

**Q. Have you brought a record along, a gas chromatograph along so we can just have it marked and see how it looks?**

MR. YANNACONE: I'm going to object unless it's related to the direct.

MR. STAFFORD: I'm sure he has several there that I will introduce and explain completely. I just want to have him see and show what it looks like.

EXAMINER VAN SUSTEREN: We could take it as an aid to the court type of thing.

MR. YANNACONE: Well, the appropriate sample recording if we're going to take any aids to the court and if this witness can't produce one, we will—is the sample run of a mixture of the various commonly encountered environmental organochlorine material or a sample run of DDT or the polychlorinated hyphenate or something else under discussion but just an ordinary sheet of graph paper with a bunch of humps and peaks on it's—

**Q. Will you produce the gas chromatogram on the Bear Creek Coho salmon?**

A. Yes.

**Q. Before getting into that, Mr. Coon, describe the chief problems, if any, associated with the GCL—the GLC method.**

MR. YANNACONE: I'm going to object unless we can have a little *voir dire* on this exhibit or unless the exhibit is going to be withdrawn at this time.

MR. STAFFORD: I'm going on the exhibit before this witness and Ill prove it in the course of his testimony. I don't choose to prove it at this time; just mark it.

MR. YANNACONE: Then it doesn't belong in the record at this point.

MR. STAFFORD: It's not in the record.

EXAMINER VAN SUSTEREN: He has merely marked it. We don't even know what it is.

MR. YANNACONE: He has asked the witness to show some kind of example and the witness has pulled out an ordinary XY recorder plot on paper.

EXAMINER VAN SUSTEREN: Give Mr. Stafford a chance to ask whatever questions he wants to ask. Apparently he's not going to ask any questions relating to the document that has been marked as exhibit 151.

MR. YANNACONE: Then while he's asking, may I examine the marked copy?

MR. STAFFORD: Well, certainly.

MR. YANNACONE: I thank you.

MR. STAFFORD: Will you tell us generally what the problems are associated with this method, please?

WITNESS: Well, the problems with gas chromatography procedures stem from the sensitivity of the electron capture detector mostly in that chemicals can appear as contaminants on your GC charts. If the proper conditions are not followed on setting up and running the gas chromatogram the chemicals can get lost. The columns on occasion have a tendency to bleed, causing unusual appearing peaks on the chromatogram. Simple things which one finds in the laboratory have a notorious habit of showing up on the gas chromatogram only because of somebody using it wrongly. There are—most of the things are as a result of the great sensitivity of the detector.

**Q. Yes, I think at the time we took a recess you were telling us some of the problems associated with identifying these peaks shown on the GLC. Now, can you relate this difficulty specifically to the problems if any associated with analyzing residues of DDT and its metabolites?**

A. Well, yes, all of the things that I have said would certainly apply to DDT and metabolites. I shouldn't say specifically concerning DDT, but one of the problems as it concerns DDT is the occurrence of other compounds which could be calculated or assigned a numerical value as DDT.

**Q. Now, when did you first observe these so-called other compounds, shall we call them interfering compounds?**

A. Well, we observed them shortly after starting GLC work. We were not cognizant at that time of what they were but some of our early work was with birds and at that time we noticed that we had peaks that we could not assign a value or a chemical to.

**Q. These were wild birds?**

A. Yes, birds in nature.

**Q. All right. When were these peaks first identified and by whom?**

A. Well, I don't know that I would have any great knowledge as to when they were first identified. There was a note in a journal in 1966 that something was unusual about certain GLC tracings as it concerned wildlife, but I think that they first mentioned them as a particular compound was at a residue symposium in Sweden in 1967.

**Q. That be the fall of 1967, do you recall?**

A. Well, it was last summer or early fall, yes.

**Q. And what did they identify these interfering peaks as?**

A. They determined that they were polychlorinated biphenyls.

A. PCB's.

**Q. Did the British also identify these interfering peaks about the same time, if you know?**

A. Yes, almost at identically the same time an article appeared in "Nature" by British researchers, also saying that they had found compounds which they subsequently identified as the PCB's.

**Q. Now, they were in sea birds, were they, and the eggs of these birds?**

A. Most all of the work at that time reported them being in the sea birds, birds associated with large bodies of water, and eggs.

**Q. Also animals?**

A. There didn't seem to be anything that I could find in the literature that give any indication of these compounds in animals at that time.

**Q. All right, now, after you and your laboratory first became aware of the existence of these PCB's and their identity and that they were interfering with your analysis work—**

MR. YANNAcone : I'm going to object. There is no evidence they have interfered with this man's analysis.

MR. STAFFORD: Have they interfered in the past in your analyses of the DDT residues in wild birds and fish?

WITNESS: The indications are at this time that we did have interference from DDT and DDD in birds and eggs.

MR. YANNACONE : Excuse me a minute. Interference from DDT and DDD or to DDT and DDD?

WITNESS: To DDT and DDD.

**Q. By PCB's?**

A. By something which was subsequently identified as PCB's, yes.

**q. All right. Once you found these interferences, what if anything did your laboratory do to advise your clients of this situation, if anything?**

A. Well, we notified them at the time the analyses were reported I that we found first, that there was a peak which we could **not** identify which showed up routinely between DDT and **DDD**.

**MR. YANNACONE:** Just so we get things straight before we **go on**, you haven't mentioned DDE for Edward, have you?

WITNESS: No, I have not.

**Q. You notified them and did you also notify them that the result { you had shown as DDT and metabolites might contain PCB's erroneously?**

A. Well, not at that time. We could only inform them that we saw something which we could not identify.

**Q. Yes, but after you finally did identify this interference of these metabolites did you notify them that there—that the reports that had been submitted before might be somewhat erroneous due to PCB's?**

A. Yes, we notified as many clients we could of the fact that the Swedish researchers and the British researchers had found something which would appear to have been in their samples.

MR. YANNACONE: Mr. Examiner, before we go any further it appears from this witness' testimony that he's done thousands of analyses; now I assume he has the name and mailing address of everybody who sent him an analysis and I think at this time before we continue talking about this and these and those we ' identify with this witness whether he did send out a letter to everybody who had sent out a sample that had reported DDT or whether he only sent it out to selected clients?

EXAMINER VAN SUSTEREN: Well, perhaps he can answer that last question.

WITNESS: Well, we certainly didn't send out to everybody for whom we did DDT only because of the fact there were a lot of samples which we assayed, that gave no evidence of ever having any interfering peaks and the compounds which one could say were at that moment interfering with the analyses.

**Q. But these samples which were not interfered with were not raptor hawks or marine birds or fish, were they, sir?**

A. Yes, some of them were.

MR. YANNACONE: I must object to any further leading of this witness. He's Counsel Stafford's witness.

EXAMINER VAN SUSTEREN: The questions are leading.

MR. STAFFORD: That is leading. I agree and a poor question. Now, did you—did you make some DDT residue analyses for Professor Joseph Hickey of the University of Wisconsin?

A. Yes, we did.

**Q. I'm just wondering whether these results and what followed are privileged for any reason. Mr. Coon, do you feel that you're privileged to inform the Examiner at this time what those studies were and what retesting showed or not? If you feel that you're not I won't ask you unless Counsel waives any privilege?**

MR. YANNACONE: I certainly can't waive any privilege of an independent scientist. Dr. Hickey has been examined within an inch of his life on this record by Mr. McLean for over a day and a half on the results of his analyses. If Mr. Coon is here to say that Dr. Hickey's analysis are wrong, let him say it and we'll bring back Dr. Hickey and we'll find out which one of the two is in error.

EXAMINER VAN SUSTEREN: Why I don't think we've gotten to that point, Counsel. The question before the witness is, is any of your work of such a confidential nature that your laboratory is precluded from divulging this?

WITNESS: Well, all of our work conducted at WARF Institute is the confidential property of the clients. In other words, these people pay for analyses, for consultation, for whatever it may be and as such they are entitled to use it in any way they see fit. We are not privileged without prior request to be able to divulge anything from any one client. Anything that would appear in a journal I would assume would be public knowledge, with the exception that I would not want to feel that we were competent to discuss the work itself, but merely the analyses.

**Q. All right. Now, you do—you have made studies of DDT residues in raptor hawks have you not?**

A. Yes.

**Q. And in other marine birds and in marine birds?**

A. Yes.

**Q. And in fish?**

A. Yes.

**Q. Including the Coho salmon?**

A. Yes.

**Q. Other fish that have been taken in the state of Wisconsin other than Cohos?**

A. Yes.