Environment

PCBs: THE WEED OF PROGRESS BEARS DEADLY FRUIT

Last fall, fishermen awaiting the annual salmon run along Ontario's Credit River received a rude shock: the provincial Ministry of Health warned them not to eat any of their catch. The reason? The fish were

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Salmon fishing on the Credit River: It's okay to catch 'em, but not to eat 'em

almost certain to contain dangerously high levels of PCBs—polychlorinated biphenyls—a highly toxic, potentially fatal chemical, once thought to be firmly under control. But the salmon warning was part of mounting evidence that PCBs are still creeping into the environment in significant and alarming numbers. And authorities predict that the current furor is nothing compared to what's to come.

Despite present regulations, for example, 10 million pounds of PCBs are annually dumped in the United States, and virtually all human tissues so far tested have contained traces of the compound, also called askarels. Nor is concern confined to industrialized regions—though counts are predictably highest there; PCBs have also been found in Rocky Mountain eagles, Baltic Ocean fish and Antarctic snow. "We find it almost everywhere we look," says one U.S. scientist, "and the amounts seem to be increasing." The problem is potentially severe because polychlorinated biphenyls, a combination of chlorine, hydrogen and carbon, are chemically stable—they do not break down naturally in the environment. (This very property, of course, has made them desirable and widely used industrial components since 1929, in everything from electrical equipment—fluorescent lights, air conditioners, television sets—to printing inks and ceramic molds.) Worse, PCBs are nonflammable, so attempts to incinerate municipal waste containing the chemical only spreads them through the atmosphere. Perhaps most worrisome: PCBs are bio-accumulative, increasing in concentration as they move up nature's food chain.

The risk of PCBs to human health has long been known, but their extreme toxicity was first underlined in 1968 when rice oil contaminated with the compound was sold for human consumption in western Japan. Thirteen hundred people were poisoned, many died; seven years later, most of the victims still retain symptoms of the disease (called yusho, after the Japanese word for oil). In a second incident, 600 pounds of a closely related chemical, polybrominated biphenyl, were shipped to a Michigan cattle feed plant in 1973. The contaminated feed nearly wiped out the state's dairy industry.

But while isolated outbreaks have captured the headlines, environmental researchers fear the slower, but equally deadly poisoning of entire populations by the steady accumulation of PCBs in the environment. Laboratory animal studies have already shown that small doses over a long period of time yield extreme illness or death, birth defects and—in some cases—liver cancer. "The Great Lakes," says Nathaniel Reed, assistant secretary in the U.S. Department of the Interior, "are a virtual sink for PCBs. The fish are trying to tell us something, and what they're trying to tell us is that our environment stinks."

Only one American firm, the Monsanto Co. of St. Louis, now manufactures PCBs, and since 1970 Monsanto has restricted sales to closed electrical systems, to minimize the leakage. Still, Monsanto's Sauget, Illinois, plant produces some 40 million pounds a year of PCBs in this single application, and the U.S. Environmental Protection Agency estimates another 300 million pounds—currently hidden in products manufactured before 1970—will find their way into the environment. "Regardless of controls," says Environment Canada scientist Dr. Maurice Millson, "I don't expect a decrease in PCBs in the 1970s."

Nevertheless, half a dozen agencies, including Ottawa's Environmental Protection Service, the EPA and the UN's World Health Organization are about to stiffen controls. Ironically, one product that may be affected by the new regulations is the electrostatic precipitator, a device installed in thousands of factory smokestacks in North America in the early Seventies to reduce air pollution.

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