primary importance as to whether or not it was worth the risk of making application of this chemical.

Congressman John Dingell of Michigan published an article in the April 10, 1968, Congressional Record from the "Michigan Out-Of-Doors" April, 1968, issue entitled "DDT Killing Fish: Lake Michigan Trout, Salmon are Hard-Hit." Researchers leave virtually no doubt that DDT residue in Lake Michigan is responsible for the die-off of coho salmon fry (15–20% mortality) in Michigan and Wisconsin hatcheries. This is transmitted from the lake-run mature females' ovaries, where it is concentrated in the oil droplets of the egg yolk. Director Ralph MacMullan of the Michigan Conservation Department warns of the dire consequences of the use of DDT in Lake Michigan areas to this currently-thriving coho salmon fishery, and urges considerate use of less persistent and easily biodegradable pesticides now available to agriculture. This department has issued instructions on storage and disposal of the DDT-type "hard" pesticides as contained in Appendix A, in hopes that continued use will be greatly curtailed. These instructions, Mr. Chairman, may be of use to those so disposed to follow these words of warning—at least we hope so, maybe somewhat naively.

Sport Fishing Institute, Mr. Chairman, has long been aware of and long publicly warned as to the intrinsic dangers involved in the synthetic and organic materials, and some of the substantiated results of their relentless use being broadcast over tremendous areas without due concern for *all* of our natural resources. DDT was the mere beginning. Tragic results on aquatic life using DDT in forest insect spraying programs were convincingly demonstrated and publicly chronicled by the Institute and others in the cases of extentive destruction of the organisms in New Brunswick's Miramichi River in 1954, famous for Atlantic salmon, and a similar debacle in 1955 in the Yellowstone River, Montana. These are instances we don't forget. Since its availability in 1947, DDT has had several subsequent competitors that have extremely dangerous and persistent characteristics. The more troublesome chlorinated hydrocarbons involving more persistent effects than the organic phosphates are aldrin, dieldrin, heptachlor, endrin and others.

By comparison with DDT, dieldrin and heptachlor are in the category of the hydrogen bomb compared to the atom bomb. Dieldrin itself is some twenty times as destructive of fish, game, song birds, beneficial insects, etc., as its predecessor DDT. I would like to cite a rather dramatic example as it was reported in SFI BULLETIN No. 74, January, 1958, in the lead article entitled "Super Insecticides—Space-Age Pollutants."

"Dieldrin was air-disseminated at the rate of one pound per acre over some 2,000 acres in May, 1955, in Florida, to kill sand-fly larvae . . . About 67 miles of ditches traversed the marshes where this treatment was conducted . . . 20–30 tons of fish or about 1,175,000 fish of at least 30 species were estimated to have been killed in this treatment . . . The larger game and food fishies succumbed first . . . crab set upon and destroyed the moribund fishes, but next day were dead themselves . . . Apparently, all of the aquatic life within this Indian River area was completely destroyed."

Mr. Chairman, this is merely to indicate to you and to your Committee that such cases as this were known and in public reports at least 13 years ago. Since that time, there have been many reports of aquatic life killed by such treatments and it has become increasingly evident that little or nothing is being done to stop this wholesale carnage. A sample of five of such reports is available as Appendix B to this testimony.

The immediate effects upon the aquatic organisms, in which we are particularly interested, may well be only a small aspect of the total panorama of the insecticide problem. Many are becoming alarmed at the various forms of fish and wildlife exhibiting growing concentrations of poisonous chemicals in their tissues and organs—animal protein that we consume as food, such as tuna, halbut, pheasants. A selective concentration of these toxic chemicals occurs when injected in oils—cod liver oil fed to babies being a prime example. The late Rachel Carson's SILENT SPRING, already a classic, emphasized and illustrated in various and diverse ways the vital warning that all should heed. With this exposition in mind, I doubt whether there be further need for me to dwell on these various facets of the inherent problems involved in the uncontrolled and widespread use of such "hazardous" chemicals. Dr. Jerome Wiesner, well known for his work as the Presidential Science Advisor, has claimed that health hazards of chemical pesticides are potentially greater than radioactive fallout!