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DEPARTMENT OF NATURAL RESOURCES

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RALPH A. MAC MULLAN, Director

October 28, 1970

The Honorable Thomas Anderson
House of Representatives
State Capitol
Lansing, Michigan

Dear Tom:

This is in answer to your note of October 9 asking us to review a letter from Donald Stearns of the Physics Department of Montcalm Community College, expressing concern over the PCB's in the environment.

The PCB's (poly chlorinated biphenyls) are a series of complicated organic compounds widely used in industry. They are commercially known as Arachlors and are manufactured by Monsanto Company. Like DDT, they are now known to escape readily into the environment, are very persistent, and readily enter and are concentrated in living organisms. The difference is that DDT reaches the environment by intent, PCB's by accident. Still, these PCB's are just as widespread in animal life as DDT. The PCB's are of relatively low toxicity but have only lately been under study. In other words, they need to be watched.

Stating it briefly, the PCB's are about the same toxicity as DDE, one of the breakdown products of DDT. DDE in itself is mildly toxic, but has been shown to be responsible for egg shell thinning in birds and consequently for crushed eggs and reproductive failure. The PCB's, on the other hand, do not produce thin egg shells. However, the PCB's, when added to DDT and dieldrin, increase their toxicity to insects. The possibility of an increased, similar toxic effect on fishes, birds, or mammals exposed to DDT and dieldrin has yet to be tested.

The PCB's have also lately come into prominence because some of them appear on the gas liquid chromatograph charts in the same peaks as

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some of the breakdown products of DDT. This was not known until a few years ago. Consequently, some amounts of DDT reported present in animals a few years ago are too high since they contain some PCB's.

Two comprehensive accounts of the PCB problem have recently appeared in the near-popular scientific magazines. One of these is that cited by Stearns. I am enclosing copies of these for your information, with an extra copy of the Risebrough article for Stearns. The Peakall account is heavy reading. The Risebrough article is more readable. Both men are ecologists and scientists of reputable standing.

Peakall, D. B., and J. L. Lincer
1970. Polychlorinated Biphenyls--Another Long Life Widespread Chemical in the Environment.
Bio-Science 20:17:958-964

Risebrough, Robert, with Virginia Brodine
1970. More Letters In The Wind.
Environment 12:1:16-27

I hope that this analysis has been of some help. It is certainly to your credit, Tom, as a guardian of the environment, that you are keeping up with all of the late developments.

Sincerely,

A. Gene Gazlay
Assistant Director

Enclosures

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