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Little action so far on PCBs in the Ohio

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A DANGEROUS industrial chemical, related to DDT, has been found at hazardous levels in Ohio River channel catfish and carp during the past six years. Unlike the mercury furor of 1970, however, the government has taken no remedial action other than sampling the water.

The chemical is PCB, short for polychlorinated biphenyl. It is used mainly in oil form as an insulator in electrical transformers and capacitors. It also has been used in lubricants, hydraulic fluids, adhesives, carbonless carbon paper and plasticizers.

Earlier this month Monsanto Co., the sole producer of PCBs in the United States, announced it would stop production of PCBs and withdraw all inventories by Oct. 1, 1977. A company spokesman said that mounting evidence of the chemical's accumulation in the environment and the development of substitute chemicals prompted the action.

AND two weeks ago President Ford signed the Toxic Substances Control Act, which includes a ban on PCBs that will be phased in over two years. The law also calls for testing of all new chemicals before they are placed on the market.

Earlier this fall a definite link between PCBs and liver cancer in humans was announced at an international cancer conference in Cold Spring Harbor, N.Y.

In addition, laboratory tests have shown that even low levels of PCBs in fish affect the production of protein, muscle contractions and the nervous system. Ducklings that were fed PCBs became much more susceptible to diseases such as hepatitis.

THE most widely known human poisoning from PCB-contaminated food occurred in 1968 in Japan and involved 1,000 victims. No one died at that time, but of a sample group monitored, only half showed improvement two years later from eye and skin disorders, headaches, vomiting, diarrhea and fever. This is also the instance from which the linking of PCBs with liver cancer in humans was made — eight years later.

One measure of the insidious nature of PCBs is that they are related to DDT, a long-lasting pesticide. In a test it was found that PCBs decayed into harmless substances at a rate 10 to 20 times slower than DDT.

Until this year Ohio River Valley residents heard next to nothing about PCBs.

Hoosiers in the Bloomington area became alarmed this summer over the disclosure that Westinghouse was discharging PCBs into the municipal sewage treatment plant and ultimately into tributaries of the White River.

But the Ohio River pollution has received little publicity even though the Ohio is the second most PCB-contaminated river in the nation. Only the Hudson River in New York has had higher PCB readings.

Since last February most commercial fishing has been banned along 200 miles of the Hudson. The New York Department of Environmental Conservation has ordered General Electric, a major PCB discharger, to stop discharging PCBs into the Hudson by July 1, 1977. In addition, GE has agreed to pay the state $3 million to help restore the river and $1 million for research. New York will also spend $3 million in efforts to restore the river.

So far Ohio, West Virginia, Indiana, Kentucky and Illinois have not restricted fishing or even issued warnings to fishermen or fish-serving restaurants. They have also not placed controls on catfish that are transported live from the Ohio River to numerous pay-to-fish lakes in the five-state area.

The Environmental Protection Agency has not vigorously pursued the monitoring of the water and industrial polluters. Likewise, ORSANCO (Ohio River Water Sanitation Commission, composed of water-quality officials from eight states) has taken only a timid position on PCBs when it has acted at all.

Besides fish, the Federal Drug Administration (FDA) has found PCBs in significant quantities in other food, including dairy products, poultry, and animal feed but not nearly in the magnitude as in certain freshwater fish and wildlife.

WHAT has been known since 1973, through the results of the National Pesticide Monitoring Program's samplings and EPA tests, is that:

Fish have been taken near Cincinnati with PCB levels up to 16

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times higher than the tolerance allowed by the Food and Drug Administration (FDA) for food-fish sold interstate

- In two of the four Kentucky testing sites during 1975, the average PCB level for the tested fish was above the FDA tolerance level

- The highest levels of PCBs were discovered in 1974 in the effluent of the Henderson Ky., sewage treatment plant, which collects wastes from chemical and metal working companies. It was 190 times more than the allowable minimum. Nearly as high a level was found elsewhere in the Ohio River in 1976 near the Rohm & Haas plant in Louisville

Discharges may or may not be accidental but the dangers of PCBs have been suspected for 40 years and known with certainty for a decade. Laboratory tests show that not all Ohio River fish exceed the FDA "tolerance" level but enough do to make eating the fish a hazard. Even OR SANCO executive director Lee Weaver when asked said he would not eat Ohio River catfish

PCBs do not dissolve in water. They cling stay suspended in the river or creek and accumulate in the silt. They re-enter the water when disturbed such as when the bottom is dredged or stirred up by tow-boat propellers.

Fish may ingest PCBs, which dissolve in fatty tissues, either through the water or by eating organisms on the bottom.

There is speculation that officials of Ohio River basin states have not taken action because it would disturb the fishing industry and industries discharging PCBs into the river.

Fishing is a large and growing business on the Ohio River. More than 10 tons of Ohio River fish were caught from 1973 through 1975 by commercial fishermen licensed in West Virginia. The 1976 catch may exceed this three-year total. Nearly all of these catches were reported to have been transported live to lakes where fishermen pay to fish.

Figures on the total catch from the Ohio River in Kentucky, Indiana, Ohio and Illinois are not readily available from Kentucky officials, who control the Ohio River section bordering the other three states. But the amount is believed to exceed by far the catch in West Virginia. Figures from 1963 and 1968 indicate it is worth over 11 million annually.

PCBs were first manufactured in 1930. They were recognized by some persons as a health hazard in the early 1900s, but this and other warnings in the early 1940s were ineffective.

In 1971 Monsanto, the sole U.S. producer of PCBs restricted sales for use only in "closed system electrical applications because of increasing evidence of worldwide contamination. A closed system is one that is completely sealed, but many of those have eventually broken open allowing the PCBs to escape into the environment.

PCBs continue to spread into the environment because according 1973 EPA figures approximately [illegible] pounds of PCBs are being imported to the United States annually. Some of these are being used in other than "closed" electrical systems, such as in plastics and as surface coatings.

The accumulation factor is what makes bottom-feeding fish such as carp and catfish dangerous to eat. Even the tiniest amount of PCB is added to what already exists in the human body. Eventually the total amount could begin to cause adverse health effects.

IN LABORATORY tests, a PCB accumulation in the tissue of a monkey from 2.5 to 3 parts per million (ppm) has been found to be the "effect level" which is when adverse health effects become evident. A tissue accumulation of 200 ppm in a monkey is capable of causing death. The effects on monkeys, with some exceptions, are considered applicable to humans.

In time the total PCB accumulation in a person's tissue could reach or exceed the effect level. A 1974 sampling of tissue specimens from the general population found that 36.6 per cent had PCB tissue levels of from 1 to 2 ppm, a finding that indicated the seriousness of PCB contamination. There is a likelihood that the FDA will lower the "tolerance" level to the 2 ppm of Canada or even below this.

In 1972 the PCB analysis of fish from the 1970 National Pesticide Monitoring Program was published in a scientific periodical and noted that fish from the Hudson River had the highest PCB levels with a total of 210 ppm in a single fish — 42 times higher than the limit allowed by the FDA in interstate food.

The Ohio River had the second highest levels, with total PCB residues in fish as high as 123 ppm at Cincinnati and 12 ppm at Marietta Ohio.

On June 6, 1972 the FDA set a maximum tolerance for food fish in interstate commerce of 5 ppm.

In March 1976 the EPA analyzed 14 Ohio River channel catfish taken near Evansville Ind. and Henderson Ky. PCB concentrations ranged from 3.7 to 28.5 ppm. The average concentration was 8.8 ppm. In July 1974 the EPA found that the concentrations in carp and catfish samples from West Virginia exceeded the 1973 FDA limits on PCB residues.

RESULTS from the National Pesticide Monitoring Program published in 1974 indicated a decrease in PCB content of fish taken in 1972 from the Ohio River at Cincinnati and Marietta. The Marietta samples went from 122 ppm in 1970 to as low as 4 ppm in 1972. The Cincinnati samples went from 123 ppm in 1970 to 45.3 ppm in 1972.

The decrease could be accounted for by Monsanto's 1971 restriction in selling PCBs, curtailing industrial use of certain PCB types.

In an analysis of the Ohio River in late 1973 ORSANCO found that in addition to PCBs there were high levels of the pesticide chlordane a cancer causing compound now virtually banned. Its presence with high levels of PCBs which are also chlorinated hydrocarbons, could result in a poisonous effect greater than that of each separate contaminant.

Given these analyses there seems to be no PCB study by any agency that would support the current policy of unrestricted fishing. While fish shipped interstate is a state responsibility, the FDA will act against all fish in interstate commerce found to exceed 5 parts per million. The FDA has said the apparently there has been no sampling of commercial catches from the Ohio by the FDA for PCBs.

Since West Virginia and Kentucky boundaries extend to the low water mark on the opposite side of the Ohio River all food fish taken for commercial purposes into Indiana Ohio and Illinois would be in interstate commerce.

Fish taken for commercial purposes directly into West Virginia or Kentucky would not be in interstate commerce. However the responsibility for ensuring fish safe for human consumption would then lie with the states fish and wildlife departments and the health departments.

What actions the state and federal governments will take remains to be seen.

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