

1 occasion to look at the forest product industry?

2 A. Well, this is from my Oregon experience. When one
3 lives in the Northwest in Washington, Oregon, you're
4 impressed by the fact that at that time at least the whole
5 economy was based upon forest product industries, on
6 lumbering and the products from the lumber, including
7 chemicals, and we had known a little bit about their problems
8 before we got there, but then decided that we were going to
9 see what the frequency of such problems were, and it was
10 obvious that the forest product industry led all the others
11 in the -- in the source of the dermatitis problems that came
12 before the Workmen's Compensation Commission, so we decided
13 to look into the origins of those problems, and we made a
14 variety of extracts of native woods and bark and needles as
15 well as leaves and then attempted to sensitize guinea pigs.
16 Guinea pigs are used to determine whether or not you can
17 produce, for example, an allergic problem, contact problem of
18 the skin, and you can do it experimentally in guinea pigs,
19 and we found that we could do that with certain Northwest
20 wood extracts and then we wanted to find out, well, among the
21 people who come, who are referred to us for dermatitis, how
22 many really react to those extracts, and we found that we
23 while we were able to sensitize guinea pigs to western red
24 cedar and several other wood extracts, we were -- when we

1 tested our patients to these materials we, only found that
2 they reacted to Douglas fir, which is the very common wood in
3 the Northwest and grand fir, which is the real fir. Douglas
4 fir is really not a fir tree.

5 And we also in looking at the industries
6 themselves, we found that there was a fair number of problems
7 that had nothing to do with the wood. It had to do with the
8 other chemicals that we used in wood processing like the
9 laminating glues that are used in making plywood such as
10 phenol formaldehyde resin, and there were a number of people
11 within the industry, workers in the industry that reacted to
12 formaldehyde and were sensitized in the making of the -- of
13 the laminated wood. It was really a first step in attempting
14 to clarify some of the issues which we didn't understand as
15 to what in the forest, what materials from the woods
16 themselves caused skin reactions.

17 Q. This morning, sir, we covered your relationship
18 with the National Institute of Environmental Health Sciences,
19 and does that organization have a publication?

20 A. It does. It's called Perspectives in Environmental
21 Health.

22 Q. And have you had papers published, one or more
23 papers published in that particular journal?

24 A. Yes, the one I think that has been probably most

1 useful is the one that we talked about this morning, and that
2 is in a task force which was organized to develop a
3 description of the needs in environmental health research.
4 One of the committees of that task force addressed the issues
5 of the problems of specific organ systems like the liver, the
6 pancreas, the nervous system, and I was asked to develop a
7 paper on the state of the science in environmental health
8 with respect to the skin, which we did and also to describe
9 the research needs of that at that time, and the -- as a
10 result of that effort, some of the papers were published in
11 Environmental Health Perspectives, and the one you're
12 referring to is called The Environment and the Skin and what
13 it does is simply describe the defenses of the skin, the
14 adaptive mechanisms of the skin, physiology and chemistry of
15 the skin as we know it, and some of the major problems of the
16 skin in relation to the physical environment, chemical
17 environment and biologic environment and what some of those
18 needs were for further research.

19 Q. Sir, have you had occasion to write chapters for
20 books?

21 A. Yes. One book, which is rather extensively used by
22 dermatologists and those who want to know something about
23 dermatologic problems in relation to general medicine is a
24 book edited by Dr. Thomas Fitzpatrick of Harvard and his

1 staff and Dr. Edward Emmett, who's a resident and graduate
2 student of mine, and I wrote a chapter on occupational
3 dermatoses, and it has to do with the frequency of the
4 problems, again the defenses, the etiologic aspects of it,
5 how to take a good history in an occupational skin problem if
6 a problem is suspected of being occupational, the methods of
7 diagnosis and the -- in it, and this is for physicians, we
8 also stress and underscored the importance of knowing
9 something about the work place, knowing something about the
10 environment and the work place, not just treating the patient
11 in the office, but knowing what the individual has been or is
12 exposed to, knowing what kind of hygienic practices go on in
13 the plant or in -- on the farm if it happens to be an
14 agricultural problem, and this chapter was in Dr.
15 Fitzpatrick's book.

16 Q. Did you write a chapter in a book that was
17 published by the American Association for the Advancement of
18 Science?

19 A. Yes. I can't remember the exact date, but it's in
20 the sixties, I believe, or late fifties. We were asked by
21 the Association for the Advancement of Science to develop a
22 symposium on environmental skin problems, and I was asked to
23 present a paper on etiologic factors and the pathogenesis or
24 cause of pre-malignant and malignant lesions of the skin, and

1 we did that by examining all of the data which we had up to
2 date on the effect of sunlight on the skin and the fact that
3 most skin cancer in man is as a result of exposure to
4 sunlight and plus the characteristics of the skin of the
5 individual, which is a genetic factor, so the pale Caucasians
6 are much more susceptible to the sun burning rays of the skin
7 and have a much higher frequency of skin cancer than people
8 from the Mediterranean area or from Mexico or blacks.

9 And then we went on to demonstrate that some of the
10 problems of the skin cancer could stem from chemical sources
11 so that things like polycyclic aromatic hydrocarbons --
12 you'll have to pardon me for using that term, but it's the
13 chemical component of, let's say, coal tar, which we know
14 with frequent exposure the skin can cause skin cancer, and
15 people that handle a lot of coal tar or pitch, and we have
16 done some experiments within the lab to show that certain
17 chemical agents like benzo-a-pyrene, a polycyclic aromatic
18 hydrocarbon, which is carcinogenic, can be made more
19 carcinogenic by so-called promoting agents, and the promoting
20 agents that we identified in our laboratory with Dr. Whorton
21 happen to be long chain hydrocarbons that are often found in
22 refineries. For example, shale oil refineries, while the
23 shale itself might not have a lot of polycyclic aromatic
24 hydrocarbons in it, the shale products might be very

1 carcinogenic because of the promoting agents in it.

2 It was not only a status report paper, but a paper
3 which actually included some of the work that we had been
4 doing at the Kettering Laboratory.

5 Q. What does the term pre-malignant mean?

6 A. Pre-malignant means a lesion of the skin, which
7 may, may go on to becoming cancerous, but may not. For
8 example, we know that people of light skin, longstanding
9 exposure to sunlight develop actinic keratosis or these
10 heaped up lesions on the face and the hands. They can, they
11 are pre-malignant, and they can go on to forming cancer, but
12 not necessarily.

13 Q. Now, over the years, sir, have you had occasion to
14 give presentations at various conferences?

15 A. Yes, I have. On a number of occasions I've given
16 presentations to meetings within this country and overseas in
17 Japan and Chile and Great Britain and in Leon for the NIEHS
18 and so on.

19 Q. Directing your attention to the NIEHS conference, I
20 think, in 1973 did you give a presentation at that and can
21 you tell us a little bit about it?

22 A. That's a very interesting question, because in 1973
23 the medical and scientific community had become alerted to
24 the fact that there were populations that had been exposed to

1 tetrochlorodibenzodioxin, 2,3,7,8-TCDD in the work place in a
2 number of industries throughout the world, and we did not
3 know what the state of the health of those workers were, and
4 we -- they were reported only after an accident perhaps, but
5 they were never really followed up, and in 1969 with the
6 Vietnam use or the use in Vietnam of Agent Orange and the
7 study by a laboratory for the government that found that TCDD
8 was -- had an effect on the reproductive system in animals,
9 in rats, plus the fact that by that time there was an
10 epidemic of chloracne and other symptoms in Japan caused by
11 the accidental ingestion of pcb's, with all that in place the
12 scientific community was alerted we ought to do something
13 about these things and study them so we know what the short
14 term or long-term effects are.

15 And the NIEHS called a meeting in Research Triangle
16 Park, North Carolina, and I was asked to present a paper
17 there in 1973 on chloracne and other clinical manifestations
18 of exposure to TCDD, which we did. It was the only paper in
19 that meeting, I believe, that addressed the clinical issues.
20 The others were about environmental issues, about toxicology,
21 but there were no others that were presented on clinical
22 issues.

23 Q. Now, in 1975 did you have some connection with the
24 Japanese society in a conference held there?

1 A. Well, in 1975 I was asked to talk to or present a
2 paper on occupational and environmental allergic problems of
3 the skin before the Japanese Society of Allergology or
4 Congress of Allergology, which has to do with allergy, and
5 this was in Okayama and presented a paper on summarizing what
6 we knew about new environmental problems which caused skin
7 hypersensitivity, and the paper lists all of the new
8 information about products that are used in fragrances and
9 cosmetics in the work place that may give rise to allergic
10 problems.

11 We had at the time been doing a study of organic --
12 of aldehydes, aroma aldehydes used in flavors and cosmetics
13 and fragrances and found that there were certain agents that
14 inhibited in man, certain agents that inhibited the allergy
15 producing characteristics of these aldehydes, and the paper
16 also describes some of the new work that we had been doing on
17 these aroma aldehydes and the so-called quenching effect of
18 agents in guinea pigs.

19 Q. Then, in 1978, sir, did you have any participation
20 in a work health group again with NIEHS and IARC?

21 A. Yes, in -- actually there was an interval meeting
22 in 1975. After the '73 meeting there was a small meeting in
23 Research Triangle Park called the Quail Roost meeting because
24 that was the name of the place it was in, where just a few

1 people, a handful of people got together to talk about what
2 they were doing.

3 In 1978 the NIEHS and the International Association
4 for Research Against Cancer, which is IARC, it's a WHO
5 organization, felt that it was about time we brought together
6 people from all over the world who knew something about
7 especially the industrial exposure to TCDD and the
8 dibenzofurans which are found in pcb's, and this was the
9 meeting at which I was asked to give a paper on chloracne and
10 associated problems in the manufacture of 2,4,5-T, of which I
11 believe you have a copy, and what we did in there is simply
12 describe our experiences examining workers that have been
13 exposed to a runaway reaction back in 1949, following them
14 for three years or four years, and then what we knew about
15 followup.

16 Q. Where did that meeting take place, sir?

17 A. It took place in Leon, France, where there is the
18 offices of the international association, International
19 Agency for Research against Cancer, which you referred to as
20 IARC.

21 Q. I was just going to ask you what IARC meant?

22 A. International Agency for Research against Cancer.

23 Q. Now, in 1980, sir, did you participate in a
24 presentation with the National Academy of Sciences?

1 A. By the time we held the Leon meeting Seveso had
2 occurred. There was this runaway reaction in a plant making
3 trichlorophenols in ICNESA or Mada, the ICNESA plant in Mada
4 near Milan, and that story is rather well-known and by that
5 time the scientists in Italy had already gotten a fair amount
6 of information about the effects on children, the effects on
7 adults, the effects on the workers themselves, and it was
8 kind of important that they be incorporated also into the
9 IARC meeting, which they were.

10 In 1980 the National Academy of Sciences decided
11 that they should bring in, bring the Italian scientists back
12 to the United States for a three-day conference, which was
13 held at the National Academy, and I gave two papers at that
14 conference. One I was asked to give a paper on the clinical
15 manifestations of 2,4,5-T exposure, which I did. The Italian
16 scientists and physicians were very anxious to find out what
17 we knew about it, and they shared a lot of their information
18 with us, incomplete at the time, but they did share it.

19 Q. Now, in 1980, sir, did you publish a paper with
20 Judy Zack?

21 A. Yeah. The work on this -- the idea to do a
22 retrospective study, a mortality analysis of a group exposed
23 to TCDD, the idea actually arose earlier, and by the time we
24 went to Leon, this work was already going on, and that is

1 that the epidemiologist at Monsanto, and we couldn't have
2 done this without the help of Monsanto records, the
3 epidemiologists at Monsanto and I developed a scheme for
4 identifying who was still alive of those people who were
5 exposed back in 1948, 1948 and '49 who were exposed to the
6 runaway reaction as well as those who were exposed to the
7 usual process of making 2,4,5-T, and it was our feeling that
8 the first thing to do was to do a study of what we regarded
9 as the most heavily exposed population, and the people
10 exposed to the runaway reaction in our view were the most
11 heavily exposed, and they were identified and the mortality
12 analysis was about that group.

13 Q. We'll be addressing that in more detail later, Dr.
14 Suskind, but I wanted to just mention it. In 1984 did you
15 and Dr. Herzberg publish a paper?

16 A. Yes. In 1979 we returned to the site of the
17 manufacture of 2,4,5-T, which had been discontinued some ten
18 years before, in order to do a study of the populations which
19 were exposed to that process, whether they were in the
20 runaway reaction or not and compare that group to the
21 unexposed and see what the long-term effects were, what
22 happened 30 years after they were exposed. We knew what
23 happened right after they were exposed. We knew what
24 happened for four years after they were exposed, but we

1 didn't know what the state of the health of these people who
2 were exposed 25 to 30 years afterwards, and that was the
3 nature of that study published in the Journal of the American
4 Medical Association in May of 1984.

5 Q. And, sir, we mentioned this morning the Agent
6 Orange publication on behalf of the American Medical
7 Association, you participated in that as well?

8 A. Right.

9 Q. Now, did you have occasion, sir, to make a
10 presentation at Michigan State University?

11 A. Yes, we did.

12 Q. All right. And did you prepare a paper as a result
13 of that presentation?

14 A. That - I was asked by the group at Michigan State
15 that was organizing this meeting on the dioxins in the
16 environment, which eventually was published as a book, to
17 give a paper on the health effects of 2,4,5-T and its toxic
18 contaminants. What I did essentially was to recount the
19 story from 1949 until the day that I gave the paper to tell
20 them what I knew about it, including some of the studies that
21 we had done, especially the earlier ones as well as the one
22 back in 1979, and I summarized the findings as I described
23 them in that paper, that is, my findings.

24 (Defendant's Exhibit 1692 marked for

1 identification.)

2 Q. All right. Dr. Suskind, let me hand you sir what's
3 been marked as Defendant's Exhibit No. 1692, and I'd ask you
4 to examine that and identify it for us please.

5 A. This Exhibit 1692 is a reproduction of Chapter 17
6 of the book on dioxin in the environment, which was the paper
7 which I gave at the meeting in December, 1983 at East
8 Lansing.

9 MR. HEINEMAN: Your Honor, at this time we would
10 move the admission of Defendant's Exhibit -- is that 92?

11 THE COURT: 92.

12 MR. CARR: Is this it, counsel? What is the
13 chapter? We have no objection to it, Your Honor.

14 THE COURT: It's admitted without objection.

15 Q. Now sir, I wonder if you would tell the Court and
16 jury briefly what this presentation is about?

17 A. The presentation, as I indicated, simply describes
18 my experience with the workers who had been exposed to the
19 making of 2,4,5-T, including its toxic contaminants, among
20 which was TCDD, and it describes the accident of -- or the
21 runaway reaction of March of 1949, the fact that we were
22 asked to examine four of the most severely effected persons
23 in Cincinnati, the followup on those examinations in 1950,
24 and then a further group who were examined in 1953, some of

1 whom were exposed to the runaway reaction, and others simply
2 exposed to the manufacture of 2,4,5-T itself.

3 We also describe some work that we did on
4 determining how -- how the sebaceous gland reacts to
5 chloracnegens. We did that in '53, but we didn't know that
6 this chloracnegen was TCDD, and then further we summarize the
7 acute clinical findings and the subacute or subchronic
8 findings, clinical findings and laboratory findings, and then
9 finally what we would regard as the long-term effects of TCDD
10 on humans.

11 Q. Now, did you prepare tables in that paper, sir,
12 discussing those subjects?

13 A. Yes, in this exhibit on Page 238 there are three
14 tables, which one describes the acute, which followed the
15 runaway reaction of March, 1949, the subsequent effects or
16 the subacute effects after the acute effects subsided were
17 subchronic effects, the effects that lasted maybe for a year
18 or two and then what we found 30 years afterwards were the
19 long-term human health effects which we believe describes the
20 long-term human health effects of TCDD.

21 (Defendant's Exhibit 1692A, B, and C marked for
22 identification.)

23 Q. Dr. Suskind, let me hand you what's first been
24 marked as Defendant's Exhibit 1692A and ask you to examine

1 that and identify it for me please.

2 A. This is a reproduction and enlargement of Table 1
3 from that exhibit.

4 Q. All right, sir. And would this Exhibit 1692A
5 assist you in your testimony?

6 A. Yes, sir, I believe so.

7 Q. All right. Let me get these others identified as
8 well. Show you 1692B, sir?

9 A. This is a reproduction and enlargement of Table 2
10 of that paper given at Michigan State.

11 Q. All right, sir. I'm sorry?

12 A. And it's accurate.

13 Q. Would this -- would this assist you in your
14 testimony as well, sir?

15 A. Yes, I believe it would.

16 Q. All right. And again Defendant's Exhibit 1692C,
17 sir.

18 A. This is an enlargement of Table 3 from the same
19 paper listing the long-term human health effects of TCDD.

20 Q. All right. Would this assist you in your
21 testimony?

22 A. Yes, I believe it would.

23 MR. HEINEMAN: Your Honor, at this time we would
24 move the admission of 1692A, B, and C.

1 MR. CARR: No objection, Your Honor.

2 THE COURT: They're all three admitted without
3 objection.

4 MR. HEINEMAN: Thank you, sir.

5 Q. Now, Doctor, I wonder if I can put 1692A up here,
6 and if you wouldn't mind stepping down and discussing these
7 exhibits with the jury.

8 A. This list of clinical effects, health effects were
9 observed in a variety of accidents, among them the one that
10 occurred at Nitro, West Virginia, and what happened
11 essentially is that the kettle in which trichlorophenol was
12 being made blew a valve and the material came out in the --
13 in the plant and some of it outside. People went in to clean
14 it up, and they were exposed in retrospect not only to TCDD,
15 but they were exposed to trichlorophenol and trichlorophenol
16 is very irritating, and what they experienced actually was
17 irritation of the eyes, irritation of the respiratory tract,
18 the nose and throat, and even nausea and vomiting, which is a
19 symptom of gastrointestinal effect. They experienced headache
20 and ill at ease, they felt sick. Those people who were in
21 that cleanup operation quickly got out, and they didn't
22 return for a little while, but we feel that these acute
23 effects are probably less due to TCDD than to the irritating
24 chlorinated phenol.

1 Q. All right, sir.

2 A. If I can go on to the next one. May I?

3 Q. Please do.

4 A. After the acute -- oh, incidentally the same thing
5 occurred in Seveso with that toxic material coming out of
6 also a trichlorophenol kettle. The people who and the
7 children especially who were exposed to that toxic cloud, so
8 to speak, developed eye irritation, respiratory irritation,
9 and GI symptoms.

10 These effects that I have on Table 2 are those
11 which usually follow these acute effects, and sometimes there
12 are no -- these acute effects, but it takes a little while
13 after the beginning of the exposure to TCDD for the features
14 of TCDD toxicity to occur in humans, and what are they? The
15 first thing that occurs is that people develop acne, and the
16 acne usually occurs on the face. In instances where the
17 exposure is severe it may occur in other areas as well, and
18 we can show you pictures of some of those.

19 So that in all instances the effect that was
20 noticed first was acne, and then there are some who we have
21 seen both in our own population that we studied as well as
22 others where they develop pains in the skeletal muscles, in
23 the arms and the legs, shoulders and the back, and along with
24 the pains in the muscles, which is due to a toxic effect on

1 the peripheral nerves, the nerves that supply these muscles,
2 the voluntary muscles, and that occurs usually well after the
3 acne occurs. In one instance where we did a biopsy of such a
4 nerve in a leg of one of the first people we examined, we did
5 find some pathology within that nerve.

6 We also found that those who were heavily exposed
7 may develop liver function problems, their liver may become
8 enlarged, it may become tender. It usually doesn't last very
9 long, but an indication that the liver may be affected and
10 this is in not everybody who develops acne, but only some who
11 are perhaps more heavily exposed, they develop abnormal
12 laboratory tests for liver function so-called SGOT, GGPT in
13 the day -- in 1949 these did not exist for us, they weren't
14 done at the time and the only laboratory test that we had to
15 indicate abnormal liver function was the so-called
16 prothrombin time, and the prothrombin time was elevated and
17 the prothrombin concentration was decreased, and we also
18 found and others have found -- we didn't find elevated
19 triglycerides in our group, but others have found elevated
20 triglycerides in those who have chloracne and are being
21 exposed to TCDD, and they may have elevated liver enzymes.
22 Again this is in the subacute stage.

23 In many instances the skin is also affected by
24 becoming discolored or hyperpigmented. The skin as a result

1 of being exposed to TCDD or associated substances becomes
2 sensitive to sunlight, and the sensitivity to sunlight is
3 shown in the fact that they become dark skinned. They
4 develop hair around the area where they have their acne along
5 the cheek bone. And we did find, too, that those who had
6 other systemic manifestations may have been irritable,
7 nervous.

8 Now I'm going to also talk a little bit about the
9 other finding, which is reported, the porphyria. Porphyria
10 by -- when we did this paper, the only thing that we knew
11 about porphyria was that that skin problem called porphyria
12 cutanea tarda, which means blistering of the skin due to
13 exposure to sunlight where the porphyrins are elevated, and
14 that can be determined by examining the urine for porphyrins
15 in a 24 hour sample. There were only two experiences in
16 which porphyria occurred in industry. One was in Spolana,
17 Czechoslovakia where the -- they were making 2,4-D and
18 pentachlorophenol and 2,4,5-T. The other one was in New
19 Jersey at the Diamond Alkali plant where they were making
20 2,4,-D and 2,4,5-T.

21 Well, we say that this is rare and only occurs on
22 this chart, say it occurs in mixed exposures. We now know
23 from recently acquired evidence, matter of fact the
24 Czechoslovakian evidence is not so recent, but that

1 hexachlorobenzene, which is a different chemical agent was
2 used in the Spolana, Czechoslovakia plant and
3 hexachlorobenzene is known to cause porphyria cutanea tarda
4 and disturbance in heme metabolism or porphyrin metabolism.
5 In the Diamond Alkali plant it's been recently shown by going
6 back and studying the records, recently shown that these
7 people were also exposed to hexachlorobenzene. If you go
8 back to the original paper by Bleiberg on the Diamond Alkali
9 group that had porphyria cutanea tarda, he says in his paper
10 that it -- this eruption was very much like that which occurs
11 in exposure to hexachlorobenzene, but he didn't know, cause
12 he wasn't in a position, he didn't know at the time that they
13 were using hexachlorobenzene in that plant.

14 So much for the subacute or subchronic effects. In
15 most instances, in all instances that I know of and I have
16 studied severely hundred now, the neuromuscular symptoms, the
17 aches and pains and the neuritis subsides with time as does
18 the liver problem as does the hyperpigmentation and as does
19 the nervousness, so that when you get to 30 years afterwards
20 and you look at the human health effects in a population
21 known to be exposed to TCDD and who have had acne, what you
22 -- what you find is that in about over fifty percent of the
23 people who were exposed and who had acne at one time may
24 still have their chloracne, not severe, but they still have

1 evidence of it, and you also find that these people have
2 associated with it changes in the elastic tissue of the skin
3 like farmers' skin, and it usually occurs in greater
4 frequency around the chloracne, and they still may have their
5 hairiness of the face.

6 We did find also that if one took a medical
7 history, which was only by medical history, that it appeared
8 that among the exposed there was an increased frequency of
9 upper GI ulcers any time, and we don't know why that is so,
10 but that was one of our suggested findings. We also found
11 that if the individual who was exposed smoked and still
12 smoked when we examined them, that is, at the time we
13 examined them, that there was an -- among the exposed there
14 was an abnormal, an increase in abnormal pulmonary function
15 tests, that is, their lungs functioned less well if they were
16 exposed and smoked than if they were not exposed and smoked.

17 We also found that the high density lipoproteins,
18 there were a greater frequency of abnormal values of the high
19 density lipoproteins, one of the blood fats that is rather
20 significant, among those who still had being are acne, who
21 still had acne as compared to the exposed who didn't have
22 acne. So that there may be a lipid disturbance reflected in
23 the high density lipoproteins among those who still have
24 their acne.

1 Q. Dr. Suskind, I notice in the left hand column of
2 each of those or of the last two boards you have the terms
3 constant and inconstant or common and suggestive. I wonder
4 if you could explain those terms to the jury?

5 A. Okay. In our experience people who are exposed to
6 TCDD and have had any kind of health effect the first
7 evidence of health effect is acne. That is constant. And
8 those who develop acne may also if they're exposed to high
9 enough concentrations of TCDD, and we don't know what those
10 are, by the way, because there are no-- have been no human
11 studies to determine the dose response relationship between
12 TCDD and acne or TCDD or any other health effect.

13 The inconstant means that it doesn't occur in
14 everybody who has acne, it only occurs in some of the people
15 who have acne, that is, the neuromuscular symptoms, enlarged
16 livers, and hyperpigmentation doesn't occur in everybody. It
17 only occurs in some, and irritability and nervousness occurs
18 in some. That's why we label those as inconstant, but the
19 only constant finding in humans, in humans exposed to TCDD,
20 the first constant, the first and constant finding is
21 chloracne.

22 Now, in the long-term health effects we have that
23 which is a common clinical finding and those which I have
24 regarded as being suggestive. Well, if you're going by

1 history and it's not completely verified by hospital records
2 or surgical records or doctors' records, then you have to
3 say, well, it can't be absolute, it's only suggestive.
4 That's why we have put that as a suggestive finding.

5 The abnormal pulmonary function among smokers in
6 the HDL the numbers are relatively small but statistically
7 significant, relatively small but statistically significant,
8 so that an epidemiologist who would look at this and say,
9 well, you don't have enough numbers to really say it's
10 absolutely so. That's why we say it's suggestive rather than
11 absolute.

12 Q. Now, did you find, referring again to Table 2, sir,
13 do the inconstant features and findings occur in people who
14 do not have chloracne?

15 A. I have not seen this, not in my experience. In my
16 experience I have never seen anybody who was exposed to
17 2,4,5-T or TCDD who developed neuromuscular symptoms and
18 liver findings, hyperpigmentation and had abnormal laboratory
19 findings without having chloracne.

20 Q. Thank you, sir. Now did there come a time when you
21 participated in an -- in 1984 in an international Congress on
22 occupational health?

23 A. Yes.

24 Q. And was there a paper that you published that arose

1 out of that presentation, sir?

2 A. There was.

3 (Defendant's Exhibit 1693 marked for
4 identification.)

5 Q. Let me hand you, sir, what's been marked as
6 Defendant's Exhibit 1693 and ask if you would examine that
7 and identify it for us please.

8 A. This is a paper which I presented at the
9 international Congress on occupational health in October of
10 1984 in Dublin, and it was a paper that was requested by the
11 Congress as -- there were several others, there were two
12 given in any one day over a period of three days, and one of
13 the issues that they felt should be discussed was chloracne
14 and dioxin, and I was asked to do that before a plenary
15 session, and this paper was the product of that presentation.

16 Q. All right. How did it come to be published, sir?

17 A. Well, all of the invited papers were requested for
18 publication in the Scandinavian Journal of Work, Environment
19 and Health, which is published in Finland in Helsinki by
20 their very distinguished Institute of Occupational Medicine,
21 and the editor of that journal is Sven Hernberg,
22 H-E-R-N-B-E-R-G, and he requested that I submit a manuscript
23 for publication, and I did that, and it has been published
24 already in the Scandinavian Journal of Work, Environment, and

1 Health in 1985.

2 Q. All right, sir. And is that what Defendant's
3 Exhibit 1693 is is that publication?

4 A. Yes, it is.

5 MR. HEINEMAN: All right. Your Honor, at this time
6 we would move the admission of Defendant's Exhibit 1693.

7 MR. CARR: May we approach the bench, Your Honor?

8 THE COURT: Yes, you may.

9 (At this time a conference was had at the bench out
10 of the hearing of the jury.)

11 MR. CARR: On what basis is it being offered?

12 MR. HEINEMAN: It's being offered as his paper that
13 he has produced. What do you mean what basis is it being
14 offered?

15 MR. CARR: I mean just that, on what basis? It
16 deals with a lot of different people. It doesn't deal
17 particularly on this case. It's a review article of other
18 articles. I don't know any basis it's admissible into
19 evidence.

20 MR. HEINEMAN: It is.

21 MR. CARR: It contains hearsay, it contains
22 statements that others have said, it's self-serving, it's
23 argumentative, it's -- I see no --

24 MR. HEINEMAN: It is a recitation of this man's

1 opinions.

2 MR. CARR: Yeah.

3 MR. HEINEMAN: With respect to chloracne and
4 dioxin. It is a paper he has published. You have the author
5 of the paper present for cross-examination, and, therefore,
6 certainly it is not, would not be barred by the hearsay
7 rule. It is information that he has developed, and he's here
8 to be cross-examined upon it. He's the author of this
9 document.

10 MR. CARR: Because he's the author of the document
11 doesn't make it admissible. There's no basis that I know of
12 that it's admissible. This is apparently his testimony in
13 written form. I certainly object to this. There's no --
14 there's arguments in it, it's argumentative, it's -- it's
15 just a self-serving document prepared by a long-time agent of
16 Monsanto, which they want to put into the jury to give their
17 particular views of the evidence, including things about
18 Times Beach that he has no knowledge of, including things
19 about Vietnam veterans, Ranch Hand that he has no knowledge
20 of, all kinds of things that this man has no knowledge of.

21 MR. HEINEMAN: On the question of whether he has
22 knowledge of it can certainly be gone into in
23 cross-examination, which may go to the weight of the document
24 but certainly not as to its admissibility.

1 before chloracne, but the evidence shows, the population
2 studies show that that usually doesn't occur.

3 Q. Now, are there any specific incidents that you have
4 reference to when you say you have examined hundreds of
5 people and are there -- what incident, what are you talking
6 about?

7 A. I'm talking about first exposures to chloracnogens,
8 and the largest group that we had an opportunity to study is
9 the Nitro group, but we have also looked at and examined
10 others who have developed chloracne and done and have looked
11 at their laboratory findings and find that if they don't have
12 chloracne, the laboratory findings are usually not abnormal
13 or they don't have other systemic manifestations without the
14 chloracne.

15 Q. I'm sorry. Go ahead. I interrupted you.

16 A. I say they don't have other systemic manifestations
17 without the chloracne.

18 Q. What is the difference or is there a difference
19 between intoxication and exposure?

20 A. Exposure simply means that one is in an atmosphere
21 of a toxic agent, one is in an atmosphere of a toxic agent
22 and may absorb some of that toxic agent. Intoxication is the
23 biological, the adverse biological effect of that absorption,
24 whether it comes through the skin or the respiratory tract or

1 think it is.

2 (The following proceedings were had in open Court.)

3 Q. Dr. Suskind, do you have an opinion as to whether
4 or not acne is a hallmark of dioxin intoxication?

5 A. Yes, I do.

6 Q. What is that opinion, sir?

7 A. The opinion is that the first biological effect
8 that one observes in persons who are exposed to TCDD is
9 chloracne, and as such it is the hallmark. Without it you
10 don't have other biological effects.

11 Q. Now --

12 A. And I think this has been borne out by studies even
13 since that paper was given.

14 Q. And what do you -- upon what do you base your
15 opinion with respect to chloracne being the hallmark of
16 dioxin intoxication?

17 A. Well, I myself have made observations on several
18 hundred people with chloracne, and chloracne from TCDD,
19 chloracne from pentachlorophenol, chloracne from the
20 contaminants of dichloraniline, and there are no systemic
21 manifestations in these people, including laboratory
22 disturbances unless there's the chloracne.

23 Now, this is not -- there are a number of opinions
24 given that why shouldn't one have laboratory disturbances

1 MR. CARR: It's hearsay if he has no knowledge of
2 it, counsel.

3 THE COURT: Let me take a look. I haven't seen
4 this. Let me take a quick look at it.

5 MR. CARR: When was this supposed to have been given
6 to us? I don't recognize ever having seen it before. It
7 doesn't mean that I haven't seen it, but I certainly don't
8 recognize it. When was this given to us?

9 MR. HEINEMAN: I can only assume it was provided to
10 you with the other materials. That's my understanding.

11 MR. CARR: It was not included in the other
12 materials that's given to us today. I haven't read it
13 before. The fact that he is the author of this document is
14 not a grounds for its admission. I could use it to
15 cross-examine him on, but the fact that he's the author
16 doesn't make it admissible.

17 MR. HEINEMAN: It is a written statement of his
18 opinions.

19 MR. CARR: It is, yes.

20 MR. HEINEMAN: And the facts that he has gleaned,
21 and he is certainly permitted to testify about these things,
22 and he's here for cross-examination about them and to that
23 end I believe it's admissible.

24 THE COURT: Okay. Objection sustained. I don't

1 the gastrointestinal tract. People become sick, that's
2 intoxication.

3 Q. All right. Now, what is the relationship between
4 chloracne and exposure and intoxication?

5 A. Well, there are any number of people, including
6 many people in this room who have been exposed to TCDD in two
7 different ways, one from 1948 to 1969, 2,4,5-T was being used
8 in lots of gardens and along thorofares and railroad
9 rights-of-way to get rid of weeds, and we were exposed to
10 it. I was, you were, and some of us are still being exposed
11 via incineration, and that's exposure. We're not sick, we're
12 not intoxicated, and we don't have chloracne.

13 So that a level of absorption has to be reached in
14 order for an adverse effect. These, Mr. Heineman, the simple
15 principles of toxicology, one does differentiate exposure,
16 absorption, and adverse effects, and usually it takes a level
17 of absorption and a level of body burden to be reached to
18 develop symptoms. For example, many of us have been exposed
19 to lead from a variety of sources, but we don't have lead
20 poisoning.

21 Q. All right. Now, are you aware, sir, that Dr. Ellen
22 Silbergeld has testified in this courtroom?

23 A. I was aware that she had.

24 Q. And she testified, sir, that -- I'd like you to

1 assume, if you would, that she testified that --

2 MR. CARR: What page, counsel?

3 MR. HEINEMAN: Page 125 on April 12th.

4 Q. That high dose is required to produce chloracne,
5 and chloracne is not a reliable indicator of exposure. Do
6 you agree with that statement?

7 A. Absolutely not. First of all, Dr. Silbergeld,
8 who's not a physician, has had absolutely no experience in
9 studying populations who have been exposed to chloracnogens,
10 and the assumption that she makes is an unproven assumption,
11 and I disagree with her completely. There's no scientific
12 basis for what she says.

13 Q. Now, sir, in connection with -- I'd like to pass on
14 from the publications which you have made and talk about
15 government grants and contracts which you've had. Can you
16 tell us --

17 THE COURT: Before you get into that, is this a good
18 point for a break?

19 MR. HEINEMAN: Oh, sure, Judge.

20 THE COURT: We'll take a short recess at this time
21 and then resume testimony.

22 (At this time the following proceedings were had in
23 chambers out of the hearing of the jury.)

24 MR. HEINEMAN: Want to go back on the record, Judge.

1 THE COURT: Right.

2 MR. HEINEMAN: In connection with the dates problem
3 with Dr. Suskind, I have spoken to him about the Louis
4 Livermore thing. He says that that is a commitment that he's
5 made to the federal government, it's a U.S. government
6 sponsored thing, and he says that he's just, he's committed
7 to them. He said he just can't go back on that now, and he
8 did give me three more dates in March that he could make
9 available. He said he can't be here on the 5th, 6th and 7th,
10 but he could do it on the 10th, 11th and 12th of March, he
11 could be back. He's got -- if I go through Friday, that
12 would give with the present schedule would give Rex eight
13 days to cross-examine him.

14 MR. CARR: I think that would -- I'm not concerned
15 about finishing by then. I think I can -- of course, I don't
16 know what he's saying thus far. I don't know what he's going
17 to say, but I can't -- based upon what he's saying right now
18 I know I won't need eight days, but I don't know what you're
19 going to go through. I imagine, from what you've given me I
20 imagine you're going to go through the Krummrich plant study,
21 you're going to go through the Nitro study. At a minimum I
22 know you're going to do those things, I assume. I don't know
23 what else you're going to do.

24 MR. HEINEMAN: We told you in that submission what

1 we were going to do.

2 MR. CARR: That submission is worthless. All it is
3 is broad general statements.

4 MR. HEINEMAN: Well, they're broad.

5 MR. CARR: And other witnesses have not testified
6 that way.

7 MR. HEINEMAN: Well, I can assure you that he's
8 going to discuss Nitro and Krummrich.

9 MR. CARR: Well, it is my judgment, Your Honor, but
10 I don't know how valid it is that eight days will be adequate
11 for me to cross-examine this doctor. My objection is to the
12 recess in the middle of the cross-examination, primarily
13 objection, my primary objeciton is taking these two
14 additional days off in the middle of what will be my
15 cross-examination.

16 THE COURT: Where's he supposed to be the 5th, 6th
17 and 7th?

18 MR. HEINEMAN: I don't know.

19 MR. NASSIF: He's back in Cincinnati for a
20 conference that he's chairing I think is what he said.

21 MR. HEINEMAN: I don't remember what the 5th, 6th
22 and 7th was.

23 MR. NASSIF: I thought he was chairing a conference
24 in Cincinnati.

1 MR. HEINEMAN: That's right, he said he had to be
2 back on the 5th.

3 MR. HEINEMAN: You know, I don't care about
4 interrupting my part of it.

5 THE COURT: Pardon?

6 MR. HEINEMAN: I don't care about interrupting my
7 part of it and bringing him back.

8 MR. CARR: I do. I most certainly object to that.
9 That's like having a direct examination all over again. You
10 have to cross all over again.

11 THE COURT: It's really not good when that happens.
12 It's something that should be avoided if at all possible.
13 Let's see. Do you figure on finishing Friday?

14 MR. HEINEMAN: I think so, Judge, yes.

15 THE COURT: Umm. What did he say the meeting was
16 about the 20th and 21st?

17 MR. HEINEMAN: It's the -- it's a federal
18 government program involved with the Defense Department on
19 the Lawrence Livermore Laboratory, and it is a thing that's
20 been set up by the government, and he has committed to do it,
21 and that's the date that the government selected for it. He
22 didn't select the date. He's committed to do it, and they
23 said this is when it's going to be.

24 MR. CARR: Well, the government could, you know,

1 the President's Council on Aging is something set up by the
2 government, it goes on the president, his council on birth
3 control, there's all kinds of things set up by the
4 government. Just to say that it's a government sponsored
5 thing is a meaningless statement. There's thousands of
6 conferences go on all across the country that are government
7 projects.

8 MR. HEINEMAN: That's certainly true.

9 MR. CARR: You haven't given us, at least I don't
10 understand there to be anything affecting the defense of the
11 country by his --- I don't undersand what it is that he's
12 supposed to be there for and what he's supposed to do.

13 THE COURT: Until I get some further information I'm
14 going to hold to my previous ruling. I'm open to any further
15 information. I don't want to take any more time now. Let's
16 go back in.

17 (The following proceedings were had in open Court.)

18 Q. Dr. Suskind, if I can direct your attention a
19 moment again to Defendant's Exhibit 1693, which you have
20 before you there, how does an author know when his paper is
21 peer-reviewed?

22 A. Well, I think it's rather obvious that one gets
23 from the editorial office of the publication comments and
24 requests for either changes or additions or elimination of

1 sections, sentences or whatever. I described earlier how a
2 journal usually asks one to peer review, and when I send in
3 an article for publication or for being considered for
4 publication, I get comments from unnamed reviewers, usually
5 two, sometimes just one, describing their appraisal of the
6 paper.

7 Q. That's forwarded to you by whom?

8 A. By the editor's office.

9 Q. Of the journal to whom you've submitted the paper?

10 A. Right.

11 Q. Did you receive such comments with respect to
12 Defendant's Exhibit 1693?

13 A. Are you referring to the chloracne hallmark paper?

14 Q. Yes, sir.

15 A. Yes, I did, and as a matter of fact, there were
16 some editorial --

17 MR. CARR: Your Honor, may I approach the bench.

18 THE COURT: Yes, you may.

19 (At this time a conference was had at the bench out
20 of the hearing of the jury.)

21 MR. CARR: Your Honor, this witness has been
22 instructed that he's not to say what others have said, the
23 fact that he's had conversations with others, peers or
24 otherwise, as to what, as the Court knows we had this --

1 approached this with this last witness, counsel is supposed
2 to have instructed his witnesses that they are not to come
3 out with these statements that I have discussed this matter
4 with other people and I have been told they agree with me or
5 they disagree with me or what they say, and in addition to
6 that, I want to make sure that this witness has been so
7 instructed. In addition to that, Your Honor, I thought the
8 objection had been sustained.

9 THE COURT: I did sustain the objection on whatever
10 that number is.

11 MR. CARR: 1693.

12 MR. HEINEMAN: Your Honor, I'm trying to establish
13 that the document was peer reviewed.

14 MR. CARR: I'll stipulate it was peer viewed.

15 THE COURT: Okay. Then it's irrelevant.

16 MR. HEINEMAN: The -- Your Honor, there has been
17 admitted into evidence by Mr. Carr's previous stipulation all
18 kinds of documents, all kinds of peer-reviewed papers, which
19 Dr. Silbergeld was questioned about, which Dr. Carnow was
20 questioned about, peer reviewed papers that have been
21 admitted into evidence.

22 MR. CARR: Your Honor, we have had this same
23 discussion so many times I don't believe counsel is still
24 doing it.

1 THE COURT: You know, almost all these objections
2 are waivable. The fact that either one of you might have
3 waived an objection before does not mean you are foreclosed
4 from asserting that same type of objection on something
5 later. I've been in that position, you've been in that
6 position. If he waived a similar objection at a previous
7 point in time, that's his professional judgment just as it's
8 been the same with yours. The objection was made, I have
9 sustained the objection. The fact that he might have decided
10 to waive it with some other documents is his judgment.

11 (The following proceedings were had in open Court.)

12 Q. Dr. Suskind, we had begun just before the break to
13 talk about grants and contracts from the government. Would
14 you tell the jury what a principal investigator is?

15 A. A principal investigator is the responsible
16 person. In this instance, a responsible scientist who
17 develops a grant application or a contract application for
18 the support of his or her research, and the -- if the grant
19 is awarded, contract is awarded, the principal investigator
20 is the responsible individual. He or she is in charge of
21 that study or that program project or that center.

22 Q. All right. Are there such grants as to which you
23 have been principal investigator at the University of
24 Cincinnati?

1 A. There are.

2 Q. All right. Would you recite those for the jury
3 please?

4 A. Well, between 1955 and 1962 I was a
5 co-investigator, being a co-principal investigator with Dr.
6 Leon Goldman in a grant that was given for the study of
7 occupational skin diseases, and when I left to go to the
8 University of Oregon, I had a similar grant of which I was
9 the principal investigator, which started in about 1964, I
10 believe, and was renewed, and in 1969 I became the principal
11 investigator of the grant for the support of the research
12 center under the sponsorship of NIEHS, National Institute of
13 Environmental Health Sciences.

14 In 1977 I became the principal investigator in a
15 center grant given for the support of an educational program
16 in the occupational health disciplines, medicine, nursing,
17 hygiene, and safety, and I was principal investigator of
18 these two center grants, one from '69 to '85 and the other
19 from 1977 to 1985 when I retired from the chair.

20 I also was principal investigator for several
21 studies, some of which are not even represented here. For
22 example, the -- we have a -- have had grants from the
23 American Petroleum Institute that originally sponsored the
24 cancer research laboratory at the institute back in 1950, and

1 it continued to support cancer studies and is currently
2 supporting cancer studies, and I am still a principal in the
3 study of the cancergenic or carcinogenic potential of
4 petroleum fractions, of oil fractions that come as a result
5 of the processing of oil and the products of those
6 processes.

7 I have had a grant from the Goodyear Tire and
8 Rubber Company in the International Rubber Workers' Union for
9 the support of an epidemiologic study of rubber workers,
10 which was carried out between 1978 and 1985.

11 Q. Who was the sponsor of the second educational
12 center grant that you--

13 A. NIOSH.

14 Q. NIOSH?

15 A. National Institute of Occupational Safety and
16 Health.

17 Q. Okay. Now can you tell me about any awards or
18 honors that you've received in your career?

19 A. Well, in addition to receiving an award at
20 graduation from medical school, which award was given to the
21 student who was regarded as the most accomplished in all
22 branches of medicine, flattering to be sure, but they gave
23 such an award and I was the awardee. At the University of
24 Cincinnati we have a graduate fellows award, which is given

1 to scholars in any field, whether it's science, humanities or
2 music and so on, who are regarded as having contributed
3 significantly to their field, and in 1972 I was made a fellow
4 of the graduate school, given a honorary Alpha Omega Alpha,
5 which is the honorary fraternity for medical school, and I
6 got an award from the American Association of -- the American
7 Occupational Medical Association for achievement in industry
8 for the work that we did in the graduate education program
9 development. And in 1984 I got a Project Hope award, again
10 for service in international education and medical service.
11 And last year, two years ago I was made an honorary member of
12 the Society for Investigative Dermatology, and last year I
13 was one of the several Daniel Drake medalists given in -- to
14 commemorate the birth of Daniel Drake, a pioneer physician,
15 and this was given for distinguished achievements at the
16 medical school and for international recognition.

17 Q. Now, I'd like to ask you, if I may, sir, about a
18 brief historical overview of your work with industrial
19 problems at Monsanto Company. From 1949 until the present
20 who has been your employer and who has paid your salary?

21 A. From 1948 until I retired in 1985 the University of
22 Cincinnati paid my full time salary.

23 Q. And you told us about the Schmidlapp chair --

24 A. Right.

1 Q. That you had -- tell me, if you would, what
2 payments you've received, what activities you've received
3 payment for by Monsanto Company?

4 A. Are you talking about directly?

5 Q. Yes.

6 A. For services? Before I retired the only two
7 consultations, which I -- for which I had some income, for
8 which I charged, was a visit, one day visit and survey of a
9 process at Nitro making Santocuren N.S., in which they had
10 some skin problems they wanted me to look at the process, and
11 this was done over the Christmas holiday.

12 Q. What year was that, sir?

13 A. 1981, 1981, I believe, right.

14 Q. All right.

15 A. And several days later I went to the Luling,
16 L-U-L-I-N-G, Louisiana plant also for one day. I couldn't
17 spend more time, looking at people who would have been
18 exposed to a process which made dichloraniline and they had
19 some chloracne as a result of that exposure, and I got paid
20 for that. And then subsequently I was paid for my expert
21 witness testimony at a trial in Charleston and for
22 preparation as well as testifying and --

23 Q. When was that?

24 A. -- This trial.

1 Q. I'm sorry?

2 A. That was in -- it started actually in the winter of
3 '84, but went into the winter and spring of '85. It was
4 January, February, and March of '85.

5 Q. And are you being paid for your testimony in this
6 case?

7 A. I hope so.

8 Q. All right. Now, with respect to any of the other
9 studies that you've done, Dr. Suskind, the examinations of
10 Monsanto employees in 1949, '50 and '53 or in '79, have you
11 derived any personal financial gain as a result of any of
12 that work?

13 A. I have not. The full time employees or full time
14 facility at -- in the Department of Environmental Health were
15 truly full time. They were paid a level income for doing
16 whatever work was required of them and which was consistent
17 with their expertise, so that when Monsanto requested that
18 the Kettering Laboratory clinical group do an examination of
19 Nitro workers, the Kettering Laboratory was paid for it or
20 the Department of Environmental Health was paid for it, not
21 me.

22 Q. So there have been occasions, have there not, sir,
23 when Monsanto made payments for these studies?

24 A. Well, they paid it to the -- to the department and

1 subsequently to the University of Cincinnati, but not, not to
2 me personally.

3 Q. Of that money that went to the University of
4 Cincinnati was any of that money given to you?

5 A. No, I got my regular salary, which was paid by the
6 university.

7 Q. Now, you mentioned in earlier testimony, sir, about
8 an examination that you did of Nitro workers in 1949. Do you
9 recall that, sir?

10 A. Yes, sir, I do.

11 Q. Would you tell the jury how that came about?

12 A. Well, in, sometime in October of 1949, Dr. Emmett
13 Kelly, who was then the medical director of Monsanto, called
14 Dr. Robert Kehoe, who was the director of the Department of
15 Environmental Health and the Kettering Laboratory and asked
16 him if it would be possible to send -- first of all, he told
17 him about the runaway reaction, told him about the
18 accident, and he said that there were a number of people who
19 were affected medically and that he would like the clinical
20 group at the University of Cincinnati to examine these people
21 in the hospital in Cincinnati.

22 Q. And --

23 A. And the doctor who was given the job or the doctors
24 who were given the job of doing the examination were Dr.

1 William Ash, an internist, who was head of the clinical unit
2 at the time and myself, and I was this staff dermatologist
3 and a member of the faculty. So he and I actually examined
4 the cases and carried out all of the studies that had to be
5 done. I used some of the biopsy material, as I said
6 previously, for some of our research in addition to wanting
7 to know what -- what chloracne looked like from the
8 trichlorophenol accident exposure, what it looked like
9 microscopically, we used also that material for our studies,
10 but Dr. Ash and I did the -- did the diagnostic work and
11 recommended the treatment.

12 Q. How many people did you see?

13 A. Initially we saw four people.

14 Q. Now, were these people admitted to your hospital?

15 A. They were admitted to the Holmes Hospital, which is
16 -- at that time was the unit in which private patients were
17 admitted.

18 Q. And to your knowledge, sir, had those four people
19 been seen by other physicians?

20 A. I don't know if they were seen, all of these four,
21 but there were other consultants before we were asked to
22 examine the people, who had come to Nitro to examine the
23 people. They weren't hospitalized, and I don't believe they
24 did any laboratory work.

1 Q. All right. Do you know the identities of the
2 others who had seen those Monsanto employees?

3 A. Yes, I do. One of them was a Dr. Louis Schwartz,
4 who had been the dermatologist for Public Health Service for
5 some years and had written a book on occupational skin
6 diseases, and he examined, I believe, some of that group on
7 two difference occasions. Subsequently Dr. Donald Birmingham
8 and Cleveland Denton, who were assigned to the unit in
9 Cincinnati, the Public Health Service unit in Cincinnati, and
10 who were two very good dermatologists, they also saw the --
11 they examined some of the cases and they looked at the plant
12 exposure as well.

13 Q. Now, subsequent to their examinations your unit got
14 involved, is that right?

15 A. Yes.

16 (Defendant's Exhibit 1694 marked for
17 identification.)

18 Q. Now, let me hand you, sir, what's been marked as
19 Defendant's Exhibit No. 1694. Would you examine that and
20 identify it for us please, sir.

21 A. This is the report of the clinical examination that
22 was carried out in 1949 by Dr. Ash and myself and sent to Dr.
23 Kelly, who was the medical director of Monsanto in St. Louis,
24 Dr. Durland, who was the plant manager at Nitro and Dr.

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24 Dr. Durland, who was the plant manager at Nitro and Dr.

1 Nelson when it was sent out back in 1949 as you can see from
2 the handwriting, notations were made as to who got the
3 report.

4 Q. Now, the date of the report is what, sir?

5 A. The date of the report, I believe, is December, if
6 I'm not mistaken. Well, it was sent out in December, 1949,
7 but it is the examination of those who came to us in
8 October. They were examined in October, but the final report
9 couldn't be sent out until December, cause we didn't have all
10 the laboratory work back in order to do that.

11 Q. And the last page, sir, does that bear your
12 signature?

13 A. Yes, it does.

14 Q. And there's another signature appearing there, and
15 whose is that?

16 A. William F. Ash, M.D..

17 Q. All right. Now, at the time that you entered into
18 this project, Dr. Suskind, what did you know, what was your
19 understanding about the incident, the '49 autoclave incident?

20 A. Well, we were told by Dr. Kelly that this accident
21 had occurred and that in one building in which
22 trichlorophenol was being made the kettle, five hundred
23 gallon kettle overheated and the pressure built up and a
24 valve blew and the contents of the kettle came out into the

1 building. This was Building 41, and some of it out into the
2 surrounding atmosphere.

3 Most of the information, the detailed information
4 about the accident and what happened afterwards we got from
5 the workers themselves, cause the first four, there was a
6 chief chemical operator, Paul Willard, and there was a
7 chemical operator, Mr. Hurley, and there were two pipe
8 fitters, one of which entered right after the accident, so he
9 could tell us exactly what he knew about it and what he
10 found, and the third was a pipe fitter -- I mean the fourth
11 was a pipe fitter as well, Mr. Stiehl, who could also relate
12 the details of the runaway reaction.

13 Q. What was your understanding of the materials that
14 were involved?

15 A. Well, we were given some idea as to what chemicals
16 we used for synthesis of trichlorophenol, and they included
17 tetrachlorobenzene, sodium hydroxide, and ethanol. Those
18 were the starting chemicals and the end product was supposed
19 to be trichlorophenol.

20 Q. Now, what -- what was the material that was in the
21 building after the eruption?

22 A. Well, it was variously described as a dark brown
23 substance or a black powder depending upon who you talked to,
24 but whatever the material was when people went to clean it up

1 they became sick.

2 Q. What -- did anybody identify what that dark
3 substance was?

4 A. No. There was -- the Monsanto company had its
5 chemists, and they felt that it wasn't trichlorophenol alone
6 obviously, cause it didn't look like trichlorophenol alone,
7 so that there were impurities in it, and they felt that these
8 were impurities that came about as a result of the
9 overheating and the excessive pressure in the kettle, and
10 they were -- there were various ideas that were subsequently
11 suggested as to what might be in that kettle. Some of the
12 chemicals that were talked about was trichloroanisole, another
13 which wasn't too far from what eventually was found to be the
14 active toxic agent, somebody suggested it was a biphenol
15 oxide, which means that there were two benzene rings
16 connected by an oxygen linkage and if they had added another
17 oxygen linkage, it would have been TCDD, but that's an
18 afterthought.

19 Q. Was-- were you -- was anybody to your knowledge
20 aware of TCDD at the time of the incident in '49?

21 A. No, I don't believe so.

22 Q. Or at the time you did your exam?

23 A. I don't believe so. First of all, I believe it was
24 the first runaway reaction that had been at least reported to

1 have occurred in a trichlorophenol synthesis, so there was no
2 previous experience to my knowledge. Now, subsequently there
3 was or there were, because there were other incidents of
4 problems arising from the manufacture of trichlorophenol or
5 the runaway reaction, which occurred in a similar fashion as
6 the one which occurred on March 9th in Nitro.

7 Q. Had the compound TCDD been discovered or identified
8 at that time?

9 A. It had not.

10 Q. So I guess the answer to this may be obvious, but
11 was anything known about TCDD toxicity then?

12 A. No, the thought that TCDD might be the toxic agent
13 which caused chloracne and the other symptoms was first
14 published in 1957 by two dermatologists in Homberg named
15 Kimmig and Schulz, and they got their idea from the fact that
16 at the Boehringer plant it's B-O-E-H-R-I-N-G-E-R, I believe
17 Boehringer plant there was a chemist who was working with
18 TCDD. He had actually synthesized it apparently, and he
19 developed severe chloracne and other symptoms and Kimmig and
20 Schulz got the idea from that incident, and then they got
21 Boehringer material, Boehringer trichlorophenol and isolated
22 TCDD from that material. But they published their paper in
23 1957, so that in 1949 and '50 and '53 we didn't know that the
24 chloracnegenic agent was TCDD.

1 Q. What did you -- what information did you have with
2 respect to the exposure of the work force in this Nitro
3 accident?

4 A. Well, the first information that we got was from
5 the -- from the four people who we examined, and then six
6 months later we went to Nitro and examined the four again and
7 two others, one of whom was a foreman, and he was severely
8 affected as well. But we assumed that since there were two
9 different buildings in which the 2,4,5-T was made, one was
10 the trichlorophenol in Building 41, and that was taken to
11 another building where it was then made into 2,4,5-T by
12 acidification with monochloroacetic acid, and apparently if
13 there was a chloracne in the trichlorophenol, it probably
14 was carried over to the -- to the building which was making
15 2,4,5-T, and the esta and subsequently we discovered that,
16 yes, there were people who were involved in 2,4,5-T without
17 having been involved in the accident who also had
18 manifestations of chloracne.

19 Q. Now, with respect to the people that cleaned up the
20 '49 incident or accident, how did they -- what was their
21 exposure, what did you learn about that?

22 A. Well, in '49 we recognized that the people who came
23 to clean up were the people who were the most severely
24 affected. First, the pipe fitter who went in without any

1 protection, and he developed a severe headache and nausea and
2 eye irritation, respiratory irritation and so on, and he
3 left, and then he came back several days later with complete
4 protection and by that time others had come in with
5 protective garb and attempted to clean up the inside of the
6 building, and those people who were involved in cleaning up
7 and restoring the process, what they wanted to do was to put
8 it back into shape so they could continue to make
9 trichlorophenol, which they did, and those who were involved,
10 including the chief chemical operator eventually developed
11 chloracne.

12 It's interesting though that Mr. Willard, who was
13 the chief chemical operator, didn't develop symptoms until
14 many weeks after, and why he was less susceptible we don't
15 know. Could have been that he used some rather good
16 protective garb before going in, but he didn't develop his
17 chloracne -- his first of evidence of it was on his leg, as a
18 matter of fact, and then subsequent to that, which was
19 several weeks after he was exposed, if not months after he
20 was exposed, he then developed chloracne and had it not only
21 on his face, but elsewhere on his body.

22 Q. Doctor, I wonder if you would describe for us
23 chloracne and how it -- how it differs from acne vulgaris, if
24 it does?

1 A. It would be useful if I had some pictures to show
2 and perhaps ---

3 Q. All right.

4 A. We can do that. I'm talking about the clinical
5 photographs.

6 Q. Oh, I'm sorry.

7 (Defendant's Exhibits 1695, 1696, 1697 and 1698
8 marked for identification.)

9 Q. Let me hand you, sir, first what's been marked as
10 Defendant's Exhibit 1696 and ask you to examine that and
11 identify it for the record please.

12 A. This is a photograph of the face of the pipe fitter
13 and mechanic whose experiences I have just described.

14 Q. And Defendant's Exhibit 1697?

15 A. This is a photograph of the face of the --- one of
16 the chemical operators who also came in to clean up the mess.

17 Q. And Defendant's Exhibit 1695?

18 A. This is an another mechanic and pipe fitter, who
19 developed his chloracne when we saw him in October of 1949
20 when he developed his chloracne months after the incident,
21 and I can describe how he did that.

22 Q. All right. And Defendant's Exhibit 1698?

23 A. This is the chief chemical operator, who -- this is
24 the face of the chief chemical operator, whom we examined in

1 1949.

2 MR. CARR: I didn't hear the last part of your
3 answer, Doctor. I couldn't hear the last of your answer.

4 A. This is --.

5 MR. CARR: Your voice dropped and I didn't hear.

6 THE WITNESS: May I repeat, your Honor.

7 THE COURT: Go right ahead.

8 A. This is the face of the chief chemical operator,
9 who we examined in 1949.

10 MR. CARR: Thank you.

11 MR. HEINEMAN: Your Honor, at this time we would
12 move the admission of Defendant's Exhibits 1695 through 1698.

13 MR. CARR: We don't object to them.

14 THE COURT: They're admitted without objection.

15 MR. HEINEMAN: May we pass them to the jury?

16 THE COURT: Yes, you may.

17 (Exhibits passed to the jury).

18 THE COURT: Mr. Heineman, go ahead.

19 Q. Dr. Suskind, these photographs that you have just
20 identified, what is the condition that's reflected on the
21 face skin of those men?

22 A. These are photographs of rather severe chloracne,
23 and it's characterized by, as you have seen, blackheads on
24 the face, large numbers and these small white cysts, which

1 are really what we call closed comedones, they don't show
2 their opening, they just show the fact that they are cysts
3 that are filled with fat or filled with keratin, and this man
4 who was the pipe fitter came in to clean it up. He had it on
5 his face, his scalp, his abdomen, his back, his genitalia.
6 He had a rather severe case of chloracne.

7 Now, if I may go on and explain what the difference
8 between acne vulgaris is.

9 Q. Please do.

10 A. Physiologic acne or acne of adolescence and
11 sometimes it goes into adult life is usually characterized
12 first by greasy skin, and the first evidence in the 12, 13,
13 14 year old is grease around the nose and blackheads around
14 the nose, and the cheek bones are rarely affected, so the
15 initial locale, the locale, that is the place is very
16 significant where it starts, and in many instances, whether
17 it's an exposure to chemical agents like TCDD or
18 pentachlorophenol, the first site is usually the cheek bones
19 and in front of the ears, in front of the ears, and
20 subsequently the cysts and blackhead occur on the back of the
21 ears, posterior to the ears as well.

22 In many instances one of the differentiating
23 features is that acne vulgaris the glands are producing too
24 much fat, too much fat, so they're called hyperplastic

1 glands, and the skin is greasy, and in the case of the
2 chloracne in most instances, although not all, the skin is
3 usually hyperkeratotic, it feels spiny, hyperkeratotic, it
4 feels spiny, and it's dry. Blackheads, cysts and dry, thick
5 skin, those are the characteristics.

6 These people also had an added feature, and that is
7 they still had as the -- as the report shows, they even still
8 had the odor of some phenolic substance, and good scrubbing,
9 by the way, in the hospital cleared that up completely, so
10 that there was a problem that we saw among the first four of
11 hygiene, and they improved enormously with good hygiene, as
12 the report showed. They improved enormously with good
13 hygiene. By the time they left the hospital they had the
14 characteristics of chloracne, the comedones, the cysts, the
15 dry hyperkeratotic skin.

16 In acne vulgaris it's rare to find lesions, that
17 is, comedones and cysts on the genitalia, but in chloracne as
18 in this case, in this group there were a fairly large number
19 of males that had lesions on the penis and the scrotum, and
20 they had them 30 years later, so they didn't go away, and we
21 would regard those features as the hallmarks of chloracne,
22 and chloracne being the hallmark of dioxin intoxication, not
23 absorption, but intoxication, the adverse effects.

24 Q. Dr. Suskind, how is it that chloracne develops, how

1 is it, sir, that it develops?

2 A. Well, we have done some studies to demonstrate --
3 first of all, you can't demonstrate it in animals, and we
4 have had some human volunteer studies that go back some
5 years, which we have reported on, in which we have
6 demonstrated that if you take the trichlorophenol from a
7 kettle, and we did this before we knew that it was TCDD and
8 you dilute the material out so that it doesn't irritate the
9 skin if you apply it to human skin, and then you apply it
10 daily for several weeks making sure that there are no adverse
11 other effects, which we did, you can with repeated biopsies
12 of the skin demonstrate what the cellular changes are, the
13 progression from the normal sebaceous glands to the chloracne
14 lesion. I think we have a series of charts that come from
15 one of my papers, which demonstrate that, what would be
16 called the cellular kinetics, the cellular pathogenesis of
17 chloracne.

18 (Defendant's Exhibit 1699 marked for
19 identification.)

20 Q. Let me show you, sir, what's been marked as
21 Defendant's Exhibit 1699 and ask you to examine that and
22 identify it for me please?

23 A. This is a drawing of the events in human skin when
24 a chloracnegen is applied to the surface of the skin

1 repeatedly over a period of in this instance 12 weeks.

2 Q. All right. Now, what is the source of these
3 drawings?

4 A. I believe it's a paper that was published in the
5 Scandinavian Work and Environmental Health, and it was the
6 paper I gave at the international Congress of Occupational
7 Health.

8 Q. Now, sir, in the work that you have done, have you
9 done histological examinations?

10 A. Oh, yes, we have.

11 Q. Of the skin?

12 A. That was the purpose of the study.

13 Q. All right.

14 A. To find out not what was just happening on the
15 surface of the skin, but what was happening to the structures
16 under the skin like the hair follicle and the sebaceous
17 gland.

18 Q. Have you personally observed the conditions that
19 are reflected in this chart that I'm holding before you?

20 A. Yes, I was the principal investigator in that
21 study, did the biopsies as well as read the slides which were
22 prepared by a pathology, by our own pathology department.

23 Q. And are these drawings or photographs, I guess --

24 A. These are drawings of photographs of histological

1 sections.

2 Q. Taken from your --

3 A. Taken from collection that we have.

4 MR. HEINEMAN: Your Honor, at this time we would
5 move the admission of Defendant's Exhibit 1699 into evidence.

6 MR. CARR: We have no objection, Your Honor.

7 THE COURT: Admitted without objection.

8 Q. Doctor, I wonder if you would be so kind as to step
9 down here and explain this exhibit.

10 A. And I wonder if it wouldn't be useful if we turned
11 it in such a way so that the Judge could see it as well.

12 THE COURT: I'll come down there. That's okay. I'd
13 rather the jury see it. Thank you?

14 A. If one -- when you do a biopsy, what you do is to
15 take a segment of a piece of tissue. In this instance it
16 would be a segment of skin, and usually we take a punch
17 biopsy of two or three millimeters in width so we don't cause
18 any scars. Sometimes they're a little larger than that, but
19 they're usually punch biopsies. Some of you may have had
20 such biopsies, and if you cut through the skin like so, you
21 will see first the surface of the skin, and this is called
22 the epidermis, this is called the epidermis. This is normal
23 skin. And then from the opening of the hair follicle you
24 find first this fat gland. That's called the sebaceous

1 gland, and the sebaceous gland is attached to the hair
2 follicle. This is the hair follicle, and these cells produce
3 the hair, these cells here produce the sebum. Everybody has
4 sebum, some more than others, but the sebaceous glands
5 produce this lipid that is a healthy thing, it's a good thing
6 to have, because of its physiological and biochemical
7 properties.

8 Now, these are cells that are so-called
9 undifferentiated cells, undifferentiated cells, but they
10 differentiate when they -- they grow, they become cells that
11 produce lipid, so we call them sebaceous cells. These are
12 the undifferentiated cells, which become sebaceous cells, and
13 as they move upward and outward these cells fill up with fat,
14 and the cell membranes break and the lipid exudes on the
15 skin.

16 Now, what happens with a chloracnegen like TCDD?
17 The first thing that happens is that you see a thickening of
18 the -- of the membrane, the lining of the sebaceous gland
19 duct, a thickening of that lining. That's the first thing
20 that happens. How long does it take to do that? Six days,
21 ten days. We did serial biopsies, so we took biopsies at ten
22 days, biopsies at 14 days, biopsies at two weeks, three weeks
23 and so on up until 12 weeks. If you go -- if you then go to,
24 let's say, ten to 14 days, you will see that this plug has

1 extended up to the opening of the follicle, and that's the
2 first sign of the blackhead. Sometimes you can't see it's so
3 small, but that's the first sign of it. Then something else
4 happens which is very characteristic of the development of
5 chloracne, and that is something happens to these cells.
6 Instead of producing fat cells they produce cells that
7 produce keratin or horny material, horny material. The
8 barrier layer on the surface of the skin is composed of horny
9 material. The nail is composed of horny material, the hair
10 is composed of horny material, and instead of their producing
11 fat cells, they produce keratin cells and what happens is
12 that these are cells that are differentiating from these
13 cells and instead of producing fat, they produce a plug like
14 so, and the end product is that blackhead that comedone and
15 this cyst, and the pictures that you see here, these cysts
16 like so, these cysts is that, that's the end product.

17 So what you find you will find a mixture, you will
18 find the blackhead, and you will find the comedone and
19 sometimes they're large, sometimes they get so large on the
20 back or the genitalia that they require surgical treatment,
21 but that's chloracne, and in contrast -- I don't have it
22 here, but in contrast acne vulgaris, while it does also
23 produce blackheads the sebaceous glands become very large,
24 and they produce lots of fat. Kids that have acne have

1 greasy skins, and the greasy skin has to come from somewhere
2 and it comes from the enlargement of this gland. Thank you.

3 Q. Doctor, with respect to the examinations that you
4 did in 1949 of these workers, could you tell us specifically
5 what you found in these four men?

6 A. Well, the first person described in the report is a
7 pipe fitter or steam fitter, who was Mr. McLanahan. In less
8 than one hour after the accident he went in, got a work order
9 to go into the building and clean it up and repair the
10 damage, and he was there for about three hours and developed
11 a burning sensation in his eyes, nose, and throat and on the
12 following day he worked in the same building, and because
13 several hours after that initial exposure when he worked for
14 those three hours he developed severe headache and nausea and
15 vomiting and dizziness, and that lasted, that is, the
16 headache lasted for about eight days.

17 Q. Was he able to notice any of the material on him,
18 did he actually get any of it on him that he noticed?

19 A. Well, I believe that he did, because he didn't wear
20 protective garb, so there was -- he was obviously exposed to
21 the material from the kettle. He also developed itching and
22 severe swelling and redness of the face about less than a
23 week after his exposure, and subsequent to that he noticed
24 his face developing comedones and pustules, and they

1 increased in number and involved not only his face, but
2 interestingly enough, it's the first time I've ever seen
3 chloracne in the scalp. Matter of fact, I think he's the
4 only one I've ever seen who had chloracne in his scalp, and
5 he developed chloracne on his lower extremities and his
6 back.

7 About one month after that he developed aches in
8 the regions of the thighs and the calves, and he -- and this
9 pain, these aches and pains were aggravated by exertion, and
10 he was really unable to walk even short distances. This pain
11 lasted for six weeks, and when he came in, while the pain on
12 exertion was less than he had experienced previously, he had
13 a feeling of weakness and fatigue and nervousness and
14 insomnia.

15 The second individual was a chemical operator,
16 chief chemical operator, and he told us that he entered the
17 building several hours after the explosion or the accident
18 and wasn't sure whether or not his contact occurred on the
19 following shift or that first occasion, but at any rate he
20 only developed symptoms a week, several weeks afterwards, and
21 it was noted that he had some lesions in his -- on the back
22 of his leg behind his knees and also developed a rash on his
23 body, and this again was followed subsequently by aches and
24 pains, which he had when he came in, and he said that it

1 wasn't until mid August of that same year, which was several
2 months later that he became aware of the fact that he had a
3 severe case of chloracne, which involved his face, his neck,
4 his back, his abdomen, and his genitalia.

5 He also indicated that the pain was so intense he
6 was unable to walk, he went to the hospital for this, and he
7 was there for about 16 days, was treated with intravenous
8 injections and within one week his pain subsided with
9 treatment. He was admitted to the hospital again, because
10 these complaints recurred, and since that hospitalization,
11 which was in August of the same year, he had no recurrence of
12 the pain in the chest and the neck although he said he did
13 have an ache in the back of his knees.

14 The third man was Jesse Stiehl, who was a pipe
15 fitter, and his contact was interesting. He was asked by his
16 foreman to go to an area in July of that year, the accident
17 occurred in March, in July of that year he went to an area
18 where they had buried some of the pipe fittings, and he was
19 asked to retrieve them, get them out of the -- of where they
20 were and clean them up, and in cleaning up these pipes and
21 pipe fittings he developed chloracne. He also developed,
22 subsequently he developed aches and pains and insomnia
23 nervousness, and he had some weight loss since the eruption
24 occurred. This was a patient, who in 1942, which was long

1 before the incident, had hepatitis, which lasted for about
2 six weeks.

3 The fourth person was Jonathan Hurley, and he was a
4 chemical operator. He was the oldest of the group, he was 56
5 years old, and we saw him 30 years later, examined him 30
6 years later at age 86. He visited the building a few hours
7 after -- of the accident and six weeks later he was assigned
8 to working there, this time to wash down the autoclave for
9 inspection. And he said he wore a respirator and goggles and
10 gloves, and two weeks following that assignments he said he
11 noticed a development of chloracne.

12 He also had some swelling of the area around the
13 eyes periorbital edema, and this occurred periodically. He
14 also had generalized -- when we examined him he had
15 generalized chloracne, including the face and the neck and
16 the lower legs and the genitalia.

17 So that all of these people had rather severe
18 chloracne, and we found that two out of four of them had
19 tender -- tenderness in the liver area and on palpation on
20 the physical examination for the liver it -- they were
21 enlarged.

22 A third person, who was Mr. Hurley, the liver was
23 barely palpable. However, there was no doubt that in two out
24 of the four they had enlarged tender livers. In Mr. Hurley

1 we also found that he had a change in his ability to feel in
2 the -- in the feet, in the skin of the feet, and the others
3 didn't have that, but this change in the sensation, ability
4 to feel made us curious to know whether or not others had the
5 same thing and that wasn't so, but we did take a biopsy of
6 Mr. Hurley's skin of the foot where he was not able to feel
7 very well, that is, he had little in the way of sensory
8 ability, and we did find on biopsy, we did find there were
9 changes in the nerve sheath, the myelin sheath of the nerve,
10 which was pathological.

11 We found that the total lipids on laboratory the
12 total lipids were increased in at least two and possibly
13 three of the four individuals, and we did find that the
14 prothrombin concentration was decreased, so it was below
15 normal. We wanted to take liver biopsies on these people,
16 cause it was indicated, wanted to find out what the liver
17 really looked like, and we were told by Dr. Leon Schiff, who
18 was then the chief of the gastroenterological service, that
19 their prothrombin time was low and that there was a danger of
20 bleeding if we took a liver biopsy so we didn't take any
21 liver biopsies at the time. However, I have to tell you that
22 severely years later Mr. Stiehl, the pipe fitter who didn't
23 have -- had his -- didn't get exposed until three or four
24 months after the incident, he had a biopsy of his liver done

1 at the Holser Clinic several years later, and it was found to
2 be normal.

3 THE COURT: I think this is a good point to break
4 for the day. Ladies and gentlemen, we'll break for the day
5 at this time. As you know, we're off tomorrow and Wednesday
6 with this court holiday. We'll resume again Thursday morning
7 at 9:30. I would remind you as I do on any overnight break,
8 that you're not to read, listen to or watch anything about
9 this case in particular or the subject matter in general in
10 any of the media. Thank you for your attention and
11 cooperation..

12 (At this time the jury left the courtroom and the
13 following proceedings were had.)

14 MR. CARR: This witness knows his last statement was
15 completely improper. He brought out the statement that this
16 liver biopsy was completely normal. It has to be hearsay, it
17 has to be something that this witness was told or has read.
18 It was something that was done several years later and not by
19 him. It's improper and he's testified enough, I'm sure, that
20 he must know that it's improper, and I would ask the witness
21 to be admonished that he should not make statements like that
22 in the future. There wasn't anything in the nature of the
23 question that was even asked that I would know that he was
24 going to make such a statement. I would like when we start

1 back with this witness Thursday that the witness-- that the
2 jury be instructed that they are to disregard the statement
3 that the witness said about this liver biopsy being normal.

4 MR. HEINEMAN: Your Honor, an expert witness such as
5 Dr. Suskind is clearly entitled to testify about the
6 information he has available to him and based upon which he
7 forms his opinions and to my understanding that's all he was
8 doing was testifying about the information that he knew about
9 with respect to these people, whom he examined and treated,
10 with respect to their conditions and the conclusions which he
11 is ultimately going to testify about with respect to their
12 conditions and prognosis.

13 MR. CARR: Counsel knows that he cannot testify as
14 to what somebody else has told him, that's hearsay. We been
15 through this many times before. If it's a medical record of
16 this witness that he knows is authentic and you have a basis
17 for it, and it comes in, that's something else, but the
18 person made that liver biopsy could be cross-examined and
19 could show that it's not. This is the rankest form of
20 hearsay. He can use information if it's ordinarily reliable,
21 if it was a medical record for him to arrive at an opinion.
22 He may not relate what that information is. It is hearsay.
23 We have been through this so many times, and the Court has
24 ruled on this point so many times. It's like reading

1 contents of an unadmitted article into evidence. He may use
2 the articles, he may use authorities to come to an opinion.
3 He may not relates what those authorities say or what those
4 articles say. It's improper, you know it's improper, and he
5 knows it's improper.

6 THE COURT: I'm sustaining the objection. I think
7 that's correct. I will admonish the jury Thursday morning.
8 Please remind me at that time about that and I'm ordering you
9 as an officer of the Court to explain that to him, explain
10 what's to be done in the future.

1 STATE OF ILLINOIS)
2) SS.
3 COUNTY OF ST. CLAIR)

4 I, MARSHA SCHNIPPER, certify the foregoing to be a
5 true and accurate transcript of the testimony and proceedings
6 in the above-entitled cause.

7 Dated this 14th day of February, 1986.

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13 Marsha Schnipper
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1 STATE OF ILLINOIS)
2) SS.
3 COUNTY OF ST. CLAIR)
4

5 I, Richard P. Goldenhersh, one of the Judges in and
6 for the Twentieth Judicial Circuit, do hereby certify that
7 the foregoing transcript is a true and correct transcript of
8 the proceedings had in said cause.

9 Dated this ____ day of February, 1986.

10
11
12 _____
13 RICHARD P. GOLDENHERSH, JUDGE
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