

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

NEVADA POWER COMPANY,)
)
)
 Plaintiff,)
-vs-) # CV-89-555-LDG (LRL
)
MONSANTO CHEMICAL COMPANY,)
et al.,)
)
 Defendants.)

DEPOSITION OF WILLIAM B. PAPAGEORGE

On the part of the Plaintiff

February 23 & 24, 1993

 **Concannon
& Jaeger**
General
Court
Reporters
705 Olive Street, Suite 604
St. Louis, Missouri 63101
(314) 421-1000

STLCOPCB4031271

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CONCANNON & JAEGER

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

NEVADA POWER COMPANY,

Plaintiff,

-vs-

MONSANTO COMPANY, et al.,

Defendants.

CV-89-555-LDG (LRL)

DISCOVERY DEPOSITION OF WITNESS, to be used in an action pending in the District Court of the United States, for the District of Nevada, wherein NEVADA POWER COMPANY is Plaintiff, and MONSANTO COMPANY, et al., are Defendants, pursuant to Notice, under the provisions of Rule 26 of the Rules of Civil Procedure, taken on February 23rd and 24th, 1993, at the law offices of Messrs. Husch & Eppenberger, 100 N. Broadway, Suite 1300, St. Louis, Missouri, before John T. Concannon, a Notary Public within and for the State of Missouri.

A P P E A R A N C E S

The Plaintiff was represented by Mr. Ralph A. Bradley, of the law firm of Bradley & Merrell, c/o Jones, Jones, Close & Brown, 300 South Fourth Street, Suite 700, Las Vegas, Nevada 89101.

The Defendant, Monsanto Company, was represented by Mr. Bruce A. Featherstone, of the law firm of Messrs. Kirkland & Ellis, 1999 Broadway, Suite 4000, Denver, Colorado 80202.

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The Defendant, Westinghouse, was represented by Mr. Arvin Maskin, of the law firm of Weil, Gotshal & Manges, 767 Fifth Avenue, New York, New York, 10153.

The Defendant, General Electric, was represented by Mr. Steven R. Kuney, of the law firm of Williams & Connolly, 725 Twelfth Street N.W., Washington, D.C., 20005.

1 WILLIAM B. PAPAGEORGE,
2 of lawful age, being first duly sworn to tell the truth,
3 the whole truth, and nothing but the truth, deposes and
4 says on behalf of the Plaintiff, as follows:

5 DIRECT EXAMINATION

6 QUESTIONS BY MR. BRADLEY:

7 Q. Would you please state your name, and spell
8 your last name for the record?

9 A. William B. Papageorge, P-a-p-a-g-e-o-r-g-e.

10 Q. Mr. Papageorge, my name is Ralph Bradley and
11 we introduced ourselves to one another just a few moments
12 ago; is that correct?

13 A. That is correct.

14 Q. You know that I am here as an attorney
15 representing Nevada Power Company; is that correct?

16 A. That's my understanding.

17 Q. And it's a lawsuit against Monsanto, General
18 Electric and Westinghouse; you understand that?

19 A. I do.

20 MR. FEATHERSTONE: Mr. Bradley, if this an
21 appropriate time, I'd like to make a statement on behalf of
22 Monsanto regarding this deposition. This is a Rule 30B-6
23 deposition of Monsanto Company. The Rule 30B-6 notice
24 states, in relevant part, "Demand for information..."
25 Well, concerning "...dates and substance of it's..."

1 meaning Monsanto's "...acquisition of notice and/or
2 knowledge at any time about any and all alleged potential
3 or actual hazards of PCBs or monochlorinated biphenyls,
4 whether denominated by those terms or by any other terms
5 having the same meaning." That's the notice that I have on
6 my notes that was dated September 23, 1992. As part of
7 Monsanto's response to that Rule 30B-6 deposition notice,
8 we are tendering Mr. Papageorge. Mr. Papageorge will
9 testify in this particular deposition as Monsanto's 30B-6
10 witness to respond to questions regarding the contents of
11 that notice for the time period 1966 through the end 1975.
12 At the current time, Monsanto intends to tender Dr. Emmett
13 Kelly and Dr. John Craddock to cover other time periods.

14 MR. BRADLEY: Are you done, Bruce?

15 MR. FEATHERSTONE: Yes.

16 MR. BRADLEY: Off the record for a moment.

17 (Whereupon, a discussion was held between Counsel, off the
18 record.)

19 MR. BRADLEY: Let me put on the record that
20 Nevada Power Company was under the impression that we were
21 doing a separate 30B-6 deposition - in fact, that we were
22 doing several over the course of yesterday, today and
23 tomorrow. Mr. Featherstone informed me that it is his
24 belief that there was an agreement between Richard Hinkley,
25 General Counsel and Vice-President of Nevada Power Company,

1 and Steve Cooney on behalf of the Defendants, to limit this
2 deposition to the one referred to by Mr. Featherstone.
3 I've spoken with Mr. Hinkley, who assured me that there was
4 no such agreement. Instead Mr. Cooney sent a letter to Mr.
5 Hinkley suggesting a change. Mr. Hinkley wrote back
6 rejecting the change, but here we are. I do not at present
7 have the September 23, 1992 interrogatory in front of me,
8 nor available to me at this point, since I was led to
9 believe that we would be taking a separate 30B-6 this
10 morning. Nonetheless, I'm ready and willing to go forward
11 with this witness.

12 Q. (By Mr. Bradley) Mr. Papageorge, did you
13 review -- First of all, have you discussed with an
14 attorney the purposes of a deposition?

15 MR. FEATHERSTONE: You can answer that yes or
16 no.

17 MR. BRADLEY: Well, is that an objection?

18 MR. FEATHERSTONE: No. That's an instruction.

19 MR. BRADLEY: Well, you don't get to instruct
20 during my depositions.

21 MR. BRADLEY: Go ahead, Mr. Papageorge.

22 MR. FEATHERSTONE: Same instruction, Bill.

23 A. Yes.

24 Q. (By Mr. Bradley) Are you here today
25 represented by an attorney?

1 A. Yes.

2 Q. Is the attorney Mr. Featherstone?

3 A. Yes.

4 Q. Did you review any materials in preparation
5 for today's deposition?

6 A. Yes.

7 Q. Before asking you about those, let me ask,
8 when was it that you learned that you were nominated by
9 Monsanto to be their 30B-6 deponent in today's deposition?

10 A. Last week.

11 Q. Was that a notice that came to you from Mr.
12 Featherstone?

13 A. Yes.

14 Q. What is your understanding of what it is
15 you're here to do today?

16 MR. FEATHERSTONE: Well, you're instructed not
17 to answer that question.

18 MR. BRADLEY: On what grounds?

19 MR. FEATHERSTONE: Privilege.

20 Q. (By Mr. Bradley) Other than the information
21 provided to you by your attorney, what is your
22 understanding of why you're here to testify today?

23 MR. FEATHERSTONE: No. He's not going to
24 answer that question. He's discussed the purpose of this
25 deposition with me. He has read the notice, which

1 apparently you don't have with you, and you're entitled to
2 ask questions within the scope of the notice, and he will
3 respond to those questions properly put to him within the
4 scope of the notice, and within to scope of his designation
5 by Monsanto.

6 Q. (By Mr. Bradley) Go ahead and answer my
7 question now, Mr. Papageorge.

8 MR. FEATHERSTONE: You're instructed not to
9 answer that, Mr. Papageorge.

10 MR. BRADLEY: On what basis?

11 MR. FEATHERSTONE: The bases I've already
12 stated on the record.

13 MR. BRADLEY: Is privilege one of them?

14 MR. FEATHERSTONE: Yes.

15 MR. BRADLEY: All right.

16 Q. (By Mr. Bradley) What documents did you
17 review in preparation for today's deposition, Mr.
18 Papageorge?

19 A. I frankly forgot. If I saw them, I should
20 remember which.

21 Q. When was it that you made the review of the
22 documents?

23 A. Last Wednesday, if I remember correctly.

24 Q. Were they documents that you went out and
25 obtained or documents handed to you?

1 A. They were handed to me.

2 Q. Were any of the documents prepared by Monsanto
3 Company?

4 A. If I understand the use of the word "prepared"
5 -- Were they written in the course of business of Monsanto
6 in the past? Is that "prepared by Monsanto"?

7 Q. I'll accept that as a definition. Were any of
8 them written as you suggested?

9 A. Golly, I draw a blank on just which ones they
10 were. I frankly have forgotten, sir.

11 Q. Were any of them written on Monsanto
12 letterhead?

13 A. I don't remember.

14 Q. Were any of them -- Did any of them involve
15 studies regarding the alleged potential or actual hazards
16 of PCBs or monochlorinated biphenyls, whether denominated
17 by those terms or any other terms having the same meaning?

18 A. I don't think so. I just don't remember.

19 Q. How many documents did you review; do you
20 recall that?

21 A. No. Very, very few.

22 Q. Can you give me an idea of the page numbers
23 that you reviewed?

24 A. No, sir. Less than ten.

25 Q. Less than ten pages?

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CONCANNON & JAEGER

1 A. Yes. Very small.

2 Q. Were you provided with a copy of the Notice of
3 Deposition pursuant to which this deposition is being
4 taken?

5 A. No, sir.

6 Q. When and how did you first come to understand
7 that this, that the Notice of Deposition required Monsanto
8 to select one or more persons to testify on the subject of
9 this 30B-6 deposition?

10 A. When I met with the attorneys, I was informed
11 of the purpose of the meeting and that was described for
12 me.

13 Q. With whom did you discuss the Notice of
14 Deposition within Monsanto?

15 A. Mr. Michael Newport.

16 Q. Mr. Newport is in-house counsel for Monsanto?

17 A. He is.

18 Q. Who else within Monsanto did you discuss the
19 Notice of Deposition?

20 A. No one.

21 Q. Did you participate in the evaluation of which
22 Monsanto employee was best equipped to respond to the 30B-6
23 notice of deposition?

24 A. I did not.

25 Q. What was your understanding of the reason you

1 were picked as the best qualified person to give testimony
2 regarding this 30B-6 deposition?

3 MR. FEATHERSTONE: You're instructed not to
4 answer that question. Grounds of privilege.
5 Attorney/client privilege, if there is any doubt.

6 Q. (By Mr. Bradley) I take it, you're here
7 prepared to testify on behalf of Monsanto regarding the
8 30B-6 Notice of Deposition that was referred to by Mr.
9 Featherstone?

10 A. I am.

11 Q. In your determination, are you the best
12 qualified representative for Monsanto to testify about the
13 subject matter of today's 30B-6 deposition?

14 MR. FEATHERSTONE: You're instructed not to
15 answer that question.

16 MR. BRADLEY: On what grounds?

17 MR. FEATHERSTONE: Beyond the scope of
18 deposition notice, improper.

19 MR. BRADLEY: Instructed not to answer?

20 MR. FEATHERSTONE: Yes.

21 MR. BRADLEY: Then let's go to Judge Leavitt.

22 MR. FEATHERSTONE: Okay.

23 MR. BRADLEY: Apparently, we're taking an hour
24 and five minute break.

25 (Whereupon, a thirty minute recess was taken.)

1 MR. FEATHERSTONE: Before Mr. Papageorge
2 answers. Mr. Bradley, in a conversation off the record,
3 I'll not attempt to describe in any way that conversation,
4 other than to say that we are going forward, and to the
5 extent I believe that there are questions that are beyond
6 the scope of the notice, I will try the procedure whereby I
7 will object, note that objection, permit the witness to
8 answer. I did, however, say that if there were too many of
9 these, that I reserve my right to go back to instructing
10 the witness not to answer; and further, I'm trying this
11 procedure without any waiver or agreement that this is the
12 appropriate procedure for handling questions beyond the
13 scope.

14 MR. BRADLEY: That's my understanding of our
15 agreement, as well.

16 MR. FEATHERSTONE: Mr. Papageorge, go ahead
17 and answer the question.

18 THE WITNESS: Would someone repeat the
19 question? I'm sorry.

20 (Whereupon, the reporter propounded the previous question.)

21 A. I don't know that I am in a good position to
22 determine whether I'm the best qualified. I certainly was
23 involved during the period of time, so I do feel
24 comfortable with the knowledge that I have and
25 understandings that I have.

1 Q. (By Mr. Bradley) Let's discuss for a moment
2 the background that you have with Monsanto that apparently
3 has resulted in your being nominated as today's 30B-6
4 deponent. Let's start with your educational background.
5 You have a Bachelors Degree; is that correct?

6 A. That is.

7 Q. In what year did you obtain your Bachelors
8 Degree?

9 A. 1943.

10 Q. Was that in chemical engineering?

11 A. Yes.

12 Q. And where did you obtain that?

13 A. Washington University in St. Louis, Missouri.

14 Q. Briefly, what did you study in chemical
15 engineering when you received your Bachelors Degree?

16 A. Chemistry, physics, mathematics, engineering
17 principles, economics, geology. That's all I can recall at
18 the moment.

19 Q. All right. You worked in-between receiving
20 your Bachelors Degree and beginning a Masters program; is
21 that correct?

22 A. No.

23 Q. All right.

24 A. Unless being in the military is considered
25 work.

1 Q. All right. You graduated with a Bachelors
2 Degree in what year, again? I'm sorry. I didn't write
3 that down.

4 A. 1943.

5 Q. When did you enter the military?

6 A. 1943. Well, no. Correct that. I was in the
7 military while attending school, so I entered the military,
8 as best I remember, about 1942.

9 Q. Upon graduation, did your involvement with the
10 military change?

11 A. I went on active duty.

12 Q. And part of your active duty related to the
13 subject matter in which you obtained a Bachelors Degree; is
14 that correct?

15 A. Not -- No. I would not say so. No.

16 Q. Were you ever involved in the disposal of
17 waste as part of your military duties?

18 A. For a period of about two months or so in
19 Japan I was involved with the disposal of chemicals used,
20 or intended for use by the Japanese in coping with chemical
21 warfare attacks.

22 Q. Did you have more than two methods of
23 disposing of those chemicals while you were in the
24 military?

25 A. As best I recall, yes. Some of the chemicals

1 had civilian use. They were set aside, given to the local
2 authorities. Those for which we didn't perceive any
3 civilian use, we destroyed. I recall burning as one of
4 them, and diluting in water solutions some of the others.

5 Q. Were you involved in any burial of those
6 chemical warfare chemicals?

7 MR. FEATHERSTONE: Objection. Beyond the
8 scope. When I say that, I mean beyond the scope of the
9 Rule 30B-6 notice for which this witness is tendered, and
10 for the time period for which he's tendered, as I described
11 earlier.

12 A. There were some materials that couldn't be
13 destroyed by the two previous methods that were buried,
14 yes.

15 Q. (By Mr. Bradley) When did you leave --
16 First of all, were you in the Army?

17 A. Yes.

18 Q. What was your rank?

19 THE WITNESS: At what point in time?

20 MR. BRADLEY: When you entered the Army.

21 MR. FEATHERSTONE: Same objection.

22 A. Private.

23 Q. (By Mr. Bradley) And when you left the Army?

24 A. Captain.

25 Q. When did you leave the Army?

1 MR. FEATHERSTONE: Continuing objection.

2 A. 1946.

3 Q. (By Mr. Bradley) What did you do, if
4 anything, for employment when you got out of the Army?

5 A. Nothing. I went to school.

6 Q. All right. And where did you go to school?

7 A. Washington University, St. Louis.

8 Q. What years did you attend Washington
9 University in St. Louis once you left the Army?

10 A. '46/'47. One year.

11 Q. Did you graduate with a Masters Degree?

12 A. Yes.

13 Q. In what?

14 A. Chemical engineering.

15 Q. Did you write a thesis to obtain your Masters
16 Degree?

17 A. No.

18 Q. Did you write a paper?

19 A. No. Yes. Yes, I did. I'm sorry.

20 Q. Is it fair to say that that, the paper that
21 you wrote to obtain your Masters Degree, is the only paper
22 you've written -- Let me ask it this way. Have you
23 written any papers that have been submitted to trade
24 journals, or any other type of journal, for publication?

25 A. No.

1 Q. What did you study to obtain your Masters
2 Degree in chemical engineering?

3 A. Advance courses in mathematics, thermal
4 dynamics, advance courses in engineering principles, and I
5 had the research project which resulted in the paper you
6 mentioned.

7 Q. You recall the title of the research paper you
8 wrote when you obtained your Masters Degree?

9 A. Not specifically. It involved electrolytic
10 formation of a chemical, Pathalimide,
11 P-a-t-h-a-l-i-m-i-d-e. I believe that's the correct
12 chemical name.

13 Q. Does that chemical contain chlorinated
14 hydrocarbons?

15 A. No.

16 Q. During the period of time you obtained your
17 Bachelors and Masters Degree, did you take any courses in
18 toxicology?

19 A. No.

20 Q. Any courses is in epidemiology?

21 A. No.

22 Q. Have you taken any course work at any college
23 or university, whether or not intended to lead to a degree,
24 following completion of your Masters Degree?

25 A. I have.

1 Q. Which college or university did you take
2 courses from?

3 A. Oklahoma A&M. I think today it's referred to
4 as Oklahoma State, Stillwater, Oklahoma.

5 Q. How many credits of course work did you obtain
6 from Oklahoma A&M?

7 A. As I recall, about twelve out of a required
8 eighteen.

9 Q. When did you take the course work at Oklahoma
10 A&M?

11 A. From 1947 into and including 1951.

12 Q. What were the courses that you took at
13 Oklahoma A&M?

14 A. Again, I don't recall the specific courses,
15 but they were involved with advanced chemical engineering
16 studies and principles.

17 Q. What is chemical engineering?

18 A. It's the discipline that uses the knowledge
19 of, relating to chemicals and their behaviors and the
20 principles of mathematics and physics as it relates to air,
21 gases, liquids and solids to result in the design of the
22 facilities that can be used to support chemical reactions
23 that result in the desirable end products.

24 Q. Did you take any courses in toxicology while
25 at Oklahoma A&M?

1 A. No.

2 Q. Did you take any courses in epidemiology while
3 at Oklahoma A&M?

4 A. No.

5 Q. Other than attending Oklahoma A&M, did you
6 take any course work at any college or university following
7 completion of your Master's degree?

8 A. Yes. I attended a course at Washington
9 University in about 1962 or '3, that was designed to teach
10 business administration.

11 Q. Any other courses at colleges or universities?

12 A. I don't recall any others.

13 Q. Okay. Following completion of your Masters
14 Degree, have you attended professional seminars in the
15 subject of chemical engineering?

16 A. I don't recall any at the moment.

17 Q. Did you, following completion of your Masters
18 Degree, did you attend any professional seminars on the
19 subject of business administration?

20 A. Can you help me a bit with the definition of
21 business seminars? I've attended many conferences,
22 meetings, gatherings. I don't recall that the word
23 "seminar" was necessarily used to describe these meetings.

24 Q. Were these conferences, meetings and
25 gatherings regarding the subject matter of business

1 administration?

2 A. Yes.

3 Q. Did you attend any conferences, meetings and
4 gatherings regarding chemical engineering following
5 completion of your Masters Degree?

6 A. Yes.

7 Q. Do you recall who the sponsor or sponsors were
8 of the conferences you attended regarding chemical
9 engineering?

10 MR. FEATHERSTONE: Objection. Beyond the
11 scope of the notice.

12 A. I do recall attending sessions sponsored by
13 the American Institute of Chemical Engineers.

14 Q. (By Mr. Bradley) Do you recall attending any
15 sponsored by any other group?

16 A. Not at the moment, I don't.

17 Q. Do you recall attending any meetings regarding
18 the subject matter of chemical engineering that was
19 sponsored by a particular group?

20 A. I thought I just answered that.

21 Q. (By Mr. Bradley) I asked about conferences
22 before. You had differentiated between conferences,
23 meetings and gatherings.

24 A. No.

25 Q. Have you, following completion of your Masters

1 Degree, have you received any training whatsoever in
2 toxicology?

3 A. No.

4 Q. Following completion of your Masters Degree,
5 have you received any training whatsoever in epidemiology?

6 A. No. But when you use the expression,
7 "whatsoever," I become puzzled because I don't know what
8 limitations there are, then, as to describing the word
9 "training." Would you include a tutorial by a toxicologist
10 as part of that?

11 MR. BRADLEY: Yes, I would. Would you? Or
12 did you receive a tutorial in toxicology from someone?

13 A. Well, I called it a tutorial. I sat down with
14 the individual in Monsanto Company that was the manager of
15 toxicology studies for a period, at least two weeks, and
16 the area of that one-on-one dialogue had to do with the
17 area of studies relating to toxicology.

18 Q. Who was the manager of toxicology studies that
19 you received your tutorial from?

20 A. Elmer Wheeler, W-h-e-e-l-e-r.

21 Q. When did you have these tutorial sessions with
22 Mr. Wheeler. Is it Dr. Wheeler?

23 A. No.

24 Q. Mr. Wheeler.

25 A. I had those discussions in January of 1970.

1 Q. Other than the tutorial from Mr. Wheeler, have
2 you received any particularized information or training in
3 toxicology?

4 MR. FEATHERSTONE: Object to the form. Vague.

5 A. I don't know what you mean by --

6 Q. (By Mr. Bradley) Well, did you receive any
7 other tutorial sessions from anyone else regarding
8 toxicology or epidemiology?

9 A. I had discussions with individuals that were,
10 that had expertise in that area, in which results of
11 studies would be described, and during those discussions,
12 the type of testing and the significance of the results
13 were described to help me better understand what the
14 results were indicating. To me, that - I would consider
15 that as part of my exposure in learning about the field of
16 toxicology.

17 Q. With whom did you have these discussions?

18 A. There were other individuals within Monsanto,
19 of course; there were individuals in government. I can't
20 recall any other group.

21 Q. Can you recall the names of the Monsanto
22 employees with whom you had these discussions?

23 A. I'll try to remember some of them. There was
24 a William Hunt.

25 Q. What was his position at Monsanto when you had

1 the discussions with him?

2 A. I don't recall his title, but he was a
3 toxicologist working for Mr. Wheeler.

4 Q. Do you recall what it was you discussed with
5 Mr. Hunt?

6 MR. FEATHERSTONE: Object to the form of the
7 questioning. Also, beyond the scope.

8 A. I, of course, don't recall the details. It
9 had to do with the studies Monsanto had conducted and was
10 conducting relating to polychlorinated biphenyls.

11 MR. BRADLEY: Would you read back the answer
12 for me, please?

13 (Whereupon, the reporter propounded the previous answer.)

14 Q. (By Mr. Bradley) When did you have these
15 discussions with Mr. Hunt?

16 A. Oh, first early several months of 1970.

17 Q. Who else do you recall speaking with at
18 Monsanto, who was a Monsanto employee, regarding
19 toxicology?

20 A. The director of Monsanto's medical department,
21 Dr. Emmett Kelly.

22 Q. What was the subject of your discussions with
23 Dr. Kelly?

24 MR. FEATHERSTONE: Object to the form of the
25 questioning.

1 A. I do.

2 Q. What were those topics?

3 MR. FEATHERSTONE: Objection. Beyond the
4 scope.

5 A. Of course, I don't pretend to recall all of
6 them but I do recall the discussions relating to wood
7 treating chemicals, pentachloropenol, and the sodium
8 pentachlorophynate.

9 Q. (By Mr. Bradley) Have we now exhausted the
10 topics of your discussions with Dr. Kelly regarding
11 toxicology?

12 A. Yes.

13 Q. Who else was a Monsanto employee, if anyone,
14 that you had discussions with regarding toxicology?

15 A. Dr. George Levinskas, L-e-v-i-n-s-k-a-s.

16 Q. What was his title when you had these
17 discussions with him?

18 A. I don't propose to remember his formal title.
19 He was a toxicologist in Monsanto's medical department.

20 MR. BRADLEY: I think I need to take a break
21 now to call my office regarding the items you and I had
22 talked about earlier, Bruce.

23 MR. FEATHERSTONE: Okay.

24 (Whereupon, a fifteen minute recess was taken.)

25 Q. (By Mr. Bradley) During what period of time

1 did you have discussions with Dr. Levinskas regarding
2 toxicology?

3 A. I don't recall the exact time. I mean, it
4 seems to me that Dr. Levinskas joined Monsanto in '71 and
5 that's when I would have first had discussions with him,
6 and it went on until I retired, really, in '86.

7 Q. Are there any other Monsanto employees with
8 whom you had discussions regarding toxicology?

9 A. Yes.

10 Q. Who are they?

11 A. Dr. Fred Johannsen, J-o-h-a-n-n-s-e-n.

12 Q. What was Dr. Johannsen's title at Monsanto
13 when you had these discussions with him?

14 A. He was staff toxicologist.

15 Q. Over what period of time did you have these
16 discussions with Dr. Johannsen?

17 A. About 1972 or so until the end of '86.

18 Q. What other Monsanto employees did you have
19 discussions with concerning toxicology?

20 A. Dr. Rashni Nair, R-a-s-h-n-i, N-a-i-r.

21 Q. What was his job title when you had these
22 discussions with him?

23 A. She was a staff toxicologist.

24 Q. Over what period of time did you have these
25 discussions with Dr. Nair?

1 A. About 1976 to 1986.

2 Q. What other Monsanto employees did you have
3 discussions with regarding toxicology?

4 A. There were other toxicologists. I'm having a
5 difficult time recalling their names. There was one
6 individual whose last name started with a B - Burto or some
7 such. B-e-r-t - something. I don't recall the name.

8 Q. Do you recall the time during which you had
9 the discussion with the employee whose last name started
10 with B?

11 A. As best as I can recall, it was 1975 to about
12 1978. These are not exact. That's my best recollection.

13 Q. Have you now told us the names of all of the
14 Monsanto employees that you can recall having discussions
15 with regarding toxicology?

16 A. That I can recall, yes.

17 Q. Which government employees do you recall
18 having discussions with regarding toxicology?

19 A. Dr. Herbert Blumenthal, staff toxicologist for
20 the Food and Drug Administration in the early '70s.

21 Q. Anyone else?

22 A. Dr. Albert Kolbye, K-o-l-b-y-e, who was the
23 Associate Director in the Food and Drug Administration.

24 Q. Do you recall when you had the discussion with
25 Dr. Kolbye?

1 A. The best I --

2 MR. FEATHERSTONE: Object to the form.

3 Q. (By Mr. Bradley) Do you recall the date that
4 you had discussions with Dr. Kolbye regarding toxicology?

5 MR. FEATHERSTONE: I'm sorry. Did you say
6 discussion or discussions?

7 MR. BRADLEY: I believe I said discussion.

8 MR. FEATHERSTONE: Same objection.

9 MR. BRADLEY: Well, let's do it this way.

10 Q. (By Mr. Bradley) How many discussions did you
11 have with Dr. Kolbye when he was Associate Director of the
12 FDA regarding the subject matter of toxicology?

13 A. It's more than one. I don't recall. It's not
14 too many. Two, three, maybe. In the early '70s.

15 Q. How many discussions did you have with Dr.
16 Blumenthal regarding toxicology?

17 A. I don't recall the exact number. I would
18 suggest that it was approaching six - four to six.

19 Q. What other government employees did you have
20 discussions with regarding toxicology? So that you
21 understand my question, if you only had one discussion, I
22 want you to answer that, as well.

23 THE WITNESS: Is this with employees of
24 government, whether they're toxicologists or not?

25 MR. BRADLEY: Yes. Concerning the subject

1 matter of toxicology.

2 A. Toxicology. Dr. John Buckley, the
3 Environmental Protection Agency.

4 Q. Do you recall how many times you had
5 discussions with Dr. Buckley?

6 A. Not the exact number, no. But it was, again,
7 approaching six.

8 Q. During what period of time did you have these
9 discussions with Dr. Buckley?

10 A. From 1970 through 1975. There was an
11 individual in the Environmental Protection Agency who was a
12 toxicologist, and I have forgotten his name.

13 Q. Do you remember what his title was?

14 A. Toxicologist.

15 Q. Do you remember what period of time -- Did
16 you have more than one discussion with this toxicologist?

17 A. I would -- As best as I recall, it was about
18 three times or so.

19 Q. Over what period of time did you have these
20 discussions?

21 A. Oh, 1970 to '73.

22 Q. Any other discussions with government
23 employees regarding toxicology?

24 A. Yes. I recall several more. I recall
25 speaking with a person at the Department of Agriculture in

1 Bethesda, Maryland. I'm having difficult recalling his
2 name. He was involved with the poultry studies, poultry
3 toxicology.

4 Q. Was this gentleman with the Department of
5 Agriculture as a toxicologist?

6 A. I don't recall ever being told his particular
7 specialty. I do know that he was conducting research
8 studies, feeding chemicals to poultry flocks, determining
9 the effects of those materials.

10 Q. How many discussions did you have with this
11 Department of Agriculture employee?

12 A. Oh, again, less than six.

13 Q. Over what period of time did you have these
14 discussions with him?

15 A. 1971 to '74 or '5.

16 Q. Any other government employees that you had
17 discussions with regarding toxicology?

18 A. Yes. Dr. Renata Kimbrough, K-i-m-b-r-o-u-g-h.

19 Q. Do you recall what her title was when you had
20 discussions with her?

21 A. I don't recall her formal title. I do know
22 that she was involved in toxicology studies.

23 Q. Do you recall for what government agency she
24 was employed?

25 A. When I first had contact with Dr. Kimbrough,

1 as I recall, she was with the Centers for Disease Control
2 in Atlanta, Georgia. As best I remember, she transferred
3 to the Food and Drug Administration, still in Atlanta, and
4 I think she finally, as best I remember, she finally ended
5 up with the Environmental Protection Agency.

6 Q. How many discussions did you have with Dr.
7 Kimbrough regarding toxicology?

8 A. I don't recall the exact number. I would
9 suggest -- Let me think here. Half a dozen or so.

10 Q. Over what periods of time did you have
11 discussions with Dr. Kimbrough regarding toxicology?

12 A. '71 through '76.

13 Q. Any other government employees?

14 A. Dr. - I think his first name is William
15 Squires, S-q-u-i-r-e-s.

16 Q. What was his job title when you had
17 discussions with him regarding toxicology?

18 A. He was a pathologist.

19 Q. What government agency did he work for when
20 you had these discussions with him?

21 A. That, I don't recall. I do know that he was
22 working closely with Dr. Kimbrough. I do not recall what
23 agency he was assigned to.

24 Q. Over what -- Let me ask this first. How many
25 discussions did you have with Dr. Squires regarding

1 toxicology?

2 A. I only recall one, which lasted a couple of
3 days or so, off and on.

4 Q. When was that discussion?

5 A. 1974 or '5.

6 Q. Do you recall where the discussion took place?

7 A. Yes.

8 Q. Where?

9 A. St. Louis.

10 Q. Did that occur at Monsanto's corporate
11 headquarters?

12 A. Yes.

13 Q. Was Dr. Squires at Monsanto's corporate
14 headquarters as a result of an invitation submitted by you?

15 A. I was involved, but I don't know -- I don't
16 recall being the one to personally invite Dr. Squires.

17 Q. Did Dr. Squires distribute written material
18 during his visit to Monsanto's corporate headquarters in
19 1974, 1975?

20 A. Not that I recall.

21 Q. Do you recall whether Monsanto, any Monsanto
22 employee gave written reports to Dr. Squares during his
23 visit to Monsanto's corporate headquarters in 1974, 1975?

24 A. I'm not aware of any.

25 Q. What other government employees have you

1 spoken with regarding toxicology?

2 A. Dr. David Rall, R-a-l-l.

3 Q. What was his job title when you had a
4 discussion with Dr. Rall?

5 A. He was the Director of the National Institute
6 of Environmental Health Sciences Research Triangle, North
7 Carolina.

8 Q. What agency did Dr. Rall work for when you had
9 a discussion or discussions with him?

10 A. That's the National Institute of Environmental
11 Health Sciences.

12 Q. And did you have more than one discussion with
13 Dr. Rall regarding toxicology?

14 A. As best I remember, it was about three or so.

15 Q. Over what period of time did you have these
16 discussions with Dr. Rall?

17 A. About 1970 to about 1973.

18 Q. Any other government employees that you've had
19 discussions with regarding toxicology?

20 A. Dr. Tom Duke, the Commercial Fisheries
21 Laboratory in Gulf-Breeze, Florida.

22 Q. What government agency did Dr. Duke work for
23 when you had a discussion or discussions with him?

24 A. His laboratory at the time was under the
25 Department of commerce.

1 Q. How many discussions did you have with Dr.
2 Duke regarding toxicology?

3 A. About half-a-dozen or so.

4 Q. Any other government employees that you had
5 discussions with regarding toxicology?

6 A. Dr. Don Mount, M-o-u-n-t.

7 Q. What was his job title when you had
8 discussions with him?

9 A. He was a Director of the Federal - I don't
10 recall the formal title. The Federal Water Laboratories in
11 Duluth, Minnesota.

12 Q. How many discussions did you have with Dr.
13 Mount regarding toxicology?

14 A. Oh, two or three.

15 Q. Over what period of time did you have these
16 discussions?

17 A. 1970 to 1972 or '3.

18 Q. Any other government employees that you had
19 discussions with regarding toxicology?

20 A. I'm sure there were others but at the moment,
21 I can't recall them.

22 Q. Did you discuss the chemical - well, PCBs with
23 Dr. Mount?

24 A. Yes.

25 Q. PCBs is another - well, an abbreviated

1 reference to Polychlorinated Biphenyls; is that correct?

2 A. Yes.

3 Q. Tell me about the discussions you had with Dr.
4 Mount regarding PCBs.

5 MR. FEATHERSTONE: Objection. Beyond the
6 scope.

7 A. Discussions with Dr. Mount --

8 MR. FEATHERSTONE: Also object to the form of
9 the questioning.

10 A. With respect to PCBs, it dealt with the status
11 of studies sponsored by Monsanto and he, in turn, described
12 what I understood to be his laboratory's attempts to
13 conduct studies with aquatic specimens. He was looking for
14 a species of fish that, to use his terminology, would be
15 the equivalent of the white rat in mammal studies.

16 Q. What were the studies sponsored by Monsanto
17 that you had discussions with Dr. Mount?

18 A. There were -- We shared with Dr. Mount the
19 results of the acute toxicity studies that were conducted
20 for Monsanto back in the 1950s and even earlier, and we
21 shared with him the status on the studies involving
22 subchronic feeding - in other words, the ninety day feeding
23 studies - of rats. And also discussed with him the studies
24 with rats, which was the chronic studies, the lifetime
25 feeding studies; also, the studies involving rat

1 reproduction, multigeneration; the studies relating to
2 teratogenesis; the studies relating to chickens and
3 studies relating to dogs.

4 Q. All of these studies had to do with exposure
5 to PCBs?

6 A. Yes.

7 Q. All right. Were the acute toxicity studies
8 that you discussed with Dr. Mount, studies that were
9 performed in-house by Monsanto?

10 A. No.

11 Q. Were they studies that Monsanto referred out
12 to a different laboratory to conduct?

13 A. Yes.

14 Q. Which laboratory conducted the acute toxicity
15 studies for Monsanto regarding PCBs?

16 MR. FEATHERSTONE: You mean the ones that date
17 back to the 1950s and earlier?

18 MR. BRADLEY: The ones he referred to, yes.

19 MR. FEATHERSTONE: Beyond the scope.

20 Objection.

21 A. There are two laboratories involved. I'm
22 having difficulty recalling the names. I just don't
23 remember them anymore.

24 Q. (By Mr. Bradley) Do you recall whether the
25 studies were published?

1 A. I do not.

2 Q. Had you reviewed these studies before you had
3 your discussion with Dr. Mount?

4 A. Yes.

5 Q. Where were those studies kept before you
6 reviewed them?

7 A. You mean, the formal reports of the studies?

8 MR. BRADLEY: Yes.

9 A. Of course, the original reports are kept in
10 the Monsanto medical department files.

11 Q. Were copies of those reports kept in any other
12 Monsanto department file?

13 MR. FEATHERSTONE: Objection. Calls for
14 speculation.

15 A. I don't know.

16 Q. (By Mr. Bradley) Did you -- Which department
17 within Monsanto did you work between 1970 and 1973?

18 A. There was so many changes in that period of
19 time. I was a member of a business group referred to as
20 the Functional Fluids Group, which was a part of the
21 Organic Chemicals Division of Monsanto Chemical Company.
22 I'm sorry. It was Monsanto Company, not chemical company.
23 In about 1973, it became part of the Specialty Chemicals
24 Group of Monsanto Intermediate Chemicals Company, an
25 operating unit of Monsanto Company.

1 Q. During the time you were a member of the
2 business group that you've referred to, did you personally
3 maintain a copy of the acute toxicity studies conducted for
4 Monsanto back in the 1950s and earlier?

5 A. No.

6 Q. While you were with the business group, did
7 the business group maintain a file that contained copies of
8 the acute toxicity studies conducted for Monsanto back in
9 the 1950s and earlier?

10 MR. FEATHERSTONE: Objection. Calls for
11 speculation. Also, beyond the scope.

12 A. Not to my knowledge.

13 Q. (By Mr. Bradley) During the time you were
14 part of the specialty chemicals group, did you maintain a
15 file that had a copy of the acute toxicity studies
16 conducted for Monsanto back in the 1950s and earlier?

17 A. No.

18 Q. Do you know whether that group, itself,
19 maintained a copy of those studies?

20 A. Not to my knowledge.

21 Q. The studies that you discussed with Dr. Mount
22 involving subchronic feeding, ninety day feeding studies of
23 rats, were those studies conducted in-house by Monsanto?

24 A. No.

25 Q. To whom did Monsanto contract to have those

1 studies completed?

2 A. Industrial Biotest Laboratories in Northbrook,
3 Illinois.

4 Q. What did you tell Dr. Mount when you met with
5 him regarding the status of those ninety day feeding
6 studies?

7 A. I don't recall the specific details but we
8 discussed the levels of PCBs that were fed to the test
9 animals; I recall sharing with him the intent of that
10 study, which was to establish feeding levels to be used in
11 the subsequent chronic study. I don't recall the numbers
12 now, but as I remember it, a very high level of exposure.
13 The test animals did not survive. That's all I recall at
14 the moment.

15 Q. When you had these discussions with Dr. Mount
16 regarding the ninety day feeding studies, were those
17 studies completed?

18 A. Yes.

19 Q. Prior to having the discussions with Dr.
20 Mount regarding the ninety day feeding studies, had you
21 reviewed the final reports written for those studies?

22 A. Yes. That was part of my tutorial.

23 Q. Were the originals of those study reports kept
24 in Monsanto's medical department files?

25 A. Yes.

1 Q. During your work with Monsanto, did you ever
2 maintain copies of those studies?

3 A. No.

4 Q. Do you know whether anyone else maintained
5 copies of those files within Monsanto?

6 A. I do not know.

7 Q. At the time you had these discussions with Dr.
8 Mound, had the chronic lifetime feeding studies been
9 completed?

10 A. They were completed in '71, and yes, they
11 were, by the -- In the period that I mentioned earlier
12 covering my discussions with Dr. Mount, they were
13 eventually completed.

14 Q. Were those chronic studies preformed by
15 Industrial Biotest Laboratories?

16 A. Yes.

17 Q. Was there someone within Monsanto coordinating
18 completion of the chronic studies with IBT?

19 A. Can you help me with the word "coordinating
20 completion?"

21 Q. Was there someone within Monsanto who ordered
22 the chronic studies?

23 A. Yes.

24 Q. Who was that?

25 A. Mr. Elmer Wheeler.

1 Q. Did Mr. Wheeler develop a protocol for the
2 study to be completed by IBT?

3 MR. FEATHERSTONE: Objection. Calls for
4 speculation.

5 A. The protocol was a jointly developed procedure
6 involving representatives from the Industrial Biotech
7 Laboratory, Mr. Wheeler, Dr. Kelly and Dr. Hunt.

8 Q. (By Mr. Bradley) Was there a file maintained
9 within Monsanto regarding the request to have IBT conduct
10 these chronic studies?

11 A. I don't know.

12 Q. Did you ever review such a file?

13 A. I don't recall seeing such a file, no.

14 Q. During the -- Well, the chronic study was a
15 two-year study, do you know?

16 A. Yes. With the rats.

17 Q. Yes. Was there a chronic study performed by
18 IBT regarding exposure to PCBs that was for an animal,
19 other than rats?

20 A. As I mentioned, the chickens and the dogs.

21 Q. All right. Were the chronic studies involving
22 chickens and dogs also contracted out to IBT?

23 A. Yes.

24 Q. Were those studies also completed when you had
25 your discussions with Dr. Mount?

1 A. Eventually, yes.

2 Q. Were the protocols for the studies involving
3 chickens and dogs developed jointly by representatives of
4 IBT, Mr. Wheeler, Dr. Kelly and Dr. Hunt?

5 A. Yes.

6 Q. Did you ever review a file which contained
7 memoranda, business records, reports, regarding the joint
8 effort to develop that protocol?

9 A. No.

10 Q. Did you ever speak with Mr. Wheeler regarding
11 that, those chronic studies, during the period of time the
12 studies were being conducted by IBT?

13 THE WITNESS: Did I have a discussion with Mr.
14 Wheeler during the period?

15 MR. BRADLEY: Yes.

16 A. Certainly.

17 Q. (By Mr. Bradley) Did Mr. Wheeler indicate to
18 you that Monsanto was monitoring those chronic studies?

19 A. Yes.

20 Q. Did he indicate to you how Monsanto was
21 monitoring those studies?

22 A. Yes.

23 Q. What did he tell you?

24 A. Well, there was, of course, the personal
25 visits to the laboratory made by Dr. Hunt and Mr. Wheeler,

1 and of course, there was the correspondence by mail and the
2 telephone calls.

3 Q. Did Mr. Wheeler tell you about his personal
4 visits to the IBT laboratory regarding these chronic
5 studies?

6 MR. FEATHERSTONE: Objection. Beyond the
7 scope.

8 A. Yes.

9 Q. (By Mr. Bradley) What did he tell you he did
10 during these personal visits to IBT regarding the studies?

11 MR. FEATHERSTONE: Same objection.

12 A. I don't recall all of the details. He met, of
13 course, with the principles at the laboratory. He met with
14 the individuals that were managing the actual study; he was
15 brought up-to-date on the findings as of the day of the
16 visit.

17 Q. (By Mr. Bradley) Did he indicate to you
18 whether he visited the area in which the rats were housed?

19 A. Yes.

20 MR. FEATHERSTONE: Objection.

21 Q. (By Mr. Bradley) And what did he tell you?
22 He did visit the area in which the rats were housed?

23 A. Yes.

24 MR. FEATHERSTONE: Same objection.

25 Q. (By Mr. Bradley) What did he tell you about

1 the area in which the rats were housed?

2 MR. FEATHERSTONE: Objection. Beyond the
3 scope.

4 A. I don't recall anything that he told me.
5 Chambers dedicated to that specific study, rather than
6 mixed in with studies for other chemicals and other
7 companies. I don't recall anything, other than that.

8 Q. Did Mr. Wheeler indicate to you that the rats
9 were kept in a room called the swamp room.

10 MR. FEATHERSTONE: Well, I object to the form
11 of the questioning.

12 A. No, sir.

13 MR. BRADLEY: No?

14 Q. (By Mr. Bradley) Did he indicate to you
15 whether the rats were housed on a particular floor at IBT?

16 A. No.

17 Q. Did he indicate that the rats were housed on
18 the ground floor?

19 MR. FEATHERSTONE: Object. Beyond the scope.

20 A. I don't remember any discussion with Mr.
21 Wheeler in which he described where the rooms were located.

22 Q. (By Mr. Bradley) Did Mr. Wheeler indicate to
23 you any concerns about the conditions under which the rats
24 were housed?

25 MR. FEATHERSTONE: Objection. Beyond the

1 scope.

2 A. No, sir. No.

3 MR. FEATHERSTONE: Let's go off the record for
4 a second. Is that okay with you, Ralph?

5 MR. BRADLEY: That's fine.

6 (Whereupon, a discussion was held between Counsel, off the
7 record.)

8 Q. (By Mr. Bradley) Did you speak with Dr.
9 Hunt regarding the personal visits he made to the IBT
10 laboratory during the time the chronic studies were being
11 conducted there?

12 A. Yes.

13 Q. Did Dr. Hunt indicate to you whether he had
14 visited the area in which the rats were housed?

15 A. Yes.

16 MR. FEATHERSTONE: Same objection, scope.

17 Q. (By Mr. Bradley) What, if anything, did Dr.
18 Hunt tell you about the area where the rats were housed at
19 IBT during the time they were conducting the chronic
20 studies?

21 MR. FEATHERSTONE: Same objection.

22 A. The overall impression I had from my
23 discussions with Dr. Hunt were that he was dealing with a
24 reputable, first-class laboratory and he was favorably
25 impressed.

1 Q. (By Mr. Bradley) Did Dr. Hunt indicate to you
2 with whom he spoke at IBT during the time IBT was
3 conducting the chronic studies for Monsanto?

4 MR. FEATHERSTONE: Same objection.

5 A. He did, but I don't recall the names of the
6 individuals.

7 Q. (By Mr. Bradley) Did Mr. Wheeler indicate to
8 you who he spoke with at IBT during the time IBT was
9 conducting Monsanto's chronic studies?

10 A. Yes.

11 MR. FEATHERSTONE: Object to the scope.

12 A. I remember specifically Dr. Kalander's name
13 being mentioned and Dr. Keplinger. There were, of course,
14 others but I don't recall them specifically.

15 Q. (By Mr. Bradley) Have you ever heard the name
16 Manuel Reyna, R-e-y-n-a?

17 A. Recently.

18 Q. Okay.

19 A. Not before.

20 Q. All right. Not during the 1970s, you hadn't
21 heard that name?

22 A. I had not.

23 Q. Were the rat, chicken and dog chronic studies
24 completed at roughly the same time?

25 A. Roughly so, yes.

1 Q. And that was roughly 1971?

2 A. '71/'72 period.

3 Q. Were the results of those chronic studies, the
4 originals of those studies, maintained in Monsanto's
5 medical department?

6 A. Yes.

7 Q. Were copies of those chronic rat, chicken and
8 dog studies maintained in any other Monsanto department
9 that you're aware of?

10 A. I had a set in my own files.

11 Q. Were you aware of anyone else that had a set?

12 A. I -

13 MR. FEATHERSTONE: Objection. Scope.

14 A. - do not know.

15 Q. (By Mr. Bradley) Why did you maintain a
16 separate set of the chronic rat, dog and chicken studies?

17 MR. FEATHERSTONE: Objection. Scope.

18 A. I received a set because I was intimately
19 involved with the PCB issue, and since I received it, I
20 just felt that I should keep it in my files. I saw no
21 reason for discarding it.

22 Q. (By Mr. Bradley) When you retired from
23 Monsanto Company in 1986, did you have a separate PCB file?

24 MR. FEATHERSTONE: Objection. Scope.

25 A. No. I'm sorry. I did not retire in 1976.

1 MR. BRADLEY: Did I say '76?

2 MR. FEATHERSTONE: I thought you said '86.

3 Make it '86.

4 A. I had no PCB files in 1986.

5 Q. (By Mr. Bradley) Was there a time when you
6 did not maintain files on the chronic toxicity studies?

7 MR. FEATHERSTONE: Objection. Scope.

8 A. Yes.

9 Q. (By Mr. Bradley) When was that?

10 MR. FEATHERSTONE: Objection, scope.

11 A. February, 1976.

12 Q. (By Mr. Bradley) What was the reason that you
13 no longer maintained copies of those chronic toxicity
14 studies in February of 1976?

15 MR. FEATHERSTONE: Objection. Scope.

16 A. My job responsibilities changed and I no
17 longer had responsibilities for PCBs.

18 Q. (By Mr. Bradley) What happened to the chronic
19 toxicity studies that you maintained when your job changed
20 in February of 1976?

21 MR. FEATHERSTONE: Object to the form and
22 object to the scope.

23 A. They were transferred to my successor.

24 Q. (By Mr. Bradley) And who was that?

25 A. J. Cole Weber. C-o-l-e, W-e-b-e-r.

1 Q. (By Mr. Bradley) Since 1976, have any of your
2 job responsibilities at Monsanto involved PCBs?

3 A. Yes.

4 Q. When did you first have a job responsibility
5 at Monsanto that involved PCBs?

6 A. About 1956, or thereabouts.

7 Q. When you first obtained job responsibilities
8 regarding PCBs at Monsanto, what was your job title?

9 A. I'm a little confused. The use of the word
10 "regarding PCBs" or involved with PCBs?

11 Q. Did you indicate your first job responsibility
12 involving PCBs was about 1956?

13 A. Yes. Involving.

14 Q. And at that time, what was your job title?

15 A. I was a maintenance supervisor.

16 Q. Prior to first obtaining a job responsibility
17 involving PCBs, were you aware that Monsanto manufactured
18 PCBs?

19 MR. FEATHERSTONE: Objection. Scope.

20 A. No.

21 Q. (By Mr. Bradley) Had you heard the term PCB
22 before you obtained your first job responsibility involving
23 PCBs?

24 A. No.

25 MR. FEATHERSTONE: Objection. Scope.

1 A. No.

2 Q. (By Mr. Bradley) What were your job
3 responsibilities as a maintenance supervisor in 1956?

4 A. I supervised a team of craftsmen, with the
5 assistance of a foreman or two as required. That team was
6 involved with minor new construction projects.

7 Q. Were the construction projects in-house
8 Monsanto projects?

9 A. Yes.

10 Q. What was there about your job as a maintenance
11 supervisor that got you involved with PCBs?

12 A. Some of the equipment that was installed by
13 this team contained fluids. These fluids had, as an
14 ingredient, PCBs.

15 Q. Was there a tradename for those fluids?

16 A. There was several tradenames.

17 Q. What were they?

18 MR. FEATHERSTONE: Objection. Scope.

19 A. Therminols, T-h-e-r-m-i-n-o-l-s; Pydrauls,
20 P-y-d-r-a-u-l; Inerteen, I-n-e-r-t-e-e-n; Pyranol,
21 P-y-r-a-n-o-l; Santovac, S-a-n-t-o-v-a-c. I believe that's
22 it.

23 Q. (By Mr. Bradley) Was the Therminol that you
24 mentioned manufactured by Monsanto?

25 A. Yes.

1 Q. Was the Pydraul that you mentioned
2 manufactured by Monsanto?

3 A. Yes.

4 Q. Was the Inerteen that you mentioned
5 manufactured by Monsanto?

6 A. Yes.

7 Q. Was the Pyranol that you mentioned
8 manufactured by Monsanto?

9 A. Yes.

10 Q. Was the Santovac you mentioned manufactured by
11 Monsanto?

12 A. Yes.

13 Q. Were any of those five ever imported to
14 Monsanto from another company?

15 MR. FEATHERSTONE: Objection. Scope. Also,
16 object to the form of the questioning.

17 A. Not to my knowledge.

18 Q. (By Mr. Bradley) Who was it that first
19 informed you that those fluids contained PCBs?

20 MR. FEATHERSTONE: Objection. Scope.

21 A. I don't recall the specific individual. I
22 just don't remember.

23 Q. (By Mr. Bradley) Was there a time that you,
24 as a maintenance supervisor, undertook to determine the
25 toxicity of the five products you mentioned that contained

1 PCBs?

2 MR. FEATHERSTONE: Let me hear the question
3 back, please.

4 (Whereupon, the reporter propounded the previous question.)

5 MR. FEATHERSTONE: Objection. Scope.

6 THE WITNESS: I need some help with the
7 expression, "undertook to determine the toxicity." Do you
8 mean did I undertake laboratory studies, animal studies,
9 this kind of thing?

10 MR. BRADLEY: What I'm interested in knowing
11 is whether you made any efforts to determine the toxicity
12 of the products containing PCBs - looking at manuals,
13 talking with different individuals; any effort whatsoever
14 to determine the toxicity of those five chemicals.

15 MR. FEATHERSTONE: Objection. Scope, and also
16 the form of the question. Foundation, "five chemicals."

17 MR. BRADLEY: All right. From now on when I
18 refer to the five chemicals, I'm referring to Therminol,
19 Pydraul, Inerteen, Pyranol and Santovac. Is that
20 satisfactory to you? Is there a better way to refer to
21 them?

22 A. No. I understand that. There was information
23 available regarding the health effects of these materials
24 on the workers if improperly handled. These documents were
25 prepared by Monsanto's corporate medical department and

1 were included in the various procedure manuals used in the
2 plant and copies were available in the plant medical
3 department files.

4 MR. BRADLEY: Would you read the last part of
5 that answer back. Where the copies were available.
6 (Whereupon, the reporter propounded the previous question.)

7 Q. (By Mr. Bradley) Do you recall the title of
8 any of the procedure manuals used in the plant regarding
9 the health effects to workers if these five chemicals were
10 improperly handled?

11 MR. FEATHERSTONE: We're still talking about
12 the 1950s?

13 MR. BRADLEY: Yes.

14 MR. FEATHERSTONE: Objection. Scope. Not
15 even yet within ten years of time period that this witness
16 has been tendered.

17 A. I don't recall the exact title but generally,
18 they were referred to in the plant as operating procedures,
19 standard operating procedures.

20 Q. (By Mr. Bradley) Do you recall what those
21 standard operating procedures indicated regarding the
22 potential of those five chemicals to cause adverse health
23 effects?

24 MR. FEATHERSTONE: Object to the form. Object
25 to the foundation, object to the hearsay and object to the

1 scope.

2 MR. BRADLEY: Let me rephrase my question.

3 Q. (By Mr. Bradley) Do you recall what those
4 standard operating procedures said regarding the health
5 effects of these chemicals on the workers if the chemicals
6 are improperly handled?

7 MR. FEATHERSTONE: Same objections and I'll
8 add that it's compound.

9 A. I don't, at this point in time, recall the
10 specifics. I do recall a section of the procedures which
11 addressed the need for proper handling and advice on
12 breathing the material, getting it on your skin, these
13 kinds of things. I do not recall the specifics.

14 Q. (By Mr. Bradley) Do you recall reviewing any
15 other material, other than the standard operating
16 procedures, regarding the toxicity of the five chemicals
17 that we have been referring to?

18 MR. FEATHERSTONE: Still in the 1950s?

19 MR. BRADLEY: That's an open-ended question
20 and I'll ask you, if your answer is yes, I'll ask you what
21 year you learned of other information.

22 MR. FEATHERSTONE: I'll object. Beyond the
23 scope.

24 A. Well, in the 1950s, the information contained
25 in the standard operating procedures was also available in

1 the medical files and in the plant safety director's files.
2 There were copies of the same documents, and they were all
3 accessible, and I made it a point to cover those three
4 departments to make certain that I didn't miss anything.

5 MR. FEATHERSTONE: Before you pose your next
6 question, Mr. Bradley. I was thinking about something.
7 Listening to these questions about the 1950s, when he's
8 intended for 1966 through 1975, I was also thinking about
9 your admonitions to me, that you believe the procedure
10 calls for me having to go to the Court, otherwise letting
11 the witness answer the question. Your co-counsel set a
12 precedent in this case of instructing witnesses not to
13 answer when he believed questions were beyond the scope of
14 the Rule 30B-6 deposition, and we're getting to the point
15 where I'm going to use your procedures because in my
16 judgement, you're not exercising good faith in trying to
17 confine your questioning to the proper scope of the Rule
18 30B-6 notice. We're not even close right now.

19 MR. BRADLEY: Are you done?

20 MR. FEATHERSTONE: For the time being, I'm
21 done.

22 MR. BRADLEY: I can't comment on what my
23 co-counsel did in a different 30B-6, I wasn't there and
24 don't know the circumstances of it. I can tell you, Mr.
25 Featherstone, that I wouldn't ever ask a question in bad

1 faith, and that my intent in asking these questions has to
2 do with the background information this witness had on the
3 subject matter of the 30B-6 notice at the time for which
4 you're tendering him, with the belief, again, that the
5 degree of knowledge that one has about a particular area
6 depends, in part, on the background information with which
7 they can evaluate the new information. That is my purpose
8 in asking the questions, and I don't mind at all if you
9 want to take this matter up with the Magistrate. I am a
10 believer in the process that you and I negotiated in the
11 hallway several hours ago. If, at any time, you're
12 uncomfortable with that, that's fine with me to handle it a
13 different way.

14 MR. FEATHERSTONE: I wouldn't dignify that
15 conversation by saying we negotiated anything. Also, I'll
16 say that it's nonsense to sit here and tell us that you
17 need to go through this guy's background in the minutia
18 that you're going through it when you're about to take his
19 individual deposition, and you come back and say you have
20 to know that so you can evaluate what he has to say during
21 the time period for which he was tendered. He's tendered
22 from 1966 to 1975 to talk about the corporate knowledge and
23 notice of what it learned and when it learned it regarding
24 PCBs, as stated in your notice, during that time period.

25 MR. BRADLEY: Do you have anything else you

1 want to share with us?

2 MR. FEATHERSTONE: Not at the present time.

3 Q. (By Mr. Bradley) Was there a time when you
4 reviewed the files in the medical department that they --
5 Let me ask it this way. Did the medical department within
6 Monsanto maintain files regarding the products that it
7 manufactured which contained PCBs?

8 MR. FEATHERSTONE: Calls for speculation.
9 Object to the form, beyond the scope, indefinite and vague.

10 A. Yes.

11 Q. (By Mr. Bradley) Do you know when the medical
12 department began assembling a file on the products
13 manufactured by Monsanto that contained PCBs?

14 MR. FEATHERSTONE: Same objections. Beyond
15 the scope.

16 A. When Monsanto acquired the facility that made
17 PCBs. In the 30's, the medical department began its files.

18 Q. (By Mr. Bradley) Were those files maintained
19 by the medical department between 1966 and 1975?

20 A. Yes.

21 Q. Were they maintained during the entire time
22 that Monsanto was manufacturing products that contained
23 PCBs?

24 MR. FEATHERSTONE: Object to the scope. No
25 foundation, calls for hearsay.

1 A. Yes.

2 Q. (By Mr. Bradley) Did you review those medical
3 files in 1966?

4 A. No.

5 Q. Did you review them prior to 1966?

6 A. No.

7 Q. Did you review them at all between the period
8 of 1966 and 1975?

9 A. I reviewed documents that I understood were
10 part of a file. I do not know if they were the complete
11 file.

12 Q. Were those documents sent to you for your
13 review?

14 A. Some of them were shared with me when I
15 underwent the tutorial with Mr. Wheeler. Some of them were
16 shown to me when I had discussions with Dr. Kelly.

17 Q. Dr. Kelly?

18 A. Dr. Emmet Kelly.

19 Q. Okay.

20 A. I don't recall -- I do recall a few documents
21 that were mailed to me. They included the final study
22 reports of the IBT study conducted in the late '60s and
23 completed in the early '70s. And I did receive
24 periodically status reports on these studies as they were
25 ongoing.

1 Q. The periodic status reports of the studies
2 that were ongoing, were those the studies that were
3 undertaken by IBT that you have spoken about here, this
4 morning?

5 A. That is correct.

6 Q. Where did you undergo the tutorial that you
7 had with Mr. Wheeler?

8 A. In the area in Monsanto's offices that was
9 occupied by the corporate medical department.

10 Q. And where were your meetings with Dr. Kelly,
11 your tutorial meetings?

12 A. In Dr. Kelly's office in that area.

13 Q. During those tutorials, were you ever shown
14 the medical department files -- Let me rephrase the
15 question. During the course of those tutorials, were you
16 ever informed that the medical department maintained a file
17 on the products manufactured by Monsanto that contained
18 PCBs?

19 A. Yes.

20 Q. During the course of your tutorials, were you
21 ever informed where those files were kept - and by that, I
22 mean a particular file cabinet or room?

23 A. I was shown a room, and along the wall were a
24 line of these metal file cabinets and as I recall, they
25 pointed to a few of them and indicated that's where the PCB

1 related products were located.

2 Q. During your tutorials?

3 MR. FEATHERSTONE: You mean files, PCB files?

4 A. Files, yes.

5 Q. (By Mr. Bradley) During your tutorials with
6 Mr. Wheeler and with -- Well, let's do Mr. Wheeler. Would
7 Mr. Wheeler go to those files and occasionally pull out
8 some documents as part of your tutorial?

9 A. On occasion. Generally, he had it all
10 prepared before I arrived. He had the documents he needed
11 with him at the time we met.

12 Q. And during the time you had a tutorial with Dr.
13 Kelly, did Dr. Kelly ever go to the files to remove
14 documents relating to PCBs?

15 A. There were occasions when he asked a secretary
16 to go get something, yes, sir.

17 Q. During your tutorials with Dr. Kelly, would Dr.
18 Kelly also begin the tutorials by showing you a set of
19 documents?

20 MR. FEATHERSTONE: Objection. Compound.
21 Object to the form of the questioning.

22 A. Wouldn't necessarily start with the documents
23 but eventually, we'd get to those that he had accumulated
24 for the purpose of our discussion.

25 Q. (By Mr. Bradley) Did Dr. Kelly ever indicate

1 to you at the end of your tutorial, or any other time
2 during your tutorial, that Dr. Kelly had shown you the
3 entire file in the medical department relating to products
4 manufactured by Monsanto that contained PCBs?

5 MR. FEATHERSTONE: Object to the form of the
6 question.

7 A. I don't recall any discussion regarding
8 whether or not the entire file was shown to me. I don't
9 know that.

10 Q. (By Mr. Bradley) You don't know whether you
11 saw the entire file?

12 A. That is correct.

13 Q. I take it, Mr. Wheeler, during your tutorials
14 with him, never informed you that he was showing you the
15 entire file on products manufactured by Monsanto that
16 contained PCBs?

17 A. That is correct.

18 Q. During 1966 to 1975, who was the director of
19 the medical department at Monsanto?

20 THE WITNESS: You say '66 to '75?

21 MR. BRADLEY: Yes.

22 A. From '66 to '74, it was Dr. R. Emmett Kelly.
23 Starting in 1974, it was Dr. George Roush, R-o-u-s-h.

24 MR. FEATHERSTONE: You said starting in '74?

25 A. '74, yes.

1 Q. (By Mr. Bradley) Between 1966 and 1975, did
2 Monsanto have a procedure for identifying published studies
3 relating to the products it manufactured which contained
4 PCBs?

5 MR. FEATHERSTONE: Object to the form of the
6 question.

7 MR. BRADLEY: What's wrong with the form?

8 MR. FEATHERSTONE: Well, you've read enough
9 scientific literature to know those scientific articles
10 don't deal with products. Typically, they deal with
11 chemicals. You might ask about PCBs, per se.

12 MR. BRADLEY: All right. I'll take your
13 attorney's advice.

14 Q. (By Mr. Bradley) During the period 1966 to
15 1975, did Monsanto have a procedure for identifying studies
16 relating to the chemicals it manufactured?

17 A. Yes.

18 Q. Where -- Let me first ask, who developed the
19 procedure?

20 A. That, I don't know.

21 Q. Who was responsible for insuring that the
22 procedure was followed between 1966 and 1975?

23 A. The responsibility rested with the director of
24 the activity to which this task was assigned.

25 Q. Was the task assigned to someone in the

1 medical department?

2 A. For medical toxicology matters, it was
3 assigned to the medical department.

4 Q. Was there a written procedure that you're
5 aware of within the medical department for acquiring
6 information on studies between 1966 and 1975 regarding
7 chemicals manufactured by Monsanto that contained PCBs?

8 A. I'm not aware of any written procedure.

9 Q. Were you orally told there was a procedure?

10 A. Yes.

11 Q. Who informed you there was such a procedure
12 within the medical department between 1966 and 1975?

13 A. Mr. Wheeler.

14 Q. Did he tell you what the procedure involved?

15 A. Yes.

16 Q. What did the procedure involve?

17 A. It involved the perusal of all of their
18 journals, documents that Monsanto subscribed to, as well as
19 the perusal of any bibliographies or literature references
20 cited in the articles of these subscribed publications.

21 MR. BRADLEY: Would you read back that answer
22 for me?

23 (Whereupon, the reporter propounded the previous answer.)

24 Q. (By Mr. Bradley) Did you learn about the
25 procedure in the medical department for obtaining this

1 information from anyone, other than Mr. Wheeler?

2 A. No.

3 Q. Did Mr. Wheeler indicate to you which journals
4 Monsanto subscribed to, to determine -- Excuse me. Let me
5 start all over again. Did Mr. Wheeler indicate to you
6 which journals Monsanto subscribed to, to obtain
7 information regarding the products manufactured by Monsanto
8 - excuse me - chemicals manufactured by Monsanto that
9 contained PCBs?

10 A. To my knowledge, there were no subscriptions
11 to journals that exclusively related to PCB-type products.

12 Q. What journals did Monsanto subscribe to
13 between 1966 and 1975?

14 A. Oh, I don't remember them all.

15 Q. Were you ever informed what they were?

16 A. Did I -- Yes, I was at one time.

17 Q. Who informed you of that?

18 A. Mr. Wheeler. We walked through the library.
19 We saw them.

20 Q. But you can't here, this morning, tell us
21 which journals those were?

22 A. Well, there's the New England Journal of
23 Medicine. I believe that's the title. I'm not certain.
24 The AMA publishes something. There was so many, I really
25 don't remember them.

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1 Q. Did the journals go back to as early as 1930?

2 MR. FEATHERSTONE: What are you talking about,

3 the journals that were reviewed or the journals that were

4 actually contained in the library?

5 MR. BRADLEY: The journals that were contained

6 in the library.

7 Q. (By Mr. Bradley) Did they go back to 1930?

8 A. That was my understanding, yes, sir.

9 Q. That's what Mr. Wheeler told you?

10 A. Yes.

11 Q. Did you review any journals that went back to

12 the 1930s that were maintained in the medical department?

13 A. I personally did not.

14 Q. Was this a library within the medical

15 department?

16 A. Yes.

17 Q. And is that how you and Mr. Wheeler referred

18 to it, medical department library?

19 A. Yes.

20 Q. Did Mr. Wheeler ever indicate to you his

21 belief whether Monsanto maintained copies of all journals -

22 excuse me - all journal articles discussing chemicals

23 manufactured by Monsanto which contained PCBs?

24 MR. FEATHERSTONE: Object to the scope. Also,

25 the form.

1 A. I was informed that they kept copies of
2 articles. I do not personally know that they kept copies
3 of all articles dating back to the '30s. I have no way of
4 knowing that.

5 Q. (By Mr. Bradley) Do you know whether there
6 was an effort to keep copies of all of the articles back to
7 the '30s written on chemicals manufactured by Monsanto
8 which contained PCBs?

9 MR. FEATHERSTONE: Objection. Cummulative.

10 A. Well, that was no different than the question
11 of other chemicals Monsanto made. It was in the file
12 related to that product line.

13 Q. (By Mr. Bradley) Well, I take it, it's good
14 corporate business, Monsanto must have been interested in
15 maintaining copies of journal articles regarding the
16 chemicals it manufactured; is that fair to say?

17 MR. FEATHERSTONE: Object to the form of the
18 question.

19 A. Yes.

20 Q. (By Mr. Bradley) And did Monsanto have a
21 policy of trying to maintain a library that contained all
22 of the references to chemicals manufactured by it which
23 contained PCBs?

24 MR. FEATHERSTONE: All of the references?

25 MR. BRADLEY: All of the journals, all of the

1 articles.

2 MR. FEATHERSTONE: All of the articles for
3 something like PCBs?

4 MR. BRADLEY: That was my question.

5 MR. FEATHERSTONE: Objection. Scope.

6 A. The medical department kept in it's files,
7 those cabinets I referred to, articles that addressed
8 health effects, toxicity studies and the like. They were
9 made available, and they filed them by product.

10 MR. BRADLEY: My question, though, was there a
11 policy within the medical department to maintain a library
12 that included all of the journals written that addressed
13 the health effects, toxicity studies and the like regarding
14 chemicals manufactured by Monsanto which contained PCBs?

15 MR. FEATHERSTONE: Object to the scope and
16 also the form.

17 A. I have some difficulty because --

18 MR. FEATHERSTONE: Also cumulative.

19 A. An article that would appear in a journal that
20 was relevant to PCB containing products would, of course,
21 be read and followed up and studied and the like, and a
22 copy would be filed in the appropriate - a copy of the
23 article would be filed in the product file. The journal,
24 itself, would remain intact, on the bookshelf, along with
25 other copies of the journal. I don't know how else to

1 describe this procedure.

2 Q. (By Mr. Bradley) I think it's because I'm not
3 asking the question very well, you might be having some
4 trouble. What I'm interested in knowing is whether
5 Monsanto's medical department actually had -- Let me start
6 all over again. I'm interested in knowing whether Monsanto
7 had a policy of trying to identify published articles
8 relating to the health effects and toxicity studies of
9 chemicals manufactured by Monsanto that contained PCBs?

10 A. Certainly.

11 MR. FEATHERSTONE: Wait a minute. To the
12 extent it goes beyond '66 to '75, I object. It's beyond
13 the scope. He's already testified to that.

14 MR. BRADLEY: Go ahead.

15 A. It's the policy -- The policy was that any
16 medical information relating to chemicals Monsanto handled,
17 produced, sold, would be monitored and appropriate files be
18 kept of that medical-type data.

19 Q. (By Mr. Bradley) Between 1966 and 1975, if
20 there were journal articles addressing health effects,
21 toxicity studies and the like, of chemicals manufactured by
22 Monsanto that contained PCBs, would those have been sent to
23 you?

24 MR. FEATHERSTONE: Object to the form.

25 A. Very likely, yes.

1 Q. (By Mr. Bradley) How do you know that those
2 would very likely be sent to you?

3 A. Because I had an arrangement with the medical
4 department that they saw to it that I would receive copies.

5 Q. When did you make that arrangement?

6 A. While I was undergoing the tutorial with Mr.
7 Wheeler in January of 1970.

8 Q. Did you have that arrangement prior to January
9 of 1970?

10 A. I did not.

11 Q. So those articles wouldn't have been sent to
12 you prior to January of 1970; is that fair to say?

13 A. That is correct.

14 Q. Between the period of January of 1970 when you
15 made this --

16 (Whereupon, a discussion was held between Counsel, off the
17 record.)

18 MR. BRADLEY: Actually, it's 12:10 and I have
19 been requested to have a lunch break during the regular
20 lunch hour. So if this is an adequate time for the rest of
21 you, I'd like to take lunch now.

22 MR. FEATHERSTONE: Okay.

23 MR. MASKIN: What time are we going to resume?

24 MR. BRADLEY: 1:15.

25 MR. FEATHERSTONE: What's the word on Dr.

1 Craddock?

2 MR. BRADLEY: I'm still probably not going to
3 be able to make that assessment until between 2:00 or 3:00.

4 (Whereupon, a luncheon recess was taken until 1:15 p.m.)

5 Q. (By Mr. Bradley) Mr. Papageorge, I assume
6 from your prior answer that if a study came into Monsanto
7 in 1966, '67, '68 or '69 having to do with any and all
8 alleged potential or actual hazards of Polychlorinated
9 Biphenyls or Monochlorinated Biphenyls, whether denominated
10 by those terms or any other terms having the same meaning,
11 you wouldn't know about those studies?

12 THE WITNESS: That's the period '66 through
13 '69?

14 MR. BRADLEY: Yes.

15 A. That's correct.

16 Q. (By Mr. Bradley) Who, within Monsanto, would
17 know what studies Monsanto received during '66 through '69
18 regarding any and all alleged potential or actual hazards
19 of Polychlorinated Biphenyls or Monochlorinated Biphenyls,
20 whether demoninated by those terms or any other terms
21 having the same meaning?

22 A. Monsanto's corporate medical department.

23 Q. And who would that be for the period of time
24 between '66 and '69?

25 A. Dr. Emmett Kelly and Elmer Wheeler.

1 MR. BRADLEY: Under the circumstances, Bruce,
2 can we -- I assume it's all right if we include in the
3 period of time for Mr. Kelly, the period -

4 MR. FEATHERSTONE: Dr. Kelly?

5 MR. BRADLEY: Dr. Kelly. The period of '66 to
6 '69?

7 MR. FEATHERSTONE: Well, the fact of the
8 matter is, this witness knows about events from '66 to '70,
9 or '66 through '69, by virtue of his assumption of
10 responsibilities in January of 1970, and he has been
11 designated for that time period, if you'd like to ask him
12 about that time period. If there is something that he
13 can't answer and it seems appropriate that Dr. Kelly should
14 answer for that time period, then Dr. Kelly will be here to
15 do that.

16 MR. BRADLEY: All right. Let me pursue that a
17 little bit further, then.

18 Q. (By Mr. Bradley) Mr. Papageorge, you made
19 arrangements with the medical department that you would
20 receive copies of any studies that came in regarding the
21 alleged or potential hazards of PCBs and you made that
22 arrangement in January of 1970; is that correct?

23 A. That is correct.

24 Q. In January of 1970, though, as I understand
25 your prior testimony, you didn't go into the files of the

1 talking about.

2 Q. Did Mr. Wheeler indicate to you what period of
3 time was represented by those articles, when they were
4 written?

5 A. Well the articles spoke for themselves, in
6 that they were dated. They came out in certain journals,
7 certain dates.

8 Q. Other than articles speaking for themselves,
9 what dates did they indicate they were covering?

10 A. These were primarily in the late '60s.

11 Q. Did Mr. Wheeler indicate to you that those
12 were all of the studies received by Monsanto's medical
13 department that were conducted - or excuse me, that were
14 published between 1966 and the end of 1969 regarding PCBs
15 or monochlorinated biphenyls?

16 MR. FEATHERSTONE: Before you answer that, Mr.
17 Papageorge, may I hear the question back, please? There
18 was a start and stop in the middle of it and I don't
19 understand.

20 (Whereupon, the reporter propounded the previous question.)

21 MR. BRADLEY: Go ahead and answer the
22 question. Do you want the question read?

23 A. No. I understand it. I was confused by the
24 reference to mono--

25 MR. BRADLEY: No. PCBs, or monochlorated

1 biphenyls.

2 A. Oh, yes. That was -- It was my understanding
3 that this was a collection of the articles that appeared in
4 that period of time.

5 Q. (By Mr. Bradley) Did Mr. Wheeler indicate to
6 you why he was giving you copies of the articles only for
7 the period of 1966 through 1969?

8 MR. FEATHERSTONE: Object to the form of the
9 question.

10 A. Yes, he did.

11 Q. (By Mr. Bradley) And what did he tell you?

12 A. These articles were reporting discoveries of
13 the the authors of the presence of PCBs in the environment
14 and the possible health effects that were noted.

15 MR. FEATHERSTONE: Go off the record for a
16 second.

17 (Whereupon, a discussion was held between Counsel, off the
18 record.)

19 Q. (By Mr. Bradley) Did you have a discussion
20 with Mr. Wheeler about those studies that represented the
21 1966 through 1969 period?

22 A. Certainly. Yes.

23 Q. Did that -- Was it more than one discussion
24 with Mr. Wheeler regarding those studies?

25 A. It was only one discussion, at least, per

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1 study, and it didn't all take place in one afternoon or one
2 day. It was spread over that several week period of time.

3 Q. To save time here searching, did you claim
4 that Mr. Wheeler gave you a tutorial on toxicology earlier
5 this morning?

6 A. Yes.

7 Q. And was the tutorial that he gave you on
8 toxicology relating to the studies that he provided to you
9 between, representing the period '66 to '69?

10 A. No.

11 Q. When you met with Mr. Wheeler regarding the
12 studies that he provided to you between, that represented
13 the period of '66 to '69, did you discuss with Mr. Wheeler
14 each study that was in the pile that he gave to you?

15 A. Yes.

16 Q. Would you discuss more than one study with him
17 on any particular occasion?

18 A. I don't recall specifically but it's very
19 likely that in a day's time, we probably could cover maybe
20 a couple of these instances, along with other discussions
21 regarding PCBs.

22 Q. Do you recall how many hours you spent with
23 Mr. Wheeler discussing the studies that he provided to you
24 representing the period 1966 through 1969?

25 A. No. I never kept score.

1 Q. How about days? How many days did you spend
2 with him? Your best estimate.

3 A. My best estimate? My best estimate is of the
4 three-week period, I would suggest that a week of that was
5 devoted to the effects of PCBs.

6 Q. Did Mr. Wheeler indicate to you during the one
7 week that was devoted to the effects of PCBs, that studies
8 existed prior to 1966 regarding the alleged potential or
9 actual hazards of PCBs or monochlorinated biphenyls?

10 A. Yes.

11 Q. Did you discuss those with him, as well?

12 A. Yes.

13 Q. Did you review any of those studies with Mr.
14 Wheeler?

15 MR. FEATHERSTONE: "Those" being the ones
16 earlier, before '66?

17 MR. BRADLEY: Yes.

18 A. Yes.

19 Q. (By Mr. Bradley) Did he show you the studies?

20 A. He showed me the summary of the results of the
21 studies. The report that he got from the laboratory.

22 Q. Was the report from the laboratory the --
23 Let me ask this. What do you mean by, "report of the
24 laboratory?"

25 A. It's a document on laboratory letterhead

1 addressed to Monsanto in which the author describes a
2 material tested, the type of test he's conducted, dosage
3 levels, and the results of the test and the period during
4 which the test was conducted.

5 Q. Do you recall how many studies you discussed
6 with Mr. Wheeler that predated 1966 that had to do with the
7 alleged potential or actual hazards of PCB or
8 monochlorinated biphenyls?

9 A. I don't recall the number, no.

10 Q. Do you recall if it was more or less than ten?

11 MR. FEATHERSTONE: Well, object. Beyond the
12 scope. Go ahead.

13 A. Less than ten.

14 Q. (By Mr. Bradley) What was Monsanto's
15 knowledge in 1966 concerning any and all alleged potential
16 or actual hazards of PCBs or monochlorinated biphenyls?

17 THE WITNESS: Prior to 66?

18 MR. BRADLEY: As of 1966.

19 A. Yes. That the PCBs were considered mildly
20 toxic, I think was the terminology at that particular time,
21 and that excessive exposures to PCBs could result in damage
22 to the liver.

23 Q. Did Monsanto, in 1966, relate a condition
24 called chloracne to exposure to PCBs or monochlorinated
25 biphenyls?

1 A. Yes. The animal testing, as well as some
2 human experience, indicated that at some intermediate
3 levels - by intermediate, I mean a level that's lower than
4 the excessive one that causes liver damage - could result
5 in this skin condition referred to as chloracne. At still
6 lower levels, another skin condition could be noted that
7 looked like the effect of chapped hands, redness and
8 rawness of the skin, and it was also known that inhalation
9 of fumes could result in a chest irritation that had
10 symptoms that resembled a severe chest cold.

11 Q. Regarding -- Until I tell you otherwise,
12 we're going to talk about 1966, all right?

13 A. Yes.

14 Q. In 1966, what did Monsanto mean when it said,
15 when it believed or took the position that PCBs were
16 considered mildly toxic?

17 MR. FEATHERSTONE: Object to the form.

18 MR. BRADLEY: Let me rephrase it.

19 Q. (By Mr. Bradley) What did you mean when you
20 indicated in 1966, Monsanto knew that PCBs were considered
21 mildly toxic?

22 A. By the test protocols conducted in testing
23 laboratories using animals, the animals are exposed to the
24 test material - in this case, PCBs - and the number of
25 animals that do not survive are noted and a calculation is

1 then made to determine what is called the LD-50, Lethal
2 Dose 50, which means that at this dose, fifty percent of
3 the test animals are expected to die from the exposure.
4 The magnitude of the dose determines how it's categorized,
5 in terms of nontoxic, slightly toxic, mildly toxic and
6 extremely toxic. I think those are the categories, as best
7 as I recall. I don't recall the number for PCBs, but it
8 was a number that fit the mildly toxic definition.

9 Q. The LD-50 is used to determine acute health
10 effects from exposure to PCBs; is that correct?

11 MR. FEATHERSTONE: Objection. Beyond the
12 scope.

13 A. That's true.

14 Q. (By Mr. Bradley) Typically, in determining
15 the potential hazards of a chemical, both acute testing and
16 chronic testing is completed; is that correct?

17 MR. FEATHERSTONE: Well, I object -- What
18 time period are you talking about now?

19 MR. BRADLEY: I had indicated to the witness
20 --

21 MR. FEATHERSTONE: 1966?

22 MR. BRADLEY: That's correct.

23 MR. FEATHERSTONE: All right. 1966.

24 A. In 1966, for industrial chemicals - in other
25 words, chemicals not regulated by the, at that time, the

1 U.S. Department of Agriculture for pesticides, or FDA for
2 food and drug use, those chemicals did not undergo chronic
3 feeding studies by industrial practice. It just was not
4 something that was done. The only testing that was done on
5 industrial chemicals was the acute toxicity testing for
6 purposes of labeling to avoid workers any harm from acute
7 exposures.

8 Q. Was there a time when the industrial chemical
9 businesses performed chronic testing -- Excuse me. I'm
10 going to start that question all over. Was there a period
11 in time when businesses such as Monsanto routinely
12 conducted chronic testing of the chemicals it manufactured?

13 MR. FEATHERSTONE: Objection. Beyond the
14 scope.

15 A. Routinely conducted testing? No.

16 THE WITNESS: Of industrial chemicals?

17 MR. BRADLEY: Yes.

18 A. No.

19 Q. (By Mr. Bradley) As far as you know, not up
20 until 1986, that didn't become routine?

21 MR. FEATHERSTONE: Objection. Beyond the
22 scope.

23 A. That is my understanding, yes.

24 Q. (By Mr. Bradley) Monsanto began chronic
25 testing of PCBs in 1969; is that correct?

1 A. Yes, sir.

2 Q. What led Monsanto to the decision to begin
3 chronic testing of PCBs in 1969?

4 A. Testing was conducted to answer the question
5 that occurred to Monsanto, what, if anything, are the PCBs
6 doing to living creatures in the environment.

7 Q. Was that the first chronic testing of any
8 chemical -- Let me start again. Was that the first time
9 Monsanto had tested any of the chemicals it manufactured
10 with chronic tests?

11 MR. FEATHERSTONE: Objection. Beyond the
12 scope. How can that conceivably be within the scope of the
13 Rule 30B-6 notice, which specifically says
14 PCBs/monochlorinated biphenyls?

15 MR. BRADLEY: I think that it relates to the
16 determination of whether Monsanto considered PCBs to be an
17 alleged potential or actual hazard. That's the purpose of
18 the question.

19 MR. FEATHERSTONE: How?

20 MR. BRADLEY: Because if it is the first time
21 they've ever done a chronic study of any of its chemicals,
22 then to me, that means something, versus the fact that it
23 was the one thousand, one hundred and nineteenth, and we
24 may disagree about that, but I think it goes to the weight,
25 and I view it as having some relevance.

1 MR. FEATHERSTONE: Objection. Beyond the
2 scope. I'm not sure the witness has the foundation to
3 answer that question, so I'll object on lack of foundation,
4 as well.

5 THE WITNESS: Your question implies that
6 Monsanto did not conduct chronic testing on its chemicals.
7 It did conduct testing for those materials that were
8 intended for FDA approval and for U.S. Department of
9 Agriculture approval. The testing of PCBs, as I indicated,
10 was done to answer an environmental question and to all
11 appearances, it was the first industrial chemical that was
12 tested in a manner that at one time had been reserved for
13 food and drug applications.

14 Q. (By Mr. Bradley) What information did
15 Monsanto have regarding the relationship of liver damage to
16 excessive exposure of PCBs?

17 MR. FEATHERSTONE: We're still in 1966 now?
18 You keep hooking around on time.

19 MR. BRADLEY: Until I tell you otherwise, I
20 mean 1966.

21 MR. FEATHERSTONE: May I hear the question
22 back, please.

23 (Whereupon, the reporter propounded the previous question.)

24 A. In the '30s and '40s, there were industrial
25 incidences in which chlorinated chemicals were found to

1 have caused liver damage to workers. The principle
2 chlorinated chemical was chlorinated naphthalene. There
3 was also some PCBs present. As a result of the studies
4 that took place then, Monsanto, through involvement with Dr.
5 Kelly, concluded that liver damage was likely to happen if
6 human beings are overexposed. You'll have to ask Dr.
7 Kelly for the details of those studies.

8 Q. What do you mean when you use the word
9 overexposed?

10 A. I can give you my understanding, not Dr.
11 Kelly's scientific numbers.

12 Q. Can you give me Monsanto's understanding, or
13 would I have to ask Dr. Kelly for that?

14 A. Dr. Kelly is the one most qualified to give
15 you a medical opinion on that.

16 Q. What do you understand the term overexposed
17 means?

18 A. It's an exposure that has already manifested
19 itself with some early warning signals, such as reddening
20 of skin, followed by chloracne and if the exposure
21 continues, the liver is apt to be harmed.

22 Q. Who told you about the industrial incidences
23 in the '30s and '40s where chlorinated chemicals were found
24 to have caused liver damage to workers?

25 A. Dr. Kelly and Mr. Wheeler.

1 Q. What did they tell you about those industrial
2 incidences?

3 MR. FEATHERSTONE: Object to the form of the
4 questioning and beyond the scope.

5 A. As best I recall, they described a process
6 whereby wire cable was being dipped into a hot bath of
7 molten chemicals, which included the chlorinated
8 naphthalene and PCBs and other materials. The workers were
9 exposed to the molten material, as well as the fumes from
10 the baths, and as I recall, there were some reported deaths
11 from that exposure.

12 Q. (By Mr. Bradley) Was that information given
13 to you in roughly January of 1970?

14 A. Yes.

15 Q. Did the Therminol manufactured by Monsanto
16 contain chlorinated naphthalene?

17 A. No.

18 Q. Did the Pydraul manufactured by Monsanto
19 contained chlorinated naphthalene?

20 A. No.

21 Q. Did the Inerteen manufactured by Monsanto
22 contained chlorinated naphthalene?

23 A. No.

24 Q. Pyranol?

25 A. No.

1 Q. Santovac?

2 A. No.

3 Q. Therminol was not pure PCB, was it?

4 MR. FEATHERSTONE: I'm sorry. Therminol?

5 MR. BRADLEY: Yes.

6 MR. FEATHERSTONE: Beyond the scope.

7 THE WITNESS: Can you help me with the
8 expression "pure PCB?"

9 Q. (By Mr. Bradley) Was it a mixture of PCB with
10 some other chemicals?

11 A. No.

12 Q. Was Pydraul a mixture of PCBs and some other
13 chemicals?

14 MR. FEATHERSTONE: Same objection.

15 A. Yes.

16 Q. (By Mr. Bradley) In 1966, what chemicals, in
17 addition to the PCBs, comprised Pydraul?

18 MR. FEATHERSTONE: Beyond the scope.

19 A. Well, there were several Pydrauls. I don't
20 recall the recipes for all of these mixtures. Some of them
21 had mineral oil in them; and there were other additives
22 added to give certain viscosity and lubricity features.
23 I've forgotten them all. As well as material to give it a
24 unique color. I'd have to see the recipes to refresh my
25 memory.

1 Q. (By Mr. Bradley) As a chemist, are you
2 familiar with the term synergism?

3 MR. FEATHERSTONE: As a chemist?

4 MR. BRADLEY: Excuse me. A chemical engineer.

5 A. Yes, sir.

6 Q. (By Mr. Bradley) Are you familiar with the
7 term synergism?

8 A. I believe I am.

9 Q. What is synergism?

10 MR. FEATHERSTONE: Objection. Beyond the
11 scope.

12 A. I'll give you my idea. It's a favorable
13 property brought about by, I want to call it a mixture of
14 materials to achieve a desired property. That property
15 doesn't exist in and of itself in either ingredient but the
16 combination gives that desired characteristic.

17 Q. (By Mr. Bradley) Are you aware of chemicals
18 acting synergistically to create some adverse impact?

19 MR. FEATHERSTONE: Objection. Beyond the
20 scope.

21 A. Well, I have personally never associated the
22 word synergy with undesirable effects.

23 Q. (By Mr. Bradley) Do you know whether the
24 additives to Pydraul in 1966 caused PCBs to have a greater
25 tendency to cause liver damage?

1 MR. FEATHERSTONE: Objection. Beyond the
2 scope.

3 A. Never heard of that. I don't know.

4 Q. (By Mr. Bradley) In 1966, did you hear about
5 the other chemical constituents of Pydraul acting
6 synergistically with PCBs to cause any kind of increased
7 adverse health effect?

8 A. I have not.

9 Q. In 1966, were there additives to PCBs to
10 create Inerteen?

11 A. Yes.

12 Q. And the Inerteen was manufactured at Monsanto?

13 MR. FEATHERSTONE: Well, the Inerteen
14 tradename?

15 Q. (By Mr. Bradley) Was the Inerteen
16 manufactured at Monsanto.

17 A. I would suggest a better word would be it was
18 blended at Monsanto.

19 Q. After it was blended at Monsanto, it was sent
20 out to Westinghouse?

21 A. Westinghouse was one of the customers, yes.
22 There were others.

23 Q. What were the other chemical constituents of
24 Inerteen besides PCBs?

25 A. Again, there were several formulations. The

1 principle one was a mixture of some -- See, Inerteens were
2 PCBs with an additive which was used to control the
3 formation of free chlorine.

4 Q. What was that chemical?

5 A. It was referred to by the acronym PPO.

6 Q. And what did it stand for?

7 A. I have forgotten. I have forgotten. Some
8 kind of oxide.

9 Q. All right.

10 A. And whereas others had this chlorine scavenger
11 added, as well as a mixture of tetrachlorobenzene.

12 Q. Did Monsanto, in 1966, do any studies to
13 determine whether tetrachlorobenzene acted synergistically
14 with PCBs?

15 MR. FEATHERSTONE: Objection. Beyond the
16 scope.

17 A. No.

18 Q. (By Mr. Bradley) In 1966, did Monsanto do any
19 studies to determine whether trichlorobenzene
20 acted synergistically with PCBs?

21 MR. FEATHERSTONE: Objection. Beyond the
22 scope.

23 A. No.

24 MR. MASKIN: Let me also note for the record,
25 we join in Monsanto's objection throughout this deposition

1 from now on. Up to now, we will join in all of Monsanto's
2 objections.

3 Q. (By Mr. Bradley) In 1966, was Monsanto aware
4 of any studies that suggested that tetrachlorobenzene
5 reacted synergistically with PCBs?

6 MR. FEATHERSTONE: Objection. Beyond the
7 scope.

8 A. No.

9 MR. FEATHERSTONE: You're talking about in a
10 health effect sense?

11 MR. BRADLEY: Yes.

12 MR. FEATHERSTONE: All right.

13 MR. BRADLEY: In any sense. Actually --

14 MR. FEATHERSTONE: I was looking at his
15 definition, which says "A favorable property brought about
16 by a mixture of materials." I assume if Inerteen had this
17 mixture, there must have been some reason for it, probably
18 physically more than anything else.

19 MR. BRADLEY: Actually, I intended the
20 question to be open-ended and using synergism in the way
21 you had defined it.

22 A. And your questioned, did Monsanto have studies
23 showing the synergism, whether it be in the health area or
24 functioning area?

25 MR. BRADLEY: That's correct. Is that how you

1 understood my question?

2 A. And my answer is no.

3 Q. (By Mr. Bradley) Between 1966 and 1975, did
4 Monsanto ever gain information that tetrachlorobenzine
5 reacted synergistically with PCBs? "Synergistically" used
6 the way we have been using it.

7 A. No.

8 Q. Was Pyranol in 1966 comprised of any
9 chemicals, other than PCBs?

10 A. Yes.

11 Q. What additional chemicals were in Pyranol?

12 A. They, too, contained tetrachlorobenzine; they
13 also contained a chlorine scavenger, and I cannot recall
14 which particular scavenger they were using.

15 Q. What is a chlorine scavenger?

16 A. It's a chemical that has the ability to
17 capture any free chlorine in a solution and tie it up in
18 such a way that it literally takes it out of action, so it
19 cannot cause any corrosion or any damage of the equipment.

20 Q. Do you recall what chlorine scavenger was used
21 in Pyranol?

22 A. I don't remember.

23 Q. Do you recall what chlorine scavenger was used
24 in Inerteen?

25 A. That was the PPO I mentioned.

1 Q. Was the Pyranol also blended on Monsanto's
2 property?

3 A. The Pyranol that Monsanto shipped was blended
4 on Monsanto's property.

5 Q. Was Pyranol also blended on -- Was Pyranol
6 also blended at other businesses?

7 MR. FEATHERSTONE: Beyond the scope.

8 A. It's my understanding that General Electric,
9 on occasion, blended its own Pyranol.

10 Q. (By Mr. Bradley) Was Inerteen blended at a
11 business, other than Monsanto?

12 MR. FEATHERSTONE: Beyond the scope.

13 A. It's my understanding, in the earlier years,
14 there was blending. Later, as I understand it, it was all
15 done at Monsanto's plant.

16 Q. (By Mr. Bradley) I'm now going to ask you
17 questions covering the period 1966 to 1975. During that
18 time frame, did Monsanto learn that PCBs are poorly
19 metabolized and tend to accumulate in animal tissues,
20 including humans?

21 A. I'm puzzled by the question. If I understood
22 you, you said fully metabolized.

23 MR. BRADLEY: Poorly.

24 A. Poorly. Okay. Yes.

25 Q. (By Mr. Bradley) When did Monsanto learn that

1 information?

2 A. Well, the presence of PCBs in animal tissue
3 was first reported by Jensen and Widmark out of Sweden in
4 1966.

5 Q. Did Monsanto ever learn in this nine year
6 period that studies revealed PCBs in human fat tissue and
7 blood plasma?

8 A. Yes.

9 Q. When did they learn that information?

10 MR. FEATHERSTONE: Object to the form.

11 A. I don't recall the specific date but it was
12 probably, very likely about 19 -- About 1972, as best I
13 can recall.

14 Q. (By Mr. Bradley) Did Monsanto ever learn
15 during this nine year period that workers exposed to PCBs
16 have reported skin lesions along with systemic effects,
17 such as digestive disturbances?

18 MR. FEATHERSTONE: Can I hear the question
19 back, please?

20 (Whereupon, the reporter propounded the previous question.)

21 MR. FEATHERSTONE: Object to the form.

22 A. The best person to answer that would be Dr.
23 Kelly because, as I recall, he was involved with a report
24 of that type and then pursued a study of it. I have
25 forgotten what year that took place.

1 Q. (By Mr. Bradley) Do you recall whether that
2 took place in the 1937 - as part of a study called the
3 Drinker study?

4 MR. FEATHERSTONE: Wait a minute. Is this a
5 trick question, because your first, you said during this
6 nine year period, and you're talking about '66-'75, and now
7 you're back to the 1930s. Are you suggesting that Monsanto
8 didn't know about Drinker until 1960, is that your
9 question? Are you asking if Monsanto knew about Drinker
10 back when the Drinker --

11 MR. BRADLEY: Would you read back my question?
12 (Whereupon, the reporter propounded the previous question.)

13 Q. (By Mr. Bradley) Was the report that Dr.
14 Kelly took part in regarding that topic, part of the
15 Drinker study that occurred in 1937?

16 MR. FEATHERSTONE: Beyond the scope.
17 Objection.

18 A. It's my understanding this was another
19 incident reported to Dr. Kelly's office, and it happened in
20 the '60s, late '60s, as best I recall.

21 Q. (By Mr. Bradley) Did Dr. Kelly ever discuss
22 with you his participation in a 1937 report called,
23 authored by a gentleman by the name of Drinker?

24 A. Yes.

25 Q. When was it that Dr. Kelly discussed that

1 topic with you?

2 A. When I had my discussions with him in '70.

3 Q. And what did Dr. Kelly tell you about the
4 study authored by a gentleman named Drinker?

5 MR. FEATHERSTONE: Objection. Beyond the
6 scope.

7 A. I don't remember all the details, except the
8 fact that because workers showed some effects in exposure
9 to this chlorinated chemical led him to believe that it
10 would be best, although there was no hard evidence, to
11 treat PCBs in a conservative way and assume that they could
12 be as bad as that bath mixture. There was also, as I
13 remember, some discussion at the time regarding the proper
14 identification of some of the bath ingredients, and I would
15 suggest that Dr. Kelly is the more appropriate person to
16 clarify that.

17 Q. Are chlorinated biphenyls another term for
18 PCBs?

19 MR. FEATHERSTONE: Diphenyls?

20 MR. BRADLEY: Biphenyls.

21 MR. FEATHERSTONE: Biphenyls.

22 A. Yes. Chlorinated di or biphenyls were later
23 known commonly as PCBs.

24 Q. (By Mr. Bradley) Did Dr. Kelly discuss with
25 you a round table discussion that occurred in 1937

1 regarding a gentleman named Drinker?

2 A. Yes.

3 Q. I'm going to show you what has been marked as
4 Plaintiff's Exhibit 979, and ask you to look at that for a
5 moment.

6 MR. FEATHERSTONE: Do you want him to flip
7 through it or look at it? What do you want me to do with
8 this thing? It's multipages.

9 MR. BRADLEY: I want him to examine it so he
10 can determine whether he's familiar with it.

11 MR. FEATHERSTONE: Off the record.
12 (Whereupon, a discussion was held between Counsel, off the
13 record.)

14 A. I have quickly scanned the multipage article.

15 Q. (By Mr. Bradley) Is that exhibit a copy of
16 the article authored by Drinker in 1937 that Dr. Kelly
17 discussed with you?

18 A. This is one of them, yes.

19 Q. All right. Did you read that study prior to
20 today?

21 A. Yes. Back in 1970, I read it.

22 Q. And did the copy of the study that you read
23 include the round table discussion that appears at the end
24 of the exhibit?

25 A. Yes, sir.

1 Q. Did you and Dr. Kelly, in 1970, discuss the
2 inclusions of Dr. Lewis Schwartz at page 304, at the bottom
3 and moving onto page 305, where it says, in essence, "If
4 there is sufficient concentration to do that..."

5 MR. FEATHERSTONE: Were are you reading from?

6 MR. BRADLEY: I just identified it.

7 MR. FEATHERSTONE: We haven't found it yet.

8 MR. BRADLEY: The bottom of page 304.

9 MR. FEATHERSTONE: 304?

10 A. I don't remember that specific item in detail.

11 Q. (By Mr. Bradley) I want to cover the section
12 that I'm interested in and inquiring about, just to make
13 certain that we all agree we're talking about the same
14 material. At the end of page 304, it says, "If there are
15 any cases of acne or of this dermatitis occurring in a
16 plant where Halowax or the chlorinated naphthalene or
17 chlorinated diphenyls are used, then that shows that there
18 is sufficient concentration of these substances in the air
19 to cause plugging of the follicles and to cause a skin
20 condition. If there is sufficient concentration to do
21 that, there may be sufficient concentration to cause
22 systemic poisoning in the few people who are hypersensitive
23 to the action of these hydrocarbons." Is that something
24 you and Dr. Kelly discussed?

25 A. We certainly discussed chloracne; we discussed

1 sensitivity of different people to different
2 concentrations. I recall fairly vividly Dr. Kelly's - and
3 you're going to have to ask him. He doubted that the
4 chloracne was caused by plugging of follicles from an
5 external exposure.

6 Q. Did Dr. Kelly doubt, though, that if there is
7 chloracne -- Excuse me. If there is sufficient
8 concentration of chlorinated biphenyls, or PCBs, to cause
9 chloracne, there may be sufficient concentration to cause
10 systemic poisoning in a few people who are hypersensitive
11 to the action of these hydrocarbons?

12 MR. FEATHERSTONE: Object. Beyond the scope.
13 Calls for speculation.

14 A. I would suggest that Dr. Kelly, again, is
15 qualified to answer that.

16 Q. (By Mr. Bradley) Did he indicate to you,
17 though, his belief that that was true or not true?

18 MR. FEATHERSTONE: Object to the form, beyond
19 the scope.

20 Q. (By Mr. Bradley) Did Dr. Kelly indicate to
21 you in 1970, when you met with him, whether he believed
22 that if there was a sufficient amount of exposure to PCBs
23 to cause chloracne, there may be sufficient amounts to
24 cause systemic poisoning?

25 A. I did not get that impression.

1 Q. Did Dr. Kelly indicate to you -- I apologize.
2 I can't remember if I asked you this. Did he indicate to
3 you whether he was a participant in the round table
4 discussion that's appended to this article authored by
5 Drinker?

6 A. I understand he was invited and did attend.

7 Q. Did Dr. Kelly indicate to you that a gentleman
8 from General Electric was also present at this round table
9 discussion?

10 MR. FEATHERSTONE: Beyond the scope.

11 A. I don't remember that. I don't recall that.

12 Q. (By Mr. Bradley) Do you know a gentleman
13 named D.B. Vosburgh?

14 A. Vosburgh.

15 Q. V-o-s-b-u-r-g-h.

16 A. No.

17 Q. Did Monsanto know in 19 - between 1966 and
18 1975, that workers exposed to PCBs had reported skin
19 lesions along with systemic effects, such as impotence?

20 A. I don't remember any reference to impotence.
21 I do remember the skin lesions, and it was the case that I
22 referred to earlier, where a customer called Dr. Kelly's
23 office seeking medical guidance on this matter.

24 Q. Are you familiar with the term hematuria,
25 h-e-m-a-t-u-r-i-a?

1 A. No.

2 Q. Have you ever heard of exposure to PCBs being
3 associated with systemic effects, such as hematuria?

4 A. No.

5 Q. Was Monsanto -- Excuse me. Let me rephrase
6 that. Did Monsanto have knowledge, between the period of
7 1966 and 1975, of the research work done by a gentleman
8 named Lewis Schwartz regarding health problems associated
9 with exposure to PCBs?

10 A. I don't recall the author's name, Schwartz.

11 Q. Between 1966 and 1975, did Monsanto have
12 knowledge of work done by a researcher named J.W. Miller
13 regarding pathologic changes in animals exposed to
14 commercial chlorinated diphenyls?

15 A. That's James Allen?

16 Q. J.W. Miller.

17 A. Oh, Miller. I cannot place that.

18 Q. Did Monsanto have knowledge, between 1966 and
19 1975 regarding work done by J.F. Treon, T-r-e-o-n; F.B.
20 Cleveland; J.W. Cappell; C-a-p-p-e-l-l; and R.W. Atchley,
21 A-t-c-h-l-e-y, regarding the toxicity of the vapors of
22 Aroclor 1242 and Aroclor 1254?

23 A. Yes. I think that predates 1966, as best I
24 recall.

25 MR. FEATHERSTONE: Objection. Beyond the

1 scope.

2 Q. (By Mr. Bradley) In 1966, though, Monsanto
3 had knowledge of that?

4 A. Oh, yes. We had knowledge, yes. We
5 participated in that.

6 Q. Did you participate in that particular study?

7 A. Yes.

8 Q. How did Monsanto participate in that study?

9 MR. FEATHERSTONE: Objection. Beyond the
10 scope.

11 A. They shared their acute toxicity work with Dr.
12 Treon and his team.

13 MR. BRADLEY: Give me a moment here.

14 THE WITNESS: Is this a good time for a break?

15 MR. BRADLEY: Yes, it is a good time for a
16 break.

17 (Whereupon, a ten minute recess was taken.)

18 Q. (By Mr. Bradley) Do you recall which studies
19 Monsanto had in 1966 that gave it knowledge that excessive
20 exposure to PCBs could result in damage to the liver?

21 A. In general, I recall the work that was done in
22 the '30s and '40s as being the basis for that conclusion.

23 Q. No studies in the '50s or '60s?

24 MR. FEATHERSTONE: Objection. Beyond the
25 scope.

1 A. I'm not aware of any.

2 Q. (By Mr. Bradley) Are you aware of the studies
3 that Monsanto had in 1966 that related exposure to PCBs
4 with chloracne?

5 A. That Monsanto had in '66?

6 MR. BRADLEY: Yes.

7 A. Yes, I'm aware of studies, or a report.

8 Q. (By Mr. Bradley) What is the name of the
9 report?

10 MR. FEATHERSTONE: Objection. Beyond the
11 scope.

12 A. I don't know under what name it went. This
13 was a reported incident of chloracne among its employees in
14 manufacturing PCBs. As best I recall, it was with the Swan
15 Chemical Company, and that effect was traced back to the
16 use of a poor quality benzene in the manufacture of
17 Biphenyl, which was eventually used in the production of
18 PCBs.

19 Q. Are there any other studies or reports that
20 you can recall that gave Monsanto knowledge in 1966 of the
21 relationship between exposure to PCBs and chloracne?

22 MR. FEATHERSTONE: Object to the form and
23 also, beyond the scope.

24 A. The records we discussed earlier by Drinker
25 and group, with reference to chloracne and chlorinated

1 hydrocarbons was also available to Monsanto.

2 Q. What studies were available to Monsanto in
3 1966 that gave Monsanto knowledge that at lower levels of
4 exposure to PCBs, instead of getting chloracne, you could
5 get chapped hands, redness or rawness of the skin?

6 MR. FEATHERSTONE: Same objection.

7 A. Again, the best person to discuss this with is
8 Dr. Kelly. I do not personally know of any formal study.
9 This is based on observation of workers who did not wear
10 the proper gloves, ending up with red skin on the hands.

11 Q. (By Mr. Bradley) Were these Monsanto workers?

12 A. Yes.

13 Q. And were those workers evaluated by any
14 medical personnel to determine whether they had a condition
15 known as chloracne?

16 MR. FEATHERSTONE: Objection. Beyond the
17 scope.

18 A. Again, Dr. Kelly would be the person to ask.

19 Q. (By Mr. Bradley) What studies or reports did
20 Monsanto have in 1966 that gave it knowledge that
21 inhalation of fumes from PCBs could result in chest
22 irritation that would resemble a severe chest cold?

23 MR. FEATHERSTONE: Beyond the scope.

24 A. This would be a study of the plant dispensary
25 records, where individual workers who had the symptoms

1 would report to the plant doctor who would, by questioning
2 employees, determine the source of irritation was exposure
3 to PCB-type fumes.

4 Q. Were those Monsanto employees, again?

5 A. Yes.

6 Q. Was the conclusion that inhalation of fumes
7 from PCBs could result in chest irritation that would
8 resemble a serious chest cold among Monsanto workers, was
9 that ever published in a journal or some professional
10 paper?

11 MR. FEATHERSTONE: Objection. Beyond the
12 scope.

13 A. No.

14 Q. In 1966, did Monsanto have knowledge that PCBs
15 absorb through the skin?

16 A. I don't know that I can correctly call it
17 knowledge of absorption, but there was an inference that
18 continued exposure to the skin, ignoring the red skin
19 symptoms, would manifest itself as chloracne, which would
20 indicate absorption through the skin and introduction into
21 the body.

22 Q. In 1966, did Monsanto have knowledge that
23 chronic poisoning may occur with repeated exposures in
24 sufficient concentrations of PCB vapor?

25 MR. FEATHERSTONE: All right. Because of the

1 way this 30B-6 deposition has proceeded - or not proceeded,
2 depending on your point of view - Mr. Papageorge is no
3 longer being tendered to respond to questions regarding
4 alleged human health effects, or potential or actual human
5 health effects from PCBs during the time period 1966 to
6 1975 or at any time, as a corporate witness.

7 MR. BRADLEY: I need to take a short break.

8 (Whereupon, a ten minute recess was taken.)

9 MR. BRADLEY: Without waiving the right to
10 challenge whether you can withdraw Mr. Papageorge as a
11 30B-6 deponent when his deposition has already started and
12 gone for four or five hours --

13 MR. FEATHERSTONE: I didn't withdraw him as a
14 30B-6 deponent. I withdrew him on human health defects or
15 hazards, or whatever the phrase is.

16 MR. BRADLEY: All right. Without waiving the
17 right to challenge your right to do that, when we were
18 taking his deposition on that topic since 9:00 this morning
19 and it's now 4:00 o'clock in the afternoon, I'll proceed to
20 question him on 30B-6 issues not related to human health.

21 Q. (By Mr. Bradley) During the period 1966 to
22 1975, did Monsanto acquire knowledge concerning any and all
23 alleged potential or actual hazards of PCBs or
24 monochlorinated biphenyls for anything, other than human
25 health?

1 A. Yes.

2 Q. What knowledge did they gain in that nine year
3 period on that topic?

4 A. There were reports that PCBs, along with DDT,
5 were suspected of causing reproduction problems with the
6 brown pelican off the Southern Coast of California. That
7 happened in about 1968. At about that time, there was
8 another report Monsanto was aware of referring to an
9 incident in the North Sea involving sea birds and seals
10 that were found dead on the beaches and all, and their
11 carcasses were analyzed and PCBs were detected; there was
12 an initial suspicion that PCBs might have been implicated.
13 There was a report in early '70 from the Gulf-Breeze,
14 Florida Commercial Fishers Laboratory that in a laboratory
15 test, young recently hatched shrimp, juvenile shrimp, were
16 extremely sensitive to very diluted PCB in water solutions.
17 There was also a report in about 1971, if my memory serves
18 me right, of a study made at Cornell University in which,
19 again, DDT and PCBs were detected in peregrine falcons and
20 the suspicion was that either, or a combination of these
21 two chemicals was affecting the reproduction of the falcon.
22 Let me think. There was a report in 1971 that flocks of
23 chicken in the Southeast were having reproduction problems
24 and that the eggs were not hatching and that some of the
25 hens were showing other symptoms of illness, and those

1 affects were attributed to the presence of PCBs in chicken
2 feed. There was a report about in 1972 that a Dr. Allen at
3 the University of Wisconsin --

4 Q. Pallen?

5 A. Allen, A-l-l-e-n, had observed some effects on
6 monkeys. The effect being a reproduction problem affecting
7 the fetus. There was also a report of a study sponsored by
8 a Dr. Renata Kimbrough in which she reported that their
9 pathologists had detected liver cells that, in his opinion,
10 were either cancerous or precancerous. They were livers of
11 test rats at high doses of hydrochlorinated PCBs, and by
12 the end of -- Well, near the end of '71, Monsanto had
13 received its final reports from the studies being conducted
14 at the Industrial Biotest Laboratories, which showed that
15 high levels of high chlorinated PCBs had an effect on the
16 test animals, in terms of weight gain and liver effect and
17 reproduction; reports also showed that the lower
18 chlorinated type of PCBs at lower levels affected the
19 reproduction of chickens. I believe I've covered all that
20 I can recall.

21 Q. When you met with Dr. Kelly and Mr. Wheeler in
22 early 1971, did they indicate to you what knowledge
23 Monsanto had at that point in time regarding any and all
24 alleged potential or actual hazards of PCBs or
25 monochlorinated biphenyls, other than adverse effects to

1 humans?

2 A. I met with them in early '70 for the first
3 time, okay?

4 Q. All right.

5 A. And at that time, we discussed the shrimp
6 report and the brown pelican report and the North Sea
7 incident. That is all that existed at that time.

8 Q I'm now showing you what has been marked for
9 identification as Plaintiff's Exhibit Four-Twenty, and ask
10 you to review that, if you would, for me.

11 A. I reviewed the documents.

12 Q. Is that a document you've seen before?

13 A. Yes, I have.

14 Q. All right. And is that a letter from Emmet
15 Kelly to you?

16 A. It's a copy of one, yes.

17 Q. And is it a letter that you received from Mr.
18 Kelly on or about March 30th, 1970?

19 MR. FEATHERSTONE: Not that it matters, but
20 it's a memo, I think.

21 A. It's a Monsanto in-house memorandum.

22 Q. (By Mr. Bradley) Does it say memorandum
23 anywhere on it?

24 A. Well, it's doesn't but the letterhead is
25 different.

1 Q. All right. And as far as you can tell, is
2 that a true and accurate copy of the letter that Dr. Kelly
3 sent to you on March 30th, 1970?

4 A. As best as I can tell, yes.

5 Q. And is that a document that you maintained in
6 a file at Monsanto?

7 A. Yes.

8 Q. Did Monsanto produce a product called Aroclor,
9 which contained PCBs?

10 A. Yes.

11 Q. Does this refresh your recollection of any
12 other alleged potential or actual hazards of PCBs or
13 monochlorinated biphenyls that came to, that Monsanto had
14 knowledge of between 1966 and 1975?

15 A. Well, I have difficulty associating the
16 presence of PCBs in milk as a hazard.

17 Q. So to you, PCBs present in milk from three cow
18 herds in Ohio does not present a hazard?

19 MR. FEATHERSTONE: Objection. Don't answer
20 the question.

21 MR. BRADLEY: On what grounds?

22 MR. FEATHERSTONE: It's beyond the scope. You
23 established the memo, and the memo says what the memo says.
24 That is all you're entitled to under the notice. Are we
25 going to argue now about what Mr. Papageorge knows about

1 this?

2 MR. BRADLEY: I am entitled under the notice
3 to get into the areas of alleged hazards.

4 MR. FEATHERSTONE: No. You're entitled to
5 have the information that Monsanto has about the - that's
6 called for in the notice. You're not entitled to get into
7 an argument about it. If you want to argue about it,
8 we'll do it at a different deposition at a different time,
9 if that's appropriate.

10 MR. BRADLEY: I'm also entitled to know what
11 Monsanto considered to be a hazard and the basis for it.

12 MR. FEATHERSTONE: He just testified to that.

13 MR. BRADLEY: He testified that he didn't
14 consider it a hazard. I now am entitled to inquire about
15 the basis of that.

16 MR. FEATHERSTONE: You didn't ask that.

17 MR. BRADLEY: That is what I asked. Let me
18 try it again.

19 Q. (By Mr. Bradley) What is the basis of your
20 comment that you do not, that Monsanto did not see a
21 particular hazard from PCBs in milk?

22 MR. FEATHERSTONE: Object to the form.

23 MR. BRADLEY: Would you read back the
24 gentleman's answer to my last question?
25 (Whereupon, the reporter propounded the previous answer.)

1 Q. (By Mr. Bradley) What is the basis of your
2 difficulty associating the presence of PCBs in milk as a
3 hazard?

4 A. There is no evidence to suggest that
5 concentration of PCBs of this magnitude in milk were known
6 to create any health problems when the milk is consumed.

7 Q. Did you discuss the contents of this
8 memorandum with Dr. Kelly?

9 A. Certainly.

10 Q. Do you know whether, between the period 1966
11 to 1975, Monsanto ever gained knowledge that a government
12 agency restricted the use of PCBs in concrete silos whose
13 interior surfaces were painted using a formulation that
14 contained Aroclor 1254?

15 A. I know of no agency that addressed the
16 presence of PCBs in silos.

17 Q. Do you know of any agency that addressed the
18 presence of PCBs in paints using a formulation that
19 contained Aroclor 1254?

20 MR. FEATHERSTONE: Beyond the scope.

21 A. I recall the Food and Drug Administration
22 having an interest. I don't recall, or remember if they
23 ever issued a guideline or a regulation regarding the
24 paint, itself.

25 Q. (By Mr. Bradley) Was there a point in time

1 when Monsanto manufactured paint using a formulation that
2 contained Aroclor 1254?

3 A. Monsanto never manufactured paint.

4 Q. Excuse me. Was there ever a point in time
5 between 1966 and 1975 when Monsanto gained knowledge that
6 Aroclor 1254 was being used in certain paints?

7 A. Yes.

8 Q. Was there a time between 1965 and 19 --
9 Excuse me, 1966 and 1975 when Monsanto became aware that
10 Aroclor 1254 was no longer being used in paint?

11 MR. FEATHERSTONE: Beyond the scope.

12 A. Yes.

13 Q. (By Mr. Bradley) What year did that occur?

14 MR. FEATHERSTONE: Beyond the scope.

15 A. Monsanto terminated the sales of Aroclor 1254
16 and similar PCB mixtures for use in applications such as
17 paint in August of 1970.

18 Q. (By Mr. Bradley) And why did Monsanto do
19 that?

20 MR. FEATHERSTONE: Beyond the scope.

21 A. It was believed by Monsanto that a use such a
22 paint was such that it was difficult to prevent PCBs from
23 entering the environment. Therefore, they stopped selling
24 to that type of use.

25 Q. Was one of Monsanto's concerns the use of

1 paint in silos that would contain Aroclor 1254?

2 MR. FEATHERSTONE: Beyond the scope.

3 A. That was one of the considerations.

4 Q. (By Mr. Bradley) Was there a time between
5 1966 and 1975 when Monsanto gained knowledge of the real,
6 alleged or potential hazards of PCBs in paint formulation
7 that required warning to be given to customers?

8 MR. FEATHERSTONE: Beyond the scope.

9 A. I have -- I need some help on the use of the
10 word "warning." Do you mean letters of information or --

11 MR. BRADLEY: Actually, I'm referring to the
12 last paragraph of Exhibit 420. In that last paragraph, Dr.
13 Kelly asks, does he not, "When are we going to tell our
14 customers not to use any Aroclor in any paint formulation
15 that contacts feed or water for animals or humans?" That
16 is what it says?

17 A. Yes. That was accomplished indirectly by a
18 broader action taken by Monsanto, in that these Aroclor
19 type PCBs were not marketed for any kind of paint, whether
20 it be for the conditions described in this paragraph or for
21 road stripe paint or building paints or any kind of paint.
22 So it was a broader banning of the use.

23 Q. It had to do with Aroclor as a paint?

24 MR. FEATHERSTONE: Beyond the scope.

25 A. Yes.

1 Q. (By Mr. Bradley) Between 1965/1966 and 1975,
2 did Monsanto -- Let me start all over again. Are you
3 familiar with the term biomagnification?

4 A. I believe I am, yes, sir.

5 Q. What is biomagnification?

6 A. This describes the phenomenon in which a
7 particular material is found in increasing amounts as one
8 studies the steps in the food chain, such that the creature
9 at the high, on top of the food chain is exposed to a
10 greater amount than that which exists at the bottom of the
11 food chain. That's what is referred to as magnification of
12 the amount of material detected.

13 Q. Is there a formula for determining
14 biomagnification for PCBs?

15 A. I'm not aware of any scientifically developed
16 formula. I'm aware of many investigators coming up with
17 numbers.

18 Q. What numbers -- Are those numbers an
19 investigator came up with between 1966 and 1975?

20 A. Yes, there's some.

21 Q. What numbers did they come up with?

22 MR. FEATHERSTONE: Object to the form of the
23 question. Beyond the scope, hearsay.

24 A. I have personally been made aware of numbers
25 that range from a thousand to two hundred thousand from

1 different individuals.

2 Q. (By Mr. Bradley) When did Monsanto gain
3 knowledge of the issue of biomagnification?

4 MR. FEATHERSTONE: What time period?

5 MR. BRADLEY: That's what I asked him.

6 MR. FEATHERSTONE: Well, he's limiting his
7 response from 1966 to 1975.

8 A. Well, the concept of biomagnification is not
9 unique to PCBs. The scientists in the areas of biology --

10 MR. FEATHERSTONE: Bill, stop. May I hear the
11 question back, please?

12 (Whereupon, the reporter propounded the previous question.)

13 MR. FEATHERSTONE: Beyond to scope because
14 it's not even related to PCBs.

15 MR. BRADLEY: You may answer the question.

16 A. The concept of biomagnification was not
17 limited to PCBs. Scientist within Monsanto were aware of
18 that concept. When it all started, I just can't tell you.
19 It begins, really, with the basic training of these
20 scientists.

21 Q. (By Mr. Bradley) What information, if any,
22 regarding biomagnification came to Monsanto regarding PCBs
23 between 1966 and 1975?

24 THE WITNESS: Came from Monsanto?

25 MR. BRADLEY: Came to Monsanto

1 THE WITNESS: To Monsanto.

2 A. The concept was shared with Monsanto, to my
3 knowledge, as it relates to PCBs, in 1970.

4 Q. (By Mr. Bradley) And how did Monsanto gain
5 knowledge of biomagnification with regard to PCBs in 1970?

6 A. There was informal input gained when our
7 analytical chemists would have dialogues with chemists with
8 many laboratories who were testing, looking for PCBs. To
9 my knowledge, the first - I'm going to refer to as formal
10 type of discussion, open discussion, in a group, occurred
11 about March, 1970.

12 Q. Were you present for that group discussion?

13 A. I was.

14 Q. Who else was present?

15 A. Well, there were about thirty or forty
16 attendees.

17 Q. Where did the discussion take place?

18 A. Duluth, Minnesota.

19 Q. Where in Duluth?

20 A. In the Federal Water Pollution Control
21 Laboratory.

22 Q. Were you invited to attend that group
23 discussion?

24 A. I was.

25 Q. Were papers presented at that discussion?

1 A. No.

2 Q. Were presentations made at that discussion?

3 A. Yes.

4 Q. Who made presentations?

5 A. Oh, I don't remember all of the speakers. Dr.
6 Mount, the director of the laboratory. There were - I
7 don't recall their names. The chemists from the State of
8 Wisconsin regulatory agency that concerned themselves with
9 water; Monsanto made presentations. There was some people
10 from Michigan. In fact, there were representatives from
11 all the states along the Great Lakes.

12 Q. Who, from Monsanto, made a presentation?

13 A. There were three of us: Jack Garrett
14 representing the medical department, Dr. Robert Keller
15 representing the analytical research department; and I
16 spoke on the manufacture and uses of PCBs.

17 Q. Do you recall what Jack Garrett presented at
18 that discussion?

19 A. He shared with the audience --

20 MR. FEATHERSTONE: Beyond the scope.

21 A. He shared with the audience the medical
22 department's information with regard to the acute testing,
23 subchronic, the ongoing chronic studies.

24 Q. (By Mr. Bradley) And do you recall what Dr.
25 Keller presented at that discussion?

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1 MR. FEATHERSTONE: Same objection.

2 A. Dr. Keller described Monsanto's efforts to
3 develop analytical methodology for gases, liquids and
4 solids that was reliable, reproducible, and offered to
5 share with the audience copies of Monsanto's procedures and
6 asked for comments from those who were in a position to
7 evaluate.

8 Q. Between 1966 and 1975, did Monsanto consider
9 biomagnification of PCBs to be an alleged potential or
10 actual hazard?

11 A. Monsanto's understanding of the word "hazard"
12 is not based on amount so much as it is on exposure to
13 living things and levels of exposure, and the results from
14 that exposure. So presence alone was not considered a
15 hazard. Pebbles on the beach, if I can use that
16 expression.

17 Q. But certainly, if you're interested in levels,
18 then biomagnification must have been of some interest?

19 MR. FEATHERSTONE: Beyond the scope.

20 MR. BRADLEY: Let me ask it this way.

21 Q. (By Mr. Bradley) Does not biomagnification
22 relate to the level of PCB exposure in the food chain?

23 MR. FEATHERSTONE: Beyond the scope.

24 A. It certainly does but then, you need a lot
25 more information to establish whether that level in that

1 algae is going to affect some living creature because
2 there's a lot of information still missing.

3 Q. Now, I'm going to show you what's marked for
4 identification as Plaintiff Exhibit 422, and ask if you've
5 seen that document before.

6 MR. FEATHERSTONE: Did you identify it as
7 Plaintiff's Exhibit?

8 MR. BRADLEY: Yes, I did.

9 A. I recall seeing this document in situations
10 such as this one.

11 Q. That is a rough draft of an outline entitled
12 "PCB Environmental Pollution Abatement Plan," dated
13 11-10-69; is that correct?

14 A. That's what it says.

15 Q. Did Monsanto learn in --

16 MR. MASKIN: I'm sorry. What's the date of
17 the document?

18 MR. BRADLEY: 11-10-69.

19 Q. (By Mr. Bradley) Did Monsanto learn, between
20 1966 and 1975, that marine or aquatic species concentrate
21 PCB in the fatty tissue?

22 A. Yes. That's part of the biomagnification
23 concept.

24 Q. Within that nine year period, did Monsanto
25 learn that PCBs are toxic in small quantities, down to nine

1 parts per billion to sensitive marine life, such as shrimp?

2 A. Yes. That was the shrimp study I referred to
3 earlier.

4 Q. Did Monsanto learn between 1966 and 1975 that
5 predatory species feeding on the marine or aquatic life can
6 further concentrate PCB to possible harmful effects?

7 A. That refers to the falcon and the pelican.
8 Yes.

9 MR. BRADLEY: Could we go off the record for a
10 moment?

11 (Whereupon, a discussion was held between Counsel, off the
12 record.)

13 Q. (By Mr. Bradley) Did Monsanto learn prior to
14 -- Excuse me. During the period 1966 to 1970, that in
15 birds, PCBs can affect the calcium metabolism, leading to
16 eggshell imperfections which prevent proper hatch of the
17 young?

18 A. Well, Monsanto was aware of that hypothesis to
19 describe what happens when eggshells don't form properly.

20 Q. Well, in fact, Monsanto confirmed that
21 eggshell problem by feeding chickens, a high order of the
22 species, PCBs in controlled tests; isn't that correct?

23 A. Yes. But that - all that showed was the
24 result. The effect on calcium metabolism and enzymes and
25 all, I don't know of any study to demonstrate that.

1 Q. Did Monsanto know, between 1966 and 1970, of
2 any environmental damage caused by PCBs in swimming pool
3 paint?

4 A. I'm not aware of any environmental damage
5 related to swimming pool paint.

6 MR. MASKIN: Swimming pool what?

7 THE WITNESS: Paint.

8 MR. FEATHERSTONE: Paint.

9 Q. (By Mr. Bradley) Did Monsanto know, between
10 1966 and 1970, of any environmental contamination from
11 plasticizers containing PCBs?

12 MR. FEATHERSTONE: Beyond the scope.

13 A. I could use some help on the definition of
14 plasticizer because within Monsanto, they have a unique
15 definition.

16 MR. BRADLEY: Would you turn to page eight of
17 Plaintiff's Exhibit 422? About two thirds of the way down,
18 you see the number two, and plasticizers?

19 THE WITNESS: I don't have a page eight. I go
20 five to ten. There, it is.

21 MR. FEATHERSTONE: Pages are out of order.

22 Q. (By Mr. Bradley) See the term plasticizer
23 there?

24 A. I do.

25 Q. When I refer to plasticizer -- First of all,

1 let me ask you. Do you know what was meant by the term
2 plasticizer as it appears in Plaintiff's Exhibit 422?

3 A. I believe I do, yes, sir.

4 Q. All right. And what do you believe the term
5 refers to?

6 MR. FEATHERSTONE: Object to the form.

7 MR. BRADLEY: All right. Let me ask it this
8 way.

9 Q. (By Mr. Bradley) What does that term,
10 plasticizer, mean as used at page eight of Plaintiff's
11 Exhibit 422?

12 A. Well, PCB terminology, I would suggest that
13 the word "miscellaneous" might be more appropriate. These
14 are uses other than as fluids in machinery and so on.

15 Q. So now let's go back to my question, and if
16 the court reporter would read it back. This all started
17 with him asking what I meant by plasticizer.
18 (Whereupon, the reporter propounded the previous question.)

19 THE WITNESS: I heard 1970. So limit just to
20 that one year?

21 MR. BRADLEY: 1966 to 1975.

22 THE WITNESS: Just that one year?

23 MR. BRADLEY: No. Four year period, 1966 to
24 1970?

25 THE WITNESS: I'm sorry.

1 MR. BRADLEY: I'm still not sure you heard me
2 right. Not '60 to 70. '66 to '70.

3 THE WITNESS: Yes. Four years.

4 MR. BRADLEY: Right.

5 A. Monsanto had not received, other than the silo
6 situation, information of any contamination that could be
7 traced back to a PCB use.

8 Q. Between 1966 and 1970, did Monsanto gain
9 knowledge regarding any alleged potential or actual hazards
10 of PCBs and the incineration of wax coatings?

11 A. No.

12 Q. Between 1966 and 1970, did Monsanto gain any
13 knowledge of any alleged potential or actual hazards of
14 PCBs in traffic paints?

15 A. No.

16 Q. Would you now refer to, again, to page eight
17 of Plaintiff's Exhibit 422.

18 A. I have it.

19 Q. Does that document not indicate that as of
20 November 10, 1969, Monsanto considered PCBs to be
21 indirectly put into the environment through traffic paints?

22 MR. FEATHERSTONE: Beyond the scope.

23 A. The document we're looking at is a rough draft
24 of a proposed presentation. The comments you pointed out
25 on page eight are the speculative conclusions of the

1 author, and I don't know who it was in this case who sat
2 back and visualized these applications, and from his
3 personal knowledge concluded that a traffic line, once it's
4 worn by the traffic, results in paint that's mixed with
5 dirt and what have you - tire, rubber and all - and
6 eventually ends up on the shoulders of the road. To him,
7 that meant an environmental contamination.

8 Q. (By Mr. Bradley) All right.

9 A. So this really is speculation on the part of
10 the author. There was no data, such as a sample from the
11 shoulder of the road, that was analyzed and directly
12 related to the traffic paint, and the water that came out
13 of a swimming pool analyzed to determine if there was any
14 PCB in it. None of that existed.

15 Q. During the 1966 to 1970 period, did Monsanto
16 learn that PCBs were indirectly entering the environment
17 through printing inks and paper?

18 THE WITNESS: That's through 1966 to '70?

19 MR. BRADLEY: Four year period

20 THE WITNESS: Four year period.

21 A. No.

22 Q. (By Mr. Bradley) Did they learn about that
23 before 1966?

24 A. No.

25 Q. Did they learn about that after -- Between

1 1970 and 1975?

2 A. Yes.

3 Q. When did they learn that?

4 A. As best as I can remember, it was about 1971,
5 '72.

6 Q. Did Monsanto learn, between 1966 and 1970,
7 that PCBs were indirectly entering the environment from
8 paper coatings?

9 A. No.

10 Q. Did they learn about that after 1970 and
11 before 1975?

12 A. Yes.

13 Q. When did they learn that?

14 A. About that 1971-'72 period.

15 Q. Did somebody -- Did Monsanto request a study
16 be performed to determine whether PCBs were entering the
17 environment through paper coatings?

18 A. No.

19 Q. Did somebody study that on their own?

20 A. Monsanto analyzed samples on its own and, as I
21 recall, the Food and Drug Administration had a study and
22 also, there was an incident in New York with some poultry
23 contamination with PCBs that were considered to have come
24 from bread wrappers and cookie cartons and so on.

25 Q. Between 1966 and 1975, did Monsanto initiate

1 or cause to have happen any studies regarding whether PCBs
2 are present in swimming pool paints?

3 A. No.

4 Q. Between 1966 and 1975, did Monsanto initiate
5 or commission any studies to determine whether PCBs were
6 caused by the incineration of wax coatings?

7 A. No.

8 Q. Between 1966 and 1975, did Monsanto commission
9 any studies to determine whether PCBs are an environmental
10 contaminant through their presence in traffic paints?

11 A. No.

12 Q. Between 1966 and 1970, did Monsanto gain
13 knowledge that PCBs were indirectly entering the
14 environment through certain adhesives?

15 THE WITNESS: Did Monsanto determine, was your
16 question?

17 MR. BRADLEY: I'll rephrase the question.

18 Q. (By Mr. Bradley) Between 1966 and 1970, did
19 Monsanto gain knowledge that PCBs indirectly entered the
20 environment through certain adhesives?

21 A. No.

22 Q. Did Monsanto learn that between 1970 and 1975?

23 MR. FEATHERSTONE: Object to the form.

24 Q. (By Mr. Bradley) Did Monsanto learn between
25 1970 and 1975 that PCBs were indirectly entering the

1 environment through certain adhesives?

2 A. We were aware of reports that indicated that
3 the source of PCBs could well have been the adhesives
4 associated with these packages I talked about earlier.

5 Q. Did Monsanto commission those reports
6 regarding PCBs indirectly entering the environment through
7 certain adhesives?

8 A. No.

9 Q. Did General Electric initiate those?

10 A. No.

11 Q. Westinghouse?

12 A. No.

13 Q. Who did?

14 MR. FEATHERSTONE: Well beyond the scope.

15 MR. MASKIN: Also, no foundation.

16 A. It was either the Department of Agriculture,
17 because of poultry involvement, or the Food and Drug
18 Administration.

19 MR. FEATHERSTONE: Tell me when there would be
20 a good time to stop for a break, Mr. Bradley.

21 MR. BRADLEY: This is an acceptable time for
22 me.

23 (Whereupon, a fifteen minute recess was taken.)

24 Q. (By Mr. Bradley) Between 1966 and 1970, did
25 Monsanto gain knowledge that, by far, the most critical

1 problem regarding PCBs was water contamination?

2 A. Yes.

3 Q. When did Monsanto gain that knowledge?

4 A. I would suggest about 1970, after the
5 analytical methods were well developed.

6 Q. Between 1966 and 1970, did Monsanto gain
7 knowledge that its PCB manufacturing facilities contributed
8 a sizable quantity of PCBs, causing a water contamination
9 problem?

10 MR. FEATHERSTONE: Objection. Beyond the
11 scope.

12 A. Well, as I indicated earlier, that reflects
13 the opinions of the author. Monsanto was aware of the PCBs
14 that were introduced into the municipal treatment plants
15 through the water effluent. As to whether it was creating
16 a problem or not, I don't have any evidence at all to
17 indicate that to this day.

18 Q. The PCBs that got into fish came from PCBs in
19 the water; is that correct?

20 MR. FEATHERSTONE: Objection. Beyond the
21 scope. Also, calls for speculation, vague, indefinite.

22 A. I don't know that anyone could determine in
23 wildlife that the presence of PCBs in fish came from the
24 water itself or from the food the fish consumed.

25 Q. (By Mr. Bradley) Between 1966 and 1975, did

1 Monsanto gain knowledge that shrimp were contaminated with
2 PCBs as a result of PCBs in the water?

3 MR. FEATHERSTONE: Object to the form.
4 Cumulative. Asked and answered. Beyond the scope.

5 A. I don't recall a report that Monsanto was
6 aware of fish, shrimp, being contaminated with PCBs.

7 Q. (By Mr. Bradley) Would you turn to page four
8 of Plaintiff's Exhibit 422, and in the middle of the page,
9 read the section under number one, called "Fish?"

10 A. I see that.

11 Q. Does that refresh your recollection on PCBs
12 being studied relative to shrimp?

13 MR. FEATHERSTONE: Object to the form.

14 MR. BRADLEY: What's wrong with the form?

15 MR. FEATHERSTONE: The witness doesn't have a
16 recollection and needs to be refreshed, according to his
17 testimony on that point.

18 A. As I understood your initial question, you
19 asked if we were aware of any tests that demonstrated the
20 presence of PCBs in shrimp. This sentence you refer to on
21 page four, item one, refers to a laboratory test conducted
22 at the Commercial Fisheries Laboratory in Gulf-Breeze,
23 Florida, where these newly hatched shrimp were dumped into
24 water containing low quantities of PCBs and they did not
25 survive.

1 Q. (By Mr. Bradley) I'm going to show you
2 Plaintiff's Exhibit 415 and ask you to review that
3 document.

4 A. I have scanned the article, document.

5 Q. Is that a copy of a letter authored by you
6 and sent to Mr. Jenkins on July 8, 1970?

7 A. It appears to be, yes, sir.

8 Q. Does it appear to be a fair and accurate copy
9 of a letter you sent to Mr. Jenkins on that date?

10 MR. FEATHERSTONE: With or without the
11 attachment?

12 MR. BRADLEY: As it is.

13 A. Well, there are attachments missing and the
14 letterhead has been masked here. Other than that, it
15 appears to be a copy.

16 Q. All right. You have a section -- And is this
17 a copy of a letter that you may retain in your files at
18 Monsanto?

19 A. Yes.

20 Q. You have a section there, on the first page,
21 called biodegradeability, and your first sentence says,
22 "Biodegradation studies conducted in our research
23 laboratories in St. Louis, Missouri and in Rubin, Wales,
24 using median consisting of local river waters or activated
25 sludges acclimated to biphenyl gave direct evidence that

1 the lower chlorinated biphenyls are affected." What does
2 that sentence mean?

3 A. That means that the lower chlorinated types of
4 PCBs were not detected in the water sample after a given
5 period of time, indicating that biodegradation had taken
6 place and the PCB was destroyed.

7 Q. Were those studies that were maintained in the
8 medical department of Monsanto?

9 A. No. This is the research department.

10 Q. When was the study completed for the
11 laboratory in St. Louis, Missouri?

12 A. Late 1971, early 1972.

13 Q. In your letter, which is dated 1970, you refer
14 to study results. Were those preliminary study results?

15 A. Yes.

16 Q. When did you obtain preliminary study results
17 regarding biodegradation in your research laboratory in
18 Rubin, Wales?

19 A. Early 1970 they started coming in.

20 Q. Under the section labeled toxicity, about half
21 way down, you indicate that, "Juvenile shrimp did not
22 survive in water containing five parts per billion of PCB
23 in a study conducted in a lab through the U.S. Fisheries
24 Laboratory." Is that the study you have been referring to
25 earlier?

1 A. It is.

2 Q. In your letter on the second page at the
3 bottom, you refer to analytical methodology, and you say,
4 "I have attached copies of Monsanto's analytical procedures
5 for the determination of PCBs in water, soil, air and
6 biological samples." Correct?

7 A. I do.

8 Q. My question is, when did Monsanto develop
9 analytical procedures for the determination of PCBs in
10 water?

11 MR. FEATHERSTONE: Beyond the scope.

12 A. By 1968, the methodology had been developed to
13 the point where it was considered acceptable. However, the
14 attempts to improve on it did not stop, they continued in
15 an attempt to develop methods that could get down to lower
16 and lower levels. That methodology was refined by 1969.

17 Q. (By Mr. Bradley) Does Monsanto -- Between
18 1966 and 1975, did Monsanto have analytical procedures for
19 the determination of PCBs in water down to parts per
20 billion?

21 A. Yes.

22 Q. When did Monsanto develop analytical
23 procedures for the determination of PCBs in soil?

24 A. It was available in 1970, early 1970.

25 Q. After analytical procedures were developed for

1 the determination of PCBs in water?

2 A. Yes.

3 Q. Did Monsanto have the analytical procedure for
4 the determination of PCBs in soil down to parts per billion
5 between 1966 and 1975?

6 A. Yes.

7 Q. And when did they develop that procedure?

8 A. It was available by mid 1970.

9 Q. When did Monsanto develop the analytical
10 procedure for the determination of PCBs in air?

11 A. At the same time.

12 Q. The same time as they did for soil?

13 A. Yes.

14 Q. And again, are they able to, roughly in the
15 early 1970s, were they able to determine PCBs in air in
16 parts per billion?

17 A. Yes.

18 Q. When did Monsanto develop analytical
19 procedures for the determination of PCBs in biological
20 samples?

21 A. Again, at about that same time.

22 Q. And about that same time, did Monsanto's
23 analytical procedures allow for the detection of PCBs in
24 biological samples down the parts per billion?

25 A. Yes.

1 MR. FEATHERSTONE: By that same time, are we
2 talking about 1970 now?

3 Q. (By Mr. Bradley) Early 1970?

4 A. Yes.

5 Q. Between 1966 and 1975, did Monsanto hear of
6 PCBs as a potential environmental contaminant?

7 A. Yes.

8 Q. In what year did Monsanto first hear of PCBs
9 as a potential environmental contaminant?

10 A. 1966.

11 Q. I'm going to show you what's marked for
12 identification as Plaintiff's Exhibit 1166 and ask you to
13 review that document.

14 A. I have read the document.

15 Q. In the document, you refer to professors
16 Widmark and Jensen at the University of Stockholm. Did
17 they write a report in 1966?

18 MR. FEATHERSTONE: Objection. Beyond the
19 scope. Calls for speculation.

20 MR. BRADLEY: Let me rephrase the question.

21 Q. (By Mr. Bradley) Did those two authors write
22 a report regarding the presence of PCBs in the environment
23 in 1966?

24 A. I recall their report. I also recall that
25 they made a presentation. I do not recall the date of what

1 I'm going to call the scientific report. There were news
2 clippings that covered that meeting.

3 Q. Were you shown any report written by
4 Professors Widmark and Jensen at the University of
5 Stockholm when you had your tutorial sessions with Dr.
6 Kelly or the other gentleman you had a tutorial with?

7 A. Mr. Wheeler.

8 Q. Mr. Wheeler.

9 A. I don't recall any report, other than the
10 newspaper or journal clipping.

11 Q. Do you recall whether you saw a journal or
12 newspaper clipping regarding a report issued by Professor
13 Widmark and Jensen at the University of Stockholm regarding
14 PCBs in the environment in 1966?

15 A. The report was dated 1966, this clipping.

16 Q. All right.

17 A. And it reported the presentation of that
18 information at a meeting. I was shown that clipping in
19 1970.

20 Q. During 1968, did Monsanto have the methodology
21 to test to determine whether the higher chlorinated
22 biphenyls were present in the tissues of fish and birds?

23 MR. FEATHERSTONE: Down to what level?

24 A. Methodology was available to detect PCBs and
25 to identify the level of chlorination. There was work

1 still under way to improve the ability to quantify what the
2 chemist was seeing.

3 Q. (By Mr. Bradley) In 1968, did Monsanto have a
4 methodology to determine the presence of higher chlorinated
5 biphenyls in the tissues of fish and birds down to parts
6 per million?

7 A. Yes.

8 Q. And parts per billion?

9 A. Not quite.

10 Q. On page two of the second full paragraph that
11 begins, "The PCBs..."

12 A. I see it.

13 Q. That paragraph refers to some studies. Were
14 those the studies conducted for Monsanto by IBT?

15 A. Yes.

16 Q. I neglected to ask you, what is Plaintiff's
17 Exhibit 1166?

18 A. Sorry?

19 Q. What is it.

20 MR. FEATHERSTONE: The document. He wants you
21 to identify the document.

22 A. This is the text of a talk I gave at the first
23 formal meeting of a committee that was formed in 1971
24 called the ANSI Committee, C-107.

25 Q. (By Mr. Bradley) ANSI refers to what?

1 A. American National Standards Institute.

2 Q. Who else were committee members of C-107 with
3 ANSI at the time you gave your presentation on September
4 14th, 1971?

5 A. It was over thirty people. I don't propose to
6 recall all of them by name.

7 Q. Do you recall whether anyone employed by
8 General Electric was on that committee?

9 A. Yes.

10 MR. FEATHERSTONE: Beyond the scope.

11 Q. (By Mr. Bradley) Do you recall whether anyone
12 employed by Westinghouse was on that committee?

13 A. Yes.

14 MR. FEATHERSTONE: Beyond the scope.

15 Q. (By Mr. Bradley) Do you recall whether anyone
16 from Nevada Power Company was on that committee?

17 MR. FEATHERSTONE: Beyond the scope.

18 A. They were not.

19 Q. (By Mr. Bradley) In 1971, was Monsanto aware
20 of reports of fish kills and some very drastic effects
21 attributed to PCBs?

22 MR. FEATHERSTONE: Object to the form.

23 MR. BRADLEY: What's wrong with the form?

24 MR. FEATHERSTONE: Go ahead and answer, Mr.
25 Papageorge. You don't really want to debate with me, Mr.

1 Bradley. I don't want to debate with you at ten of six.
2 I'll make objections, the Judge will rule on them. If he
3 sustains them, fine; if he doesn't, I'll live with it.

4 A. We, Monsanto, kept hearing reports of fish
5 kills and we tried to follow up and determine the cause and
6 we did not succeed in determining the cause of those fish
7 kills that were known to us, or made known to us.

8 Q. (By Mr. Bradley) Who reported the fish kills
9 to you?

10 MR. FEATHERSTONE: Object to the form of the
11 question.

12 A. I don't recall anyone specific.

13 Q. (By Mr. Bradley) How did you learn about the
14 allegations of fish kills?

15 A. It would generally come from a Monsanto plant
16 where some regulatory agency would contact them, they would
17 relay it in to St. Louis. That's generally the way we
18 heard about it.

19 Q. What did Monsanto do when it heard reports of
20 fish kills and some very drastic effects attributed to
21 PCBs?

22 MR. FEATHERSTONE: Object to the form of the
23 questioning.

24 A. We asked the location nearest that incident,
25 where the incident took place, to send out individuals and

1 try to get as much information as they can, including
2 samples for processing.

3 Q. Were samples ever obtained of fish that had
4 been killed?

5 A. Yes. I recall some. Uh-huh.

6 Q. And was testing ever performed on those fish
7 samples?

8 A. Yes, sir.

9 Q. And what were the results of the tests?

10 MR. FEATHERSTONE: Object to the form of the
11 questioning.

12 A. Some showed no PCBs and some showed some PCBs.
13 A mixture of results.

14 Q. (By Mr. Bradley) And when were the tests
15 done?

16 A. Oh, in the period 1970, '71.

17 Q. Who performed the tests?

18 A. The analytical research laboratory in St.
19 Louis, the group that developed the methodology.

20 Q. Do you remember the levels of PCBs found in
21 the fish that had PCBs in them?

22 A. No, I don't. I'd have to see the reports
23 again.

24 Q. Do you recall the highest level?

25 A. No, I don't.

1 Q. Do you recall whether it was in parts per
2 million?

3 A. Yes, it was parts per million, and I don't
4 recall anything --

5 MR. MASKIN: I'm sorry. Parts per billion?

6 A. Parts per million, and I don't recall any
7 number that was dramatically high, to the point where it
8 impressed me to the point that I remember the number.

9 Q. (By Mr. Bradley) Do you recall, at that time,
10 whether there were FDA limits regarding the amount of
11 allowable PCBs in fish?

12 MR. FEATHERSTONE: Object to the form. Also,
13 beyond the scope. So the question is misleading.

14 A. As I remember, FDA had issued guidelines as
15 distinguished from regulations, at which they listed the
16 amount of PCBs permissible in fish in commerce.

17 Q. (By Mr. Bradley) And did the levels found in
18 the fish that were tested by Research Triangle exceed the
19 amounts recommended -- Excuse me. Let me rephrase the
20 question. Did the amounts in the fish that were tested by
21 Monsanto exceed the amounts recommended in the FDA
22 guidelines?

23 MR. FEATHERSTONE: Object to the form of the
24 questioning.

25 A. I don't remember.

1 Q. Between 1966 and 1972, did Monsanto gain
2 information about the presence of PCBs in crab?

3 MR. FEATHERSTONE: When you say that, Mr.
4 Bradley, are you saying any time during that time period?

5 MR. BRADLEY: Between 1966 and 1972, that's
6 correct.

7 MR. FEATHERSTONE: Any time during that time
8 period.

9 MR. BRADLEY: Yes.

10 MR. FEATHERSTONE: Okay.

11 A. We were informed by the fish laboratory in
12 Gulf-Breeze, Florida that some studies they had conducted
13 indicated crab exposed to PCBs did contain PCBs in their
14 tissues.

15 Q. (By Mr. Bradley) On page four of Plaintiff's
16 Exhibit 415, at the top - Actually, it begins on page three
17 at the end - it says, "We have talked with scientists at
18 the Gulf-Breeze, Florida Commercial Fisheries Laboratory.
19 They have conducted studies with crab and shrimp. This is
20 the laboratory that did detect a build-up in crab and also
21 the lethal effect on juvenile shrimp." Did I read that
22 correctly?

23 A. Yes, sir.

24 Q. What did you mean when you said this is the
25 laboratory that detected a build-up in crab?

1 A. This is the laboratory that tested crab and
2 analyzed the tissue and found PCBs.

3 Q. All right.

4 A. These are not crab caught in the Gulf.

5 Q. Did Monsanto gain knowledge, between 1966 and
6 1975, that PCBs were building up in the marine environment?

7 A. Yes.

8 Q. When did Monsanto gain that knowledge?

9 A. It was an evolving situation in which, in a
10 way, started with the Jensen/Widmark study, and as the
11 methodologies were improved and more laboratories became
12 involved, of course more studies were made and the reports
13 were available. So Monsanto became aware of the degree to
14 which PCBs were scattered out in the environment.

15 Q. Did Monsanto write -- Or excuse me. Did
16 Monsanto ever learn -- It's getting late. I'll try it one
17 more time. Did Monsanto learn between 1966 and 1972 that
18 PCBs were being used in certain pesticides, such as
19 lindane?

20 MR. FEATHERSTONE: Again, is this at any point
21 in time during that time period '66 to '72?

22 A. Yes.

23 Q. (By Mr. Bradley) When did Monsanto gain that
24 knowledge?

25 A. 1970.

1 Q. Did Monsanto ever write to the Department of
2 Agriculture regarding the use of PCBs in pesticides?

3 A. Yes.

4 Q. Was that in 1970?

5 A. Yes.

6 Q. And what was the substance of the letter to
7 the Department of Agriculture?

8 MR. FEATHERSTONE: Beyond the scope.

9 A. The letter -- I don't propose to remember all
10 the words but in essence, it indicated that PCBs would have
11 been determined to be present fairly widely in the
12 environment. We were aware of suggestions made by the
13 Department of Agriculture that PCBs could be used in
14 pesticides to extend their effectiveness, that we suggested
15 that that is not a proper use because we sensed, or
16 believed that if it was widely used, PCBs would be
17 scattered even more so in the environment. Recommendation
18 was made to, in essence, ban the use of PCBs as a pesticide
19 extender.

20 Q. Did Monsanto gain knowledge between 1966 and
21 1972 that Congressman William Ryan was proposing
22 legislation to ban PCB because it posed a threat to the
23 environment?

24 A. Yes.

25 Q. When did Monsanto gain that knowledge?

1 A. 1970, as I recall.

2 Q. Between 1966 and 1972, did Monsanto learn that
3 certain uses of PCBs were grossly contaminating the
4 environment?

5 MR. FEATHERSTONE: Before you answer that, Mr.
6 Papageorge, when you use the time period, you're talking
7 about at any time; is that right?

8 MR. BRADLEY: At any time.

9 MR. FEATHERSTONE: All right. Just before,
10 you were going up to '75 and now you're '72. Is that
11 because of the date of this document?

12 MR. BRADLEY: Because of the date of the
13 document.

14 MR. MASKIN: Objection as to form, though.

15 THE WITNESS: I forgot the question now.

16 Q. (By Mr. Bradley) Between 1966 and 1972, did
17 Monsanto gain knowledge that some uses of PCBs were grossly
18 contaminating the environment?

19 MR. FEATHERSTONE: I object to the form.

20 MR. BRADLEY: If it helps you, I'm referring
21 to the paragraph at the top of page ten of Plaintiff's
22 Exhibit 415.

23 A. I was wrestling with the use of the word
24 "grossly."

25 Q. At page ten of Plaintiff's Exhibit 415, the

1 first paragraph says, "But we thought that we had made some
2 tremendous strides in the right direction to preserve those
3 uses which we thought were essential while eliminating
4 those uses which were grossly contaminating the
5 environment." Is that what that says?

6 A. That is true.

7 Q. When you wrote that, what uses of PCBs were
8 grossly contaminating the environment?

9 A. These are the uses that we perceived and
10 defined as open uses, which were primarily the plasticizer
11 use - you may remember that use, the one that I believe
12 ought to be called miscellaneous uses; the paints,
13 varnishes, the calkings, the sealants, adhesives, inks.
14 Those are the uses that we concluded, without any formal
15 study, really, that if anything is getting into the
16 environment, those are the uses that are.

17 Q. What do you mean when you used the term
18 "grossly contaminating the environment?"

19 A. I was trying to come up with an adjective to
20 distinguish between a minor release as compared to a, one
21 that had no control, whatever. Just once it was out there,
22 it's in the environment literally.

23 Q. Did Monsanto become aware in 1971 of a bill
24 referred to as the Toxic Substances Act of 1971?

25 A. Yes.

1 Q. Was the purpose of the bill to prevent the
2 introduction of PCBs into the environment?

3 MR. FEATHERSTONE: Object to the form. Also,
4 calls for speculation, beyond the scope.

5 A. The purpose of the bill was to control the use
6 of materials that were defined as hazardous by someone and
7 prevent their release into the environment.

8 Q. (By Mr. Bradley) Did Monsanto learn in 1971
9 that PCB was brought out in committee discussions regarding
10 the proposed Toxic Substances Act of 1971 as an example of
11 a material introduced into societies and thought at one
12 time to be most valuable but is not considered a serious
13 threat to all of us?

14 A. That is the thinking that existed at the time
15 the initial Toxic Substances Act was introduced.

16 Q. Between 1966 and 1972, did Monsanto learn that
17 fairly high levels of PCBs were being found in the recycled
18 material used in cereal boxes, cracker boxes and other
19 boxes made from what is known as chipboard?

20 A. Yes.

21 Q. When did they learn that?

22 A. Oh, this was, as I mentioned previously, as I
23 remember, it was in '71, with a poultry incident in the New
24 York area and boxes being involved.

25 Q. Looking at page fifteen, in the middle of the

1 page, the first sentence of that paragraph. You go on to
2 say, at line three, "Many of these PCBs are man-made and
3 were introduced to the environment because of our lack of
4 understanding of what these materials can do to the
5 environment." Are there any PCBs that are not man-made?

6 A. Not to my knowledge. Let me put it another
7 way. Not of the type that would give the fingerprints,
8 with all these different levels of chlorination.

9 Q. What did you mean when you wrote that PCBs
10 were introduced to the environment because of our lack of
11 understanding of what these materials can do to the
12 environment.

13 MR. FEATHERSTONE: Again, the scope.

14 A. The understanding of PCBs was one that
15 prevailed throughout the world, that they were so inert
16 they wouldn't react with anything. Therefore, because of
17 that inertness, couldn't get involved in any metabolism in
18 any creature or harm any vegetation. To use the expression
19 I used earlier, they were perceived, if they got out there,
20 they would be as pebbles on a beach. They would be there
21 but they would do no harm because of their inertness.

22 Q. When, in fact, they did cause harm?

23 MR. FEATHERSTONE: Object to the form of the
24 question. Vague, beyond the scope.

25 A. It caused somewhat -- They did cause some

1 effects on some creatures at certain levels, certain
2 conditions.

3 MR. BRADLEY: It's nearly 6:15. I'm going to
4 adjourn this until tomorrow morning at 8:30.

5
6 (Whereupon, the deposition was adjourned untill 8:30 a.m.,
7 February 24, 1993.)

8
9 Q. (By Mr. Bradley) Mr. Papageorge, you
10 understand you're still under oath today?

11 A. I do.

12 Q. I'm going to show you what's been marked for
13 identification as Plaintiff's Exhibit 421 and ask you to
14 review that document for me.

15 MR. FEATHERSTONE: Do we have a pile of the
16 exhibits that you've used so far in the deposition?

17 MR. BRADLEY: There was one last evening. I
18 don't know if the court reporter -- Off the record.
19 (Whereupon, a discussion was held between Counsel, off the
20 record.)

21 Mr. BRADLEY: Mr. Papageorge, when you're done
22 discussing that document, why don't you hand it over to Mr.
23 Featherstone, and that will be true for all the documents
24 that I show you today.

25 MR. FEATHERSTONE: Off the record.

1 (Whereupon, a discussion was held between Counsel, off the
2 record.)

3 THE WITNESS: I've reviewed the documents.

4 Q. (By Mr. Bradley) Did Monsanto, in 1969, have
5 a Corporate Development Committee?

6 A. Yes.

7 Q. And is this exhibit a copy of the minutes of
8 the meeting of that committee, held November 17th, 1969?

9 A. It represents copies of portions of the
10 minutes taken at that meeting.

11 Q. All right. And is this the sort of document
12 that Monsanto would continue to keep in its records
13 regarding its routinely conducted business?

14 A. Yes.

15 Q. And would you now turn to the second page, and
16 do you see a section there marked "Environmental Aspects?"

17 A. I do.

18 Q. Is it fair to say, then, that by November
19 17th, 1969, Monsanto had knowledge that there was some
20 evidence of an ecological buildup of PCBs in certain water
21 deposits and fish and ultimately, in bird life?

22 A. Yes.

23 Q. Is it fair to say that as of the day of this
24 document, Monsanto had knowledge that PCBs had been found
25 at limited locations in water, in birds and some forms of

1 aquatic life?

2 A. Yes, but you note the PCBs referred to are
3 specifically the higher chlorinated types.

4 Q. The Aroclor 1254 and 1260?

5 A. Which contain the five and six types of PCBs,
6 five and six chlorine containing types.

7 Q. And is it true, then, that by this date,
8 November 17th, 1969, Monsanto had knowledge that the five
9 and six chlorinated biphenyls, such as Aroclor 1254 and
10 1260, may affect reproduction of fowl life and may be toxic
11 to shrimp?

12 A. Yes.

13 MR. FEATHERSTONE: Read the last question
14 back, please.

15 (Whereupon, the reporter propounded the previous question.)

16 Q. (By Mr. Bradley) I'm going to show you what's
17 been marked for identification as Plaintiff's Exhibit 313.
18 Let me remind you that Exhibit 421, if you'd give that to
19 Mr. Featherstone. Thank you. If you'd review that for a
20 moment.

21 MR. KUNEY: What's the date of the document?

22 MR. BRADLEY: 1970.

23 MR. FEATHERSTONE: It's actually July 16th,
24 1970.

25 MR. KUNEY: Thank you.

1 MR. FEATHERSTONE: At least, the date line is
2 July 16th. It's a news release.

3 MR. KUNEY: News release?

4 MR. MASKIN: July 16th, 1970.

5 A. I have reviewed the document.

6 Q. (By Mr. Bradley) Is this a document that is a
7 news release issued by Monsanto, apparently on July 16th,
8 1970?

9 A. This is a copy of that news release, yes.

10 Q. And did Monsanto occasionally, as part of its
11 business activities, issue news releases?

12 A. Yes.

13 Q. And is this a fair and accurate copy of the
14 news release that was issued July 16th, 1970?

15 A. It appears to be, yes, sir.

16 Q. And is this the sort of document that Monsanto
17 would maintain in its business records?

18 A. Yes.

19 Q. I'm looking at page one now, and request that
20 you do the same. The second full paragraph, page one. It
21 says, "Our program began back in 1968 with the proper
22 identification and measurement of PCB in the environment,
23 and will conclude this year by our unilateral action to
24 restrict its use." Did I quote that correctly?

25 A. You did.

1 Q. And that quote came from Howard Minckler,
2 Company Vice-President and General Manager of Monsanto's
3 Organic Chemicals Division; is that correct?

4 A. That is correct.

5 Q. What measurement of PCB in the environment did
6 Monsanto make in 1968?

7 MR. FEATHERSTONE: Before you answer that
8 question, Mr. Papageorge, Mr. Bradley, I guess I've kind of
9 given up, for purposes of this deposition, trying to
10 distinguish between a Rule 30B-6 and his individual
11 deposition. That aside, you don't need to comment on that,
12 but the things I'd like you to comment on is whether we can
13 agree that I don't have to make anymore beyond-the-scope
14 objections and I can reserve all of that, in the event you
15 try to use any of this testimony as a, as corporate
16 testimony within the meaning of the Rule 30B-6.

17 MR. BRADLEY: You want me to agree that every
18 single question I ask from now on, you have a reserved
19 right to object to scope?

20 MR. FEATHERSTONE: Yes. Specifically, the
21 objection being that the question and answer are beyond the
22 scope or the matters specified in the Rule 30B-6 notice to
23 which this witness was originally tendered at some point
24 yesterday morning.

25 MR. BRADLEY: You mean originally tendered,

1 Mr. Featherstone, or as modified? Modified tendered that
2 occurred roughly at 4:00 p.m. yesterday?

3 MR. FEATHERSTONE: Well, it really wasn't 4:00
4 p.m. I don't want to quibble about that. We're talking
5 about the notice for which he was tendered, and he is now
6 being tendered to talk about alleged potential or actual
7 hazards, as those words are used in your notice, with the
8 exception of human health hazards, but I'm talking about
9 that notice.

10 MR. BRADLEY: It's fine with me for you to
11 have a continuing objection.

12 MR. FEATHERSTONE: Talking about the scope; is
13 that correct?

14 MR. BRADLEY: That is correct. You may have
15 it. You made it quite clear that you're going to make
16 those objections a lot. Go ahead and answer the question.

17 A. By 1968, the environmental samples that were
18 analyzed by Monsanto's analytical chemists included water
19 samples from the plants' effluence, plants that
20 manufactured the PCBs; it also included samples of soil and
21 sediments from ponds and so on; and by 1968, the capability
22 in the analytical laboratory was such that the type of PCB
23 could be identified with a high degree of confidence, such
24 as the four chlorine, the five chlorine and so on, to help
25 identify which of the commercial products it might

1 represent. The ability to measure the concentration or the
2 quality of that material in parts per million was good.
3 The laboratory was still working on refining that
4 capability to be able to determine it at lower levels.

5 Q. All right. By July 16th, 1970, had Monsanto
6 gained knowledge that amounts of PCBs representing an
7 actual potential or real hazard were escaping from
8 Monsanto's manufacturing plants?

9 MR. FEATHERSTONE: Object to the form.

10 A. There was no evidence of any effect that could
11 be properly described as hazardous.

12 Q. (By Mr. Bradley) By July 16th, 1970, did
13 Monsanto have any knowledge of PCBs escaping from its
14 manufacturing plants?

15 A. Can you help me with "escaping?"

16 MR. BRADLEY: Yes. Not going into the
17 products for which it was intended.

18 A. Monsanto was aware that PCBs were present in
19 the waste waters in its sewer system that went to the
20 municipal treatment plants.

21 Q. And when did Monsanto gain that knowledge?

22 MR. FEATHERSTONE: Object to the form of the
23 question.

24 A. Be late '69, early '70.

25 Q. (By Mr. Bradley) I'm now handing you what's

1 been marked for identification as Plaintiff's Exhibit 1122
2 and ask you to review that for me, please.

3 A. I have scanned through the document.

4 Q. What is the document?

5 A. This appears to be a copy of a newsletter
6 published at the Monsanto plant located in Sauget,
7 Illinois, dated April 13th, 1970.

8 Q. And would that plant periodically issue these
9 types of news releases as part of its regular business?

10 MR. FEATHERSTONE: Object to the form.

11 A. Yes.

12 Q. (By Mr. Bradley) Is this a fair and accurate
13 copy of the news release issued by that plant on April
14 13th, 1970?

15 A. It appears to be, yes, sir.

16 Q. Is this the sort of document that Monsanto
17 would have maintained in its records, either at the Sauget
18 plant or corporate headquarters?

19 A. Yes.

20 Q I'm looking now at page one, the middle column,
21 second to the last paragraph, where it's quoting
22 Congressman William F. Ryan, Democrat of New York, during a
23 press conference he held in New York City, where he said -
24 this is a quote within a quote - 'the incredible thing
25 about the PCB menace is that its affect on man and animal

1 have long been documented by chemists and biologists,' he
2 said." Did I read that correctly?

3 MR. FEATHERSTONE: Object to the form.

4 A. You did.

5 Q. (By Mr. Bradley) Is it fair to say by April
6 13th, 1970, Monsanto had knowledge that PCBs and their
7 effects on animals had been long documented by chemists
8 and biologists?

9 MR. FEATHERSTONE: Are you talking about
10 knowledge that's a fact, or that Ryan said that in a
11 newspaper article?

12 MR. BRADLEY: Are you objecting because it's
13 vague and ambiguous?

14 MR. FEATHERSTONE: Yes.

15 Q. (By Mr. Bradley) Go ahead and answer.

16 MR. FEATHERSTONE: You want to clarify the
17 question?

18 MR. BRADLEY: I don't care what Congressman
19 Ryan thought. I want to know what Monsanto knew.

20 MR. FEATHERSTONE: Object to the form of the
21 question.

22 Q. (By Mr. Bradley) Let me ask it again, then,
23 so that we can clarify any apparent ambiguity. By April
24 13th, 1970, did Monsanto know, or have knowledge that PCBs
25 affects on animals had long been documented by chemists

1 and biologists?

2 MR. FEATHERSTONE: Object to the form and
3 compound.

4 Q. (By Mr. Bradley) Go ahead and answer.

5 A. We discussed yesterday the acute toxicity
6 testing sponsored by Monsanto. Those definitely showed an
7 effect at the higher levels that the test animals were
8 exposed to. We also, if you recall, discussed yesterday
9 the effects noted by investigators on humans with
10 chlorinated hydrocarbons, and one of those hydrocarbons
11 mentioned in that article was chlorinated biphenyls, along
12 with the chlorinated naphthalenes and so on. So the
13 effects on humans and test animals of high levels of these
14 chemicals certainly were known, and this is why cautions
15 were issued with the product.

16 Q. On April 13th, 1970, did Monsanto have
17 knowledge that PCBs were being released into the
18 environment from Krummrich?

19 MR. FEATHERSTONE: Object to the form of the
20 question.

21 A. I hesitate because I don't know that we, the
22 two of us, have the same understanding of the word
23 "environment." Monsanto was aware of the presence of PCBs
24 in the waste waters going to the Sauget Village treatment
25 plant.

1 Q. And was that from Krummrich?

2 A. Yes.

3 Q. By April 13th, 1970, was Monsanto aware that
4 PCBs were used in waxes?

5 A. Oh, yes.

6 Q. By that date, was Monsanto aware that PCBs
7 were used in floor tiles?

8 A. Yes.

9 Q. By that date, was Monsanto aware that PCBs
10 were used in brake linings?

11 A. Not to my knowledge.

12 Q. By that date, was Monsanto aware that PCBs
13 were used in plastics?

14 A. Yes.

15 Q. By that date, was Monsanto aware that PCBs
16 were used in adhesives?

17 A. Yes.

18 Q. I'm now looking at page two, the middle
19 paragraph. In the middle of the middle paragraph --

20 MR. FEATHERSTONE: The one that begins "Howard
21 L. Minckler..."?

22 MR. BRADLEY: Yes.

23 Q. (By Mr. Bradley) In the middle of that
24 paragraph, it says "We also have been in close contact with
25 our customers." Is that correct?

1 A. That is correct.

2 Q. On April 13th, 1970 was General Electric one
3 of your customers?

4 A. Yes.

5 Q. And so was Westinghouse?

6 A. Yes.

7 Q. And were you in close contact with them
8 regarding any and all alleged potential or actual hazards
9 of PCBs regarding the environment?

10 MR. FEATHERSTONE: Object to the form of the
11 question.

12 MR. MASKIN: I join in that.

13 MR. BRADLEY: Okay. Let me rephrase that.

14 Q. (By Mr. Bradley) By that date, did Monsanto
15 have contact with General Electric regarding PCBs and their
16 effects on the environment?

17 A. Whatever knowledge Monsanto had at that point
18 in time was shared with representatives of General
19 Electric.

20 Q. And would that be true for Westinghouse, as
21 well?

22 A. Yes.

23 Q. And how did that occur?

24 MR. FEATHERSTONE: How did what occur?

25 MR. BRADLEY: How did the communication with

1 GE and Westinghouse occur regarding the real or alleged
2 hazards of PCBs and their effects on the environment.

3 A. Well, there were several individuals
4 representing both Monsanto and the customer.
5 Communications on this subject would take place in a
6 face-to-face discussion or telephone discussions or by
7 letters and memoranda.

8 Q. (By Mr. Bradley) Was there someone within
9 Monsanto as of April 13th, 1970 responsible for
10 communicating with General Electric?

11 MR. FEATHERSTONE: When you say "as of," do
12 you mean on that date?

13 MR. BRADLEY: That's fine.

14 MR. FEATHERSTONE: Or on or about that date?

15 MR. BRADLEY: On or about that date.

16 A. There was no one person designated as the sole
17 communicator.

18 Q. (By Mr. Bradley) Who were the Monsanto
19 communicators with GE and Westinghouse regarding the
20 alleged hazards of PCBs to the environment?

21 A. It would be the field salesmen, field
22 representative. It would be the manager of marketing for
23 products that were purchased by General Electric containing
24 PCBs. I was involved, members of Monsanto's research
25 department. That's all that come to mind at present.

1 Q. Did the field salesmen -- Let me rephrase it.
2 What information did Monsanto give to its field salesmen on
3 or about April 13th, 1970 regarding the alleged or real
4 hazards of PCBs on the environment?

5 MR. FEATHERSTONE: Object to the form of the
6 question.

7 A. Well, the field salesmen, who was a chemist by
8 training, therefore had technical knowledge, received his
9 information from the marketing manager or from me or from
10 the research person.

11 Q. (By Mr. Bradley) Was there a system in place
12 within Monsanto to insure that all field salesmen had
13 current, up-to-date knowledge of the alleged or real
14 hazards of PCBs on the environment on or about April 13th,
15 1970?

16 MR. FEATHERSTONE: You mean all field salesmen
17 involved in the sales of PCB products?

18 MR. BRADLEY: To GE and Westinghouse, yes.

19 THE WITNESS: To GE and Westinghouse?

20 MR. BRADLEY: Yes.

21 A. There was only one person involved.

22 Q. (By Mr. Bradley) Who was that?

23 A. Randall Graham. I have forgotten his first
24 name. G.R. Graham. Randall is what we called him.

25 Q. G-r-a-h-a-m?

1 A. Correct.

2 Q. Is it Dr. or Mr. Graham?

3 A. Mr.

4 Q. Is Mr. Graham still a Monsanto employee?

5 A. No.

6 Q. Do you know where he's still living?

7 A. The last I heard, yes.

8 Q. Where was the last place you heard Mr. Graham
9 resided?

10 A. Up in the Northeast U.S. is as close as I can
11 come.

12 Q. Who was the manager of marketing on or about
13 April 13th, 1970?

14 MR. FEATHERSTONE: Can you just hold on for a
15 second?

16 THE WITNESS: Can we take a break?

17 MR. FEATHERSTONE: Are you comfortable with
18 that? Actually, you've got a question out. Are you
19 comfortable with that?

20 MR. BRADLEY: That's fine.

21 (Whereupon, a ten minute recess was taken.)

22 Q. (By Mr. Bradley) Go ahead and answer the
23 question.

24 A. Paul Benignus.

25 Q. Which Monsanto research department members

1 would have had contact with General Electric or
2 Westinghouse on or about April of 1970 regarding the
3 alleged or potential or real hazards of PCBs on the
4 environment?

5 A. Ralph -- Dr. Ralph Munch, M-u-n-c-h.

6 Q. And is Dr. Munch the only one?

7 A. Yes.

8 Q. Did you ever conduct any training with G.R.
9 Graham regarding the alleged or real hazards of PCBs on the
10 environment prior to April of 1970?

11 A. Oh, I had telephone contact with Mr. Graham,
12 during which I would review matters relating to PCBs and
13 the environment. I don't know if you'd call that formal
14 training, but it was an attempt on my part to share with
15 him the latest information available to me.

16 Q. You told us yesterday that Monsanto's medical
17 department maintains a library of journal articles relating
18 to PCBs alleged or real effects on human health; is that
19 correct?

20 A. Yes.

21 Q. Does the medical department also contain a
22 library of studies and journal articles relating to alleged
23 or real impacts of PCBs on the environment?

24 A. The medical department kept that kind of
25 information as part of the PCB file that they had.

1 Q. All right.

2 A. I don't know how complete a file they kept
3 after I was assigned the environmental manager's job.

4 Q. When were you assigned the environmental
5 manager's job?

6 A. January, 1970.

7 Q. Was one of your responsibilities as a general
8 manager to determine what studies existed regarding the
9 alleged or real impacts of PCBs on the environment?

10 MR. FEATHERSTONE: When you say studies, are
11 you talking about written reports? Are you talking about
12 formal scientific studies? How are you using the word, Mr.
13 Bradley?

14 MR. BRADLEY: I'm referring to -- Instead of
15 studies, how about any available information.

16 A. In your question, you used the word "general
17 manager," or at least that's what I thought I heard.

18 MR. BRADLEY: I thought you said you were
19 assigned the general manager's job in 1970.

20 A. No. I was manager of environmental matters
21 relating to PCBs.

22 Q. And you obtained that job assignment in 1970?

23 A. Correct.

24 Q. In January of 1970?

25 A. January.

1 Q. In January of 1970, what was your specific job
2 title?

3 A. Manager, environmental control.

4 Q. As part of your job responsibilities as
5 manager of environmental control in January of 1970, did
6 you make an effort to gather all of the existing
7 information relating to alleged or real effects of PCBs on
8 the environment?

9 A. Yes.

10 Q. What did you do to seek that information?

11 MR. FEATHERSTONE: Well, I object, insofar as
12 some of this was already covered in this deposition.
13 Repetitive.

14 A. When I discussed PCBs and the environment and
15 the current status as of January, 1970, I would ask each of
16 the individuals with whom I made contact for copies of any
17 articles that they may have in their files. I also, as I
18 indicated earlier, made a request of the medical department
19 personnel to send me copies of any new articles that they
20 became aware of; I also asked the research library to send
21 me copies of articles relating to PCBs, whether they be
22 environmentally oriented articles or any other reference to
23 PCBs; and I also asked the Monsanto's public relations
24 department to arrange for a subscription to a clipping
25 service whereby I would receive a collection of any

1 articles that appeared in the public press that referred to
2 PCBs.

3 Q. Do you know whether the Monsanto research
4 library subscribed to a clipping service to receive a
5 collection of any articles that appeared in the public
6 press that referred to PCBs?

7 A. I do not know.

8 Q. Who was director of the Monsanto research
9 library between 1966 and 1975?

10 A. Oh, I don't remember her name. I just don't
11 remember. There was a chief librarian.

12 Q. Did you ever speak with the head of Monsanto's
13 research library about the topic of PCBs?

14 A. Yes. When I made my request that I be copied
15 in on any distribution of articles that she made.

16 Q. Did the director of the research library
17 indicate to you her belief, one way or the other, regarding
18 whether Monsanto had copies of all of the articles that
19 appeared in the public press that referred to PCBs?

20 MR. FEATHERSTONE: Object to the form. We've
21 got apples and oranges all over the place here. He's
22 talking about a librarian, you're talking about a director
23 of the research library. Are you referring to the
24 librarian when you use that phrase?

25 MR. BRADLEY: I was referring to the

1 librarian.

2 MR. FEATHERSTONE: Okay. Let me ask. You
3 talk about the public press, and this is a research
4 librarian. My guess is the research library doesn't
5 concern itself much with the public press. Probably with
6 the scientific publications, journals. It's not my guess.
7 I'm pretty sure that's the fact.

8 Q. (By Mr. Bradley) The head librarian that
9 you've indicated, whose name you don't recall, you recall,
10 though, it was a female who held that position between '66
11 and '75?

12 A. Yes.

13 Q. And was the head librarian, the head librarian
14 for Monsanto's research library?

15 A. Yes.

16 Q. Did Monsanto have a library, other than a
17 research library?

18 A. All that I worked with and was aware of was a
19 research library and a medical library. This does not mean
20 that other libraries didn't exist somewhere, but I had no
21 contacts with those libraries.

22 Q. Was there a -- Let me ask it this way. Was
23 the head of the research library between '66 and '75, also
24 the head of the medical library?

25 A. No.

1 Q. Who was the head of the medical library
2 between 1966 and 1975?

3 A. I don't remember her name either.

4 Q. Another woman?

5 A. Yes.

6 MR. BRADLEY: Would you go back to the
7 question that I asked just prior to Mr. Featherstone making
8 his comments?

9 (Whereupon, the reporter propounded the previous question.)

10 MR. FEATHERSTONE: Object to the form of the
11 question, and the form of the questioning.

12 Q. (By Mr. Bradley) Did you have a discussion
13 with the head of the research library about whether that
14 library had a complete collection of all the articles that
15 appeared in the public press that referred to PCBs?

16 A. The discussion regarding PCB articles in the
17 public press was limited to the association of the PCBs
18 with some medical issue or study. It was not extended to
19 PCBs totally, and in general --

20 Q. Did it include published reports about the
21 alleged hazards of PCBs on the environment?

22 A. If such reports were published, either in the
23 popular press or in the more formal peer review type
24 documents, yes, I expected to receive copies of those.

25 Q. Did the head of the research library indicate

1 to you her belief that Monsanto had copies of all published
2 papers regarding the alleged or real effects of PCBs on the
3 environment?

4 MR. FEATHERSTONE: Object to the form of the
5 question.

6 A. We never talked about the subject to that
7 degree, to assure that we had all. I recognize that
8 personally, that guaranteeing that all articles would be
9 found was unrealistic. I expected that as many as she
10 could be made aware of she shared with me.

11 Q. (By Mr. Bradley) Do you know whether there
12 was an effort prior to 1966 by the research library to
13 obtain copies of all studies regarding PCBs effects on the
14 environment?

15 A. Yes.

16 Q. Was that something that went back all the way
17 to the 1930s, when Monsanto began producing PCBs,
18 manufacturing PCBs?

19 MR. FEATHERSTONE: Objection. Absence of
20 foundation, calls for speculation, hearsay. All sorts of
21 objections.

22 A. The interest of PCBs in the environment began
23 with the Swedish studies in 1966. Prior to that, there was
24 no reason to associate PCBs and the environment in any way.
25 Therefore, the request of that type could not have been

1 made.

2 MR. BRADLEY: For your record, apparently
3 Plaintiff Exhibit 1166 is the same as Plaintiff's Exhibit
4 323.

5 MR. FEATHERSTONE: I'm sorry. 323?

6 MR. BRADLEY: Yes.

7 Q. (By Mr. Bradley) In April of 1970, did
8 Monsanto know that PCBs were entering the environment
9 through the use of pesticides?

10 MR. FEATHERSTONE: Object to the form.

11 A. No.

12 Q. (By Mr. Bradley) Was there a point -- I take
13 it, Monsanto knew at some point that PCBs were being used
14 to extend the life of some pesticides such as Lindane?

15 A. Yes.

16 Q. Did Monsanto know that PCBs were being used to
17 extend the life of pesticides, other than Lindane?

18 MR. FEATHERSTONE: Cumulative.

19 A. No.

20 Q. (By Mr. Bradley) Was there a point in time
21 that Monsanto believed that PCBs were no longer being used
22 to extend the life of pesticides?

23 MR. FEATHERSTONE: Object to the form.

24 A. Monsanto communicated with the Department of
25 Agriculture regarding the Department's recommendation that

1 PCB be used as an additive in pesticide formulations and
2 expressed its concern about such a use and the effect that
3 it might have if broadly broadcast in the environment and
4 suggested to the Department that that use be banned. At no
5 time did Monsanto become aware that this use was a very
6 large use, and it appears to have been limited to a very
7 small use in households and within buildings, rather than
8 broadcast in open fields.

9 Q. (By Mr. Bradley) In October of 1970, did the
10 Department of Agriculture put out a notice that PCBs could
11 not be used to extend the life of pesticides?

12 A. That sounds correct, yes. About that time of
13 the year, yes.

14 Q. And is it fair to say that up until the time
15 that the Department of Agriculture put out that notice,
16 that Monsanto knew that PCBs were, up to October of 1970,
17 being used to extend the life of pesticides?

18 MR. FEATHERSTONE: Now, he's already answered
19 that. You asked him just a minute ago, in April of 1970
20 did Monsanto know that PCBs were entering the environment
21 through the use of pesticides. He said no.

22 MR. BRADLEY: Go ahead and answer the
23 question.

24 A. Monsanto knew from a published article,
25 published by scientists in the Department of Agriculture,

1 the a recommendation was made that PCBs could be used as
2 extenders in pesticides. Monsanto also knew that that use
3 was a very small use and it was in the, I want to say early
4 summer of 1970 that Dr. Kelly wrote to the Department of
5 Agriculture, stating Monsanto's opinion that that use
6 should not be encouraged and should be discontinued.

7 Q. Now, I'm going to show you what's been marked
8 for identification as Plaintiff's Exhibit 1120 and ask you
9 to review that document for me, if you would, please.
10 There is no date on it.

11 MR. FEATHERSTONE: "Historical Summary of PCB
12 Environmental Issues, by William B. Papageorge."

13 A. I have reviewed the document.

14 Q. (By Mr. Bradley) What is the document?

15 A. It is a summary that I prepared in an attempt
16 to pull together all the known bits and pieces of
17 information regarding PCBs and the environment.

18 Q. And the title, "Historical Summary of PCB
19 Environmental Issues."

20 A. That's the title.

21 Q. By W.B. Papageorge?

22 A. It does.

23 Q. What date did you prepare this document?

24 A. That's what I was looking for. At this point
25 in time, I could only guess at the date.

1 Q. Why don't you make your best estimate of the
2 date?

3 A. I would suggest that this was prepared in
4 1970.

5 Q. Do you recall whether you gave this document
6 to G.R. Randall Graham?

7 A. I don't remember that specific.

8 Q. Do you remember whether you discussed the
9 contents of this exhibit with G.R. Randall Graham?

10 A. Oh, yes. Yes.

11 Q. Do you recall whether you provided this
12 document to Dr. Munch?

13 A. I don't recall that specifically, no.

14 Q. Do you recall whether you discussed the
15 contents of this exhibit with Dr. Munch?

16 A. Oh, yes. Yes.

17 Q. What was your purpose in writing the document?

18 MR. FEATHERSTONE: Objection. Repetitive.
19 Asked and answered.

20 A. As best as I recall, I had prepared this - I
21 have to confess, I'm somewhat fuzzy, but I had prepared
22 this in preparation for a trip to Europe in March of '70,
23 and I used this when I met with customers during the summer
24 of 1970. That's as best as I can recall.

25 Q. (By Mr. Bradley) Which customers did you use

1 this document with in the summer of 1970?

2 A. Primarily, manufacturers of transformers and
3 capacitors.

4 Q. Did that include GE and Westinghouse?

5 A. Yes.

6 Q. Is this a fair and accurate copy of the
7 summary you prepared?

8 A. It appears to be. Again, I'm a little bit
9 fuzzy about some of it, but it looks appropriate.

10 Q. Is this the sort of document that you would
11 maintain in your business files while you were a Monsanto
12 employee?

13 A. Yes.

14 Q. I'm now going to show you was has been marked
15 for identification as Plaintiff's Exhibit 1172, which is
16 entitled "Monsanto's PCB program, W.B. Papageorge," and
17 it's undated. Ask you to review that for me, please.

18 MR. MASKIN: What's the Exhibit number on
19 that?

20 MR. FEATHERSTONE: 1172.

21 MR. BRADLEY: Bruce, which documents are you
22 looking at now?

23 MR. FEATHERSTONE: The one you used yesterday.

24 MR. BRADLEY: 1166?

25 MR. FEATHERSTONE: Yes. We're checking to see

1 if it's the same. Trying to see if it's the same.

2 MR. BRADLEY: Okay.

3 MR. FEATHERSTONE: Off the record.

4 (Whereupon, a discussion was held between Counsel and the
5 witness, off the record.)

6 THE WITNESS: I have reviewed the document.

7 Q. (By Mr. Bradley) Plaintiff's Exhibit 1172
8 appears to be the same as Plaintiff's Exhibit 1166?

9 A. It does, except the reference to, that appears
10 on 1166 as having been presented to the ANSI Committee in
11 September, '71 has been, is not reproduced on Exhibit 1172.

12 Q. Also, there's a small change on page sixteen,
13 is there not?

14 THE WITNESS: Page sixteen?

15 MR. BRADLEY: Yes, on 1172, next to the last
16 line. The word is crossed out and a word added, and that
17 doesn't appear on 1166?

18 A. That is correct. Of course, there is a couple
19 of others I noticed throughout 1172, there are some penned
20 in corrections.

21 Q. Other than that, the documents appear the
22 same?

23 A. Yes.

24 Q. I'm now going to show you a document which was
25 identified as Plaintiff's Exhibit 359, which is titled

1 "Background information on Polychlorinated Biphenyls,
2 Office of Occupational Health, Surveillance and Biometrics,
3 National Institute for Occupational Safety and Health,"
4 dated November 3, 1975 and ask you to review that for me,
5 please. Have you had a chance to review that document?

6 A. I have scanned through it quickly.

7 Q. Can you tell me what this document is?

8 A. It's a document prepared by the Office of
9 Occupational Health Surveillance and Biometrics of the
10 National Institute of Occupational Safety and Health. It's
11 entitled, "Background Information on Polychlorinated
12 Biphenyls."

13 Q. Is this a document that you have reviewed on a
14 prior occasion?

15 A. I recall the document, yes. I had an
16 opportunity to see it.

17 Q. Is this a document that you maintained in your
18 files at Monsanto while you were employed there between the
19 period of 1966 and 1975?

20 A. I did.

21 Q. And is this a true and accurate and fair copy
22 of the document that you maintained in your files?

23 MR. FEATHERSTONE: Well, you're not suggesting
24 that he had the document in 1966, are you? The document is
25 dated October of '75.

1 MR. BRADLEY: Right. Obviously, you can't
2 have had it before it was written. I'm not suggesting
3 that.

4 MR. FEATHERSTONE: All right.

5 Q. (By Mr. Bradley) You didn't understand me to
6 suggest that, did you? I hope you didn't.

7 A. No. I received this document in early '76.

8 Q. All right. If you --

9 A. You asked me if it's a complete, or an
10 accurate copy. I don't -- I really don't know what else
11 was included in the original. It appears to be complete,
12 but I - parts could be missing.

13 Q. Okay. You're not aware of any parts missing?
14 It appears to you to be full and complete and accurate?

15 A. Yes.

16 Q. All right. If you would, please, turn to the
17 bibliography section. In the bibliography section, they
18 have listed thirty-five separate references in the
19 bibliography; is that correct?

20 A. Yes.

21 Q. And I'd like you to pay particular attention
22 to those items and tell me whether there are any that
23 Monsanto did not have in any of its libraries between 1966
24 and 1975.

25 MR. FEATHERSTONE: Object to the form of the

1 questioning.

2 MR. BRADLEY: That's the purpose for which I
3 want you to review. I'll ask you specific questions about
4 it in a moment.

5 A. I have reviewed the listed articles in the
6 bibliography.

7 Q. Can you tell me --

8 A. Most --

9 Q. I'm sorry. Go ahead.

10 A. I recognize many of them. There are some that
11 I just know nothing about, or at least cannot recall
12 anything about.

13 Q. All right. Let me ask you some specific
14 questions.

15 A. Uh-huh.

16 Q. Let's look at item one on the bibliography.
17 Is that a, an article that Monsanto had in any of its
18 libraries before 1975?

19 MR. MASKIN: Could you identify the name of
20 the article?

21 MR. BRADLEY: How about if I just give you a
22 copy of it here, if I can do that.

23 MR. MASKIN: Well, it doesn't add very much.
24 It's kind of late in the game. Rather late than never.

25 MR. FEATHERSTONE: Off the record.

1 (Whereupon, a discussion was held between Counsel, off the
2 record.)

3 Q. (By Mr. Bradley) Mr. Papageorge, is item one
4 an article that made it's way into one of Monsanto's
5 libraries prior to 1975?

6 A. I know that Monsanto had copies of that
7 article. What I don't know is the year at which it became
8 available to Monsanto. I just don't recall that.

9 Q. Did you cease being the manager of
10 environmental control in 1975?

11 A. I don't want to mislead. My title changed
12 from the period 1970 to 1976, when I was no longer involved
13 with the PCB environmental issue.

14 Q. All right. And what titles did you have
15 between 1970 and 1976, when you no longer were involved in
16 the PCB issue?

17 A. I had the title of manager, environmental
18 control until about 1971; manager of environmental
19 protection until about 1973; and manager of product
20 acceptability through 1976.

21 MR. BRADLEY: Can we for off the record for a
22 minute?

23 (Whereupon, a discussion was held between Counsel, off the
24 record.)

25 Q. (By Mr. Bradley) Did you cease having

1 involvement with the PCB issue in February of 1976?

2 A. Full-time involvement, yes.

3 Q. Do you know whether Monsanto obtained copies
4 of what's listed as item one on the bibliography we're
5 looking at prior to the end of 1975?

6 A. Yes.

7 Q. They did receive it prior to the end of 1975?

8 A. Yes.

9 Q. How about item two? Is that an article
10 Monsanto received sometime in 1975?

11 A. If it wasn't '75, it was '76.

12 Q. Early '76?

13 A. Yes.

14 Q. How about item three? Did Monsanto receive
15 that in 1975?

16 A. Certainly received it. Again, I don't recall
17 the exact month and date of having received it.

18 Q. Do you know whether it was received prior to
19 February of '76, when you ceased your full-time involvement
20 with the PCB issue?

21 A. Oh, yes.

22 Q. Is item five a document that Monsanto received
23 in 1972?

24 A. Yes.

25 Q. Is item six a document prepared by Monsanto in

1 October of '74?

2 A. Yes.

3 Q. Is item seven a document Monsanto received in
4 1975?

5 A. Yes.

6 MR. FEATHERSTONE: It has a specific date,
7 September 15. You just want to know any time during the
8 year 1975?

9 MR. BRADLEY: Yes. I assume you received it
10 after it was made available.

11 A. Yes, sir.

12 Q. (By Mr. Bradley) And I'll assume that for all
13 the documents we talked about. You obviously can't have
14 received them before they were made available.

15 A. That is correct.

16 Q. (By Mr. Bradley) Is item nine --

17 MR. FEATHERSTONE: Well, I guess I'm confused
18 by "made available." If you're saying whatever date is
19 shown for the publication date of the document, that's
20 fine.

21 MR. BRADLEY: That is what I'm saying.

22 MR. FEATHERSTONE: All right.

23 Q. (By Mr. Bradley) Is item nine a document that
24 Monsanto received during 1975?

25 A. I don't remember such a document.

1 Q. Is item ten a document Monsanto received in
2 1973?

3 A. Monsanto received that document. Not knowing
4 if this is December, '73 or not, I can't -- It's either
5 '73 or early '74.

6 Q. All right.

7 A. Several weeks after the date of publication.

8 Q. Is item twelve a document Monsanto received in
9 1973 or the very first part of 1974?

10 A. I don't remember ever seeing such a document.

11 Q. Is item twelve a document received by Monsanto
12 in 1970 or the first part of 1971?

13 A. I don't remember seeing that document.

14 Q. Is item fourteen a document received by
15 Monsanto in 1972 or early 1973?

16 THE WITNESS: I'm sorry?

17 MR. FEATHERSTONE: He's talking about
18 fourteen. Did you skip thirteen?

19 MR. MASKIN: I think you skipped thirteen.
20 That was the question.

21 MR. FEATHERSTONE: I think you said twelve
22 twice.

23 MR. BRADLEY: All right.

24 MR. FEATHERSTONE: I may have misheard it, but
25 I thought that's what you did.

1 MR. BRADLEY: Thank you.

2 Q. (By Mr. Bradley) Is item thirteen a document
3 that Monsanto received in 1970, or the first part of 1971?

4 A. Yes.

5 Q. Is item fourteen a document Monsanto received
6 in 1972 or the first part of 1973?

7 A. Yes.

8 Q. Is item fifteen a document Monsanto received
9 in 1972 or the first part of 1973?

10 A. Yes.

11 Q. Is item sixteen a document Monsanto received
12 in 1974 or the first part of 1975?

13 A. Yes.

14 Q. Do you know whether you received item sixteen
15 in 1974?

16 A. I do know we received item sixteen. We
17 received it several weeks after the date of publication. I
18 don't know what the date of publication is. I don't know
19 if it slopped over to the following year.

20 Q. Is item seventeen a document received by
21 Monsanto in 1974?

22 A. I don't remember that document at all.

23 Q. Is item seventeen a document received by
24 Monsanto in 1971 or the first two weeks of 1972?

25 MR. FEATHERSTONE: Seventeen? You asked him

1 about that.

2 MR. BRADLEY: I'm sorry. I apologize.

3 Q. (By Mr. Bradley) Is item nineteen a document
4 received by Monsanto several weeks after it was published?

5 A. As I remember that particular subject, to the
6 best of my recollection, this could have been as much as a
7 year later.

8 Q. Is item twenty a document received by Monsanto
9 in 1936 or early 1937?

10 A. I cannot speak to that. I would suggest Dr.
11 Kelly might be able to help us there.

12 Q. Is that a document that was in Monsanto's
13 files when you began your work with PCBs in 1970?

14 A. I'm having difficulty recalling the authors.
15 I do remember the subject matter.

16 Q. Do you remember Monsanto having in its files a
17 document entitled "A preliminary report of the
18 Dermatological and Systemic Effects of Exposure to
19 Hexachloronaphthalene and Chloro-Diphenyl"?

20 A. I believe I do, yes, recall that.

21 Q. Do you recall whether that document was in the
22 files in January of 1970?

23 A. Yes.

24 Q. Is item twenty-one a document that Monsanto
25 received in 1938?

1 MR. FEATHERSTONE: Object. It calls for
2 speculation.

3 A. I just don't recall that specific document.

4 Q. (By Mr. Bradley) Do you recall whether that
5 document was in Monsanto's library in January of 1970?

6 A. Since I don't recall the document, I can't
7 associate it with its presence in the file.

8 Q. Do you recall whether Monsanto, in January of
9 1970, had a document entitled "Skin Conditions Resulting
10 from Exposure to Certain Chlorinated Hydrocarbons?"

11 A. I don't recall that.

12 Q. Do you remember whether Monsanto had, in
13 January of 1973, whether Monsanto had documents in its
14 library concerning skin conditions resulting from exposure
15 to certain chlorinated hydrocarbons?

16 A. Yes. I recall references to chloracne
17 conditions, yes.

18 Q. Do you remember the names of the documents in
19 Monsanto's library in January of 1970 covering that topic?

20 A. I don't remember the titles. I do remember at
21 least one author, Dr. Drinker.

22 Q. Do you recall -- Let me ask this. For any
23 document that predates 1970, you wouldn't know when
24 Monsanto received it; is that correct?

25 A. That's correct.

1 Q. Do you know whether Monsanto had in its files
2 in January, 1970, the document identified as number
3 twenty-two in this bibliography?

4 A. I do not recall that document.

5 Q. Do you recall the subject matter of Dermatitis
6 from Synthetic Resins and Waxes being in Monsanto's library
7 in January of 1970?

8 A. Not by that title. I just don't recall
9 titles.

10 Q. How about by the subject matter?

11 A. I do recall the references to this coating
12 bath that I talked about yesterday and the chloracne
13 condition.

14 Q. How about item twenty-three? Is that, too, a
15 document received by Monsanto in 1971 -- Well, let's ask
16 it this way. Is item twenty-three a document Monsanto
17 received within two weeks of its publication?

18 MR. FEATHERSTONE: Two weeks? You want to be
19 that precise? I thought his testimony was that on those
20 that he could identify, that they were received shortly
21 after their publication.

22 MR. BRADLEY: I thought that he said a couple
23 of weeks after its publication.

24 A. Several weeks.

25 Q. (By Mr. Bradley) Well, let me ask this way

1 then. Is item twenty-three a document Monsanto received
2 within a month of its publication?

3 A. About that, yes, sir.

4 Q. Is item twenty-four a document Monsanto
5 received within a month of its publication?

6 A. As best as I remember, yes.

7 Q. Is item twenty-five a document received by
8 Monsanto within a month of its publication?

9 A. Approximately so, yes, sir.

10 Q. Is item twenty-six a document received by
11 Monsanto within a month of its publication?

12 A. Yes.

13 Q. Is item twenty-seven a document received by
14 Monsanto -- Let me rephrase that. Is item twenty-seven a
15 document that existed in Monsanto's library in January of
16 1970?

17 A. I don't remember that specific document.

18 Q. Do you remember Monsanto having any documents
19 in January of 1970 in its library on the subject matter of
20 pathologic changes in animals exposed to commercial
21 chlorinated diphenyl?

22 MR. FEATHERSTONE: I'm sorry. Did you put a
23 date on that? Read the question back.

24 (Whereupon, the reporter propounded the previous question.)

25 MR. FEATHERSTONE: Go ahead.

1 A. I recall pathological changes in animals
2 documented by reports from testing laboratories which
3 conducted the studies, the tests, for Monsanto. I do not
4 happen to, at this moment, recall the reference on item
5 twenty-seven on this document.

6 Q. (By Mr. Bradley) Do you recall whether, in
7 January of 1973, Monsanto had any documents published by
8 Public Health Reports?

9 A. I do not.

10 Q. Have you heard of the document, Public Health
11 Reports?

12 A. Yes.

13 Q. What is it?

14 A. I don't know how to describe it. It's a
15 publication.

16 Q. Who publishes it?

17 A. Public Health Service, Federal department.

18 Q. It's a government document?

19 A. Yes.

20 Q. Is item twenty-eight a document that existed
21 within one of Monsanto's libraries in January of 1970?

22 A. I recall that, yes.

23 Q. Is item twenty-nine a document received by
24 Monsanto within a month of its publication?

25 A. Approximately so, yes. Uh-huh.

1 Q. Is item thirty a document received by Monsanto
2 within a month of its publication?

3 A. Yes.

4 Q. Is item thirty-one a document received by
5 Monsanto within a month of its publication?

6 A. Yes.

7 Q. Is item thirty-two a document received by
8 Monsanto within a month of its publication?

9 A. I don't recall that document at all. I cannot
10 place it.

11 Q. Were you aware of the proceedings of the 15th
12 Intern Pharmacological Congress held in Holland in 1972?

13 A. I don't remember it.

14 Q. Is item thirty-three a document received by
15 Monsanto within a month of its publication?

16 A. Yes.

17 Q. Is item thirty-four a document received by
18 Monsanto within a month of its publication?

19 A. Yes.

20 Q. Is item thirty-five a document received by
21 Monsanto within a month of its publication?

22 A. Yes.

23 Q. I'm now looking at page six of that Exhibit.
24 Looking down about two-thirds to three fourths of the way
25 down, where it say "Aroclor 1254 (25)." Do you see that?

1 A. I see that.

2 Q. Over on the right-hand side, it has a listing
3 for effects and it says, "Increased liver weight.
4 Adenofibrosis in all mice fed for eleven months. None of
5 twenty-two mice fed for eleven months had hepatomas. One
6 of twenty-four mice fed for six months had a hepatoma."
7 First of all, did I read that correctly?

8 A. You did.

9 Q. Did Monsanto ever learn about these effects
10 associated with Aroclor 1254?

11 MR. FEATHERSTONE: Object to the form.

12 MR. BRADLEY: Let me ask it this way.

13 Q. (By Mr. Bradley) Did Monsanto ever learn that
14 Aroclor 1254 had the effects listed for it at page six of
15 Exhibit 359?

16 A. Yes. That was the result of reference
17 twenty-five, which is listed. That's what the parentheses
18 "(25)" refers to.

19 Q. (By Mr. Bradley) I'm now going to show you
20 what's been marked for identification as Plaintiff's
21 Exhibit 292, and ask you if you would please to review that
22 document.

23 A. I have glanced through the documents.

24 Q. Plaintiff's Exhibit 292 is entitled, "Process
25 for the Production of Aroclors, Pyranols, etc. at the

1 Anniston and the William G. Krummrich Plant," dated April,
2 1953 by E. Mather; is that correct?

3 A. That is correct.

4 Q. Who is E. Mather?

5 A. At the time, he was director of Monsanto's
6 research department.

7 Q. Is this a document that you've seen before
8 today?

9 A. Yes.

10 Q. And does this appear to be a fair and accurate
11 copy of the document prepared by Mr. Mather in April of
12 1955?

13 MR. FEATHERSTONE: Object to the absence of
14 foundation. Calls for speculation.

15 A. No. These appear to me to be a collection of
16 selected sheets from a bigger document.

17 Q. (By Mr. Bradley) All right. Is this a
18 document that existed in the library of Monsanto -- Excuse
19 me, one of the libraries of Monsanto in January of 1970?

20 A. Yes.

21 Q. Would it have been the regular practice of
22 Monsanto as a business to place this document in its
23 regular business files shortly after it was generated?

24 MR. FEATHERSTONE: Objection. Speculation, no
25 personal knowledge of this witness to answer that question.

1 A. Well, the purpose of this document is to
2 provide useful information to the recipients and because of
3 its nature, it becomes a document that is virtually used
4 daily by someone.

5 MR. FEATHERSTONE: Are you referring to a
6 bigger document or this one?

7 THE WITNESS: I'm referring to a larger, full
8 document.

9 MR. BRADLEY: All right.

10 A. Not just these pieces of it.

11 Q. (By Mr. Bradley) Apparently, what you're
12 telling us is Plaintiff's Exhibit 292 are selected pages of
13 a larger document with this title?

14 A. Yes.

15 Q. I'm now looking at what appears to be page
16 forty-nine of the document, the larger document, but page
17 four of this Exhibit, which has at the top, "XI. Hazards."

18 A. I see.

19 Q. All right. Half way down, there's an article
20 entitled, "Chemistry of Synthetic Drugs," by Percy May. Do
21 you see that reference?

22 A. I do.

23 Q. Dated September, '47?

24 A. I see it.

25 Q. Is that a document that Monsanto had in one of

1 its libraries in January of 1970?

2 A. I personally don't know.

3 Q. Looking down further, there's a reference to
4 the MCC bulletin. Is the MCC -- "MCC," those are the
5 initials for Monsanto Chemical Company?

6 A. Yes.

7 Q. That is how Monsanto occasionally refers to
8 itself, is it not, by MCC?

9 A. At that time.

10 Q. All right. In January of 1970, did Monsanto
11 have in one of its libraries the MCC bulletin written
12 apparently before April, 1955, entitled "Physical
13 Properties of Aroclors," which mentions systemic effects
14 arising from the oral injection from Aroclors?

15 A. I'm not personally aware of the presence of a
16 copy in the library.

17 Q. In looking underneath that, in January of
18 1970, did Monsanto have, in one of its libraries, the
19 letters from E. Mather to P.J.C. Haywood, December 17th,
20 1951, and from Mather to Newman, dated January 8th, 1952,
21 reviewing the literature on toxicity of Aroclors?

22 A. I don't know.

23 Q. I'm now looking at the next page, under the
24 section that appears after the words, "Aroclors: Toxicity."

25 A. I see it.

1 Q. In January of 1970, did Monsanto have, in one
2 of its libraries, an article in the J.T. Baker Company's
3 Chemist Analyst, Volume 26, Number 2, page 33, September,
4 1947?

5 A. I don't personally know.

6 Q. Would you now look at the following page? At
7 the top of the page, it has X1 - Hazards, continued." Is
8 that correct?

9 A. Yes.

10 Q. And underneath that, it has the Chemist
11 Analyst, Volume 36 number 2 page 33, J.T. Baker Chemical
12 Company, Phillipsburg, New Jersey, September, 1947,
13 entitled, "On the Toxicity of the Arochlors (sic)," because
14 Aroclors was misspelled; is that correct?

15 A. That is correct.

16 Q. In January of 1970, did Monsanto have a copy
17 of what is listed on this page and the next four pages of
18 this exhibit?

19 MR. BRADLEY: Would you read back the question
20 to me?

21 (Whereupon, the reporter propounded the previous question.)

22 MR. BRADLEY: Go ahead and answer the
23 question, please.

24 MR. FEATHERSTONE: Have a copy of what?

25 MR. BRADLEY: The last four pages of what is

1 Plaintiff's Exhibit 292, which appears to me to be the
2 study that was referred to on the preceding page.

3 MR. FEATHERSTONE: I object to the form of the
4 questioning. Absence of foundation for the question. I'm
5 not sure I share that point of view.

6 A. Well, since these pages came from a larger
7 document that was kept in the library, certainly Monsanto
8 had these pages.

9 MR. BRADLEY: All right. Thank you.

10 Q. (By Mr. Bradley) I'm now going to show you
11 what has been marked for identification as Plaintiff's
12 Exhibit 1184 and ask you to review that document for me,
13 please.

14 MR. FEATHERSTONE: Bill, you can review it but
15 don't answer anything until I get back.

16 (Whereupon, a two minute recess was taken.)

17 Q. (By Mr. Bradley) Have you had a chance to
18 review that document?

19 A. I have.

20 Q. Before I ask you any questions about it, I
21 want to return for a moment to Plaintiff's Exhibit 359. If
22 you'd turn back to the bibliography section. In January of
23 1970, was Monsanto aware that prior to 1940, a report had
24 been prepared regarding the Dermatological and Systemic
25 Effects of Exposure to Chloro-Diphenyl?

1 THE WITNESS: Did you refer to a document that
2 had been prepared?

3 MR. BRADLEY: Yes.

4 THE WITNESS A document had been prepared?

5 MR. BRADLEY: Actually, would you tell us what
6 my question was?

7 (Whereupon, the reporter propounded the previous question.)

8 MR. FEATHERSTONE: Object to form.

9 A. Yes. Monsanto, through its medical
10 department, was aware of that type of information.

11 Q. (By Mr. Bradley) In January of 1970, was
12 Monsanto aware that prior to 1940, a report had been
13 prepared regarding the skin conditions resulting from
14 exposure to certain chlorinated hydrocarbons?

15 A. Yes.

16 Q. In January of 1970, was Monsanto aware that
17 prior to 1940, a report was prepared regarding Dermatitis
18 from Synthetic Resins in Waxes?

19 A. Yes. There was a document, Drinker's study.

20 Q. In January of 1970, was Monsanto aware that
21 prior to 1945, a report was prepared on the pathological
22 changes in animals exposed to commercial chlorinated
23 diphenyls?

24 MR. FEATHERSTONE: Object to the form of the
25 questioning. Vague.

1 A. Monsanto was certainly aware that the studies
2 had been sponsored, and the effects on the animals of
3 exposure to commercial polychlorinated biphenyls.

4 MR. FEATHERSTONE: He's talking about a report
5 -- He's talking about in 1970, if Monsanto was aware of a
6 report prepared before 1945?

7 A. Correct.

8 Q. (By Mr. Bradley) So my question is, in
9 January of 1970, was Monsanto aware that prior to 1945, a
10 report had been prepared regarding the pathologic changes
11 in animals exposed to a commercial chlorinated diphenyl?

12 A. Yes.

13 MR. FEATHERSTONE: I'll object to the form of
14 the question.

15 Q. (By Mr. Bradley) In January of 1970, was
16 Monsanto aware that there had been a study prior to 1957
17 regarding the toxicity of the vapors of Aroclor 1245, and
18 Aroclor 1254?

19 THE WITNESS: What year was that, 1950?

20 MR. BRADLEY: Prior to 1957. I'm now looking
21 at item twenty-eight on the bibliography, if that helps
22 you.

23 MR. FEATHERSTONE: He already acknowledged
24 that report. It was testified to yesterday.

25 MR. BRADLEY: Actually, I think Mr.

1 Featherstone is correct.

2 Q. (By Mr. Bradley) Let me now return to Exhibit
3 1184. Would you put that in front of you again? First of
4 all, what is Plaintiff's Exhibit 1184?

5 A. It appears to be a copy submitted by a Versar,
6 Incorporated to the United States Environmental Protection
7 Agency, referred to as a Final Report on the Subject
8 Polychlorinated Biphenyls, 1929 to 1979.

9 Q. And the document's dated May 16th, 1979?

10 A. It is.

11 Q. Do you know Versar, Incorporated?

12 A. Yes. I'm aware of them, yes.

13 Q. Who are they?

14 A. It was a consulting firm and, as I understood
15 it, they concentrated consulting in the area of
16 environmental issues.

17 Q. Did they ever do consulting work for Monsanto
18 between 1966 and 1975?

19 A. No.

20 Q. Have you seen this report prior to today?

21 A. No.

22 Q. Would you turn to page three, please? I'm
23 looking now at the first full paragraph, the one that says,
24 "The available data on the toxicity of PCBs was first
25 summarized in an article published in 1931 (Smyth, 1931)"

1 Do you see that there?

2 A. I do.

3 Q. In your work with the PCB issues at Monsanto,
4 would you agree that the available data on the toxicity of
5 PCBs was first summarized in an article published in 1931
6 by Smyth?

7 MR. FEATHERSTONE: Object to the form.
8 Speculative.

9 A. I personally am not familiar with the article
10 referred to in that sentence.

11 MR. FEATHERSTONE: Improper opinion, as well.

12 Q. (By Mr. Bradley) Moving down in that same
13 paragraph, it says, "Systemic effects of exposure to
14 mixtures of chlorinated organic compounds, including PCBs,
15 were also noted during the 1930s." Do you agree with that
16 statement?

17 MR. FEATHERSTONE: Object to the form.

18 A. In my understanding --

19 MR. BRADLEY: Let me ask the question all over
20 again.

21 Q. (By Mr. Bradley) Do you agree that systemic
22 effects of exposure to mixtures of chlorinated organic
23 compounds, including PCBs, were noted during the 1930s?

24 MR. FEATHERSTONE: How can he say that? He
25 wasn't there in the 1930s. All he can tell you is whether

1 or not he's familiar with the report that said that.

2 MR. BRADLEY: Go ahead and answer.

3 MR. FEATHERSTONE: I object to the form of the
4 question. You know better than that, Mr. Bradley. Come
5 on.

6 MR. BRADLEY: Mr. Featherstone, I'm not at all
7 certain what you intend when you express anger and
8 displeasure.

9 MR. FEATHERSTONE: That I express anger and
10 displeasure. Let there be no misunderstanding about that.

11 MR. BRADLEY: Let there be no misunderstanding
12 about my belief it serves no useful purpose. People aren't
13 necessarily wrong just because they disagree with you. Go
14 ahead and answer my question, if you would, please.

15 A. My awareness of the effects described in that
16 sentence are a result of my conversations with Mr. Wheeler,
17 Dr. Keller and their sharing with me copies of at least one
18 report by Dr. Drinker and his group. I'm in no position to
19 evaluate the quality of that work or the significance of
20 it.

21 Q. If you would, turn to page seventeen for me,
22 please. At the top of that page, does it say,
23 "References?"

24 A. I see it. Yes.

25 Q. In January of 1970, did Monsanto have in one

1 of its libraries the report entitled Chlorodiphenyls
2 containing 42 percent, 54 percent chlorine," that first
3 item referenced on page seventeen?

4 A. It did.

5 Q. I'm going to now be referring to all of the
6 references on page seventeen, and I'm just going to go
7 along chronologically, so if you'll follow with me, please.
8 In January of -- Excuse me. Did Monsanto have in its
9 libraries in 1971, or the first couple of weeks of 1972,
10 the article referred to next, which was written by Aulerich
11 and others, entitled "Effects of feeding Coho Salmon and
12 other Great Lakes Fish on Mink Production."

13 A. I don't remember the article that appeared in
14 the Canadian Journal of Zoology.

15 Q. All right. During 1973, did Monsanto have in
16 its library the next volume, which is by the same author,
17 and which apparently was published in the Journal of
18 Reproduction and Fertility?

19 A. Monsanto had received a copy of that.

20 Q. Is the next document what you have been
21 referring to as the Drinker study, or is that a different
22 document, the one that's listed by the first name Bennett?

23 A. No. This is a different document, where the
24 principle author is Mr. Bennett.

25 Q. In January of 1970, did Monsanto have in one

1 of its libraries, the article referred to, the fourth
2 article referred to on page seventeen by Bennett and
3 others, which appeared in the Journal of Industrial Hygiene
4 and Toxicology and which was entitled "Morphological
5 Changes in the Livers of Rats as Resulting from Exposure to
6 Certain Chlorinated Hydrocarbons?"

7 A. I do not recall the specific article. I do
8 recall Dr. Drinker's name appearing on several articles on
9 that type of subject.

10 Q. The next reference is one written by D.J.
11 Birmingham, entitled "Occupational Dermatology, Current
12 Problems," in January of 1970. Did Monsanto have that
13 document in one of its libraries?

14 A. I do not know.

15 Q. In January of 1970, did Monsanto have, in its
16 libraries, information regarding current problems in
17 occupational dermatology relating to exposure to PCBs?

18 A. Not to my knowledge.

19 Q. Moving down on the references, I'm now not
20 going to go through all of them. You see the one listed by
21 Clark, F.M.?

22 A. I do.

23 Q. Appears to be a 1934 article entitled, "The
24 Development and Application of Sythetic Liquid
25 Dielectrics." Is that correct?

1 A. That is correct.

2 Q. In January of 1970, did Monsanto have that
3 document in one of its libraries?

4 A. I do not know.

5 Q. The next document is also by F.M. Clark. It's
6 dated 1937, entitle "Nonflammable Dielectric Organic
7 Compounds." In January of 1970, did Monsanto have that
8 document in one of its libraries?

9 A. I don't know.

10 Q. That same author in 1962 apparently wrote a
11 document entitled, "Insulating Materials for Design and
12 Engineering Practice." In January of 1970, did Monsanto
13 have that document in one of its libraries?

14 A. I don't know.

15 Q. In January of 1970, did Monsanto have in one
16 of its libraries the next document, written by H. Coalson,
17 and K.W. Sellers, written in 1957 on the topic of Modern
18 Potato Chip Production?

19 A. I don't know.

20 Q. Did Monsanto have in its libraries in 1971 or
21 early 1972, a document entitled "Toxic Substances,"
22 authored by The Council On Environmental Quality?

23 A. I don't remember that.

24 Q. Have you heard of the Council on Environmental
25 Quality?

1 A. Certainly.

2 Q. What is it?

3 A. It was a Federal Governmental group that was
4 to advise the government on environmental matters.

5 Q. If you would on turn to page eighteen.

6 A. I have it.

7 Q. There are, at the top of the page, there are
8 two reports authored in whole or in part by C.K. Drinker,
9 one dated 1939 and one dated 1937. When you have referred
10 to the Drinker report during your deposition, do you know
11 which, if either of those, you have been referring to?

12 MR. FEATHERSTONE: I object to the form of the
13 questioning.

14 A. As best I remember, I'm referring to both of
15 those.

16 Q. (By Mr. Bradley) All right. Moving down, and
17 unfortunately, the references are in alphabetical order.
18 The document written in part by D.F. Flick, dated 1965. Do
19 you see that there?

20 A. I see that.

21 Q. "Studies of the Chick Edema Disease." In
22 January of 1970, did Monsanto have that study in one of its
23 libraries?

24 A. I don't know.

25 Q. In January of 1970, did Monsanto have in its

1 libraries the subject matter of chick edema disease
2 relating to PCB exposure?

3 MR. FEATHERSTONE: Object to the form.

4 A. Not to my knowledge.

5 Q. (By Mr. Bradley) Moving down, there's a
6 article written in part by C.K. Good, also authored by N.
7 Pensky, dated 1943, entitled, "Hallowax Acne, (Cable Rash)"
8 In January of 1970, did Monsanto have that document in one
9 of its libraries?

10 A. I do not know.

11 Q. In January of 1970, did Monsanto have in its
12 library anything to do with the subject matter of Hallowax
13 Acne?

14 A. The best I remember, the Drinker studies
15 referred to Hallowax. Those are the only studies I
16 personally know of.

17 Q. All right. Moving down, there's an article by
18 R.L. Jenkins, in part, and dated 1930, entitled "Syntheses
19 in the Diphenyl Series." In January of 1970, did Monsanto
20 have that document in one of its libraries?

21 A. I don't know.

22 Q. In January of 1970, did Monsanto have in one
23 of its libraries anything on the topic of syntheses in the
24 diphenyl series?

25 A. I don't know what the expression "syntheses in

1 diphenyls series" refers to.

2 Q. All right. The next document listed is also
3 authored in part by R.L. Jenkins, it's dated 1931 and is
4 entitled, "Compatibility Relationships of Aroclors in
5 Nitrocellulose Lacquers." January of 1970, did Monsanto
6 have that document in one of its libraries?

7 A. I don't know.

8 Q. In January of 1970, did Monsanto have in its
9 libraries anything on the topic of the compatibility
10 relationships of aroclors and nitrocellulose lacquers?

11 A. I don't know.

12 Q. Moving to page nineteen, there's a reference
13 to an article written by J.W. Jones and H.W. Alden, 1936,
14 entitled "An Acneiform Dermatargosis." In January of 1970,
15 did Monsanto have that document in one of its libraries?

16 A. I don't know.

17 Q. In January of 1970, did Monsanto have in its
18 libraries anything regarding the subject matter of
19 acneiform dermatargosis?

20 A. The only documents I am personally aware of
21 are those, again, referring to Dr. Drinker's study and in
22 reference to chloracne.

23 Q. There's an article written by R.D. Kimbrough,
24 1972, entitled "Toxicity of Chlorinated Hydrocarbons and
25 Related Compounds." Did Monsanto have that document in its

1 library in 1972, or the first several weeks of 1973?

2 A. Yes.

3 Q. The next article written by R.D. Kimbrough is
4 dated 1974, it's entitled "The Toxicity of Polychlorinated
5 Polycyclic Compounds and related Chemicals." Did Monsanto
6 have that in one of its libraries in 1974 or the first two
7 weeks of 1975?

8 A. I don't know if it's the first two weeks.
9 Shortly thereafter.

10 Q. Moving down, there's an article by M.
11 Kuratsune and others, dated 1971, entitled "Yusho, a
12 Poisoning Caused by Rice Oil Contaminated with
13 Polychlorinated Biphenyls." Did Monsanto have a copy of
14 that documents in one of its library in either 1971 or the
15 first month of 1972?

16 A. Yes.

17 Q. There's an article written in part by R.E.
18 Lister, dated 1972, entitled "PCBs in Copying Paper." Did
19 Monsanto have that document in one of its libraries in
20 1972, the first month of 1973?

21 A. I don't remember that.

22 Q. In January of 1970, did Monsanto have anything
23 in its libraries on the subject matter of PCBs in copying
24 paper?

25 A. Monsanto did have documents referring to that

1 application of PCBs, yes.

2 Q. Do you recall the earliest date of the
3 articles that Monsanto had in its libraries relating to
4 PCBs in copying paper?

5 MR. FEATHERSTONE: Now, you're referring to
6 something other than what the witness referred to, which
7 were the documents in the files?

8 MR. BRADLEY: No. I'm referring to documents
9 in your files.

10 A. I don't know that I ever personally knew the
11 very first date in which Monsanto became involved in the
12 studies leading to the use of PCBs in carbonless copy
13 paper. It would have to be the late '50s, early '60s.

14 Q. (By Mr. Bradley) Do you recall who the
15 authors were of the documents in your files relating to
16 PCBs in copy paper?

17 A. I do not.

18 Q. Do you recall whether they were all written by
19 Monsanto employees?

20 A. No, I don't.

21 Q. Do you recall whether Monsanto had in its
22 library in 1972, or the first month of 1973, an article
23 written in part by Y. Masuda, entitled Polychlorinated
24 Biphenyls in Carbonless Copying Paper?

25 A. I do not remember that article.

1 Q. In January of 1970, did Monsanto have in its
2 libraries an article written by M.R. Mayers, M-a-y-e-r-s,
3 and M.G. Silverberg, dated 1938 entitled "Skin Conditions
4 Resulting from Exposure to Certain Chlorinated
5 Hydrocarbons"?

6 A. I don't know.

7 Q. In January of 1970, did Monsanto have in its
8 libraries, in any of their libraries, the article written
9 in part by E.L. McCune, dated 1962 entitled
10 "Hydropericardium and Ascites in Chicks Fed a Chlorinated
11 Hydrocarbon"?

12 A. I don't know.

13 Q. In January of 1970, did Monsanto have in its
14 libraries anything on the subject matter of
15 hydropericardium and Ascites in chicks fed a chlorinated
16 hydrocarbon?

17 MR. FEATHERSTONE: Object to the form.

18 A. I don't know.

19 Q. (By Mr. Bradley) In January of 1970, did
20 Monsanto have, in any of its libraries, an article written
21 in part by J. McLaughlin, dated 1963, entitled "The
22 Injection of Chemicals into the Yolk Sac of Fertile Eggs
23 Prior to Incubation as Toxicity Test?"

24 A. I don't know.

25 Q. In January of 1970, did Monsanto have in its

1 files, in its libraries, anything on the subject matter of
2 the injection of chlorinated hydrocarbons into the yolk sac
3 of fertile eggs?

4 A. I don't know.

5 Q. In January of 1970, did Monsanto have, in any
6 of its libraries, and article written in part by W.J., last
7 name, M-e-i-g-s, dated 1954, entitled "Chloracne from an
8 unusual exposure to Aroclor?

9 A. I don't know.

10 MR. BRADLEY: I believe we've discussed this
11 one before.

12 Q. (By Mr. Bradley) In January of 1970, did
13 Monsanto have in any of its libraries an article written by
14 J W. Miller, dated 1944 entitle "Pathologic changes in
15 Animals Exposed to Commercial Chlorinated Diphenyl?"

16 MR. FEATHERSTON: Repetitive.

17 A. I don't know.

18 Q. (By Mr. Bradley) In 1972 or the first month
19 of 1973, did Monsanto have in any of its libraries an
20 article written in part by C.T. Nisbet, N-i-s-b-e-t, dated
21 1972, entitled "Rates and Routes of Transport of PCBs in
22 the Environment?"

23 A. Yes.

24 Q. Are you familiar with an agency referred to as
25 OECD?

1 A. Yes, sir.

2 Q. What is OECD?

3 A. It's an organization of countries and, as I
4 understand it, that it pools the countries that form NATO,
5 plus Canada and Japan.

6 Q. What does OECD stand for?

7 A. It's the Organization for Economic and
8 Commercial Development.

9 Q. Did Monsanto have, in its libraries in 1973 or
10 the first month of 1974, an article authored by OECD
11 entitled "Polychlorinated Biphenyls, their use and
12 control?"

13 A. Yes.

14 Q. In 1973, or the first month of 1974, did
15 Monsanto have in its libraries, an article authored by the
16 OECD Council entitled, "Protection of the Environment by
17 Control of Polychlorinated Biphenyls. Decision adopted 13
18 February, 1973?"

19 A. Yes.

20 Q. In 1973, or the first month of 1974, did
21 Monsanto have in its libraries a document authored by the
22 Office of Water Resources Research, U.S. Department of the
23 Interior entitled "PCB in Water, a Bibliography?"

24 A. I don't remember that document. I don't know.

25 Q. In 1975, or the first month of 1976, did

1 Monsanto have in its libraries, a document authored by the
2 Office of Water Research and Technology, U.S. Department of
3 the Interior, entitled "PCB in Water, a Bibliography,
4 Volume Two?"

5 A. I don't recall that document. I don't know.

6 Q. Did Monsanto have in its libraries in 1972 or
7 the first month of 1973 an article authored by D.B., last
8 name is Peakall, entitled "Polychlorinated Biphenyls:
9 Occurrence and Biological Effects?"

10 A. Yes.

11 Q. In January of 1970, did Monsanto have, in its
12 libraries, and article written by C.H. Penning in 1930,
13 entitled "Physical characteristics and commercial
14 possibilities of Chlorinated Bipheynyl?"

15 A. I don't know.

16 Q. In 1971 or the first month of 1972, did
17 Monsanto have in its library an article written by J., last
18 name Pichirallo, entitled "PCBs: Leaks of Toxic Substances
19 Raise Issue of Effects, Regulation?"

20 A. I don't recall that document. I just don't
21 know if Monsanto had a copy or not.

22 Q. In 1972 or the first part of, first month of
23 1973, did Monsanto have, in its library, a document
24 authored by G.E. Quinby, Q-u-i-n-b-y, entitled
25 "Polychlorobiphenyls (PCBs) and Related Chlorophenyls:

1 Effects on Health and Environment," Roman Numeral One,
2 "Bibliography, 1881 to 1971?"

3 A. Yes.

4 Q. Did you personally review that particular
5 document that was in Monsanto's files?

6 A. Yes.

7 Q. Can you tell me whether -- Well, let's do it
8 this way. Do you recall whether you reviewed that document
9 in 1972 or the first part of 1973?

10 A. At about that time, as best as I can recall,
11 yes.

12 Q. All right. And when you reviewed it, were you
13 able to tell whether Monsanto had in its libraries the
14 documents listed on the bibliography prepared by G.E.
15 Quinby?

16 A. As best I remember, we had many of them but
17 not all of them.

18 Q. Do you recall, when you reviewed the
19 bibliography prepared by G.E. Quinby, whether Monsanto had
20 documents referenced in the bibliography that predated
21 1940?

22 MR. FEATHERSTONE: Documents listed in the
23 Quinby bibliography that predated 1940?

24 MR. BRADLEY: Yes.

25 A. Yes.

1 Q. (By Mr. Bradley) Did Monsanto have in its
2 libraries documents listed in the Quinby bibliography that
3 predated 1930?

4 A. I don't recall any that predated 1930.

5 Q. Did Monsanto have documents in its libraries
6 listed in the Quinby bibliography as having been written
7 between 1940 and 1950?

8 A. Yes. There were some.

9 Q. Did Monsanto have in its libraries documents
10 listed in Quinby's bibliography that were authored in 1950
11 and 1960?

12 A. Yes.

13 Q. 1960 to 1970?

14 A. Yes.

15 MR. BRADLEY: It's 12:10. Do you want to take
16 a break?

17 MR. FEATHERSTONE: Sounds like a good idea.
18 Talking about a lunch break?

19 MR. BRADLEY: I'm talking about a lunch break.

20 MR. FEATHERSTONE: All right. Sounds like a
21 good idea.

22 MR. FEATHERSTONE: Okay.

23 MR. MASKIN: Resume around 1:00?

24 MR. BRADLEY: 1:15.

25 (Whereupon, a luncheon recess was taken until 1:15 p.m.)

1 Q. (By Mr. Bradley) Mr. Papageorge, I was asking
2 you some questions regarding the references on Plaintiff's
3 Exhibit 1184, if you could find that.

4 A. I have it.

5 Q. I was looking at page twenty.

6 A. I have it.

7 Q. And close to the bottom, there's a reference
8 to an article written by L.M. Reynolds in 1971, entitled
9 "Pesticide Residue Analysis in the Presence of
10 Polychlorobiphenyls (PCBs)" Is that a document that
11 Monsanto had in one of its libraries in 1971 or the first
12 month of 1972?

13 A. Yes.

14 Q. The next document is one by Robert Risebrough
15 and others dated 1968, entitled "Polychlorinated Biphenyls
16 in the Global Ecosystem." Is that a document that Monsanto
17 had in one of its libraries in January of 1970?

18 A. Yes.

19 Q. The next document is one written by H.
20 Schmidt, with an 1881 date, and I won't attempt to
21 pronounce the title, but I will spell it: U-b-e-r,
22 D-i-p-h-e-n-y-l-b-a-s-e-n. Is that a document that
23 Monsanto had in its files - excuse me - in one of its
24 libraries in January of 1970?

25 A. I do not know.

1 Q. Do you know if Monsanto had a, this particular
2 article translated into English?

3 A. I do not know.

4 Q. The next article is one by R.F. Skrentny, and
5 others, written in 1971, "Silo Sealants as a Source of
6 Polychlorobiphenyl (PCB) Contamination of Animal Feed." Is
7 that a document that Monsanto had in its library in 1971 or
8 the first month of 1972?

9 A. Yes.

10 Q. The next article is by H.L. Smith and W.E.
11 Freeman, dated 1955, entitled, "Automatic remote heating
12 Cures Frying Faults." Is that a document Monsanto had in
13 its library in January of 1970?

14 A. I don't know.

15 Q. Mr. Papageorge, do you remember if we've
16 discussed the next article by H.F. Smyth, 1931? Let me
17 just ask about it. The article by H.F. Smyth is entitled,
18 "Toxicity of certain Benzene Derivatives and Related
19 Compound." Is that a document Monsanto had in its library
20 in January of 1970?

21 A. I don't recall this document. I don't know if
22 it existed in Monsanto's files.

23 Q. In January of 1970, did Monsanto have in its
24 library documents relating to the toxicity of certain
25 benzene derivatives and related compounds?

1 A. I don't know.

2 Q. In -- The next document is by W. N. Sullivan
3 and I Hornstein, 1953, entitled "Chlorinated Polyphenyls to
4 Improve Lindane Residues." Is that a document that
5 Monsanto has in its library in January of 1970?

6 A. Yes.

7 Q. Skipping one and moving to the article by J.F.
8 Treon, is that an -- That is an article that we discussed
9 previously, is it not?

10 A. Yes.

11 Q. The document following that is by a person
12 whose last name is T-s-a-o, an others, dated 1953, entitled
13 "A Comparison of Evaporation Rates and Toxicity to House
14 Flies of Lindane and Lindant-Chlorinated Polyphenyl
15 Deposits." Is that a document that Monsanto had in its
16 libraries in January of 1970?

17 A. I don't know.

18 Q. The next document is written by the U.S.
19 Department of Agriculture, Ad Hoc Group on PCBs, dated
20 1972, entitled "Agriculture's Responsibility Concerning
21 Polychlorinated Biphenyls (PCBs)." Is that a document
22 Monsanto had in its libraries in 1972 or the first month of
23 1973?

24 A. I do not remember. I don't know.

25 Q. The next document is a also written by the

1 U.S. Department of Health -- Excuse me. It's not also,
2 but it is written by the U.S. Department of Health,
3 Education and Welfare, dated 1970, entitled "Supplement 1 -
4 Status Report on the Chemistry and Toxicology of
5 Polychlorinated Biphenyls (PCBs) of Aroclors." Is that a
6 document Monsanto had in its libraries in 1970 or the first
7 month of 1971?

8 A. I don't know.

9 Q. The next document is written by H. Von Wedel
10 and others, dated 1943, entitled, "Observations on Toxic
11 Effects Resulting from exposure to Chlorinated Naphthalene
12 and Chlorinated Phenyls with suggestions for prevention."
13 Is that a document that Monsanto had in its libraries in
14 January of 1970?

15 A. I don't know.

16 Q. In January of 1970, did Monsanto have in its
17 libraries any documents on the subject matter of the toxic
18 effects resulting from exposure to chlorinated phenyls,
19 with suggestions for prevention?

20 MR. FEATHERSTONE: Object to the form.

21 A. Chlorinated biphenyls, yes.

22 Q. (By Mr. Bradley) The next document is by G.
23 Widmark, dated 1967.

24 MR. FEATHERSTONE: Over.

25 THE WITNESS: Sorry.

1 Q. (By Mr. Bradley) Entitled "Possible
2 Interference by Chlorinated Biphenyls." Is that a document
3 that Monsanto had in its library in January of 1970?

4 A. The last time I said yes, I thought you were
5 referring to this document.

6 Q. Oh. All right.

7 MR. FEATHERSTONE: When you said yes to the
8 last question?

9 A. Yes to the Widmark document.

10 Q. (By Mr. Bradley) Let's clear that up then.
11 In January of 1970 -- I'm now looking at the Von Wedel.

12 A. Okay.

13 Q. In January of 1970, did Monsanto have in its
14 library documents on the subject matter of the toxic
15 effects resulting from exposure to chlorinated phenyls with
16 suggestion for preventing?

17 MR. FEATHERSTONE: Object to the form.

18 A. It had documents covering this subject, as I
19 indicated earlier, primarily under the authorship of Dr.
20 Drinker.

21 Q. (By Mr. Bradley) All right. Now, moving to
22 the G. Widmark, 1967 article. Now, will you turn the page
23 back for a moment? Still on page 21. G. Widmark wrote an
24 article entitled, "Possible interference by Chlorinated
25 Biphenyls," dated 1967. Is that a document that Monsanto

1 had in its libraries in January of 1970?

2 A. Yes.

3 Q. The final article is one written by D.R. Young
4 and others, dated 1974 entitled "Marine Inputs of
5 Polychlorinated Biphenyls and Copper from Vessel
6 Antifouling Paints." Is that a document that Monsanto had
7 in its library in 1974 or the first month of 1975?

8 A. I don't know.

9 MR. BRADLEY: Go off the record for a moment?

10 MR. FEATHERSTONE: Certainly.

11 (Whereupon, a discussion was held between Counsel, off the
12 record.)

13 MR. FEATHERSTONE: We have marked as
14 Plaintiff's Exhibit 1124-A documents bearing the Bates
15 Numbers NEV 023091 through NEV 023119. All right. We have
16 marked as Plaintiff's Exhibit 516-A, a two page document,
17 Bates Number ADM 000799 and ADM 000800; we have marked as
18 Plaintiff's Exhibit 1316-A, a one page document, page 632,
19 from an article entitled "Dermal Toxicity Studies of
20 Technical Polychlorinated Biphenyls and fractions thereof
21 in Rabbits," by Voss and Beams, received October 5, 1970.
22 I guess I probably ought to make clear on the record that
23 Plaintiff's Exhibit 516-A is a two-page bibliography taken
24 out of a document previously marked as Plaintiff's Exhibit
25 516, entitled "Submission to the subcommittee on oversight

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1 and investigation of the Committee on Interstate and
2 Foreign Commerce, U.S. House of Representatives," by
3 Monsanto Company, bearing the date November 16th, 1979.
4 First page of that document bears ADM 000762, and with
5 regard to Plaintiff's Exhibit 1124-A and all the pages that
6 make up that exhibit, that was taken from a document
7 previously marked as Plaintiff's Exhibit 1124, entitled
8 "Final Report of the Subcommittee on the Health Effects of
9 Polychlorinated Biphenyls and Polybrominated Biphenyls,"
10 July, 1976, Department of Health, Education and Welfare,
11 Washington, D.C. The first page of which bears Bates
12 number NEV 022886. That is a very lengthy document, and
13 Plaintiff's Exhibit 1124-A is a lengthy bibliography from
14 that document.

15 MR. BRADLEY: Let's go back off the record.

16 (Whereupon, a thirty minute recess was taken.)

17 Q. Mr. Papageorge, during a break, you went
18 through what are now deposition Exhibits 516-A, 1124-A and
19 1316-A, and made various markings on those documents; is
20 that correct?

21 A. That is correct.

22 Q. And the markings are Xs, Bs, Ns and As; is
23 that correct?

24 A. That is correct.

25 Q. And you then put one of those initials next to

1 each articles listed on each of those exhibits; is that
2 correct?

3 A. That is correct.

4 Q. And what did you intend when you placed an A
5 next to an article?

6 A. An A next to an article indicates that, to my
7 knowledge, a copy of that article was in Monsanto's --
8 Let me back off. The article listed was dated before 1970
9 but as of 1970 - January, to be specific - to the best of
10 my knowledge, Monsanto had a copy of that article in its
11 library and files.

12 Q. And what did you intend when you placed a B
13 next to any of those articles?

14 A. The B was reserved for those articles that
15 were published after 1970, and the B designates that
16 sometime shortly after publication, Monsanto obtained a
17 copy and that copy was retained in its files, library.

18 Q. And what did the N signify?

19 A. The N signifies that a copy of the article
20 that's listed was not retained in Monsanto's files and
21 since all of these documents were considered as being
22 associated with PCBs, I used that as a criteria.

23 Q. All right. And what does take X indicate?

24 A. X indicates that - one of two things. I
25 either did not recall the article at all or I had no

1 information to lead me to believe that a file was kept. In
2 other words, I didn't know.

3 MR. FEATHERSTONE: Can we go off the record
4 for a second?

5 (Whereupon, a discussion was held between Counsel, off the
6 record.)

7 MR. BRADLEY: Let's go back on the record.

8 Q. (By Mr. Bradley) Mr. Papageorge, do you have
9 some clarification to make regarding what you intended when
10 you placed an N next to these articles?

11 A. Yes, I do. To the best of my knowledge, the
12 article alongside which I placed an N was not kept in the
13 PCB files. That does not mean it was never known to
14 Monsanto; it does not mean it was not kept in some other
15 file, but I know it was not kept in the PCB file.

16 MR. FEATHERSTONE: Does it mean it was known
17 to Monsanto?

18 A. It may or may not have been known to Monsanto.

19 Q. (By Mr. Bradley) Would that be true for the
20 articles that you placed an X to, as well, that Monsanto
21 may have known about those articles, you just don't know
22 whether a copy was kept in the files at Monsanto?

23 A. That's a possibility. When I put an X, I just
24 don't know anything about that article.

25 Q. Just so that I understand, as well, is it

1 possible that Monsanto maintained as part of its files
2 documents on the subject matter referenced by those which
3 you've placed an X next to, may have or may not have, but
4 regardless of whether it did, you don't know whether that
5 article ever made its way into Monsanto's files?

6 A. That is true.

7 MR. FEATHERSTONE: Object to the form.

8 A. That is right.

9 Q. (By Mr. Bradley) I'm now going to show you --
10 Let's go off to record for a moment.

11 (Whereupon, a discussion was held between Counsel, off the
12 record.)

13 MR. BRADLEY: By agreement of counsel, we have
14 agreed that documents 516, 1124 and 1316 will be comprised
15 of both those numbers and 516-A and 1124-A and 1316-A.

16 MR. FEATHERSTONE: No. No. Lets go off the
17 record.

18 (Whereupon, a discussion was held between Counsel, off the
19 record.)

20 MR. BRADLEY: By aggrement of counsel, 516,
21 Plaintiff's Exhibit 516, will contain 516-A and 516-A will,
22 itself, be a separate document; Plaintiff's Exhibit 1124
23 will contain 1124-A and 1124-A, in addition, that will be a
24 seperate document, and Plaintiff's Exhibit 1316 will
25 include 1316-A. However, 1316-A will also be a separate

1 document; is that correct?

2 MR. FEATHERSTONE: No.

3 MR. BRADLEY: Okay.

4 MR. FEATHERSTONE: Let me try it. Try it this
5 way. Off the record.

6 (Whereupon, a discussion was held between Counsel, off the
7 record.)

8 Q. (By Mr. Bradley) I'm now going to show you
9 what's been mark for identification as Plaintiff's Exhibit
10 516 and ask you to identify that document for me.

11 A. This is a copy of a multipage document
12 entitled, "Submission to the Subcommittee on Oversight and
13 Investigations of the Committee on Interstate and Foreign
14 Commerce, U.S. House of Representatives, by Monsanto
15 Company, 800 North Lindbergh Blvd, St. Louis, Missouri
16 63166, November 16th, 1979."

17 Q. Is this a document you've seen before?

18 A. I have not.

19 Q. From time-to-time, did Monsanto submit reports
20 to committees or subcommittees within the United States
21 House of Representatives?

22 A. Yes.

23 Q. And from time-to-time time, those submissions
24 would relate to polychlorinated biphenyls?

25 A. Yes.

1 Q. Do you know whether Plaintiff's Exhibit 516
2 was, in fact, a document prepared by Monsanto and submitted
3 to the U.S. House of Representatives.

4 MR. FEATHERSTONE: Absence of personal
5 knowledge. Objection.

6 A. Not having seen this document before, I find
7 that I am in no position to evaluate who put it together
8 and how it was used.

9 Q. (By Mr. Bradley) All right. Mr. Papageorge,
10 I now am going to show you what's been marked for
11 identification as Plaintiff's Exhibit 1124, and ask you to
12 tell me what that document is?

13 A. This appears to be a copy --

14 MR. FEATHERSTONE: I'm going to object on the
15 grounds of absence of foundation, since all the witness has
16 done the last couple of documents has read the cover page,
17 but you can go ahead and read the cover page.

18 A. It's entitled "Final Report of the
19 Subcommittee on the Health Effects of Polychlorinated
20 Biphenyls and polybrominated biphenyls," July, 1976,
21 Department of Health, Education and Welfare, Washington
22 D.C.

23 Q. (By Mr. Bradley) Have you seen that document
24 before today?

25 A. I have not.

1 Q. I now am going to show you what's been marked
2 for identification as Plaintiff's Exhibit 1316 and ask you
3 to tell me what that document is. You have Plaintiff's
4 Exhibit 1316 in front of you?

5 A. I do.

6 Q. Have you seen that document before today?

7 A. I recall it, yes.

8 Q. What is it?

9 A. It's a copy of an article entitled "Dermal
10 Toxicity studies of Technical Polychlorinated Biphenyls and
11 Fractions Thereof in Rabbits," authored by J.G. Vos, V-o-s,
12 and R.B. Bems, B-e-m-s, of the Institute of Veterinary
13 Pathology and Institute of Veterinary Pharmacology and
14 Toxicology, University of Utrecht, Bilstrat, 172, Utrecht,
15 The Netherlands.

16 Q. And what is the date on it?

17 A. "Received, October 5, 1970."

18 Q. All right.

19 A. I do not know the date of publication.

20 There's no reference.

21 Q. Is the date of receipt, a date that was placed
22 there by Monsanto when it received that document?

23 A. Oh, no.

24 Q. All right. Is that a document that Monsanto
25 kept in one of its libraries?

1 A. Yes.

2 Q. And is that a document that existed in the
3 library, one of the libraries of Monsanto in January of
4 1970?

5 A. Yes.

6 Q. Is that --

7 A. I'm sorry. Not January. I misstated that.

8 Q. Do you recall when that entered the libraries
9 of Monsanto?

10 A. No, I don't.

11 Q. Well, you just had something pointed out to
12 you on the document. Was there something pointed out to
13 you that makes you believe you didn't receive it, or have
14 it in the library in January of 1970?

15 A. Yes.

16 Q. What is that?

17 A. As I mentioned earlier, the article has on it
18 the statement "Received October 5, 1970."

19 Q. All right.

20 A. That tells me that the publication editor
21 received this document for consideration for publication.

22 Q. Do you know whether that's a document
23 that Monsanto had in its libraries in 1971?

24 A. I am having difficulty because I see in this
25 article a reference to another article dated 1971. So I

1 have no idea just when this article was published.

2 Q. All right. May I see it for a moment? The
3 reference that you saw to 1971, was that on this side of
4 the page?

5 A. No, sir. It's in the first paragraph of the
6 article we were looking at.

7 MR. BRADLEY: Oh. I see. All right.

8 Q. (By Mr. Bradley) Did the Monsanto librarian
9 maintain records within Monsanto that showed the date of
10 acquisition of materials entering the Monsanto library
11 system?

12 MR. FEATHERSTONE: Objection. No showing of
13 personal knowledge, plus object to the form.

14 A. I don't know.

15 Q. (By Mr. Bradley) Did you ever see a document
16 in Monsanto's library that showed the date of acquisition
17 of the materials within Monsanto's library?

18 A. No.

19 Q. Did you ever discuss with the head librarian
20 at Monsanto, between 1966 and 1975, whether there was a way
21 to determine the date of acquisition of the materials in
22 Monsanto's library?

23 A. No.

24 Q. Between 1966 and 1975, did you ever inquire of
25 Monsanto's librarian about the date of acquisition of any

1 item within Monsanto's library?

2 A. No.

3 Q. Is this a document you recall being in
4 Monsanto's library system prior to 1973?

5 A. As best as I recall, yes.

6 Q. And is that a fair and accurate copy of the
7 document?

8 A. As far as I can tell. I have nothing to
9 compare it to and it's been over twenty years. I just
10 don't know how to answer the question.

11 Q. Does anything about it appear to indicate to
12 you that it's not a fair and accurate copy of the document
13 it purports to be?

14 A. With a quick glance at the portions, I'm left
15 to wonder if maybe additional pages were originally with
16 this. I have no way. The acknowledgement section, for
17 example, stops abruptly on the last sheet. I don't know if
18 more followed.

19 MR. FEATHERSTONE: Let me make a suggestion
20 here. We detached the bibliography page at your direction,
21 Mr. Bradley. The copy you gave him is the one without the
22 bibliography, it can't be full and complete. That's
23 missing for sure.

24 MR. BRADLEY: Let's stop for a moment and
25 let's put it together correctly. May I have it back,

1 please?

2 THE WITNESS: Sure.

3 MR. FEATHERSTONE: Don't you have a copy? I
4 took the bibliography off of one.

5 MR. BRADLEY: I know that, and it was, we
6 should have three separate copies of it.

7 MR. FEATHERSTONE: Off the record.

8 (Whereupon, a discussion was held between Counsel, off the
9 record.)

10 Q. (By Mr. Bradley) Mr. Papageorge, do you now
11 have in front of you what appears to be a true and accurate
12 copy of the document entitled "Dermal Toxicity Studies of
13 Technical Polychlorinated Biphenyls and Fractions Thereof
14 in Rabbits," by J.G. Vos, that was maintained in Monsanto's
15 library?

16 A. It appears to be, yes, sir.

17 Q. All right.

18 MR. FEATHERSTONE: Just so the record is
19 clear, Plaintiff's 1316, as it will be attached to the
20 Exhibit, is pages 617 through 633. You've got my copy.

21 MR. BRADLEY: It's going to get confused if
22 you don't do it right now. Off the record one more time.
23 (Whereupon, a discussion was held between Counsel, off the
24 record.)

25 (Whereupon, the deposition is being continued to a future

1 date to be determined.)

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CONCANNON & JAEGER

STLCOPCB4031500

1 STATE OF MISSOURI)
) SS
2 COUNTY OF ST. LOUIS)

3 I, John T. Concannon, a Notary Public within and for
4 the State of Missouri, duly commissioned, qualified and
5 authorized to administer oaths and to take and certify to
6 depositions, do hereby certify that pursuant to Notice in
7 the civil cause now pending and undetermined in the
8 District Court of the United States, within and for the
9 District of Nevada, entitled NEVADA POWER COMPANY,
10 Plaintiff, -vs- MONSANTO COMPANY, et al., Defendants, to be
11 used in the trial of said cause in said Court, I was
12 attended at the law offices of Messrs. Husch & Eppenberger,
13 100 N. Broadway, Suite 1300, in the City of St. Louis,
14 State of Missouri, by Ralph A. Bradley, attorney for the
15 Plaintiff; by Bruce A. Featherstone, attorney for the
16 Defendant, Monsanto; by Arvin Maskin, attorney for the
17 Defendant, Westinghouse; by Steven R. Kuney, attorney for
18 the Defendant, General Electric, and by WILLIAM B.
19 PAPAGEORGE, the witness, in said office on February 23rd
20 and 24th, 1993.

21 The said witness, WILLIAM B. PAPAGEORGE, being of
22 sound mind and being by me first carefully examined and
23 duly cautioned and sworn to testify the truth, the whole
24 truth and nothing but the truth in the case aforesaid,
25 thereupon testified as is shown in the foregoing

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1 transcript, said testimony being by me reported in
2 shorthand and caused to be transcribed into typewriting,
3 and that the foregoing pages correctly set out the
4 testimony of the aforementioned witness, WILLIAM B.
5 PAPAGEORGE, together with the questions propounded by
6 counsel and the remarks and objections of counsel thereto,
7 and is in all respects a full, true and complete transcript
8 of the questions propounded to and the answers given by
9 said witness; and that said testimony, so transcribed, was
10 subscribed to by the witness on the _____ day of
11 _____, A. D., 1993.

12 I FURTHER CERTIFY that I am not of counsel nor
13 attorney for any of the parties to said suit, nor related,
14 nor interested in any of the parties or their attorneys.

15 WITNESS MY HAND and Notarial Seal, given this _____
16 day of _____, A. D., 1993, at St. Louis, Missouri.

17 MY COMMISSION EXPIRES SEPTEMBER 12, 1994

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JOHN T. CONCANNON,
Notary Public, within and
for the State of Missouri