GLENN BROWN, et al. v. MONSANTO CO.

DEPOSITION OF R. EMMET KELLY, M.D.
TAKEN JUNE 12, 1990
VOL. III

IN THE CIRCUIT COURT OF THE CITY OF ST. LOUIS

STATE OF MISSOURI

GLENN BROWN, et al,	)	
	)	
Plaintiffs,	)	
	)	
vs.	)	Cause No. 862-00694
	)	
MONSANTO COMPANY,	)	
	)	
Defendant.	)	

Volume III
Continued deposition of R. EMMET KELLY, M.D.
On behalf of Defendant
June 12, 1990

WALLER REPORTING, INC.
515 Olive Street, Suite 1506
St. Louis, Missouri 63101
(314) 621-2571

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Defendant.	)	

CONTINUED DEPOSITION OF R. EMMET KELLY, M.D., produced, sworn and examined on behalf of the Defendant, June 12, 1990, between the hours of eight o'clock in the forenoon and five o'clock in the afternoon of that day, at the offices of Communitronics, 1907 S. Kingshighway, St. Louis, Missouri, before TOD MINNIGERODE, a Certified Shorthand Reporter and a Notary Public within and for the State of Missouri.

A P P E A R A N C E S

The Plaintiff was represented by Mr. Thomas M. Carney of the law firm of Husch, Eppenberger, Donohue, Cornfeld & Jenkins, 100 N. Broadway, St. Louis, MO 63101.

The Defendant was represented by Mr. David McCrea of the law firm of McCrea & McCrea, 119 South Walnut Street, Bloomington, Indiana 47402.

IT IS HEREBY STIPULATED AND AGREED by and between Counsel for the Plaintiffs and Counsel for the Defendant, that this deposition continuation may be taken in shorthand by TOD MINNIGERODE, a Certified Shorthand Reporter and Notary Public, and afterwards transcribed into typewriting, and that the deposition is to be continued.

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R. EMMET KELLY, M.D.,

of lawful age, being produced, sworn and examined on the part of the Defendant, deposes and says:

EXAMINATION

QUESTIONS BY MR. MC CREA:

Q. Dr. Kelly, how are you this morning, sir?

A. Fine and yourself?

Q. Pretty good. When we last convened we were discussing Exhibit K-2, I believe, and if you would, sir, turn to page 1023 as indicated by the article page number at the top. The first full paragraph down about two-thirds of the way, it states, "In approximately one half of the workers exposed there developed comedones of a

TOWOLDMON0000411

particularly heavy and tenacious type with resultant sebaceous abscesses containing heavy yellow pus and serum." Can you again for us describe a comedone in layman terminology?

A. It's something between a blackhead and a boil. A boil is an infected comedone. A comedone is a plugged up sebaceous gland.

Q. And when it says of a particularly heavy and tenacious type, could you break that definition down for us?

A. I don't know what he means by heavy. Tenacious means like if I use a common definition means it took a little while to get well. You realize here he's talking about chloracne in Europe, not PCB's at all. This is chlorinated naphthalene he's talking about in this.

Q. All right, sir, and that's identified in that paragraph as chlorinated naphthalene?

A. Yes. He refers to it as hexachlorobenzene -- Well, it's all chlorinated naphthalene. In 1918, these cases were long before PCB's were invented.

Q. Is that the same general family of chemicals, chlorinated hydrocarbon family?

A. Well, it depends on how widespread you include the family. I mean, Italians and Irish and Indians are all in the same family, but chlorinated

naphthalene is a different thing entirely than chlorinated diphenyl.

Q. What are the chemical elements in chlorinated naphthalene?

A. Chlorine, hydrocarbon -- chlorine, hydrogen, carbon.

Q. And those would be the same chemical elements in a PCB, correct?

A. Oh, yes, but it depends how they're --

Q. Arranged?

A. Arranged. Coal is carbon, diamonds are carbon, but they're a little different.

Q. Could chlorinated naphthalene be accurately described as a chlorinated hydrocarbon?

A. In one sense, yes. Usually people do not refer to a ring compound, which the naphthalene is, as a hydrocarbon. It's usual, the usual termination -- terminology for hydrogen is a straight chain carbon with chlorine on it. But you could use that as a definition, yes.

Q. In manufacturing chlorinated naphthalene do you begin the process with benzene as you do with PCB's?

A. I don't know how they make it.

Q. It also states in that sentence, "With resultant sebaceous abscesses." Can you define that for

us?

A. An abscess is a boil. Sebaceous means a sweat gland.

Q. And then it said --

A. An oily gland of the skin. It's an oil gland of the skin.

Q. Containing heavy yellow pus and serum?

A. Once it's infected, that's what the pus is.

Q. Then it states in the next sentence that -- and I'm having a little difficulty reading, it looks like Teleky, T-e-l-e-k-y?

A. Yes, sir.

Q. "Believes that the disease was due directly to the halogen content of the substance," and by that is he referring to the chlorine content?

A. Yes.

Q. Turning over to page 1024 -- Well, actually down to the bottom of 1023, it says, "Others," and then a series of names, "Consider it to be dermatitis due to the absorption of chemical compounds by the lungs or gastrointestinal tract with elimination by way of the sebaceous glands."

MR. CARNEY: I'm going to object to this line of questioning. Are we still talking about a condition with exposure to chlorinated naphthalenes?

MR. MC CREA: Yes, I presume that we're still talking --

Q. (By Mr. McCrea) That still relates to chlorinated naphthalenes, does it not, Doctor?

A. Yes.

MR. CARNEY: I'm going to object to the relevancy of that as opposed to the case we're involved in, which is PCB's, and PCB's in any case are not the same as chlorinated naphthalene.

Q. (By Mr. McCrea) Dr. Kelly, was there -- Were there varying opinions as to the manner in which chlorinated naphthalenes caused the eruption on the skin? Did some authors believe it was an irritation, did some believe it was the elimination of the chemical through the sweat glands and did others believe it involved liver enzymes?

A. I don't know where the enzymes are, but that was a later belief. The first two beliefs I believe about such as Teleky in 1918 was discarded sometime around the 1960's or seventies. But to answer your questions; yes, with the exception that it was believed that there was some change in the fat metabolism and the enzyme activity of the body, yes.

Q. And Teleky, his belief was what, that was later changed in the sixties and seventies?

TOWOLDMON0000415

A. Well, I don't know exactly what Teleky thought back there in 1918; but at that time the people believed that this material got on your skin, plugged up the sweat glands and caused it that way.

Q. And could --

A. I think that was a pretty rudimentary approach to it.

Q. And could that be described as more of an irritant effect rather than a systemic effect?

A. Well, irritant has a particular definition. If you put paint remover into your skin you get red, that's an irritation. Here we are not talking particularly about irritation, we're talking about chloracne.

Q. Then below that on page 1024 is, "Report of a Case," and in somewhat fine print it has, "History," of a case, and it describes the actual symptoms of a worker who was employed for Swann Chemical, is that correct?

A. That is correct.

Q. And does this article then go on -- does it just have the one case history, Doctor?

A. Well, it gives a short sketch of the sixteen cases but they just gave the detailed history of Mr. O.D., whoever he was.

Q. Would O.D. be the initials of an individual?

TOWOLDMON0000416

A. That's correct.

Q. And then on page 1025 it gives a summary of the symptoms and treatment in sixteen cases of acneform eruption, is that correct?

A. Yes, sir.

Q. Was it this author's belief that the acneform eruptions were the result of exposure on the surface of the skin, and that it was not the result of systemic poisoning?

A. I'll have to look. I don't think he has come out with anything. He does say that some of the problem may have been due to skin irritation of -- He doesn't make any positive statement of what he thinks is the cause, whether it's systemic or local action.

Q. All right, sir. In the report of a case which is described on page 1024, in the first paragraph it gives a description of blackheads on his face, neck, arms and legs. Does that fairly well speak for itself?

A. Yes, sir.

Q. In your opinion would that be an indication of chloracne?

A. Not of and by itself. It depends really on what they looked like.

Q. What would indicate to you that that condition of blackheads on his face, neck, arms and legs

TOWOLDMON0000417

would be chloracne?

A. If it started around the cheekbones. If there were some pigmentation, it's -- Mr. O.D., being a black man, I don't know of how well pigmentation could have been observed.

Q. Is it your opinion that if the condition does not present itself initially on the cheekbones that you do not have chloracne?

A. No. No, I don't say that; but the majority of them do start around the cheeks, around the eyes and around the ears.

Q. The next phrase states, "These areas itched slightly." In your opinion could slight itching of the skin of a worker exposed to PCB's be an indication of chloracne?

A. I don't think so. It all depends on what else he might be exposed to, how long the PCB's were on his skin. Itching in a chemical plant could come from a great number of things.

Q. Is itching a condition caused by an irritant effect on the skin or a systemic involvement of the chemical?

A. In a worker it's due to the action on the skin. In some cases there are allergic reactions that are systemic that are accompanied by itching.

TOWOLDMON0000418

Q. If an individual is working in PCB's and experiences a condition of itching would that then indicate exposure of the skin to PCB's?

A. Again it depends on what else he might be exposed to. Maybe he was exposed to chlorine, maybe he was exposed to solvents.

Q. If there was no other chemical which by history could explain the itching, would itching of the worker's skin be an indication that there has been PCB contamination of the skin?

MR. CARNEY: Are you excluding anything outside the work place, like poison ivy or some other condition that might cause itching?

MR. MC CREA: Right.

Q. (By Mr. McCrea) If no other history of being PCB's cause itching?

A. I think if you get enough of it on you it may.

Q. Can itching result from systemic involvement?

A. Of what?

Q. PCB's.

MR. CARNEY: I'm going to object to the question; it's vague and ambiguous to me.

A. If the person has developed chloracne from a systemic involvement from PCB he may get itching.

TOWOLDMON0000419

Q. (By Mr. McCrea) Then it states, "In a short time blackheads began to appear on the chest, back and lower part of the abdomen, around the navel and on the scrotum and penis." Do you believe -- do you know of any other conditions which can cause blackheads in those particular areas of the body other than exposure to PCB's or related chlorinated hydrocarbons? For instance, can a teenager experience conditions in those areas?

A. I have never seen teenage acne on the scrotum and penis. There are any number of chemicals ranging from wood treating chemicals to agricultural chemicals that can cause widespread chloracne which is -- could be in those areas.

Q. And which wood treating chemicals and which -- what was the other chemical?

A. Pentachlorophenol.

Q. All right, is that --

A. 2,4,5-T.

Q. And those chemicals can also produce blackheads on the scrotum and penis?

A. Yes.

Q. What other skin conditions can appear on the scrotum and penis as a result of exposure to PCB's, related chlorinated hydrocarbons, pentachlorophenol, 2,4,5-T?

TOWOLDMON0000420

A. I don't know of any.

Q. Could boils appear in those areas?

A. Well, it all depends. I mean, what you mean by a boil, if you have chloracne there and these areas get infected obviously you've had an abscess. A boil is usually referred to as an abscess in a hair follicle, but these are not in the hair follicles but you get pustules and infected comedones is an abscess. It's pretty close to a boil. It's not exactly a boil in the terminology but it's close.

Q. If you examined a worker and he had blackheads on his scrotum and penis would you suspect chloracne?

A. No, not necessarily. I guess, I'd have to say where else it was, if that's all the place -- the only place it was I would not suspect chloracne.

Q. If it was on other areas of his body, such as his arms, his trunk, his face, would you suspect chloracne?

A. I would if there was any history of exposure to any chlorinated compounds.

Q. If you observed abscesses on his scrotum and penis and he had other skin problems would you suspect chloracne?

A. And a history of exposure to chlorinated

compounds, yes, I'd suspect it.

Q. Do you know of any condition resulting from normal biological functions that can result in comedones or boils on the scrotum and penis?

A. Sure. You get jockstrap itch, and if you get jockstrap itch and you scratch it and it becomes infected you get boils and abscesses on the penis and scrotum.

Q. Any other conditions?

A. There may be some but that's the most common one.

Q. Have you ever seen it there as a result of acne, teenage acne?

A. No. I haven't seen very many teenage acnes, either.

Q. Have you ever seen it reported as a result of teenage acne?

A. Not that I recall.

Q. Have you ever seen it reported as a result of acne fulminans, fulminans?

A. That means a pretty serious acne. Fulminans means a fulminating acne and I don't know whether that refers to teenage acne or chloracne. Could be referred to both, either one.

Q. So is it fair to say it's rare to find comedones and boils on the scrotum and penis?

TOWOLDMON0000422

A. Certainly more rare to find it there than on the face and arms and back.

Q. The next sentence or at the bottom of that paragraph said, "When seen in December 1933 the patient complained of lassitude, loss of appetite and loss of libido and said that his cutaneous condition seemed to be improving." What is lassitude?

A. Tiredness.

Q. And can that be -- that condition would have to involve systemic, that would be a systemic involvement, would it not?

A. Could be systemic, could be psychological.

Q. And what is loss of appetite? Speaks for itself?

A. I think so.

Q. And loss of libido, what is that?

A. Loss of sexual drive.

Q. And that would have to be systemic, would it not?

A. Not necessarily. It could any number of reasons, it could be social, it could be psychological, could be due to domestic trouble.

Q. If those symptoms corresponded in time to the chloracne would you suspect a systemic poisoning?

A. No. I would not.

TOWOLDMON0000423

Q. Why not?

A. Because these symptoms are very common in almost any number of occupational and non-occupational conditions. Tiredness, loss of appetite, that can occur -- loss of libido, it can occur for any number of reasons. The largest percentage is psychological in these cases.

Q. If the worker had no history of complaints of lassitude, loss of appetite and loss of libido before the onset of the chloracne would you find that to be significant from the standpoint of cause and effect?

A. No, I wouldn't; because here a man has been presumably off work, he's been going to several doctors. He's got a lot of changes in his before and after pattern. So I don't believe that one could just say that these symptoms, and remember these are symptoms, there's nothing objective that you can look at. These are symptoms that are very common and are seen in all sorts of instances.

Q. Could it be the result of systemic poisoning, lassitude, loss of appetite and loss of libido?

A. I would think you would have to know more about the case to know that. After all, there has been nothing else in here on these because the next sentence he says, "On examination he seemed to be in good general health." Dr. Jones in the next sentence did not ascribe

TOWOLDMON0000424

lassitude to the PCB's. I believe that Dr. Jones made a statement that would not be said today, in the next sentence, but he did not agree that this was due to his PCB exposure.

Q. In the next sentence Dr. Jones states that, "His --" meaning O.D. -- "complaint of lassitude was not borne out by anything more than the usual temperament of the Negro toward work." Dr. Kelly, isn't that flat-out a racist statement?

A. It certainly is, and remember this is Dr. Jones, back in Georgia in 1935. So this is not my statement.

Q. Did Monsanto ever correct that statement by confronting Dr. Jones and pointing out to him that that statement was racist and had no basis whatsoever in fact?

MR. CARNEY: Let me object to this question. It's an obvious attempt by Mr. McCrea to try to attribute a very racist statement made by a doctor that had nothing to do with Monsanto back in the 1930's in the South and to somehow try to attribute or connect that statement, which is abhorrent to Monsanto and to Dr. Kelly, as he's indicated, to Monsanto and it has no place in this lawsuit and to try to inject that to in this lawsuit is -- it's very repugnant.

MR. MC CREA: Well, lassitude is a symptom

which Dr. Kelly acknowledged was caused by the exposure of the Japanese to the Yusho PCB in 1968. Lassitude is clearly documented in this article written in 1933. The point is, what credence did the PCB industry give to this account of lassitude?

Q. (By Mr. McCrea) Dr. Kelly, did you at any point in time as medical director of Monsanto believe that lassitude could be a symptom caused by exposure to chlorinated hydrocarbons from 1936 forward?

MR. CARNEY: I'm going to object to the speech you made. Move to strike.

A. Let's have that question over please.

MR. MC CREA: Could you read it back please?

(Reporter read back from the record as directed:

"MR. MC CREA: Well, lassitude is a symptom which Dr. Kelly acknowledged was caused by the exposure of the Japanese to the Yusho PCB in 1968. Lassitude is clearly documented in this article written in 1933. The point is, what credence did the PCB industry give to this account of lassitude?

Q. (By Mr. McCrea) Dr. Kelly, did you at any point in time as medical director of Monsanto believe that lassitude could be a symptom caused by exposure to chlorinated hydrocarbons from 1936 forward?")

A. You have a multiple question there, Mr.

TOWOLDMON0000426

McCrea, two that I know. Do you want to break it down or do you want me to --

Q. (By Mr. McCrea) No. Just answer the last one.

A. Well, in the first place before I answer the last one, you talked about the PCB's in Yusho. You must realize that that has been acknowledged to be due to the presence of dibenzofurans in the PCB's.

Now to answer the last question, I would have to take a symptom into account with other -- with the physical examination and the laboratory studies and the general -- what other findings there were, if there were -- Well, that's the answer.

Q. Dr. Kelly, you and your attorney acknowledge that this was a racist statement by Dr. Jones in ascribing lassitude and stating it was not borne out by anything more than the usual temperament of the Negro toward work; and I know that you don't believe that and I know that no one believes that statement. Isn't it a fact then that lassitude was a documented symptom of this individual who was exposed to the chemicals in the workplace at Swann?

A. Yes, sir. He did tell Dr. Jones I feel tired.

Q. And that there was no explanation for that as Dr. Jones suggested, I mean, that is just totally outside

TOWOLDMON0000427

the realm of any validity, correct?

A. No. I don't know what you mean. It's totally outside the realm of any validity; I don't know. I can't make sense of that statement.

Q. Well, he ascribed that to the fact that this man was black?

A. Well, he did say he could find no reason for the lassitude.

Q. Well, isn't there --

A. Wait, just a minute, let me finish. He said this complaint was not borne out by anything, now, okay. He didn't find anything else. He ascribed it to -- in a racist manner which I disagree with; but I have to agree with this first part when he said he didn't find anything to bear out the tiredness.

Q. Well, isn't it a fact that the man had just been exposed to PCB's, contaminated with whatever and had a horrible skin condition and was complaining of lassitude and shouldn't the doctor have considered lassitude as a consequence of the exposure?

A. I would not --

MR. CARNEY: Let me just object; to have Mr. Kelly or Dr. Kelly speculate as to what was inside Dr. Jones' mind at that time --

A. Well, that's what I was going to say. I have

TOWOLDMON0000428

no idea what Dr. Jones' thoughts were in 1935. I don't know what he thought of, I cannot put myself inside his head.

Q. (By Mr. McCrea) But we know it's not related to the reason ascribed by Dr. Jones, agreed?

A. Yes.

Q. We know that the man had exposure to PCB's and had a skin condition that was very obvious, correct?

A. Yes.

Q. Doesn't that give medical credibility to the fact that the lassitude could be the result of the exposure to the chemical?

A. It's possible, but it could also as I said earlier it could be due to a great number of psychological problems. Here a man is off work, here a man is making trips to the doctor, here a man is hanging around the house. I don't know what was happening to him. I don't know what made him tired; but you can see people who are ill that feel tired, and this man was in good general health according to what he seen, in good general health. I can't say any more than that. The general physical examination revealed nothing of importance outside of the skin condition.

Q. Describe to the jury your interpretation of the finding of lassitude in this article.

TOWOLDMON0000429

A. Well, this article states that Mr. O.D. had lassitude, which meant he felt tired. Dr. Jones says a general physical examination revealed nothing of importance. Dr. Jones said he seemed in good general health and his complaint of lassitude was not borne out. Now if he stopped there that would be fine, he couldn't find the cause of the lassitude. Well, he proceeded on what we know is a racist type of mindset, and that's all I can say about it.

Q. If I called you and asked you after you read this article if you felt lassitude could be a consequence of this man's exposure to the chemicals, what would your answer be?

A. Say that over. I want to get this exactly right.

THE WITNESS: Could you read it please?

MR. MC CREA: Read that back.

(Reporter read back from the record as directed:

"Q. If I called you and asked you after you read this article if you felt lassitude could be a consequence of this man's exposure to the chemicals, what would your answer be?")

A. It might and it might not.

Q. (By Mr. McCrea) What would you, Dr. Kelly, do to determine if in fact the lassitude was caused by the

exposure to the chemicals. How would you go about determining that medically?

A. I don't think you can.

Q. Would you take a history and ask him if during his twenty-six years he had ever felt tiredness before?

A. I may have -- I certainly might, yes.

Q. And in --

A. This doesn't say whether he had ever felt tired before, either.

Q. Wouldn't that be something that you would want to know as a doctor in trying to determine if the chemicals caused lassitude?

A. I am saying that, yes, but you have to remember that the question is: Did the chemical cause the lassitude? Did the man's illness and the sociological changes in his environment cause the lassitude? Did being out of work cause the lassitude? I don't think anybody can say this caused it, and this didn't cause it.

Q. But if in fact the chemicals are causing lassitude then that means there is a systemic involvement that is of significance, correct?

A. No, not correct; because in the absence of any physical signs, in the absence of any laboratory work, just the fact that a man feels tired is not a significant

TOWOLDMON0000431

symptom, no, sir.

Q. What about the libido, loss of libido? Have you seen that reported in the literature, other than this article?

A. I've seen it reported in the literature for probably fifty chemicals.

Q. How does chemical exposure result in loss of libido?

A. I don't think it's known and it's also -- I don't think it's known whether it does.

Q. Well, you stated that you have seen it reported as a result of exposure to some fifty chemicals?

A. No. I didn't say as a result of exposure. I said in connection with.

Q. Can you describe some of those chemicals for us, list some of them?

A. No, I can't, but you can go through almost any trial and you will find that loss of libido is a very prominent symptom, no matter what the chemical is.

Q. Describe to the jury your interpretation of the report of this worker that he experienced loss of libido, based on all the knowledge which you have right up to this date?

A. Will you repeat that again?

MR. MC CREA: Could you read it back?

MR. CARNEY: Yeah. Let me just for the record object to the question on the ground that I think it's vague and ambiguous.

(Reporter read back from the record as directed:

"Q. Describe to the jury your interpretation of the report of this worker that he experienced loss of libido, based on all the knowledge which you have right up to this date?")

A. Well, I can't describe what he -- because I didn't take the history, I don't know how much loss of libido he had. I don't know how his libido was five years before this, and I don't think any -- When you say the knowledge I have up to this present date, my knowledge of libido being lost by workers who have alleged loss of libido as a symptom, that's a pretty hard thing to prove.

Q. (By Mr. McCrea) But the complaint is one that's very specific, is it not?

A. Specific as to what, the chemical?

Q. As to symptom?

A. Well, certainly, it's --

Q. And it's one that you take seriously, if someone reports that to you and they report a chemical exposure, you know from your experience that loss of libido has been associated with exposure to some fifty chemicals?

TOWOLDMON0000433

A. In conjunction with exposure, yes. I do not know that it has -- I certainly did not say that that loss of libido has been caused by exposure to these fifty chemicals. I said that loss of libido is a symptom that is prominent in histories of people alleging injury from chemicals.

Q. This article dismissed outright those symptoms of lassitude, loss of appetite and loss of libido, did it not, it gave them no credence?

A. I don't know what your interpretation is there. It gave them no credence what? He put it down, he said, "This man told me that he had loss of libido."

Q. Does he ever discuss it?

A. No, he doesn't discuss it, no.

Q. But that was essentially documented in 1933 in this article which you have relied on in your direct examination as I recall and there's no other explanation other than the chemical exposure or his being fatigued as a result of being out of work?

MR. CARNEY: I'm going to object to the form of the question. It's compound, it's vague and ambiguous.

Q. (By Mr. McCrea) Let me ask this, I agree with that. Did you take those symptoms seriously when you read this article, loss of libido, loss of appetite and lassitude?

TOWOLDMON0000434

A. I don't know what you mean, serious about what? So this man had some symptoms, yes, but his main problem was his skin. He came in, and was treated for his skin. He was in pretty good, quite -- nothing of importance in his physical examination outside the skin, and he got well. I didn't pay a great deal of attention to the symptoms, no. That's a whole -- you're picking one small item out of the whole makeup of the individual. Well, I'm not saying that libido isn't important, let me get that right, but --

Q. I don't know that lassitude, loss of appetite and loss of libido are any less significant than chloracne, Doctor.

MR. CARNEY: Well, I'm going to object to what's more significant. I don't know what's more significant than what. I don't know how you compare loss of libido to loss of appetite in terms of -- I don't know what you're trying to get him to compare them to.

MR. MC CREA: Well, he said that it's one small item.

A. Did I say small?

Q. (By Mr. McCrea) I thought you said one small item.

A. Well, then I went to correct it. I do not want to minimize loss of libido.

TOWOLDMON0000435

Q. Right. Did you service the workers at Monsanto Company for loss of lassitude who were exposed to PCB's?

A. No. The physicians did, examining physicians.

MR. CARNEY: I'm going to --

Q. (By Mr. McCrea) And did you instruct them to look for this condition?

A. For what condition?

Q. Lassitude?

A. No, sir, because a physician knows when he's examining a man, he asked him, "How have you been feeling? Are you tired?" He goes through a whole gamut of questions.

Q. With this report in 1933 why didn't you direct your physicians to look for those symptoms in the workers?

MR. CARNEY: Well, I'm going to object. I think he's already answered that they knew how to take a history which would include those questions.

A. These physicians are people who have examined workers all their life. They are experts at it. They don't need to be told to look for one or two isolated symptoms. You are picking one or two symptoms out of a whole category of questions that people ask during the

TOWOLDMON0000436

course of a history and physical examination.

Q. (By Mr. McCrea) Lassitude is one of those symptoms which you stated earlier in your deposition was related to the Japanese exposure to the Yusho oil, correct?

A. Yes, the Yusho oil.

Q. Dr. Kelly, going down to physical examination, it says, "On the forehead extending within the hairline and on the cheeks, chin, nose and neck were numerous small very black tenacious comedones, their distribution being best described as peppered within the the skin." Could you explain that description to the jury in any more detail other than what is stated there?

A. No, sir. I don't know what he meant.

Q. When it says within the hairline, what does that mean?

A. Well, I think everybody knows what a hairline is. That's where your scalp stops and your forehead starts.

Q. So there would have been according to this observation small very black tenacious comedones within the hairline itself?

MR. CARNEY: Well, I'm going to object. You're asking this witness to possibly speculate as to what those words mean and what Dr. Jones meant. I

TOWOLDMON0000437

think -- I don't know that this witness is any better at reading those words than the jury or the lawyers are.

MR. MC CREA: I agree, I think it pretty well speaks for itself.

Q. (By Mr. McCrea) But I would like to clarify, doctor, if in fact there were small very black tenacious comedones inside the hairline. In other words --

A. That's what he said.

Q. Have you seen that reported in other cases of chloracne?

A. I may or I may not have. It's not a very prominent -- it doesn't stand out very much in my mind.

Q. But it did in this case?

A. Did and he reported it.

Q. Isn't it true, Dr. Kelly, that there's a great variability among people to symptoms, for instance, I could walk through a patch of poison ivy and break out, and somebody else could lie down in the stuff and not be effected, is that generally safe -- Is that fair to say?

A. Well, no, because first of all you're confusing terms. A symptom is a complaint that's not objective. You can't see it. A sign is what you would get when you go into poison ivy. You would get a blister, you would get redness. A symptom would be itching. Now to answer your question, yes, some people when exposed to

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poison ivy get a symptom of itching, some people don't.

Q. And that's just because we don't all react in the same way, fair statement?

A. Yes. But that's over-simplistic, it all depends on how much you get. Some people -- The same person might react to a good-sized dose of poison ivy, and he wouldn't react at all to a small dose of poison ivy.

Q. Have you ever seen two cases of chloracne which are just identical?

A. No.

Q. There is some variability to all of them, is that a fair statement?

A. Oh, yes, from insignificant to severe.

Q. What would be an example of an insignificant case of chloracne?

A. Something a man doesn't know he has until a doctor looks at it and says, "I think you've got chloracne."

Q. What would those signs be of an insignificant case?

A. Small blackheads around the cheekbones.

Q. Anything else?

A. That's it.

Q. Then the next, it says, "Many of the comedones surmounted firm shot-like cysts which in some

areas contained viscid yellow pus." What does that, break that down for us?

A. This means that these blackheads were sitting on top of a cyst. A cyst is a collection of liquid or semi-viscous material or pus in these cases. So here we have these little blackheads sitting on top of a circular area that contained yellow pus.

Q. Next sentence, "The pustular elements were more noticeable on the neck." Can you tell the jury what that would appear to be?

A. It means whatever he had were more noticeable in his neck than anyplace else.

Q. What does it mean, pustular?

A. That means the cysts that contained viscid yellow pus that he mentions in his previous sentence.

Q. "Some shot-like comedones had appeared on the shoulders, mid portion of the back and chest with an occasionally large cyst." Does that fairly well speak for itself, Doctor?

A. I think so.

Q. "A peculiar peppering of the skin with tenacious carbon-colored comedones was apparent around the umbilicus and lower portion of the abdomen." Is that descriptive in and by itself?

A. I think so.

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Q. "The scrotum and penis were involved in a similar process; the former being given more to the formation of cysts." We've discussed that?

A. Yes.

Q. "The outer surfaces of the forearms and interior thigh showed similar but fewer comedones." Can you show to the jury what is meant when they state the outer surfaces of the forearms? Is that this part here?

A. That's outer, this is inner.

Q. So it would be this part of the forearm which had comedones, correct?

A. Yes, sir. Fewer they said.

Q. Yes. And then it says, "The anterior thighs likewise showed fewer comedones," and anterior would be the front portion of the thigh?

A. That's correct.

Q. Have you seen that condition in other cases of chloracne where it's on the outer forearm and the anterior thigh?

A. Yes. But not limited to those areas, yes, sir.

Q. In addition to other places?

A. Other places?

A. Yes, sir.

Q. Other places. Says, "The whole eruption was

acneform but differed from acne particularly in the lack of a seborrheic appearance of the skin and in the peculiarly deep black of the comedones as well as a general peppered distribution in areas not usually involved with acne vulgaris?" Can you explain that to the jury?

A. Well, acne vulgaris means common acne, teenage acne which goes up to at adult life. Seborrhea is flaking of the skin, redness of the scalp and flaking of the skin also that accompanies teenage acne. The deep blackheads seen in chloracne are not usually present in acne vulgaris, that's what he says.

Q. All right, sir. Then he goes on to describe treatment and he goes on to describe microscopic examination on page 1025?

A. Yeah. Well, he also, to end up, be complete, he also ends up saying a general physical examination revealed nothing of importance.

Q. All right, sir.

A. And the treatment, yes, sir.

Q. And on the general examination which revealed nothing of importance, what do you understand to be a general physical examination?

A. Examination of the heart, lungs, blood pressure, abdomen, neurological system; the whole business

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outside of the skin.

Q. But nothing specific? I mean, it's not -- he wasn't referred to a specialist in neurology by Dr. Jones.

A. No, but he had no symptoms or findings that -- after all Dr. Jones is a physician, he would know if a man had neurological symptoms or neurological findings.

Q. Well, couldn't lassitude be a neurological symptom?

A. No, sir, lassitude, a neurological -- it's hard to say whether a symptom is neurological or psychological.

Q. Could it be a neurological symptom?

A. I don't think so. I wouldn't include it as a neurological symptom.

Q. Can a person experiences lassitude as a result of medications?

A. Oh, certainly.

Q. And how is that brought about?

A. You have medicines that are depressants. You're using the term neurological and I'm using the term psychological.

Q. Well, if it's a depressant and it affects the brain?

A. Yes, sir. That's correct.

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Q. And that can result in lassitude?
A. Yes, sir.
Q. Page 1025, treatment, they gave this man radiation, correct?
A. Yes, sir.
Q. Then microscopic examination. Dr. Kelly, have you ever done microscopic examination of skin samples of individuals in whom you suspected chloracne?
A. No, sir, I have not.
Q. And they describe on page 1025, "Summary of the symptoms and treatment in sixteen cases of acneform eruption," and across the top it has case, and a number, age, race, type of skin, type of eruption. Is that time of exposure, I can't read it on mine?
A. Yes, time of exposure.
Q. Time of exposure, and special treatment and it goes through all sixteen cases?
A. Yes, sir.
Q. Do you know which of these individuals you consulted when you became medical director?
A. No, sir, they don't have the names down.
Q. But you did consult --
A. Some of them, yes.
Q. Some of them when you became medical director for Monsanto Company?

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A. Yes, sir.

Q. Did you make any inquiry into the symptoms of lassitude, loss of libido, loss of appetite?

A. Not that I recall. I don't know if I did. I asked them how they were feeling. When they said they felt fine I figured they had no symptoms.

Q. Before you commenced your consultation with these individuals you had read this article?

A. Yes, sir.

Q. The microscopic examinations described in this article, is there anything you feel is indicative of chloracne as a result of microscopic examinations?

A. Are we talking about this article or any time?

Q. No. In general.

A. Yes. Some dermatologists and some pathologists believe that they could tell chloracne by microscopic examination.

Q. Who are some of those folks?

A. Suskind is one.

Q. Who else?

A. Gosh, I don't remember them offhand, but --

Q. Page 10twenty-six is what, is that a photograph of a microscopic examination?

A. A section of the skin from the chest showing

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the formation of the acneform eruption, eruption meaning a condition or rash, acneform being acne.

Q. Is that a situation where they actually took a photograph of the microscopic --

A. Yes, sir.

Q. Picture?

A. They took one out of the skin and sliced it and put it on slide and put a microscope on it and put a camera on top of the microscope.

Q. Page 1027, "Twenty-three of twenty-four men reported acneform eruption on the face and body." It says of the twenty-three, sixteen were examined. What does this mean, Doctor, just above the photograph, "In many patients numerous small sebacious abscesses developed particularly around the -- I read that as c-o-l-l-o-r-a, is that correct?

A. Collar, collar, they just spelled it wrong. I think it's the collar line. That would be what I would think.

Q. That would be just above the collar around your neck?

A. Yes.

Q. But that c-o-l-l-o-r-a is just a misspelling?

A. I don't know. I don't know what else it could be. I have never heard of a word like

TOWOLDMON0000446

c-o-l-l-o-r-a.

Q. And it makes reference in that same sentence at the end to scarring, "Leaving in their wake much scarring." Is that something that has been reported in chloracne, scarring?

A. Well, it's been reported in chloracne, it's been reported in teenage acne, it's been reported in adult acne. Wherever you incise a cyst that has pus in it, you get a scar from the incision and the healing.

Q. Next couple of pages describe the process of manufacture, is that a fair statement, Doctor?

A. Yes, sir.

Q. Break time.

(Whereupon, a short break was taken.)

Q. Dr. Kelly, we're ready to resume here. This morning we have discussed Exhibit K-2, which I believe you have in front of you?

A. Yes, I do.

Q. And for the record that document is titled, An Acneform Dermatergosis -- Can you pronounce that for me?

A. No. That's a -- I think you're doing as well as anybody. That's an obsolete term.

Q. Authored by Jack W. Jones, M.D. and Herbert S. Alden, M.D., Atlanta, Georgia. Do you know if you in

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fact interviewed the individual whose case was reported on page 1024?

A. No, sir, I do not.

Q. Just to be clear for the record and I think this has been asked and answered, but just to be totally clear, when you interviewed the workers who had been exposed to these chemicals in 1935 or 1936?

A. Wait, I did not -- which of the dates, '35 or '36?

Q. When you interviewed them?

A. No, I didn't interview them in '35, I wasn't with Monsanto in '35. I didn't interview them in 1936, it was '37 or '38.

Q. Thank you. When you interviewed them, you did not ask any of them if they had experienced tiredness when they were exposed to the chemicals?

A. To the best of my knowledge, I did not. I asked them if they had lost any work, how they were feeling and the response was favorable. They said, "I feel fine."

Q. And just to be clear on the record, you did not ask any of them if they had experienced a loss of appetite when they developed the chloracne?

A. You mean I did not ask them in 1937 whether they had lost their appetite in 1935?

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Q. No. When they had the chloracne.

A. Well, that's when they had the chloracne, in '35.

Q. I thought it was earlier.

A. Well, it was very -- Well, whenever they had the chloracne, no, I did not.

Q. And again to be clear for the record you did not ask any of the individuals whom you interviewed if they had experienced a loss of libido when they suffered the chloracne?

A. I did not in 1936 or '37 or whenever. I discussed their case with the workers that had chloracne and when they were working for the Swann company I did not ask in 1937 or '38 if they had loss of libido. No, I did not.

Q. And again, to be clear for the record, when you interviewed the workers you had read this article?

A. That's correct.

Q. You had also I believe talked to Dr. Alden or Jones?

A. I believe I had. I'm not sure I did.

Q. Before you interviewed the workers?

A. At some -- Yes. I'm not sure that I did. I mean, I'm not certain of that. That is fifty-five years ago.

TOWOLDMON0000449

Q. Did you generate written materials as a result of your interview of those workers?

A. No, I did not, no. I think you're stating this interview, I saw these workers while they were working and I asked them if they had been -- some of the ones that had been seeing Dr. Jones and during the course while they were work, I talked to them about their present medical condition.

Q. Could we --

A. It was not a formal interview.

Q. Excuse me. Could we call that medical examination?

A. No. We could not.

Q. Did you interview them in an office type setting?

A. No, I saw them at their workplace.

Q. Doctor, can differences in the color of PCB's indicate impurities?

A. Yes.

Q. Did Monsanto publish documents which described variations in the color of certain Aroclors in the manufacturing process?

A. I don't know whether they did or not.

Q. As of this date you have no knowledge of documents published by Monsanto which describe variations

TOWOLDMON0000450

in the color of Aroclors?

A. Well, I don't have any specific knowledge, but it may exist. I don't know.

Q. What would that indicate to you if there was a variation in colors?

A. I am not a manufacturing chemist. I cannot comment on that.

Q. On page 1030 at the bottom of the paragraph beginning, "In the beginning," it states -- and I'll read the sentence, "In the beginning an attempt at prevention of the condition was made by being especially careful that all men engaged in the manufacture of chlorinated diphenyl should have a thorough bath after working hours and that they should wear freshly laundered clothing before starting work." Would you consider a deviation from that practice as an unsafe practice?

A. No. It all depends on what the working conditions were. In other words, if this referred to the early days of manufacturing chlorinated biphenyl at Anniston, that's one thing. If it referred to after we had -- after the modernization of the plant and the improvement in the housekeeping and the improvement in ventilation they may not have had to do this.

Q. If a worker came up to you and he said, "Dr. Kelly, when should I have a thorough bath after working

TOWOLDMON0000451

hours and wear freshly laundered clothing?" What would you tell him?

A. About what? He just walks in and asks anything?

Q. Yes. If he says, "Dr. Kelly, when should I have a thorough bath after working hours, and have freshly laundered clothing?" What would you tell him?

MR. CARNEY: Are you talking about what period of time, what plant? Just generally a worker? Is he a PCB worker; is he in the Anniston plant?

MR. MC CREA: Let's say in 1958.

Q. (By Mr. McCrea) In 1958 if a worker called you from the Bloomington, Westinghouse plant and asked under what conditions he should have a thorough bath after working hours and have freshly laundered clothing, what would you tell him?

MR. CARNEY: I'm going to object because I think the doctor doesn't have knowledge of the Bloomington plant.

A. I would tell him, "I don't know exactly how you're exposed. I don't know how much contact you've had with material. That is something for you to ask your supervisor, don't ask me." I don't know what his exposure -- I don't know what else he was exposed when they were outside of PCB's.

Q. (By Mr. McCrea) If the worker asked you what exposure would require a thorough bath after working hours and wearing freshly laundered clothing, how would you describe that exposure that would necessitate those precautions?

A. I would say if you have your -- In the first place, I don't know if I would be in a position to comment on this man's work over there. I would have to take that into advisement -- under advisement. But as a general recommendation I would say that if your clothes is -- clothes are soiled, soaked with the material you should not wear those. You should take a bath or a shower immediately, or during your -- Shortly after such exposure occurred.

Q. And would you consider the failure to have a thorough bath after working hours and wear freshly laundered clothing under those circumstances an unsafe practice?

MR. CARNEY: Well, I'm going to object to the question. I think it leaves too many facts out. I don't know what you're talking about again, what other chemicals the person might be exposed to, what the extent of the exposure -- There are too many factors there that you haven't hypothesized. What time period, what plant, and Dr. Kelly -- if you're referring to Bloomington again, he

has indicated he's never seen that plant.

A. It would have to be an assumption. I could answer that as far as the Monsanto plant is concerned.

Q. (By Mr. McCrea) What would your answer be as far as Monsanto's plant is concerned?

A. I would say that if you're exposed to PCB's and your clothing is saturated with it at various areas you should take a bath and change your clothing.

Q. And would you also consider that an unsafe working condition?

A. Well, it depends how long it was repeated, how often it was repeated. I don't know. I mean, you are asking for an assumption that I'm not in a position to give. I just don't have all the facts on it.

Q. Weren't you asked to give expert testimony as well as factual testimony as to the fact that if there were safe working conditions there would be no risk from PCB's?

A. That's correct.

Q. Would you consider soaked and saturated clothing on one day with no thorough bath and no freshly laundered clothing as an unsafe working condition?

A. Are you saying then --

MR. CARNEY: Read that question back. I'm not sure I --

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(Reporter read back from the record as directed:
"Q. Would you consider soaked and saturated clothing on one day with no thorough bath and no freshly laundered clothing as an unsafe working condition?")

A. I would consider if the person wore a clothing that was saturated with PCB's and wore it for a working day, that should in the be allowed.

Q. (By Mr. McCrea) And would that be unsafe?

A. That again depends. I don't know if that has occurred. It's not been reported as causing any problems. So I can't answer whether it's unsafe.

Q. The next sentence states that, "These workers were also instructed to apply night and morning veterinary white lotion to the affected parts." Do you know what the purpose of that was?

A. I haven't the slightest idea.

Q. Doctor, do you know any of the gentlemen whose names are referenced in the abstracts of discussion which begins at page 1033, Dr. Oliver S. Ormsby, Chicago?

A. I do not know him.

Q. Do you know Dr. Marion E. Sulzberger?

A. I know him by reputation. He was a very prominent dermatologist.

Q. Dr. H. G. Irvine?

TOWOLDMON0000455

A. No, I do not know him. Know of him either.
Q. Dr. Kelly, who is Herbert Blumenthal?
A. Herbert Blumenthal is a Ph.D. who is United States -- who's with the United States Public Health Service -- I mean, the United States Department of Agriculture.
Q. Did you recall correspondence with Dr. Blumenthal regarding PCB's?
A. I know I've had correspondence with him. If you show me it will refresh my memory.
Q. All right, sir.
MR. MC CREA: Could the court reporter mark this as our next exhibit?
(Whereupon, Plaintiff's Deposition Exhibit No. 3 was marked for identification.)
Q. (By Mr. McCrea) Dr. Kelly, can you identify what is marked Plaintiff's Exhibit No. 3?
A. Yes, sir.
Q. What is that?
A. This is a letter from me to Dr. Blumenthal.
Q. Sir, if I could look over your shoulder, I just have one copy of this. Did you authorize the exhibit?
A. Yes, I dictated it.
Q. In the first sentence you state, "I thought

you would be interested in knowing Monsanto is committed to a program will allow the future use of our Aroclors only in those applications where escape to the environment can be prevented." First of all, for the jury are Aroclors synonymous with PCB's?

A. Some Aroclors are PCB's, some Aroclors are not PCB's. There could be chlorinated terphenyls.

Q. Could we substitute the word PCB's for Aroclors and not change the impact of that first sentence?

A. Yes.

Q. When did Monsanto commit itself to a program to prevent escape of PCB's on the environment?

A. I can't answer that. I don't know the dates.

Q. Will you describe that program for the jury that existed on the date of April 8, 1970 as you described to the U.S. Food and Drug Administration?

A. Well, we -- first of all I said we committed to the program, I don't know when we implemented the program. But the program was to stop selling the material for open uses. Open uses meaning plasticizers, paints, lubricants and carbonless carbon paper. I don't know when it was implemented but we were committed to do that. It takes a little while to get the bureaucratic machinery going.

Q. The bureaucratic machinery at Monsanto?

A. And its customers, yes. You have to give them a little time before you stop pulling the rug out from under them, their raw materials.

Q. Why did you implement that program at Monsanto?

A. Well, I didn't. The company implemented it.

Q. Why did Monsanto implement that program?

A. Because the material was getting into the environment and it was contaminating the environment and it was staying there and we did not want to add any contaminant to the environment that could help -- that would not be biodegradeable.

Q. In what way did the contamination of the environment place the environment at risk as of April 8, 1970 as you understood it?

A. It was hurting the reproduction of birds.

Q. Did you consider that a fact that was established in science?

MR. CARNEY: At what point?

MR. MC CREA: On the date of April 8th, 1970?

A. I'm not sure about the dates, but I felt quite sure of it.

Q. (By Mr. McCrea) Were there other implications other than the reproduction of birds that encouraged Monsanto to introduce this program to prevent

TOWOLDMON0000458

escape of PCB's into the environment?

A. I don't know when it was found that it was getting into the food chain. I don't know the exact time of that.

Q. In what way would PCB's entering the food chain be a risk to individuals?

A. There might have been no risk at all. It wasn't supposed to be in the food so we didn't want it there.

Q. Did you have any scientific information that would suggest it was a risk?

A. No, sir.

Q. In 1970?

A. No, sir.

Q. Had you read about Yusho?

A. Yes, sir. I believe I had at that -- I'm not sure about the dates. I thought I was referring to the United States food chain. There really wasn't in the food chain, it was right in the food in Yusho.

Q. And if it's in the food chain it's also in the food, is it not?

A. Well eventually, yes; but I think there's a little difference between a compound getting into the environment and going up the food chain and getting a compound that -- pouring the material on your rice

TOWOLDMON0000459

pancakes.

Q. In April 8, 1970 did you consider the presence of PCB's in the food chain as a serious problem?

A. Well, serious problem from the point of adulteration. I didn't consider it a serious problem from the health aspects.

Q. Do you consider it a serious problem today?

A. No, sir.

Q. If I called you up and asked you if you consider PCB contamination of food a serious problem, your answer today would be no?

A. No, I didn't say that. I mean, it depends how you contaminate it. If you were pouring PCB into a batter for cake mix or something like that, that's contamination, but if you mean by that the presence of PCB's in the marketplace basket, it is not a problem. Where it is actually ingested accidentally as it was in Yusho and Yucheng, yes, that was a problem; but in the United States it is not a problem.

Q. If I called you up and asked you about the environmental risks of owning a PCB transformer in a substation next to a farmer's pasture, what explanation would you give me as to the environmental risks and risks of PCB's in the human food chain from the ownership of that transformer in a substation?

TOWOLDMON0000460

MR. CARNEY: Let me object to the question. I don't understand the question. I think it's vague. Are you talking about farm -- a transformer in the middle of a farm crop? I don't understand what you're asking.

A. I mean, if you want to describe -- Here we've got this transformer on a pole in a farmer's field, right, is that what you're talking about?

Q. (By Mr. McCrea) Yes, sir.

A. What's he got in that field?

Q. He's got hay.

A. I think the only risk he has if that transformer leaks in the ground and there I think the amount of material that would be there in relationship to the amount of hay that a horse or a silage that a cow eats would depend on how much, how big the transformer was, how much got into the silage.

Q. Could you explain those numbers to me if I made inquiry of you?

A. Well, if you tell me how big the transformer is and how much PCB is in there and how much hay is going to be contaminated I can explain it, but I can't make the figures up myself for you.

Q. If it contained two hundred gallons of PCB oil and it was in a substation in the middle of a farmer's field?

TOWOLDMON0000461

A. Wait. We're talking about transformer in a pole the first time; now we're talking about dug down in the bottom below a farmer's field?

Q. No, in a substation.

A. Substation in his field?

Q. Right.

A. And you've got two hundred gallons in this?

Q. Right.

A. It's a pretty big substation. And it leaked?

Q. No, it didn't leak.

A. No.

Q. It was just sitting there perking along?

A. Well, it was no problem. As long as it was contained there was no problem.

Q. Would there be any risk to me as owner of that transformer in that as I described to you, a transformer in a substation with two hundred gallons of PCB oil surrounded by a pasture of hay used to feed cattle?

A. Well, the only risk would be if it leaks.

Q. Would that be a risk?

A. Yes, if you spill two hundred gallons out of it into his field, yes.

Q. What if it burned?

MR. CARNEY: Can you give us some idea of the

temperature of the fire?

A. I mean --

MR. CARNEY: I think you're asking questions difficult to answer without the facts.

Q. (By Mr. McCrea) What would your advice be to me if I asked you if it was safe to own that transformer in that substation with two hundred gallons of PCB oil surrounded by a field in which there was hay consumed by cattle?

MR. CARNEY: And no leaking.

MR. MC CREA: No leaking.

A. I'd say it was safe.

Q. (By Mr. McCrea) If I asked you the same question today about a transformer in a building that had no leaks, no malfunctions, contained two hundred gallons of PCB oil; would there be any risk in your opinion to the ownership of that transformer?

A. Well, there's always a risk if it burned.

Q. And what would that risk be?

A. That the transformer would spill out the fluids and that during the fire PCB's could be ignited, they could be -- benzofurans could be formed in a transformer, there's trichlorobenzene in there which could form dioxins. They could be disseminated through the building. Certainly there's that risk.

Q. And how would you explain the health consequences of that particular fire and spread of furans throughout able?

MR. CARNEY: Let me -- I don't know what you mean by health consequences as opposed to having a flammable transformer without the PCB oils, are you trying to evaluate the relative risk of a PCB transformer versus a non-PCB transformer?

MR. MC CREA: No. I'm just asking him to explain the health consequence to the people in the building if the furans were contaminated.

A. Well, I think in the first place once a fire starts in the building everybody gets out. So it depends how fast you get out whether there's any risk or not. If you aren't burned up, if you get out in time that you aren't suffering from the consequences of the risk, you won't have any risk, you will get out.

Q. (By Mr. McCrea) What if you don't? What if you're in there for twenty-four hours and you are exposed to the furans permeating the building?

A. How much exposure you've got to tell me.

Q. Well, I'm asking you for your evaluation. I'm making an inquiry of you and I want you to explain it to me with just the facts that have been given to me?

A. Well, you haven't given me any facts.

TOWOLDMON0000464

MR. CARNEY: Well, I'll object. You are saying somebody is in a building burning for twenty-four hours?

MR. MC CREA: No, I'm asking, Tom, I'm asking him, Dr. Kelly, if I owned a transformer in a building that contained PCB oil what are the risks of owning that transformer in that situation?

MR. CARNEY: That wasn't the question you asked.

MR. MC CREA: Well, let's make that the question.

A. Is that the question?

Q. (By Mr. McCrea) Yes.

A. Well, the risks are that if there's a fire and the contents of that transformer, which are trichlorobenzene and trichlor -- chlorinated biphenyl, two different compounds are ignited and the fire is hot enough to reach certain temperature levels and not go to a level of which the material is completely disintegrated then there is a risk of these contaminants, these added compounds being formed. The amount of risk depends upon the exposure a person has, and I can't say how much exposure a person is going to have in that building.

Q. If I asked you if I should continue to own that transformer knowing the risks that you know, what is

TOWOLDMON0000465

your answer?

A. I think I would have to equate that with what I would do -- of what substitute I had. Do I run the risk of a fire that would be enormously more extensive with an oil filled transformer, or do I run the possible risk of adverse consequences from the PCB fire? I don't know.

Q. So if I called you and asked you if I should continue the ownership of that transformer your answer would be you don't know?

A. No. I don't think I said that, you are talking to me at --

Q. Well, your answer --

A. Well, I would say if I -- I would say I would not -- I would weigh both factors and I would -- and depending on whether or not the individual thought that there was a more serious problem relating to a use of a flammable material in the transformer or a PCB containing fluid, if he thought there was more likelihood of a danger from the oil I would say keep on using it. Now speaking as of today you're talking about?

Q. Right, 1990?

A. Well, speaking as of 1990 I would say then you should be in a position to insure that if that eventuality occurs in which a PCB transformer burns there should be methods to keep the material from the soot and

the products of the fire, of combustion, from being disseminated through the building, which would minimize the risk very markedly. So it would be my opinion you have to weigh all these factors.

Q. Weighing all the factors, if I asked you, Dr. Kelly, what's the end line, should I replace it with a transformer with more risk of fire or should I keep the PCB transformer with its risk, what's the bottom line?

A. I would say it varies with the conditions but I would believe that the PCB transformer is less risk than the one with an oil containing transformer.

Q. Dr. Kelly, the next sentence on Plaintiff's Exhibit No. 3 which is the second paragraph, states, "Secondly --" and excuse me if I can look over your shoulder, "We have essentially a crash program underway to find non-persistent, non-chlorinated substitute products." Who initiated the crash program at Monsanto?

A. I think it was the division that manufactured the PCB's, the division meaning the research, the sales, the marketing and the manufacturing group of the organic division, which was one of the four manufacturing divisions in the company.

Q. And who were the individuals who initiated that crash program that you have described in your letter to the U.S. Food and Drug Administration?

A. I think Minkler was one, who was I believe of the head of it at that time. I don't know. I don't remember the other names at present, but Howard Minkler was to my impression, the best of my recollection the vice-president in charge of that particular division in April of 1970.

Q. Where was the research being done for the crash program?

A. At St. Louis. Maybe it was done at Dayton also.

Q. Did Monsanto develop a non-persistent, non-chlorinated substitute product?

A. I don't know if they did subsequent to my departure. I don't know if we had developed one or not.

Q. What were the non-persistent, non-chlorinated substitute products that were the subject of the crash program in April, 1970?

A. I haven't the slightest idea. There were phthalates, there were silicones, there were a whole battery of them. I don't know what they -- and they might have looked at a hundred different potential products.

Q. When was that crash program started?

A. As I said I don't know it was implemented. I know that they were committed in April of 1970. I don't know when the research program started.

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Q. Did you inform Westinghouse that you had initiated a crash program to find non-persistent, non-chlorinated substitute products as you informed the U.S. Food and Drug Administration?

A. You mean me personally?

Q. Yes, sir.

A. No. I think that's commercial matters that the marketing group or technical service people would have done, not me.

Q. Do you know if Monsanto Company gave the same information to Westinghouse that they are giving to the U.S. Food and Drug Administration that describes a crash program for non-persistent, non-chlorinated substitute products?

A. No, I don't know.

Q. Why did you tell the U.S. Food and Drug Administration that you were initiating a crash program, what's the relevance of that to them?

A. Well, I don't know what the relevance is, but I thought Herb and I were good friends and I thought I would let him know how we were coming along. He was interested in the same things we were interested in, in keeping it out of the food, and if -- I was telling him that not only were we going to cut down the uses where it could escape into the environment but we're doing our best

to try to eliminate PCB's all together in those uses, in all uses.

Q. The next sentence states, "Already we have two large users switching to substitutes of this type." period. Who were those two large users?

A. I don't know, but I do not believe they're in the electrical field. They may very well have been in the plasticizer field. I would imagine they were the plasticizers.

Q. And today as you sit here you do not recall who the two large users were?

A. No, I do not. I do not even know what field they were in.

Q. Did you on the day you wrote the letter?

A. I'm sure I did.

Q. And you say switching to substitutes of this type," what substitutes are you referring to in your letter to the U.S. Food and Drug Administration?

A. If I'm -- They were I'm going to say non-persistent, non-chlorinated substitute products. I don't know which ones they were. They were very probably of the phthalate group, p-h-t-h-a-l-a-t-e.

Q. Were they manufactured by Monsanto?

A. I don't know.

Q. Did you research the information before you

wrote this letter?

A. Did I research what information? Whether the customers were using some of our product or somebody else's product?

Q. The names of the two large users and the type products they were switching to?

A. Well, I'm sure I had known that two companies were using other products instead of PCB's, but when you say research it, I don't know what you mean by that. I knew enough to write them a letter and say two of these people, two large producers were getting out PCB's.

Q. Have you ever been asked about this letter in any other depositions that you've given for Monsanto?

A. I don't recall.

Q. Next sentence, "Obviously, Herb, you can recognize the competitive aspect of developing and phasing into sales such type of substitutes, so at present we are not making any widespread announcement." Would you explain why you are telling the U.S. Food and Drug Administration that information?

A. I don't know what my mindset was at that time, but I think it speaks for itself. We are trying to get out of the PCB's, and we haven't reached a point where we said we are going to get out of it because we don't know when a substitute will be available.

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Q. Well, aren't you saying that we don't want everybody to know we're getting out of the PCB business because if we did they would capture the market on substitute fluids, so we're going to keep that information ourselves, develop our own substitute fluids and retain the market, is that what that says?

A. Of course not. Keep it ourselves? I'm writing to the government and I'm keeping it to myself?

Q. Well, I don't know about that, but it says we are not making any widespread announcements?

A. That's right; but after all there were two large users that were switching. I don't know if they switched to substitutes of ours or substitutes of somebody else, but they knew we were doing our best to get people out. We had already told customers that we are cutting down the use of the material in not allowing for applications where it could get out. So I don't see anything wrong with what I told Herb.

Q. It says, "You can recognize the competitive aspects of developing and phasing into sales such type of substitutes so at present we are not making any widespread announcement," isn't that so you can retain the sales market?

A. No, it really isn't, because we're not the only people manufacturing these fluids. We're not even

talking -- you know, I'm not saying, I don't know who these -- what fields these other users were in.

Q. Dr. Kelly, isn't it a fact that you were the only company in the United States making PCB's?

A. That's true.

Q. And you knew that if PCB's are eliminated substitute fluids will be used?

A. If they work, yes.

Q. And you wanted the market on the substitute fluids?

A. No, that is not correct. Of course we were in the business, we wanted to have as good a chance as anybody, if they liked our fluid, fine. But nobody had a fluid at that particular time that could use to -- that could do all the things that's PCB's could do. Plasticizers are -- fifty different plasticizers could be used.

Q. That's -- Go ahead.

A. I don't know what else you want me to say? Ask me a question.

Q. Why didn't you make a widespread announcement that you had this crash program and you were making substitute?

A. That's a marketing decision and I didn't have nothing to do with it.

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Q. Well, can you explain it? You wrote the letter.

A. I can't explain it. I just said we're not making any widespread announcements.

Q. You don't know why?

A. I do not know the marketing responsibilities of a supplier to his customer. I don't know what the marketing people had in mind; whether or not they could say to a customer, we're getting out right now. I don't know what the Monsanto reasons were. I'm afraid you'll have to ask someone else.

Q. You didn't tell Westinghouse about this information?

MR. CARNEY: Well, objection. I don't think that was his testimony.

A. I said before, I said I would not be the person to talk to a customer. It would be the marketing people, the development people.

Q. (By Mr. McCrea) Have you seen documents at Monsanto which described the crash program?

A. In its entirety?

Q. Right.

A. I may have.

Q. You don't recall that?

A. No. After twenty years I don't think I do.

Q. But you've testified to it a number of times, Dr. Kelly?

A. Well, certainly I have, but I mean, I don't know if I've seen the entire program. I've seen parts of it.

Q. The last sentence states, "On the other hand, if the publicity gets as red hot as it did in the case of DDT we may be forced to make such an announcement at any time." What do you mean by that statement?

A. Well, I think some decisions are made on scientific bases, some are made on commercial bases, some are made on emotional bases and some are made on political bases. In the case of DDT, here was a wonderful product that wiped out probably a hundred million malaria deaths that was banned because of emotional and political reasons.

So that's what I mean, they had some very red hot publicity. Now if such an emotional and political situation occurred we would be forced to make such an announcement. By such an announcement I guess I refer to we're getting out of all the sales and we're doing our best to make a product that doesn't have these things in it.

Q. Did you ever make such an announcement to the public?

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A. We certainly made announcements we were getting out of the material. I don't know if we made any announcements that we were working on substitute materials, that's a sales and marketing situation. I don't know whether they did or not.

Q. As you sit here today based on your years with Monsanto and all of your testimony you don't know if this announcement to which you have referred and which you describe in your Plaintiff's Exhibit No. 3 was ever made?

MR. CARNEY: Well, which announcement are you talking about? I think there's several things.

MR. MC CREA: It says, "We may be forced to make such an announcement at any time."

A. I find it a little hard to say what announcements I'm talking about,but certainly I know we made two very definite announcements. One, we're getting out of all the open uses of PCB's. No. 2, we're getting out all of uses of PCB's and discontinuing use and -- the manufacture and sale of it. We made those two announcements. Whether or not we made the announcements we've got a substitute for this or if we ever had a substitute or what percentage of the market we ever had, I don't know.

Q. (By Mr. McCrea) Did DDT cause adverse environmental effects?

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A. Yes. It caused thinning of birdshell eggs.
Q. Anything else?
A. No. Not that I can recall.
Q. Dr. Kelly, isn't it a fact that at the time of this letter Monsanto was using PCB's in pesticides to extend the kill life?
A. No, it was not. That was a recommendation made by the Department of Agriculture, as extender in pesticides. To the best of my knowledge I have seen the Department of Agriculture recommendation but it certainly was an extremely small portion of the PCB business and I doubt very much -- there may be an isolated Monsanto statement about its use, but I don't recall seeing it in technical bulletins.
Q. Dr. Kelly, you don't recall any publications of Monsanto in which they stated that PCB's extend the kill life of pesticides by up to ten years?
A. I may have seen them referring to Department of Agriculture work, they may have quoted Department of Agriculture findings.
Q. Did Monsanto have any customers to which it sold PCB's to use as an extender in pesticides to --
A. I don't know if it did or not.
Q. Monsanto had a wood treatment operation, correct?

A. Yes, it did.
Q. And you manufactured pentachlorophenol?
A. Yes, we did.
Q. And did you manufacture other wood preservatives?
A. Sodium pentachlorophenate, which was a sodium salt of pentachlorophenol.
Q. Did you use PCB's as a termiticide?
A. Not that I ever heard of.
Q. As you sit here today you have no knowledge of Monsanto experimenting with PCB's as a termiticide for a wood protection?
A. That's a little different than what you said. You said did they ever use it as a -- I understand by using it did they offer for sale as a termiticide. I do not know whether or not they ever experimented with it or not. I don't know. I have seen no articles on it.
Q. Do you know Robert Arceneaux?
A. I recognize the name. I cannot tag him with any position or anything in the company.
Q. If he has described experiments by Monsanto in using PCB's to kill termites as a wood preservative, that information is new to you?
A. It all depends. I would think so, but if you will give me what information he is supposed to have said,

let me look at it and it may refresh my memory I may know something about it. I don't recall at the present time. It was certainly not a very prominent feature of PCB's, let me tell you.

Q. But it could be?

A. Possibly, if they experimented with it. I don't know if they ever marketed for it. I don't recall it.

Q. Are you familiar with any test grounds at Florida State University in which PCB's were used as a termiticide in wood by Monsanto?

A. I have heard something about that. They did have experimental -- they did some experiment on -- I don't know, soaking PCB's or soaking posts in PCB's and putting it in the ground and I think they used it after the question of nonbiodegradeability came in, they checked it to see -- they checked those areas, but I don't recall of ever having any sales effort or marketing effort devoted to the use of PCB's as a wood treating chemical.

Q. Do you recall the years in which Monsanto was experimenting with PCB's by soaking wood posts in the chemical?

A. No, and I'm not even sure if they just soaked the wood. I don't know how they did it. I just heard that sometime after I left the company. I don't know when

I heard it.

Q. Monsanto sold its wood preserving business to Koppers, correct?

A. I don't know to whom they sold, they disposed of it. They hadn't sold it by the time I left, but I don't believe they are in the wood treating business anymore.

Q. With respect to Plaintiff's Exhibit 3, which is your letter to Herb Blumenthal, dated April 8, 1970, did you receive inquiries from him before you wrote this letter?

A. I don't think so, and if I did I would have very probably said, "In reference to your letter and so and so, here is the information."

Q. Did you authorize this letter or did you sign it or did you do both?

A. I did both. That's my secretary's initials.

Q. But the information contained in the letter was your information, not information supplied to you. In other words, you knew and understood what was being stated?

A. Well, I got it from somebody.

MR. CARNEY: I'm going to object.

Q. (By Mr. McCrea) Somebody didn't come in to you with a letter and say, "Dr. Kelly, could you sign this

and send it to Herb Blumenthal?"

A. They certainly did not.

Q. Dr. Kelly, you retired from Monsanto Company in 1974, is that correct?

A. That's correct.

Q. When you retired did you own stock in Monsanto Company?

A. Yes, I did.

Q. Do you own stock in Monsanto Company today?

A. Yes, sir.

Q. Now I -- Do you know the value of that stock?

A. I haven't looked lately. It's been going down.

Q. Do you know the approximate value of all of your stock ownership in Monsanto Company?

A. $90,000, something like that.

Q. And do any other family members have stock ownership in Monsanto?

A. Small amounts.

Q. Do you know what --

A. Ten thou --

Q. Excuse me. Do you know what that would total?

A. Ten thousand dollars.

Q. Do you have what generally could be referred

to as stock options at this time, can you increase your stock ownership?

A. Only by going out in the open market and buying it. I have no stock options.

Q. Did you know any of the individuals at the Bloomington Westinghouse plant from 1957 which I will represent to you is the day I understand it opened until today?

A. No, sir.

Q. Did you know any of the --

MR. CARNEY: Would you read that last question back? I just didn't hear it. I didn't hear the dates.

MR. MC CREA: 1957 to today.

MR. CARNEY: Okay. You don't need to read it.

Q. (By Mr. McCrea) Did you know any of the individuals at the Muncie, Indiana transformer plant from the date it opened in the fifties to this date?

A. No, sir.

Q. Did you know any of the individuals at the Westinghouse transformer repair facility in Cincinnati, Ohio at any point in time up to and including today?

A. No, sir.

Q. Can you describe to the jury the medical

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monitoring program of Westinghouse for its workers --

A. No, sir.

Q. -- exposed to PCB's?

A. No, sir.

Q. Do you know if Westinghouse had a medical monitoring program for its workers exposed to PCB's?

A. No, sir, I do not.

Q. Did you ever establish a written protocol for medical monitoring of workers exposed to PCB's?

A. No, sir.

Q. Were you ever asked to describe a medical monitoring program for workers exposed to PCB's by any individual from Westinghouse Electric Corporation?

A. No, sir. You must remember that Westinghouse Electric has a very sophisticated medical organization. It antedated mine, was bigger than the Monsanto and they knew all about PCB's. They knew how the workers were exposed, which I didn't.

MR. MC CREA: Going to ask that that answer be stricken and that Doctor, could you -- Could the court reporter reread the question and could you answer the question?

THE WITNESS: I thought I did.

MR. CARNEY: Well, I'm going to object to the motion to strike, because I think the doctor did answer

the question. You just didn't like the answer.

MR. MC CREA: Didn't say I didn't like the answer. I want the answer.

Could the court reporter please reread the question?

(Reporter read back from the record as directed:

"Q. Were you ever asked to describe a medical monitoring program for workers exposed to PCB's by any individual from Westinghouse Electric Corporation?")

MR. CARNEY: Why don't you read the answer?

(Reporter read back from the record as directed:

"A. No, sir. You must remember that Westinghouse Electric has a very sophisticated medical organization. At any date --")

THE WITNESS: Antedated, a-n-t-e-d-a-t-e-d.

("-- antedated ours, was bigger than Monsanto and they knew all about PCB's. They knew how the workers were exposed, which I didn't.")

Q. (By Mr. McCrea) Who told you about the manner in which the workers were exposed to PCB's at Westinghouse?

A. Nobody. I said I didn't know how they were exposed.

Q. You said you knew how the workers were exposed?

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A. I said I didn't know. They knew, yes. They were manufacturing it, they were using it.

Q. Okay. What is the source of your information there?

A. I guess it's common sense. If you have a company that is using a material and it's in their plant they know how they are using it, they know how their workers are exposed.

Q. How were your workers exposed?

A. They were exposed during the filling, during leaks in pumps, they were exposed during changes in pumps, they were exposed during flushing out of lines.

Q. Were they exposed by fires?

A. No, sir. We didn't have any fires.

Q. Were there any other ways in which your workers were exposed?

A. Well, they may have been exposed by cleaning parts of the equipment.

Q. And that's common sense?

A. Beg your pardon?

Q. That's common sense?

MR. CARNEY: Well, I don't know what you mean by common sense. You're --

Q. (By Mr. McCrea) Well, strike it. Were there any other ways that your workers were exposed?

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A. I can't think of any.
Q. Were there vapors?
A. Well, yes. I said during filling, material came out hot.
MR. MC CREA: Break.
(Whereupon, a short break was taken.)
Q. (By Mr. McCrea) Dr. Kelly, we're back on the record. Dr. Kelly, during the time that we had the continuance of the deposition were there any materials that you reviewed or any answers which you gave that you would like to bring to our attention?
MR. CARNEY: Read that question back --
MR. MC CREA: It's a compound question, let me break it down.
Q. (By Mr. McCrea) Dr. Kelly, we had two days of depositions a week ago or so, following the continuance of the deposition during that interim time, were there any materials that you reviewed as those materials relate to answers you gave which you would like to bring to our attention and if so what are those materials?
A. No, sir.
Q. And the same question for any answers, were there any answers which you gave which upon thinking about them you would like to amplify them in any way?
A. To amplify?

Q. Right. Amend, change?

A. Well, not change. Well, I'll amplify one.

Q. All right, sir.

A. At the close of one deposition you asked me did you put on the label, on PCB's, that it could kill you, and I said no. I'd like to amplify that by saying; We manufacture aspirin; aspirin if you take too much of it will kill you, we don't put that on the label. People manufacture iron pills; if you take enough iron pills that will kill you. There are probably four hundred thousand industrial chemicals that will kill people if you take too many. None of those are put on the label.

Q. Any other answers that you would like to amend or modify, amplify in any way?

A. No; but I presumably will see the deposition to correct it for errors.

Q. Absolutely correct. Dr. Kelly, have you reviewed any depositions of any of the plaintiffs in this case?

A. No, sir.

Q. Did you consult with Monsanto Company or the attorneys regarding questions to be addressed by Monsanto to the plaintiffs in this case? Did you help them prepare questions?

A. No, sir. There may have been

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interrogatories, but I don't even know if I did that.

Q. I appreciate that, and I think you answered it. You didn't sit down with them and say, "Why don't you ask this set of questions? This might be helpful to our case."

A. No, sir.

MR. MC CREA: Could the court reporter mark this as Plaintiff's Exhibit 4, I believe?

(Whereupon, Plaintiff's Deposition Exhibit No. 4 was marked for identification.)

Q. Dr. Kelly, during the depositions of the plaintiffs in this case, the attorneys for Monsanto asked certain questions regarding health problems or health symptoms; now I will represent to you that I abstracted those depositions and took a list of perhaps eighty-five percent of the questions which Monsanto asked to the plaintiffs.

I have listed those symptoms on a document and I would like to now hand your attorney that document so that he may review it and then I would like to hand it to you and then I'll address a question to the document and we can go from there?

A. Yes.

MR. CARNEY: Let me just object for the record that Exhibit -- Plaintiff's Exhibit 4 is I believe,

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six pages long and I'm not going to take the time -- I don't think you're proposing that I do to check make sure the statements that you made about the document -- I'm not saying they are inaccurate, I just don't know about checking them.

MR. MC CREA: I'm not stating that they are totally accurate, all right. I'm not stating that each and every health symptom and/or problem on that list is a verbatim abstract from the depositions. But what I will tell you is it's a good faith effort to duplicate all of the questions which you asked nearly all of our plaintiffs in some forty some depositions, and by you I mean Monsanto, and I also will represent to you that it includes perhaps eighty-five percent of the questions, there are maybe fifteen percent that are not incorporated on this document.

MR. CARNEY: Okay, just for the record, I think most of these problems that are listed in Exhibit 4 and again I'm not going to take the time to look at them, but I would say probably most of them are complaints that various of the plaintiffs have made either in their answers to interrogatories, in their petition in this lawsuit, possibly complaints they made to treating doctors or complaints they have made in their depositions. So I don't know that this is a list that has any meaning other

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than than forty or fifty people, some have made these various complaints.

Q. (By Mr. McCrea) All right, sir. Dr. Kelly, I hand you what the court reporter has marked as Plaintiff's Exhibit 4 and on the top it states, "Deposition of R. Emmet Kelly, M.D.," June 12th, 1990. The question which I would like to address to this document is incorporated at the top of the page.

The question states: "In your opinion, based on medical probability is there no causal relationship, comma, a possible causal relationship, comma, a probable causal relationship or a proven causal relationship between exposure to Yusho PCB oil which was contaminated with furans and other chemicals and each of the following --" and what I would like for you to do is to simply go through that list and check the appropriate response. If you're unable to provide an opinion I think we should also have that category and you can simply X out the symptom, if you have no opinion.

MR. CARNEY: Let me object to the form of the question and I'm going to object to the format. You know, you're giving the witness a questionnaire to answer in a deposition, we've got six pages listing probably twenty-five health problems or symptoms on each page, so you're talking about maybe a hundred and fifty questions

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and they are multiple questions, or multiple choice questions.

I'm going to object to that being done at this deposition. I don't think that there is any basis for that kind of a questionnaire being done or taking up the time of the jury or the -- and the time of everybody here while the doctor would have to answer that. It could take a significant amount of time. If -- so I would object to this as a format and I would object to the question because I think the question's compound and vague and ambiguous.

Q. (By Mr. McCrea) Dr. Kelly?

A. Can I answer it?

Q. Just a second. It's important for me that you understand the document in question. I did this to save time and if you would like to go off the record and check those off, that's fine with me. You don't have to sit here on the record and do it. But rather than ask each one and then have it typed out in a deposition, I thought this would save time.

So with that -- with your attorney's objection, and the question posed to you I'll ask you the courtesy, would you prefer to go off the record and respond to these various symptoms or would you prefer to stay on the record and do it?

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MR. CARNEY: Why don't we go off the record?

MR. MC CREA: All right, agreed.

(Whereupon, a discussion was held off the record.)

Q. (By Mr. McCrea) Dr. Kelly, we're back on the record --

MR. CARNEY: Let me make a statement first. I objected before and I want to reiterate my objection to this way of proceeding. I object to having this witness fill out a -- answer a hundred and fifty questions in this kind of a format. Number one, if I could -- Let me see the document. Dr. Kelly, if you -- We're talking about Exhibit 4. I want to further object in addition to the objections I made before to the form of the question.

I believe the standard used in Missouri is not based on medical probability. This is a compound question. It relates to PCB exposure in Yusho, the Japanese PCB oil which was contaminated with furans and which the experts have indicated that it was the furans, the heavy concentration of furans in the PCB oil in Yusho that caused the problems in Yusho and also the victims in Yusho ate the PCB's, used it in cooking. So I'm going to object to this format and instruct the witness not to participate in filling out this questionnaire, in this form anyway.

MR. MC CREA: Well, I can ask them one at a

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time and that would take probably six times as long as it would to fill out the form and I think that we certainly are entitled to Dr. Kelly's opinion for discovery purposes in this case for the reason that there was heating of PCB's in the Bloomington, Westinghouse plant, there were explosions on a daily and weekly basis of capacitors in the Bloomington, Westinghouse plant, there were fires in the Muncie plant in which the Muncie Fire Department was called to extinguish the fires and there was heating and there were also incidents of fire in Cincinnati; all of which are calculated according to Dr. Kelly's testimony to produce furans at a window of six hundred to nine hundred degrees Fahrenheit.

I don't think there's been any evidence that absorption into the body by ingestion produce a more toxic or less toxic systemic reaction than absorption by route of entry through the skin or breathing. Therefore Counsel's suggestion that ingestion or as he states eating of PCB's somehow distinguishes the factual situation in Yusho in 1968, and Taiwan in 1979, I don't think is meaningful.

The idea of the form, Tom, is to save time. We sat through forty some depositions in which you and your associates addressed all of these questions one at a time to each and every one of our plaintiffs and we never

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objected. Now it's our turn to determine the medical significance of these questions from Dr. Kelly, and I can ask them one at a time and you can object and thus eliminate the fact that it is a compound question or we can save time and have Dr. Kelly answer this form.

I think the question is fair, I think that medical probability is in fact the standard, it's the standard in Missouri, it is more likely than not in his opinion is it more likely than not, and I think that the question's fair.

MR. CARNEY: Well, again, I don't think there will be any saving of time. I think it will save time to proceed without going through this elaborate questionnaire which will not -- I think is objectionable, so will not move this case along at all or the testimony. I mean, you have the option of asking questions and I just -- I have the option of objecting where I think they're improper.

I would point out that again you're talking about -- you're trying to relate again the symptoms or the problems of the plaintiffs in this case with -- and none of these plaintiffs as I understand it were exposed to Japanese PCB's with the heavy furans that caused the problems in Japan and Taiwan.

None of these plaintiffs as I understand it ate the PCB's like they did in Japan and I believe there is a

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difference between eating them and having your skin come in contact with them. We can debate that; but I don't know that our opinions matter really, it's going to be the experts in the case.

Further, Dr. Kelly has not examined any of these plaintiffs and does not intend to examine the plaintiffs to determine what problems they had and whether they're related to PCB's. We had a panel of doctors in various specialties who have done that and I assume you're going to take their depositions and ask those specific questions.

So I don't know that this is the right witness to cover the health problems that the plaintiffs have. Dr. Kelly has never met any of the plaintiffs and we don't intend to have him examine any of the plaintiffs. With regard to your comments about the explosions daily in Bloomington, et cetera, I'm not going to debate what that is, except that I don't that think you've accurately characterized the conditions in the three plants.

At any rate, my instruction to Dr. Kelly is not to respond to the questions in this format as you -- in terms of filling out a questionnaire with these problems that I have outlined in the questionnaire that you've given to him.

Q. (By Mr. McCrea) Dr. Kelly, in your opinion,

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based on medical probability, is there no causal relationship between exposure to the Yusho PCB oil which was contaminated with furans and other chemicals and asthma?

MR. CARNEY: Let me object and we'll have the question read back. Let me object to the form of that question again for the same grounds I outlined before, and in addition what you're asking the doctor to do in this question and in Exhibit 4 is to try to recollect what was in the literature, the Japanese literature about what symptoms and problems the Yusho victims who had the heavily furan contaminated PCB's and they ate them and to try to recollect what was in there.

I don't think there's any evidence that Dr. Kelly has independent knowledge as to what these Japanese victims' problems were other than through the literature. We have the literature, that would be the best evidence of what's contained in there and Dr. Kelly can give you his recollection but I don't know that that helps any.

He probably if you get into the detail particularly that you have in Exhibit 4 would have to look at the literature to determine whether asthma or something else was a symptom of the Japanese Yusho victims who ate PCB oils with heavy contaminants of the furans.

Q. (By Mr. McCrea) Dr. Kelly, you may answer.

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A. Well, first of all you have to tell me what you mean by medical probability; one out of a million, one out of fifty, one out of two.

Q. More likely than not.

A. Fifty-one percent?

Q. Let me explain this. That's a good question. I'm asking you if in your opinion based on medical probability is there no causal relationship between exposure to the Yusho PCB oil which was contaminated with furans and other chemicals and asthma. In other words, can you tell us based upon your opinion on a more likely than not basis if there was no causal relationship?

A. Based on --

MR. CARNEY: Same objection.

A. Based on my knowledge of the Yusho literature, is that correct?

Q. (By Mr. McCrea) Your knowledge of the Yusho literature, your attendance at seminars, your information from medical personnel throughout the world, any available source to you.

A. Well, all right. We start then. Asthma, I would have to know, A, the person's smoking habits. I would have to know whether they had asthma previously, whether the asthma was exaggerated before I could answer any of those questions.

TOWOLDMON0000497

Q. What do you mean exaggerated?

A. Well, was it hastened by -- Did they get, have asthma before and after they ate the PC -- Yusho PCB oil with the furans in, or did they get more asthma. I'd have to go back to the literature and look.

Q. All right. Skin irritation?

MR. CARNEY: Could I -- because I assume you're going to go down this list.

MR. MC CREA: Yes.

MR. CARNEY: Could I have a standing objection to this line of questioning, to the question in terms of the use of the word medical probability and the question being compound and to the question being based on the medical literature or the literature -- the Yusho or Japanese literature, which I think is a matter of record and would be the best evidence of what the problems were associated with that, and the fact that Dr. Kelly does not have firsthand knowledge of this; so that we're not adding anything other than Dr. Kelly's recollection of the literature, and I think the question's vague and ambiguous as well. If I can have a standing objection, then I'll try and unless I hear another objection not to continue my objections and we can move faster.

MR. MC CREA: I agree that you may have a standing objection as to the fact that it is a compound

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question and all of those other reasons stated in your objection.

Q. (By Mr. McCrea) Dr. Kelly, then, skin irritation and again with the understanding that we are answering the question at the top of the page and if you don't understand that please address any lack of understanding?

A. On all these we are talking about the Yusho PCB oil, which is a Japanese Kanechlor, which was contaminated with chlorinated dibenzofurans and contaminated with chlorinated quaterphenyls, that's what we're talking about?

Q. That's right.

A. In an undetermined amount, various amounts in the rice oil which they put in the stuff they cooked?

Q. Exactly correct.

A. Okay. Skin irritation, I don't know what they are talking about. Skin irritation, what's the irritation? Redness? What was it? I don't know. How long did it last? It may be -- I will also have to say I would probably have to go over the six articles that were summarized by Selikoff in his journal on the Yusho incident before I could be sure about all these things. Put down a don't know on skin irritation.

Q. All right, sir. Skin rashes?

TOWOLDMON0000499

A. Yes, that's proven; if by skin rashes you mean chloracne and pigmentation.

Q. Hearing problems?

A. There again, I don't know if they had infected chloracne inside their ear canals, I don't know that. I would say none on that, none to not proven -- none to I don't know; because I don't know the basis for the hearing problem. I don't know what hearing problem it is. I would suggest we also have a column, not enough information.

Q. Okay. Let's add that.

A. Huh?

Q. All right, we'll add that.

A. Okay.

Q. And do you want to add not enough information to the hearing problem?

A. Hearing problems, correct.

Q. Headaches?

A. Again, how often? One headache, one four times a day, one lasting for weeks? Not enough information.

Q. Kidney problems?

A. Again, what kind of problems? Getting up at night, passing blood, kidney stones? Not enough information.

TOWOLDMON0000500

Q. Swelling?

A. Where? If it's in the gums, some of the children had swelling of their gums; but I don't know anyplace else.

Q. Would you say proven as to children with swelling in their gums?

A. Yes.

Q. Hypertension?

A. Well, I think hypertension and high blood pressure are the same.

Q. All right. Can we treat them as one?

A. Yes. It was alleged but further work showed that there wasn't any connection; so not proven.

Q. Stomach problems?

A. There again, I don't know. That runs all the way from indigestion to stomach cancer. So I don't know really how I could answer a question like that.

Q. Not enough information?

A. Not enough information.

Q. Sinus problems?

A. Not enough information. I don't know what kind of problems they had.

Q. So would that be don't know and not enough information?

A. That's correct, not enough information.

TOWOLDMON0000501

Q. Ulcerated esophagus?

A. I recall that there was one instance of ulcerated esophagus, but it certainly without seeing the report again and something if anybody else, if any other cases had it outside of the one I'd have to say not proven.

Q. Prostate problems?

A. Not enough information.

Q. Cysts?

A. Yes, proven.

Q. Pneumonia?

A. Not proven.

Q. So that would be -- It is your opinion that there was none?

A. That's right, not proven.

Q. Not proven. Peeling of feet?

A. Well, let's put feet and hands together. I mean, I don't know what they mean by peeling of that.

Q. Let's add to that peeling of skin on the bottom of feet?

A. Not enough information. I don't know if they were checked for fungi or not, if they had athlete's foot.

Q. So that would be not enough information?

A. That's correct.

Q. Peeling of hands, peeling of skin on hands?

TOWOLDMON0000502

A. Same.
Q. Acne?
A. Proven.
Q. Skin cancer?
A. Not proven, none.
Q. Boils?
A. If by that you mean an infected cyst, proven, but a boil, again as I said a boil is around a hair follicle, but -- so technically if it's a -- by that you mean an infected cyst, yes.
Q. Okay. I'm going to put infected cyst.
A. Right.
Q. And that's proven?
A. Yes.
Q. Flushing of skin?
A. Not enough information.
Q. Skin discoloration?
A. Yes.
Q. Unusual growth or loss of hair? Now, I think we should break that down into two categories, first, unusual growth of hair?
A. Possible.
Q. And second, unusual loss of hair?
A. Not enough information.
Q. Allergies?

TOWOLDMON0000503

A. I don't know what you mean by that. Does that mean they are allergic to PCB's, allergic to milk, allergic to rice? Not enough information.

Q. Let's interpret that as being after the exposure they became allergic to various things, not PCB's. In other words, they became more of an allergic-type person.

MR. CARNEY: Are you saying that's what the articles in Yusho say?

MR. MC CREA: No, I'm just asking him.

MR. CARNEY: Do the articles in Yusho say that?

MR. MC CREA: I'm asking him for his opinion of the symptoms in Yusho, based on articles, based on seminars, based on communications with personnel within Monsanto.

MR. CARNEY: Well, I don't know that Dr. Kelly has indicated he has any information about Yusho other than what's contained in the literature. So I don't know how you could be asking him and he I think he has indicated he wasn't there and didn't examine them personally.

So again I don't -- I think this is a waste of time to have Dr. Kelly try to recollect what's in the literature and whether it's in there in a sufficient

amount to -- or clear enough with control groups, et cetera, to make any kind of a determination as to whether -- what the probability is.

MR. MC CREA: I agree that all those variables exist, but I'm asking him his opinion based on medical probability if there is no causal relationship, a possible causal relationship, a probable causal relationship, or a proven causal relationship between exposure to the Yusho PCB oil which was contaminated with furans and other chemicals and allergies.

Q. (By Mr. McCrea) And the way I'd like to phrase that is more prone to allergies after the exposure.

A. I'd have to review the literature.

Q. Do you understand the question; more prone to allergies?

A. Yes.

Q. Thank you. So we'd say that's not enough information?

A. That's correct.

Q. Hives?

A. Same answer, hives are an allergic reaction.

Q. Profuse sweating?

A. Here again I don't know if you -- again, I need more information. If you got a bunch of infected cysts, you've got a fever, you've got sweating. So more

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information.

Q. Not enough information on that?

A. That's correct.

Q. Problem with toenails?

A. Possible.

MR. CARNEY: Let me object to that on the problem with toenails. I don't know, are you talking about ingrown toenails, are you talking about thick toenails, are you talking about what -- It seemed to me there are several types of problems with toenails, so that's a vague question.

Q. (By Mr. McCrea) Let's break that down. First, thickened toenails?

A. There were some changes in the toenails. I don't know if they were problems for the people or not; but there were some changes in the toenails.

Q. Okay. Let's make that changes in toenails rather than problems with toenails?

A. Yes.

Q. And that would be possible?

A. Yes.

Q. And the next one, let's make that changes in fingernails?

A. Possible also.

Q. Shortness of breath?

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A. I'd have to review that. Not enough information.

Q. Emphysema?

A. Same answer.

Q. Sores that won't easily heal?

A. I don't know what they mean by that, whether they mean the sores from the infected chloracne or sores they might have got scraping their knees on bamboo? I don't know.

Q. Let's make that unrelated to chloracne. Let's make that sores that are unrelated to chloracne.

A. Not proven.

Q. So that would be none?

A. That's correct.

Q. Bronchitis?

A. More information needed.

Q. Not enough information, correct?

A. That's right.

Q. Breathing problems?

MR. CARNEY: Objection to what is meant by breathing problems; and again asking this witness to try to recollect everything in the literature that he read about the Japanese victims where they ate PCB's laced with heavy amounts of furans that caused the problem.

A. Not enough information on what the symptoms

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are.

Q. (By Mr. McCrea) In other words, that question is -- You don't know what is meant by the word problems?

A. Yes.

Q. The same for the next one?

A. Throat, right.

Q. That's it's not understood what is meant by problems?

A. Correct.

Q. So that would be need more information as to the symptoms?

A. Yes.

Q. Increase or decrease in sensitivity to certain kinds of smells?

A. I just have no comment to make on that at all.

Q. So your answer would be no comment?

A. No comment.

Q. Altered sense of taste?

A. The same answer to that one.

Q. And that would be no comment?

A. That's correct.

Q. Epilepsy?

A. Not proven.

TOWOLDMON0000508

Q. Shaking or tremors in hands -- Excuse me, shaking or tremors of hands?

A. I need more information.

MR. CARNEY: Let me object. As we're going through these questions are you implying when you get an answer not proven that it means it's possible or probable or --

MR. MC CREA: No. When it says it's not proven it means it can happen.

MR. CARNEY: Well, again --

MR. MC CREA: When he says none, when he says it's not proven that means it's his opinion that it didn't happen.

MR. CARNEY: It didn't happen in the literature in Japan?

MR. MC CREA: No, Tom, it didn't happen in Yusho. He's not restricted to the --

MR. CARNEY: Well, why don't you ask him if he has any firsthand knowledge outside of the literature that's involved. It seems to me you're -- you know, now I object to all these questions on the further ground that I think your understanding of the answers and my understanding certainly are different as to what's meant by none, as to what's meant by proven.

MR. MC CREA: None means that he's stating

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based on his opinion, he's stating in his opinion based on medical probability that that symptom was not caused by the exposure to the Yusho PCB oil. That's what that means, it was not caused.

MR. CARNEY: Well, that wasn't my understanding of what was meant by none. Maybe you need to -- the problem with your questions, Mr. McCrea, when you're assuming definitions and terms without defining those terms in the question we have then the potential of a communication gap between a term that's undefined that may mean a different thing to the witness than it does to you, Mr. McCrea.

So I think if you're not going to define your terms in the question I think you have another flaw here that -- and the flaw is that you have got questions with undefined terms.

MR. MC CREA: I think that's a valid objection. In other words, I wouldn't want to finish this deposition and come back and face the reality that we weren't talking about the same thing.

Q. (By Mr. McCrea) Let's go to where we are, epilepsy, all right. I have indicated on my sheet that you're stating as a matter -- that you in your opinion are stating as a matter of medical probability that that symptom was not caused by the exposure on the Yusho oil?

A. Yes; but I also though can also state that somebody in that Yusho experience may have had epilepsy.

Q. Right, and I understand that; but you're stating it was not caused by the oil?

A. That's correct. I don't believe epilepsy was caused by the Japanese PCB oil with --

Q. And you're stating it wasn't possible that it was caused by the Yusho oil?

MR. CARNEY: Well --

MR. MC CREA: Just a second please.

Q. (By Mr. McCrea) Because we've got a category for possibility.

MR. CARNEY: Well, that's the problem. You're assuming by his answering one question in your multiple choice group an answer on other questions which you're not asking, number one. Number two, when you say none, I don't know whether you're asking him was there any epilepsy shown by any of the people who ate contaminated Japanese PCB's laced with furans, with heavier concentrations of furans than in the U.S. PCB's, again. So I haven't still understood what you mean by none.

MR. MC CREA: Didn't happen.

MR. CARNEY: That no one in those articles --

MR. MC CREA: Established that symptom as being in any way related to the exposure to PCB's?

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THE WITNESS: Well, that isn't what you were saying.

MR. CARNEY: Yeah, now you've changed the question.

THE WITNESS: Well, you've changed the legal parameter.

MR. MC CREA: Well, let's read the question again.

THE WITNESS: Yes, but not what you just --

MR. MC CREA: It was my error.

THE WITNESS: Just so we know the ground rules of each one.

MR. MC CREA: Believe me, when I get back to Indiana I'd like to think that we understand the ground rules; and it's important for me, it's important for you, it's important for your attorneys.

Q. (By Mr. McCrea) Go back to Page 1, the question at the top, please.

A. Okay.

Q. Let's look at that again, Dr. Kelly. It says in your opinion, based on medical probability is there no causal relationship? That would mean none, in my thinking. A possible causal relationship? That would mean possible. A probable causal relationship? That would mean probable; or a proven causal relationship, that

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would mean proven. In other words, we have four categories, it didn't happen, there is no indication --

A. No. That isn't the category, it didn't happen.

Q. As a result of PCB ingestion?

A. All right, fine, but you've got to say -- it happened, it happened there.

Q. As a result -- Read the question. Between exposure to Yusho PCB oil. All right? I'm not saying that they couldn't have interviewed a person who had epilepsy and they would report this person has epilepsy; but this person had epilepsy before the exposure; therefore it is concluded that there is no causal relationship.

Now, if they interviewed the person and they said this person has epilepsy, the individual is thirty-four years old, the individual never had epilepsy up until that date, there was nothing to explain the epilepsy based upon other potential causes, that's to me what we're talking about.

MR. CARNEY: Let me just make the objection that just because one person out of all of the people that were -- that ate the Japanese contaminated PCB's with furans happened to get epilepsy doesn't mean that there's any proof that PCB's of the Japanese variety that have the

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furans causes epilepsy.

MR. MC CREA: Well, the doctor can answer it that way.

MR. CARNEY: Well, but that's not the -- the problem is your question's confusing as to when you say none. Do you mean none of the victims had epilepsy, when they got epilepsy, whether the writers concluded one way or the other that the epilepsy had anything to do with the Japanese people eating these PCB's with the furans? I don't know what you mean when you say none. I'm ambiguous -- I think it's ambiguous as to what you mean.

MR. MC CREA: What I mean is, I'm asking the doctor for his opinion, all right; do you understand that, correct, Tom?

MR. CARNEY: Well, and again --

MR. MC CREA: Just a second. I'm asking him for his opinion; is there any problem with that?

MR. CARNEY: I do have a problem with that, because the doctor has indicated that his knowledge is based on some literature. Now there are articles that cover this and I don't know that he has any opinions outside of that literature with regard to the Japanese people ingesting PCB's with furans.

MR. MC CREA: You're not stating that he's not qualified to discuss the cause and effect relationship

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between PCB's and health effects, are you?

MR. CARNEY: No. What I am saying is with regard to the Japanese PCB's that the Japanese cooked with and ate and those particular furans when you had much more -- those PCB's had a much higher concentration of furans. It's something entirely different than the PCB's in the United States with a much lower furans and so I think there's a difference and I'm not sure that Dr. Kelly has any more knowledge other than the literature about the Japanese situation.

MR. MC CREA: Are you stating that Dr. Kelly is not qualified as a medical practitioner to offer his opinion on the cause and effect relationship between the exposure to Yusho PCB oil and health problems? Are you stating he's not qualified to give that?

MR. CARNEY: No. Dr. Kelly can speak for himself as to what he feels he can offer his opinions on. All I'm doing is making a comment that there's a difference, number one, and I don't think he has indicated that he has knowledge outside of the literature with regard to the Japanese.

MR. MC CREA: He started off with skin irritation, don't know, hearing problems, don't know. He also has given the answer not enough information on several occasions, totally legitimate answers.

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MR. CARNEY: I'm not disputing that all. But I am disputing that your questions are vague and I certainly had a different understanding as to what you meant by none. Now Dr. Kelly may. I don't know that you defined the terms.

MR. MC CREA: None means he has stated based on as a medical doctor, based on information he has read and based on the information that has come to his attention that that problem was not caused by the ingestion of the PCB Yusho oil, period.

MR. CARNEY: Well, you're not even saying whether there was any indication that there was any epilepsy.

MR. MC CREA: Well, I'm asking him the question and if there's been no indication --

MR. CARNEY: Well, go ahead and ask your questions. I think so far they have been very vague and I think there's been an -- at least in terms of what I understood your questions to be I have not understood the definitions that you just recently defined your questions to be.

MR. MC CREA: None means none, possible means possible.

MR. CARNEY: None what? None what?

MR. MC CREA: No connection. No connection

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whatsoever.

MR. CARNEY: Do the articles say there is no connection?

MR. MC CREA: No, that it's his interpretation of the articles, it's his interpretation of the data, it's his opinion as medical doctor that there is no causal relation.

MR. CARNEY: Well, that's not the questions that I understood that you're asking.

THE WITNESS: Well, I'd like to have a couple more definitions clarified.

MR. MC CREA: Yes, sir.

THE WITNESS: When I say don't know, I mean by that I don't -- have not checked the literature recently to find out whether this -- whether I can make an -- give an opinion on it.

MR. MC CREA: That's exactly the way I understand your answers.

THE WITNESS: All right, and when I say not enough information that means as we were talking about kidney problems, what kind of kidney problems were you talking about?

MR. MC CREA: That's exactly the way I understood your answer, Dr. Kelly. That's exactly right. In other words, there isn't -- That's exactly the way I

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understood it.

MR. CARNEY: Well, what is your --

MR. MC CREA: Ask him. Ask him. You said what is your --

MR. CARNEY: Well, what I'd like you to do is just have you ask questions that are not so vague and ambiguous that it leaves listeners confused as to what you're asking. That's what I'd like; if you could do that I'd appreciate it.

MR. MC CREA: I'd like to satisfy your questions for clarity.

MR. CARNEY: And up to date on this whole series of questions on Exhibit 4 I think this whole series of questions is riddled with ambiguity to the point where it's unintelligible to me what you're asking.

Q. (By Mr. McCrea) It's not easy, is it, Doctor? Dr. Kelly, we're down to shaking or tremors of hands, the question posed to you by this document is in your opinion based on medical probability is there no causal relationship, a possible causal relationship, a probable causal relationship or a proven causal relationship between exposure to Yusho PCB oil, which was contaminated with furans and other chemicals and shaking or tremors of hands? Your answer is there's not enough information?

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MR. CARNEY: Objection. Well, I'm objecting to the form of the question, it's compound, as well as all the other objections.

A. I would say I would have to examine the Yusho literature before answering that question.

Q. (By Mr. McCrea) Change in speech pattern?

MR. CARNEY: I'm going to object. I don't know what you mean by change in speech pattern.

MR. MC CREA: It means a speech pattern which has somehow been altered or change. I don't know that that's --

MR. CARNEY: That doesn't help cure my objection.

A. Well, I'll give a double-barrelled answer to that.

Q. (By Mr. McCrea) All right, sir.

A. I don't -- I need more information as to what the change in speech pattern is. Is he talking about stuttering, is he talking about repeating words? And I'll have to say I'll have to examine the literature, the Yusho literature to see whether there's any possible or probable connection. You're asking me really to give an epidemiological answer to any of these questions.

Q. Just asking for your opinion.

A. Well, yes; but as I say I'll have to

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double-check it to see if there's one person there with a speech pattern or fifty, with a changed speech pattern.

Q. I understand.

A. Numbness in hands. Let's first separate this out, numbness in hands. The same situation; I'll have to have more information as to how, when the numbness came on, how long it lasted and in what percentage of the people it was reported.

Q. So that would be not enough information?

MR. CARNEY: Well, again, you know, you're trying to put him into a --

MR. MC CREA: No.

MR. CARNEY: You made four categories, he's given you an answer.

MR. MC CREA: Okay.

MR. CARNEY: And somehow you're trying to put him into a category of yours and I think that's improper.

THE WITNESS: Well, my category is I need more information on it, and two, I would have to review the Yusho literature to come out with an opinion.

Q. (By Mr. McCrea) Okay, sir. Numbness in feet?

A. Same answer.

Q. Coordination problems?

A. Same answer.

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Q. Unusual gait or walking characteristics?
A. Same answer.
Q. Next page, stumbling?
A. The next two are really the same answer to that, stumbling or problems with balance.
Q. Yes, sir.
A. Same answer.
Q. And that answer is need more information? You would have to read the literature?
MR. CARNEY: I'm not sure that is --
Q. (By Mr. McCrea) What is the answer?
A. Well, the answer is I would have to know more about the stumbling, whether it was once or whether it was all the time, and I would have to read the literature to see -- the Yusho literature to see what the significance of the individual case reports might have been.
Q. All right, sir, and that's true for stumbling and problems with balance, is that correct?
A. That's correct.
Q. Arthritis?
A. Not proven.
Q. Joint pain?
A. I'd have to have more information and check the occurrence in the literature, of the Yusho literature.
MR. CARNEY: I just want to object to that

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one as well as a couple of the others. I don't know what you mean by joint pain.

MR. MC CREA: Stiffness or soreness of muscles.

MR. CARNEY: Again, I would object on the ground that I don't know what you mean by that.

A. Again, I need more information on how stiff they were, how long they were -- How sore they were, and I'd have to see the incidents in these people, by reviewing the Yusho literature following the ingestion of this Japanese PCB material.

Q. (By Mr. McCrea) All right, sir. Paralysis?

A. I don't think it's been proven, no.

Q. And that would be again for clarity of the record you are stating in your opinion based on medical probability there is no causal relationship?

A. What kind of paralysis? What are we talking about? Paralysis of the little finger or a stroke or one whole extremity? I don't know what you mean. Dropped eyelid? I mean, there are all sorts of paralysis, so I say, I don't know. I could change my answer to I'd like to -- I need more information but I don't think there is any causal relationship.

Q. Let's say paralysis of the limbs, hands, legs?

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A. You mean they can't move their arms and legs?
Q. Right.
A. I don't believe there's any causal relationship.
Q. Problems with bones?
MR. CARNEY: I'm going to object. Problems with bones is very broad.
Q. (By Mr. McCrea) How about changes in bone structure? Let's change that to changes in bone structure.
MR. CARNEY: I don't know what you mean by changes in bone structure. The question's vague as well as all of the other objections I have in my standing objection.
Q. (By Mr. McCrea) Okay, changes in bone structure.
A. I'd have to see more information on that.
Q. That's the break time. Thank you, Doctor.
(Whereupon, a lunch break was taken.)
Q. Dr. Kelly, we're back on the record. Again referring to Plaintiff's Exhibit 4, is that the number, sir, on the document?
A. Yes, sir.
Q. The next symptom listed as I recall when we took our break is swelling of joints. Do you have an

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opinion based on a medical probability if there is no causal relationship, a possible causal relationship, a probable causal relationship or a proven causal relationship between exposure to the Yusho PCB oil which was contaminated with furans and other chemicals and that particular symptom?

A. I would have to have more information about the symptoms, when the swelling came on, how long it lasted and I would also have to review the -- re-review the Yusho literature to see what the incidence of this particular symptom was.

MR. CARNEY: Do I still have my standing objection?

MR. MC CREA: Yes.

Q. (By Mr. McCrea) The next symptom, rheumatism?

A. Same answer.

Q. Muscle spasms?

A. Same answer.

Q. Muscle weakness?

A. Same answer.

MR. CARNEY: I'm going to object on the ground that I don't know what is meant; what type of muscle weakness we're talking about and where?

MR. MC CREA: Again you understand that we

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took this from questions which you addressed to our clients.

MR. CARNEY: Well, as I recall at least in looking at some of those depositions that the questions would be asked in a general way, "Have you had muscle weakness?" and if they indicated they did then we asked where and when and what type and got details. So what I am saying is when you just ask these general questions without any definition to it I think it is overbroad.

Q. (By Mr. McCrea) Muscle twitching?

A. I'll have to give the same answer that I would have to know more about what is meant by that particular symptom and then re-review the literature to see if that was a prominent symptom in the Yusho cases.

Q. Swelling of hands?

A. Same answer.

Q. Multiple sclerosis?

A. None.

Q. Parkinson's disease?

A. None.

Q. Back problems?

A. Again, I would have to ask what back problems are we talking about, and I would have to review the literature, the Yusho literature to see if they had any particular become problems and how often it occurred. But

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my opinion would be it would be very improbable.

Q. Disk problems?

A. PCB exposure has not been causally related to any disk problems. I presume, the vertebral disks.

MR. CARNEY: Again, Doctor, we're talking about the Japanese situation --

THE WITNESS: The Japanese --

MR. CARNEY: Not the American.

THE WITNESS: The Japanese Yusho PCB with chlorinated benzofurans and chlorinated terphenyls.

Q. (By Mr. McCrea) The answer to that would be none?

A. That's correct.

Q. Back pain?

MR. CARNEY: Objection to what you mean by back pain.

A. I would have to know more about the symptom and re-review the literature to see whether that was a prominent factor.

Q. (By Mr. McCrea) Let's make that pain in the spine, in the back?

A. Same answer to that.

Q. Ringing in ears?

A. Again I'd have to know when that occurred, how often it occurred, how long it occurred and I think I

can answer the same thing for the next two, and I would have to re-review the literature of Yusho to find out if the Japanese PCB had caused that at Yusho.

Q. Problems with eyes?

A. Yes, there were problems with eyes, if by that you mean the eyelids, that was proven.

Q. Problems with vision?

A. Again, there I would have to know what the problems with and I think we can include blurred vision under that for the sake of hurrying this along. I'd have to know more about what problems we're talking about and whether or not -- I'd have to re-review the literature with Yusho with the Japanese PCB.

Q. Glaucoma?

A. None.

Q. Loss of eyesight?

A. None.

Q. Seeing spots?

A. I mean by loss of eyesight, you mean complete blindness? Is that what you mean by complete loss, it's gone?

Q. I don't know.

A. Gee, it's hard for me to answer then.

Q. I would assume it means not blindness, or it would state blindness?

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A. Five percent loss?
Q. Yes.
A. Hundred percent loss?
Q. Yes. Diminished.
A. Well, I'd have to agree with you, I don't know what it means.
Q. We just took these from their depositions.
MR. CARNEY: I'm going to object to that characterization and I will say if in fact you did and I'm not saying you did or didn't; I'm not -- you haven't shown me the depositions, but I will say this: That if that question was asked, it was undoubtedly asked because one or more of the plaintiffs indicated that they had a problem, that problem associated with PCB's. One of the problems with your clients, Mr. McCrea, is they're claiming that every problem they've had from ingrown toenails to headaches and everything in between was caused by PCB's.
So since that's the position that you have taken we have had to go into all of these problems. If you could be a little more specific in your complaint as to what you think is caused by PCB's we could narrow the focus, which I would welcome. If we could limit it to chloracne we'd have a much simpler time and we wouldn't have to take all this time.

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Q. (By Mr. McCrea) Seeing spots?

A. Again, I am unable to evaluate that symptom and I would have to re-review the Yusho literature to see if their eating their PCB's caused spots in front of their eyes.

Q. Doctor, is it your opinion that PCB's ingested into the body as opposed to PCB's which have a route of entry through the skin, if the amount is the same, once into the body --

MR. CARNEY: Let me -- Are you finished?

MR. MC CREA: No.

MR. CARNEY: I want to object as soon as you're finished.

MR. MC CREA: Okay.

Q. (By Mr. McCrea) Is it your opinion that there's a difference of the toxicity between PCB's which are ingested into the body and PCB's which are absorbed through the skin?

MR. CARNEY: Let me object because I think the question is vague and ambiguous. You haven't mentioned the amount.

MR. MC CREA: Same amount.

MR. CARNEY: You haven't mentioned whether you're talking about the Yusho Japanese PCB's that had the heavy amount of furans that caused problems in Japan that

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we haven't seen in the PCB's in America, and so I think the question's vague.

Q. (By Mr. McCrea) Doctor, if the -- Are you stating that if the same identical compound of PCB's is ingested that it would be more toxic than that same --

MR. CARNEY: I just wanted to make sure I had time to object. Sometimes the doctor is quicker than I am with his answer, and so as soon as you're finished let me know and I'll object.

THE WITNESS: I will wait for you, but just keep reminding me, that's a problem of mine I answer a little too fast.

Q. (By Mr. McCrea) Doctor, are you stating that if the same compound of PCB's is ingested as opposed to entering the body through the skin that there's a difference in toxicity in ingested PCB's as opposed to PCB's absorbed through the skin?

A. This is --

MR. CARNEY: Object, let me object. When you say you are saying the same; I don't know what you're talking about in terms of amount.

MR. MC CREA: Same amount.

MR. CARNEY: Same objection. What, if you drink PCB oil versus sticking your hand in the same PCB oil, would that be the same amount?

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MR. MC CREA: No.

MR. CARNEY: So again I don't know what you mean by amount and again I don't know what you mean by saying compounds. Are we talking about the Japanese PCB's with the heavy amount of furans in them?

MR. MC CREA: We can talk about anything you want to talk about. We can talk about PCB's with furans, with quaterphenyls, with biphenylenes, with dioxin. We can talk about the Yusho PCB's with the furans and the quaterphenyls. We can talk about you PCB's that you manufacture with furans in it, as tested by Monsanto.

It doesn't matter. What I'm stating is this: If you ingest as opposed to having a route of entry through the skin and the same amount ends up absorbed into your body, are those compounds more toxic, according to Dr. Kelly, if they're ingested?

MR. CARNEY: Let me object, because number one, you said it doesn't matter whether it's the Japanese PCB's with the heavy amount of furans or the American PCB's, and I beg to differ with you. I think there's a significant difference between the two, the American PCB's I think the record is clear on -- at least from Dr. Kelly's testimony, has a very infinitesimal amount of furans compared to the Japanese and the furans are what caused the problems in Japan.

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So I think it's a problem when you're trying to equate and say the same thing. I think the record is clear that it isn't. They are not the same; and you're mixing again apples and oranges when you're talking about the same amount of PCB's in the body.

I'll agree with you if you have the same amount of PCB's in the body you have the same amount of PCB's, but the question is how much PCB's does it take to have your hand in it or to be exposed through skin contact versus drinking and getting the PCB's in your body that way. It's a totally different situation and you're trying to say it's the same, so I think your question is vague and ambiguous.

MR. MC CREA: Thank you for the agreement.

Q. (By Mr. McCrea) Doctor, have you performed any studies as to what the rate of skin absorption is of PCB's on the skin?

A. You mean the rate?

Q. Right.

A. How much goes in in one minute, half hour, two hours, twenty-four hours?

Q. Exactly.

A. No, I have not.

Q. Do you know of any study in which that has been done?

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A. There may have. There are minimum lethal doses by skin absorption, there are minimum lethal doses by oral intake. But to answer your question there may have been those studies. I don't know. I don't recall.

Q. But if the PCB's enter the body they don't have less toxicity if they are ingested as opposed to going through the skin? I mean, there's nothing about the skin absorption that makes them less toxic, or is there?

A. There could be, because remember if you swallow it, it's absorbed, it goes into the liver and also if you swallow, when these people swallowed the Japanese PCB if one of them had an ulcerated esophagus, which is the gullet, which is the tube leading from the mouth on the stomach, he had that.

Whether that was caused by swallowing that PCB or not I don't know. But certainly it would not be caused by absorption through the skin, you would not get a ulcerated esophagus from skin absorption. If it was absorbed through the skin it goes to the lungs first rather than the liver. Whether or not there's excretion from the lungs or not is a question.

Q. Which body organs produce enzymes?

A. The liver.

Q. Any others?

A. I'm sure there are. As I said earlier I'm no

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enzymologist; but I'm sure there are other enzymes outside of the liver.

Q. Are PCB's an enzyme inducer?

A. Yes.

Q. And you can't tell us here today if there are other organs which produce enzymes other than the liver?

A. No, sir.

Q. Problems with reading?

MR. CARNEY: Again, I have to know what you mean by problems with reading. The question's vague.

Q. (By Mr. McCrea) An inability to read and retain the information. In other words, the inability to look at a document, to read it and to retain the information?

A. And to remember it?

Q. Yes, sir.

MR. CARNEY: Well, it's a compound question. You're asking about inability to read and then inability to retain what you have read, and so I object to the form.

Q. (By Mr. McCrea) Inability to retain what you've read.

A. I would have to know more about the symptom and re-review the literature.

MR. CARNEY: Again for the record, we're talking about the Japanese Yusho literature?

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A. Yes.

MR. MC CREA: Correct.

Q. (By Mr. McCrea) Or Taiwan, can we include Taiwan in this?

MR. CARNEY: Well, I think your question up to now has just been Yusho?

THE WITNESS: Yusho.

MR. MC CREA: I agree.

A. Let's stick to this. Why don't you come up with another questionnaire on Taiwan?

Q. (By Mr. McCrea) No, Doctor. Do you know of any substantial differences between Yusho and Taiwan?

A. There may be. I'll have to check.

Q. Do you know of any?

MR. CARNEY: Let me object here. You're asking the witness to speculate about what's in literally hundreds of pages of writing in these two instances to determine the differences.

MR. MC CREA: The question did not ask Dr. Kelly to speculate. The question is do you know of any substantial differences between Yusho poisoning and poisoning in Taiwan?

A. Well, what do you mean by substantial?

Q. (By Mr. McCrea) Something that you would consider medically significant or scientifically

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significant.

A. I would have to re-review both articles to answer that.

Q. What I mean by medically significant are the symptoms produced, scientifically significant are the dose response, the amount ingested, makeup of the chemical?

MR. CARNEY: I'm going to object to the form of the question. It's compound; you're asking at least three or four different questions in that question. I don't know which one you want him to answer.

Q. (By Mr. McCrea) Let's break it down one at a time. Do you know of any differences in the symptoms between the Japanese symptoms and the Taiwanese victims?

A. I would have to re-review the articles on both.

Q. Do you know of any significant differences between the amount of PCB's with contaminants ingested in Japan compared to Taiwan?

MR. CARNEY: Talking about the amounts?

MR. MC CREA: Right.

A. I cannot be certain. My impression is the people in Yusho have had more. I'm not certain of that; I would have to look again at the literature.

Q. (By Mr. McCrea) Do you know of any substantial differences in the chemicals in the PCB's in

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Japan as opposed to Taiwan?

MR. CARNEY: Objection to the form. Contains an undefined term what you mean by substantial.

A. Again I would have to look at the amounts that were listed in both literatures to say whether or not there were substantial differences.

Q. (By Mr. McCrea) Dr. Kelly, the next one is problems with lights, and make that oncoming headlights at night when driving?

MR. CARNEY: Well, I don't know what you mean by problems with oncoming lights. If you're in the path of the lights I think you'd have a problem with it but I don't know if that's what you mean.

Q. (By Mr. McCrea) Eye sensitivity with lights when driving at night?

A. I don't believe the people in Yusho were driving automobiles; so I don't recall that symptom ever coming up.

Q. It probably didn't. Cataracts?

A. No.

MR. CARNEY: Let me, just for clarification, are we back to just Yusho again?

MR. MC CREA: Correct.

Q. (By Mr. McCrea) Cataracts?

A. No.

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Q. What are cataracts?
A. Opacity of the lens and of the eye.
Q. And what is the chemical composition?
A. Calcium, presumably, and some colloid formation.
Q. Seeing spots in sunlight?
A. Again, I would have to know more about the symptoms and re-review the literature on Yusho poisoning with the Japanese PCB's.
Q. Irritated eyes?
A. Yes.
Q. Eye disease?
A. Here again, you mean by an eye disease, eyelid disease or eye disease? I don't know what you mean by that sentence. I mean, if I say yes, cataracts is an eye disease, but I don't believe cataracts --
Q. Are there any particular diseases of the eye --
A. The eye itself? Not --
Q. -- that you feel are possibly, probably or proven to have resulted from the ingestion of the Yusho PCB oil?
A. If you mean the globe of the eye itself or do you mean the eyelids? Do you include that in your blanket --

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Q. The eye itself, excluding the eyelid?
A. I do not know of any.
Q. Inflamed or puffy eyes?
A. Well, we skipped a few.
Q. We did?
A. Irritated eyes.
Q. I thought we went over that. You said that was proven?
A. Well, we can take it inflamed or puffy eyes, unusual redness of the eyes, plus a discharge in the eyes. Yes, those have been reported at Yusho.
Q. Heart problems?
A. Again, I would have to know what the meaning of that symptom is or that condition is and re-review the literature of the Japanese poisoning with Kanechlor, the Japanese PCB.
Q. Heart attack?
A. I certainly do not believe that has been proven.
MR. CARNEY: Again we're talking about Japan, Yusho?
A. Yusho, Japan, Yusho.
Q. (By Mr. McCrea) Stroke?
A. I do not believe there has been a causal relationship between strokes and the ingestion of Japanese

PCB oil with the furan contaminations.

Q. Was your answer I do not believe there has been a definite causal relationship between stroke and the ingestion of Yusho oil?

A. That's correct.

Q. Is it your opinion that there is no relationship?

A. I would have to re-review the literature to find out.

Q. Tightness in chest?

A. Again, I'd have to know more about the symptom.

Q. Peripheral neuropathy as it effects the nerves crossing the chest?

A. Well, that's not tightness of the chest. That's pain along the ribs.

Q. All right. My question is peripheral neuropathy?

A. We're forgetting about tightness of the chest now, are we?

Q. Yes, sir; and now as a subcategory, peripheral neuropathy as it effects the nerve endings in the chest area?

MR. CARNEY: I'm going to object to the definition of what peripheral neuropathy is. At least I

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think you've mischaracterized it and it's my understanding that it's in the ends of the nerves on the limbs, but maybe I'm wrong, I'm not a --

THE WITNESS: I couldn't hear what you said.

MR. CARNEY: The ends of the nerves at the ends of the extremities; but I may be wrong and I'm not a doctor, so I'll -- but I think you mischaracterized what a peripheral neuropathy is.

MR. MC CREA: I'm not a doctor, I could very well have.

Q. (By Mr. McCrea) But Doctor, could you have peripheral neuropathy in the nerve endings in the chest muscles?

A. Yes.

Q. The question is now peripheral neuropathy, is the nerve endings in the chest?

A. I would have to review the article to find out whether there was any relationship.

Q. Tightness in heart area or pain?

MR. CARNEY: Objection to the form, as well as I have my continuing standing objection, right, Mr. McCrea?

MR. MC CREA: Yes, we stipulate.

A. I would have to review the symptoms of what they are talking about to get more information about the

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symptoms of what they mean by tightness in the heart area or pain I presume where he has pain in the heart area. Again I would need more information on that and I would then have to re-review the literature on the Yusho incident using the Japanese contaminated PCB's.

Q. (By Mr. McCrea) Unusual rapid or irregular heart beat?

MR. CARNEY: Objection to the form. It's also vague; I don't know what you mean by unusual.

A. Again, I would have to know what caused irregular heart beat. I would have to know what caused the rapidity of the heart. I'd have to know how long it was. I'd have to know whether it was once in a while or intermittent, so the answer is I do not have enough facts to give an adequate opinion on that.

Q. Diabetes?

A. No.

Q. High blood sugar?

A. No.

Q. Leukemia?

A. No.

Q. You acknowledge, Doctor, that benzene can cause leukemia, correct?

A. Oh, yes, certainly. We aren't talking about benzene.

Q. I understand that.

A. Well, I just want to let the jury know that there's a big difference between benzene and chlorinated biphenyl.

Q. All right. Are there transformer fluids that contain trichlorobenzene?

A. Yes.

Q. If a worker is exposed to a transformer which contains trichlorobenzene and polychlorinated biphenyls, putting aside Yusho, would leukemia be a possible consequence of exposure?

MR. CARNEY: Objection, I don't think you've given enough facts. The amount, the length of time, the dose.

Q. (By Mr. McCrea) Doctor, let me uncomplicate the question, if I can. Is there a difference between toxicity of trichlorobenzene and benzene?

A. Oh, yes.

Q. All right, sir. In your opinion is trichlorobenzene associated with leukemia?

A. No.

Q. Anemia? Now we're back to Yusho.

A. I do not know if anemia has been associated with the Yusho occurrence. I would have to know more about the type of anemia, the extent of the anemia, what

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happened to the blood counts and I would have to review the literature to know if that was a significant finding.

Q. Gout?

A. No, never heard of gout being associated with anybody's PCB much less Yusho's.

Q. What causes gout?

A. It's a disturbance of the purine metabolism which causes a precipitation of uric acid in the joint cavities.

Q. Liver problems?

MR. CARNEY: I'm going to object to that as being undefined, what you mean by liver problems.

MR. MC CREA: Swelling of the liver.

MR. CARNEY: I'm not sure that these -- there was any measuring of the liver. I don't know that people know if their liver is swollen or not.

You can answer.

A. It is possible.

MR. CARNEY: He's asking whether there's anything in the literature in Yusho?

A. I think there was to the best of my recollection, but we have defined liver problems to the swelling of the liver.

Q. (By Mr. McCrea) Hepatitis?

A. Yes. If the liver is swollen it could be due

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to hepatitis.

Q. Porphyria cutanea tarda?

A. Do we get that one? I don't see it in here.

Q. As a liver problem?

A. What?

Q. As a liver problem?

A. I thought you were asking for that. I don't know if that was reported in the Japanese Yusho incident are or not.

Q. Elevated porphyrins as part of liver problems?

A. If they had liver problems they may have had elevated porphyrins. I do not know if they were, at the present time, I do not recollect whether or not they tested for them or whether they were elevated to a statistical positivity.

Q. Primary liver tumor?

A. Is that also under problems?

Q. Yes, sir.

A. I don't recall if the Japanese PCB's with the chlorinated benzofurans, et cetera, caused primary liver tumors. I am of the opinion it did not.

Q. Fatty degeneration?

A. That's possible.

Q. Induction of enzymes?

A. That's possible. There's inductions of enzymes isn't all bad all the time.

Q. Cirrhosis, which is the next one on the chart?

A. I do not know whether or not cirrhosis has been reported in the Yusho literature.

Q. Hepatitis we have discussed. Tumors, and by this, doctor, non-cancerous tumors?

A. We mentioned that, too. You said hepatoma above. Didn't you mention hepatoma under liver problems? I thought that was one of your subsidiary questions.

Q. Primary liver tumor?

A. That's a hepatoma.

Q. You answered that?

A. And I said I did not know that that was reported.

Q. And now the question is, excuse me, is unrelated to the liver. This is to the body, tumors in the body, non-cancerous tumors?

A. I do not recall any such association in a causal manner.

Q. What about non-cancerous tumors of the liver?

A. Again, I do not know if any of them had occurred. I'd have to re-review the literature.

Q. Cancer?

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A. Any place?
Q. Yes, sir.
MR. CARNEY: You're again talking about the Japanese ingestion of the Japanese PCB's with the furans?
MR. MC CREA: Correct.
A. I do not know if it has been statistically proven that cancer has resulted from the oral intake of the Japanese PCB's.
Q. (By Mr. McCrea) Food allergies?
MR. CARNEY: Objection to the form, it's vague.
A. I don't know enough about the delineation of that symptom and I would have to re-review the literature to answer the question.
Q. Motion sickness?
A. Same answer.
Q. Stomach problems?
MR. CARNEY: Objection to the form. It's vague.
A. I presume by this you mean anything from a person having to take the Japanese equivalent of Maalox to a cancer of the stomach?
Q. (By Mr. McCrea) Yes, sir.
A. Well, I would have to know more about the stomach problems and re-review the literature.

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Q. Ulceration of the esophagus?

A. It's been stated that that occurred. At least one case there, in Yusho.

Q. I think that's a repeat of one on the first page. No -- Well, yes, it is, and you've answered that. Can you tell us what you recall about that one case, Doctor?

A. Not except that someone had -- I'd have to re-review the literature, but one person had an ulcerated esophagus.

Q. Problems with intestines?

A. I'm going to give you the same answer on the next one, two, three, four, five, six, seven; it will save some time. The answer is --

Q. All right.

A. The answer is I would have to know more about the delineation of these symptoms, the time factor involved and I would have to know -- I'd have to re-review the literature to see if in fact these occurred.

Q. As a subcategory, Dr. Kelly, on problems with intestines, fatty tumors of the intestines?

A. I'd have to know more about where this fatty tumor was. I mean, the intestine is coated with fat. There are pieces of fat hanging down all along the intestines and I don't know if that's considered a fatty

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tumor or not, if it's a piece of fat. The omentum which hangs over almost the complete intestine is almost completely composed of fat, so --

Q. Doctor, I think these next two have been previously answered -- No, they haven't. Unusual weight gain?

MR. CARNEY: I don't -- I guess I'll object. I don't know what you mean by unusual weight gain, versus usual, usual. I don't know if there's a difference in your mind or not.

A. Well, Mr. McCrea, I'd have to find out what they mean by unusual weight gain and what they mean by unusual weight loss. I'd have to look up in these articles and see if some people gained weight and some people lost weight as a result of the exposure to the Japanese eating the Japanese PCB's. So I would have to see, there'd have to be a preponderance of one; I don't believe you'd have it both ways. Some people would gain weight and some people would lose weight as a result of PCB's, so I can't answer that.

Q. (By Mr. McCrea) Allergies to medications?

MR. CARNEY: Objection. I don't know what you mean, what type of medications? Question's vague.

A. I don't think that was talked about in there. I would have to review the literature to give you an

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answer to that.

Q. (By Mr. McCrea) Can enzyme induction alter the effectiveness of medications?

A. Well, sometimes it can enhance it. Sometimes it can all hurt.

Q. So it can both make it more effective and make it less effective?

A. It's a possibility.

Q. Do you know how enzymes do that?

A. No, I don't.

Q. Is that proven, that enzyme induction can enhance and decrease the effectiveness of medications?

MR. CARNEY: I'm going to object to the word proven. That's an undefined term as to what you mean by proven. I assume you're talking about the literature here --

MR. MC CREA: No.

MR. CARNEY: And I don't think the literature uses the word proven.

MR. MC CREA: No. I'm not talking about the Yusho literature. I'm asking Dr. Kelly if it's a proven fact that enzyme induction can both improve or lessen the effectiveness of medication?

MR. CARNEY: Well, I'm going to object to the use of the word proven fact. I don't know what you mean

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by proven fact; has it been proved in a law -- proved up in a lawsuit. I don't know that this witness is an expert as to what's been proven in the courts of the United States or not.

Q. (By Mr. McCrea) Has it been proven in medical science that enzyme induction can enhance the effects of enzyme induction?

MR. CARNEY: I'm going to object on the same grounds, the use of the word proven. I don't know what you mean by that, it's an undefined term.

A. If one takes antipyrine, which is a drug that has been used previously in the reduction of fever and you have enzyme induction you will speed up the elimination of that antipyrine from the body. Whether that's good or bad for the body I don't know, but it does effect that.

Q. (By Mr. McCrea) How long has that been known, Doctor?

A. Ten years, give or take a few years.

Q. Do you recall where that was reported?

A. Oh, it's reported often.

Q. Are there any other medications?

A. There may well be.

Q. Which can be likewise affected in addition to antipyrine?

A. Antipyrine?

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Q. Yes, sir.

MR. CARNEY: Objection to the form. It's vague.

A. There may have been. I mean, there may be. I just don't recall at the present time.

Q. (By Mr. McCrea) Now Doctor, loss of appetite and we're talking about Yusho PCB ingestion?

A. Well, I'll have to answer that the same way I answered unusual weight gain, unusual weight loss. There's loss of appetite and there's too much appetite. I would have to know more about the symptoms and I'd have to know more about -- I'd have to re-review the literature to answer that question.

Q. In 1933 the individual working for Swann Chemical complained of loss of appetite, is that not correct?

A. May I see Exhibit 1 again?

Q. Page 1024 under Report of Case, the first full paragraph, second to the last line?

A. Yes, he complained of loss of appetite, yes, sir.

Q. Uncontrolled urge to eat, Yusho ingestion?

A. I don't know. I'd have to re-review the literature on that.

Q. Colitis?

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A. Again, that is a catch-all phrase for everything from amoebic colitis to ulcerative colitis to to spastic colitis to allergic colitis. I'd have to know more about the type of colitis. I'd have to review the literature to be able to tell it.

Q. Kidney pain?

A. Same answer to that, kidney pain could be kidney stone, could be pain in the region, could be pain on emptying the bladder.

Q. Bladder problems?

A. Again, I'd have to know more about what they are talking about. I think we could take all three of these, bladder problems, colon problems, spleen problems. I'd have to know what the problems with. I don't think the spleen has very many problems unless it gets too big; but I'd have to know more about that and re-review the literature on the Yusho incident using the Japanese PCB's.

Q. Rectal bleeding?

A. There again I'd have to know whether that's associated with constipation, hemorrhoids, whether they do a lot of stooping or lifting and I don't know without re-reviewing the literature whether that was prominent at Yusho.

Q. Painful urination?

A. I do not know whether that was a prominent

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symptom or not.

Q. Unusual color in urine?

A. I haven't the slightest idea what color they are talking about. Purple, green, red? I don't know.

Q. Fair enough. Blood in urine?

A. I think that has not been proven at all in the Yusho people.

Q. Would your answer be none?

A. I know of none, yes.

Q. Frequent urination?

A. The same answer. I would have to say that I would have to know more about this, what other causes there may have been for the urination and I would have to re-review the literature to see if that was a prominent finding in the Yusho episode after the ingestion of Japanese PCB.

Q. Dizziness?

A. I think we can take the next four.

Q. All right, sir.

A. Because the answer is just going to be the same as I have just given you, periods of disorientation, blacking out, fainting and memory loss.

Q. All right, sir. What is your answer?

A. That I would have to know more about a description of these symptoms, when they occurred, how

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often they occurred, what their relationship was to the exposure, what was the extent of the exposure and then I'd have to re-review the literature to find out whether it was a prominent finding at Yusho.

Q. Amnesia?

A. That's pretty close to memory loss, I think I would include that under it.

Q. Were the -- Were the Yusho -- Strike the question. Disorientation?

A. That I'd have to have more information what were they disoriented around time, place, people or what.

Q. Speech disorder?

A. Didn't we have that before?

Q. Very similar; speech problems I think it was.

A. My answer would be the same for speech disorder as it was for speech problems.

Q. Okay. Lethargy?

A. I would have to know more about it and re-review the literature to see if it was prominent in the Yusho episode.

Q. Trouble sleeping?

A. I think we can combine that with insomnia. That's pretty close.

Q. All right, sir.

A. I would have to say I would have to know more

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about it. I would have to know more about the symptoms and would have to re-review the literature to see if it was a positive finding.

Q. Trouble concentrating?

A. Same answer.

Q. Nervousness?

A. I'd have to know what they mean by nervousness. Does that mean a person is jittery, does that mean a person has tremors, does that mean a person is afraid to go out in the street, get hit by a ricksha.

Q. First jittery, under the category of nervousness, at Yusho?

A. Beg your pardon? I can't hear you.

Q. First, the subsymptom of jittery, under nervousness?

A. I do not know if that was a prominent symptom at Yusho, so I cannot answer.

Q. Tremors?

MR. CARNEY: I think that's vague. What kind of tremors?

A. I think I answered that before someplace. No, maybe I didn't; but I would have to know more about when the tremors came on, how long they came on, what muscles were involved and I'd have to re-review the literature to see if it was a significant finding.

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MR. CARNEY: And I'll object on the ground that further you haven't indicated what type of tremor.

Q. (By Mr. McCrea) Tremors of the hand?

MR. CARNEY: Well, I would object. There are various types of tremors of the hand and I'd have to know which ones you mean. Otherwise the question's overbroad and vague.

Q. (By Mr. McCrea) Tremors of the hand?

MR. CARNEY: Talking about a postural tremor or --

A. My answer is the same, I'd have to know more about it. Is it a tremor when you reach for a glass of water. Is it shaking all the time like Parkinson's? I don't know, I'd have to know more about it.

Q. (By Mr. McCrea) Scared?

MR. CARNEY: Objection.

A. Scared?

Q. (By Mr. McCrea) Yeah. You said scared, scared of being hit by a ricksha?

A. I do not believe that that was a prominent symptom that I can recall.

Q. Anxiety?

A. I do not believe that was prominent symptom in Yusho. I would have to re-review the literature to find out.

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Q. Irritability?

A. Same answer.

Q. What is your answer on irritability, that you need more information?

A. I would need more information to know what they would be irritated about, how often it would be irritated, how long the periods of irritability would last and then I would have to review the Yusho literature to find out if the ingestion of the Japanese PCB caused people to be more irritable than they were previously.

Q. Injury to the immune system?

A. That's possible.

Q. Predisposed to cancer?

A. No, I do not believe so.

Q. Depression?

A. I would have to review the literature to find out if that was a prominent symptom at Yusho and I do not recall it being.

Q. Change in personality?

A. Same answer.

Q. Unexplained crying?

A. Same answer.

Q. Claustrophobia?

A. I never heard of that before. It may have been, but I never heard of it, at Yusho after the

ingestion of the Japanese PCB's.

Q. Vertigo?

A. There again, people get very confused. Does vertigo mean you stand up and the room goes around, or do you get lightheaded. So there's got to be a very definite definition of what they mean by vertigo and what I mean by vertigo and what medical -- what is accepted as vertigo. But to answer your question I would have to know more about that symptom and I would have to re-review the literature.

Q. Dr. Kelly, Exhibit 4, we have gone over every symptom on that exhibit?

A. Yes, sir.

Q. As medical director of --

A. May I correct you a minute? Because I said yes and I want to correct that answer.

Q. Yes, sir.

A. You have gone over signs and symptoms. Skin cancer is not a symptom, it's a sign. It's not a symptom. A boil is not a symptom. High blood pressure is not a symptom.

Q. All right. We have gone over all of the signs, which is something you can see, and all of the symptoms, which is something that's reported?

A. That's correct.

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Q. On Plaintiff's Exhibit 4?

A. Yes, sir.

Q. My question to you, as medical director of Monsanto Company did you ever ask a single worker if he had any of these specific problems? In other words, when you sat down and did your medical evaluation of the workers did you ask the worker a question such as: "Mr. Worker, I'm going to ask you a series of questions. Have you had any of the following: Asthma, skin irritation, skin rashes?" Did you ever go through a list of questions with the workers?

MR. CARNEY: Let me object. I think you covered this in questions about what he did in his physical examinations at length last week when you were examining the witness, and I'm going to object to that. I think the question is vague and ambiguous. Are you asking did he ask specifically about each one of those or are you asking on one? I don't know what the question is, very vague.

Q. (By Mr. McCrea) And I appreciate the objection and it's important for us to understand this answer. I'm not talking about these symptoms, Dr. Kelly, what I am asking you is did you ever specifically ask a worker about specific signs or symptoms?

A. Yes. Not these, now, you're not talking

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about those you've said?

Q. No.

A. Yes, I asked them if they had gained weight. I asked them if they lost weight. I mean, when you take a physical examination you don't have a list to sit down and say okay, "Do you have asthma?" "No." "Do you have skin irritation?" "No." You go by symptoms. You start with the head, you ask them about whether they had headaches, you develop when they got the headaches, if they had headaches. If they had eye problems you ask them about that. You ask them when they have had their glasses checked. You ask them -- you cover all these specific things but not specifically each one.

Q. Did you ever have a list of questions like when you go in for a driver's license, you know how they sit there and they ask you if you had any of these. Did you ever have a list of questions in which you checked off the signs or symptoms on a written list?

A. We have had some -- We would have asked people about conditions that occurred infrequently in the industrial environments. We would ask people if they had back pain. We would ask people who were exposed --

Q. Now we're talking about PCB workers?

A. No. You didn't mention PCB. You said did I ever talk to any Monsanto workers.

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Q. Right. Let's restrict it to PCB workers. Did you ever have a specific list of signs and symptoms which you asked workers exposed to PCB's in Anniston or Sauget, Illinois?

A. Well, now remember, the people that I examined were the -- What was it, seventeen or twenty-seven people at East St. Louis. I did not examine the workers at Anniston, the PCB workers. I talked to the workers at Anniston, when I asked them how they were getting along, asked them if they had any problems, asked them when they went back to the doctor, asked them when they went to St. Louis. The people in St. Louis where I gave the thorough examination in that one group that were still working there, I covered these things under the systems.

Q. Did you specifically ask them about specific signs or symptoms on a written list?

MR. CARNEY: I think we're out of time. So we don't cut off the answer, save it for the break.

MR. MC CREA: Break.

(Whereupon, a short break was taken.)

Q. Dr. Kelly, your attorneys asked you about documents which were identified as K-1 through K-87?

A. Me?

Q. K-87.

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A. K what?
Q. K-87.
A. Eighty-six documents in there?
Q. Right. Your attorneys asked you about those documents.
MR. MC CREA: Do you have a second set that you could give to Dr. Kelly?
(Whereupon, a discussion was held off the record.)
Q. (By Mr. McCrea) Doctor, I'm going to ask you a few questions about certain documents in this stack and I will refer to them by the exhibit number in the lower right corner?
A. Yes, sir.
Q. The first one --
MR. CARNEY: Why don't we just, so that we can have -- if you just mention the exhibit number I could have my associate hand the doctor that. That way he won't have to juggle. I think our -- just for the record our exhibits went from K-1 through K-108.
MR. MC CREA: K-108, all right.
Q. (By Mr. McCrea) Dr. Kelly, can you review please Exhibit K-3?
A. Yes, sir, I have it.
Q. Would you turn to page 298?
A. Yes, sir.

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Q. First of all, the title of this document is what?

A. Symposium on Certain Chlorinated Hydrocarbons.

Q. Does that include PCB's?

A. It includes what he called PCB's. He did not test PCB's as he stated in his 1939 article, he tested P -- polychlorinated diphenyl benzene, which is not a PCB. But he referred to that particular compound as a PCB through all these articles in 1937.

Q. All right. On page 298 can you see in the second column the heading discussion?

A. Yes, sir.

Q. The first sentence under that heading states "These experiments leave no doubt as to the possibility of systemic effects from the chlorinated naphthalenes and chlorinated diphenyl." Is chlorinated diphenyl synonomous, the same as PCB?

A. Yes, it is. But remember now, he was not using chlorinated diphenyl. This is an error that he accepted and changed when he found out he was not testing chlorinated diphenyl so that whenever he refers to that in these 1937 articles when he refers to chlorinated diphenyl, he is in error, he is referring to chlorinated diphenyl benzene and for accuracy we will have to get his

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1939 article in which he reverses his nomenclature.

Q. Would you define systemic effects as written in this sentence?

A. Yes, affects the body as a whole.

Q. Would you turn to page 307?

A. Yes, sir.

Q. When did you determine the cause of the chloracne in the workers at Swann Chemical?

A. When I read the literature on it. When I read Jones' article.

Q. Would you read the paragraph in the left column? Dr. R. Emmet Kelly, is that you?

A. That is I. The name is spelled wrong but that is all right. One T in Emmet.

Q. And would you read those two paragraphs into the records?

A. "I can't contribute anything to the laboratory studies; but there has been quite a little human experimentation in the last several years, especially in our plant where we have been manufacturing this chlorinated diphenyl. It has been our observation that although on one occasion we did have a more or less extensive series of skin eruptions which we were never able to attribute as to the cause whether it was an impurity in the benzene we were using or the chlorinated

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diphenyl, we have never had any systemic reactions at all in our men."

Q. Let's stop right there. Did you make that statement on the date of June 30, 1970?

A. Yes, I did.

Q. And before June 30, 1970 had you read the article by Jones and Alden?

A. I very probably did.

Q. And on June 30, 1937 was that statement which you gave accurate in which you state: "It has been our observation that although on one occasion we did have a more or less extensive series of skin eruptions which we were never able to attribute as to cause, whether it was impurity in the benzene we were using or to the chlorinated diphenyl, we have never had any systemic reactions at all in our men." Was that statement accurate on that date?

A. Well, it depends what is meant by we, what I meant by we at that time. I don't believe that at that particular time in June the 30th, 1937 I was going to go into the structure, the subsidiary structures of Swann and when we bought Swann and I believe I used we in the all-inclusive sense meaning Monsanto and Swann.

Q. Was that statement accurate on that date?

A. With that provision it's accurate, yes. That

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it was Swann workers and they had it -- but I wasn't going to say when we bought a company that had it, I used the word we for simplicity.

Q. Was the statement accurate when you state, "We were never able to attribute as to cause whether it was impurity in the benzene we were using or to the chlorinated diphenyl." Was that statement accurate on that date?

A. I think so, yes.

Q. And chlorinated diphenyl is synonomous with PCB?

A. Yes.

Q. And when you said chlorinated diphenyl on this date that was one and the same as PCB?

A. Well, not exactly, you are oversimplifying it; because we didn't know -- at least I didn't know at that time whether the impurity in the benzene caused a chlorinated diphenyl, chlorinated styrene, chlorinated diphenyl benzene or God knows what. So I didn't know that -- so I believe this was an ad-lib statement I made there that probably in hindsight I might have been more precise.

Q. And that statement was made after you read the Jones and Alden article?

A. That's right, but after all Jones and Alden

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did not precisely know either. They said in our opinion this is probably -- in our opinion this is probably chlorinated styrene or something else.

Q. Was that statement made after you talked to the workers at the Anniston, Alabama plant?

A. I can't answer that.

Q. You go down in that paragraph at the end and you say also from chlorinated diphenyl alone there have been no cases of systemic poisoning reported?

A. That's correct.

Q. What do you consider a report of systemic poisoning?

A. A government report, a case report, a series of papers on -- a paper that, such as Jones and Alden had.

Q. Do you consider a worker's report of lassitude, loss of appetite and loss of libido a report?

A. To whom?

Q. To you?

A. Well, I never got those.

Q. To Jones. You consider that a report?

MR. CARNEY: Well, I'm going to object to the form of the question. I don't know what you mean by report.

MR. MC CREA: I'm asking him.

MR. CARNEY: Well, I don't know what you mean

in your question. The question is vague.

Q. (By Mr. McCrea) Dr. Kelly, you state here: "We have examined them very closely both from what laboratory tests we thought might help us and from the clinical viewpoint." When you say them, are you referring to the sixteen men who experienced chloracne?

A. That's correct.

Q. And did you inquire of those men as to their reports of lassitude, loss of appetite and loss of libido?

A. No, sir; but in this report I am talking about medical reports in the medical literature, not a report of an individual to a doctor, that is not what's usually considered to be a report.

Q. And when you say also from chlorinated diphenyl alone there have been no cases of systemic poisoning reported. Were there cases of systemic poisoning reported from chlorinated diphenyl and other chemicals?

A. They were reported, yes. They were reported by Drinker but then Drinker changed his mind. I mean, he not only changed his mind, he accepted the fact that he was in error. So I didn't know that at that time that he was going to then double-check the chlorinated diphenyl. He had reported it.

He had said that these people had systemic effects

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from certain chlorinated hydrocarbons and he called it chlorinated diphenyl when in truth it should have been chlorinated diphenyl benzene.

So I went on his statement in 1937 and then when I found out that -- Well, there never were any cases where chlorinated diphenyl was used by itself that had systemic poisonings. There were cases of chlorinated diphenyl benzene, which was included as ten percent and chlorinated naphthalene that caused systemic poisoning.

Q. What were the effects resulting from the systemic poisoning of that combination of chemicals and when were they reported?

A. Well, they were reported obviously sometime before 1937 but I don't know when.

Q. What were the effects of the systemic poisoning?

A. Both.

Q. Of those combinations of chemicals?

A. There were cases that had chlorinated naphthalene alone that developed jaundice and death and chloracne, not exactly in that order. There were cases of chlorinated naphthalene that had what was called ten percent chlorinated diphenyl in them which were also reported in the literature as causing chloracne, jaundice and death. But there were no cases reported that had

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chlorinated diphenyl by itself or chlorinated diphenyl by itself by -- in conjunction with naphthalene reported as causing any systemic illness.

Q. Dr. Kelly, isn't it a fact that Dr. Jones and Dr. Alden received a report from a worker that he suffered lassitude, loss of appetite and loss of libido, isn't that that a fact?

A. Yes, but the fact -- that's one fact. The other fact is he didn't know what those people were exposed to. He said, "We've got an impurity in here, we don't know what it is. We think it may be chlorinated styrene."

Q. But in your paragraph above you state that you don't know if it was the impurity or the PCB?

A. Well, that's correct, I didn't know it then. But then I knew afterwards when we had forty years of experience just having chlorinated -- PCB's without impurities and no ill effect then I was certainly positive. I didn't know in 1937 but I certainly knew in 1939 all the way up to 1974.

Q. Do you have any statistics available for your workers in PCB's to show the percentage of workers on an epidemiological basis who had lassitude, loss of appetite or loss of libido?

A. No, sir.

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MR. CARNEY: I'm going to object to the question before the doctor answers and that's the question is vague and ambiguous. I don't know what you mean by several terms including the epidemiological basis. The question's compound. So I object to the form and I object on the grounds that it's vague and ambiguous.

MR. MC CREA: Could the reporter reread the question.

(Reporter read back from the record as directed:

"Q. Do you have any statistics available for your workers in PCB's to show the percentage of workers on an epidemiological basis who had lassitude, loss of appetite or loss of libido?")

A. That's the question?

Q. (By Mr. McCrea) Yes, sir.

A. No, I did not do any epidemiological studies as to the presence or absence of lethargy, loss of libido or loss of appetite.

Q. Do you have any numbers for those symptoms?

MR. CARNEY: I'm going to object. I don't know what you mean by do you have any numbers.

Q. (By Mr. McCrea) The number of people who experienced those symptoms who worked in PCB's?

A. We have no record of any of them ever telling their examining physician that, so the number would be

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zero.

Q. And no record of ever asking those questions?

MR. CARNEY: Well, let me object to the -- You mean a written record as opposed to a memory of asking? If we get hung up on this whether the doctor had a written checklist, was asking certain questions or whether he had people fill out a form.

MR. MC CREA: I think we established he had no written checklist. I think we have established that he did an examination, a standard examination, a standard physical examination, but there was no checklist.

Q. (By Mr. McCrea) My question is: Do you have any numbers in writing of workers who experienced those three symptoms, lassitude, loss of appetite, also of libido?

A. We have no numbers in writing or oral that these people did have these symptoms. If you ask that, we have no written record that these workers reported those three symptoms.

Q. I think we have been over that enough, Doctor.

A. Good.

Q. What information did you gain after June 30, 1937 with respect to the chloracne of the sixteen individuals who worked for Swann?

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A. You mean from then on out?
Q. Right.
A. Fifteen, twenty years?
Q. Right.
A. Well, I obtained the information that the chloracne had receded markedly in the years that I went to Anniston before the war.
Q. Any other information which you obtained after June 30, 1937?
MR. CARNEY: Other than what he's already testified to about saying that they felt fine? Do you want him to repeat what he already said?
Q. (By Mr. McCrea) I think that -- Was that before or after June 1937 when you interviewed the workers in the plants?
MR. CARNEY: Again I want to object to you're characterizing as interviewing. I think he's already described what he did.
A. I saw them on almost yearly intervals.
Q. (By Mr. McCrea) Did you obtain any information after June 30th of '37?
A. No positive information that they had any complaints of libido, loss of appetite or loss of --
Q. They didn't come out and tell you that?
A. No. They said they felt fine.

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Q. And you didn't ask?

A. No, I didn't ask them.

Q. Doctor, I want to ask you about Renate Kimbrough. Would you turn to Exhibit K-7? Who is Renate Kimbrough?

A. Renate Kimbrough is a scientist who works for the United States government, she is probably the premier worker in PCB's. She's been a laboratory individual, she is a pathologist, she's a -- has done a great deal of work in epidemiology, and in 1987 she was for the Center of Environmental Health at the Centers for Disease Control of the Public Health Service.

Q. When she did her experiments on rats and determined that PCB's caused liver cancer --

A. A PCB, 1260.

Q. Did she get that from Monsanto?

A. Yes.

Q. What was the chemical again?

A. Aroclor 1260, which is a PCB chlorinated to sixty percent.

Q. When she did her studies on rats with the PCB obtained from Monsanto and determined that it caused cancer in the livers of the rats did you hold her in regard as a premier scientist?

A. Yes, I did.

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Q. And did you --
A. May I explain?
Q. Certainly.
A. Yes, but there's often differences of opinion between scientists.
Q. Did you find any flaws with her work in which she took your PCB's from your factory and used them in an experiment and produced cancer in rats?
A. Yes. There were flaws because there's an interpretation by her pathologists. Her pathologists had a different viewpoint than the two independent pathologists we picked.
Q. Was she wrong?
A. In our opinion she was, in hers she wasn't.
Q. Did you tell her she was wrong?
A. No. We didn't have our scientists, independent pathologists look at her slides by the time, at that particular time.
Q. Was she untrustworthy?
A. No, she wasn't untrustworthy. What leads you to believe that?
Q. I just want to know your feelings.
A. My feeling is she's entirely trustworthy. She's an excellent scientist, but scientists have different opinions.

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Q. And was the protocol which she did using your PCB which produced cancer done in an appropriate protocol under excellent scientific standards?

A. I didn't investigate the protocol. I took her word for it, and I accepted the fact that she's a good scientist and what she did is good work. Now if her other pathologists came out with a point of view that was different for other pathologists, you've got to weigh both of them.

Q. Who were the pathologists who disagreed with her pathologic interpretation that there was cancer?

A. Dr. Parvis, P-a-r-v-i-s, P-o-u-r, of the Eppeley, E-p-p-e-l-e-y, Institute of Cancer of the University of Nebraska Medical School --

Q. Did he --

A. And wait, that's one and Dr. Gordon Richter, R-i-c-h-t-e-r. I think it's Gordon Richter, but it's Richter of the Department of Pathology of Northwestern University Medical School.

Q. Are you knowledgeable about the trip Dr. Gordon Richter took with the Monsanto personnel to Washington, D.C. in which he reviewed the slides of the cancer in the rats and told your people that was cancer?

A. No, sir, I'm not. When was that?

Q. I'll be glad to furnish you a transcript of

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his testimony.

A. Fine. Would you give me the date?

Q. I certainly will.

A. Fine. But I'm not familiar with that, I don't recall it at present.

Q. Where is Dr. Richter now?

A. I don't know.

Q. But your testimony is that this individual looked at the slides and said there was no cancer?

A. No. He did not. He didn't say there was no cancer. He said there were many fewer than the 186 or something that Dr. Kimbrough's pathologist said.

Q. Were you employed at Monsanto when Monsanto flew him out there to look at the slides?

A. I don't know when they flew him out.

Q. Did you ever talk to Mr. Lavinskas about that?

A. No, I didn't.

Q. So you're not familiar, Dr. Kelly, with his review of those slides?

A. I don't recall I've seen his review, no. I've been told about his review.

Q. Where did -- Who told you about his review?

A. Somebody at Monsanto. I don't recall the name.

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Q. What did they tell you?
A. They said Richter and Parvis Pour didn't find as many cancers as Dr. Kimbrough's pathologists.
Q. When did they tell you that?
A. Sometime after 1974, between 1974 and 1980. I don't know the first time I heard it.
Q. Did Dr. Parvis, is that his name?
A. That's right.
Q. Publish a study on his review of the cancer slides?
A. I don't know if he -- I have never seen it in a medical journal, whether he published the report and sent it to Dr. Kimbrough and sent it to Monsanto. I would imagine he did but I don't recall seeing it.
Q. Did anyone other than Dr. Parvis and Dr. Richter by your testimony disagree with the results of the Kimbrough studies using your PCB's?
MR. CARNEY: Again you're talking about the rat studies?
MR. MC CREA: Correct.
A. I don't know. I mean, I don't know anyone else. I don't know; they may have, they may not. I don't know of any else. I know these two had different points of view than Dr. Kimbrough's pathologists.
Q. (By Mr. McCrea) But you've never seen

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anything in writing from either one of them?

A. Well, I may very well have. I don't recall it.

Q. Was that significant finding by Dr. Kimbrough with regard to the manufacture and use of PCB's as far as Monsanto was concerned?

MR. CARNEY: Objection to the form of the question. It contains undefined terms.

A. Would you repeat the question, please?

MR. MC CREA: Could you reread the question, please?

(Reporter read back from the record as directed.)

A. Well, it certainly was a matter of concern. We had a two year study and that gave negative results and we had -- here was this other study that gave positive results. So it was a matter of concern, yes.

Q. (By Mr. McCrea) Your two year study was done by who?

A. By Dr. Calandra, I.B.T.

Q. Was he indicted for fraudulently preparing reports and giving them to the United States government?

MR. CARNEY: With regard to the PCB study?

MR. MC CREA: No, with regard to the work he did at I.B.T.

A. I don't know if Dr. Calandra was indicted or

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not.

Q. (By Mr. McCrea) What does it mean to be indicted?

MR. CARNEY: I'm going to object, this is not a lawyer talking but a doctor and you're asking him about a technical legal term. I don't know that he's claiming any expertise in the area of criminal law.

Q. (By Mr. McCrea) Was your toxicologist, Paul Wright, a participant in the I.B.T. studies, which is Industrial Bio-Test, Northbrook, Illinois.

MR. CARNEY: I'm going to object to the form of the question, mischaracterizes the record.

A. He was not a Monsanto employee when he was working at I.B.T.

Q. (By Mr. McCrea) Did Monsanto pay his attorney's fees of about a million, $400,000?

A. I don't know that of myself. That would be hearsay. I just don't know.

Q. Have you talked to Paul Wright about the work he did at Industrial Bio-Test and the laboratory studies which he carried out?

MR. CARNEY: Are you talking about after he finished his work at I.B.T.?

MR. MC CREA: At any time.

A. Well, I'm sure I had, when he came back it's

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natural to say, "Paul, what have you been doing up there, what have you been working on?" But I don't have the details of it. I never received in the slightest inkling that everything was not in accord with good scientific methods and principles.

Q. (By Mr. McCrea) Did you review the I.B.T. studies in coming to that conclusion?

A. Well, I read them. I had George Lavinskas who was our pathologist review them. We also had the Food and Drug people review them, we sent the results to the Food and Drug Administration, they reviewed them.

Q. And you determined that everything which was done at I.B.T. according to the information presented to you was done in a scientifically appropriate manner?

MR. CARNEY: Well, I'm going to object. I think you're mischaracterizing by he determined. Are you saying did he make an independent investigation or did he -- I don't know what you mean by he determined.

Q. (By Mr. McCrea) Let's tell the jury a little bit about I.B.T. Why did Monsanto make the decision to do tests at I.B.T.?

A. Because we had used I.B.T. almost since they started the laboratory.

Q. What information did you not have that you wanted when you started these studies at I.B.T.?

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A. I don't follow you all at all. What information did I want when I started the studies at I.B.T.? I wanted information on the toxicity of some products. I don't know which the products they were. They may have been plasticizers. I don't know which our first product was. We sent them products from the agricultural department. We sent them products from the organic division. We sent them products from the inorganic division. I don't know which the first ones we used.

Q. Who made the decision to do toxicological studies on PCB's at I.B.T. in 1970?

A. I did.

Q. What factors did you take into account in making that decision to do toxicological studies of PCB's at I.B.T. in 1970?

A. Several factors, one, the reputation of the laboratory, which was of the highest, it's list of customers, Dow, DuPont, U.S. Army, Food and Drug Department, many pharmaceutical companies. Two, our experience with the individuals and the laboratory on our own products that were done prior to using -- prior to I.B.T. using the PCB's.

This was not the first one we had. We had -- I can't tell you when they started but we had at least five

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to eight years of experience with them. Our results were excellent, our results were accepted as gospel by the government.

Q. Why did you feel it was necessary in 1970 for Monsanto to obtain this toxicological data from I.B.T. on PCB's?

A. Well, you mean from I.B.T. or from anybody?

Q. From I.B.T.?

A. Because I thought they were the best laboratory to do it.

Q. But why did you need to do the test?

A. Well, that was what I was asking, the reason for the tests or the reason we had done at I.B.T.

Q. I think you established the reason for using I.B.T., it was reputation, their experience and excellent results.

A. And also their list of satisfied customers.

Q. Why did you feel it was necessary to run these tests?

A. Because there was no long term studies on I.B.T. -- I mean, on PCB's that it was showing up in the environment. It was showing up in some of the fish, sport fish and I don't know when it started showing up in milk, but there was no long term studies on it so we wanted to find out what the long term effects were.

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Q. And by long term effects, is that the same as chronic effects?

A. Yes.

Q. You as medical director at Monsanto Company made the decision to use I.B.T. because there were no long term or chronic studies showing the effects of PCB?

A. That's correct.

Q. Who made the decision to send Paul Wright from Monsanto to I.B.T.?

A. I don't think there ever was a decision made to send Paul Wright from Monsanto to I.B.T. I believe Paul Wright was either recruited by I.B.T. or applied himself. He was not sent by anybody as far as I know.

Q. Who made the decision to employ Paul Wright at Monsanto after he finished his work at I.B.T.?

A. That was a decision made by the medical department. I was the ultimate individual to say go or no go. It was on the recommendation of our people who knew Paul Wright from his days in the agricultural division. I didn't know him but other people did know him.

I don't know if -- I think George Lavinskas was with us then, and certainly Elmer Wheeler knew him from going up to Calandra to I.B.T. during those two years Paul was up there.

Q. Was Paul Wright indicted for falsifying

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toxicological studies at I.B.T.?

A. I do not know the details of the indictment.

Q. Was he convicted in a jury trial of falsifying studies?

A. He was convicted. I don't know of what he was convicted. I don't know whether it was a jury trial or a judge, I do not know.

Q. Did he serve time in prison?

A. That I don't know either.

Q. When Paul Wright left Monsanto to go to I.B.T. did you, and by you I mean you yourself, have an understanding that when he finished at I.B.T. he would be welcome back at Monsanto?

A. No. In fact I have really no recollection of when Paul went up there, because he wasn't working in the medical department at that time. He was working in the agricultural research department.

Q. Dr. Kelly, do you understand that we cannot take the deposition of Dr. Kelly -- or Dr. Wright, do you understand that?

A. I don't know.

MR. CARNEY: I'm going to object to that.

A. I mean, I don't know anything about the legal ramifications of what you can or you can't do in this case.

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Q. (By Mr. McCrea) Do you understand that he takes the Fifth Amendment when asked about I.B.T., against self-incrimination?

A. I understand he has, yes.

Q. Can you explain to the jury the reasons he elected to depart from Monsanto and go to I.B.T.?

MR. CARNEY: Well, I'm going to object because I think this would call for speculation. There's been no foundation that he even had much contact with Mr. Wright.

Q. (By Mr. McCrea) Did Paul Wright tell you why he wanted to leave Monsanto and go to I.B.T.?

A. Not that I can recollect.

Q. Did you discuss with him his departure from Monsanto and new job at I.B.T.?

A. I really don't know. I mean, he may have said what kind of an outfit is I.B.T., do you know Joe Calandra, or something like that; but remember he was not working for me. He was in an entirely different building. He was in a different division, he was in the agricultural division. He was in the research department over there. I doubt if I saw Paul twice in my life before he went up to I.B.T.

Q. Did anyone explain to you why he left Monsanto and went to I.B.T.?

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A. There may have been, but it didn't seem like a big deal to me one way or the other. He was a man going into a toxicological laboratory; I guess he wanted do some work in toxicology.

Q. Do you know that while he was at I.B.T. he was involved in Monsanto's toxicological studies of the long term or chronic effects of PCB's?

A. He may. I may have known that or may not. I don't know whether he was or not. I didn't -- I don't know whether he was. His name may be on some of those reports. I don't know. If they are on the reports obviously he was.

Q. Did you receive any updates from Paul Wright while he was working at I.B.T. on the Monsanto PCB long term studies?

MR. CARNEY: By updates are you talking about anything prior to the formal report?

MR. MC CREA: Correct.

A. There were quarterly reports, whether they were quarterly or semiannual reports sent by I.B.T. Paul Wright may have been one of the signatures on those. Usually there was a more senior person than Dr. Wright on these reports. So Paul's name may very well have been on one of those.

But I believe that Paul was not only working for on

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Monsanto projects. He wasn't working just on PCB's. I don't know how many various compounds the I.B.T. was working on at that time. I don't know if Paul was in charge of the acute testing, chronic testing or what kind of testing.

Q. (By Mr. McCrea) Were the studies done by I.B.T. for Monsanto on the long term effects of PCB's done in a scientifically appropriate manner?

A. Yes.

Q. Were the studies done by I.B.T. reliable?

A. On PCB's?

Q. On the long term effects of PCB's?

A. Yes, they certainly were.

Q. Were the studies trustworthy?

A. Yes.

Q. Were the studies accurate?

A. Yes.

Q. Were the studies honest?

A. Yes.

Q. And do you believe the United States government should rely on those studies?

A. Yes. They do.

Q. And do you believe that the citizens of this country should rely on those studies?

A. Yes.

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Q. Dr. Kelly, isn't it a fact that representatives of Monsanto Company were highly critical of the work done at I.B.T., its reliability, its veracity, and its accuracy?

A. I don't believe that's correct. I would like you to show me those papers.

Q. All right, sir. Have you seen any documents that have been prepared by individuals on behalf of Monsanto Company which sharply criticized the work done at I.B.T., its accuracy, veracity and reliability?

A. No, sir.

MR. CARNEY: I'm going to object to the question. I don't know what you mean by sharply criticized. I assume you're talking about PCB studies?

A. Are you talking about PCB now?

Q. (By Mr. McCrea) Yes, sir.

A. No, I never seen any. On PCB's?

Q. Right.

A. No, sir. I never seen any.

Q. Did Monsanto ever change the wording on studies prepared by I.B.T.?

MR. CARNEY: I object here. I think the question is vague. And to be talking about the actual findings?

MR. MC CREA: No.

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MR. CARNEY: Are you talking about conclusions or summaries of the findings? I don't know what you mean.

Q. (By Mr. McCrea) Did Monsanto ever change the conclusions on reports done by I.B.T. on toxicological studies on PCB's?

A. No. They did not change the conclusions there may be some changes suggested as to how the conclusions should be worded.

Q. What do you know about that?

A. Well, there was a question whether something should be called tumorogenic or not carcinogenic.

Q. Did you participate in that decision-making process?

A. No, I did not.

Q. Tell us what happened in that regard.

A. Well, I don't know. I mean, all I know is what I saw during one of these depositions the last six years or something.

Q. Since you last worked at Monsanto in '74 the only information you have is what you saw at a deposition?

A. Well, I may have seen some Monsanto papers. I may have been, there may have been some anecdotal remarks made. I don't know if I'm having lunch out there and the question comes up I may hear about it. But I've

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had no reports that I have seen or discussions as to if or when or why Monsanto would have wanted to do some editorial comment on the reports.

Q. Have you ever changed the wording on a conclusion of a toxicological study?

A. I can't --

MR. CARNEY: Are you talking about a summary or a conclusion?

MR. MC CREA: Just what the question says?

A. Well, you said the wording.

Q. (By Mr. McCrea) Right.

A. Well, a person may have used a particular term and I may have said this is what you want to change it to, yes. I certainly also changed it on the Drinker study when it came out and called chlorinated diphenyl and I called him up and said, "Look, this isn't -- How do you know this is a chlorinated diphenyl?" So I think I'm responsible for his next paper. That not only changed the study, it changed the paper.

Q. Did the studies at I.B.T. establish that PCB's were slightly tumorogenic?

A. Yes, I don't know whether they said slightly. I don't know if that was the term. They did say that at some levels there were non-malignant tumors found.

Q. And do you understand how the PCB's produced

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the non-malignant tumors?

MR. CARNEY: Could you read that question back?

(Reporter read back from the record as directed:

"Q. And do you understand how the PCB's produced the non-malignant tumors?")

A. I do not believe that the secret of how chemicals cause tumors is understood. It certainly isn't understood by me and I don't know if by people much smarter than I have written down how a particular compound causes a tumor.

Q. (By Mr. McCrea) Did Monsanto -- Strike the question. Were the studies at I.B.T. peer reviewed by independent scientists?

A. Well, if you give them to the scientists of the government -- I don't really know what you mean by peer review, now, Mr. McCrea. If you send a compound to a laboratory they do the work and send it back to you. Do they send it out to competing laboratories and say, "Hey look, did we do this all right?" That's never done.

But we sent this data to the government, it certainly was peer reviewed by the government because they had the data. The slides were peer reviewed by the government, if that's what you mean. But if you think or you're equating that a report you get from an independent

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commercial laboratory with a paper in the New England journal of medicine, they are worlds apart.

Q. All right, sir, that's exactly what I meant.

A. Yes. They are never peer reviewed in that sense, no.

Q. Did you know that Monsanto paid the attorney's fees for Paul Wright?

A. I don't know, myself. I've heard --

MR. CARNEY: You've already asked that.

A. -- anecdotal rumors, but I don't know.

Q. (By Mr. McCrea) Have you talked to Paul Wright since he was indicted?

A. Yes.

Q. Can you tell us when you talked to him and what you said to him and what he said to you?

A. Sure.

Q. All right.

A. I said, "Paul, there's a case down in Texas, I understand you don't want to testify," and he said, "No, I don't want to testify on advice of counsel." I said "Okay, fine. How's everything else going?" That's the extent of it.

Q. Did he tell you why he did not want to testify in a PCB case?

A. Yeah. On advice of counsel.

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Q. And to what did the advice of counsel relate?
A. I didn't believe that was my business.
Q. Why did you call him and ask him about Texas?
A. Well, I wanted to know why he didn't want to testify.
Q. What?
A. I wanted to know why he didn't want to testify.
Q. Is that the only reason?
A. I think that's a -- that was a good enough reason. I mean, whatever a counsel may have said, Paul doesn't want to testify on the advice of counsel, do you want to talk to him and see if you can get any reasons?
Q. And do you know the reason?
A. No, I didn't inquire that much. That was his business. I just wanted to be sure that he was definite in his mind on the advice of counsel he didn't want to testify.
Q. Other than that conversation have you talked to Paul Wright since he was indicted?
A. No, sir.
Q. Have you ever asked Paul if he falsified data?
A. No.
Q. Have you ever asked --

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A. I didn't believe he would.

Q. But you've never asked him?

A. No, I never asked him.

Q. Have you ever questioned him about the accuracy of the I.B.T. studies?

MR. CARNEY: You know, I think this is misleading in that I believe this all occurred after Dr. Kelly was retired from the company and I don't know that he has any right to pry into somebody's life and ask them personal questions of the sort you're suggesting. I think you ought to at least make it clear to the jury that Dr. Kelly was no longer employed by Monsanto, but retired, to put it in context.

Q. (By Mr. McCrea) The I.B.T. studies were done from '70 to '75?

A. If you show me the final report I'll be able to -- Let's be accurate on this.

Q. All right, sir.

A. If you just show me the final report I could give you an estimation.

Q. Was the entire series of studies done pursuant to your authorization?

A. Yes, in conjunction with the United States government, the Department of Food and Drug Administration. We went up there before we started these

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studies. We told them where we were going to go, what we were going to do and do you have any suggestions. It's those big thick ones down there.

Q. Thank you. All right, Dr. Kelly, I'll look at this with Counsel. Exhibit K-71, Report to Monsanto Chemical Company. Subacute Dermal Toxicity of Aroclor 1248?

A. Oh, no, that isn't the one, because that only takes two months to do.

Q. That was 1963?

A. Right.

MR. CARNEY: I thought you were talking about the long term studies?

MR. MC CREA: I am, excuse me.

(Whereupon, a discussion was held off the record.)

A. Here it is, K-76. The final report was dated November the 21st, 1971. They were probably started sometime in the latter months of 1968 because to run a two year testing you have got to run a range finding to be sure you've got a dose that the animals can take for two years, so you're fooling around with those doses until you get the right dose.

Then after you sacrifice the animals after two years you've got to fix the tissues and wait around to get the pathologist to read the slides which also takes time.

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Then you've got to the get the report together. So it's at least three years and we started these sometime in 1968.

Q. (By Mr. McCrea) Do you know if when they started Paul Wright was working for I.B.T.?

A. I don't know that.

Q. Now were there additional studies, Dr. Kelly, other than the one that ended November of '71?

A. Well, sure they were doing some on ducks or chickens, they were doing skin testing on rabbits.

Q. Were those done pursuant to your authority or someone else?

A. No, mine.

Q. And when did those studies end?

A. Well, you have them there and I'll tell you.

Q. I don't see it.

A. Don't you have chickens there someplace? It's not a big thick one. You've got a dermal, which is skin on rabbits, and you've got -- I think a chicken study.

Q. I'll have to have you locate that.

A. The dermal toxicity was finished in March of 1963.

Q. That's not what we're talking about, is it?

A. Uh-huh.

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Q. That's not what we're talking about?
A. What were we talking about?
Q. The long term studies?
A. I thought we were off that. The long term, dermal is not long term. That was started presumably in 1968 sometime.
Q. And ended in '71?
A. That's right.
Q. Were there studies subsequent to that?
A. I don't know when the chickens were done. We had some testing done on chickens. I thought that was subsequent to these.
Q. All right. Maybe we can take some time during the break and line those dates up. Dr. Kelly, if an individual called you from Westinghouse Electric Corporation and asked to summarize the results of the long term or chronic studies what would you have told them?
MR. CARNEY: Well, I'm going to object because I think it's overbroad as to what area. I mean, they --
A. I would have told them I will sit down and make a summary of these and send it to you.
Q. (By Mr. McCrea) You couldn't answer that question --
A. Right off the top of my head, no. We're

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dealing remember with three different substances, three different levels, two different species and I wanted to give him the figures on all of them.

Q. If an individual from Westinghouse Electric Corporation called you in 1973 and asked you if based on the studies which were done at I.B.T. if you felt there was any cause of concern for the workers in the Bloomington, Westinghouse plant from the long term effects of PCB's what would your answer have been?

A. Well, I'd say, "What is your exposure?" I don't know how they're working with the material.

Q. If he said that the exposure was moderate what would you tell him, what advice would you give him based on the studies at I.B.T.?

MR. CARNEY: Objection to the use of the word moderate as vague?

A. Any information I would give a worker at any plant would be based on several things. It would be based on the testing we did back in 1954, on analysis of air test, inhalation studies for ninety days. It would be based on information in the literature on PCB's in 1963. I don't think there was much at that time. It would be based on lack of information or the lack of any positive results.

It would be based on my own experience, that with

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our own workers, so I would take into account the PCB studies at I.B.T., yes, and I would say you have a product that you should avoid breathing at elevated temperatures or in confined spaces, you should avoid repeated or prolonged skin contact.

Q. Based on the I.B.T. studies, you would tell them that?

A. I said based on all three.

MR. CARNEY: I think we've got no time.

MR. MC CREA: Break.

(Whereupon, a short break was taken.)

MR. CARNEY: I'd just like to say when we took this last break to change tapes we had agreed to go one more tape or one more hour and now when we're ready to start up Mr. McCrea has indicated he wants to quit. I would be prepared to go a couple more hours and I think Dr. Kelly would, too. I can understand putting some reasonable time limit on it.

On the other hand, I think we have been going at this for a long time and we were told, Mr. McCrea, when we broke last time early and decided to not make a formal objection to going the next day and this deposition was supposed to continue until concluded, that you would complete the deposition in one more day.

Now we're at 4:00 o'clock or it's now 4:15 on this

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one more day and we're not only not complete but apparently another half a day isn't going to complete the deposition, and so I'm just objecting to that for the record, and I guess the only other thing I'd like to at least put on the record is that are we agreeable that we're going to start at 7:30 and going until 11:30 tomorrow?

MR. MC CREA: That's awful early to start. I would agree to 8:30. I just -- I don't, 8:30 to 11:30, I think, 7:30 is awful early.

MR. CARNEY: Well, we're only going to do -- I thought we had an agreement, Mr. McCrea. We asked the studio if they could come in early so they could start at 7:30. I thought we had an agreement. Now we're not only quitting early but we in an effort to try to get this done. I thought we had an agreement that we start at 7:30.

MR. MC CREA: Let's make it 8:00 o'clock. If we can do three full tapes tomorrow morning -- how long are the tapes, an hour?

MR. CARNEY: Yes.

MR. MC CREA: We can do three tapes tomorrow that should take us to about 11:30.

MR. CARNEY: Are you going to finish?

MR. MC CREA: I doubt it.

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MR. CARNEY: Well, I --

MR. MC CREA: I might, but look --

MR. CARNEY: It seems like to me and I'm not trying to be difficult but we're -- This thing's getting stretched out over a lengthy period, you know, we're talking about trial testimony and here we have had a week interimission already and we came back thinking that one day would do it and I agreed to that. I'd prefer to get the deposition done in consecutive days. I was prepared to do that, the --

MR. MC CREA: We're driving from Bloomington, Indiana to St. Louis to do this deposition so it's no picnic from our standpoint. Secondly, we've got a hundred and eight documents here, none of which I had. I was not given copies. I did give you copies of my exhibits, which Dr. Kelly has and you have. I didn't receive copies of yours and I think you get to the point of diminishing returns when you extend things to a point where it's just not productive, so my recommendation is we do three tapes tomorrow.

I absolutely have got to be back in Bloomington by 3:00 o'clock or 3:30 or 4:00 to interview a client who has a work comp hearing the next day, Thursday, and I mean I have to be there. His name is a Larry Martin. So that's -- I think if we can get in three tapes tomorrow

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that would be productive.

Also on the record I need to know the cases in which Dr. Kelly testified and you stated you were going to ask Monsanto for those and I would like to have those before tomorrow if you can get them.

MR. CARNEY: Well, you know, Dr. Kelly has given you all of the information --

MR. MC CREA: Well --

MR. CARNEY: -- that he has on that and I simply don't know whether there's any other information to be had.

THE WITNESS: One Market Plaza, One Market Plaza, that's whatever, A.D.R. or something like that.

MR. CARNEY: Well, let's --

MR. MC CREA: Maybe we can go off the record and figure out some of those other cases.

MR. CARNEY: Let me just while you're on the record you made some comments about the exhibits. I believe that we have had an extra copy of the exhibits in the courtroom or in the studio here and you have been looking at those from time to time during the three days that we have had the depositions.

I just for the first time this morning you handed me some exhibits that you intend to use. I haven't had time to look at them but I don't think it's fair to say

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that we have held back on exhibits and that you have given us exhibits. I think you have had those exhibits in the courtroom.

MR. MC CREA: I'm not saying that, and I acknowledge that I think I've been through these exhibits but I just, to me, there's not much I want out of this stack, okay.

THE WITNESS: You talking to me now?

MR. MC CREA: No, I can't turn that far. But there's not much I want out of this stack, but I think if I can take this with me tonight and go through it. There's just not a whole lot that I want.

MR. CARNEY: I'm willing to give you my only copy of it. Appreciate your not marking the copies.

MR. MC CREA: I have marked them. I have marked them.

MR. CARNEY: Well, I appreciate since that's my only clean copy I'd like to keep those clean. They are not working copies. I have got the court reporter's exhibits, that's not -- My only other copies are those exhibits; I know you have put a quite a few marks on it already.

MR. MC CREA: I put a few marks on it

THE WITNESS: At what time is it tomorrow?

MR. CARNEY: 8:00 o'clock tomorrow.

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THE WITNESS: And then what's the next time?
MR. CARNEY: And are we agreeable that if we don't conclude tomorrow you will start in the morning on 8:00 o'clock Friday and go to conclusion.
MR. MC CREA: Did you check the calendar for Friday?
(Whereupon, a discussion was held off the record.)
MR. MC CREA: We can't do it on Thursday because of your conflict?
MR. CARNEY: It's the doctor's conflict and your conflict.
MR. MC CREA: True, that's agreed.
MR. CARNEY: I'd like to just so we have -- If you don't conclude on Friday can we go into Saturday to conclude?
MR. MC CREA: Yes.
MR. CARNEY: Okay.
MR. MC CREA: There is no way this is going to go beyond Friday.
THE WITNESS: What time we start on Friday?
MR. CARNEY: 8:00 o'clock.
THE WITNESS: And what time tomorrow?
MR. CARNEY: 8:00 o'clock.
(Deposition continued.)

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NOTARIAL CERTIFICATE

STATE OF MISSOURI)
)
CITY OF ST. LOUIS)

I, TOD MINNIGERODE, a Certified Shorthand Reporter and a duly commissioned Notary Public within and for the State of Missouri, do hereby certify that pursuant to agreement there came before me at the offices of Communitronics, 1907 S. Kingshighway, St. Louis, Missouri,

R. EMMET KELLY, M.D.,

who was by me first duly sworn to testify to the truth and nothing but the truth of all knowledge touching and concerning the matters in controversy in this cause; that the witness was thereupon examined under oath and said examination was reduced to writing by me; that the deposition is to be continued by agreement of all parties; and that this deposition is a true and correct record of the testimony given by the witness.

I further certify that I am neither attorney nor counsel for nor related nor employed by any of the parties to the action in which this deposition is taken; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on July 18, 1990.

My commission expires June 3, 1991.

[Notary Public]

IN THE CIRCUIT COURT
COUNTY OF ST. LOUIS, MISSOURI

GLENN BROWN, et al,	)	
	)	
Plaintiffs,	)	
	)	
vs.	)	Cause No. 862-00694
	)	
MONSANTO COMPANY,	)	
	)	
Defendant.	)	

Taxed as per statute:

Attn.	$ 85.00
Org & 1 cc	616.90
Jurat	1.00
TOTAL	$ 867.20

For:
Husch, Eppenberger, Donohue, Cornfeld & Jenkins
100 N. Broadway
St. Louis, Missouri 63102

Taxed as per statute:
One copy $ 218.90

For:
Mr. David McCrea
McCrea & McCrea
119 South Walnut Street
Bloomington, Indiana 47402

So ordered

_____
Attorney

Phone_____

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Judge

Division_____

_____
Attorney

Phone_____