

ORIGINAL

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
BEAUMONT DIVISION

CHARLES B. WRIGHT, ET UX.,)
)
 PLAINTIFFS,)
)
) NO. B-85-322-CA
)
MONSANTO COMPANY, ET AL.,)
)
) DEFENDANTS.)

Deposition of DR. R. EMMETT KELLY
Taken on behalf of the PLAINTIFF.

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

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GERARD H. DAVIDSON, JP

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
BEAUMONT DIVISION

CHARLES B. WRIGHT, ET UX,)
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 Plaintiffs,)
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vs.) NO. B-85-322-CA
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MONSANTO COMPANY, ET AL.,)
)
 Defendants.)

Deposition of DR. R. EMMETT KELLY, taken
on behalf of the Plaintiffs at the Danielle Hotel,
in the County of St. Louis, State of Missouri, on
the 26th day of September, 1986 before Elsie M.
Delevich, Registered Professional Reporter and
Notary Public.

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

7 DIRECT EXAMINATION

8 QUESTIONS BY MR. HOBSON:

9 Q. Would you introduce yourself please?

10 A. Yes. I am Dr. R. Emmett Kelly.

11 Q. Dr. Kelly, my name is Herschel Hobson.

12 I represent the plaintiff in a lawsuit that has
13 been filed against Monsanto, and I understand you
14 are a past employee of Monsanto; is that right?

15 A. That is correct.

16 Q. I am on the opposite side of the lawsuit
17 from your past employer, you understand we are
18 adverse?

19 A. Yes, I understand that.

20 Q. What years did you work for Monsanto,
21 sir?

22 A. From 1936 until 1974, with the exception
23 of four years during World War II.

24 Q. What was your position with Monsanto?

25 A. Before World War II, I was the plant

1 physician on a part-time basis with their plant
2 now called the Queenie plant in St. Louis.
3 Following that, I was given some responsibility
4 for medical observation of the other plants, and
5 when I returned from the service, I was made
6 medical director.

7 Q. And you remained the medical director
8 until 1974?

9 A. That is correct.

10 Q. As the medical director, would you have
11 involvement in all of Monsanto's facilities
12 worldwide?

13 A. Yes; with one exception. I did not have
14 involvement with the Japanese plants or the
15 Australian plants.

16 Q. I think we learned a while ago from Mr.
17 Papageorge that there was a plant in Japan that
18 manufactured PCBs for a short period of time. So
19 you would have had no involvement with that?

20 A. No involvement with that, no, sir.

21 Q. Would you have made recommendations for
22 medical program for that facility?

23 A. No.

24 Q. They were on their own?

25 A. On their own.

1 Q. As a physician with Monsanto, what is
2 the first work that you recall that involved
3 PCBs?

4 A. That I was connected with?

5 Q. Yes, sir.

6 A. In 1938, there was a meeting at the
7 Harvard Medical School in which chlorinated
8 naphthalenes and chlorinated diphenyls were
9 discussed. They discussed historical events that
10 had occurred at Monsanto before I came aboard.

11 Q. Who attended that meeting at Harvard?

12 A. That I can recollect, I was the only one
13 from Monsanto. It was chaired by Professor
14 Drinker of the Harvard School of Public Health,
15 and I just don't remember who the other attendees
16 were.

17 Q. Was this a public forum or was it a
18 private meeting?

19 A. Well, it is hard to say what you mean by
20 public forum. I think almost anyone who had any
21 interested in chlorinated naphthalene or
22 chlorinated biphenyls was present.

23 Q. Was there a published proceeding of the
24 meeting?

25 A. Yes.

1 Q. Where was it published?

2 A. In a now defunct journal, the Journal of
3 Industrial Hygiene and Toxicology, something of
4 that nature.

5 Q. At the meeting, was the discussion
6 limited to the chlorinated products or did you
7 also discuss the raw materials that you used to
8 make chlorinated naphthalene and biphenyls?

9 A. To the best of my recollection, it was
10 limited to the final products.

11 Q. What in the way of health related events
12 did you discuss at that meeting?

13 A. We discussed chloracne, which as I said
14 had occurred historically at Monsanto, and
15 occurred at other -- at some users's places. We
16 discussed chlorinated naphthalenes with the
17 occurrence of chemical hepatitis in some of the
18 workers.

19 Q. Chemical hepatitis, effects on the
20 liver?

21 A. Yes, that is correct.

22 Q. The chloracne that had historically
23 occurred, do you recall what it was, historically,
24 that was discussed at Monsanto?

25 A. Well, some of the workers who were

1 engaged in manufacturing and/or filling of drums
2 had developed chloracne. When I came with
3 Monsanto in 1936, the first time I went down to
4 our Anniston plant, which was conceivably '37, but
5 I don't know. There were no residues, so I saw no
6 one with chloracne.

7 Q. It had been resolved by the time you got
8 there?

9 A. Yes, there were no cases there.

10 Q. What steps had been taken to resolve the
11 chloracne, if any?

12 A. Simple housekeeping, clean the place up,
13 have the men wear gloves and put a vacuum or
14 device to bring off -- to take away the hot vapors
15 when they are filling the fifty-five gallon drums.

16 Q. Would you happen to recall about what
17 the temperature of the material was when it was
18 drummed?

19 A. No, I wouldn't.

20 Q. Do you know if it had been hot enough if
21 it splashed on people it would have burned their
22 skin, from a temperature standpoint?

23 A. I can't answer that. I do not recall
24 that skin burns were a prominent feature of the
25 workers that I met in 1937 onwards.

1 Q. So while you can't specifically recall,
2 you didn't find any burn problems, so probably
3 wasn't temperature burn standpoint that there was
4 any concern?

5 A. Well, I can't say that, either.

6 Q. Just don't recall one way or the other?

7 A. I just don't recall whether or not they
8 had burns. If they were wearing gloves, it would
9 forestall any burns, even if the material were
10 pretty hot.

11 Q. When you say clean the place up, can you
12 tell me a little bit better what you mean by
13 that?

14 A. Yes. In other words instead of using a
15 dirty rag to wipe off the tops of the drums
16 repeatedly, they would use cloths which they would
17 discard into a closed container.

18 Q. Use a new cloth each time they cleaned
19 up a mess?

20 A. I don't know, but they used it much less
21 frequently than they had in the past.

22 Q. Anything else that you recall?

23 A. Well, the exhaust ventilation.

24 Q. They added exhaust ventilation?

25 A. Yes. And they added gloves.

1 Q. Where was the exhaust ventilation
2 added?
3 A. Where?
4 Q. Yes, sir.
5 A. Well, the material came out of a vessel,
6 spout, and went down a bong of a fifty-five gallon
7 drum and they put the exhaust apparatus around the
8 bong so it would draw the vapors.
9 Q. So that was the filling operation?
10 A. That is correct.
11 Q. At the Monsanto plant in Anniston in the
12 '30s, was any medical monitoring of these
13 employees conducted?
14 A. Yes, it was.
15 Q. Did you become familiar with what had
16 been done or what was being done?
17 A. Yes.
18 Q. What did you find?
19 A. What did I find? I don't understand the
20 question.
21 Q. Well, in the '30s, what kind of medical
22 monitoring was being done and what was the result
23 of it?
24 A. We had a plant physician that examined
25 these individuals on an annual basis. There were

1 some liver function tests carried out at that
2 time, not as much as would be now because at that
3 time it required two intervenous injections, an
4 intravenous injection, and it was not
5 enthusiastically accepted. But that result was we
6 found no evidence of chloracne, we found no
7 evidence of malignancy, we found no evidence of
8 hepatitis or liver involvement.

9 Q. About how many employees would we be
10 talking about? I know it has been a long time
11 ago, but can you give your best estimate?

12 A. Twenty.

13 Q. Were these employees that were doing the
14 drumming or do you recall what jobs they might
15 have had?

16 A. Well, they all worked in the same
17 department. So they rotated different jobs.
18 During the drumming operation, there were only one
19 or two people at the drumming operation at the
20 time. Four shifts a day, that is eighty people
21 there, but whether they rotated between that
22 operation and other operations in the chlorination
23 or manufacturing of diphenyl, I don't know.

24 Q. Were there other biological monitoring
25 activities going on at the Anniston plant besides

1 just those involved in PCBs?

2 A. At that time?

3 Q. Yes, sir?

4 A. In the '30s?

5 Q. Yes, sir?

6 A. No.

7 Q. What was it that, for lack of better

8 terminology, drew attention to the PCB activity as

9 opposed to -- well, why did you have a program for

10 the PCB workers is what I want to know?

11 A. Because we had historically an addition

12 of chloracne. There was considerable interest

13 displayed as a result of occurrences of

14 chlorinated naphthalene and mixtures of chlorinated

15 naphthalene and chlorinated biphenyl and various

16 users, and there was the Drinker symposium.

17 Q. The user problems or user interest that

18 Mr. Drinker was -- Dr. Drinker helping you with,

19 what --

20 A. Pardon me. He was not helping us.

21 Q. The symposium you mentioned covered user

22 activities. What users are you talking about, and

23 what kinds of activities?

24 A. There were several companies in

25 Massachusetts. Whether these companies were wire

1 coating or whether they were transformer
2 companies, I don't know. At that particular time,
3 PCBs were used for insulating electric wires.

4 Q. And those users were having chloracne
5 problems?

6 A. Yes. And they had chemical hepatitis.

7 Q. Were they using chlorinated naphthalenes
8 or using PCBs?

9 A. I think that depends on what job we are
10 talking about. If it is wire coating, it is
11 almost, to the best of my knowledge, it was
12 entirely chlorinated naphthalenes, whether there
13 was five percent or ten percent PCBs in it. If it
14 was a transformer operation it would not have
15 chloracne -- it would not have been chlorinated
16 naphthalene, it would have been PCBs.

17 Q. Were there other manufacturers of
18 chlorinated naphthalene besides Monsanto?

19 A. Monsanto was not a manufacturer of
20 chlorinated naphthalene.

21 Q. Were there other manufacturers at the
22 symposium besides Monsanto?

23 A. I feel sure there were, but I cannot
24 name them.

25 Q. What about some of the parties in this

1 case, did anyone from Westinghouse attend that
2 meeting?

3 A. I don't remember.

4 Q. GE?

5 MR. HALL: It is only forty-eight years
6 ago.

7 Q. I have to ask.

8 How about General Electric?

9 A. Yes, I believe General Electric was.

10 Q. In your medical work at Monsanto, can
11 you recall the next grouping of activities or
12 series of activities that you were involved with
13 concerning PCBs?

14 A. We handled PCBs as we would any
15 industrial chemical. We afforded our workers the
16 same examination we afforded the other workers.
17 There were isolated instances in which a company
18 would write into us and it would be referred to me
19 about various questions about safe handling of
20 PCBs, and I recall one instance where -- I don't
21 know the year or I don't know the company, their
22 workers were making thermometers, billows type
23 thermometer which was sort of like a little sack
24 about two inches in diameter and an inch thick and
25 they were filling this with PCBs and they were

1 filling it with their ungloved hands and they had
2 two or three of their workers with chloracne.

3 I went up to that particular place and
4 said, look, can't you use an instrument to dunk
5 these things in the PCBs, which they did, and that
6 took care of it.

7 Then there was one article in the
8 literature about sixties, I believe, in Indiana
9 where this material was used as a heat transfer
10 agency, it was a jury rigged affair, and it leaked
11 for about three days. The material obviously --
12 heat transfer was elevated temperatures and an
13 individual inhaled and developed, again, a
14 chemical hepatitis with jaundice, from which they
15 recovered.

16 I did not see that case, and it was
17 brought to my attention when it appeared in the
18 literature.

19 Other than that, until the environmental
20 aspects of PCB surfaced, it was very little that
21 brought PCBs to my attention.

22 Q. That would be in the late sixties when
23 the environmental concerns --

24 A. Late sixties or early seventies.

25 Q. Were you involved in labeling of

1 Monsanto materials?

2 A. It depends on the time frame.

3 Q. Early on, in the '30s or '40s, '50s?

4 A. No.

5 Q. Who would have been doing labeling of

6 your products in that era?

7 A. I don't remember. I don't know.

8 Q. Was the medical group that you headed

9 apart from any industrial hygiene or toxicology or

10 any other activities of Monsanto or did you even

11 have those activities in the '30s, '40s or '50s?

12 A. In the '50s we did. In the fifties we

13 engaged one industrial hygienist, I think that was

14 probably in the early '50s. By the time I left,

15 we had four or five industrial hygienists. In the

16 '60s, we engaged one toxicologist, and by the time

17 I left, we had four toxicologists, but I can't

18 tell you when each of them came up.

19 Q. Who was the first industrial hygienist,

20 if you recall?

21 A. Elwin Wheeler.

22 Q. Was any air sampling for PCBs conducted

23 at any of Monsanto's plants that you are aware

24 of?

25 A. Not that I can recollect. I am not

1 sure. It might very well have been, but I just
2 cannot recollection it. I think it may have, but
3 I just can't answer that.

4 Q. Would it be safe to say that no air
5 sampling was done prior to hiring an industrial
6 hygienist?

7 A. I do not know if any was done by the
8 insurance carrier at the time of the -- in the
9 '36 period when we had -- when they had
10 chloracne. I was not there then. I do not recall
11 anything done following that, because we had no
12 problems.

13 Q. Was it a regular practice of Monsanto to
14 have their insurance carriers provide industrial
15 hygiene services?

16 A. At one time it was.

17 Q. About what time period are we talking
18 about?

19 A. As far as I can tell, '37. We had --
20 Liberty Mutual at that time was insurance carrier
21 and they had industrial hygienists that they
22 provided services to their policyholder. They did
23 some hygiene measurements, but I don't recall.

24 Q. What did Mr. Habershal come in, did you
25 ever work with him?

1 A. No.

2 Q. Did Liberty Mutual or whoever the
3 carrier might have been provide you with reports
4 of their surveys?

5 A. I am sure they did, but I don't remember
6 anything of the content.

7 Q. But it was a practice to write down the
8 results of what they found?

9 A. Are we talking about anything now or
10 PCBs?

11 Q. Anything.

12 A. I am sure they told us when they went
13 into a plant and did some sampling, but to the
14 best of my knowledge -- well, I do know there was
15 something strikingly out of line in it. So -- but
16 I don't know the figures and I have no
17 recollection of what products they examined for.

18 Q. Do you know if there is any place that
19 those reports might be retained?

20 A. I haven't the slightest idea, and I
21 would doubt very much if they are retained for
22 forty-five years.

23 Q. Over the years, in any time period that
24 you are aware of, have any of the employees of
25 Monsanto been followed biologically, in biological

1 monitoring for PCBs other than what you told me
2 about in the '30s?

3 A. Yes. Once in either late '60s or early
4 '70s I examined a group at the Krummrich plant,
5 that is at the Sauget plant in Illinois. And I
6 presume by biological monitoring, you mean
7 checking their body fluids for the presence of
8 PCBs.

9 Q. Fluids or tissues?

10 A. At no time were tissues examined.

11 We did run, on these individuals, a
12 blood PCB. You must remember the techniques for
13 examining anything for PCBs in organic fluids was
14 was pretty difficult until some time around the
15 late '60s or '70s.

16 Q. Do you recall approximately how many
17 people you looked at at that occasion?

18 A. In the neighborhood of twenty.

19 Q. So the workforce making PCB was
20 relatively stable in number over the years?

21 A. I think you told me about twenty at
22 Anniston?

23 A. Well, I can't answer that whether it was
24 stable or not. We are talking about two different
25 plants, remember, and obviously we made more PCBs

1 in the '60s than we made in the '30s. Whether we
2 had an increased work force or not, I don't know.

3 Q. Any other occasions that you can recall
4 of doing any biological monitoring?

5 A. No, I cannot recall.

6 Q. I take it while you were with Monsanto,
7 you did not have an epidemiology program
8 in-house?

9 A. Did not.

10 Q. Did you ever contract with anyone else
11 or work with anybody else on doing any
12 epidemiological studies of Monsanto employees?

13 A. No, I did not.

14 Q. The toxicity testing, I think you said
15 while you were with Monsanto, you did hire some
16 toxicologist. Were they in your department?

17 A. Yes.

18 Q. Did they perform or have performed any
19 tests on PCB containing materials?

20 A. That is a double question. They did not
21 perform the test. They had them performed.

22 Q. Can you tell me what they had performed
23 and what your recollection is of when?

24 A. They had some performed at the
25 University of Cincinnati, the Kettering

1 Institute. They had some performed at the
2 industrial biotech laboratory in Chicago.

3 Q. Do you recall when the Kettering work
4 was done?

5 A. It was done before the industrial
6 biotech work was done. It was inhalation studies,
7 and it was reported in the literature, so it would
8 be easy to find, but I don't remember the decade
9 that it was done.

10 Q. Would you recall what products were
11 tested?

12 A. I know 1254 was and I believe 1242.

13 Q. The IBT work, do you recall what
14 products were tested there?

15 A. Again, 1254 was. I don't recall if any
16 others were done at the same time.

17 Q. Do you remember the approximate dates of
18 the IBT work?

19 A. Late '60s.

20 Q. Did you know Joe Kliner?

21 A. Yes.

22 Q. Do you still communicate with Joe?

23 A. No, I haven't talked to Joe for ten
24 years.

25 Q. Are you aware of any follow-ups to the

1 Harvard symposium? Was there a second symposium
2 or any other work groups or any other meetings
3 that evolved from that symposium?

4 A. I can't think of any. I don't recall
5 any at all.

6 Q. Were you ever involved in determining
7 either through measurement or through estimation
8 any exposures of any Monsanto employees to PCBs?

9 A. Well, again, I would say I went through
10 the plants before I had an industrial hygienist on
11 a yearly -- at least yearly basis, and I would
12 inspect the plants and I would look over the
13 housekeeping and I would look over the presence of
14 exhaustion ventilation. I would speak to the
15 plant physician about occurrence of chloracne or
16 non occurrence of chloracne, as it was, and if
17 that is what you mean by observance, yes, I did.

18 Q. Did you follow up your visits to the
19 plants with any kind of written report or
20 memorandum?

21 A. Well, there would be a memorandum to
22 file and memorandum to the plant physician -- to
23 the plant manager.

24 Q. Do you know where those reports would be
25 maintained?

1 A. Now?

2 Q. Well, let's talk about when you left?

3 A. No, because we had what was called a
4 retention policy, which was to keep us from being
5 swamped by paperwork. And, so, we had two files
6 that we talked -- in our medical department on a
7 particular product. We had a product file, which
8 would consist of information, letters from
9 customers, and a plant file, which was related to
10 the plant. At five year intervals or so, we would
11 discard material that did not appear to be of
12 current interest, so I haven't the slightest idea
13 where that material is.

14 Q. How did you go about following the
15 medical and scientific literature in pre-computer
16 era?

17 A. Well, first of all, medical literature,
18 in the pre-computer era was not as extensive as it
19 is now. There were probably three, at the most
20 four journals in the English language relating to
21 toxicology, industrial hygiene and occupational
22 medicine. We subscribed to all those and
23 circulated them around our department and kept up
24 that way.

25 After the department enlarged, the

1 various people would examine various magazines and
2 if there was something of interest to all of us,
3 they would photostat it and send it around to us.

4 Q. Were there any professional
5 organizations that dealt with occupational
6 medicine or industrial hygiene that your people
7 regularly attended?

8 A. Yes. I attended the industrial medical
9 association, now called the occupational medical
10 association. There was an American Academy of
11 Occupational Medicine, which I attended, and after
12 a while, I spent more time there than I did with
13 the occupational medical association because that
14 was -- had different points of view. They were
15 related more to the business side of occupational
16 medicine. There was, in the late seventies, there
17 was a toxicological plan that our toxicologist
18 attended, in was an industrial hygiene association
19 that our industrial hygienist attended.

20 Q. You mentioned the late seventies. You
21 left --

22 A. I'm sorry, the seventies. Industrial
23 hygienist, that was through the sixties.

24 Q. I think it was the toxicology -- you
25 said the late seventies?

1 A. That was an error. The Toxicological
2 Society started about three or four years before I
3 left Monsanto. So it must have been '70, '71
4 era.

5 Q. What has been your relationship with
6 Monsanto since 1974?

7 A. Well, I get their newsletters, I get
8 invited to the senior dinners, I have been
9 consulted by them on some cases, I have given
10 depositions in various cases and have testified
11 various times.

12 Q. Do they pay you a consultant's fee when
13 they utilize you for these various capacities?

14 A. Yes, they do.

15 Q. Were you ever involved in any
16 epidemiological studies that Monsanto has
17 conducted which pertain to PCBs?

18 A. No.

19 Q. And that is true even through today with
20 your consulting capacity with them?

21 A. That's correct.

22 Q. Do you know if Monsanto has ever looked
23 at any other employee tissues and fluids in
24 biological monitoring other than the episode you
25 told me about earlier in the sixties looking at

1 blood even through today?

2 A. I don't know of any.

3 Q. Do you know if there were ever any
4 health related problems from PCBs at the Sauget
5 plant?

6 A. From 1938 until 1974, there were none.
7 I don't know anything after 1974.

8 Q. And prior to '38, was it one of the
9 plants -- I guess it was built thereabouts?

10 A. It is an old plant, but I do not believe
11 any PCBs were manufactured at Sauget until some
12 time in the fifties or sixties.

13 Q. What about at any of the other plants,
14 this -- I don't know if I wrote down the name of
15 it, the Queenie plant in St. Louis, did it have
16 PCBs?

17 A. I don't think it did.

18 Q. I guess there wouldn't be any health
19 related effects from PCBs to anybody there?

20 A. They weren't there, because I don't
21 believe they had any PCBs, and as I said before,
22 there were no PCB related health effects to any of
23 the people at Sauget or Anniston.

24 Q. The UK facility that Monsanto had that
25 made PCBs, was that under your auspices, also?

1 A. Yes.

2 Q. That was a later constructed plant, as I
3 recall from Mr. Papageorge's testimony. He said
4 in the fifties. Does that jive with your
5 recollection?

6 A. The first time I went over to England
7 was in '54, and they had the plants then. And
8 they had a doctor, full time doctor, Dr. Newman.
9 And I talked to him and we asked him about the
10 situations. There were no problems at the English
11 installation.

12 Q. You were hired full time in 1936 by
13 Monsanto?

14 A. No, part time in '38.

15 Q. And how long --

16 A. Full time in 1945 or '48. Four years --
17 '48.

18 Q. Was there a medical director at Monsanto
19 prior to you in this area?

20 A. No, I was the first one.

21 Q. When did you get your first full time
22 assistant, approximately?

23 A. Not until some time in the Fifties. We
24 had part time assistants all along. We had two
25 part time assistants and then we engaged a full

1 time assistant, I think in early fifties.

2 Q. Do you recall who your first full time
3 assistant was?

4 A. Yes. Dr. Johnson.

5 Q. Where is Dr. Johnson?

6 A. He is director of environmental health
7 for BF Goodrich in Akron.

8 Q. Do you recall when he left Monsanto's
9 employment?

10 A. I guess around '69 or '70.

11 Q. Did you hire any other full time
12 businesses after Dr. Johnson?

13 A. Dr. Roush. Dr. Roush, engaged him after
14 Dr. Johnson left us.

15 Q. Where is Dr. Roush today?

16 A. He out to be at 800 North Lindberg.

17 Q. He is still at Monsanto?

18 A. Yes.

19 Q. Did Dr. Roush succeed you as medical
20 director, then?

21 A. Yes.

22 Q. Did he hire a replacement when you
23 left?

24 A. Well, he hired -- I forgot to mention I
25 stayed on as a paid consultant for a year. And at

1 that particular time, he had at least two other
2 full time physicians. I do not know in what
3 capacity he hired them. But, then, his scope of
4 the department has increased considerably.

5 Q. Who were those two gentleman at that
6 time if you recall?

7 A. Dr. Ernest Tillman, who is now with Olin
8 Matheson, if I am not mistaken, and a Dr. James
9 Spraul, S-P-R-A-U-L, who is still with Monsanto.

10 Q. I asked Mr. Papageorge a bit about how
11 you make PCBs, and he told me, and I don't know if
12 I can remember it all, but I understand one of the
13 building blocks is biphenyl?

14 A. That's correct.

15 Q. Did you identify any potential health
16 affects that could be related to biphenyl?

17 A. None.

18 Q. And he told me that, I think, you make
19 the biphenyl from Benzene, that is the beginning
20 product?

21 A. Yes.

22 Q. Were you able to identify any health
23 related problems that could be associated with the
24 Benzene?

25 A. No. The Benzene is run into a closed

1 container which is heated by a liquid lead bath
2 which hooks up the two Benzene rings which makes
3 diphenyl, and then diphenyl is pumped out of that
4 through into a chlorinated and it is chlorinated
5 to various degrees of chlorination.

6 Q. Would you have had any biological
7 monitoring programs of your employees at Monsanto
8 for either the biphenyl or Benzene over the
9 years?

10 A. As far as biphenyl is concerned, no.
11 Biphenyl was something that was regulated as
12 almost a food additive. I cannot answer whether
13 we ran blood counts on people who might have been
14 exposed to Benzene, but we considered their
15 exposure insignificant.

16 Q. And I guess chlorine is the other
17 component we haven't mentioned in the
18 manufacturing, yet. How about for chlorine, were
19 there any biological monitoring programs or any
20 effects you were looking for?

21 A. There is no biological monitoring you
22 can do for chlorine. And yearly examination, what
23 was done, chlorine causes an asthmatic type of
24 breathing and it is very easily picked up if you
25 have any excess or repeated exposure to chlorine.

1 Q. Mr. Papageorge told us one of the
2 cautionary statements that accompanied the PCBs
3 had to do with prevention of inhaling materials.
4 And he described a cold like symptom that you
5 could get if you did inhale PCBs. Is that
6 something you can distinguish between whether it
7 was PCBs or whether it was chlorine or are these
8 two different things we are talking about?

9 A. Well, the material, at elevated
10 temperatures, and in confined spaces is irritating
11 to the lungs, but the main concern --

12 Q. Which material?

13 A. PCB is. Both of them are. Chlorine, if
14 I had to quantify it, I would think chlorine is
15 somewhat worse. But the main problem of avoiding
16 inhaling PCB is to avoid systemic action on the
17 liver.

18 Q. That is the chemical hepatitis you were
19 telling us about?

20 A. That's correct.

21 Q. Have you seen any epidemiological
22 studies done on the employees that made PCBs for
23 Monsanto?

24 A. No, I haven't.

25 Q. Do you know if they exist?

1 A. I have heard about them, but I know they
2 did some.

3 Q. Do you know the results of what they
4 found?

5 A. No.

6 Q. Did you have any input at all into that,
7 those studies?

8 A. No.

9 Q. Did you have a practice of publishing
10 your medical findings when you were at Monsanto?

11 A. No. There really wasn't time.

12 Q. Have you had an opportunity to publish
13 any scientific or medical literature yourself?

14 A. About PCBs or about other things?

15 Q. Other things?

16 A. Yes.

17 Q. Would you happen to have a bibliography
18 of your publications?

19 A. It is not that large.

20 Q. Perhaps you could tell me, then, what
21 they are?

22 A. Two of them were with -- concerned a
23 bladder carcinogen. That was in the journal --
24 New England Journal of Medicine and one in the
25 National Cancer Institute. I was not the

1 principal author. There were four of us there.

2 Q. What compound did that deal with?

3 A. Para-aminobiphenyl, which is entirely
4 different from PCBs. No chlorination and has an
5 amine radical. It is entirely different.

6 And the other one was one in the
7 American Public Health Journal which was just sort
8 of a resume of toxilogical findings. It was quite
9 some time ago. Another one was in the Missouri --
10 Journal of Missouri State Medical Association
11 which was much like the public health one. Didn't
12 deal with any specific compounds.

13 Q. That is basically your bibliography?

14 A. That is it.

15 Q. What was your association with the
16 biphenyl?

17 A. With which?

18 Q. I'm sorry, the compound you described,
19 what was it the amino compound, was it?

20 A. Yes. Aminobiphenyl. It was
21 manufactured at two plants, and manufactured and
22 used in three plants at Monsanto.

23 Q. Did you find it to be a bladder
24 carcinogen?

25 A. Yes, it was.

1 Q. In your work as the medical director,
2 did you have contact with other company's medical
3 directors, in particular, say, General Electric's
4 medical director?

5 A. Yes.

6 Q. Did any of those discussions or contacts
7 ever involve PCBs?

8 A. I can't recall if they did or not. It
9 is not very prominent in my recollection.

10 Q. What about with Westinghouse, would you
11 have had contact with Westinghouse medically?

12 MS. OLIVER: Objection. Lack of
13 foundation.

14 Q. You may still answer, if you can.

15 A. No, I don't know if Westinghouse had a
16 medical director or not. I don't remember. I
17 remember the General Electric medical directors
18 and we had a group called medical directors forum
19 of which there were thirty-five medical directors
20 of various multi planned operations and General
21 Electric medical director was at that. But
22 Westinghouse was not. So I can't answer your
23 question.

24 Q. What was the time period of this group?

25 A. '50s onward.

1 Q. Did you hold regular sessions or was it
2 an ad hoc type of thing?

3 A. They had regular sessions. There were
4 no minutes. It was a myriad of topics were
5 brought up, Some had to do with policy, some had
6 to do with how much do they pay medical directors
7 how much do you pay your industrial hygienist,
8 things you just don't find out unless you talk
9 about them in groups.

10 Q. Did that group continue to function
11 through '74 when you retired?

12 A. Yes, it is still functioning.

13 Q. What about a company called Transformer
14 Consultants?

15 A. Never heard of them.

16 Q. Research-Cottrell?

17 MR. HALL: What is the question?

18 MR. HOBSON: If he has had any contacts.

19 A. I have had no contacts with them. I
20 know that they were supposed to be an
21 environmental company that was supposed to go
22 through the ceiling on the New York stock
23 exchange, which I had no financial or business
24 dealings with them or medical dealings.

25 Q. What did you do during the war?

1 A. I was with chemical warfare service at
2 Pine Bluff Arsenal and Edgewood Arsenal. I was in
3 charge of their occupational medical programs.

4 Q. Mr. Papageorge mentioned that he was
5 aware of some Department of Defense useages of
6 PCBs. Did any of that ever come up while you were
7 in the Army?

8 A. No.

9 Q. Had Monsanto begun its program of tier
10 testing toxilogically while you were with
11 Monsanto?

12 A. Tier testing?

13 Q. Yes, sir, testing toxilogically
14 compounds as they were developed, do certain tests
15 at the bench sale level, certain tests at pilot
16 plant, certain tests at certain phases of
17 marketing?

18 A. If we are talking about the same thing,
19 we talked -- we had a new compound or compound
20 that was liable to be used in laboratories for
21 development work, we had what we called a package
22 toxicology tests which included dropping into
23 rabbits' eyes and see how irritating it was in the
24 eyes. Yes, we did that.

25 Q. Do you know about when that program was

1 begun?

2 A. '50s. Late '50s.

3 Q. Would that have preceded your employment
4 of a toxicologist?

5 A. Yes.

6 Q. Is that something you began?

7 A. Yes.

8 Q. How did or did that program change with
9 time while you were the medical director?

10 A. Certainly. They always did the same
11 package test on compounds, but as the interest and
12 demand for toxilological information occurred, we
13 had to enlarge it to either longer term animal
14 work or skin work or other things.

15 Q. While you were with Monsanto, did you
16 ever do any toxicological testing in-house or was
17 it always on someone else's premises?

18 A. We did no toxilological testing of
19 animals. We might have done a couple of series of
20 patch tests on people. We didn't do any more than
21 one or two of that. It was too much of a hassle.

22 Q. Dr. Kelly, would you have any knowledge
23 about any changes, if they occurred, in the
24 chemical composition of the various PCB materials
25 over the years?

1 A. No, I wouldn't.

2 Q. Were you involved at all, from a medical
3 standpoint, in the incineration of PCBs at your
4 Sauget, Illinois plant?

5 A. No, except that I knew they had one
6 there or they were building one. That occurred
7 very close to the time I left.

8 Q. Did you have anything to do with
9 prescribing any tests or any protective equipment
10 or anything like that to be done either on the
11 employees or provided to the employees?

12 A. Wait. Break that down into individual
13 questions.

14 Q. Yes, sir. I just want to know if
15 medically you had any input into the procedures
16 they would have followed?

17 A. At that particular time, in the early
18 seventies, we looked over any development
19 bulletins that went out, we looked over labels at
20 that time, and we prescribed -- advised against
21 breathing it at elevated temperature, repeated or
22 prolonged skin contact, do not take internally,
23 yes, I had that relationship.

24 Q. When you say elevated temperatures, can
25 you give me an idea what you are talking about?

1 A. Well, it varies with the PCBs. They
2 have vapor pressures that vary considerably. At
3 ambient temperature, there is no great problem.
4 Elevated temperatures, 200 degrees C, you wouldn't
5 want to breath it in a closet.

6 Q. That is the best you can do on what
7 elevated temperature means?

8 A. Yes. I think people recognize that
9 elevated means significantly over ambient
10 temperature, and I don't believe they quantified
11 the term significant.

12 Q. Do you know if there is any kind of a
13 guideline or standard for concentration of PCBs
14 that worker exposure is to be controlled by?

15 A. Yes. First of all, the government
16 industrial hygienist put out a standard for
17 chlorinated biphenyls of various chlorine
18 concentration. It was based on the Cincinatti
19 work that Monsanto fostered. Then when the OSHA
20 came in, OSHA developed certain standards which
21 listed the amount for eight hour day with
22 presumably ceiling levels.

23 Q. The work at Cincinatti, the Kettering
24 work, that was in the '50s, I think you told me?

25 A. I thought it was the late '50s or early

1 '60s. I am not sure.

2 Q. And that was the basis of the American
3 Conference of Environmental Hygienists were?

4 A. That was the only information around. I
5 can't speak for them, but it was one of the
6 factors that led them to establish a safe working
7 level.

8 Q. Do you recall if at that time it was a
9 maximum allowable concentration or whether it was
10 a threshold limit value?

11 A. I think it was MAC, maximum allowable
12 concentration, at that time. I believe. I am not
13 certain.

14 Q. Did you get input to the committee that
15 established that standard?

16 A. I don't recall that I did. I don't
17 think so.

18 Q. Do you remember who was on the
19 committee?

20 A. No idea.

21 Q. What use was made of the ACGI MACs in
22 that time period from a regulatory standpoint, if
23 you know?

24 A. I don't know.

25 Q. Do you recall if it had a skin

1 notation?

2 A. Yes. They had a skin notation meant it
3 could be absorbed through the skin. Yes, it did
4 have that.

5 Q. Was it listed by its trade name or by
6 its chemical name?

7 A. I believe it was listed by the chemical
8 name, because there were quite a few trade names,
9 it was Aroclor, Inerteen, Pyranol, so I think it
10 was listed as chlorinated biphenyl fifty-four
11 percent chlorine, forty-two percent chlorine.

12 Q. I think you mentioned earlier you
13 visited at least three of the plants that made
14 PCBs. You told me about the UK visit?

15 A. Anniston.

16 Q. And Sauget?

17 A. That's correct.

18 Q. Can you tell me any differences in your
19 observations at those plants or were they all
20 about the same?

21 MR. HALL: As to what topic?

22 Q. PCBs and manufacturing and what you
23 observed as the medical director as you walked
24 around?

25 A. I can't recall any differences, with the

1 exception that the Wales plant, Newport, England
2 plant was a more modern one than the Anniston
3 plant. That is the extent of my recollection.

4 Q. Would you be in a position to say,
5 especially back in the '40s, '30s and '40s and
6 '50s when you made these walk-throughs, would the
7 employee exposures, if any, have been higher or
8 lower at any one plant or would they be the same?

9 A. I would think -- I believe they are all
10 the same, and they are all extremely high from
11 observational point of view.

12 Q. Would they have -- if employee exposures
13 have changed any with time, would they have gotten
14 higher or lower or would they have stayed the
15 same, based on your observations?

16 A. Well, I think employee exposures are
17 always improving due to employee practices. And,
18 so, I think if any, they may have been improving.
19 But at no time did I consider that there was a
20 significant hazard to any of the workers at the
21 three plants.

22 Q. But as a general trend, the exposures
23 would have been downwards with time?

24 A. I think that is correct.

25 Q. Would there have been any groups within

1 the plant that would have had a different exposure
2 than any other group? In other words, would
3 maintenance people have a different exposure than
4 operations people compared to drum fillers
5 compared to tank car fillers, any group,
6 comparison like that you can recall?

7 A. Maintenance workers usually have a
8 larger exposure because they are taking down
9 equipment; but they have less exposure from a
10 point of time. So they have probably higher --
11 well, maybe not, because they are not at elevated
12 temperatures, either, when they are working on
13 these, and it is down to room temperature. So I
14 cannot answer your question.

15 Q. Just can't decide?

16 A. Can't decide.

17 Q. What I would like to know is if you can
18 give me any guidance if we had a listing of the
19 different jobs that the employees at the two
20 plants, Anniston and Sauget, did, is there any way
21 that you know that we could go back in time and
22 say this group of jobs would be a relatively
23 speaking low exposure group, this group of workers
24 would be in a middle exposure group, and this
25 group of workers would be in a high exposure

1 group, without quantifying that, just
2 qualitatively high, medium and low, is there any
3 way you can categorize these jobs based on
4 exposure? I am talking about your personal
5 observations.

6 MS. OLIVER: And without speculating?

7 A. Yes. I don't think I can.

8 Q. So it would be your observation that any
9 attempt to do that would be just speculation?

10 A. I think it would.

11 MR. HOBSON: I think that is all I have.

12 CROSS EXAMINATION

13 BY MR. HALL:

14 Q. Dr. Kelly, how old a gentleman are you?

15 A. 76.

16 MR. HALL: Thank you very much.

17 Anybody else have any questions?

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COMES NOW THE WITNESS, DR. R. EMMETT
KELLY, and having read the foregoing transcript of
the deposition taken on the 26th day of September,
1986, acknowledges by signature hereto that it is
a true and accurate transcript of the testimony
given on the date hereinabove mentioned.

DR. R. EMMETT KELLY

Subscribed and sworn to me before this

____ day of _____, 1987.

My Commission expires: _____

Notary Public.

1 State of Missouri)
2) SS.
3 City of St. Louis)

4 I, ELSIE M. DELEVICH, a Notary Public in
5 and for the State of Missouri, duly commissioned,
6 qualified and authorized to administer oaths and
7 to certify to depositions, do hereby certify that
8 pursuant to Notice in the civil cause now pending
9 and undetermined in the United States District
10 Court for the Eastern District of Texas, Beaumont
11 Division, to be used in the trial of said cause in
12 said court, I was attended at the Danielle Hotel,
13 in the County of St. Louis, State of Missouri, by
14 the aforesaid witness; and by the aforesaid
15 attorneys; on the 26th day of September, 1986.

16 The said witness, being of sound mind and
17 being by me first carefully examined and duly
18 cautioned and sworn to testify the truth, the
19 whole truth, and nothing but the truth in the case
20 aforesaid, thereupon testified as is shown in the
21 foregoing transcript, said testimony being by me
22 reported in shorthand and caused to be transcribed
23 into typewriting, and that the foregoing pages
24 correctly set forth the testimony of the
25 aforementioned witness, together with the

1 questions propounded by counsel and remarks and
2 objections of counsel thereto, and is in all
3 respects a full, true, correct and complete
4 transcript of the questions propounded to and the
5 answers given by said witness; that signature of
6 the deponent was not waived by agreement of
7 counsel.

8 I further certify that I am not of
9 counsel or attorney for either of the parties to
10 said suit, not related to nor interested in any of
11 the parties or their attorneys.

12 Witness my hand and notarial seal at
13 St. Louis, Missouri, this 14th day of
14 January, 1987.

15 My Commission expires August 8, 1988.

16
17 Elsie M. Delwiche

18 Notary Public in and for the
19 State of Missouri.
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