish ranging from salmon in Lake Michigan to striped bass in the Hudson River—a hint that the chemicals are leaking into the very beginnings of the food chain. Oceanographers have found the chemicals far at sea.

"Our overall concern about PCBs is greater than ever before," the EPA's Mr. Schweitzer says.

That concern is increased by the fact that a three year old voluntary restriction on PCB applications has failed to reduce pollution. "The contamination of the environment is as bad as it has ever been," says Donald I. Mount, an aquatic toxicologist and director of the National Water Quality Laboratory in Duluth.

Many Buyers Eliminated

The controls were instituted in the wake of a 1972 report by a federal government task force that urged that PCBs should be restricted to essential or nonreplaceable uses which involve minimum direct human exposure, since they can have adverse effects on human health." The sole U.S. producer, Monsanto Co., voluntarily stopped selling the chemicals to "several thousand customers—all except users with "closed system" electrical applications.

The St. Louis based company says that it now sells to only 40 PCB customers in the U.S. and that its U.S. production has been slashed to about 40 million pounds a year from the 1970 peak of 85 million pounds. Monsanto also makes PCBs in Europe and sells them under the same restrictions.

But the production cutback has failed to reduce pollution levels for several reasons. One is the chemicals' persistence in the environment. PCBs "could be around for years and years to come," says Nicholas S. Fisher, a marine ecologist at the Woods Hole Oceanographic Institution in Massachusetts. Also, many U.S. users of PCBs cut off by Monsanto are obtaining supplies from European producers for use in hand soaps, copying-ink toners and other products that readily contribute to pollution, federal officials believe. And finally, even Monsanto customers in their manufacturing processes accidentally spill PCBs, and direct emissions of the chemicals into waterways have never been stopped.

Complete Ban Urged

As a result of the apparent failure of voluntary controls, environmentalists are urging a ban on PCBs. "They are a hazard to human health, so there should be a complete phaseout of PCBs in every use as soon as possible," says Karim Ahmed, a biochemist with the Natural Resources Defense Council in New York.

According to Barry Commoner, a biologist and director of Washington University's Center for the Biology of Natural Systems, the lack of environmental caution in introducing PCBs amounts to "an absolutely shocking and staggering case history."

Mr. Commoner says the ability of PCBs to cause chloracne, a skin ailment, was well documented by 1943 because of outbreaks among workers handling PCBs and products containing them. But nobody bothered to consider the eventual public health problems that might result from the environmental pollution, he says.

It's true that only after environmental problems in general and DDT in particular became issues in the 1960s did PCBs finally become suspect. In 1966, researchers discovered PCBs in the tissues of fish that at first had been thought to be suffering from DDT intoxication. Subsequent studies confirmed

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