

ORIGINAL

IN THE COURT OF COMMON PLEAS
PHILADELPHIA COUNTY

IN RE: PAOLI RAILROAD YARD)
PCB LITIGATION,)
)
)
) MASTER FILE
) NO. 90-0609-C-6

CONTINUED DEPOSITION OF R. EMMET KELLY, M.D.
DECEMBER 12, 1990

G O R E R E P O R T I N G C O M P A N Y
408 OLIVE STREET ST. LOUIS, MISSOURI
241-6750

1 IN THE COURT OF COMMON PLEAS

2 PHILADELPHIA COUNTY

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5 IN RE: PAOLI RAILROAD YARD)
6 PCB LITIGATION,)
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8)
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13 Continued deposition of R. EMMET
14 KELLY, taken on behalf of the Plaintiffs,
15 at the offices of Brown, James & Rabbitt,
16 705 Olive Street, in the City of St. Louis,
17 State of Missouri, on the 12th day of
18 December, 1990 before Ronald A. Gore,
19 Registered Professional Reporter and Notary
20 Public.

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1 R. EMMET KELLY,
2 of lawful age, having been first duly sworn
3 to testify the truth, the whole truth, and
4 nothing but the truth in the case
5 aforesaid, deposes and says in reply to
6 oral interrogatories propounded as follows,
7 to-wit:

8 CONTINUED EXAMINATION
9 QUESTIONS BY MR. COHEN:

10 Q. Doctor, during yesterday's
11 session you identified certain things that
12 you said that you would be glad to check
13 for at home and see if you could bring them
14 along today. Have you brought anything
15 with you?

16 A. Yes, I have.

17 Q. May I see what you have, sir?

18 A. Well, I think, first of all, you
19 asked me to look over what depositions I
20 might have given outside of Monsanto. This
21 is the only one I was able to find dealing
22 with PCB's.

23 Q. Is that Gallatin, G-a-l-l--

24 A. --a-t-i-n.

25 Q. Plaintiff versus Illinois

1 Central?

2 A. That's correct.

3 Q. And you gave a deposition on May
4 20, 1988 in a matter pending in the United
5 States District Court for the Southern
6 District of Illinois. And this is the
7 civil action. Is that correct, sir?

8 A. That is correct.

9 Q. You say that's the only one you
10 were able to find, that's the only one you
11 had the transcript for?

12 A. That's right. That's correct.

13 Q. Now, there are some other names
14 here, can you explain to me --

15 A. One is the lawyer for the
16 defendant.

17 Q. Bethany Culp?

18 A. Of Oppenheimer, somebody,
19 somebody and somebody.

20 Q. And is that the person who
21 contacted you in order to obtain --

22 A. Ms. Culp, yes.

23 Q. Wanted to obtain your testimony?

24 A. Beg pardon?

25 Q. In order to obtain your

1 testimony?

2 A. That is correct.

3 Q. Did you testify as an expert
4 witness in that case?

5 A. Yes, I did.

6 Q. Were you compensated for that?

7 A. Yes, I was.

8 Q. There are, however, apparently,
9 other depositions that you've given or
10 other incidents where you've given
11 testimony, but you don't have the
12 transcript?

13 A. I do not have that, that's
14 correct.

15 Q. Do you have any information
16 regarding the actions in which you
17 testified, the names of the parties, the
18 courts in which the matters were pending,
19 anything like that?

20 A. No, sir, I do not.

21 Q. Why don't you mark this as
22 Exhibit 4.

23 (Kelly Deposition Exhibit Number
24 4 mark'd for identification).

25 A. You asked me to bring some

1 documents to substantiate my quotes from
2 Dr. Kimbrough.

3 Q. Yes.

4 A. I will have here an article from
5 Health and Environmental Digest, Volume 2,
6 Number 7, August 1988. And I quote, in her
7 last paragraph, "Thus, despite positive
8 laboratory data and except for chloracne,
9 exposure to PCB's has led to no convincing
10 clinically demonstrable chronic health
11 effects in humans." Dr. Kimbrough was at
12 that time in the United States
13 Environmental Protection Agency in the
14 United -- in the UEPA office of the
15 regional operations director of the health
16 and risk capabilities.

17 Q. Is that for me, sir?

18 A. Well, I guess I'll give it to my
19 counsel and he'll do what he wants with it.

20 MR. MALIN: Obviously, you can
21 put it in the record, we've given it to you
22 fifteen times in different contexts.

23 MR. COHEN: Is this for me?

24 MR. MALIN: Well, does anybody
25 else want copies of this? You've all got

1 it.

2 A. In fact, I think that's my only

3 copy.

4 MR. MALIN: That's the Doctor's

5 only copy.

6 MR. COHEN: That explains it,

7 then.

8 MR. MALIN: He doesn't have

9 copying machines and all that.

10 MR. COHEN: Well, that's why I

11 asked if this was for me. This was

12 apparently sent to you by fax machine, is

13 that right, sir?

14 A. I think it was, yes, sir.

15 Q. You have a fax machine in your

16 home?

17 A. No. But I was giving a

18 deposition where they had a fax machine.

19 Q. So, this document was sent to the

20 location where you were giving a

21 deposition?

22 A. That is correct.

23 Q. Do you know who sent it to that

24 location?

25 A. Dr. Kaley.

1 Q. Dr. Kaley?

2 A. Right.

3 Q. K-a-l-e-y?

4 A. The same man.

5 Q. The same man?

6 A. The same man.

7 Q. Did he send it to you at your
8 request?

9 A. Yes, he did. Then we have on
10 here metabolic and health consequences of
11 occupational exposure to polychlorinated
12 biphenyls by about eight different authors,
13 of whom the principal author is A.B. Smith,
14 who was with the United States Department
15 of Health and Human Services, Public Health
16 Service, Center for Disease Control,
17 NIOSH. And I quote from Dr. Smith, page
18 367, "One would expect that adverse human
19 health effects from exposure to PCB, if
20 they exist, would most readily be
21 identified in groups with the greatest
22 exposures (excluding poisoning attributable
23 to accidental contamination of food). None
24 of the published occupational or
25 epidemiological studies (including ours),

1 however, have shown that occupational
2 exposure -- none have shown that
3 occupational exposure to PCB's is
4 associated with any adverse health outcome
5 to be distinguished from demonstrable
6 sub-clinical biochemical alterations.
7 Exceptions to this is occurrence of
8 chloracne".

9 Q. May I?

10 MR. MALIN: Why don't we copy
11 this? None of us have ever seen that one
12 before, so I'd like to have copies.

13 MR. COHEN: We'll arrange to have
14 this copied here today, and we can mark it
15 and make it part of the record, and we can
16 return it to the witness.

17 A. Thank you. The last one is
18 another article by Dr. Kimbrough, who at
19 that time was in the Center for
20 Environmental Health, Centers for Disease
21 Control of the Public Health Service,
22 United States Department of Health and
23 Human Services. And on page 106, she says,
24 I quote, "In conclusion, various toxic
25 effects of PBB" -- that's polybrominated

1 -- "and PCB's have been described in
2 laboratory animals. In humans, acute
3 poisoning outbreaks have only occurred
4 following exposure to a combination of
5 PCB's and PCDF's. When humans were exposed
6 only to PCB's or PBB, the only observed
7 acute effects have generally been minor.
8 So far, no significant chronic health
9 effects have been causally associated with
10 exposure to PCB's or PBB's."

11 MR. MALIN: You've seen that one,
12 so --

13 MR. COX: May we each be provided
14 with a copy of the Smith article, Arnold,
15 at this time?

16 MR. COHEN: We're going to have
17 copies made.

18 MR. COX: Thank you.

19 MR. COHEN: That is marked
20 Exhibit K-10, can you tell me in what
21 connection, with what matter it was marked
22 as Exhibit K-10?

23 A. Are you asking me?

24 Q. Yes, sir.

25 A. It must have been in one of these

1 depositions.

2 Q. Did you produce this document at
3 a deposition where it got marked?

4 A. I don't know how it came there.
5 It may have been produced by someone else,
6 and they asked me to comment on it.

7 Q. Do you know what the K means? Is
8 that for your name?

9 A. Kelly, I would imagine, yes.

10 Q. But you don't know which
11 deposition it was?

12 A. No, I do not.

13 (Discussion off the record).

14 MR. COHEN: Is there anybody who
15 wants a copy of the human health effects of
16 polychlorinated biphenyls and
17 polybrominated biphenyls by Dr. Kimbrough?

18 MR. COX: No.

19 MR. MC LAUGHLIN: I'll have one
20 when you get a chance.

21 MR. COHEN: Anything else, sir?

22 A. That's it.

23 Q. That's it?

24 A. Yes, sir. I believe that's all I
25 was asked to bring, and that's all I

1 promised.

2 MR. COX: Why don't we identify
3 the last Kimbrough article more completely
4 for the record, if you would do that, by
5 title and citation.

6 MR. COHEN: I've given the
7 title. The author is Renate D. Kimbrough.
8 It appears in the annual review of --

9 A. It's easy to read down at the
10 bottom, I think.

11 Q. Pharmacology and Toxicology,
12 Volume 27, for 1987. It appears to be
13 Volume 27 pages 87 to 111. Did I get that
14 right, Doctor?

15 A. Yes, that's correct.

16 MR. COX: The Smith article?

17 MR. COHEN: The Smith article is
18 going to be copied.

19 MR. MALIN: He read the citation.

20 MR. COX: I'm sorry. Thank you.

21 MR. COHEN: Yesterday, when we
22 were talking about studies that you had had
23 done, which I assume were toxicologic
24 studies that were done starting with a
25 cooperative venture with Hallowax in the mid

1 to late '30's, you said that there had been
2 some prior studies done at the request of
3 Swann Chemical?

4 A. That is correct.

5 Q. By a Dr. Flinn in New York, I
6 believe?

7 A. That is correct.

8 Q. F-l-y-n-n?

9 A. F-l-y-n-n, I believe.

10 Q. Are those the only studies that
11 you're aware that have had been done at the
12 request of Swann on the toxic properties of
13 PCB's?

14 A. Yes, sir.

15 Q. Do you know where those studies
16 are?

17 A. I may have a copy of them.

18 Q. All right. At home or in your
19 office, your old office files?

20 A. My office file, which --

21 Q. Is that in your possession, or
22 can you get ahold of it?

23 A. You mean like right now?

24 Q. Not right now, you're sitting
25 here giving a deposition. After we leave

1 here today.

2 A. Yes, I think I can.

3 Q. All right. Will you agree to do
4 that for me, sir, and provide copies of all
5 of the Swann Chemical studies?

6 A. Well, I can only give you what I
7 have, and that's what -- that's the only
8 one, I believe, I've ever seen from Swann.

9 Q. Yes. I didn't finish. All of
10 the Swann Chemical studies on the toxic
11 properties of PCB's that you have in your
12 possession, in your files or in your
13 control, and would you provide them to Mr.
14 Malin?

15 A. Yes, I will.

16 Q. Thank you, sir. Now, you had
17 talked about there were two epidemiological
18 studies, apparently, done on the workers at
19 the Krummerich plant, Zack and Muech study
20 and Gaffey?

21 A. Yes, sir.

22 Q. How many times did either of
23 these investigators do studies of the
24 Krummerich employees?

25 A. I only know the one.

1 Q. So, each of them did one study of
2 workers at Krummerich?

3 A. That is correct.

4 Q. And do you know who at the
5 Krummerich plant they studied?

6 A. Yes. The Gaffey study was all
7 the hourly workers that were present. Now,
8 these were mortality studies, they weren't
9 the workers, these were death certificates
10 they looked at.

11 Q. Yes. So, they never actually
12 interviewed or worked with the workers
13 themselves?

14 A. That is correct.

15 Q. Did they have medical records for
16 the workers?

17 A. That, I do not know.

18 Q. This is Gaffey we're talking
19 about?

20 A. Gaffey.

21 Q. So, the only thing that you're
22 aware of at this time that Gaffey looked
23 at, that you feel confident that they
24 looked at, were the death certificates?

25 A. That is correct.

1 Q. For hourly workers?

2 A. That is correct.

3 Q. Now, how many --

4 A. I'm not certain if all the hourly

5 workers. Conceivably, he may have had

6 salaried workers in there. I'd have to

7 look at the paper. I think it was

8 primarily hourly workers.

9 Q. Now, you made a distinction here

10 between hourly workers and salaried

11 workers; what does that distinction

12 indicate in your mind?

13 A. Well, that some people are paid

14 by the hour and some are paid by the month,

15 that's one of the distinctions. Two, it

16 depends where the salaried worker was

17 working. If he were a foreman who was a

18 salaried individual, and he was exposed the

19 same way the workers were. If the person

20 happened to be a secretary in an office

21 building, she was not under the same

22 working conditions as the hourly worker.

23 Q. Do you know who it was at

24 Krummerich that he did study?

25 A. Will you repeat that?

1 Q. Do you know which individuals
2 fell within the scope of the study; was it
3 just hourly or was it hourly and salaried,
4 either/or both?

5 A. I can't answer that. I do not
6 know.

7 Q. You don't know?

8 A. No.

9 Q. With respect to hourly workers,
10 from your knowledge of the Krummerich
11 plant, you do have personal experience with
12 the Krummerich plant, do you not?

13 A. Yes, of course.

14 Q. You've been there and seen the
15 operation?

16 A. Dozens of times.

17 Q. How many?

18 A. Dozens of times.

19 Q. Dozens. You have seen the
20 process of manufacture?

21 A. Yes.

22 Q. How big a physical facility is
23 it, do you know?

24 A. You mean in square feet?

25 Q. Well, whatever measure; square

1 feet, square acres?

2 A. I'd have to be guessing. I can't
3 tell you the physical dimensions of it, how
4 many reactors they had in it, or anything
5 of the sort. They did just chlorination
6 there. They did not manufacture, the
7 diphenyl, they just did the chlorination.

8 Q. So the diphenyl came to the plant
9 and was received by the plant in some form
10 or another?

11 A. Yes.

12 Q. Do you know what form it was
13 received in?

14 A. Well, it's a solid. Whether it
15 was received -- whether it was pumped into
16 a tank or molten, I do not know.

17 Q. So, it's a solid at room
18 temperature?

19 A. Yes.

20 Q. And then it has to be heated to
21 be put in a liquid form?

22 A. Yes.

23 Q. Now, the Krummerich plant, I
24 gather, has a receiving department?

25 A. Yes.

1 Q. Has some sort of warehousing or
2 storage of incoming material in the
3 department?
4 A. Yes.
5 Q. And then it has various process
6 departments?
7 A. Yes.
8 Q. And then, I assume, they also
9 have a packaging department, finished
10 goods?
11 A. Yes.
12 Q. A warehousing of finished goods?
13 A. Yes.
14 Q. And a shipping department?
15 A. Yes.
16 Q. Do you know if employees from all
17 of these departments were included in the
18 Krummerich study?
19 A. I do not know.
20 Q. Do you know at all who was
21 included in the Krummerich study?
22 A. Beg pardon?
23 Q. Do you know who was included in
24 the Krummerich study done by Gaffey, the
25 mortality study?

1 A. Well, I really don't understand
2 that question. Do I know who was --

3 Q. Included.

4 A. I didn't do the study. All I did
5 was read Gaffey's paper. And I'll have to
6 read Gaffey's paper to see what he says was
7 included in there. But he said he got as
8 many death certificates of the Krummerich
9 employees, and to the best of my knowledge,
10 I believe that's the hourly employees, that
11 he could find, not only the PCB workers,
12 but everybody in all departments of the
13 plant, whether they were working in
14 warehousing, shipping, receiving or in the
15 phenyl department, or any other department
16 that might be there, all the workers.

17 Q. You're saying now he did all the
18 workers?

19 A. He did -- I never said he only
20 did the PCB workers. I've said all the
21 time this was a mortality study of the
22 hourly workers in the Queeny -- in the
23 Krummerich plant. And he did that by using
24 what death certificates he had. I do not
25 know what the limits of his death

1 certificates were, whether he included
2 salaried foremen, salaried manufacturing
3 superintendants or not.

4 Q. Do you know what year he did the
5 study?

6 A. Sometime after I left. I would
7 say -- I can't tell you the exact year,
8 but it was after 1974.

9 Q. So, it was sometime between
10 1/1/75 and today?

11 A. Well, I can limit it a little
12 more. It was between 1/1/75, and you can
13 put a ceiling on two years ago. I knew
14 about it two years ago.

15 Q. Did you ever review the protocol
16 that he used to satisfy yourself that the
17 results of Gaffey's -- is that Dr. Gaffey?

18 A. Dr. Gaffey.

19 Q. Is he a Ph.D?

20 A. He's a Ph.D, and a very well
21 known epidemiologist, and I would not put
22 myself up as an expert to review his
23 protocol. So, the answer to your question
24 was no.

25 Q. You didn't even let me finish

1 it. But your answer is going to be no,
2 anyway?

3 A. I don't know, I'll have to hear
4 the question.

5 Q. Okay. Did you ever satisfy
6 yourself from your review of his protocol
7 that the results of Dr. Gaffey's study were
8 reliable?

9 A. I did not review his protocol, I
10 read his paper. And I do not know if his
11 protocol was explained in there. I don't
12 know what he said about it at this present
13 time.

14 Q. Are you satisfied with his
15 reliability?

16 A. Am I satisfied with what?

17 Q. The reliability of the study?

18 A. No question about it, yes.

19 Q. And what do you base that
20 conclusion upon?

21 A. On my knowledge of Dr. Gaffey's
22 work, his experience and his reputation as
23 an epidemiologist.

24 Q. But not based upon any particular
25 knowledge you have of this particular

1 study?

2 A. Well, the study seemed all right
3 to me. I read the paper, it seemed all
4 right to me.

5 Q. How about Zack and Muech, are
6 they doctors?

7 A. No, they are not.

8 Q. What are they?

9 A. Frankly, I don't know. I never
10 met either one of them. I don't know them
11 at all. I know nothing about their
12 qualifications.

13 Q. So, you're not in a position to
14 tell us whether they enjoy the same
15 reputation as Dr. Gaffey?

16 A. Well, I've heard Gaffey's name
17 mentioned quite a bit, and I never heard
18 Zack and Muech mentioned at all.

19 Q. What type of study did they do?

20 A. They did a mortality study on PCB
21 workers.

22 Q. Also at Krummerich?

23 A. Also at Krummerich.

24 Q. Do you know when they performed
25 their study?

1 A. Sometime after 1974, one or two
2 years afterwards.

3 Q. And do you know which workers
4 they included within the scope of their
5 study?

6 A. No, I don't.

7 Q. You would agree with me, however,
8 would you not, that different --

9 A. I don't know.

10 Q. Let me finish the question, and
11 then can you see whether you agree or
12 disagree.

13 A. Yes, sir. Sorry.

14 Q. That's quite all right. You
15 would agree with me, would you not, that
16 various workers in the Krummerich plant,
17 depending upon their particular tasks,
18 would have had different experience with
19 their exposure to PCB's?

20 A. Yes, sir.

21 Q. I'm going to put in front of you,
22 sir, the copies of the exhibits that we had
23 marked as 1, 2 and 3 yesterday. I'm going
24 to ask you, if you would, sir, to select
25 number 1 from that stack. Do you have that

1 in front of you, sir?

2 A. Yes, I do.

3 Q. I'm going to give you what is
4 regretably an even worse copy of the
5 document.

6 A. Yes, sir.

7 Q. Now, why don't we just mark this
8 one now as Exhibit Kelly 5.

9 (Kelly Deposition Exhibit Number
10 5 mark'd for identification).

11 MR. COHEN: You recognize Kelly
12 5, do you not, sir?

13 A. I don't know what you mean do I
14 recognize it. I know what it is when I see
15 it here. This is a letter from me to Mr.
16 Allen at Hexagon, with an awful lot of
17 additions to it, and I don't recognize
18 those. I don't know what they are.

19 Q. Okay. Well, I was going to ask
20 you about some of those additions.

21 MR. MALIN: Handwritten
22 additions?

23 A. Handwritten additions.

24 MR. COHEN: Handwritten
25 additions. The document, again, has those

1 numbers PRR and a series of numbers, and
2 SCM and a series of numbers, somewhat
3 different than -- different sequence than
4 the Kelly Exhibit 1. But you will agree
5 with me that the typed portion of the
6 letter or the typed portion of the document
7 from the date, which is even more obscure
8 on this, but appears to be the same, from
9 that point down to your initials and,
10 apparently, I guess, your secretary's
11 initials, is the same text?

12 A. Yes.

13 Q. So, it appears to be another
14 copy, whether it was ribbon or photocopy or
15 whatever, of your letter of February 17,
16 1961; but not on the copy, not reflected on
17 the copy is the blind carbon copy message,
18 correct?

19 A. That's correct.

20 Q. I guess there is no way to tell
21 at this point whether that was
22 inadvertently cut off or whether it never
23 appeared on this copy?

24 A. Or if this was a photostat of my
25 copy, my carbon.

1 Q. Which may not have had the blind
2 carbon copy on it at all?

3 A. Right.

4 Q. Now, starting at the top, there
5 is some handwriting, looks like initials
6 and a name with a line drawn through it,
7 and under it. Do you recognize that
8 handwriting at all?

9 A. Which one? I'm sorry.

10 Q. Looks like W.R. Rumson, or
11 something like that.

12 A. No, sir, I do not recognize that.

13 Q. Then it says -- apparently, it
14 looks like "R.C., have copies made for
15 W.R.D.," some more initials and all
16 scratched out, do you see that?

17 A. Yes.

18 Q. Do you recognize that
19 handwriting?

20 A. No, I do not.

21 Q. Going over to the left side of
22 the page, about halfway down it says "Heat
23 transfer, skin effects, Connecticut,
24 constant exposure, period of months." Do
25 you see that writing?

1 A. Yes, I do.

2 Q. Do you recognize that
3 handwriting?

4 A. No. It's not my handwriting.

5 Q. It's not something that appeared
6 on this document -- you've never seen a
7 copy of this document with that handwriting
8 on it before?

9 A. No, I have not. Conceivably,
10 this may be a photostat of the letter I
11 sent to Allen. If I sent blind copies, if
12 I had my notation to the people I sent
13 blind copies to, the only one that wouldn't
14 have the blind copy notation would be
15 Allen's letter, the letter to Allen. So, I
16 don't know anything about this.

17 Q. Well, did your letter, when you
18 sent it to Dr. Allen, have the letterhead
19 on it; did the letter have a letterhead?

20 A. Yes, it would.

21 Q. There is no letterhead on this?

22 A. No, there isn't.

23 Q. What was the letterhead?

24 A. Monsanto Company, or Monsanto
25 Chemical Company, whatever they were going

1 under on that date.

2 Q. Did you have your own stationery
3 identifying you as medical director, or
4 whatever your particular capacity --

5 A. No, I did not.

6 Q. Then there is a bracket around
7 the third paragraph, I gather it's not
8 possible for you to tell how that came to
9 be on the document?

10 A. No, sir.

11 Q. Then it appears over on the
12 right-hand side, it says "Emmet Kelly,"
13 that, I gather, is you?

14 A. That is, I.

15 Q. Do you recognize the hand, who
16 wrote that?

17 A. No I do not.

18 Q. Elmer Wheeler, do you know that
19 name?

20 A. Yes, certainly. He was in our
21 department.

22 (Discussion off the record).

23 MR. COHEN: I'm sorry, you said
24 Elmer Wheeler was --

25 A. Yes. He was the industrial

1 hygienist, and, as I said, he was the
2 administrative director of toxicology and
3 industrial hygiene.

4 Q. Is he a Doctor?

5 A. No. Master's Degree.

6 Q. In what field?

7 A. Chemical engineering.

8 Q. And he was an industrial
9 hygienist at Monsanto?

10 A. That's correct.

11 Q. There is a name below that, it
12 looks like Joel Gannett?

13 MR. COX: I object to the form of
14 the question.

15 MR. COHEN: Do you see it?

16 A. I see it, yes.

17 Q. Can you make it out?

18 A. It's probably Jack Garrett.

19 Because he's also an industrial hygienist
20 in that department -- in our department.

21 Q. G-a-r-r-e-t-t?

22 A. --e-t-t. You're asking me to
23 assume, and that's what I would assume,
24 most likely.

25 Q. So, these are individuals who

1 were working with you at that time, Mr.
2 Wheeler and Mr. Garrett?

3 A. Yes.

4 Q. But you don't recognize the hand
5 that put any of that information there?

6 A. No. It's not Wheeler's or
7 Garrett's.

8 Q. Then over, again, to the left
9 side, again, it says "State Health
10 Department, Indiana," and a dash. Do you
11 see that?

12 A. Yes, sir, I see that.

13 Q. Do you recognize that hand?

14 A. No, I do not.

15 Q. Then it says, "Three people
16 sealing thermostats, exposed three days,
17 eight hours. Mr. Keane," K-e-a-n-e. Do
18 you see all that?

19 A. Yes, I see all that.

20 Q. Do you recognize that hand?

21 A. No, I do not.

22 Q. Is there anything about that
23 information, three people sealing
24 thermostats, exposed three days, eight
25 hours, that triggers any recollection in

1 your mind?

2 A. Certainly. I've testified today
3 -- yesterday to you that three people in
4 Indiana -- I said it was a midwestern
5 state, I thought it was Indiana, were
6 working with the heat transfer apparatus;
7 it was jerryrigged, and they had developed
8 a chemical hepatitis from an acute exposure
9 to hot leaking PCB in the heat transfer
10 unit.

11 Q. So, this is a further notation
12 regarding that episode that you had
13 described. Now, was that the episode that
14 occurred in the '40's?

15 A. I said I wasn't quite so sure.
16 It was either '40's or '50's, I didn't know
17 when.

18 Q. But there were two episodes
19 involved. In fact, if I look at Kelly 1,
20 it says, "It may interest you to know that
21 your case is only the second that I have
22 heard of since 1940".

23 A. It must have been 1940, then.

24 Q. And this is some further
25 information regarding that particular

1 episode?

2 A. It's just a reference to it.

3 It's not further information, it was just a
4 reference to it.

5 Q. But you don't recognize the hand
6 of anyone who wrote that?

7 A. No, I do not.

8 Q. Do you see below that the words
9 "Don't educate them"?

10 MR. MALIN: I object to the form
11 of that question. I don't believe it says
12 "Don't educate them." It looks to me like
13 it says "Don't educate theirs".

14 MR. COHEN: How do you read it,
15 Doctor?

16 A. Beg pardon? I can't read it.

17 Q. You can't read it at all?

18 A. I can read "don't," I can read
19 "educate." I cannot make out the last word
20 or the signature before the question mark,
21 if that's a question mark.

22 Q. So, there is nothing that you can
23 tell me about that; you don't recognize the
24 hand, you don't know how it got there, you
25 don't know what it means, is that right?

1 A. That's correct.

2 Q. Can we agree, counsel, that this
3 is a copy of a document that was produced
4 by Monsanto in connection with the request
5 for production of documents in this
6 litigation?

7 MR. MALIN: Yes, this was
8 produced by Monsanto.

9 MR. COHEN: And it's from the
10 Monsanto files?

11 MR. MALIN: Yes, it's from the
12 Monsanto files.

13 MR. COHEN: And it was maintained
14 by Monsanto Company in the ordinary course
15 of their business?

16 MR. MALIN: Well, I don't know
17 what the document retention policy is,
18 normally. But like all PCB documents, at
19 some point they decided they would retain
20 them all, so this was a document that was
21 kept initially, at least, in the ordinary
22 course of business.

23 MR. COHEN: Thank you, sir.

24 (Kelly Deposition Exhibit Number
25 6 mark'd for identification).

1 MR. COHEN: The document has been
2 marked as Kelly 6. Have you had a chance
3 to look at the document, sir, Kelly 6?
4 A. I will now, sir.
5 Q. Please do.
6 A. Yes, sir, I've had the
7 opportunity to go over it.
8 Q. Have you ever seen it before?
9 A. I think I have, yes, sir.
10 Q. Tell me the circumstances under
11 which you saw this document?
12 A. Probably at one of these
13 depositions on PCB's.
14 Q. Someone gave it to you and asked
15 you some questions about it?
16 A. To the best of my recollection,
17 yes.
18 Q. You have no recollection of
19 anyone at Monsanto or anyone associated
20 with Monsanto prior to a deposition or out
21 of the context of litigation providing you
22 with a copy of the document?
23 A. I have no recollection.
24 Q. The document "News For Release,"
25 styled "News For Release, Monsanto"?

1 A. Yes, sir.

2 Q. Is this the type material that
3 you have seen during your tenure of
4 employment with Monsanto, where Monsanto
5 prepared information for distribution to
6 the press?

7 MR. MALIN: I'll object to the
8 form of that question.

9 MR. COHEN: Why don't you tell me
10 if you recognize the document as something
11 that Monsanto used and, if not, just tell
12 me what it is.

13 MR. MALIN: I still object to the
14 form of the question. If you think you can
15 understand that --

16 A. Well, I've seen news releases
17 from Monsanto, and this looks like one
18 Monsanto put out.

19 Q. That's what I wanted to know.
20 This looks like the way Monsanto sent out
21 news releases, is that it?

22 A. At least one of the ways. They
23 may have had a dozen ways of sending them
24 out.

25 Q. But this is one of the ways?

1 A. Yes.

2 Q. You recognize it as such?

3 A. Yes.

4 Q. It was done the same way during
5 your tenure of employment?

6 A. I can't say it's the same way,
7 but it may very well have been similar to
8 it.

9 Q. Do you know who wrote this?

10 A. I haven't the slightest idea.

11 Q. Now, it is apparently a two page
12 document, and then another page attached to
13 it which is a biographical sketch of Dr.
14 Gaffey.

15 A. Yes, sir.

16 Q. Do the names S.G. Collins or L.J.
17 O'Neill mean anything to you?

18 A. I don't recognize them at all.

19 (Discussion off the record).

20 MR. COHEN: Those are not names,
21 in any event, that you identify with anyone
22 at Monsanto?

23 A. No.

24 Q. Would the author of the News For
25 Release, in your experience while you were

1 employed there, be reflected anywhere on
2 the document?

3 A. Yes. As a rule, they put
4 somebody's name on it in case the editor or
5 whoever gets this wants some more
6 information, so they call the person up.
7 So, again, if I make an assumption, these
8 people were probably in the public
9 relations department.

10 Q. Is that where, in your
11 experience, the name of the author would
12 usually go, up at the top there where it
13 says Collins and O'Neill?

14 A. No, not the name of the author,
15 the name of the individual to ask for more
16 information.

17 Q. I see. That telephone exchange
18 314 694 and then a series of four numbers
19 after that, is that a telephone number you
20 recognize as being a Monsanto office?

21 A. Well, 314, obviously, is a
22 Missouri area code. 694 is the prefix for
23 all the Monsanto extentions, and the other
24 four digits are the individual extensions.
25 So, for direct dialing they would go right

1 to the person's desk by dialing 694, so and
2 so, so and so, so and so.

3 Q. Now, in the second paragraph on
4 the first page, it refers to Dr. William R.
5 Gaffey. Is that the same Dr. Gaffey we
6 were talking about before that did the
7 Krummerich report?

8 A. Yes.

9 Q. It says he's an employee of
10 Monsanto Company?

11 A. Yes.

12 Q. Do you know when he became an
13 employee of Monsanto Company?

14 A. Probably a year after I left,
15 sometime in '75.

16 Q. So, at the time he did the study
17 on the Krummerich plant, he was an employee
18 of Monsanto Company?

19 A. Yes.

20 Q. Do you know what position he
21 held?

22 A. Beg pardon?

23 Q. Do you know what position he held
24 when he did the study at Krummerich?

25 A. Chief epidemiologist of Monsanto

1 Company.

2 Q. Is this report, to your
3 knowledge, a report of his study done at
4 Krummerich?

5 MR. MALIN: I object to the form
6 of the question. I don't think the Doctor
7 has testified that he has necessarily had
8 any knowledge, since he wasn't personally
9 present at the time. You can answer, Dr.
10 Kelly.

11 A. Well, this is not a report of his
12 work at the Krummerich plant, it's a report
13 on the review of Gaffey of ten different
14 people, ten different people's
15 epidemiological studies.

16 Q. Did he publish a report
17 reflecting the information that is
18 summarized in this news release?

19 A. I think he did.

20 Q. Have you ever seen it?

21 A. Yes. Again, I've seen a copy,
22 and I do not know where it was published,
23 if it was published. But I've seen a
24 Gaffey report on these ten people. Whether
25 it was an internal document of Monsanto or

1 published in the general literature, I
2 can't answer that.

3 Q. So, you don't recall where you
4 saw the report?

5 A. Where I saw it?

6 Q. Yes.

7 A. You mean geographical location I
8 saw it or whether I saw it in a journal, or
9 what do you mean?

10 Q. That's right.

11 A. In a journal?

12 Q. Whether it was in a journal,
13 whether it was something that was sent to
14 you, whether it was something that was
15 distributed to people associated with
16 Monsanto, such as yourself, a consultant?

17 A. Or brought up in a deposition.

18 Q. Brought up in a deposition?

19 A. That's probably where I saw it,
20 but I don't know. But I saw it, and I do
21 not know if it's been published in the
22 general literature or if it was published
23 as an internal document of Monsanto, which
24 may have been sent to other people. I did
25 see a report by Gaffey on these ten

1 individual studies by various people.

2 Q. Do you have a copy of it?

3 A. What?

4 Q. Do you have a copy of it?

5 MR. MALIN: I believe that we
6 have provided you with that. However, if
7 we haven't, I'll be more than happy to do
8 it. It's been published and it's
9 available.

10 MR. COHEN: Thank you. Do you
11 have a copy of it, sir?

12 A. Yes, I do.

13 Q. Do you have it in your office at
14 home?

15 A. Yes.

16 Q. All right. Since counsel has
17 already agreed to produce it, it won't be
18 necessary for you to obtain it and supply
19 it to your counsel, we'll just look forward
20 to seeing it.

21 A. What was the thing you asked for
22 before? Give me a piece of paper. You
23 asked about some article earlier today, I
24 didn't make a note.

25 MR. MALIN: I've got it, Doctor.

1 Can we take a short break?

2 MR. COHEN: Sure.

3 (Recess)

4 (Kelly Deposition Exhibit Number
5 7 mark'd for identification).

6 MR. COHEN: Doctor, if you have
7 no objection, I'm going to take a photocopy
8 of the Smith article which you brought here
9 today and give it to the reporter who will
10 mark it for identification as Kelly 8.

11 (Kelly Deposition Exhibit Number
12 8 mark'd for identification).

13 MR. MC LAUGHLIN: Is 7 the one
14 dated January 26, '67?

15 MR. COHEN: Yes.

16 MR. MALIN: I believe I have a
17 copy of the Swann test that the Doctor was
18 referring to, dated May 25, 1934, which I'm
19 willing to give you, assuming that I can
20 get copies back. It's rather thick.

21 MR. COHEN: We'll certainly make
22 a copy of it today.

23 MR. MALIN: Let the record show
24 -- let me identify it for the record. Let
25 the record show that counsel for Monsanto

1 is producing a report of Dr. Frederick B.
2 Flinn of patch tests made on material
3 received from Swann Research, Inc., dated
4 May 25, 1934, which were originally
5 referred to in the deposition of Dr. Kelly
6 by Dr. Kelly. Dr. Kelly advises me this is
7 the copy that he has at home and would
8 produce.

9 A. That's the one.

10 MR. MALIN: This is an exhibit,
11 apparently, marked in another deposition
12 consisting of four pages.

13 MR. COHEN: Is that the entirety
14 of the report, four pages?

15 MR. MALIN: It, apparently, is
16 the entire report.

17 A. Yes.

18 MR. MALIN: According to the
19 Doctor, it's the entire report.

20 A. I only had a few pages in the one
21 I remember.

22 MR. COHEN: So, you were
23 surprised to see that thick document when
24 he gave it to you?

25 A. That's right.

1 MR. MALIN: And it wasn't the
2 same document.

3 MR. COHEN: You're familiar with
4 Dr. Flinn's report, Dr. Kelly?

5 A. Yes. This one is all patch
6 testing on rabbits. If he did any feeding
7 or any injection, if there was a report on
8 that that I have that's not in this, I'll
9 give it to my counsel. This is just patch
10 testing on rabbits.

11 Q. Apparently, the spelling of
12 Flinn's name is F-l-i-n-n?

13 A. Yes. I guess I was wrong.

14 Q. Is this copy available to us for
15 us to mark?

16 A. It's not mine.

17 Q. Mr. Malin, is this copy available
18 to mark?

19 MR. MALIN: That's the only copy
20 I've got.

21 MR. COHEN: You would like to
22 have a copy made for marking?

23 MR. MALIN: That's right.

24 MR. COHEN: Let's come back to
25 Dr. Flinn. Let's go on to Kelly 7. Do you

1 recognize Kelly 7, sir?

2 A. Yes, I do.

3 Q. What is it?

4 A. Kelly 7 is a letter from a D.

5 Wood, who's located at that time in

6 Brussels, dated 26th of January 1967, the

7 subject of Sweden, Aroclor. I was a

8 recipient of one of the copies. It was

9 sent to George Buchanan in St. Louis, who

10 was either in marketing or was a project

11 manager for Aroclors. I'm not certain what

12 his particular position at that time was.

13 Q. So, that reference where it says

14 DW: GB, at the top, it says from Brussels,

15 Belgium?

16 A. Yes.

17 Q. Date?

18 A. Yes.

19 Q. Subject, reference?

20 A. Yes.

21 Q. Does reference refer to the

22 author and the recipient, DW: GB?

23 A. I don't know. The DW is Douglas

24 Wood. I don't know if GB is George

25 Buchanan or a secretary. I don't know.

1 Q. Okay. On the cc list that
2 includes you, apparently someone has
3 scribbled through that, and below it
4 something is written, which is also crossed
5 out, with some initials; do you see that?
6 A. Yes.
7 Q. Do you recognize any of that
8 handwriting?
9 A. Do I recognize any of the names?
10 Q. The handwriting.
11 A. The handwriting, no, I certainly
12 don't.
13 Q. When you received the document, I
14 gather it didn't have any of that on it, is
15 that correct?
16 A. I can't remember, but I don't --
17 Q. You wouldn't think so?
18 A. I wouldn't think so.
19 Q. Additionally --
20 A. I was told not to assume.
21 Q. I don't want you to assume
22 anything, sir. If you don't know, just
23 tell me that you don't. On the first page,
24 the second paragraph is also apparently
25 underlined?

1 A. Yes.

2 Q. That wouldn't have been on the
3 document when you received it originally,
4 would it?

5 A. I don't ever recall receiving any
6 documents where they underlined things.

7 Q. Again, those PRR and SCM numbers,
8 that was not part of the original document?

9 A. That is correct.

10 Q. You are familiar with the
11 document, however?

12 A. Yes, I am.

13 Q. What was Mr. Wood doing over
14 there in Brussels, do you know? What was
15 his task?

16 A. Well, I think he was a scientist,
17 I don't know, in their research
18 department. I don't know whether he did
19 development work or anything else. I don't
20 know. I met him, I don't know the exact
21 -- what his exact duties were.

22 Q. You say he's a scientist?

23 A. Yes.

24 Q. Do you know what type of
25 scientist he was?

1 A. No, I don't.

2 Q. Is he still alive?

3 A. I don't know.

4 Q. Turn to page 2, please. Do you

5 know what he's referring to when he says

6 "Fortunately, there has not been too much

7 adverse comment as yet from plant workers

8 since they have not associated the

9 polychlorinated biphenols mentioned in the

10 article with Aroclor or Pyralene used in

11 the Swedish factories"?

12 A. I don't know what he's referring

13 to.

14 Q. This spells biphenols

15 b-i-p-h-e-n-o-l-s; do you recognize that as

16 being PCB's, as we've been referring to

17 them?

18 A. Well, yes. Certainly -- well, I

19 don't know what the article -- he mentions

20 in that paragraph, he states the plant

21 workers have not associated polychlorinated

22 biphenols mentioned in the article, they

23 haven't associated that with Aroclor, then

24 he uses the correct term, chlorinated

25 diphenyl, so, unless I would see Jensen's

1 original article where he talked about
2 polychlorinated biphenols, I don't know
3 what they mean.

4 Q. Well, p-h-e-n-o-l, phenol, is not
5 the same as p-h-e-n-y-l, is it?

6 A. That's correct.

7 Q. Different chemicals?

8 A. Different compounds, yes.

9 Q. And the article is referred to in
10 the first paragraph on the first page?

11 A. Yes.

12 Q. If you go back?

13 A. Yes.

14 Q. You said you didn't know which
15 article he was referring to; that's the
16 article that he's referring to?

17 A. Yes.

18 Q. He recently sent you a
19 translation of a Swedish newspaper article
20 referring to the identification in nature
21 of polychlorinated biphenols?

22 A. Yes, sir.

23 Q. Do you recall there being a fair
24 amount of press back in the late '60's
25 regarding Jensen's work where he discovered

1 the existence of PCB's?

2 A. There was a great deal of
3 newspaper publicity and a great deal of
4 confusion, because he was also talking
5 about DDT and trying to identify the
6 compounds they were talking about. I do
7 not know what the -- how much they were
8 doing in the press talking about
9 polychlorinated biphenols, but the whole
10 matter got a lot of publicity.

11 Q. Would you agree that, however,
12 that in this memo, polychlorinated
13 biphenols, o-l-s, is being used
14 interchangeably with chlorinated diphenyls?

15 A. No, I don't know that.

16 MR. MALIN: I object to the form
17 of the question.

18 MR. COHEN: Would you look at the
19 article, please?

20 A. Yes. And what's the question,
21 again?

22 Q. Whether in this particular memo,
23 Mr. Wood is using those terms
24 interchangeably?

25 MR. MALIN: I'm going to object

1 to the form of the question as
2 mischaracterizing the memo, because it's
3 obvious that they are not being used
4 interchangeably, because he's discussing
5 confusion between the two.

6 A. He did say in the second
7 paragraph, "I should like to emphasize that
8 there is no doubt that the chemical which
9 is the subject of the investigation and the
10 news release is chlorinated diphenyl,"
11 that's what he says. No matter what they
12 call it, it was Wood's belief that they
13 were referring to chlorinated diphenyl,
14 yes.

15 Q. So, you do agree that here, while
16 Mr. Wood is not using the phrase -- the
17 two descriptions interchangeably, he makes
18 it clear that the news article referring to
19 biphenols, o-l-s, in fact, is referring to
20 PCB's?

21 A. That's what he says in the second
22 paragraph.

23 Q. Now, going back to the second
24 page where I asked you about the sentence,
25 "Fortunately there has not been too much

1 adverse comment as yet from plant workers,"
2 et cetera, to the end of the sentence,
3 where they're now associating the
4 polychlorinated biphenols mentiond in the
5 article with Aroclor Pyralene, do you know
6 what he's talking about now, since your
7 recollection has been refreshed as to which
8 article we're talking about?

9 A. Yes. What was the question?

10 Q. Do you know what he's talking
11 about there when he says "Fortunately there
12 hasn't been too much adverse comment as yet
13 from plant workers"?

14 MR. MALIN: I object to the form
15 of that question.

16 MR. COHEN: Let's start at the
17 top. Do you know whose plant workers he's
18 talking about?

19 A. No.

20 Q. Did Monsanto have plants in
21 Europe?

22 A. They have plants. Manufacturing
23 PCB or other plants?

24 Q. Other plants.

25 A. Yes. They have plants in France,

1 they have plants in the United Kingdom,
2 they have a plant in Spain. They had
3 plants in Europe, yes.

4 Q. See where he talks about
5 capacitor manufacturer, "every capacitor
6 manufacturer in Sweden that we visited"?

7 A. Yes, sir.

8 Q. Would that be Monsanto's
9 customers in Europe?

10 A. Customers or potential customers.

11 Q. For PCB's?

12 A. That's correct. Two other
13 companies -- at least two, probably three
14 companies have manufacturers of PCB in
15 Europe. Monsanto was a late comer into it
16 and was not a major factor in Europe, as
17 they were in the United States.

18 Q. Would you agree, however, that he
19 is talking about plant workers in
20 customer's and potential customer's plants?

21 A. I don't know what he was talking
22 about there. It could be that, it could be
23 our own plant workers.

24 Q. Is that the only two you that you
25 would include within that scope of

1 possibilities?

2 A. No. It could be the French
3 manufacturer's workers manufacturing
4 PCB's. It could be the Italian workers who
5 were manufacturing PCB's. It could be any
6 of those groups.

7 Q. That is despite the fact that the
8 first sentence says, "This matter was
9 raised with us by every capacitor
10 manufacturer in Sweden that we visited"?

11 A. Well, you'll have to ask Mr. Wood
12 what he refers to from one sentence to the
13 other, I'm not going to put -- I'm not
14 going to get into Mr. Wood's mindset as to
15 whether -- what he's talking about. He
16 did say that the matter was raised by the
17 capacitor manufacturer. Then he goes on to
18 say there was not too much adverse comments
19 as yet from plant workers. Now, I do not
20 know if he refers to the capacitor
21 manufacturer workers, our workers, or the
22 French or the Italian manufacturers of
23 PCB. I don't know.

24 Q. Do you know if Monsanto reacted
25 in any way to these concerns expressed in

1 Mr. Wood's memo?

2 A. Well, yes.

3 Q. How did they react?

4 A. They got in contact with Dr.
5 Jensen, and later on we sent a task force
6 over there to talk to him about his
7 findings.

8 Q. And what was the up-shot of that?

9 A. The up-shot was they came back
10 and said I believe the man is right, what
11 they're finding is chlorinated diphenyl, so
12 we'll start looking ourself as soon as we
13 have the instrumentation that he has. He
14 had pretty sophisticated apparatus, and we
15 didn't have that. So, we eventually got
16 one and sort of followed up on his work.

17 Q. So, as of this time in 1967,
18 Monsanto itself did not have the ability to
19 do the type of analysis that Dr. Jensen had
20 done?

21 A. That is my impression.

22 Q. But subsequent to that time they
23 acquired the equipment in order to do the
24 type of analysis that Dr. Jensen had done?

25 A. That is correct.

1 Q. And the equipment was what, mass
2 spectrometry?

3 A. I think it was more than that,
4 there were some additions to it.

5 Q. Gas chromatography?

6 A. Again, I'm not an analytical
7 chemist, I'm just repeating what I was
8 told.

9 Q. You don't know what equipment
10 Monsanto had available at that time, except
11 you know they didn't have the equipment to
12 do what Dr. Jensen had done?

13 A. That's correct.

14 Q. Other than meeting with Dr.
15 Jensen and concluding that his work was
16 correct and deciding to obtain equipment
17 themselves and do their own investigation,
18 did they do anything to address the concern
19 that had been raised by the capacitor
20 manufacturers and/or plant workers?

21 MR. MALIN: I object to the form
22 of that question. If you think you
23 understand that broad question --

24 A. No, I don't. Because I find it
25 hard to evaluate Jensen's statement. He

1 has been approached by several workers
2 associated with chlorinated diphenyls for
3 non-electrical uses. I don't know what the
4 basis of that statement was, because,
5 certainly, in all those times we were never
6 approached by any workers associated with
7 chlorinated diphenyls for non-electrical
8 uses. So, there wasn't any concern, as far
9 as we knew, in the United States, then or
10 now.

11 Q. What information was available to
12 workers in the United States regarding
13 potential health effects from PCB exposure
14 in 1967, January?

15 A. In 1967, there was information in
16 our technical bulletins giving the toxic
17 properties of chlorinated diphenyl. There
18 was information giving the safe levels,
19 that was after we had run the work at the
20 Kettering Laboratory by Dr. Treon. There
21 was plenty of information available.

22 Q. And no one was expressing
23 concern?

24 A. No one expressed their concern. ,
25 It was not expressed by any government

1 officials to me it was not expressed by any
2 letters from any workers, it was not
3 expressed by any customers who were in the
4 manufacturing area, with the exception of
5 the acute episodes that we've talked about
6 earlier.

7 Q. Now, subsequent to January of
8 1967, did Monsanto make any change in the
9 product information that it was
10 disseminating to its customers regarding
11 potential toxic effects?

12 A. Remember, when you talk about
13 toxic effects, are you talking about toxic
14 effects to the environment or toxic effects
15 to the individual?

16 Q. Well, two different things.
17 Environmental effects is one and toxic
18 effects to the workers is another.

19 A. That's why I asked you which
20 you're referring to.

21 Q. Let's start with toxic effects to
22 the workers.

23 A. We did not make any different
24 change -- any changes in our warnings,
25 because we did not have any information of

1 toxic ill effects to the workers. There
2 were none in the United States that we had
3 any knowledge of.

4 Q. What, if anything, did Monsanto
5 do to address the concerns that were
6 expressed to Dr. Jensen and reported to
7 Doctor -- was it Dr. Wood or Mr. Wood?

8 A. I can't answer that, I don't
9 know.

10 MR. MALIN: I object to the form
11 of the question.

12 A. I don't know whether it's Dr.
13 Wood or Mr. Wood.

14 MR. COHEN: All right. But to D.
15 Wood, as expressed in this memo?

16 A. I was interrupted, will you
17 repeat it?

18 Q. Certainly. What, if anything,
19 did Monsanto do to address the concerns
20 expressed by workers to Dr. Jensen and by
21 Dr. Jensen to D. Wood and as expressed in
22 this memo?

23 MR. MALIN: I object to the form
24 of the question. First, it's compound,
25 you're talking about two levels of

1 concerns, the workers, and I don't know
2 that we have any idea what concerns the
3 workers expressed to Dr. Jensen.

4 MR. COHEN: We have here a
5 report, sir, that's one level. We're
6 speaking about a report back to --

7 MR. MALIN: Let me finish my
8 objection. Then we have concerns expressed
9 in this letter, that's a different
10 question. Will you take them one at a
11 time?

12 MR. COHEN: I'm only speaking
13 about one set of concerns. Again, who was
14 Mr. Buchanan?

15 A. He was either in the marketing or
16 the product manager for PCB's in the United
17 States. I do not know if his authority
18 referred to world-wide or not.

19 Q. In any event, a report is being
20 given to him in January of 1967 by D. Wood
21 from Europe indicating, among other things,
22 that workers have expressed concerns to a
23 scientist who has found evidence of
24 environmental contamination by PCB's,
25 correct?

1 A. No, I don't think the workers
2 talked about environmental contamination,
3 did they? They talked about the possible
4 effects on their health.

5 MR. MALIN: I'm not sure we know,
6 that's why I objected to the form of the
7 question. We don't know what --

8 A. Well, they say as a possible
9 effect on their health. And that has
10 nothing to do with environmental stuff.

11 MR. COHEN: Let's go to the
12 subject that you're discussing, then, the
13 workers' concerns. This report from D.
14 Wood to Mr. Buchanan reports, among other
15 things, expressed concerns by workers in
16 Europe to a scientist, and that scientist
17 is relating those concerns to D. Wood who,
18 in turn, is relating them to Buchanan, will
19 you agree with that?

20 A. Yes.

21 Q. All right. Now, what I'm asking
22 you is what, if anything, did Monsanto do
23 as a result of this report?

24 A. I do not know. But you will also
25 have to qualify your question by

1 recognizing the fact that Monsanto was not
2 the only manufacturer of PCB's in Europe.
3 In fact, we do not know if these workers
4 were -- in the non-electrical uses were
5 using Monsanto PCB's or were using the
6 French Proudulac, P-r-o-u-d-u-l-a-c,
7 Company PCB's. I do not know. I do not
8 know what Wood did in response to Jensen's
9 statement.

10 Q. I'm not concerned about what
11 other companies did, sir. I'm not asking
12 you about what other companies did, I'm
13 asking you what Monsanto did?

14 A. I'm not talking about what other
15 companies did. I do not know if Jensen is
16 referring to workers who were using
17 Monsanto PCB's or other people's PCB's. As
18 I said, we were a small portion of the PCB
19 suppliers in Europe.

20 Q. All I'm asking you, sir, is what
21 you know Monsanto did in response to this
22 report of these expressed concerns?

23 A. I do not know what they did.

24 Q. Thank you. Do you see in the
25 next paragraph, under "Future Research,"

1 "We were asked by Jensen if it was possible
2 for Monsanto to supply any samples of the
3 pure isomers of chlorinated diphenyl since
4 his work indicated at the moment that the
5 lower chlorinated isomers are fairly easily
6 metabolized, and the potentially more
7 dangerous constituents are the more highly
8 chlorinated members," do you see that?

9 A. Yes, I do.

10 Q. What, if anything, did Monsanto
11 do with respect to that?

12 A. You mean to supply them the
13 isomers?

14 Q. Yes.

15 A. I don't know what they did.
16 That's not my function, to supply isomers.

17 Q. Do you know if Monsanto ever
18 established or maintained a working
19 relationship with Dr. Jensen subsequent to
20 1/26/67?

21 A. Yes. As I said, they went over
22 and talked to him, I don't know if that --
23 if you consider that a working
24 relationship, and whether they promised him
25 the isomers and they were supplied to him,

1 I don't know.

2 Q. From your knowledge of the action
3 of chlorinated diphenyls on the body, do
4 you agree that lower chlorinated isomers
5 are fairly easily metabolized?

6 A. I don't know if I would say
7 fairly easily. They are more easily
8 metabolized than the higher ones. But back
9 in 19 -- in the 1960's they believed they
10 were not biodegradable, so, obviously,
11 people thought they were not metabolized by
12 other organisms, other species outside of
13 humans. But I think we know that the
14 toxicity of 1254 has a higher -- has some
15 higher toxicity than 1242. The Treon work
16 showed it. He came out with a threshold
17 limit value of twice as much for 1254 as he
18 did for 1242. And these figures, of
19 course, refer to the chlorination.

20 Q. What do you mean by metabolized,
21 Doctor?

22 A. Broken down by systems of the
23 body.

24 Q. So, I'm asking you whether you
25 agree or disagree with that statement, that

1 the lower chlorinated isomers are fairly
2 easily metabolized?

3 A. I don't know whether -- what he
4 means by fairly easily, and, so, I cannot
5 agree with that statement until I know what
6 he meant by easily metabolized. Are you
7 talking about metabolized like sugar?
8 They're not as easily metabolized as sugar
9 is. So, I don't know what he means by that
10 phrase, fairly easily metabolized.

11 MR. MALIN: He's answered your
12 question. Compared to the higher
13 chlorinated, they are metabolized easier
14 than higher chlorinated.

15 MR. COHEN: I don't think he said
16 that. You referred me to Treon's work
17 regarding the difference in toxicity, I'm
18 asking you about the rate of
19 metabolism. Do you know of any
20 difference in the way that they're
21 metabolized in humans or in animals?

22 A. In the way they are metabolized
23 or the rate?

24 Q. The rate?

25 A. The rate they're metabolized?

1 No, I do not.

2 Q. Have you seen any articles that
3 indicate to you that there is a difference
4 in the rate of metabolization in either
5 humans or animals?

6 A. I don't know if I have or not.

7 Q. There is nothing that you can
8 refer me to today?

9 A. Nothing I can refer you to today.

10 Q. Do you see the first sentence of
11 the last paragraph that begins on this page
12 that says, "The point that I have made to
13 Jensen is the need for care in any further
14 publication of his work which is made"?

15 A. Yes, sir, I see that.

16 Q. Do you have any idea what D. Wood
17 is referring to?

18 A. No, I do not.

19 Q. Was it ordinary practice for
20 Monsanto at that time, through its
21 scientists such as Mr. Wood, to advise
22 independent scientists of the need for care
23 in further publication of their work?

24 A. I do not know what Dr. Jensen --
25 I mean, what Mr. Wood means by this. I do

1 not believe -- to answer your question,
2 Monsanto does not sensor their own
3 scientists when they're talking to other
4 scientists.

5 Q. So, you're saying from your
6 knowledge, sir, anything that Mr. Wood said
7 to Dr. Jensen at that time at a scientific
8 level would have been Mr. Wood, or D.
9 Wood's own statement?

10 A. Yes. I don't think that Monsanto
11 has a policy of what you say to a
12 scientist, whether you say what you believe
13 or whether you -- if you say what the
14 company believes, I think you would
15 paraphrase and say this is what the company
16 believes. If you're talking as an
17 individual, if I was talking to Jensen as
18 an individual, I would not be reflecting
19 Monsanto's -- necessarily, the opinion of
20 management.

21 Q. What, if any, response, do you
22 know, did Monsanto give to D. Wood
23 regarding his statement to Dr. Jensen as
24 set forth therein?

25 MR. MALIN: I object to the form

1 of that question. I don't think I
2 understand what you're asking.

3 MR. COHEN: Do you know if
4 Monsanto said anything to D. Wood about his
5 comments to Dr. Jensen?

6 A. No, I don't know anything -- I
7 know nothing that Monsanto talked -- said
8 to D. Wood concerning this memorandum.

9 Q. We have Dr. Flinn's patch test
10 results, we can mark this as Exhibit 9.

11 (Kelly Deposition Exhibit Number
12 9 mark'd for identification).

13 A. Yes, sir, I read it.

14 Q. Now, Kelly 9 has previously been
15 shown to you in another deposition, is that
16 right?

17 A. Yes, it has.

18 Q. And that's what the Exhibit K-20
19 is all about?

20 A. That's correct.

21 Q. That was not part of the original
22 report of Dr. Flinn?

23 A. Beg pardon?

24 Q. That was, obviously, not part of
25 the original report of Dr. Flinn?

1 A. Yes.

2 Q. You are familiar with this
3 document, Kelly 9?

4 A. Yes, I am.

5 Q. Is this the only report of Dr.
6 Flinn that you know of that you had
7 referred to earlier in your deposition as
8 being some of the work done previously by
9 Swann?

10 A. I told you earlier in the
11 deposition that I was not sure if this is
12 the only one. If there was one where he
13 did any feeding to animals or injection of
14 material, I would see if I had that report
15 and submit it to you.

16 Q. All right. So, you'll continue
17 looking for that?

18 A. Beg pardon?

19 Q. You'll continue looking for that?

20 A. Yes.

21 Q. Thank you. I note that this test
22 was -- or this report, rather, is dated
23 May 25, 1934. Was that prior to the time
24 Monsanto acquired Swann Chemical?

25 A. Yes, I believe it was.

1 Q. And I see that the name Aroclor
2 is being used to identify the compounds
3 involved?

4 A. Yes, sir.

5 Q. So, the name Aroclor was part of
6 the property that Monsanto acquired when
7 they acquired Swann Chemical?

8 A. That is correct.

9 Q. There is reference in this report
10 to dermatitis which had developed among
11 some of the workmen in the plant. Do you
12 know what type of dermatitis that was?

13 A. Well, the only dermatitis that I
14 know of that was developed among some of
15 the workmen in the plant, if by the plant
16 he means the Swann plant, is chloracne.

17 Q. Did you associate, then, this
18 report with chloracne?

19 A. I don't know what you mean by
20 associate it with chloracne.

21 Q. Well, this report is trying to
22 determine the agent that produced a
23 dermatitis?

24 A. Yes, sir.

25 Q. Did you identify in your own mind

1 that dermatitis as being chloracne?

2 MR. MALIN: I object to the form
3 of the question. We haven't established
4 what, if anything, he knew about this
5 particular --

6 MR. COHEN: All right. Fine. Why
7 don't you tell me what you knew about this
8 incident?

9 A. Let me start with what I know
10 about the report.

11 Q. Fine.

12 A. This is a report based on the
13 state of the art in 1934, it absolutely has
14 no relationship at all to finding out
15 whether a particular product had caused
16 chloracne. And I doubt very much if it has
17 any relationship at all to finding out
18 whether a skin irritation -- whether a
19 material could be a skin irritant. I don't
20 think in the last thirty years there's been
21 a series of patch tests on animals, people
22 do not do that any more, it just -- this
23 is a report that is valueless, as far as
24 I'm concerned. Now, if you want to know
25 about the dermatitis that occurred, if

1 that's the term you want to use, there was
2 chloracne occurred in some 20, 25 workers
3 of the Swann Chemical Company in '33 or '34
4 that was later proven to be due to a
5 benzene that was off spec material
6 produced, it was a different color than the
7 usual Aroclor. Why they sold it, I don't
8 know. But that was written up by Dr. Jones
9 in an article that I'm sure you've got,
10 because it's been in every deposition, in
11 which he describes the treatment of these
12 twenty some people with chloracne. After
13 they went back to their -- after Swann
14 went back to their original supplier of
15 benzene, and did a certain amount of
16 housekeeping and put ventilation over the
17 filling spouts where they filled the drums,
18 they had no more chloracne. And during the
19 years that I've been associated with
20 Monsanto, to the conclusion of manufacture,
21 we never had any chloracne in our
22 manufacturing process. That's what I know
23 about it.

24 Q. So, for all of the reasons that
25 you have discussed, you consider this

1 report to be just worthless, is that right?

2 A. Yes. At the present date.

3 That's the way they were thinking back in

4 1934. Flinn was a man at Columbia

5 University who did a lot of work in this

6 field. But it's almost like using

7 mercurochrome instead of penicillin. I

8 mean, it was all right back 30 years ago,

9 but it isn't all right now.

10 (Discussion off the record)

11 (Kelly Deposition Exhibit Number

12 10 mark'd for identification).

13 A. Yes, sir, I've read it.

14 Q. Do you recognize the document,

15 Kelly 10?

16 A. Yes. This document is a copy of

17 a quarterly report from the medical

18 department, authored by me to the

19 management of Monsanto.

20 Q. Now, it says, "Quarterly

21 Report". How often did you prepare a

22 quarterly report?

23 A. Every quarter.

24 Q. And when I say you, I'm speaking

25 of the medical department at that point.

1 But you apparently prepared this particular
2 quarterly report?

3 A. Yes. With help from other people
4 in our department.

5 Q. Did you prepare a quarterly
6 report every quarter of every year during
7 the years you were medical director at
8 Monsanto?

9 A. No. I think there was -- later
10 on, we didn't do it every quarter, I think
11 we might have done it yearly. I think the
12 executive group were getting too many
13 reports from too many people too often, and
14 I believe we went down to yearly reports.
15 I don't know the year that that started.

16 Q. But it would have been after
17 1969?

18 A. Certainly after September of '69,
19 yes.

20 Q. Because as of September '69 you
21 were still preparing quarterly reports?

22 A. That's correct.

23 Q. Do you know how many quarterly
24 reports you prepared prior to September of
25 '69 that discussed PCB's?

1 A. No, sir, I don't.

2 Q. Was that a subject that was

3 regularly discussed?

4 A. Only when the environmental

5 aspect of PCB became prominent.

6 Q. And when was that?

7 A. That was sometime after Wood's

8 first meeting with Jensen.

9 Q. So that would have been '67?

10 A. Was this '67 or earlier than

11 that? '67, yes, sir.

12 Q. Prior to that time or -- I'm

13 sorry.

14 A. Prior to that time we did not

15 discuss PCB's at all in our reports.

16 Q. But subsequent to that time it

17 became a subject of frequent mention in

18 your quarterly reports?

19 A. Yes. It became quite important.

20 Q. How about annual reports?

21 A. Well, when we had the quarterly

22 reports we didn't have an annual report.

23 Q. I understand.

24 A. But I don't know when the annual

25 reports came in, and I don't know if by

1 that time the PCB problem had lessened a
2 great deal, but I'm sure we were still
3 manufacturing it and I'm sure it was still
4 present in the annual reports.

5 Q. Page 2, sir, of the report
6 itself.

7 A. Yes, sir.

8 Q. In the fourth full paragraph, the
9 last sentence reads, "Evidence indicates
10 that the more highly chlorinated PCB's,
11 including Aroclor 1254, are not subject to
12 biodegradation".

13 A. Wait a minute. I haven't found
14 this yet. Which paragraph, sir?

15 Q. It's the fourth full paragraph,
16 it would be the fifth paragraph of text.

17 A. Yes, sir.

18 Q. "Evidence indicates that the more
19 highly chlorinated PCB's, including Aroclor
20 1254, are not subject to biodegradation and
21 the solubility of 1254 is only
22 approximately 100 parts per billion".

23 A. Yes, sir.

24 Q. Now, you wrote that?

25 A. I wrote that, yes, sir.

1 Q. Do you still believe that Aroclor
2 1254 is not subject to biodegradation?

3 A. If it is, it's very slow.

4 Q. So, you still stand by that
5 statement?

6 A. I think so.

7 Q. Now, what do you mean, that the
8 solubility of 1254 is only approximately
9 100 parts per billion?

10 A. Well, I refer -- I should have
11 said in water. In other words, to get --
12 if you put 1254 into a bucket of water and
13 leave it stand there for a long time, and
14 test the water, you'll find a maximum
15 concentration of 100 parts of 1254 in a
16 billion parts of water.

17 Q. What's the significance of that
18 fact, sir?

19 A. Well, the significance is that if
20 you were drinking water that -- from a
21 river that flows over PCB, which is down in
22 the sludge at the bottom of the river, the
23 water will not pick up much PCB's. In
24 other words, it lies there like a lump of
25 coal, and it's not dissolved by the water.

1 Q. Do you know of any studies that
2 have established the solubility of PCB's in
3 any human body fluid, such as blood?

4 A. Well, I'm sure it's present in
5 the blood, obviously. You can find PCB's
6 dissolved in the blood.

7 Q. Do you know the rate of
8 solubility of Aroclor 1254 in the blood?

9 A. No. I just know what the general
10 background level is, it's about five or six
11 parts per billion in the blood.

12 Q. That's the amount that's floating
13 around in blood in people in the United
14 States with no known exposure, is that
15 correct?

16 A. That's right.

17 Q. What did you say it was?

18 A. Around five to seven parts per
19 billion.

20 Q. Five to seven parts per billion?

21 A. Billion.

22 Q. What data do you base that on?

23 A. United States Government
24 statistics.

25 Q. From what year?

1 A. I can't give you the year.
2 Sometime in the '70's or '80's.

3 Q. So, data from the '70's or '80's
4 would indicate people with no known
5 exposure to PCB's have anywhere from 5 to 7
6 parts per billion in their blood?

7 A. That's correct.

8 Q. Do you have any more current data
9 than that?

10 A. Not off the top of my head, no, I
11 don't.

12 Q. What data do you have, if any,
13 that indicates the rate by which PCB's in
14 the human body are eliminated from the
15 body?

16 A. I don't have any data, with the
17 exception that there are data that show
18 when a person has been removed from a PCB
19 environment his blood level drops 40, 50,
20 70 percent after a year.

21 Q. Well, which is it, 40, 50 or 70?

22 A. Well, it depends on the
23 individual. It can go as high as 70
24 percent.

25 Q. In other words, the blood level,

1 in your experience, of people who are
2 removed from a source of exposure have a
3 reduction of anywhere from 40 to 70 percent
4 in one year?

5 A. That's correct.

6 Q. What data is that you're
7 referring to?

8 A. That's data from capacitor
9 manufacturers.

10 Q. Is that published data?

11 A. It's published, sure.

12 Q. Do you know where it's published?

13 A. No, I don't.

14 Q. What is the mechanism of
15 elimination, do you know?

16 A. Presumably -- I don't know. I
17 do not know.

18 Q. Have you ever had your own blood
19 level checked for PCB's?

20 A. No, I haven't.

21 Q. If you'll turn to page 3, sir. I
22 call your attention to what is the -- I
23 guess it is the third full paragraph, "The
24 organic division".

25 A. Yes, sir.

1 Q. You wrote, "has a concerted
2 effort under way to protect continued sales
3 and uses"?

4 A. Yes, sir.

5 Q. What was that concerted effort,
6 as you understood it, at that time?

7 A. To educate the consumers not to
8 discard the material into places where it
9 could come in contact with the environment,
10 and to limit the use of -- limit the sales
11 of material for open operations where the
12 discarded PCB's could not be controlled.

13 Q. That was the concerted effort to
14 protect continued sales and uses?

15 A. Yes, sir.

16 Q. As you understood it?

17 A. Yes. That was part -- yes,
18 that's true. Also, to protect the
19 environment. In other words, if this
20 material was going to continue to be -- to
21 be -- if the amount of the material was
22 going to be increased by dispersion of the
23 stuff from customers, we were going to get
24 out of the business. As our president told
25 me at one of our meetings, if we can't

1 control this, we are -- so that we are not
2 harming the environment, we will give up
3 the business regardless of the profit.

4 Q. Who told you that?

5 A. Ed Bock, B-o-c-k.

6 Q. When did he tell you that?

7 A. In 1972 or '3, at one of our
8 meetings. It's been in depositions. I'm
9 sure it's in the papers you've gotten,
10 that's what he said.

11 Q. Did he issue a written statement
12 to that effect?

13 A. Not that I know of. But he told
14 me. Everybody in the meeting that was
15 there heard him.

16 Q. And when did Monsanto discontinue
17 sale of PCB's?

18 A. Well, remember, first we
19 discontinued sales to open operations.
20 That's like paints, waxes --

21 Q. Rayon delusterer?

22 A. Well, that went out with the
23 rayon a long time before that. Carbonless
24 carbon paper. That was all stopped by
25 Monsanto refusing sales to it. Then we

1 sold it only to places where we thought
2 there would be closed systems, such as
3 hydraulic fluids and heat transfer agents.
4 When we found out that we were getting
5 contamination in the environment from those
6 systems, we stopped that. Then when
7 substitutes became available, we stopped
8 the use in all manufacturing installations,
9 which we only had uses -- we only allowed
10 uses in the electrical business. And we
11 did that on the request of the government,
12 because the material in transformers was
13 being used in critical areas.

14 Q. Read your whole paragraph, would
15 you please, sir?

16 A. Beg pardon?

17 Q. Would you read that whole
18 paragraph?

19 A. "The Organic Division, which
20 produces this series of very profitable
21 products, has a concerted effort under way
22 to protect continued sales and uses. It is
23 likely, however, that it will be found
24 impossible to prevent losses to the
25 environment of Aroclors 1254 and 1260 in

1 some customer applications, and that public
2 and governmental pressures will lead to
3 restrictions that cannot be met without
4 discontinuing production and sales.
5 Concurrently, action is being directed at
6 protecting the sale and uses of other
7 polychlorinated biphenyls and terphenyls".

8 Q. Now, let's go back to the
9 beginning of the paragraph. What
10 information did you have regarding the
11 profitability of the PCB's?

12 A. Just what I was told.

13 Q. So, someone in the organic
14 division told you this is a very profitable
15 product for us?

16 A. That's correct.

17 Q. And that's the information that
18 you relied upon when you put in this
19 paragraph that this is a series of very
20 profitable products?

21 A. Yes, sir.

22 Q. Would you describe for me again
23 the concerted effort under way to protect
24 continued sales and uses?

25 MR. MALIN: Objection, the

1 question was asked and answered. Answer it
2 again.

3 A. Yes. We started a program of
4 educating the consumer, our customer, how
5 to dispose of the material in a manner that
6 would be in accord with a safe
7 environment. In other words, we told them
8 do not allow leaks, do not throw it away,
9 do not spray it on the ground. We even
10 made arrangements for the material from the
11 electrical industry to be sent back to us
12 to be incinerated, and so we -- then we
13 had a program of eliminating uses where the
14 material would come in contact with the
15 environment, such as carbonless carbon
16 paper, where the carbon was discarded, and
17 there was chlorinated biphenyl in
18 carbonless paper. So, to summarize, it was
19 a customer education, helping the customer
20 dispose of it in a proper manner, limiting
21 the uses of it. And, finally, at the end
22 of the road, discontinuing manufacturing it
23 completely, two years before the government
24 banned it.

25 Q. Your last sentence says,

1 "Concurrently, action is being directed at
2 protecting the sale and uses of the other
3 polychlorinated biphenyls and terphenyls."
4 What action are you referring to there?

5 A. I don't remember.

6 Q. On page 4, sir, under "Industrial
7 Hygiene," part C, it says, "Routine studies
8 or visits were made to the Decatur, Eugene,
9 Luling, W.G. Krummerich, Pensacola and J.F.
10 Queeny Plants".

11 A. Yes, sir.

12 Q. Are these studies investigating
13 worker industrial hygiene issues regarding
14 substances other than PCB's?

15 A. Yes. They did not manufacture
16 PCB's in any of these plants or use them,
17 except they may have used them like at
18 Pensacola, they used them in the air
19 compressers, but that was not -- did not
20 have any worker exposure there,
21 environmental exposure.

22 Q. So, when it says routine studies
23 or visits, these were routine studies and
24 visits, but they were investigating PCB's
25 and perhaps a whole range of other things?

1 A. Did you say they were
2 investigating PCB's?

3 Q. And perhaps a whole range of
4 other things?

5 A. I don't think that we singled out
6 PCB's, because I said none of these six
7 plants there manufactured PCB's or used
8 PCB's, with the exception that it may be a
9 component of the oil for an air compressor,
10 as a lubricant for an air compressor. As I
11 said, there was no worker exposure in those
12 areas.

13 Q. The only industrial hygiene
14 studies you know of that dealt with PCB's
15 were the ones done at Krummerich that we
16 referred to earlier, Zack and Muech and
17 Gaffey?

18 A. Remember, these are
19 epidemiological studies, these were not
20 industrial hygiene studies.

21 Q. Well, were industrial hygiene
22 studies done regarding PCB's?

23 A. Yes. We took levels of PCB's at
24 Krummerich and the Anniston plant.

25 Q. You did what?

1 A. We took air levels of PCB's in
2 the air at Anniston and Krummerich. But
3 the fact is, we didn't do them in the three
4 months, July, August and September, we did
5 them some of the other months in 1969. We
6 didn't do all plants every quarter.

7 Q. What happened to those PCB level
8 studies?

9 A. I don't know. I mean, they're
10 like yesterday's newspaper. I mean, they
11 found out they were under the allowable
12 concentration, so I'm sure they were
13 discarded in the retention system.

14 Q. To your knowledge, in the
15 Krummerich plant did they show different
16 levels of air concentration of PCB's in
17 different parts of the plant?

18 A. I can't remember that. All I can
19 remember is we did not get any levels
20 higher than threshold limit of .5
21 milligrams per cubic meter of air.

22 Q. Do you know if air concentration
23 studies were ever made available to the
24 investigators that were doing the
25 epidemiology studies at Krummerich?

1 A. No, sir. Remember, now, the
2 workers who were doing the Krummerich study
3 were looking at death certificates.

4 Q. Do you know if any correlation or
5 attempt was made to correlate a worker's
6 task with the mortality studies?

7 A. No, I do not. But, of course,
8 the fact that they didn't have any
9 increased mortality in the plant and
10 specific illnesses didn't make it so
11 important to find out what levels the
12 people may have been exposed to.

13 Q. Who made the decision as to the
14 importance of determining levels of
15 exposure in those studies?

16 A. Mr. Wheeler, who was head of --
17 repeat that question.

18 (The requested portion of the
19 record read by the reporter).

20 A. You mean epidemiological
21 studies?

22 Q. Yes.

23 A. I don't know if -- I don't know
24 anything about what was the basis of the
25 studies, or whether they asked for it or

1 thought that it was important. I would
2 imagine it would be the authors of the
3 study, but I don't know.

4 MR. COHEN: Why don't we take a
5 five minute break.

6 (Recess)

7 (Kelly Deposition Exhibit Number
8 11 mark'd for identification).

9 MR. COHEN: Have you had a chance
10 the look at Kelly 11?

11 A. Yes, I have.

12 Q. Do you recognize it?

13 A. Yes, I do.

14 Q. Do you want to tell me what it
15 is?

16 A. This is a letter from Elmer P.
17 Wheeler, who was in the medical department,
18 to a W.R. Richard, who was in the St. Louis
19 office, he was a research individual in St.
20 Louis, dated October 21, 1968.
21 Polychlorinated Biphenyls in the
22 Environment. With numbers PRR 050542 and
23 SCM 051029.

24 Q. And this document has an
25 attachment to it?

1 A. A Xerox copy of a technical paper
2 which was delivered by Dr. Risebrough at
3 -- I don't know where he delivered it.
4 Well, yes, he delivered it at a symposium
5 on toxicology at the University of
6 Rochester in June of '68.

7 Q. You see here in the second full
8 paragraph, it says, "The meeting was billed
9 as the first annual conference on
10 toxicology"?

11 A. Yes, sir.

12 Q. And was underwritten, presumably,
13 by the ABC. Do you know who that is?

14 A. I don't know what that is.

15 Q. Mr. Wheeler, as I understand it,
16 worked for you?

17 A. Yes, he did.

18 Q. You received a copy of this
19 document in or around October of 1968?

20 A. Yes, I did.

21 Q. With the attachment?

22 A. Yes, sir.

23 Q. Are you familiar with the
24 attachment?

25 A. Yes, I'm familiar.

1 Q. Do you know who Dr. Risebrough
2 is?

3 A. Yes. He's at the University of
4 California, Berkeley. He's a man who
5 discovered the residues of PCB in avionic
6 species, birds.

7 Q. Do you know if Monsanto has ever
8 had any kind of relationship whatsoever
9 with Dr. Risebrough?

10 A. What kind of a relationship?

11 Q. Yes. Have they ever funded any
12 studies by Dr. Risebrough, have they ever
13 given him any research grants, that type of
14 thing, has he ever worked as a consultant
15 for Monsanto?

16 A. Not that I know of.

17 Q. Neither before or since, to your
18 knowledge?

19 A. I just don't know. Certainly --
20 no, not before or since I left, not that I
21 know of.

22 Q. I'm going to ask you to turn to
23 what is the third page of the abstract,
24 although it's not numbered 3. It does bear
25 those two identification stamps, it's 50545

1 on PRR and 51032 on SCM. And I would call
2 your attention to -- by the way, if I can
3 just back up for a moment, do you know if
4 this abstract has ever been published, if
5 this report has ever been published?

6 A. You're talking about abstract --

7 Q. I'm talking --

8 A. The whole report?

9 Q. Yes, the entire report.

10 A. I don't know whether it has been
11 or not.

12 Q. Do you know if it's been peer
13 reviewed?

14 A. Well, I don't know that.

15 Q. You were going to say?

16 A. I was going to say, Risebrough is
17 a well known investigator, and I suppose
18 this conference on toxicology, which was at
19 the University of Rochester by invitation
20 only, was probably a pretty high-powered
21 organization, I would imagine he must have
22 submitted this to the people running the
23 conference, but I don't know.

24 Q. Do you see in the first
25 paragraph, which would not be the first

1 full paragraph, but --

2 A. Which page are we on now?

3 Q. This is the third page. It says
4 "They are highly toxic to man when inhaled
5 as vapors," and then there are two
6 references, 9 and 25, and the more heavily
7 chlorinated components have greater
8 toxicity".

9 A. What page are we on now?

10 Q. The numbers stamped at the bottom
11 are PRR 050545 and SCM 051032. The first
12 paragraph.

13 A. Yes, sir, I see that.

14 Q. Do you agree or disagree with
15 that statement?

16 MR. MALIN: I'll object to the
17 form of the question. I'm not sure what
18 statement we're talking about.

19 MR. COHEN: They are highly toxic
20 to man when inhaled as vapors.

21 A. No, I don't agree with it.

22 Q. Do you see the references that
23 Dr. Risebrough has here, that is, number 9,
24 "Documentation of threshold limit values;"
25 41, "Committee on threshold limit values,

1 American Conference of Governmental
2 Industrial Hygienists, 1966"?

3 A. Yes.

4 Q. And 25, "Sax," S-a-x, "N.I.,
5 Dangerous properties of industrial
6 chemicals, Reinhold, New York"?

7 A. Let's forget about Sax. All he
8 does is go around and pick up other
9 people's work and gives us his
10 interpretation, so I disregard him
11 completely.

12 Q. You think that Sax as an
13 authority is worthless?

14 A. Well, he's not one of my
15 authorities that I would quote. Other
16 people may think so, but I think I reflect
17 a good body of medical and scientific
18 people that would say Sax is not a complete
19 authority.

20 Q. So, Risebrough, when he cited
21 Sax, was running against the tide at that
22 time?

23 A. I don't know. But I'm quoting
24 you what I believe about Sax.

25 Q. Okay. How about the Committee on

1 Threshold Limit Values, The American
2 Conference of Governmental Industrial
3 Hygienists?

4 A. I don't know if they said that,
5 I'd have to see the reference. This is
6 Risebrough's interpretation, or the
7 government conference's interpretation,
8 because after all, the American Conference
9 of Governmental Industrial Hygienists used
10 a Monsanto funded research by Dr. Treon at
11 the University of Cincinnati to come to
12 their decisions, so I don't know if
13 Risebrough, who's an analytical chemist, is
14 in a position to say something is highly
15 toxic. I think that's outside his
16 specialty. And I don't believe the
17 government documentation of threshold
18 values says highly toxic. I don't think
19 that's true.

20 Q. So, you're saying Dr. Risebrough
21 is making a statement here that you think
22 is outside of his area of expertise and
23 citing a reference that you're not sure is
24 an accurate citation for that particular
25 authority or that particular statement?

1 A. That's what I am saying.

2 Q. And in addition to which the
3 reference that he's citing, indeed, relied
4 upon Dr. Treon's work which was funded by
5 Monsanto?

6 A. That's correct.

7 Q. So, you do not agree with that
8 part of the statement, they're highly toxic
9 to man when inhaled as vapors?

10 A. Not at all.

11 Q. Have you been shown this document
12 before, Kelly 11? Have you been shown this
13 before in depositions?

14 A. I may have. I can't answer that.

15 Q. You can't answer because you
16 don't recall?

17 A. What?

18 Q. You can't answer because you
19 don't recall?

20 A. I don't recall whether I was or
21 not.

22 Q. I see. When is the last time you
23 looked at Risebrough's article that we're
24 referring to here?

25 A. Not for a couple of years.

1 Q. Do you agree with the second part
2 of the statement, the more heavily
3 chlorinated components have greater
4 toxicity?

5 A. As I've been saying repeatedly,
6 the Treon study showed that 1254 was more
7 toxic than 1242, yes. Again, if that's
8 what he means by heavily chlorinated
9 components, I agree that it has greater
10 toxicity, yes.

11 Q. What was the mechanism of
12 toxicity of the higher chlorinated
13 compounds as reported by Treon?

14 A. Just about the same as the lower
15 chlorinated. They both had the same
16 general effect, they both had enzymatic
17 changes in the liver.

18 Q. That's the toxic reaction that
19 you're speaking of, the enzymatic changes
20 in the liver?

21 A. That's correct.

22 Q. Those changes in the liver don't
23 necessarily, as you understand it, lead to
24 any particular disease or illness?

25 A. That isn't what I said. If you

1 get enough changes, you can get liver
2 destruction. An enzymatic change can occur
3 with three drinks of whiskey, you'll get
4 changes in the liver enzymes. But you
5 won't get cirrhosis of the liver until you
6 take more alcohol over a prolonged period
7 of time. And you can also take enough in
8 24 hours to kill you. So, enzymatic
9 changes are only one of the changes, there
10 are changes in liver structure that can
11 occur from toxic effect of the liver.

12 Q. So, you do agree that PCB's do
13 cause enzymatic changes in the liver?

14 A. They may, yes. Depending on the
15 amount that's absorbed.

16 Q. I see. They may, you're
17 qualifying that based upon the amount of
18 exposure, the duration of exposure, et
19 cetera; that's correct?

20 A. That's correct.

21 Q. Can you identify for me today the
22 scientific literature that supports the
23 conclusion that we just discussed, that is,
24 that PCB exposure can cause or may cause
25 enzymatic changes in the liver?

1 MR. MALIN: I'm going to object
2 to that as a mischaracterization of what
3 the witness said. He didn't say PCB
4 exposure, he said PCB absorption; there is
5 necessarily a difference.

6 MR. COHEN: All right.

7 MR. MALIN: Answer the question.

8 MR. COHEN: PCB absorption, as
9 modified by your counsel, sir, PCB
10 absorption may cause enzymatic changes in
11 the liver; can you tell me the scientific
12 literature that you rely upon that supports
13 that conclusion?

14 A. No, I can't today, but it's
15 pretty widespread.

16 Q. Is it simply epidemiological data
17 that you rely on for that conclusion?

18 A. No. It's both animal
19 toxicological work and examination of
20 people.

21 Q. So, you do rely upon the animal
22 toxicologic work for a conclusion with
23 respect to the potential effect of PCB's in
24 humans?

25 A. It is part of the data base that

1 I rely upon.

2 Q. What is your reason for relying
3 upon animal studies with respect to this
4 particular conclusion?

5 A. Because animal studies and human
6 studies in this case had the same target
7 organ.

8 Q. So, this was one of the two
9 criteria that you discussed with us
10 yesterday as potential reasons for relying
11 upon animal data in interpreting or
12 predicting effects in humans, is that
13 right?

14 A. Were there only two? I thought
15 there were more than two.

16 Q. Perhaps there are were more,
17 let's see.

18 MR. MALIN: I'll object to the
19 mischaracterization. I think he -- what
20 he talked about was the requirements for a
21 valid epidemiological study.

22 MR. COHEN: You're on another
23 point, Mr. Malin.

24 A. I can't hear you.

25 Q. I said, Mr. Malin is on a

1 different point. We were discussing the
2 use of animal testing, and you said it was
3 not freely transferable to humans -- may or
4 may not be transferable to humans, and you
5 went through a number of criteria. If
6 there were more than two, sir, the record
7 will reflect it, and I don't mean to
8 mischaracterize your testimony on that
9 point.

10 A. Okay.

11 Q. But this was one of the criteria
12 that you referred to yesterday?

13 A. Yes, that's correct.

14 Q. You also discussed metabolic
15 studies that show the same metabolic
16 reaction in the different species, is that
17 right?

18 A. That's correct.

19 Q. In your experience, are there
20 species that have shown changes in the
21 liver enzymes in animals that have the same
22 metabolic action on the PCB's as humans?

23 A. I don't know if I can recall
24 those studies or not.

25 Q. In other words, there may be such

1 studies, but you can't recall?

2 A. That is correct.

3 Q. You said earlier that Monsanto
4 had for a long time published product
5 information regarding their PCB products
6 that contain certain information for proper
7 handling of the material?

8 A. That is correct.

9 Q. What were the recommended worker
10 protection steps that were to be taken in
11 order to assure safe handling of the PCB
12 products, as you recall?

13 A. Avoid prolonged or repeated skin
14 contact, do not breathe the fumes at
15 elevated temperatures or in confined
16 spaces.

17 Q. Now, how were the workers to
18 prevent -- how were the workers to avoid
19 prolonged contact with the material?

20 A. That is up to the person who was
21 using the material. We tell them what to
22 do. We do not know what is going on in the
23 customer's plants, so it's up to the
24 customer who is using the material, the
25 manufacturer, to carry that out.

1 Q. Do you recall a problem arising
2 regarding the existence of appropriate
3 gloves for the handling of Aroclors?

4 A. I don't know if it was a
5 problem. People have written to me about
6 what kind of gloves do we use, because
7 Aroclor would destroy particular gloves.

8 Q. What gloves did it destroy, what
9 type of material?

10 A. Natural rubber.

11 Q. What was the mechanism of
12 destruction, do you know?

13 A. It dissolved them.

14 Q. It just dissolved natural rubber
15 gloves?

16 A. I don't know if they dissolved
17 like a kleenex would in water, but they
18 were rendered impervious.

19 Q. How long did it take for that to
20 occur, do you know?

21 A. I don't know.

22 Q. What was the recommended glove
23 construction in order to prevent this
24 destruction of the glove?

25 A. Well, eventually they went to

1 neoprene, but I don't know when that was
2 available on gloves, because some of the
3 materials were fabricated in such a way
4 that they couldn't be used satisfactorily
5 in operations. So, I do not know when they
6 got down to the time frame when it got down
7 to a synthetic material that was resistant
8 to Aroclors. I don't know that.

9 Q. What are Askarels?

10 A. Askarel is a generic name for the
11 electrical uses of PCB. It's not a
12 Monsanto name, it's a generic name.

13 Q. But an Aroclor is an Askarel?

14 A. Askarels are Aroclors, but not
15 all Aroclors are Askarels. In other words,
16 there are chlorinated diphenyl benzenes
17 that are called Aroclors that are not used
18 in the electrical business and are not
19 Askarels.

20 Q. So, they would be Aroclors, other
21 than the 12 series that we've been
22 discussing?

23 A. That's right.

24 Q. And not including the 10 series,
25 the 1016?

1 A. No. They would be in the 45, 44
2 or 54.

3 Q. So, they're polychlorinated
4 biphenyl --

5 A. Terphenyls. I mean, diphenyl
6 benzene.

7 Q. Other combinations that were not
8 used for dielectric fluid?

9 A. Yes. I'm sorry I used the term
10 to confuse everything.

11 Q. I'm not sure you confused it, I
12 -- you may not have used it, I may have
13 thrown it in and confused everybody.

14 (Discussion off the record).

15 MR. COHEN: What are Montars,
16 sir?

17 MR. MALIN: I didn't hear. What
18 are what?

19 MR. COHEN: Montars,
20 M-o-n-t-a-r-s?

21 A. I'm not sure at the present time
22 what they are. That was a -- they
23 certainly are not chlorinated biphenyls.
24 They are mixtures, residues of distilled
25 bottoms of the manufacture of chlorinated

1 biphenyl, but I do not know what the
2 example composition of the material is. It
3 is not used in the electrical business.

4 (Kelly Deposition Exhibit Number
5 12 mark'd for identification).

6 A. Yes, sir, I read it.

7 Q. Now, in this document, sir, you
8 refer to -- I'm sorry, this is a memo from
9 someone by the name of Edelblut?

10 A. That is correct.

11 Q. Who is C.M. Edelblut?

12 A. I haven't the slightest idea.

13 Q. This is not a name that was
14 familiar to you at that time, or if it was,
15 you've forgotten, is that fair to say?

16 A. That is fair to say.

17 Q. This document is, I note, 33
18 years old?

19 A. Yes, 33 years old.

20 Q. Do you recall ever having seen
21 this document before?

22 A. I must have, I received a copy of
23 it. But I don't recall it.

24 Q. You don't have a specific
25 recollection of it, you're just saying that

1 it has your name on it and in the ordinary
2 course you would have received a copy.
3 There is a reference, however, apparently,
4 to a memo of yours dated 2/25/57, do you
5 see that, sir?

6 A. Yes, I do.

7 Q. Would it be helpful to you if you
8 saw your memo of 2/25/57?

9 A. Helpful in what way?

10 Q. Answering any questions about Mr.
11 Edelblut's memo?

12 MR. MALIN: That's going to
13 depend on the kind of questions.

14 A. Yes. He didn't ask me any
15 questions, he asked for a method for
16 determining concentration of stuff in air.

17 MR. COHEN: Would you agree that
18 it was your belief at that time that PCB's
19 would cause liver trouble by inhalation of
20 the fumes at elevated temperatures?

21 A. Yes. We're not talking about
22 PCB's here, just so you're not using guilt
23 by association. Montar is not a PCB, it's
24 a mixture of tars that are at the bottom of
25 the distillation. It's got all sorts of

1 chemicals in there.

2 Q. But I'm asking you about, would
3 you agree that PCB's -- that you believed
4 in 1957 that PCB's could cause liver
5 trouble by inhalation of fumes liberated at
6 elevated temperatures?

7 A. For enough period of time, yes.

8 Q. I guess the reason I haven't
9 given you this is it's so darn hard to
10 read, I wasn't sure I was going to use it,
11 but why don't we mark it as Kelly 13 and
12 see if this clarifies it.

13 (Kelly Deposition Exhibit Number
14 13 mark'd for identification).

15 MR. MALIN: This is a letter on
16 Monsanto Chemical Company stationery, St.
17 Louis, Missouri, apparently to Mr. J.E. --

18 A. Crouch, C-r-o-u-c-h.

19 MR. MALIN: In Anniston,
20 Alabama. It is dated February 25, 1950
21 something. I can't read -- the final digit
22 is not there.

23 A. It must have been in --

24 MR. MALIN: Probably '57.

25 A. It was the one he's referring to

1 in number 12. Yes, sir. Is there a
2 question?

3 MR. COHEN: What were you
4 discussing in your 2/25/57 memo?

5 A. Toxicity of montars.

6 Q. And you had no toxicologic data
7 on montars, is that correct?

8 A. That's correct.

9 Q. You were sort of analogizing from
10 what you knew about PCB's?

11 A. No. Well, I suppose that was
12 part of the equation. I think some of the
13 other was part of Drinker's work, because
14 he worked with some chlorinated diphenyl
15 benzenes, which I'm sure are in Montars,
16 which was not a PCB, of course.

17 Q. Now, you referred to
18 nightboilers?

19 A. Beg pardon?

20 Q. Nightboilers, is that what it
21 says?

22 A. I didn't understand your last
23 phrase. I refered to what?

24 Q. Nightboilers?

25 A. Highboilers.

1 Q. Highboilers, is that what it is?

2 A. Yes.

3 Q. The reason I didn't want to use
4 this is that it's so obscure it's difficult
5 to see. "As you know, the old
6 chlorinated," then there is a word that I
7 can't read, "boilers were more toxic than
8 the plain chlorinated Aroclors, and I feel
9 sure that this mixture of polyphenyls is
10 more toxic than chlorinated diphenyl".

11 A. Yes, sir, that's true.

12 Q. What is the word before boilers?

13 A. It must be highboilers, that
14 would be the term I would use. That's
15 highboilers. Highboiler means you have a
16 distillation column, you distill off the
17 Aroclors at varying temperatures. I'm not
18 sure, but then down below is a bunch of
19 tarry gunk, g-u-n-k. It's not quite
20 scientific, but that's what it is. So, to
21 get that out of there you increase the
22 temperature so it boils at high
23 temperatures, higher temperatures than the
24 Aroclors. That's why they call them
25 highboilers. And those things are not used

1 in the electrical business.

2 Q. Where are they used?

3 A. I haven't the slightest idea
4 where they used them at that time.

5 Q. We'll have some extra copies
6 made. I'm going to ask you, if you can, to
7 identify some people for me, telling me
8 what you know about them. George Rousch,
9 Jr., M.D.?

10 A. He is my successor at Monsanto.

11 Q. What can you tell me about Dr.
12 Rousch's educational background, do you
13 know?

14 A. Well, he had an M.D. from
15 Washington University. I do not know his
16 undergraduate school. He was a medical
17 consultant for Ethyl Corporation, he was a
18 professor of medicine at Tulane University
19 School of Medicine. He was with Monsanto
20 for two years before I retired.

21 Q. In what capacity?

22 A. Associate medical director.

23 Q. William R. Gaffey, Ph.D, we've
24 talked about before?

25 A. Yes, we have.

1 Q. Elmer P. Wheeler, we've talked
2 about?
3 A. Yes.
4 Q. And George Levinskis, he was also
5 one of your assistant toxicologists?
6 A. He was the head toxicologist.
7 Q. He was also a Ph.D?
8 A. Yes.
9 Q. Pharmacologist?
10 A. I can't answer that.
11 Q. You don't recall. William B.
12 Papageorge?
13 A. He was the point -- he was the
14 plant manager at the Anniston plant, then
15 he became the point man, the point person
16 for the environmental aspects of PCB in the
17 Monsanto Chemical division of Monsanto
18 Company.
19 Q. How was it that Mr. Papageorge
20 got that unhappy task?
21 A. I can't hear you.
22 Q. I say, how is it that Mr.
23 Papageorge got that unhappy task?
24 MR. MALIN: I object to the form
25 of the question.

1 A. I did not appoint him, so I
2 cannot tell you.

3 MR. COHEN: What was your
4 professional relationship with Mr.
5 Papageorge from the point that he became
6 the point man, as you called him, through
7 until your retirement?

8 A. Very friendly and very frequent.
9 He discussed the environmental aspects, I
10 discussed the medical aspects.

11 Q. Do you know his educational
12 background?

13 A. No, I don't.

14 MR. MALIN: When you take his
15 deposition, we'll give you a CV.

16 MR. COHEN: J.R. Garrett?

17 A. Jack Garrett had a Master's
18 Degree, he had taught at the University of
19 Tennessee, had been a research chemist at
20 Texas City division, and he came to
21 Monsanto as an industrial hygienist,
22 eventually followed Mr. Wheeler when Mr.
23 Wheeler retired, Monsanto industrial
24 hygiene.

25 Q. What was his Master's Degree,

1 what field of study was that degree
2 obtained in?

3 A. Chemical engineering, I would
4 believe.

5 Q. What background and experience
6 did he have in industrial hygiene, to your
7 knowledge?

8 A. None, when he came with us.

9 Q. Mr. Wheeler, we've talked about?

10 A. I can't hear you.

11 Q. Mr. Wheeler, we've talked about?

12 A. Yes, we talked about him.

13 Q. He was a toxicologist?

14 A. No, Wheeler was an industrial
15 hygienist. I said he had administrative
16 control over the toxicological aspect of
17 the department.

18 Q. What was Wheeler's educational
19 background?

20 A. A Bachelor Degree from some
21 eastern school and quite a few postgraduate
22 courses. I don't know if he had a Master's
23 Degree. He had served as the chief
24 industrial hygienist in one of the states
25 in New England, whether it was New

1 Hampshire or something like that, I'm not
2 sure.

3 Q. What had he taken his
4 undergraduate degree in, do you know?

5 A. Either chemistry or chemical
6 engineering.

7 Q. The graduate work that you knew
8 that he had, what fields of study were they
9 in?

10 A. Industrial hygiene, I believe.
11 He was also involved in the U.S. Army
12 industrial hygiene laboratory for several
13 years before he came with us.

14 Q. Desmond Hasmer?

15 A. Desmond Hasmer was a plant
16 manager in our Krummerich plant. He came
17 into the organic division, and I do not
18 know exactly -- in St. Louis, and I don't
19 know what position he held. I don't
20 remember it.

21 Q. Do you know anything about his
22 educational background?

23 A. No, I don't.

24 Q. Joseph Cresce, C-r-e-s-c-e?

25 A. Joseph Cresce, C-r-e-s-c-e, was a

1 plant manager at our Nitro plant. He may
2 have been a plant manager at East St.
3 Louis, I don't know. But then he also came
4 in to the headquarters and was promoted to
5 some position in manufacturing, in the
6 general office of Monsanto.

7 Q. Do you know what his position was
8 in the general offices of Monsanto?

9 A. No, I don't remember.

10 Q. Do you know his educational
11 background?

12 A. No, I don't.

13 (Kelly Deposition Exhibit Number
14 14 mark'd for identification).

15 MR. COHEN: Can you identify
16 Kelly 14 for us, sir?

17 A. Kelly 14 is a letter from me to
18 an individual, Mr. Holloway, at the Ford
19 Motor Company, dated November 21, 1960, in
20 which I forwarded to him toxicity
21 information on a hydraulic fluid Pydraul
22 A-200. It bears -- dated November 21,
23 1960. It has PRR 050148, SCM 050522.

24 Q. Do you know the composition of
25 Pydraul?

1 A. Do I -- I don't know the exact
2 composition, but it's -- the majority of it
3 is one of the Aroclors, it's a PCB. I
4 don't know if it's a hundred percent or --
5 I don't know at the present time if it's
6 easily found out.

7 Q. Now, in this attached document,
8 "Toxicity and safe handling of Pydraul
9 A-200," do you know who is the author of
10 that document?

11 A. Yes. I did. It was authored by
12 the medical department. I'm sure I was
13 ultimate responsibility for it, yes.

14 Q. What was the source of the data
15 that you used at that time in preparing
16 this toxicity and safe handling of Pydraul
17 A-200 document?

18 A. Well, the animal toxicity studies
19 that we carried out, I'd have to find out
20 whether we had 1242 or 1254 in it. If we
21 didn't have those two compounds in, which I
22 believe we probably did, however, it would
23 be the Treon work, it would also be our
24 plant experience, and the response from our
25 customers.

1 Q. So, when you're referring here to
2 vapors of the fluid and possible
3 decomposition products, depending on the
4 temperature of the heated surface, may be
5 irritating if inhaled, et cetera, et
6 cetera, you're referring to the results of
7 the studies done by Dr. Treon?

8 A. That is correct.

9 Q. What were the decomposition
10 products that you were referring to, do you
11 know?

12 A. It could be chlorine, it could be
13 hydrochloric acid. I don't know what else
14 they were finding.

15 Q. Certainly, at that time they were
16 not equipped, as I understand it, to find
17 PCDF's, is that right?

18 A. No. I don't believe in 1960 they
19 even thought about chlorinated
20 dibenzofurans.

21 (Kelly Deposition Exhibit Number
22 15 mark'd for identification).

23 MR. COHEN: That's Kelly 15. I
24 don't have a copy, Doctor. If you look on
25 that document on the first page, in the

1 second full paragraph, you'll see reference
2 to the temperature of the metal surfaces
3 that the fluid was sprayed upon.

4 MR. MC LAUGHLIN: Can you
5 identify what that is for us, please?

6 MR. MALIN: That is a letter
7 dated November 2, 1967 from Dr. R. Emmet
8 Kelly, M.D., Medical Director, Monsanto
9 Company letterhead, addressed to Mr.
10 William Vaughn of Murdock, Incorporated,
11 13800 Avalon Boulevard, Compton,
12 California. It is marked with PRR Number
13 050236 and SCM Number 050610.

14 A. Yes, sir, I've read it, Mr.
15 Cohen.

16 Q. Dr. Kelly, does this document
17 refresh your recollection as to the
18 temperature of the metal surface that Dr.
19 Treon was using in his tests to determine
20 the effects of spraying the fluid on to a
21 hot metal surface?

22 A. Yes. According to this, it
23 appears he sprayed it on at 1250 degrees F.

24 Q. 1250 degree fahrenheit surface?

25 A. That's correct.

1 Q. That's substantially higher than
2 we had discussed yesterday?

3 A. Not so much. If you -- you add
4 32 to it or take five-ninths of this,
5 five-ninths is around six or seven hundred
6 degrees centigrade.

7 (Discussion off the record).

8 MR. COHEN: I believe you said he
9 sprayed it on a surface five to six hundred
10 degrees fahrenheit?

11 A. I'm wrong, then, it should have
12 been centigrade. Because he used 1250
13 degrees F. I mean, we've got it here. I
14 mean, if we ever find his report in this
15 bunch of material.

16 MR. MALIN: That would be 675?

17 A. 675 C. So I said five to six
18 hundred F, the F was -- should have been
19 C, centigrade.

20 Q. This is by your counsel's
21 mathematics?

22 A. I'll look it over.

23 Q. Sure. Satisfy yourself.

24 A. I agree with counsel in this
25 instance.

1 (Discussion off the record)

2 (Kelly Deposition Exhibit Number
3 16 mark'd for identification).

4 A. Do you want me to read it?

5 MR. COHEN: You don't have to
6 read it. I'll just ask you to look through
7 it and familiarize yourself with the
8 document, and if you would be kind enough
9 to identify it for us?

10 A. Yes, sir, I have familiarized
11 myself with it.

12 Q. Can you identify it for us, sir?

13 A. Yes. This is an undated Monsanto
14 publication on Monsanto Askarel,
15 A-s-k-a-r-e-l, inspection and maintenance
16 guide, with the number PRR 051735.

17 Q. Was it usual that documents of
18 this type were prepared without date?

19 A. Was it -- I didn't hear the
20 last --

21 Q. Usual in your experience that
22 documents of this type were prepared
23 without date?

24 MR. MALIN: I object to the form
25 of the question, I don't know that he has

1 any experience in this area. Anyway, if
2 you can answer --

3 A. Well, it's happened in a lot of
4 ones that I've seen without dates. I hope
5 they're doing better now.

6 Q. What was the reason for the
7 publication of this document?

8 A. I don't know. This seems to be a
9 combined document with input from General
10 Electric, Westinghouse and Allis Chalmers,
11 all of whom are manufacturers of electrical
12 equipment.

13 Q. But it appears to be published by
14 Monsanto?

15 A. That's correct. We were supplied
16 with the material. There is a document on
17 our material.

18 Q. So, you were supplying the
19 material to Westinghouse, General Electric,
20 Allis Chalmers and the others?

21 A. That's correct.

22 Q. As we discussed earlier, Aroclor
23 -- some Araclors are Askarels, but not all
24 Aroclors are Askarels?

25 A. That is correct. But Askarel is

1 a PCB.

2 Q. Now, if you'll allow me --

3 MR. COX: May we go off the
4 record?

5 (Discussion off the record).

6 MR. COHEN: If I can refer you,
7 sir, by the stamped PRR number to page
8 51739, it says, "Use ordinary personal
9 precautions." Is that the entire section on
10 information for the proper handling of the
11 material that's found in that document?

12 A. Is that the entire section?

13 Q. In that document regarding the
14 proper handling of the material?

15 A. I'll have to look. Here's a page
16 that has nothing on it.

17 MR. MALIN: I'm going to object
18 to the form of the question. When you're
19 talking about proper handling of material,
20 I think you should specify whether or not
21 you're talking about handling for what
22 purpose, for human health effects or for
23 dielectric effects or for any other purpose
24 for which the material is made or used.

25 MR. COHEN: Human health effects,

1 worker safety, sir.

2 MR. MALIN: Obviously, the
3 document speaks for itself.

4 A. Yes, sir, that's the only one in
5 here.

6 Q. What input, if any, did you have
7 into this document, do you know?

8 A. I can't answer that.

9 Q. You don't know?

10 A. No, I do not.

11 Q. Did you regularly have input into
12 documents such as this that would have been
13 published during your tenure of employment
14 with Monsanto?

15 A. Yes, I should have.

16 Q. There appears to be a page that
17 is handwritten, but is sequentially
18 numbered with those PRR numbers; I'm going
19 to ask you, to your knowledge if that's
20 part of the original document?

21 A. PRR what number?

22 Q. I'm not sure which number, but if
23 you'll keep going you'll come to the
24 handwritten page. I think you might have
25 whizzed by it there.

1 A. You've been through this more
2 recently than I have, you take it.

3 Q. Okay. PRR 51752.

4 A. I never saw this before, to the
5 best of my recollection. I feel quite sure
6 it was not part of the original document.

7 Q. Do you recognize the handwriting?

8 A. No, I do not.

9 (Kelly Deposition Exhibit Number
10 17 mark'd for identification).

11 A. Yes, sir, I've read it.

12 Q. Do you recognize it?

13 A. I do now. I haven't seen this
14 for a long time.

15 Q. What is it?

16 A. Beg pardon?

17 Q. What is it?

18 A. It is a document entitled the
19 Minutes of the Aroclor-wildlife review of
20 the bio-test studies. It refers to
21 analytical studies either being carried out
22 or proposed by Monsanto on the tissues of
23 the birds and other animals that were fed
24 Aroclors and industrial bio-tested.

25 Q. It's the minutes of what? Was it

1 a meeting of some group?

2 A. Well, there were six people
3 present, it must have been some group.
4 Because they said who wasn't present.
5 Richard was the only one. So, whatever
6 that group was, I don't know. I seem to
7 have been there, but I have no idea what
8 group it was.

9 Q. Who was Keller, R.E. Keller?

10 A. R.E. Keller was the head of the
11 analytical department for the organic
12 division, or whatever it was called in
13 1969.

14 Q. How about M something Farrar?

15 A. He was a research chemist in the
16 organic division.

17 Q. And Hunt, W.H. Hunt?

18 A. Was our toxicologist at that
19 time.

20 Q. Wicker? Is that Wicker?

21 A. Tucker. He reported to Keller,
22 he was also in the analytical group.

23 Q. Wheeler, we know. W.R. Richard?

24 A. Well, his name has surfaced
25 before, he was a scientist associated with

1 the organic division. I do not know what
2 position he was in.

3 Q. You were apparently at this
4 meeting that took place?

5 A. Yes. It looks like we must have
6 had Fancher with us, who was director of
7 Industrial Bio-Test Laboratories.

8 Q. If you'll turn to the second
9 page, sir.

10 A. Yes, sir.

11 Q. There apparently are some changes
12 in the proposed tests, or changes in tests
13 that are already under way, do you see
14 that?

15 A. Changes in the amount of --
16 we're not talking about changes in the
17 test, we're talking about changes in the
18 analytical results of the tests. In other
19 words, the number of specimens that we
20 would examine.

21 Q. Do you know the reason why the
22 change was made in the number of specimens
23 to be examined?

24 A. Yes. I'm sure it was budgetary
25 reasons.

1 Q. Did the changes in any way affect
2 your confidence in the tests that were
3 being done?

4 A. The tests, remember, were made by
5 Monsanto. The tests were made by
6 Monsanto. These are analytical studies
7 that were carried out by Monsanto personnel
8 in St. Louis, so they certainly didn't
9 change my confidence in the tests. They
10 just said why do we have to do all these,
11 do we have to do male and females, why
12 can't we put the results together.

13 Q. Would you go back up, sir, to
14 Roman Numeral 1? I believe the paragraph
15 says "Review bio-test feeding studies with
16 special regard to the scheduling and
17 reduction of the number of samples to be
18 analyzed"?

19 A. Yes, sir.

20 Q. Now, is it your understanding
21 that these were studies that were done at
22 Monsanto by Monsanto personnel?

23 A. Yes. No question about it.

24 Q. So, it says review bio-test
25 feeding studies; where was Bio-Test doing

1 this?

2 A. They were feeding them in North
3 Brook, Illinois, right outside Chicago.

4 Q. Were they different tests than
5 the ones Monsanto personnel were doing?

6 A. Bio-Test was doing toxicological
7 testing, Monsanto was doing analytical
8 chemistry to determine how much PCB's were
9 in these various groups after various
10 amounts of feeding.

11 Q. In other words, there was a
12 combined effort where Bio-Test was doing
13 the feeding of the animals, sacrificing of
14 the animals and the preparation of the
15 samples for analysis, and then those
16 samples went to Monsanto for the analysis
17 itself?

18 A. After Bio-Test carried out their
19 own histological, microscopic analysis of
20 the specimens.

21 Q. And what was the analysis, then,
22 that Monsanto was doing, just presence and
23 amount of?

24 A. The amount of PCB in the various
25 animals at various feeding levels.

1 Q. Did they make any effort to
2 compare the PCB itself that they were
3 identifying in the material with any
4 Monsanto product?

5 A. I cannot follow that question.
6 Who is, they, in the first place?

7 Q. Monsanto.

8 A. To identify the PCB in the animal
9 tissue to see if it was Monsanto PCB in
10 there?

11 Q. Yes.

12 A. Well, no. After all, Bio-Test
13 was getting the PCB from Monsanto, feeding
14 the material to them, sending the animal
15 back to us, so we would look to find out
16 what the PCB was. We didn't -- it didn't
17 enter into our dreams that this was
18 somebody else's PCB in there.

19 Q. Let me ask you this, do you know
20 what methods of analysis they were using in
21 1969 to determine the PCB in the biological
22 sample?

23 A. No, I do not.

24 Q. Do you know if they were using
25 gas chromatography at that time?

1 A. No. But I'm sure they used state
2 of the art in 1969, that they had all the
3 equipment that Risebrough and Jensen had.
4 I'm sure they had it by that time.

5 Q. To your knowledge, they didn't
6 make any attempt to actually identify the
7 PCB's in the biological specimen with your
8 own product?

9 A. No, sir, they did not.

10 Q. Did they make any attempt to
11 determine which Aroclor was involved, which
12 weight or degree of chlorination?

13 MR. MALIN: I object to that
14 question, it's been asked and answered.
15 He's already told you they knew what the
16 PCB's were that they give to them.

17 MR. COHEN: Would that be your
18 answer, sir?

19 A. No. Would you repeat your
20 question? It's a pretty confusing
21 question.

22 (The requested portion of the
23 record read by the reporter)?

24 A. Yes, if they got a specimen of
25 tissue from a rat that was 1254, they

1 analyzed for 1254. If they got a specimen
2 of a duck or a fish or chicken that was fed
3 1248, they analyzed for 1248.

4 Q. But this was a case of them
5 analyzing for the particular Aroclor that
6 they knew the animal had been fed?

7 A. That they were told the animal
8 had been fed, yes.

9 Q. Go to the last page, sir. There
10 is a list of analytical studies here; do
11 you know if these studies were done?

12 A. I can't answer that. Some were
13 done, I know, because I've seen residue
14 studies. I don't know if all were done.

15 Q. Where would the results be kept,
16 do you know?

17 A. They would be kept in the
18 analytical department of Monsanto Company.

19 Q. Is that where you saw them?

20 A. No. I must have seen them --
21 no, I never went over to the analytical
22 department and looked them up, but I have
23 seen memoranda showing that we have found
24 this in these particular animals.

25 (Kelly Deposition Exhibit Number

1 18 mark'd for identification).

2 A. Yes, sir, I have read it.

3 Q. Do you recognize this document?

4 A. Well, I can tell you what it is.

5 I mean, I don't recall having seen it

6 before, but I must have, I was sent a copy

7 of it.

8 Q. Who is the author of the document?

9 A. Beg pardon?

10 Q. The author?

11 A. Hardy.

12 Q. D.V.N. Hardy?

13 A. Yes, D.V.N. Hardy.

14 Q. Do you know who that is?

15 A. Somebody over in our London

16 office. He's one of the scientists over

17 there.

18 Q. Do you see the reference to a

19 study under paragraph B, it looks like --

20 A. Do you want me to identify this

21 thing?

22 Q. Sure. Go right ahead.

23 A. It's a letter from Dr. D.V.M.

24 Hardy to William Richard in St. Louis.

25 Hardy is -- was either in London -- he's

1 in London at that time. But it's dated 23
2 February 1968. With an added number PRR
3 022144, SCM 037566. Now, Mr. Cohen, you
4 asked --

5 Q. Paragraph B, "Tatton, Copies of a
6 paper entitled Chlorinated Hydrocarbons in
7 British Wildlife by D.C. Holmes, J.H.
8 Simmons and J.O'G. Tatton," Nature
9 Publication, date, et cetera. Do you see
10 that?

11 A. Yes, I do.

12 Q. It says, "This paper confirms the
13 work of Jensen and in particular shows
14 close similarity between gas-liquid
15 chromatograms," is that what it is, sir?

16 A. Yes.

17 Q. And "Extracts of Kestrel liver
18 oil." Kestrel is a type of bird?

19 A. Yes, it is.

20 Q. And a commercial
21 polychlorobiphenyl resin?

22 A. Yes, sir.

23 Q. Does this indicate to you that
24 they were comparing the results of
25 chromatograms from two different samples;

1 one, a biological specimen, one on a
2 commercial product, and finding that they
3 had a high degree of similarity?

4 A. I don't believe, Mr. Cohen, I can
5 answer that question without seeing the
6 paper. I mean, obviously, the paper,
7 according to Hardy, confirmed the work of
8 Jensen, so I'll go along with Hardy, then.

9 Q. Do you recognize that procedure
10 whereby the results of a gas chromatogram
11 of biological specimens are compared to a
12 gas chromatogram of an industrial compound
13 and compared in order to determine if there
14 is similarity?

15 A. Well, I would imagine that --
16 well, when you're running analytical
17 chemistry, you have to have a standard, so
18 they had a standard, that's a commercial
19 bichlorophenyl resin. Resin is not the
20 term we would use in the United States, but
21 that's the standard. So, whatever they
22 found in these birds, in the oil from the
23 liver, was compared to a commercial one,
24 yes.

25 Q. I'm asking you if you recognize

1 that as a procedure that was being used at
2 that time period to identify the substance
3 found in the biological specimen?

4 A. I can't comment on that, I'm not
5 an authority on that.

6 Q. You don't know?

7 A. I don't know.

8 Q. But you would have, in the
9 ordinary course, have gotten a copy of this
10 memo, in any event?

11 A. Yes, I would have.

12 (Kelly Deposition Exhibit Number
13 19 mark'd for identification).

14 MR. MALIN: Kelly 19 is a four
15 page document entitled "Chlorinated
16 Biphenyls Chronological Events".

17 A. It does not have a date on it,
18 and the only thing I -- it does not have a
19 typewritten author. On the bottom of page
20 four is the name of R.E. Keller,
21 K-e-l-l-e-r. The date 3/10/69 is on that.
22 The numerical additions were PRR 021889 and
23 SCM 037311.

24 MR. COHEN: Do you recognize the
25 document, sir?

1 A. I don't remember seeing it any
2 time.

3 Q. Mr. Keller is the individual that
4 we identified earlier as being over at
5 Queeny plant, is that right?

6 A. No. He was at the -- this is
7 Dr. Keller, he is head of the analytical
8 department of the organic division,
9 whatever it was called at that time.

10 Q. So, there is nothing you can tell
11 me about this; you don't know anything
12 about it?

13 A. No, I can't.

14 Q. The toxicologic testing, however,
15 that was done prior to November '66, which
16 is the earliest entry there, you've already
17 described in this deposition, is that
18 right?

19 A. I'm sorry, my attention wandered,
20 will you repeat it?

21 Q. That's quite all right. The
22 toxicologic testing that was done prior to
23 the first date shown on that document, that
24 is, 11/66, you've already described in this
25 deposition?

1 A. No. But the gist of this article
2 is on the environmental aspects, that's all
3 he's talking about here.

4 Q. I understand that.

5 A. Starting with Jensen and going
6 all the way up to the last letter,
7 memorandum, again, dealing with -- 3/5/69,
8 dealing with the environmental aspects,
9 he's not talking about toxicological data
10 at all.

11 Q. I understand that. I'm asking
12 you that all of the toxicologic testing
13 that was done by Monsanto or at their
14 behest you have described previously in
15 this deposition?

16 A. Yes. I mean, I've described
17 previously, yes. That has nothing to do
18 with this memorandum, previous does not
19 refer to this.

20 Q. I'm talking about previous in
21 time to now, you have previously described
22 that?

23 A. That is correct.

24 Q. All right. At any time prior to
25 11/66 did Monsanto undertake any testing of

1 the environment or any biological specimens
2 to determine the presence of their product
3 PCB's in the environment?

4 A. Not that I know of.

5 Q. Monsanto was, to your knowledge,
6 however, aware of the many uses that PCB
7 products were being put to prior to 11/66?

8 A. Yes.

9 MR. COHEN: Why don't we break
10 for lunch at this time.

11 (Noon Recess)

12 EXAMINATION

13 QUESTIONS BY MR. KOHN:

14 Q. My name is Joseph Kohn, and I'm
15 substituting for my co-counsel, and I'll
16 ask you some questions this afternoon. Do
17 you have your copy of the Smith article
18 before you that you brought to the
19 deposition today?

20 A. I do now, yes, sir.

21 Q. Tell me again why you brought
22 that article to the deposition today?

23 A. Yes. Because your associate
24 counsel asked me about whether or not
25 epidemiologists were of the opinion that

1 there had been no chronic industrial
2 injuries or conditions associated with
3 manufacture or use of PCB with the
4 exception of chloracne.

5 Q. And this is an article that you
6 purport to rely on for that proposition?

7 A. One of them. I brought a couple
8 of Kimbrough articles.

9 Q. Is A.B. Smith an epidemiologist?

10 A. My impression is he is.

11 Q. Do you know whether he is, or is
12 that just your impression?

13 A. That's my impression.

14 Q. Is Joanne Schloemer an
15 epidemiologist?

16 A. I do not know.

17 Q. Is L.K. Lowry an epidemiologist?
18 You can answer my question. Do you know
19 whether L.K. Lowry is an epidemiologist?

20 MR. COX: He hasn't finished his
21 answer.

22 MR. KOHN: Do you know whether
23 L.K. Lowry is an epidemiologist?

24 A. No. But I know this group stated
25 they did epidemiological studies, so I do

1 not know if they are epidemiologists by
2 your definition, but they do
3 epidemiological studies. Because he stated
4 none of the published occupational or
5 epidemiological studies, including ours.
6 Now, here we got a group of government
7 people from NIOSH, which is the foremost
8 research group of the United States,
9 putting out an epidemiological study, and
10 you're asking me do. I think these people
11 are epidemiologists I think they are, but I
12 don't know it.

13 Q. Do you believe that they did
14 their own epidemiological study, or are
15 they simply reviewing the results of other
16 epidemiological study.

17 A. I take the English, they said
18 "including ours".

19 Q. Do you know which study they're
20 referring to?

21 A. Their own study. I don't know
22 which one it is.

23 Q. Is that a published study that
24 you're aware of?

25 A. This one is one. He surveyed

1 three groups of workers. That's what he
2 did. That's their study. This is their
3 study.

4 Q. Are you aware of any other
5 epidemiological studies that any of these
6 individuals who are on here as authors
7 prepared?

8 A. I do not know if they prepared
9 any before or not. Smith may have, I do
10 not know.

11 Q. The second page of this exhibit,
12 page 361 of the journal, in the --

13 MR. MALIN: Excuse me. Has this
14 been marked as an exhibit?

15 MR. MC LAUGHLIN: This is Kelly
16 8.

17 MR. KOHN: In the abstract which
18 appears on that page, about the third
19 sentence, this statement is made
20 "Statistically significant positive
21 correlations of symptoms suggestive of
22 mucous membrane and skin irritation, of
23 systemic malaise, and altered peripheral
24 sensation were noted with increasing
25 concentrations of serum PCB." Do you agree

1 with that statement?

2 A. You mean do I agree that it's in
3 there?

4 Q. Do you agree that it's correct?

5 MR. MALIN: I'll object to the
6 form of the question. Answer the question,
7 if you think you understand it.

8 A. You mean do I agree that this is
9 a -- the statement that you read is in
10 here?

11 MR. KOHN: Do you agree that this
12 is a correct and accurate scientific
13 statement by these scientists that you
14 purport to hold up as authorities?

15 MR. MALIN: I object to the form
16 of that question.

17 A. Well, I will agree that these
18 scientists found symptoms suggestive of
19 these various things. They found no
20 clinical abnormalities that would -- upon
21 which these symptoms could be based. So,
22 we're taking the words of individuals who
23 said I have this particular symptom, and
24 people are quite biased in their symptoms,
25 there were no clinical findings to back up

1 the symptoms.

2 Q. Is taking what a patient says are
3 their symptoms an accepted method of
4 ascertaining symptoms in the medical
5 profession?

6 A. Yes, if there is no conflict
7 of interest, if the patient does not have
8 symptoms that may help him in a financial
9 way.

10 Q. The second to last sentence of
11 the abstract states, "These findings are
12 indicative of PCB's physiological effect on
13 the liver, whose long range health
14 significance is unknown." Do you agree with
15 the statement that these findings are
16 indicative of PCB's physiological effects
17 on the liver?

18 MR. MALIN: I object to the form
19 of the question. Again, what findings?

20 A. What's your question, again?

21 MR. KOHN: Do you agree with the
22 statement that the findings are indicative
23 of PCB's physiological effect on the liver?

24 A. Yes. PCB's can have a
25 physiological effect on the liver, yes.

1 Q. PCB's do have a physiological
2 effect on the liver, don't they?

3 A. It depends on the amount that the
4 person absorbs.

5 Q. And with certain amounts, PCB's
6 do have a physiological effect on the
7 liver; it's well documented and well
8 accepted in the scientific community?

9 MR. COX: I object to the form of
10 the question.

11 MR. MALIN: Yes, I object to the
12 form of the question. If you think you can
13 answer that question as it's phrased, try
14 to answer it.

15 A. Let's hear it again.

16 (The requested portion of the
17 record read by the reporter).

18 A. Yes, in sufficient amounts it can
19 have physiological effects. This does not
20 mean they're harmful effects.

21 MR. KOHN: Jaundice, do you
22 consider a harmful condition?

23 A. Certainly. But we're not talking
24 about jaundice here, because we have no
25 clinical findings.

1 Q. Do you consider hepatitis to be a
2 harmful condition?

3 A. Yes. But we have no hepatitis
4 here, we're not talking about hepatitis,
5 either.

6 Q. I'm just asking a question, as a
7 medical doctor, whether you consider
8 hepatitis and jaundice to be harmful
9 conditions?

10 A. Say that over?

11 Q. As a medical doctor, irregardless
12 of this Smith article, do you consider
13 hepatitis and jaundice to be harmful
14 conditions?

15 A. Certainly, they're not wanted,
16 they're harmful.

17 Q. The next sentence of this
18 abstract states, "Nevertheless, the
19 consistent positive association of serum
20 PCB with plasma triglyceride and negative
21 association with plasma HDL-cholesterol may
22 have long term cardiovascular
23 consequences." Do you know what long term
24 cardiovascular consequences these authors
25 are talking about?

1 A. No. You'll have to ask the
2 authors.

3 Q. Have you ever asked them?

4 A. No, I've never asked them.

5 Q. Have you ever seen any other
6 written report, memorandum, letter,
7 article, document of any kind that refers
8 to cardiovascular problems in connection
9 with PCB exposure?

10 MR. MALIN: I object to the form
11 of that question, entirely too broad. Go
12 ahead, if you think you can answer that.

13 A. Have I ever seen any article any
14 time in the last 30 years that referred to
15 cardiovascular problems associated with
16 with PCB exposure? I may and I may have
17 not. I do not have any at the present time
18 I can talk to you about.

19 Q. If you could turn to page 367 of
20 this article, Kelly Exhibit 8. Under the
21 heading "Discussion" on the second column,
22 which appears on the right-hand side, this
23 sentence appears, "It should be emphasized,
24 however, that the consistent inverse
25 associations of log (H-PCB) with log (HDL-

1 cholesterol) at all three work sites may
2 have long term cardiovascular significance,
3 given the significant inverse, independent
4 associations of HDL-cholesterol with
5 coronary artery disease." Do you agree
6 with that conclusion of these authors?

7 A. This is an assumption, this is
8 not a conclusion. It just says they may or
9 they may not.

10 Q. Do you agree that this consistent
11 inverse association that these authors
12 describe may have long term cardiovascular
13 significance for individuals exposed to
14 PCB?

15 MR. MALIN: I object to the form
16 of that question. You're asking him for
17 his opinion, I understand?

18 MR. KOHN: Right.

19 MR. MALIN: If you have an
20 opinion, Doctor.

21 A. I would have to see this
22 repeated. I don't know if this is accurate
23 or not.

24 Q. How do you know any of the other
25 findings they have in this article are

1 accurate?

2 A. Because they're reproducible some
3 other times.

4 Q. Which ones are reproducible and
5 which ones aren't? Take your time and go
6 right through this article.

7 A. Why don't I take his conclusion.
8 Which he says, none of the epidemiological
9 studies, including ours, have shown that
10 occupational exposure to PCB's is
11 associated with any adverse health outcome
12 that's reproducible, because other people
13 and other epidemiologists have said the
14 same thing.

15 Q. Other epidemiologists have said
16 the other?

17 A. Not with the stature of the
18 government people like Kimbrough and Smith.

19 Q. Okay. So, you do agree that some
20 epidemiologists have associated harmful
21 clinical conditions with PCB?

22 A. But they have not been
23 reproduced, and some of them have changed
24 their mind from one study to the other.

25 Q. Have there been any who have not

1 changed their minds from one
2 epidemiological study to another?

3 A. I can't answer that.

4 Q. And can you please identify the
5 scientists who have performed
6 epidemiological studies who have found
7 clinical problems associated with PCB
8 exposure, but who you consider to be in a
9 stature less than people who work for the
10 government?

11 A. Yes. Bertasi in Italy is one.

12 Q. What is Mr. Bertasi's education
13 and background and training?

14 A. I haven't the slightest idea what
15 his educational background is.

16 Q. But you consider him less
17 competent, of less stature than somebody
18 who works for the government?

19 A. Yes. Because he put out an
20 epidemiological survey in which his cohort
21 controls would have to be females of 20
22 years and remain 20 years during the entire
23 time of his epidemiological survey, so I
24 don't need to know about his
25 epidemiological work -- or his education.

1 MR. COHEN: Let me have that
2 answer.

3 (The requested portion of the
4 record read by the reporter).

5 MR. KOHN: Did Bertasi perform
6 any other epidemiological studies or
7 surveys that you're aware of?

8 A. I don't know.

9 Q. Any other scientists who have
10 performed epidemiological studies and who
11 have found clinical problems associated
12 with PCB exposure who you believe do not
13 have the stature of the people who work for
14 the government?

15 A. I'm not in a position to evaluate
16 various epidemiologists, I don't know these
17 people. I know the government and I know
18 Kimbrough, and I know that Jones is a
19 senior member of a group at NIOSH.

20 Q. I believe you indicated that in
21 your opinion that NIOSH is a very competent
22 and well respected organization, operation?

23 A. It's competent and well
24 respected. That does not mean that I agree
25 with everything they say.

1 Q. If they found that the Paoli
2 Railroad Yard was the most highly
3 contaminated site they had ever found in a
4 workplace inspection, do you have any
5 reason to doubt that finding?

6 MR. MALIN: I object to the form
7 of the question.

8 MR. COX: I object to the form of
9 the question.

10 MR. KOHN: You may answer. Your
11 counsel made an objection.

12 A. I'm not going to answer
13 hypothetical questions, because I don't
14 know what their report said.

15 Q. Let me read to you from a
16 document prepared or authored by a Mr.
17 Richard W. Hartle, H-a-r-t-l-e, which is
18 part of the record in the related Federal
19 Court PCB litigation and is contained in
20 the joint appendix. "The environmental --

21 MR. COX: Please read the
22 appendix page.

23 MR. KOHN: Yes. A0008574. The
24 environmental surface sampling data
25 collected during the NIOSH survey indicates

1 extensive PCB contamination in the car
2 shop. This finding is in general agreement
3 with the May 8-9 1986 evaluation conducted
4 by a consultant. These levels of
5 contamination are the highest encountered
6 by NIOSH during a health hazard
7 evaluation." Do you have any reason to
8 doubt that the levels found at the Paoli
9 Yard were the highest encountered by NIOSH
10 during the --

11 MR. MALIN: I object to the form
12 of the question.

13 MR. KOHN: Let me finish the
14 question. Calm down. These levels of
15 contamination are the highest encountered
16 by NIOSH during a health hazard
17 evaluation. Do you have any reason to
18 doubt that they are, in fact, the highest
19 ever encountered by NIOSH?

20 MR. MALIN: I object to the form
21 of the question since it speaks in relative
22 terms, does not really call for a specific
23 or meaningful answer. If you think you
24 understand that --

25 A. Yes, I certainly could not answer

1 a question picked out of something like
2 four hundred pages of typewritten pages,
3 and I'm supposed to comment on that. I
4 certainly cannot.

5 MR. KOHN: Are you aware of any
6 findings of an excess of circulatory
7 disease among the workers at what's also
8 known as the Sauget Illinois plant of
9 Monsanto?

10 A. Am I aware of what?

11 (The requested portion of the
12 record read by the reporter).

13 MR. KOHN: What we've been
14 calling the Krummerich plant.

15 A. Yes, I am. That was in the Zack
16 and Muech study, in which they stated that
17 they found an excess of
18 non-arteriosclerotic heart disease in the
19 workers of the Sauget plant. Upon further
20 investigation of what these were, one was a
21 case of rheumatic fever, which I don't see
22 how it could possibly be associated with
23 PCB's, rheumatic fever being a response to
24 a streptococcal infection; the second was a
25 stroke; the third was a diabetic arterial

1 disease of the lower extremity. So, that
2 was what the excess was, and it's certainly
3 not scientifically valid.

4 Q. How many incidents of circulatory
5 disease did they find among that worker
6 population?

7 A. I don't know. They talked about
8 non-arteriosclerotic heart disease, which
9 would be non-coronary disease. These were,
10 I think -- the group that I just talked
11 about were six or maybe eight, I don't
12 know. But I've given you three of them,
13 and the others were of that similar vein.

14 Q. The authors found that there was
15 a statistically significant excess of
16 circulatory disease at that plant, did they
17 not?

18 A. Well, that's what they said. But
19 if you put down -- supposedly put down
20 rheumatic fever as one of them, that's
21 nonsense.

22 Q. My question is, do you agree with
23 me that they did find a, quote,
24 statistically significant excess of
25 circulatory disease? Take this one step at

1 a time.

2 A. No, I do not.

3 Q. Do you know how many incidents of
4 circulatory disease they found? What was
5 the total number of individuals with
6 circulatory disease in their study?

7 A. You're talking about two things,
8 now. Are we getting away from
9 non-arteriosclerotic heart disease or other
10 circulatory diseases?

11 MR. KOHN: Any kind of
12 circulatory disease?

13 A. Well, no, you've got two groups
14 there. Because the only thing they found
15 statistic -- what they said was
16 statistically increased was
17 non-arteriosclerotic heart disease; that
18 rules out coronary artery disease and the
19 usual strokes. So, I do not believe they
20 found any -- even for them, any
21 statistically increased incidents of
22 arteriosclerotic heart disease. They found
23 non-arteriosclerotic heart disease, which,
24 as I said, included a mixed bag of things
25 from strokes to rheumatic fever.

1 Q. Do you know what the sum total of
2 the individuals who had these ailments, or
3 diseases were?

4 A. No, I do not.

5 Q. What was the first discussion you
6 can recall with anyone at Monsanto with
7 respect to the toxicity of the Aroclor
8 product or of PCB's?

9 A. When?

10 Q. When.

11 A. Sometime in 1937, give or take a
12 few months.

13 Q. That was upon your joining the
14 company?

15 A. No. I was already -- I joined
16 the company in January of 1936.

17 Q. Can you recall the incidents or
18 incident of your first discussion about the
19 toxicity of the Aroclors or of PCB's?

20 A. I don't recall the actual
21 incident, but that was about the time that
22 the Drinker work was going to be carried
23 out by the Halowax Corporation.

24 Q. And who at Monsanto were you
25 discussing the toxicity of Aroclors or

1 PCB's with at that time, the first
2 discussions?

3 A. I certainly can't remember what
4 happened 44 years ago. Or was it 54 years
5 ago? 54 years ago. I don't remember.

6 Q. Was it someone else within the
7 medical department that you were --

8 A. I was the medical department at
9 that time, I was the only doctor they had,
10 and I was not even associated with the
11 central office, I was in the Queeny plant
12 dispensary, Plant A dispensary. But I was
13 the only doctor on the premises. So,
14 somebody talked to me.

15 Q. Were you discussing the toxicity
16 of Aroclors with people in the sales end of
17 the business?

18 A. I told you, I don't remember who
19 it was.

20 Q. Did you discuss the results of
21 those first studies with anyone at
22 Monsanto?

23 A. Certainly.

24 Q. Do you recall who you discussed
25 them with?

1 A. No, I don't remember who I
2 discussed it with. I don't remember the
3 names. Obviously, the people were engaged
4 in the manufacture and sale of Aroclors, I
5 discussed it with them.

6 Q. And what group or department was
7 responsible for the manufacture and sales
8 of Aroclor? Is that the --

9 A. I don't remember where it fit in
10 the organization at that time. As I told
11 your co-counsel earlier, Monsanto has
12 changed their organization about every
13 seven years, and I don't know where the
14 manufacture and sales of Aroclor fit into
15 the company pattern in 1937 and 1938.

16 Q. Why don't we take a little bit of
17 time and, if you could, trace for us how
18 Monsanto's organization has changed; if you
19 could lay out for us the way it was when
20 you joined the company, what divisions or
21 department or groups there were and how
22 that has changed over time?

23 A. No, I can't do that. A
24 historical perspective of a company that
25 had seven thousand employees when I came

1 there and fifty-five thousand when I left,
2 you expect me to give you tables of
3 organizations from what happened in those
4 50 years? I can't do that.

5 Q. Can you tell us anything about
6 the way the company was organized at the
7 time you joined the company; which
8 departments, divisions or groups there
9 were?

10 A. I can't tell you about what
11 occurred at the general office, because I
12 was hired -- I was engaged by one of the
13 plants, one of the 7 or 8 plants they had
14 at that time, and belonged to what was
15 called the organic division. I believe
16 they had a plant they called -- a group
17 they called the phosphate division. And
18 they had a group, one or two plants -- one
19 plant in New England they called the
20 Merrimac division. That was, I believe,
21 the organization they had in 1936.

22 Q. And those were all the divisions
23 of the company at that time, as best you
24 can recall?

25 A. I don't know if they were

1 divisions, even, or not.

2 Q. Who was the head of the organic
3 division at that time?

4 A. John Livingston.

5 Q. Do you remember what his title
6 was?

7 A. Vice-president of something. I
8 don't know his title, any more than that.

9 Q. Did you report directly to him?

10 A. When I came with the company I
11 reported to the plant manager of the Queeny
12 plant. I had nothing to do with the
13 organization at Monsanto as a company
14 except to be an employee of the Queeny
15 plant. Then when they had medical
16 problems, and found that nobody had -- had
17 a medical degree in the organization, they
18 called me. So, whether I had a dotted line
19 to Livingston, I don't know.

20 Q. At the time that you became the
21 medical director, what division or
22 department were you housed within at that
23 time? Were you still in the organic
24 division when you became the medical
25 director, or were you sort of a separate,

1 free-floating department then?

2 A. When I became medical director,
3 which was in 1946, the company was broken
4 down into operating divisions and staff
5 departments. Staff departments were such
6 as treasury, purchasing, legal, personnel
7 relations, medical and so on, a new medical
8 department was formed. So, I did not
9 report to any of the divisions, I reported
10 to one of the vice-presidents, and I don't
11 know which one it was.

12 Q. And that was, then, on a direct
13 reporting line up to the president of the
14 company?

15 A. That is correct.

16 Q. And do you recall how many
17 operating divisions there were at the time
18 you became the medical director?

19 A. Four or five, I'm not sure.

20 Q. There was still an organic
21 division?

22 A. Still an organic division. They
23 picked up a plastics division. Whether
24 they picked up a Texas division or not, I
25 don't know.

1 Q. And they still had a phosphate
2 division and the Merrimac division?

3 A. That's correct.

4 Q. Can you just describe for me how
5 your reporting obligations, you personally,
6 changed over time from the time you became
7 the medical director until the time you
8 left the company?

9 A. Well, sometimes I reported to the
10 executive committee directly, sometimes I
11 reported to the director of manufacturing,
12 sometimes I reported to the director of
13 administration.

14 Q. Do you recall when it was that
15 the position of director of manufacturing
16 was created?

17 A. No. It was around the time of
18 the 1970's, I think. I'm not sure.

19 Q. Prior to that time, was there
20 anyone who filled that role; was that a new
21 position at that time?

22 A. It wasn't a new position, it was
23 -- I mean, which position are we talking
24 about, director of manufacturing?

25 Q. Director of manufacturing.

1 A. I don't know when they first had
2 a director of manufacturing.

3 Q. And what were the
4 responsibilities of the director of
5 manufacturing? Did they interface with all
6 the operating divisions?

7 A. That's correct.

8 Q. So, this was someone who had some
9 sort of supervisory control over, for
10 example, organic, phosphate, Merrimac,
11 plastics, et cetera?

12 A. Yes.

13 Q. When was the position of director
14 of administration created?

15 A. I don't know.

16 Q. And that individual, I take it,
17 had some supervisory responsibility with
18 the various staff departments that you've
19 described?

20 A. Some of them, yes. I don't
21 believe he had supervisory capacity over
22 the legal department, or the accounting
23 department, because that would go to the
24 vice-president of finance.

25 Q. At the time that you left the

1 company in the 1970's, to whom were you
2 reporting? Who was your direct
3 reporting --

4 A. Monte, M-o-n-t-e,
5 T-h-r-o-d-a-h-l. He was a member of the
6 board of directors.

7 Q. Is it your understanding that he
8 then reported directly to the president of
9 the company, or to the chairman?

10 A. I don't know if there was an
11 executive committee put in between there or
12 not. I don't know.

13 Q. And for what period of time had
14 you been reporting directly to this
15 individual, Mr. Throdahl?

16 A. A couple of years.

17 Q. When you reported -- you
18 indicated there was a period of time when
19 you reported directly to the executive
20 committee?

21 A. Yes, sir.

22 Q. That's the executive committee of
23 the Board of Directors?

24 A. Yes, sir.

25 Q. Was that made up entirely of

1 inside directors of the company?

2 A. Yes.

3 Q. And do you know who, are there
4 certain standing members of the executive
5 committee, certain titles or positions in
6 the company?

7 A. No, I do not.

8 Q. Was the president always a member
9 of that committee?

10 A. Yes.

11 Q. Did you ever report -- did you
12 report on regular periodic occasions to
13 that committee?

14 A. Well, I reported -- I don't know
15 what you mean by regularly. I reported,
16 certainly, at the time when I had a budget
17 approved, I reported whatever I said in my
18 regular medical department reports, whether
19 that was quarterly, annually or whatever
20 time frame I was using at that time.

21 Q. And in addition to sending them
22 the reports of the medical department,
23 would you have meetings where you orally
24 discussed the reports of the medical
25 department?

1 A. Not routinely. If there were
2 something on there that was of importance
3 to them, I would go and discuss it.

4 Q. Do you recall occasions when you
5 did, in fact, go to the executive committee
6 and discuss your reports?

7 A. Yes. I mean, I do not recall the
8 -- whether they had a full blown executive
9 committee meeting or one of the members of
10 the executive committee would call me and
11 say Emmet, come up here and talk to me
12 about this, and I'd go up and talk to them
13 about it. If that's what you mean by
14 reporting, that occurred at odd times.

15 Q. So, in addition to any formal
16 meetings of the full executive committee,
17 you had individual meetings with individual
18 members of the committee at various times?

19 A. That's correct.

20 Q. And you were housed in the same
21 building physically that these inside
22 director members of the committee were?

23 A. Yes.

24 Q. Do you recall at any time having
25 any discussions with the executive

1 committee, either the full committee or any
2 individual members, with respect to
3 Aroclors or PCB's?

4 A. Yes. From the environmental
5 point of view, we had two, that I recall,
6 very formal meetings in which minutes were
7 taken, and I'm sure I've seen them in
8 depositions.

9 Q. When did those meetings take
10 place?

11 A. Late '60's. I don't know the
12 exact year.

13 Q. Did you prepare some sort of
14 written report with respect to the Aroclors
15 and PCB's prior to those meetings?

16 A. Well, I'm sure we did. Whether I
17 supplied it or supplied -- I did not go in
18 just by myself, I went in with members of
19 the organic division, or whatever that
20 group that made and sold PCB's was called
21 at that time. And, obviously, they had an
22 agenda there they sent into the executive
23 committee.

24 Q. Are you able to distinguish in
25 your mind as you sit here today those

1 meetings one from the other, the two formal
2 meetings, or do they sort of blend together
3 in your mind?

4 A. Well, they were both about the
5 same problem. The first was the first full
6 blown information that we gave the
7 executive committee about the -- our
8 thoughts on the problem, and the size of
9 the problem. And the second was sometime
10 later in which we told them what we were
11 doing about it, a follow-up report. I
12 think it was the second one that I referred
13 to this morning that Mr. Bock, the
14 president, said if we can't manufacture and
15 sell this stuff without ruining the
16 environment, we'll get out of the business.

17 Q. You indicated that the first
18 meeting was for the purpose of giving
19 thoughts on the problem; what did you
20 personally perceive the problem to be at
21 that point in time?

22 A. We were finding a contamination
23 in the environment that we had not known
24 existed before, because in those days the
25 question of bioaccumulation was not a

1 problem. Bioaccumulation means that if you
2 get product X in the bottom of a lake at
3 one part per billion, by the time the
4 organisms in the bottom of the lake ingest
5 the material, it might be -- the
6 accumulation may be -- instead of one part
7 per billion, it might be one part per ten
8 million, and then if you get a shrimp that
9 eats the plankton, it may go up to one part
10 per million, and then you get a fish that
11 eats the shrimp, the accumulation is
12 higher, then you get an eagle or a
13 Peregrine Falcon that eats the fish, he may
14 get quite a lot more, so the question --
15 the phenomenon of bioaccumulation was not
16 very well known, understood in the late
17 1960's. Secondly, this was a situation in
18 which we did not have the scientific
19 equipment to analyze for low concentrations
20 of PCB's in the ecosystem. By ecosystem, I
21 mean the environment and fish, shrimp or
22 what else.

23 Q. So, that was your personal belief
24 or understanding of what the problem was at
25 that point that you wanted to explain, or

1 were asked to explain to the executive
2 committee?

3 A. Well, I wasn't asked to explain
4 it, because they -- I was there to tell
5 them about our problem; we've got this
6 stuff out in the environment, it's not good
7 and here's what we're going to do about it.

8 Q. Did the executive committee
9 request a report on that, or did you come
10 as a volunteer to the executive committee
11 with this problem?

12 A. When I -- when you say you, you
13 must mean both -- I did it in concert with
14 the organic -- whatever division was
15 responsible for the manufacture and sale of
16 PCB's at that time. Both of us did it
17 together. I don't know who contacted the
18 executive committee and said look, we've
19 got something that's a problem, we want to
20 talk it over with you.

21 Q. But this did reach some critical
22 mass, if you will, when people in the
23 medical department and people in the
24 organic division felt this problem was
25 important enough to bring to the attention

1 of the executive committee?

2 A. That's correct.

3 Q. And this was sometime in the late
4 1960's?

5 A. Right.

6 Q. Why were you, as the medical
7 director, or your department concerned
8 about finding environmental contamination
9 of PCB's in the environment; why did that
10 concern you?

11 A. Why did it concern me? Because
12 I've got just as much love for the
13 Peregrine Falcon as anybody else, and it
14 was hurting these -- the Bald Eagle and
15 the Peregrine Falcon or the Morning Dove or
16 something like that, and as a responsible
17 citizen and as a responsible Monsanto
18 employee, I was concerned.

19 Q. Concerned that it was having an
20 affect on the health and well being of
21 these species?

22 A. It was certainly having an affect
23 on the well being, because the birds did
24 not lay eggs with egg shells on them. That
25 could lead to disaster as far as the

1 species is concerned, it relies on eggs to
2 hatch.

3 Q. Any other reasons why the fact
4 that you were finding contamination in the
5 environment with PCB's caused you concern?

6 A. Yes. Because if we were causing
7 contamination, we wanted to stop it.

8 Q. What was it about the
9 contamination other than the harm to these
10 various species that you've mentioned that
11 caused you concern, caused you reason to
12 want to stop it?

13 A. Well, that was it. That was the
14 reason. But we also wanted to stop it --
15 yes, the only reason we were concerned
16 about it was what was happening to these
17 avionic species and the presence of our
18 material in game fish and other things like
19 that that eventually may come into the food
20 chain.

21 Q. The human food chain?

22 A. The human food chain.

23 Q. That was a concern to you as
24 well?

25 A. Yes.

1 Q. Can you tell me why that was a
2 concern to you that this chemical was
3 getting into the human food chain?

4 A. I'm sorry, I didn't hear the
5 first part.

6 Q. Why did that cause you concern,
7 that this chemical was getting into the
8 human food chain?

9 A. Because no one wants anything in
10 their food that they can keep out that
11 isn't the food.

12 Q. Well --

13 A. Whether that's weavils or
14 anything else in your cereal grain, you
15 want to eliminate it.

16 Q. Well, was your concern about
17 eliminating PCB's from the human food chain
18 related in any way to any perceived or
19 potential toxicity of the PCB's to human
20 beings?

21 A. We did not have long term
22 toxicity tests on PCB's at that time.
23 That's why we started the two year
24 toxicological testing, to fill in that
25 nitch in our -- in the data we had on

1 PCB's. We tested it as though it were
2 going to be an intentional food additive,
3 even though it was an inadvertent food
4 additive, and we laid out our protocol by
5 going up to the Food and Drug
6 Administration and saying here's what we
7 intend to do and here's why we're doing
8 it. They said fine, that's a good idea.

9 Q. Well, at that time were you
10 concerned that there was a potential toxic
11 effect to humans from ingesting PCB's as
12 part of the food chain?

13 MR. MALIN: Objection, the
14 question has been asked and answered.
15 Answer it again.

16 MR. KOHN: I'm not asking you
17 what acts you took or whether or not you
18 had started there this testing. I'm asking
19 whether you had a concern at that point
20 about potential toxicity to humans from
21 ingesting PCB's that were out in the
22 environment?

23 MR. MALIN: Same objection, asked
24 and answered. He said he wasn't aware at
25 that time, they had no long time studies,

1 and that's why they started them.

2 A. I did not know the long term
3 toxicity of PCB's. So, I wanted to find
4 out. If it turned out that there was
5 toxicity, then, obviously, I would have
6 been concerned. I was concerned enough to
7 try to find out whether there was or not.
8 I did not expect it to be, because of our
9 lack of any ill effect in our workers. So,
10 yes, I was concerned.

11 MR. KOHN: Do you recall who it
12 was in addition to yourself who had these
13 initial discussions prior to the time this
14 first report was made to the executive
15 committee about these concerns and this
16 problem?

17 A. In Monsanto?

18 Q. In Monsanto.

19 A. Well, I'm sure I talked it over
20 with Elmer Wheeler, I'm sure I talked it
21 over with our toxicologist. And I'm sure
22 that any of the other scientists that said
23 look, we're finding this in fish, there may
24 be a problem.

25 Q. Other than Wheeler and the

1 toxicologist, do you recall the names of
2 any of these individuals?

3 A. No, I do not.

4 Q. What is your best testimony with
5 respect to the date that you first had
6 discussions with Wheeler or the
7 toxicologist about the problem of finding
8 the PCB's in the environment?

9 A. Within the first three months
10 after Jensen's report surfaced in Europe.

11 Q. Was there an ad hoc group or
12 committee that came together at that time
13 in response to Jensen's work in Europe?

14 MR. MALIN: Are you talking about
15 Monsanto or generally?

16 MR. KOHN: Monsanto, yes.

17 A. Well, I don't know if it was ever
18 formalized. I mean, there were people -- I
19 guess it was ad hoc, we collected people
20 from the analytical laboratory, we
21 collected people from the research group,
22 we collected people from the marketing
23 group, and I don't know if -- when I say we
24 collected, somebody collected it, and
25 decided we'd go over to Jensen's and find

1 out what was going on.

2 Q. Why did you collect people from
3 the marketing group?

4 A. Because they were selling the
5 material, and it was important to them to
6 know what was the future for the product.
7 We would depend on them to tell us what
8 uses of the material could be -- there
9 would be that would not be contributing to
10 environmental contamination. We also
11 wanted to know where they were using the
12 PCB's in future applications.

13 Q. Do you recall the name of any
14 individuals within the marketing group that
15 you dealt with in this time frame with
16 respect to the problem of PCB contamination
17 in the environment?

18 A. No, sir, I don't remember the
19 names. These people were not -- did not
20 stay 38 years like I did in the same
21 department. I mean, they rotated every two
22 years, or something like that. They were
23 promoted and transferred. And, so, I don't
24 remember all the names.

25 Q. Was the marketing department the

1 people who had responsibility for marketing
2 the Aroclor products, were they part of the
3 organic division, or was there a separate
4 marketing division that had marketing
5 responsibilities for various products?

6 A. The organic division would have
7 various products. Over that product, one
8 of those products would be PCB, they would
9 have a product director, who was
10 responsible for the manufacturing, research
11 and marketing of that particular product.
12 The product manager would -- I don't
13 exactly know to whom he would -- to whom
14 he would report. But he would report to
15 somebody in the organic division.

16 Q. Do you recall the names of the
17 various product directors or product
18 managers for the PCB products?

19 A. No. If you would show me a few
20 memoranda, I may recognize them, but I
21 can't tell you off the top of my head here.

22 Q. No one comes to mind right now?

23 A. No. Well, Howard Bergen was one,
24 at one time he was. B-e-r-g-e-n, Howard
25 Bergen. But I don't know the dates when he

1 was there.

2 Q. Other than putting this group
3 together that went to Sweden, any other
4 activities that this ad hoc group took in
5 response to the problem of environmental
6 contamination with PCB's?

7 A. Certainly, there was a lot more
8 response. They looked over their own
9 operations to see where we could cut down
10 contamination in the outflows from our
11 plants where we were manufacturing the
12 material. They then decided, after they
13 were certain that the Swedes were on the
14 right track, that they were really talking
15 about Aroclors, they sent to their
16 customers and told the customers what the
17 facts were and how they should cut down the
18 contamination in their plants, and then
19 they made a study of where the uses were
20 that were impossible to carry out without
21 environmental contamination, and eventually
22 decided not to sell the material for those
23 uses.

24 Q. You mentioned one of the things
25 you did was to try to cut down the outflow

1 from your own plants as one of the
2 reactions?

3 A. Yes.

4 Q. Was there some sort of
5 construction activity undertaken to, I
6 think I've seen the terminology, make a
7 concrete bathtub?

8 A. I don't know what they did. I
9 don't know the details of the engineering
10 aspects. But they tested the outflow from
11 the sewers and then went backwards to the
12 plant to find out, the steps into the plant
13 to find out where they could cut down on
14 the contamination.

15 Q. Was there contamination that they
16 found outside of the plant, sewers, et
17 cetera?

18 A. Well, there was some. As I said
19 earlier, at the Pensacola plant we had some
20 from their air compressers. I'm sure we
21 had some at the Anniston plant from the
22 manufacturing. But because until the
23 problem surfaced, we treated it as any
24 other chemical, without -- people were not
25 doing a great deal of waste treatment in

1 1967.

2 Q. Another thing that you mentioned
3 as a program that the company undertook at
4 that time was to tell its customers how to
5 cut down contamination from their
6 operations?

7 A. Yes, sir.

8 Q. Do you recall, was there an
9 individual or group of individuals who had
10 responsibility for that particular task?

11 A. I don't know, until Papageorge
12 came. I think Papageorge could tell you
13 more about that than I could.

14 Q. At what point in time do you fix
15 his arrival on this job?

16 A. When Papageorge came aboard? I
17 don't remember. It was sometime after
18 '68. But I don't know.

19 Q. Do you know whether there were
20 written materials prepared for the
21 customers to instruct them how to cut down
22 on the contamination from their facilities?

23 A. They didn't tell them how to cut
24 it down, they told them -- because, after
25 all, we did not know what the details were

1 of their manufacture and use. But there
2 were written materials telling the people
3 about the necessity, the urgency for
4 cutting it down. And we said, also, if the
5 material could be shipped back to St.
6 Louis, ship it back and we will burn it.

7 Q. Do you know when those materials
8 went out, when they were distributed?

9 A. No, I do not.

10 Q. Do you know to whom they went?

11 A. The people that used -- that
12 bought the material.

13 Q. Is it your belief that it went to
14 every single customer of Monsanto who
15 bought an Aroclor or PCB compounds?

16 A. I can't answer that of my own
17 knowledge.

18 Q. Do you know whether it went to
19 General Electric?

20 A. I'm sure it did.

21 Q. What makes you sure that it went
22 to General Electric?

23 A. Because General Electric was a
24 major user of PCB's. In fact, Pyranol was
25 their patented product, so they were an

1 important customer; if anybody got it, GE
2 got it.

3 Q. Did GE, to your knowledge, during
4 this time period have its own medical
5 director counterpart to yourself?

6 MR. MALIN: This is in the late
7 '60's?

8 MR. KOHN: Late 1960's.

9 A. GE had a medical department
10 before Monsanto had one. They had a very
11 efficient medical department and a very
12 large medical department, a very large
13 industrial hygiene department.

14 Q. Do you recall who the medical
15 director was during the late 1960's at
16 General Electric?

17 A. It begins with a -- the '60's?
18 It begins with a V, I think Van something
19 or other. I'm not sure.

20 Q. Did you have any occasions to
21 have any discussions with him?

22 A. I talked with this man a couple
23 times, we would be at the same meetings, we
24 would be at the, industrial hygiene -- I
25 mean industrial medical association

1 meetings, various industrial medical
2 meetings.

3 Q. Do you recall ever having any
4 discussions with that individual about
5 Aroclors, Pyranols or PCB's?

6 A. I do not recall exactly that, but
7 I feel sure I did. But I do not recall
8 details.

9 Q. You don't recall the contents of
10 any communication with him on this subject?

11 A. The contents might be, "Have you
12 had any problems with this?" "Are you
13 having troubling with your workers?" "Do
14 you have any chloracne?" That sort of
15 question. But I can't tell you the verse
16 and line of when I did this.

17 Q. But you think you may have had
18 those kinds of discussions with the medical
19 people at General Electric?

20 A. Certainly.

21 Q. And do you know what answers you
22 got to any of those inquiries?

23 A. Yes. We didn't have any.

24 Q. And who told you that?

25 A. First of all, there was an

1 industrial hygienist that either I or
2 Wheeler talked to, I remember his name,
3 Speicher, S-p-e-i-c-h-e-r, and this other
4 man begins with a V, it's -- I don't
5 recall the name. But whoever was their
6 medical director at that time.

7 Q. Do you recall speaking with Mr.
8 Speicher?

9 A. Yes. But Wheeler did much more
10 speaking, he knew him much better than I
11 did. I remember speaking to Speicher, but
12 Wheeler carried on the majority of the
13 literature and -- I mean, the
14 correspondence and telephone calls with
15 Speicher.

16 Q. Do you recall yourself ever
17 having any communications or discussions
18 with Mr. Speicher about the Aroclors or the
19 Pyranol?

20 A. Might have been in a casual way.
21 As I said, Wheeler did it, there is lots of
22 memoranda from Wheeler to Speicher. Now,
23 he was at Westinghouse, he wasn't at GE, by
24 the way.

25 Q. Was there an industrial hygienist

1 at GE?

2 A. Yes, there was, but I do not
3 recall the name of them.

4 Q. Did Wheeler have communications
5 with the industrial hygienist at General
6 Electric of the same magnitude that he had
7 with Speicher at Westinghouse?

8 A. No, I don't think so, because I
9 haven't seen memoranda to GE particularly
10 nearly as often as I have to Westinghouse.

11 Q. Any explanation for that?

12 A. Yes. Maybe GE knew more about it
13 than we did. After all, this was their
14 product.

15 Q. Do you know whether GE ever
16 undertook any toxicological testing of its
17 own with respect to its product?

18 A. I don't know.

19 Q. You don't know one way or the
20 other?

21 A. I don't know one way or the
22 other.

23 Q. Ever ask GE about any such
24 testing?

25 A. I don't recall ever asking.

1 Q. Do you know whether GE ever
2 undertook any toxicological testing with
3 respect to the Aroclor product that they
4 purchased from Monsanto?

5 A. Isn't that the same question you
6 asked before?

7 Q. I asked about their finished
8 product, the Pyranol?

9 A. Their finished product?

10 Q. Is it your belief that the
11 Pyranol product that General Electric
12 marketed is the same as Aroclor?

13 A. We sent some stuff out marked
14 Pyranol to them, whether they added their
15 own -- they might have added corrosion
16 inhibitors or something else, I don't
17 know. To answer your question, I do not
18 know of any toxicological testing that GE
19 did either on Aroclor or Pyranol. Whether
20 they did or not, I don't know.

21 Q. But there were instances where
22 Monsanto actually sold from its plant a
23 product marked Pyranol for delivery to GE?

24 A. Well, it didn't just say Pyranol,
25 it said what it was, and it said Pyranol.

1 Yes, I've seen labels like that.

2 Q. Do you know whether General
3 Electric did anything to cut down
4 contamination after the period of the late
5 1960's when you believe this first came to
6 your attention?

7 A. I don't know.

8 Q. Do you know whether Monsanto
9 informed any companies engaged in the
10 business of operating railroads to cut down
11 contamination of PCB's?

12 A. I don't know.

13 Q. Do you know whether General
14 Electric notified any railroads to cut down
15 PCB contamination?

16 A. I don't know.

17 Q. What efforts did you make in this
18 time period, this being sometime in 1966 to
19 1968, '69, to notify the general public
20 about the concerns you had about PCB
21 contamination?

22 MR. COX: I object to the form of
23 the question.

24 A. First of all, you asked what did
25 Monsanto do about notifying the general

1 public about the concerns we had?

2 MR. KOHN: Right.

3 A. We didn't notify the general
4 public, we notified the scientific
5 community, we notified the government
6 agencies, we notified our customers.
7 That's what we did. We were not selling to
8 the general public.

9 Q. At the first meeting with the
10 executive committee concerning the PCB
11 contamination problem, did the executive
12 committee provide any directives or
13 instructions to the people who made the
14 presentation?

15 A. Well, I'm sure they did. I mean,
16 I don't know what the minutes showed, but
17 my impression is they said well, let's get
18 on with the job and do it, and come back
19 and see us next month and tell us what
20 you've done, certainly.

21 Q. When they said get on with the
22 job, what did you understand the job was
23 you were to get on with?

24 A. Notifying all the customers.

25 Q. Things you just mentioned?

1 A. Yes, all the things I mentioned.

2 Q. And do you recall then reporting
3 to the executive committee at a subsequent
4 time?

5 A. Yes.

6 Q. And do you recall who made the
7 presentation to the executive committee at
8 that time?

9 A. Well, I think the primary
10 presentation was by the product group of
11 the organic -- I mean, by the organic
12 division, because that's where the -- we
13 reported on what we were finding out,
14 toxicological-wise, but they had to report
15 on what they were doing about preventing
16 further contamination of the environment.
17 That was their responsibility.

18 Q. Do you recall, in fact, making a
19 report at that point about what you were
20 doing toxicologically?

21 A. Yes, I feel quite sure, or -- I
22 mean, I'm sure I did. I just didn't go in
23 there to listen, I would have said well,
24 we've started this and we're this far
25 along.

1 Q. Did you report at that time on
2 any of the previous toxicological work that
3 had been done that you testified to during
4 the last day and a half?

5 A. No. We had told the executive
6 committee that we had considered the
7 material to be relatively of moderate to
8 low toxicity as far as an industrial
9 chemical was concerned, so there was no
10 necessity for going through what had
11 occurred before. The problem was that we
12 did not know about what the effects -- long
13 term effects of small amounts of the
14 material could do. So, that's what we had
15 to test for. And that's what we told the
16 executive committee, giving them a
17 follow-up report. We did not go back and
18 rehash what had been done in 1954.

19 Q. So, in other words, at that point
20 you had sufficient knowledge that the
21 product had, I believe your words were,
22 moderate to low toxicity for industrial
23 chemicals, and you had known this since at
24 least the 1950's?

25 A. Yes, sir.

1 Q. And you wanted to undertake, and
2 you didn't know what the effects were of
3 long term low level exposures?

4 A. That's correct.

5 Q. Didn't know one way or the other?

6 A. Didn't know one way or the other.

7 Q. And how did you go about trying
8 to determine what the effects of long term
9 low level exposure was?

10 A. Well, we went up to Dr. Calandra
11 at the Industrial Bio-Test, along with our
12 toxicologists, and we said here is what our
13 problem is, here is what we need to do,
14 what we need to find out. And he said
15 well, I think what we ought to do is do the
16 same testing that we would on an
17 intentional food additive, even though we
18 never are going to even think of
19 recommending this as a food additive. So,
20 then, when we got together with that, they
21 had the protocol established, we said let's
22 go down now and talk to the Food and Drug
23 Administration. We went down there and
24 talked to them, and said here is what our
25 problem is, here is what we are going to

1 do, this is our protocol. They said fine,
2 let us know when you get any results.

3 Q. And then the IBT tests were
4 performed on various species of animals?

5 A. Beg pardon?

6 Q. The IBT tests were performed on
7 various species of animals?

8 A. Dogs and rats. There were
9 others, chickens and mallard ducks. I
10 don't know if they did mallard ducks or
11 they did chickens.

12 Q. And did you hope at that time to
13 glean some information from these tests
14 with respect to effects on humans?

15 A. Well, it would give us --
16 animals were all we had to work with.

17 Q. You were going to --

18 A. We would have to translate, or
19 transpose from what we got with animals to
20 humans, yes.

21 Q. That was the purpose -- the
22 purpose of the test was to try to get some
23 information with respect to humans?

24 A. To what a safe level would be in
25 the human diet, yes.

1 Q. In order to do that, you
2 conducted tests on certain species of
3 animals?

4 A. That's correct.

5 Q. And did the tests on the animals
6 give you information with respect to
7 effects on humans?

8 A. Yes.

9 Q. What was the information you
10 believe you obtained from these animal
11 studies with respect to the effects on
12 humans?

13 A. The information we obtained was
14 submitted to the Food and Drug
15 Administration, and they came out with a
16 safe -- what they considered a safe level
17 of PCB's in the market basket of food. It
18 was also information they used for setting
19 levels in game fish and other species of
20 -- other, I don't know -- I believe they
21 used milk, also, a level in milk.

22 Q. And do you recall what those
23 levels were that FDA set?

24 A. The best of my knowledge, it was
25 around 2 parts per million, I thought.

1 Q. Per million?

2 A. Million.

3 Q. Over what period of time?

4 A. Indefinite.

5 Q. In terms of safe levels of foods,
6 2 parts per million per day?

7 A. Yes.

8 MR. MALIN: In a measured
9 product?

10 A. Well, yes. I mean, in the foods
11 they tested. In other words, I don't think
12 they tested radishes or something like
13 that, there is no PCB's in radishes. They
14 tested chickens, they tested shrimp, they
15 tested fish.

16 MR. KOHN: You mentioned, I
17 think, somewhat in gest, but not entirely,
18 that when you were talking to the IBT
19 people you said they were setting up the
20 test as if it was a food additive, even
21 though nobody would ever use PCB's as a
22 food additive?

23 MR. COX: I object to the form of
24 the question.

25 MR. MALIN: I object to the form

1 of the question.

2 MR. KOHN: Why did you believe at
3 that time that you would not want to use
4 PCB's as a food additive.

5 MR. COX: I object to the form of
6 the question.

7 MR. MALIN: Same objection. Go
8 ahead.

9 A. Well, first of all, we did not
10 know any value it would have in a food.
11 Number one. So, I would see no use for it
12 in a food. Secondly, the toxicity at that
13 time was not sufficiently known to cause it
14 to be a food additive, to be allowed as a
15 food additive. And, third, it was an
16 industrial chemical that we just thought
17 had no place in the human diet.

18 MR. KOHN: At that point, as a
19 physician, did you believe, or would you
20 have advised your own patients for their
21 health and safety to avoid ingesting PCB's.

22 MR. MALIN: I object to the form
23 of the question. Answer the question, if
24 you understand it.

25 A. No, sir, I would not. And I

1 would not have advised my family to avoid
2 ingestion of food with PCB's in it. Is
3 that what you asked.

4 Q. You would not have advised your
5 own patients to avoid ingesting food with
6 PCB's?

7 A. With what percent? I mean, how
8 much?

9 Q. Any?

10 A. Well, a hundred thousand parts
11 per million, I would have told them not to
12 use it. Two parts per million, I said
13 there would be no problem.

14 Q. How about ten parts per million?

15 A. I didn't know at that time. I
16 might, ten might be too high.

17 Q. And what would the effects be on
18 the human patients from ingesting food with
19 a PCB level that's too high, as you said?

20 A. I don't know.

21 MR. MALIN: I object to the form
22 of the question. He's already answered the
23 question many, many times over. But go
24 ahead and answer it again.

25 A. There were no effects known, so I

1 could not surmise what effects might have
2 occurred.

3 MR. KOHN: Hasn't it been the
4 opinion of the medical department of
5 Monsanto since at least the mid 1950's to
6 avoid ingestion of Aroclors?

7 A. Certainly. Just like we advised
8 on ingestion of any industrial chemical, an
9 industrial chemical is not supposed to be
10 eaten or drunk.

11 Q. That's because it's potentially
12 hazardous to human beings, their health?

13 MR. COX: I object to the form of
14 the question.

15 MR. MALIN: I object to the form
16 of the question. He's already answered
17 that. It's either hazardous or you don't
18 know or you don't take the chance. We've
19 been over that many times. If you want to
20 answer it again, you may answer it again.

21 A. Well, yes, I saw no purpose in
22 swallowing the stuff. Number two, we
23 didn't know what the toxicity of large
24 amounts of it was, and I couldn't put a
25 limit on how much they should take.

1 MR. KOHN: Well, as of the mid
2 1950's, weren't there reports in the
3 literature of harm resulting from PCB's
4 that someone who got sick from ingesting
5 PCB's would have been able to point to in
6 support of any claim that the PCB's caused
7 his or her injury?

8 MR. COX: I object to the form of
9 the question.

10 MR. MALIN: I object to the form
11 of the question. If you think you
12 understand that and haven't answered it
13 before, please answer the question.

14 A. What was your question, again?

15 MR. KOHN: Read it back.

16 (The requested portion of the
17 record read by the reporter).

18 A. There may have been isolated
19 cases, I don't recall, where somebody might
20 have thought PCB's was olive oil and
21 swallowed it. I don't know. In the
22 '50's?

23 MR. MALIN: Don't speculate,
24 Doctor. If you know --

25 A. I know of no articles relating to

1 the point you just said.

2 MR. KOHN: Are you aware of any
3 literature or work prior to 1955 that
4 indicated that PCB's were toxic, whether by
5 inhalation or by ingestion?

6 A. Certainly. They're toxic by --
7 certainly toxic to animals if you give them
8 enough. We had information that as far as
9 the MLD of rats were concerned it was
10 around four or five grams per kilogram. We
11 had data in 1954 that it was toxic by
12 inhalation. Certainly, we knew that. But
13 we also know, I might say, there were an
14 awful lot of other chemicals that were
15 toxic, too. Iron pills that people take,
16 that's got an LD 50 of around 1 gram per
17 kilo. Salt is about 4 grams per kilo. I
18 don't know what alcohol is. It's up there,
19 too.

20 Q. Well, do you think PCB's and salt
21 are equally toxic to humans?

22 A. No, I'm not saying that at all.

23 Q. Do you think PCB's and alcohol
24 are equally toxic?

25 A. That might be.

1 Q. If I put a glass of whiskey in
2 front of you and a glass of Aroclor, you'd
3 drink them with indifference?

4 A. No, I don't think so.

5 Q. You'd drink the alcohol, wouldn't
6 you, and not the Aroclor?

7 A. Certainly. For a lot of reasons.

8 Q. What are those reasons?

9 A. Well, one, I know the effects of
10 alcohol in a dose, a single dose, and I
11 don't know the effects of that much PCB.
12 Secondly, I believe alcohol tastes a lot
13 better than a PCB would.

14 Q. Any other reasons?

15 A. I believe that there is a
16 tradition in human culture that alcohol has
17 been used over the centuries, whereas PCB's
18 have not been, and I believe that's another
19 reason I would stick with the alcohol.

20 Q. Anything else?

21 A. No.

22 Q. What position did Jack Garrett
23 hold with Monsanto Chemical Company in
24 1955?

25 A. He was -- he came in as an

1 industrial hygienist, and afterwards
2 enlarged that to deal with aspects of water
3 pollution in the various plants.

4 Q. Did you work directly with him
5 during the 1950's?

6 A. Yes, we were in the same
7 department.

8 Q. As the medical director, you had
9 direct supervision over the industrial
10 hygiene department?

11 A. Yes.

12 Q. How many people worked in the
13 industrial hygiene department at that time?

14 A. You mean the technical people,
15 not the secretaries or --

16 Q. Right.

17 A. Well, we start out with Wheeler,
18 then we got Garrett, then we got somebody
19 by the name of Bohl, B-o-h-l, a Dr. Bohl,
20 then we got somebody by the name of Eby,
21 E-b-y, but I don't know his first name.
22 There were four when I left, I think.
23 Might have been five when I left.

24 Q. Let me mark as the next numbered
25 exhibit a memorandum from Jack Garrett to

1 Mr. H.B. Patrick, November 14, 1955.

2 (Kelly Deposition Exhibit Number
3 20 mark'd for identification).

4 MR. KOHN: I place before you
5 what has been marked as Kelly Exhibit 20.
6 Take a moment to read that document. My
7 question is, have you ever seen it before
8 today?

9 A. I may have. It doesn't ring a
10 particular bell. I notice I am not on a
11 carbon on it.

12 Q. At the top of the memorandum
13 where it says subject, it says "Department
14 246 (Aroclors)." Did that number
15 designation identify the group or division
16 of the company that was responsible for the
17 manufacture of Aroclors?

18 A. Well, if you have a plant like
19 Krummerich, a thousand employees, there may
20 be 25 departments in there, some of those
21 departments might be called 146, that
22 refers to the building or the buildings, so
23 presumably department 246 referred to where
24 the Aroclors were made.

25 Q. The first sentence of the

1 memorandum states, "It is the opinion of
2 the medical department that the eating of
3 lunches should not be allowed in this
4 department," meaning the Department 246,
5 Aroclors, "for a number of reasons." Was
6 that your opinion at that time?

7 A. Well, it shouldn't be eaten any
8 place in a chemical plant, that was my
9 opinion, not particularly the Aroclors
10 department.

11 Q. So, that was your opinion, but
12 your opinion was, in fact, broader than
13 that?

14 A. Well, yes. I believe that it
15 shouldn't be used at all -- shouldn't --
16 your workplace should not be your dining
17 room.

18 Q. Then the number paragraphs
19 begin. Number 1, "Aroclor vapors and other
20 process vapors could contaminate the
21 lunches unless they were properly
22 protected." How could the vapors
23 contaminate the lunches?

24 A. You'd have to ask Garrett,
25 because I don't believe that. I think Jack

1 also recognized that people should not eat
2 in their workplace, and he's going as far
3 out in left field as he could possibly go
4 to come up with some reasons to answer
5 workmen's complaints who wanted to eat in
6 the lunch room -- I mean, in the
7 workplace.

8 Q. You haven't discussed this
9 memorandum with Mr. Garrett?

10 A. No, I haven't.

11 Q. Paragraph number 2 says, "When
12 working with this material," meaning
13 Aroclor, "the chance of contaminating hands
14 and subsequently contaminating the food is
15 a definite possibility." Do you agree with
16 that?

17 A. No, I don't think so. I don't
18 agree with that, because I don't believe we
19 ever had any area in the plant where there
20 was so much Aroclor on the tables or on the
21 people's hands that would contaminate the
22 food. And I think the amount -- even if
23 there were, the amount that would be
24 transferred from your fingers to a ham
25 sandwich is negligible.

1 Q. Paragraph 3 begins, "It has long
2 been the opinion of the medical department
3 that eating in process departments is a
4 potentially hazardous procedure that could
5 lead to serious difficulties." How long
6 had that been the opinion of the medical
7 department?

8 A. I think since the first time I
9 ever walked through a manufacturing
10 installation.

11 Q. Which is what, 1930's?

12 A. '37, '38. '37.

13 Q. What were the serious
14 difficulties that eating in the process
15 departments could lead to?

16 A. Those are Jack's words. I think
17 Jack is slanting this memorandum to try to
18 stop eating in the departments. I mean,
19 it's just not a good idea to eat in a
20 department where you're manufacturing
21 chemicals. Just like it's not a very good
22 idea to eat without washing your hands when
23 you come in from gardening. But if he's
24 getting in an adversary position where the
25 union wants to eat at their work place so

1 they can play cards or something rather
2 than go over to the cafeteria, that's a
3 different problem.

4 Q. Are you aware of some sort of
5 labor problem you were having about people
6 wanting to play cards?

7 A. Sure. Instead of walking over to
8 the cafeteria, sure, they always want to.
9 It happens all the time.

10 Q. You're testifying to that as a
11 fact which occurred at Monsanto in or about
12 this time period?

13 A. It's a fact that had occurred at
14 Monsanto that I know about. I do not know
15 the time frame.

16 Q. You don't know whether it was
17 before or after this memorandum?

18 A. It was afterwards -- I mean, it
19 certainly was before this. They may still
20 have done it afterwards, also. But that
21 was a common complaint, that people did not
22 want to go as far over as the cafeteria, or
23 the lunch room, they wanted to brown bag it
24 and eat at their workplace.

25 Q. And you believed that the purpose

1 of this memorandum from Mr. Garrett was to
2 discourage the workers from doing that
3 because of potential health effects?

4 A. Because, potentially, he thought
5 it just was not a good idea. And I don't
6 think he was particularly concerned,
7 certainly I would not be particularly
8 concerned about the possible health effects
9 you would get from eating a ham sandwich or
10 a pizza in department 246, because we did
11 not have that much material around smeared
12 on the -- we didn't have tables in the
13 department, anyway, they put their ham
14 sandwich on top of a reactor or something.
15 It just is not a good idea, we didn't want
16 it.

17 Q. Well, is the first sentence of
18 this memorandum a truthful statement or is
19 it a lie?

20 MR. COX: I object to the form of
21 the question.

22 MR. KOHN: Let me finish the
23 question, "It is the opinion of the medical
24 department that the eating of lunches
25 should not be allowed in this department

1 for a number of reasons".

2 MR. MALIN: I object to the form
3 of the question.

4 MR. KOHN: Is that statement true
5 or is it false?

6 MR. COX: I object to the form of
7 the question.

8 MR. COHEN: We don't have to have
9 this Greek chorus. You asked for a
10 stipulation that the objection by one
11 enures to the benefit of all, it's not
12 necessary for each of you to say with an
13 ever more forceful manner that you object
14 to the form of the question. In addition
15 to which, if you're objecting to the form
16 of the question, you should state the
17 reason for the objection to the form so the
18 question can be restated so as not to be
19 objectionable at the time of hearing.

20 MR. COX: There were about six
21 questions in that last sequence, and we'll
22 have them one by one, we'll state our
23 objections to them one by one.

24 MR. MALIN: That question, first,
25 has been asked and it has been answered.

1 He's gone over the reasons for his belief
2 and the medical department's belief why
3 people shouldn't eat when they're working
4 in a chemical company, whether they were
5 manufacturing PCB's or aspirin or
6 whatever. In addition to that, there are
7 several -- there is more than one question
8 involved in the question.

9 MR. COX: Moreover, the questions
10 are both leading and misleading and contain
11 testimony by the questioner.

12 A. I can't hear you.

13 MR. COX: The questions as put
14 are both leading and misleading and contain
15 testimony by the questioner.

16 MR. COHEN: Are you suggesting
17 that we can't lead the witness?

18 MR. COX: I'm suggesting that I'm
19 stating my objection for the record.

20 MR. COHEN: All right. So,
21 you're not suggesting that we can't lead
22 the witness, you're just objecting to
23 leading the witness for whatever reason?

24 MR. KOHN: You can answer.

25 MR. COX: My objection has been

1 stated and my reason for the objection has
2 been stated.

3 MR. MALIN: If you wish to answer
4 the question again, answer again.

5 A. I'd like to hear the question
6 again, there's been a little byplay since
7 it was first proposed.

8 MR. KOHN: Is the statement in
9 the first sentence of Mr. Garrett's
10 memorandum, "It is the opinion of the
11 medical department that the eating of
12 lunches should not be allowed in this
13 department for a number of reasons," and
14 then he goes on to list the reasons, is
15 that a true statement or is that a false
16 statement?

17 A. If your question refers just to
18 the first sentence, it is true. Whether
19 these reasons are true or not is the second
20 question.

21 Q. Are the reasons true or false?

22 MR. MALIN: The same objection.
23 You don't have to answer in terms of true
24 or false.

25 MR. COX: I object, because I

1 think the witness has already answered this
2 question and it's being asked in different
3 words. He's given the answer.

4 MR. KOHN: I thought this was a
5 fairly innocuous document until you
6 people --

7 MR. COX: I object to counsel's
8 comments.

9 (Discussion off the record).

10 MR. KOHN: My question, then, Dr.
11 Kelly, is, is the representation in Mr.
12 Garrett's memorandum that these three
13 numbered reasons are the opinion of the
14 medical department as to why you should not
15 eat lunches in the Aroclor department, is
16 that an accurate representation by Mr.
17 Garrett or is it some sort of a
18 misrepresentation by him?

19 MR. MALIN: Objection to the form
20 of that question. You don't have to answer
21 in terms of those strict alternatives, you
22 answer in terms of what you understand.

23 A. This is Garrett's statement, it's
24 not the medical department's statement.
25 This is Garrett's statement. And in my

1 opinion, he has exaggerated the possible
2 harm in order to stop the procedure of
3 eating in the workplace, and he has
4 exaggerated the medical possibilities of
5 harm.

6 Q. The last sentence of this
7 memorandum states, "In any case where a
8 workman claimed physical harm from any
9 contaminated food, it would be extremely
10 difficult on the basis of past literature
11 reports to counter such claims." Do you
12 know what type of physical harm from the
13 contaminated food Mr. Garrett is referring
14 to?

15 A. I haven't the slightest idea what
16 he is talking about or any of the basis on
17 which he talks, or the basis of past
18 literature reports to counter such claims,
19 you'll have to ask Mr. Garrett.

20 Q. Have you ever seen any documents
21 from any of the individuals to whom this
22 memorandum was sent raising any questions
23 or concerns about this memorandum?

24 A. No, I have not.

25 Q. Do you know what Mr. Webber's

1 position was with Monsanto at that time?

2 A. No, I don't.

3 Q. Do you know what Mr. Lieben's
4 position was, L-i-e-b-e-n?

5 A. No, I don't.

6 Q. Do you know what Mr. Patrick's
7 position was?

8 A. Yes. He was the safety director
9 at Krummerich plant.

10 Q. Do you know whether this
11 memorandum was complied with?

12 A. I think it probably -- I can't
13 answer that, but my impression is yes.

14 Q. You believe that it was complied
15 with?

16 A. I believe they stopped the
17 process of eating. Whether that complied
18 with the memorandum or not, I don't know.

19 Q. Is it the opinion of the medical
20 department that -- or is it your opinion
21 that individuals who work with PCB fluids
22 in the repair of electrical transformers
23 should not eat their lunches in the area in
24 which they are working?

25 A. You'll have to be more specific.

1 In the area, what do you mean?

2 Q. In an area in which PCB fluids
3 would come in contact or have come in
4 contact?

5 A. Come in contact with what?

6 Q. With the floor, with their
7 clothing.

8 MR. MALIN: I object to the form
9 of that question. It's too vague, not
10 specific enough with respect to what may be
11 around or with respect to exposure. If
12 you're talking about should people whose
13 clothes are soaked with PCB's pick up and
14 eat a ham sandwich, I think you can
15 probably answer that.

16 MR. KOHN: Why don't you answer
17 that?

18 A. First of all, they should never
19 have clothes soaked with PCB's.

20 Q. Why not?

21 A. Because there is a possibility it
22 could be absorbed through the skin, and we
23 advise against repeated or prolonged skin
24 contact. We say if -- in some of our
25 bulletins, if clothes are soaked with a

1 material, launder before using again.

2 Q. And should you, similarly, not
3 get your hands in contact with the PCB
4 fluid?

5 A. Contact how much? It all
6 depends. I said prolonged and repeated.
7 Certainly, if you drop a bolt or a pliers
8 in liquid PCB that is at room temperature,
9 it will not hurt you to reach in there and
10 pick out that pliers, then you wash your
11 hands and that's fine, nothing's happened.
12 But you shouldn't do that all day.

13 Q. You shouldn't do it several times
14 every day over the period of --

15 A. No, you shouldn't do it several
16 times every day. In fact, you shouldn't do
17 it once, but it will not hurt you if you do
18 it once. I don't know how often you have
19 to do it before you get chloracne.

20 Q. Didn't you, by you I mean you
21 personally, believe at least as early as
22 1958 that Monsanto should provide
23 additional warnings with respect to its
24 Aroclor products?

25 MR. MALIN: I object to that

1 question as, again, too vague to be
2 answered in a meaningful way. If you think
3 you understand or can refer to something,
4 Doctor, go ahead.

5 A. I don't understand it, because
6 all the time -- all the period that I was
7 responsible for warnings, I thought our
8 warnings were sufficient to protect the
9 workers and customers and their workers if
10 they followed the procedures of avoiding
11 repeated skin contact and avoid breathing
12 the material in confined spaces or at
13 elevated temperatures, they would have no
14 problem.

15 Q. Well, did there come a point,
16 then, in the 1950's when it came to your
17 attention that there was not a warning on
18 either the Pyranol or Inerteen products
19 which you were selling?

20 A. I don't recall. Do you have a
21 memorandum there? Show it to me and I'll
22 be able to comment on it.

23 Q. I know what the document says,
24 I'm trying to get your recollection.

25 A. Beg your pardon?

1 Q. I know what the document says,
2 I'm trying to get your recollection. Do
3 you recall it coming to your attention that
4 there was not a warning on the Pyranol or
5 Inerteen product and that you thought,
6 strictly speaking, there should be such a
7 warning?

8 A. I don't know if your first
9 premise is true. I don't know.

10 Q. Let me ask the reporter to mark
11 as Exhibit 21 a letter from Dr. Kelly and a
12 Mr. Minter to D.F. Smith, December 19,
13 1958, Re, labeling Pydrauls. This is the
14 only copy we have.

15 (Kelly Deposition Exhibit Number
16 21 mark'd for identification)?

17 MR. KOHN: I place before you
18 what is marked as Exhibit 21. Take a
19 moment to read that.

20 (Discussion off the record).

21 MR. KOHN: You've had a chance to
22 read the exhibit?

23 A. Yes, I have.

24 Q. Do you recognize your signature
25 on the second page of the exhibit?

1 A. Yes, I do.

2 Q. Do you recall sending that letter
3 in December of 1958?

4 A. I have no independent
5 recollection until I saw this.

6 Q. Does that refresh your
7 recollection that you sent that letter?

8 A. I still don't remember about
9 sending it, but I accept the fact that I
10 sent it.

11 Q. Does that refresh your
12 recollection with respect to a discussion
13 about the appropriateness of putting a
14 cautionary label on the Pyranol and
15 Inerteen products?

16 A. Well, did it do what?

17 Q. Does it refresh your recollection
18 with respect to that subject being
19 discussed at Monsanto?

20 A. I don't remember too much about
21 any particular meeting, but I think
22 something needs explaining. I do not know
23 if there were -- there was any type of
24 safe handling data on the label without the
25 word caution. I also know that Pyranol,

1 which is the General Electric formulation
2 of Aroclor, and Inerteen, which is the
3 proprietary name for the Westinghouse
4 product, both go to very sophisticated
5 organizations, and in the case of
6 Westinghouse they have carried out
7 toxicological experiments on their
8 Inerteen, so we are talking here about
9 something unusual, this is not a mom and
10 pop shop, this material is going to people
11 who have had years of experience with the
12 material, they have received all our
13 bulletins which do contain the warnings.
14 Whether or not -- I do not know what the
15 label -- at this point in time what the
16 label before December 19, 1958 showed. And
17 I said, I think, it would be wise to have
18 one on there. Whether or not it's
19 absolutely necessary I was somewhat
20 equivocal on, but I do not know what was on
21 the label before.

22 Q. Your letter says, "Strictly
23 speaking, it would be wise to have a
24 caution label on these products. However,
25 we have never had such a caution statement

1 during the many years of their manufacture,
2 and it would very probably cause
3 considerable unrest in the transformer
4 plants." Why did you believe that in 1958
5 it, quote, would be wise, close quote, to
6 have a caution label on these products?

7 A. Well, I believe because suppose
8 the material were damaged in traffic,
9 suppose we had a 55 gallon drum and they
10 had an 18 Wheeler filled with 55 gallon
11 drums and there was a wreck and the stuff
12 spilled out and there was no caution label
13 on it, I think that would be bad.

14 Q. Some people might get exposed to
15 it that you wouldn't want to be exposed to
16 it?

17 A. We'd want them to know something
18 about it.

19 Q. Now, your letter also says, "We
20 have never had such a caution statement
21 during the many years of their
22 manufacture." Does that refresh your
23 recollection that as of December 19, 1958
24 you had never had a caution statement on
25 those products?

1 A. No, it does not, because, as I
2 said, now, I don't know what kind of a
3 statement -- if we had anything on there as
4 far as health effects are concerned, I
5 don't know.

6 Q. You might have written a letter
7 saying we have never had such a statement
8 and that statement might have been
9 incorrect?

10 A. I don't know if at that time it
11 was, I was referring to the fact that the
12 word caution may or may not be on there.
13 There is a difference between putting on
14 caution in large letters and then putting
15 on the information you mean or just putting
16 the information on, "Don't get this on your
17 hands," "Don't breathe this in a confined
18 space".

19 Q. Then the same sentence continues,
20 "And it would very probably cause
21 considerable unrest in the transformer
22 plants." That is, the fixation of the
23 caution statement. Why did you believe at
24 that time it would cause considerable
25 unrest in the transformer plants?

1 A. Well, I would think that if
2 people were getting -- using the same
3 material all the time and the label has
4 been changed, the worker might very well
5 say what's on here, is this stuff I've been
6 working with for 20 years really bad or
7 have they changed the mixture, what have
8 they done here?

9 Q. So, in other words, it might
10 prompt the worker who has to work with this
11 stuff every day to ask some questions about
12 what affect it might be having on his
13 health?

14 A. Yes, it might very well.

15 Q. You didn't want that to happen
16 out of concern for your customer, General
17 Electric?

18 MR. MALIN: I object to the form
19 of the question.

20 A. Yes. What was that question?

21 MR. KOHN: But you didn't want
22 the worker to ask any questions about
23 potential health affects of this product?

24 MR. MALIN: Objection. I object
25 to the form of the question, that

1 mischaracterizes both what he said and what
2 this says.

3 A. I wanted the workers to get the
4 information to protect their own health at
5 Westinghouse and GE from the people who
6 were using it at Westinghouse and GE.

7 Q. If they worked for Westinghouse
8 and GE, it was Westinghouse and GE's
9 headache?

10 A. We tell Westinghouse and GE all
11 we know about the product, we do not know
12 how it was used in Westinghouse and GE. As
13 far as we knew, there may be no exposure at
14 all in those plants. It's their
15 responsibility.

16 Q. Now, moving ahead about ten years
17 to the '60's after the Jensen information
18 came to light, I believe you indicated that
19 the company, Monsanto, embarked on a
20 program to notify its customers about
21 preventing PCB contamination?

22 A. Of the environment, yes.

23 Q. And you believe that was done in
24 the 1960's, the notification to customers?

25 A. I would think it was the late

1 '60's, yes.

2 Q. Could it have been that in the
3 1970's you were suggesting that it was time
4 to tell the customers not to use any
5 Aroclor in certain products?

6 A. Well, that's an entirely
7 different statement. In one place we're
8 telling the people don't spill it around;
9 the other time, the second premise was
10 we're telling them not to use it in these
11 applications.

12 Q. What is your recollection as to
13 the first time that Monsanto began to tell
14 its customers not to use Aroclor paint that
15 comes in contact with food, with feed, with
16 water for either animals or humans?

17 A. Give me these one at a time, now,
18 one question at a time. Feed, water,
19 animals?

20 Q. When did you tell your customers
21 not to have an Aroclor product come in
22 contact with either food, feed or water for
23 animals or humans?

24 A. For animal use?

25 Q. Animals or humans?

1 MR. MALIN: As best you can
2 recall, Doctor.

3 A. I can't hear you.

4 MR. MALIN: As best you can
5 recall.

6 A. When was the first time we told
7 our customers not to have Aroclors come in
8 contact with food?

9 MR. KOHN: Food or water for
10 either animal or human ingestion.

11 A. As far as we were concerned, we
12 always operated on the principle that this
13 industrial chemical was not to come in
14 contact with food, so I don't recall any
15 particular memorandum we sent out saying
16 don't let this get into flour, don't let
17 this spill over bread. Is that what you're
18 talking about?

19 (Discussion off the record).

20 MR. KOHN: Let me ask you another
21 question. Do you recall that the Aroclor
22 products were used in certain paint
23 products?

24 A. Yes.

25 Q. Did there come a point in time

1 when you advised customers who used those
2 paint products not to let the paint come in
3 contact with food?

4 A. Animal food, yes.

5 Q. Do you recall what point in time
6 you so advised your clients?

7 A. I think sometime in the '60's. I
8 don't know the particular time in that
9 decade. It was used in only one
10 application in silos where it came in
11 contact with animal food.

12 Q. Isn't it true that you were still
13 discussing whether or not you should notify
14 customers of this situation in 1970?

15 MR. MALIN: I'll object to the
16 form of that question. I don't understand
17 it.

18 A. What situation?

19 MR. KOHN: The fact that paints
20 containing Aroclors were coming in contact
21 with food products.

22 A. Well, I don't know if we really
23 knew that the material that was painted on
24 the inside of a silo would flake off and
25 get into the silage. So, when we found out

1 it did, that's when we told them not to use
2 paint in silos. I don't know what date
3 that was.

4 MR. KOHN: I'd ask the reporter
5 to mark as the final exhibit for today a
6 memorandum from Dr. Kelly to Mr.
7 Papageorge, March 30, 1970.

8 (Kelly Deposition Exhibit Number
9 22 mark'd for identification).

10 A. Well, this is a memorandum of
11 mine to Mr. Papageorge, dated March 30,
12 1970, with two notations on the bottom; one
13 00377, the other --

14 MR. KOHN: 337, I believe.

15 A. 337. And the other, A 0009431.
16 It's now got another notation, Kelly
17 Exhibit 22.

18 MR. KOHN: Do you recall sending
19 this memorandum to Mr. Papageorge in March
20 1970?

21 A. I don't recall the date, but I
22 recall that they had problems with the
23 material getting into milk from painting
24 silos, yes.

25 Q. Getting into the feed, into the

1 cows and into the cow's milk?

2 A. That's correct.

3 Q. And then you state in this
4 memorandum, "All in all, this could be
5 quite a serious problem, having legal and
6 publicity overtones." What legal overtones
7 did you see this problem having?

8 A. I think the person who had the
9 milk that had PCB in would sue us and say
10 we can't use the milk.

11 Q. Not fit for consumption when it
12 has the PCB's?

13 A. The State Department will make us
14 spill it on the ground because it's
15 contaminated.

16 Q. What were the publicity overtones
17 that you foresaw?

18 A. Well, I think if a bunch of
19 people were suing Monsanto, that would get
20 into the papers, and that's publicity that
21 we would just as soon do without.

22 Q. And was the legal and publicity
23 problems of the company within the scope of
24 your duties and responsibilities as medical
25 director?

1 MR. MALIN: I object to the form
2 of that question.

3 A. They weren't the -- under my
4 responsibility, but I was -- just as a
5 concerned employee of Monsanto, as a
6 concerned shareholder, I was saying this is
7 a serious problem, having these overtones
8 that we'd just as soon not have, rather not
9 have.

10 MR. KOHN: Why don't we break for
11 today. Thank you, Doctor, for your time
12 over the last two days.

13 (Deposition Adjourned)

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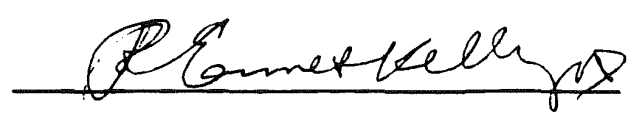
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COMES NOW THE WITNESS, R. EMMET
KELLY, and having read the foregoing
transcript of the deposition taken on the
11th and 12th days of December, 1990,
acknowledges by signature hereto that it is
a true and accurate transcript of the
testimony given on the date hereinabove
mentioned.

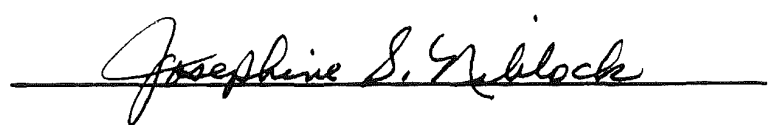


R. EMMET KELLY

Subscribed and sworn to me before this
28th day of January, 1991.

My Commission expires:

JOSEPHINE S. NIBLOCK
NOTARY PUBLIC STATE OF MISSOURI
ST. LOUIS COUNTY
MY COMMISSION EXP. JAN. 15, 1995



Notary Public

rg

1 State of Missouri)
2) SS.
3 City of St. Louis)
4 I, Ronald A. Gore, a Notary Public
5 in and for the State of Missouri, duly
6 commissioned, qualified and authorized to
7 administer oaths and to certify to
8 depositions, do hereby certify that
9 pursuant to Notice in the civil cause now
10 pending and undetermined in the Court of
11 Common Pleas, Philadelphia County, to be
12 used in the trial of said cause in said
13 court, I was attended at the offices of
14 Brown, James & Rabbitt, 705 Olive Street,
15 in the City of St. Louis, State of
16 Missouri, by the aforesaid witness; and by
17 the aforesaid attorneys; on the 11th and
18 12th days of December, 1990.
19 The said witness, being of sound
20 mind and being by me first carefully
21 examined and duly cautioned and sworn to
22 testify the truth, the whole truth, and
23 nothing but the truth in the case
24 aforesaid, thereupon testified as is shown
25 in the foregoing transcript, said testimony

1 being by me reported in shorthand and
2 caused to be transcribed into typewriting,
3 and that the foregoing pages correctly set
4 forth the testimony of the aforementioned
5 witness, together with the questions
6 propounded by counsel and remarks and
7 objections of counsel thereto, and is in
8 all respects a full, true, correct and
9 complete transcript of the questions
10 propounded to and the answers given by said
11 witness; that signature of the deponent was
12 not waived by agreement of counsel.

13 I further certify that I am not of
14 counsel or attorney for either of the
15 parties to said suit, not related to nor
16 interested in any of the parties or their
17 attorneys.

18 Witness my hand and notarial seal
19 at St. Louis, Missouri, this 21 day of
20 Jan., 1991.

21 My Commission expires May 22, 1994.

22 
23 Notary Public in and for the
24 State of Missouri
25