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PROGRAM Your Earth

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DISCUSSION OF PCB'S

REED COLLINS: "Your Earth." I'm Reed Collins, reporting on the CBS Radio Network. In the mid-1960's, a Swedish scientist discovered an unexpected chemical substance in the waters off the coast of Sweden. The scientist had been looking for evidence of DDT contamination, but his task was made difficult by the presence of something else--something which interfered with his efforts to measure the DDT.

The substance turned out to be polychlorinated biphenyls, known more simply as PCB's. Perhaps the main reason PCB's weren't noticed in the water before is that no one went looking for them. Certainly the chemical is not a recent development. It has been around since 1930, and likely has been in the oceans for some time. But the realization of the presence of PCB's came as a surprise. Now long after the Swedish findings, in 1967, Dr. Robert Risbrough(?) of the University of California's Bodega Marine Laboratory, found PCB concentrations in sea birds.

The Woods Hole Oceanographic Institute in Massachusetts is conducting continuing studies of PCB contamination of the oceans. Dr. George Harvey, at Woods Hole, says he's found PCB's in every ocean organism from the biggest fish to the tiniest plankton. He says very little is known of the effects of PCB's on marine life. Dr. Harvey says evidence being made available, though, indicates PCB's have effects similar to those of DDT -- which means they could modify growth rates and change animal behavior.

Scientists at the Marine Sciences Research Center of the State University of New York, found that in the laboratory PCB's could reduce the growth rate of two species of marine diatoms, a type of plankton. A plankton is a basic food for much marine life. PCB's apparently don't accumulate in the food chain of fish, although it appears they do accumulate in mammals, which are less able to pass the PCB's from their systems.

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PCB contamination in fish and other marine life seems determined by the concentration of the chemical in the water in which they swim. Chemically, PCB's are related to DDT. They're in the family of fluorinated hydrocarbons, but they have a very important difference. DDT was deliberately introduced into the environment. As an insecticide it was sprayed on crops to fight off the insect plagues, and used freely to control insect-spread disease. Great quantities of DDT have been used since its introduction. Only recently have controls been put into effect on its use.

Polychlorinated biphenyls are a different story. They were never deliberately set loose in the world around us, but somehow got there anyway. PCB's are used primarily in industry. They have three useful characteristics: they don't burn, they don't conduct electricity, and they keep plastics flexible. We find PCB's in electric transformers, in use as hydraulic fluids, and in pipes as heat-transfer fluids. PCB's have been widely used in adhesives, sealants, paints, and printing-ink.

It is still not clear how PCB's got from those uses into the environment, but it's believed that rivers, streams and the atmosphere all are involved in the distribution of PCB's. The burning of products containing PCB's is certainly one source of the pollution.

A Massachusetts Institute of Technology scientist estimates that in recent times, one thousand to two thousand tons of PCB's escaped into the atmosphere each year from plasticized materials alone. While scientists remain cautious about the long-term effects of PCB's in the ocean and on land, they are worried that man is loading the environment with chemical substances that could present a dangerous legacy.

"Your Earth." I'm Reed Collins. CBS News.