toxicology
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GRIFFITH E. QUINBY, M.D., M.P.H.
PREVENTIVE MEDICINE
Post Office Box 1313
WENATCHEE, WASHINGTON 98801
Area Code 509
TEL: NOrmandy 3-6175

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Dr. R. Emmet Kelly, Medical Director
Monsanto Company
800 N. Lindberg Boulevard
St. Louis, Missouri 63166

Dear Dr. Kelly:

Your reply of February 3rd to my letter of January 20th arrived while I was in the southeast on an extended trip.

Your reply was most courteous and I appreciate immensely the effort and time that you put into it. Based on the evidence in your letter, Monsanto has taken a "realistic attitude towards the PCBs". Many of us have been alarmed by what we read in the Congressional Record (Oct. 14, 1970, H10213-5) and numerous other fairly responsible sources. If Monsanto is guilty of anything concerning PCBs, it is their failure to publicize sooner the comparative safety of PCBs with structurally related polychlor-terphenyls, -polyphenyls, and -naphthalenes as well as chlorinated biphenyl insecticides. I hope your scheduled presentation at the Society of Toxicology rectifies this deficiency if not sooner elsewhere.

It would be to Monsanto's better image for you or they to explain how people like Mr. Ryan and others got the impression that your company was concealing usage of PCBs both alone and in mixtures. One of the formulators of cutting oils to whom presumably Monsanto sold PCBs would not admit that PCBs were used in cutting oils, but the respondent assured me that "after the end of this year (1970), we will offer for sale no product containing such materials". That was concealing facts as I interpret them.

Again for the ease of your following points of discussion, future reference in this letter will be in order of your reply of February 3.

My letter of January 20 had been composed mainly because of concern stated in Peakall and Lincer review (BioScience 20, 958-64, Sep '70), Riseborough's latest contribution (Environment Jan-Feb '70) and the Congressional Record cited before. I have also heard complaints by other people in the northwest that Monsanto has refused to answer what sounded like reasonable requests for information to me. In any event, your reply was reassuring and right now the toxicology field needs many more like them.

(1) I was aware of the greater toxicity of chlorinated naphthalenes and ethers and realized part of the blame for chlorinated biphenyls may be more correctly attributed to these compounds when mixed. However, the international chemical field made it clear that some foreign manufacturers at least did not produce chlorinated biphenyl compounds alone but in mixture with other chlorinated impurities considered usual for such technical material.

The Finch Commission Report of 1969 was printed before we ever got all the answers of manufacturers of chlorinated biphenyls in the U.S. and abroad.

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Although Food & Drug Administration assured us there was only one manufacturer (Monsanto) in the U.S., a British toxicologist gave us a list of seven firms supposedly manufacturing PCBs in the U.S. We are aware that they may have been formulators instead of manufacturers, but I think you could straighten out this mis-information if you will please. We are in the ridiculous position of having more knowledge about the manufacturers of foreign PCBs than we have about domestic.

(2) I appreciate your background of information on "broadcast applications" of PCBs. It is obvious that some scientists would regard 100,000 pounds as "broadcast" while others would not. Naturally the "activists" and environmentalists would try to exaggerate this whereas industry would minimize it. The important thing is that PCBs never seemed good enough or cheap enough entomologically as extenders of pesticides to warrant recommendation for widespread nationwide or international use. I sympathize with your company's problem of people making too much of this issue. Politicians and politics have really messed up some issues that should have been left to scientists. For that matter, politics and politicians are really making a mess of the practice of medicine. We will soon have to change our designation of "practice of medicine" to "regimentation of medicine". Also men like Riseborough allow their emotions to pollute their scientific approadh.

(3) If the statements often quoted are true that Monsanto implied early that PCBs were used only "in closed systems" so that they were not likely to get into the environment, then Monsanto will be years living that one down. This issue was considered by at least 10 European and American toxicologists helping to produce the Finch Report of December, 1969. I wish now that I had called or written you direct when this issue was faced with inadequate background in August, 1969. Because we had so little data and background literature, only in the portion of the chapter on "Effects of Pesticides on Man" on analytical complexities (p. 257-8) was the two-page summary used of many pages of texture composition submitted. The editors of the report did not expect in mid-1969 the relative importance of PCBs analytical confusion with pesticides to loom so large, but I correctly predicted it as long ago as 1966 as quoted therein. Strangely, none of the biologists, ornithologists, biochemists, botanists, conservationists, or other scientists succeeded in getting one word about PCBs into the report.

Moreover, in response to your question about whether I would have predicted the current situation as regards mercury, the facts are that I did many years ago and got few people to listen. It was I who got Jack Hayes to add mercurial pesticides to the Public Health Service Clinical Handbook on Economic Poisons and drafted the first copy of that section sometime between 1959 and 1962. Ever since I began presentations before northwestern pesticide applicators in the late '50s. As early as the late 1950's, I urged applicators to find alternative bacteriocides, fungicides and mossicides for the alkylated mercurials they were routinely using without appreciation of the inherent hazards to themselves and the environment. Our present situation regarding mercury in the environment is even worse off than that for PCBs and DDT. We know that certain large industrial pollutions of mercury have caused localized hazards, but we don't know whether important sources of mercury in the oceans are coming from industry from mines or from natural deposits above and below the sea. I suspect mostly the latter.

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With your permission, I would like to cite you as authority for absence of use of PCBs in tire rubber in the U.S. Could you extend this statement to world-wide? This alleged use is really running rampant as you know. Nextmost, the possible use in asphalts has been feared. Can you furnish advice one way or the other on asphalts?

From various sources I hear Monsanto is eliminating PCBs from hydraulic fluids and plastics. Is this entirely true? How about those uses in carbon paper and building products where one chemist, lacking a reference standard, used extracted carbon paper to good advantage until he could obtain standards? If you are not familiar with this article, I may be able to send it to you.

I would appreciate any statement you can provide that deals with Monsanto's current provisions for minimizing escape of PCBs into the environment, including the burning of autos, railroad cars, boats and other machinery whose equipment entailed use of PCBs in wiring or elsewhere.

The "carborator fluid" term is an auto mechanic's idiom referred mainly to specialty cleaning fluids for carborators for prophylactic use before disassembly and clean-up use after take-down if required. Some of these were labelled as containing "chlorinated cyclic hydrocarbons".

(4) Thanks very much for your almost negative answer about occupational illness from PCBs. I feared I might get an answer like I did from another world-famous company in 1966. When we were faced with two years of epidemics of nosebleeds in thousands of apple packers handling dusty trays containing gentian violet dust and in a few pulp workers dumping dusty gentian violet into vats from which trays were made, we queried one of the manufacturers of gentian violet. They replied quite honestly that they had known about this problem in manufacture for about 50 years but didn't realize anyone else would be interested since the nosebleeds could be prevented by the simple expedient of a respirator. They had failed to make this occupational syndrome available anywhere in the literature, and I had to publish it. Some people with insufficient background data still don't believe it, but gentian violet handlers do.

I have been invited to prepare a number of articles on the relative public health hazards of PCBs and their confusion in analyses with pesticides with consequent confounding of appraisal of hazards of pesticides. When you provide answers to the above or other reports, please designate which may be cited and which you would prefer to postpone until your company's own publications are out. I am also looking forward to abstracting for the Journal of Occupational Medicine the publication to appear in Society of Toxicology when it appears.

The American Academy of Clinical Toxicology, of which I am President this year, is contemplating a segment of our program on confusion of PCBs with pesticides in October next.

Thanks again for your painstaking replies.

Very truly yours,

Griffith E. Quinby, M.D.

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