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JEFFERSON CIRCUIT COURT
SPECIAL DIVISION
No. 88-CI-07591

HERMAN SNAWDER, ET UX

PLAINTIFFS

VS.

TESTIMONY OF GERRIT SCHEPERS

OWENS-ILLINOIS GLASS CO.,
INC., ET AL

DEFENDANTS

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The above styled matter came to be heard on
June 23, 1993 at 9:00 A.M. in the 4th Judicial Circuit
Courtroom in the Hall of Justice, Louisville, Kentucky.

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SCHEPERS

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The witness, GERRIT SCHEPERS, after having been duly sworn, states and testifies as follows:

DIRECT EXAMINATION

BY MR. WEINGARTEN:

Q 1 Doctor, would you please tell the members of the jury your full name and your address?

A Yes. The first name is Gerrit, spelled, G-E-R-R-I-T, two initials, W. and H., and sir name is Schepers, spelled, S-C-H-E-P-E-R-S. Address is 6527 Sunny Hill Court, McLean, Virginia, 22101.

Q 2 Doctor Schepers, where were you born?

A South Africa.

Q 3 And, how old are you?

A Seventy-nine.

Q 4 How long have you lived in the United States?

A Since '54.

Q 5 1954?

A Yes.

Q 6 And, are you not a United States citizen now?

A Yes, I am.

Q 7 Doctor, what is your present occupation?

A I just do some consulting and research. I am retired.

Q 8 Are you licensed to practice medicine?

A Yes.

Q 9 Where do you hold a medical license?

A Presently in Delaware and still in South Africa.

Q 10 Doctor, would you summarize please for the members of the jury your educational background?

A Yes. I went to school in South Africa. I went to University in 1930 in the city of Johannesburg. I studied science and medicine. Qualified as a doctor in 1938. I continued research and post graduate study and teaching through to 1945 and I received a first graduate doctorate of science degree. Continued further research and study in 1948 when I received another post graduate medical degree in internal medicine. Then I came to the United States in 1949 on a fellowship. I studied at New York University, the subject of industrial medicine. And, then the last year of more or less full time study was in 1957 through to '58 when I studied at the University of Michigan as a fellow in pathology.

Q 11 Doctor Schepers, is the European or South African system of post graduate and medical education different than back here in the United States?

A Yes, in many respects. It's the same topic, mainly

the diseases that people and how we deal with them. But, our training is more general because of the duties that the doctors have tend to be more wide ranging. So, it takes six years of undergraduate training and another ten of post graduate before you can be a specialist.

Q 12 And, Doctor, you had mentioned that you had done some teaching in South Africa before 1945.

A Yes.

Q 13 Who were your students?

A Medical students and post graduate, science and medical doctors.

Q 14 And, what subjects were you instructing then in?

A Well, miscellaneous subjects, anatomy, physiology, pathology were the main subjects.

Q 15 Did you have a private practice of medicine at all in South Africa before 1949?

A A very brief period. I had a consulting and I saw patients. And, I had a laboratory and studies for doctors in pathology. But, I very soon went from the University to government service. And, that's how I found my private practice.

Q 16 Now, you said you went from University--Doctor, I just want to make sure that we have clarified. You

received your medical degree, I think you said, in 1938?

A '38, yes.

Q 17 And, then you said, I think, you received some post medical degrees--

A Yes.

Q 18 --or post graduate degrees as well?

A A doctor of science in 1945, post graduate doctorate of medicine in 1948.

Q 19 What institutions awarded those two post graduate degrees?

A The first at the University of South Africa in Pretoria. The second at the University in Johannesburg with a complicated name called WITHWHERSREND, W-I-T-W-H-E-R-S-R-E-N-D.

Q 20 Withwhersrend?

A Yes.

Q 21 Doctor, I think you said that in 1949 you joined government service in Africa?

A '44.

Q 22 '44?

A Yes.

Q 23 What was the nature of your government service at that time?

A I joined what was known then as the Pneumoconiosis Bureau of the government of South Africa.

Q 24 All right. Now, Doctor, we have heard testimony in the first part of this case that pneumoconiosis means dust disease.

A Yes.

Q 25 Is that what the Pneumoconiosis Bureau dealt with?

A Yes.

Q 26 And, what were the dust diseases that were being dealt with by the Pneumoconiosis Bureau when you joined them?

A Any and all. The principal one then was silicosis, because of the large gold mines there. But, we have dealt with any other disease that might occur in smaller industries.

Q 27 Did you deal with asbestos related diseases?

A Oh, yes. That was the major industry.

Q 28 Okay. Is there a mine--an asbestos mining industry in South Africa, was there at the time?

A There were three major mining centers. One for the crocidolite mines in Grutamont (phonetic), one for the amosite mines in Granje Ignab (phonetic) and one for the chrysotile mines in Swaziland Barberton (phonetic).

Q 29 Doctor Schepers, what were your specific responsibilities with the Pneumoconiosis Bureau when you joined them in 1945?

A Multiple and varied and progressive. I served as an internist to examine candidates who thought that they had a dust disease, checked their bodies, checked their X-rays, if they died, had a look at their tissues. And, then form an opinion and jointly with other members of the Bureau, there were ten members, we made decisions much like you would try to make them here in this courtroom.

Q 30 How long did you work for the Pneumoconiosis Bureau at that time?

A Ten years.

Q 31 That was from 1945?

A Yes.

Q 32 Was there a break in the middle of that, Doctor, when, I think you said, you came here?

A Yes. I came to the United States between 1949 and '50.

Q 33 Now, I think you mentioned, Doctor, that that was because you had been awarded a fellowship of some type?

A That's correct.

Q 34 What was the nature of the fellowship that you received in 1949?

A It was called the Commonwealth fellowship and it was awarded from New York at the Hartman's Foundation. And, one was awarded the Commonwealth each year and I was the recipient of that fellowship for that year.

Q 35 So, there was only one individual per year who received the Commonwealth Fellowship?

A Yes.

Q 36 And, in 1949, that was you?

A Yes.

Q 37 Doctor Schepers, when you came to the United States on the fellowship in 1949, where did you spend your time?

A I was affiliated with the New York University Institute of Industrial Medicine of New York University. That's not where I spent all of my time. I traveled around in the United States quite a lot. The teacher that I had selected was a consultant to many organizations and industries and sent me around to these industries to learn things first hand.

Q 38 Who was the teacher for, with whom you were working

at NYU?

A Doctor Anthony Lanza.

Q 39 And, what was Doctor Lanza's primary interest that attracted you?

A Pneumoconiosis and industrial medicine.

Q 40 And, while you were here in the United States in that 1949, 1950 time period, where did you go and what did you do?

A Who did I--

Q 41 Where did you go and what type of study did you engage in in that fellowship?

A Just about everywhere. But, I spent a long time at a research institution in upstate New York, known as the Saranac Laboratory.

Q 42 All right. And, what was the Saranac Laboratory doing in the field of dust diseases in 1949?

A It was a research institution then to study the nature and the problems relating to the various dust diseases. And, most of it was done as contracts to specific industries.

Q 43 Were the asbestos diseases being studied at Saranac at that time?

A Yes, sir.

Q 44 Did you have the opportunity, Doctor Schepers--let

me first ask you this. How much of the time that you were here in 1949, 1950 did you spend on site at the Saranac Laboratories?

A About three months altogether.

Q 45 And, while you were at Saranac in that three month period, Doctor, did you have the opportunity to observe and review the research that was going on there concerning asbestos diseases?

A That was the purpose of it, yes.

Q 46 What did you observe--what did you participate in with respect to those asbestos disease experiments at Saranac in 1949?

A The laboratory had been doing research since 1887. So, there was an enormous amount of accumulated materials that could be reviewed. I was particularly interested in the issue of cancer as it relates to asbestos, particularly the American topic of asbestos known as chrysotile. So, I went over all of the medical data relating to patients, human beings that were there, there were very many of those. And, all of the old experiments that had been made since 1930, 1928 actually by a Dr. Gardner, the previous director through to about 1946.

Q 47 Okay. Let me ask you a few questions about the directors of the laboratory, Doctor. When you were there on your fellowship in 1949, who was the laboratory director?

A Doctor Author Vorwald was then the director.

Q 48 Okay. And, Vorwald is spelled, V-O-R-W-A-L-D?

A That is correct.

Q 49 And, was Doctor Vorwald supervising the asbestos experiments when you were there?

A Yes.

Q 50 Now, who had been the predecessor director of the lab before Doctor Vorwald, did you say Doctor Gardner?

A That was Doctor Leroy Gardner.

Q 51 And, how long had Doctor Gardner been the director of the Saranac Laboratory?

A He became associated with it in 1918 and he died in 1946 and he was there all that time.

Q 52 And, had Doctor Gardner initiated the experimentation concerning asbestos and disease?

A Enormous amount of research, yes. He commenced his asbestos experiments in 1928 and never stopped. In fact, it was still going on when he died.

Q 53 Did you have available to you in 1949 the prior

research that had been conducted by both Doctors Gardner and Vorwald?

A Yes.

Q 54 Doctor, other than the time that you spent at Saranac and the time that you spent at the New York University, where else did you go in the United States and Canada, for that matter, during your fellowship?

A I went from the east coast to the west coast from the north to the south and vice versa. I visited cities like Pittsburgh, Chicago, San Francisco, Los Angeles, all of the big places where there were many industries to inquire into the health problem issues in varied industries.

Q 55 Did you continue to investigate the issue of asbestos disease in those other places you visited?

A Oh, yes.

Q 56 Doctor, at the conclusion of your fellowship, did you return to South Africa?

A Yes.

Q 57 When you went back to South Africa, is this in 1950 now, I would just like to get my dates correct?

A '50. Yes, sir. 1950.

Q 58 And, what employment did you take up when you went back to South Africa?

A I was sort of promoted and became chief of what is called cardiopulmonary section and was made the Vice Chairman of the Bureau.

Q 59 Of the Pneumoconiosis Bureau?

A Yes.

Q 60 How long did you remain in the employment of the Pneumoconiosis Bureau?

A Till the end of 1954--'53, beginning of 1954.

Q 61 And, what were your responsibilities as as head of the Cardiopulmonary and Assistant Chief, I think you said, of the Pneumoconiosis Bureau for that time period?

A I introduced the new methods of lung function testing, which I worked out here in the United States and in Canada and in Europe. Those are all new methods, I introduced those and established labs for that. And, also assigned with cardiological testing and introduced new methods of X-ray diagnosis of the pneumoconiosis. That sort of thing.

Q 62 Doctor Schepers, from 1950 to 1954, did you continue to examine people for diagnosis of

asbestos related disease?

A Oh, yes. But, each in greater detail now.

Q 63 Did there come a time, Doctor, when you returned to the United States?

A Yes. In 1954.

Q 64 And, I think you said that you have been here ever since?

A Yes.

Q 65 Doctor, what was it that prompted your return to the United States in 1954?

A Doctor Vorwald had left the laboratory. So, I was invited to become the new director there.

Q 66 So, you replaced Doctor Vorwald as director of the Saranac Laboratory?

A Yes, sir.

Q 67 And, I think you started that position in 1954?

A Yes.

Q 68 Doctor Schepers, how long did you remain in the directorship of the Saranac Laboratory?

A The--up till 1957 and I continued the work of the lab for many years thereafter.

Q 69 When you started as director of the laboratory in 1954, Doctor, was there research being conducted at the lab concerning asbestos and disease?

A Yes.

Q 70 Did you personally become involved in that research?

A Yes.

Q 71 Did that research involve animal experimentations on inhalation of asbestos?

A Yes.

Q 72 Doctor, can you update us from the time you left Saranac in 1957--by the way, when did the Saranac Laboratory close?

A On February '57. In fact, about '58.

Q 73 What was--

A Some of the experiments had to be completed because of the contracts and things. So, some of them I didn't get to write reports till about 1980.

Q 74 So, there was on going work--

A Yes.

Q 75 --even after the laboratory shut down?

A Yes.

Q 76 Doctor, why was it that the Saranac Laboratory closed? Why did the Saranac Laboratory shut down?

A Well, the disease of tuberculosis was concurred all of the sudden with the discovery of phthisis. And, the laboratory was affiliated with the

Truelow Sanatorium. They were under the same board of direction. And, I was head of both. And, I made the recommendation that we close the laboratory--that we close the hospital but continue the laboratory but focus on cancer, because that was the coming thing instead of tuberculosis. It was not a good idea. My proposal is not very popular in the lab being closed too.

Q 77 Okay. So, once tuberculosis essentially was cured the sanatorium and the laboratory had no reason for--no primary reason for existence.

A Not for tuberculosis, no.

Q 78 So, you found yourself out of a job in 1957?

A Temporarily, yes.

Q 79 Okay. Well, how did you fill the gap? What did you do next, Doctor?

A The University of Michigan invited me to come and be a professor there and they gave me a fellowship. But, I couldn't afford, as a newcomer, to stay in that capacity. So, I took a job at the du Pont Company.

Q 80 Now, that's the--let me first--when you were at the University of Michigan, Doctor, what were you teaching?

A Pathology.

Q 81 Okay. And, we have heard a lot of discussion already, Doctor, about pathology and some of the other medical terms that you've mentioned. And, that's why I am not asking you to explain it, because the jury has already heard that. But, Doctor, you then took a job with the du Pont Company?

A Yes.

Q 82 Is that the du Pont Chemical Company in Wilmington?

A That's correct.

Q 83 And, you started there probably around, what, 1958 or so?

A '58.

Q 84 Doctor, what was your job title with du Pont and what were your responsibilities?

A I managed all of the pathology research for the company on its own problems, the health problems of its employees and health problems of its customers. And, I was also responsible for various facets of heart and lung medicine for--in the Medical Department.

Q 85 How long did you remain as the chief pathologist of

du Pont?

A About five years.

Q 86 Till about 1962?

A Yes.

Q 87 During the five year period, Doctor Schepers, that you worked for the du Pont Company, did you have any involvement with asbestos diseases?

A Less than before. I continued some of my consultations with the company organizations that I had come to know before. And, continued some interest in asbestos research for the du Pont Company to find a substitute for asbestos and did some research along those lines.

Q 88 Doctor, after leaving the employment of du Pont in 1962, where did you become next employed?

A I joined the United States Government.

Q 89 All right. And, in 1962, Doctor Schepers, what was your first position with the United States Government?

A I went to the Food and Drug Administration for one year, was in charge of cancer treating drug research. And, then I became the director of the Bureau of Laboratories with the Public Health Service. I stayed with that for five years. And,

then joined the Veterans Administration in 1970. First in field hospitals and then in 1974 in the central office as Chief of heart and lung diseases and then later on environmental diseases.

Q 90 Now, in your positions, Doctor, with the Veterans Administration as the Chief of heart and lung disease and then also you said Chief of--

A Environmental.

Q 91 --environmental disease. What did you have under your jurisdiction?

A The Veterans Administration is a very large organization with 172 hospitals, 230 clinics, 90,000 beds and about 170,000 employees.

Q 92 And, were they all under your supervision?

A No. No. Just the doctors, the internist doctors, not the surgeons.

Q 93 And, Doctor, in your responsibilities with the Veterans Administration commencing around 1970, did you--was it part of your job to visit the various Veterans Administration hospitals throughout the world?

A I visited practically all, including the one here in Louisville.

Q 94 Okay. I was going to ask you. That included the

one here in Louisville?

A Yes. And, I had many things to do with almost all of them.

Q 95 Specifically with respect to asbestos and disease, Doctor, did your Veterans Administration responsibilities include that particular area?

A Yes. There was compensation available for veterans who had contracted asbestos diseases while in military service or whose asbestos diseases might have been aggravated, if they had prior exposure through military service. There is that sort of compensation. There were many claims made for benefits and most of those were adjudicated in field offices. The Government had fifty field offices, sort of like courts like this making decisions. But, when there were problems, diagnostic problems, then those were referred to me.

Q 96 So, you were the tie breaker if there was a dispute in diagnosis of asbestos disease?

A Yes, sir.

Q 97 Doctor Schepers, when did you--when, if at all, did you retire from Government service?

A '89.

Q 98 And, what was your position or your job title when you left Government service in 1989?

A I had to--I was in charge of the cardiovascular diseases and the environmental health problems.

Q 99 Did those environmental health problems include asbestos and asbestos--

A Oh, yes.

Q 100 --diseases?

A To a very large extent. We had started the program of identifying all of the asbestos that was in buildings owned by the Government of the United States Veterans Department and to develop programs to remove them, the asbestos. And, to bring all of the employees who may have encountered the asbestos during the work or might still do so. And, the programs of health surveillance.

Q 101 Doctor Schepers, we have heard some testimony in various--from various witnesses in this case about an organization called the ACGIH, which stands for the American Conference of Governmental Industrial Hygienists.

A Yes.

Q 102 Are you familiar in your background and experience with that organization?

A Yes. I consulted for them on various topics. This was in the form of the chairman writing me a letter saying, can you tell us what you know about such and so. That sort of thing I did on a recurring basis.

Q 103 Is the ACGIH a Government agency?

A No. No. It's a private organization whose members were initially all employees of state governments, sort of like the State of Kentucky would have a Government Department where--in which there would be a hygiene officer of some kind and he would then represent the State of Kentucky.

Q 104 Doctor Schepers, and I will ask you some more questions a bit later about the ACGIH and--

A Yes.

Q 105 --some of their activities. But, I wanted to just get some general background for the jury at this point. You mentioned that you retired from Government in 1989 and I think you said earlier, Doctor, that your present occupation is as a consultant.

A Yes.

Q 106 And, I assume that that means, Doctor, that you consult with attorneys such as myself?

A Yes.

Q 107 And--

A Mostly attorneys, some other people sometimes asks me questions too.

Q 108 And, you have testified in court in asbestos related matters a number of times?

A Oh, very many times.

Q 109 Doctor Schepers, have you had the opportunity to make any contributions to the published medical literature?

A Yes. A few.

Q 110 Can you tell the members of the jury how many articles you have had published in medical texts or in medical journals?

A About 150.

Q 111 And, of those--was it 130 or 150?

A 150.

Q 112 150? Of those 150 articles that you have published throughout the years, Doctor Schepers, approximately how many of them have related to asbestos and disease?

A To dust diseases?

Q 113 Asbestos?

A Asbestos, about twenty I would say.

Q 114 Okay. And, Doctor, have you also published books or chapters in books?

A Yes.

Q 115 And, approximately how many books or book chapters have you published?

A I think there is about twelve.

Q 116 And, do any of those deal with asbestos disease?

A I am sorry?

Q 117 Do any of those books or book chapters deal with asbestos?

A Mostly.

Q 118 Mostly?

A Yes.

Q 119 Doctor Schepers, have you contributed any portions of what I will call general reference materials or general reference books?

A You mean like encyclopedias?

Q 120 That type of thing?

A Yes. Yes. I have done that.

Q 121 And, specifically with relating to asbestos disease, Doctor, what has been your encyclopedia contribution?

A The Encyclopedia Britannica is one. The Encyclopedia of Cardiology is another paper of mine

in which asbestos diseases of the heart are discussed.

Q 122 The one that I am most familiar with, Doctor, that I hear about at home all the time is the Encyclopedia Britannica. What chapter or section of the Encyclopedia Britannica did you write?

A Pneumoconiosis.

Q 123 Dust diseases?

A Yes.

Q 124 And, did that include a discussion of asbestos diseases?

A Yes.

Q 125 Doctor Schepers, can you estimate for the members of the jury how many individuals you had the opportunity to examine and diagnose with asbestos diseases over the course of your medical career from 1938?

A Very many. It would run into ten--well over 10,000.

Q 126 And, can you tell us, Doctor Schepers, how many chest x-rays you have evaluated in that period of time for dust diseases?

A More than two million.

Q 127 And, how many sets of pulmonary function test

evaluations have you reviewed and opined about concerning dust diseases?

A That would be many thousands.

Q 128 Doctor, I am going to show you a document, which we should probably--

MR. WEINGARTEN: That's going to be No. 9, Plaintiff's 9.

Q 129 Doctor, I am going to show you a document, which I have already told counsel what it is. It's been marked as Exhibit 9. Can you tell the members of the--can you identify for the members--

A Yes.

Q 130 --of the jury what that is?

A Yes. This is a summary of things I have done and some of the articles that I have written.

Q 131 And, we call that a curriculum vitae or a resume?

A Yes.

Q 132 And, Doctor, does it appear to be relatively current and fairly accurate?

A Yes. I try to keep it one page, if I can.

Q 133 You failed.

A So, I have to drop out things because of the buildup.

Q 134 Okay. So, these are just the highlights of your

career?

A Yes, sir.

Q 135 And, these are the types of things, Doctor, that we have just been discussing in your last fifteen minutes or so of testimony?

A Yes, sir.

MR. WEINGARTEN: Your Honor, I would offer this as Plaintiff's Exhibit No. 9.

THE COURT: So ordered.

MR. WEINGARTEN: Thank you. And, at this time, Your Honor, I would tender Doctor Schepers as an expert in the field of asbestos and diseases.

THE COURT: So ordered.

MR. WEINGARTEN: Thank you. Does counsel wish to cross examine as to qualifications?

MR. PINKLEY: We'll reserve all cross. Thank you.

THE COURT: That is not the practice here.

MR. WEINGARTEN: Thank you, Your Honor.

THE COURT: Okay.

MR. WEINGARTEN: It's different in

different places.

Q 136

Doctor Schepers, again, because we've had another week and a half or two weeks of this trial, we don't need to go through everything from soup to nuts. But, I would like to have you highlight a few areas for us. What is an asbestos fiber?

A

It's the little structure that forms--all of the fibers that exist were created about sixty million years ago. So, they're all very old things. And, they're all little fibers that were made up in different places of the earth in cracks between rocks. In Canada, these were delementric (phonetic) rocks with cracks in them and then the spaces in those cracks were filled by hot fluids, molten rock, consisting of magnesium and silica and they incorporated water molecules into the magnesium silica molecule. And, then that crystallized out as little hollow tubials and that became the chrysotile fiber. Now, some of those fibers also acquired calcium molecules and calcium atoms into the structure of the molecule and they crystallized out as tremolite fibers, they are solid. And, some acquired a little fluid as well as the calcium and those became actinolite

(phonetic) fibers. And, then some of them also attracted iron atoms and incorporated that with the molecule and those became anthophyllites. That all happened up in Canada and that mixture, that type of--four types of fibers up there is called chrysotile -----.

There are a few other things in it like brucite (phonetic) and so forth. But, they're not considered to be asbestos. But, those four fibers are the components of Canadian asbestos.

Q 137

Doctor--

A

And, in South Africa and Australia and a few other places, other types of fibers form. The heating system is different perhaps and the rocks from which the parent material came probably are different from in Canada. So, in South Africa two basic types of fibers were formed called tricillite (phonetic) and amosite. And, in those two there is much more iron in the molecules that were very much larger, the fiber is so much larger and they are more solid than the Canadian asbestos fibers.

Q 138

Doctor, what is the size of an individual asbestos fiber?

A

Extremely small. It's--if you took, say, a

crystal of, like sugar grain or something like the tip of this pencil and that--if that were a chrysotile, say, cubic millimeter, there would be about twenty-five billion chrysotile fibers in there, they are so small.

Q 139 Twenty-five million fibers--

A Not million, billion.

Q 140 Twenty-five billion fibers on the point of a pencil?

A Yes.

Q 141 So, I take it, Doctor, that they're invisible to the naked eye?

A Totally.

Q 142 If one were to be able to see with the naked eye asbestos fibers in a room such as this, can you tell us, Doctor, how many fibers would have to be there before it could be seen?

A Well, the particle counts would be particles consisting of clusters of these individual fibers. And, when you have lots of these particles in the air, then they make densities collectively that you can then begin to see, you can shine a light through it to begin to see them. When that becomes possible, the count exceeds five hundred million

particles per cubic foot, more like eight hundred million.

Q 143 So, to see it with the naked eye, you'd have close to eight hundred million particles per cubic foot?

A Yes.

Q 144 Well, Doctor, that leads me to what I wanted to next ask you about. We have heard some testimony from some witnesses in this case about two things, one called a MAC or maximum allowable concentration and the other called a TLV or threshold limited value. Are you familiar with those two phrases, Doctor?

A Oh, yes.

Q 145 Can you tell us, Doctor, how the concept of TLV originated in this country?

A Well, many years ago, about the 1920s, it came about largely over silica, because of the exposure of coal miners and rock miners into the silica which would produce the disease, silicosis. And, largely because of the work after the Saranac Laboratory by Doctor Gardner and it was discovered that if you could bring the dust levels lower, the amount of disease that the animals would show would be less and therefore the health risk to the

patient would be reduced or slow down. And, various engineering type professors got together and sort of ex cathedras (phonetic) selected the number of five million particles per cubic foot and said, let's try for this.

Q 146 Wait a minute, Doctor, let me slow you down. I thought I knew Latin phrases. What does ex cathedras (phonetic) mean?

A Well, just off the top of the hat.

MR. WEINGARTEN: Okay.

A There is no proof of this. But, they said, let's try it.

MR. WEINGARTEN: Okay.

A Let's see if it works.

Q 147 And, Doctor, are you familiar of when the--with when the first TLV was recommended for asbestos?

A Yes. It was in 1946. It was based on that five million concept.

Q 147 Okay. Now, when the TLV was recommended of five million particles per cubic foot, was the organization that made that recommendation the ACGIH, which we have previously discussed?

A Was it what?

Q 148 Was the organization that made that recommendation

the ACGIH?

A Yes, sir.

Q 149 And, Doctor, the TLV of five million particles per cubic foot, if one were in a room with that concentration of asbestos, would one be able to see the asbestos in the air, if it were concentrated--

A No.

Q 150 --at five million?

A No. You wouldn't see anything.

Q 151 So, it would still be invisible at that level?

A Yes.

Q 152 Was the TLV as recommended originally, Doctor, back in, I think you said, 1946?

A '46.

Q 153 Was that--what was the--was that meant to prevent asbestos related cancers and mesotheliomas from occurring?

A Oh, no. There was no study of the relationship between dust fiber levels in the air and cancer, oh, until about the 1980s. And, that's not yet been resolved. There has never been a level found at which cancer is not at risk. So, there is no standard for cancer.

Q 154 So, they don't know what a safe level is of asbestos--

A No.

Q 155 --with respect to cancer?

A No. No. The purpose of that number that was proposed in '49 is to prevent disabling asbestosis. It came from the study that had been made by the United States Government known as the Dreason Study. And, that study was conducted in factories in North Carolina between 1946 and 19--1936 and 1938. And, Doctor Dreason then had made the observation that disabling asbestosis was not observed in those employees whose jobs exposed them to less than five million particles per cubic foot of air. They counted them then.

Q 156 They way they counted them in those days?

A Right.

Q 157 And, we did hear testimony yesterday from Doctor Wagoner about how the dust counts were made in those early days. Doctor, let me ask you--

MR. PINKLEY: Object to the side bar comment, Your Honor.

MR. WEINGARTEN: I am just trying to update the doctor where we are so that

the testimony makes sense in context,
Your Honor.

THE COURT: Okay. Let's see what you do.

Q 158 Now, Doctor Schepers, was--you've used the phrase
I think two or three times now, disabling
asbestosis.

A Yes.

Q 159 Was the TLV enacted to guarantee that there would
be no disease if it had been adhered to?

A Oh, no. All of the people--all of the employees
had disease. But, it was the disability which was
the focus of the study.

Q 160 Okay. Now, Doctor, we have heard comment in this
trial about a report called the Fleischer/Drinker
Report?

A Yes.

Q 161 Are you familiar with that report?

A Yes.

Q 162 And, that was in 1946?

A Yes.

Q 163 Have you reviewed and read that report?

A Yes.

Q 164 Did you know any of the authors, either Doctors
Fleischer or Mr. Drinker?

A I didn't know the other three authors. I knew Professor Philip Drinker quite well.

Q 165 Okay. Did Doctor Fleischer ever write anything else concerning asbestos disease?

A No.

Q 166 Are you aware of any conclusions that were brought in that Fleischer/Drinker Report?

A Yes. They studied the risk to insulators of working with amosite asbestos for less than ten years. And, they concluded that in less than ten years you won't see any disease.

Q 167 Was it surprising at that time, Doctor, that there would be no disease in individuals working with asbestos for less than ten years?

A Surprising would be the wrong term to use, because it was really unknown.

Q 168 Would you expect to see asbestos disease in people exposed less than ten years?

A No.

Q 169 Why not?

A Because by then it was already known that under reasonably controlled working conditions, you know, unless people are very crudely exposed, the disease did not manifest in a diagnosable form. The

disease was there, but you couldn't diagnose it by X-ray or some other means for the first twenty years.

Q 170 Is that known as a latency period of the disease?

A Yes.

Q 171 Doctor, did Fleischer and Drinker and their other co-authors study any individuals who had been exposed to asbestos for more than ten years?

A In their cohort of about a hundred--1,070 persons, there were, I think, about fifty or so that had more than ten years exposure. And, the rest were all below ten years. And, I think there were six or three--there were three that had more than twenty years exposure.

Q 172 And, what did the authors find with respect to asbestos disease among those individuals who had been working with asbestos for more than ten or twenty years?

A Those three men all had asbestosis.

Q 173 I am sorry, Doctor, I did not hear your answer.

A I said the three men all had asbestosis.

Q 174 Okay. Doctor, in terms of a disease--a products disease causing potential, does it matter of the product contains one percent asbestos or five

percent asbestos or twenty percent asbestos?

A

I would say yes and no. If the exposure levels-- in other words, if the total amount of dust you breath are constant, remain the same, whether the substance is twenty percent or one percent, then the risk to the patient would be less with the one percent than the twenty percent. But, there is no relationship to the exposure level and that's all varied, then it almost doesn't make any difference what the percent content is.

Q 175

Why not?

A

The lung selectively captures the asbestos fibers and it rejects the non-asbestos fibers and clears them out of the lung, but it will keep the asbestos fibers. And, it takes very little asbestos actually to cause the disease. And, you can get almost as much asbestos in your lungs as you need for a full development of asbestosis from a one percent substance as from a twenty percent substance.

Q 176

Is every exposure to asbestos a substantial contributing factor to resulting disease?

MR. KIRSHNIR: Object to the conclusory nature of the question.

MR. WEINGARTEN: Your Honor--

MR. WHITE: Also, the lack of foundation,
Your Honor.

MR. WEINGARTEN: We can lead an expert
here in Kentucky, Your Honor.

MR. KIRSHNIR: There is no foundation.

MR. WEINGARTEN: We had about forty-five
minutes of foundation.

THE COURT: Well, what is the--what was
the question?

MR. WEINGARTEN: I am asking the doctor
if every exposure to asbestos is a
substantial contributing factor to
resulting disease.

MR. WHITE: It's also speculation.

MR. KIRSHNIR: Your Honor, may we
approach the bench. We have an
objection.

THE COURT: No. The objection is
overruled. He can express his opinion
about it.

Q 177 Please, Doctor, do you recall the question?

A I have forgotten it.

THE COURT: I think he is qualified to

express an opinion.

A I have forgotten your question.

Q 178 I'll ask it again, Doctor. Is every exposure to asbestos a substantial contributing factor to resulting asbestos disease?

A Yes, sir. Asbestos is a quantitative disease. And, it's also a facilitated disease. By that I mean that the more fibers allowed into the lung, the more parts of the lungs will be damaged, therefore more disease will result. By the facilitated part I mean that there are certain unpredictable things that these fibers will do, like producing cancer. And, any fiber that gets lodged anywhere in the lung, theoretically could do it. Now, we don't know that one fiber will do it. Maybe you need 10,000 fibers. But, in facilitatively, it has potential to start the process of cancer by just being there that one time.

Q 179 All right. Doctor, I am going to change the area of our interrogation. And, I would like to take you back to the 1949, 1950s time period. And, we're going to talk now about your activities at the Saranac Laboratory. You have already told us

that you were the director of Saranac from 1954 to 1957. And, that you had previously been there on your fellowship in 1949. Okay? So, that's what we will talk about. Now, Doctor, are you aware of any studies at Saranac in the 1940s time period called the Kalow Studies?

A Yes, sir.

Q 180 And, Doctor, who was the client of the Saranac Laboratory who had commissioned the Kalow Studies?

A The scientists?

Q 181 No, the client? Which company wanted the Kalow Studies?

A Oh, that was a company known as the Owens Illinois Glass Company.

Q 182 And, do you remember when the Kalow Studies first began?

A The preliminary inquiry from the company came about 1943. The actual exposure of animals on a long term basis only commenced in '46 and continued on through to 1951.

Q 183 And, you didn't arrive at Saranac until 1949, however, Doctor. When you arrived there, did you have the opportunity to review the work that had been done since 1943?

A I saw some of it. There was one exposure room that--in which animals were still surviving from the study and it was called the Kalow Room.

Q 184 The Kalow Room?

A Yes. Yes.

Q 185 Doctor Schepers, based upon what you observed in 1949 and what you understood from your review of the materials that you looked at at that time, what was the reason why the Kalow studies were being undertaken?

A Well, it was a new product. The company had in previous years brought its potential health problems to the laboratory for study. And, when they invented this new product, the medical and scientific personnel wanted to know whether there was a potential for human harm through the manufacturing and the use of this material.

Q 186 What conclusions were reached as a result of the Kalow Studies with respect to the disease causing potential of the product?

MR. PINKLEY: I object unless we are talking about Doctor Schepers' own conclusions.

MR. WEINGARTEN: We are talking about

what Doctor Schepers has knowledge of,
Your Honor.

MR. PINKLEY: Well, there are several
papers. That's why I am asking if we
could be specific about what we're
talking about.

MR. WEINGARTEN: On cross examination,
counsel can be as specific as they want.

THE COURT: What is the question?

MR. WEINGARTEN: I am asking the doctor,
what conclusions were reached in the
Kalow studies.

THE COURT: The objection is overruled.

Q 187 Doctor?

A The conclusions were that the material is hazardous
and that there should be strict hygiene control and
health conservation control for those persons
likely to be exposed to the dust, to detect early
detection of disease.

Q 188 And, Doctor, what was the hazardous component of
the material? What--

A The asbestos that was put into the Kalow.

Q 189 And, were those conclusions communicated to the
Owens Illinois Company?

A Oh, yes.

Q 190 Now, let's move ahead a few years, Doctor, to your period as director of the laboratory, '54 to '57. At that time did you review any of the old research of the Kalow Studies?

A Yes. The medical director of the company and the chief hygienist came--

Q 191 Which--well, let me back you up, Doctor. You say the medical director and the chief hygienist of the company. What company are you speaking of?

A Owens Illinois.

Q 192 And, who was the medical director?

A Doctor Shook.

Q 193 And, who was the chief hygienist?

A Mr. Housard.

Q 194 Okay. What did you--what happened with respect to those gentlemen?

A They came to see me as soon as I came to the laboratory and asked me if I would review all of Doctor Gardner's prior experiments.

Q 195 And, Doctor Gardner was the individual who had been the director of the laboratory for many many years prior to you?

A And, he had commenced the study.

Q 196 Right. Okay. So, he asked you to review the Gardner experiments?

A Yes. And, then they asked me if I would write a report for publication concerning what I observed.

Q 197 Okay. Did you, in fact, conduct that review as requested by the Owens Illinois?

A Yes, I did.

Q 198 And, did you, in fact, write a report as a result of your review of those experiments?

A Yes, I did.

Q 199 Were you, at this time, Doctor, conducting any of your own experiments concerning Kalow at Saranac?

A Yes.

Q 200 And, what types of work--what type of work were you doing during this time period yourself?

A Well, I was inquiring into certain of the asbestos--of cancer producing capabilities of chrysotile. That was the main focus of the research then.

Q 201 Doctor, before we get into some of your findings, why are animals used in this type of experiment?

A Well, first of all, they--you can use many of them in one experiment. You can put five hundred animals in one room, expose them simultaneously so

of the records. But, I had all of the slides. I had all of the tissue materials. And, the staff performed the tests under the direction of Doctor Gardner and Doctor Vorwald were still at the lab. So, they had their notes. And, so virtually, everything that I needed.

Q 204 Okay. Just so I understand, there were people still working at the lab who had done the original work with Doctor Gardner in '43?

A Yes, sir.

Q 205 Okay. And, you also said, Doctor, that the pathology slides were there for you to review?

A Yes.

Q 206 Did you, in fact, review those slides?

A Yes.

Q 207 And, did you, in fact, discuss the prior work with the people who had done the work?

A Yes.

Q 208 And, I think, Doctor, that you said that as a result of this review of the materials you did, in fact, prepare a report?

A Yes.

Q 209 Was that report ever published?

A In 1955.

Q 210 Okay. Doctor, I am going to show you a document that's been marked as Plaintiff's Exhibit 10. And, if you will just take a moment and look at that and identify it for the members of the jury what that document is?

A Yes. This is the published version of the paper that I developed out of the Kalow Study.

Q 211 Okay. Now, Doctor, when was it published?

A 1955, in September.

Q 212 And, in what journal or publication did it appear?

A The American Medical Association Archives of Industrial Medicine.

Q 213 Doctor, what is the title of the article?

A It's called the Effect of the Inhaled Commercial Hydrosilica Dust On Animal Tissues.

Q 214 All right. Now, Doctor, I don't see the name Kalow appearing in the title anywhere, is that not correct?

A No. The company asked me not to use Kalow. Although we called everything Kalow. And, that was a proprietor name and generally in scientific publications, one stays away from proprietor names.

Q 215 All right. So, there is no need to use a trade name in a scientific or medical publication?

A Right.

Q 216 But, these are, in fact, the Kalow Studies and this is your review--

A Yes, sir.

Q 217 --of the Kalow Studies?

A Yes.

Q 218 Okay. Doctor Schepers, what conclusions did you reach in that article concerning the health effects of asbestos in the Kalow product?

A I concluded that one--there are two components in the material. The hydrous calcium silicate component and the asbestos component. I concluded that the hydrous calcium component is harmless and the asbestos is harmful. And, that the asbestos, although incorporated in the hydrous calcium silica, which is something like glass, comes out of it and is retained by the lung and into parts of the lung and produces asbestosis. It also produced two other problems. One was emphysema and the other was proliferation of the cells on the surfaces of the air spaces around the small air tubials.

Q 219 What does that lead to?

A What is it called?

MR. WEINGARTEN: Yes.

A It's called peribronchial epithelization
(phonetic).

Q 220 And, Doctor, all of these conclusions were printed
up in your report?

A It's all put in there, sir.

Q 221 And, was this report sent to the Owens Illinois
people?

A Yes.

MR. WEINGARTEN: Your Honor, at this time
I move in place Exhibit 10.

THE COURT: So ordered.

Q 222 Doctor, in addition to sending this report to
Owens Illinois and publishing it in the Archives
of Industrial Health Journal, did you also present
this paper to the public at any time?

A Yes. We had a conference in Saranac Lake in
February of 1955.

Q 223 And, is that referred to as the Saranac Symposium?

A Yes.

Q 224 And, were the Saranac Symposiums given numbers,
Doctor Schepers?

A Yes. That was No. 8.

Q 225 This was No. 8?

A Yes.

Q 226 And, you presented this paper, you gave a speech on this--

A Yes.

Q 227 --on your findings at that symposium?

A Yes, sir.

Q 228 Was there anyone in attendance at the 1955 Saranac Symposium employed by Owens Illinois?

A Yes.

Q 229 Who was there from Owens Illinois?

A Doctor Shook was there and Mr. Housard was there.

Q 230 Okay. Doctor Shook and Doctor Housard?

A Yes.

Q 231 By the way, Doctor, did Doctor Shook have any editorial position with respect to the journal where your paper appeared?

A Yes. He was an associate editor of the journal.

Q 232 At this 1955 Saranac Symposium, Doctor, was there anyone there in attendance employed by Owens Corning Fiberglas Company?

A Yes. It was Doctor Bishop and there was an engineer, I have forgotten his name.

Q 233 Is that Mr. Black?

A Yes.

Q 234 What, if you recall, Doctor Schepers, was Doctor Bishop's position with Owens Corning as of 1955?

A Why were they there?

Q 235 Well, what was his job? What was Doctor Bishop's position at Owens Corning?

A Oh, he was the medical consultant for the company in those days.

Q 236 Before the 1955 conference had you previously met with Doctor Bishop?

A Oh, yes. I was doing research for him on Owens Corning Fiberglas.

Q 237 Now, other than your paper on the Kalow Studies, Doctor Schepers, were there other papers and presentations made at the 1955 conference besides your own?

A Several dozen, I think.

Q 238 Were all of the proceedings of the conference published in a booklet or a pamphlet form?

A Yes.

Q 239 And, who published the presentations of the conference?

A A guy in the American Medical Association.

Q 240 When was that conference published?

A In 1955.

Q 241 And, who received copies of the publication?

A Every one of the persons who attended the conference received a copy and all of the companies with whom we had contract relationships, I mean, the Saranac Laboratory, either past or current. And, anybody else who wrote and said they would like to have a copy.

Q 242 Doctor Schepers, other than your own paper were there any other presentations made at the 1955 Saranac Conference concerning asbestos and disease?

A Yes. There was a paper on--by Doctor Kenneth Smith, the medical director of the Johns Manville Asbestos Corporation on the health problems of asbestos employees. And, there was a reference in Doctor McGlaughlin's paper on asbestos diseases in England, as far as I can recall.

Q 243 Did any of these presentations have to do with asbestos disease in end users of the product as opposed to miners or millers or manufacturers of the product?

A The paper by Doctor McGlaughlin definitely does.

Q 244 What is an end user, Doctor?

A And, end user is the person who receives the product made in an asbestos factory and puts it

to use, like an insulator who would receive insulation material from an insulation manufacturing company and then put it in place.

Q 245 Now, Doctor Schepers, let's move ahead a bit in time. And, I would like to know if after the 1955 conference--by the way, did that--what was the formal name of that conference, Doctor, do you recall?

A We called it the McIntyre Saranac Conference.

Q 246 After the 1955 McIntyre Saranac Conference, did you have any further involvement with Doctor Bishop of Owens Corning Fiberglas?

A Yes. Through to about 1962. So--that I can recall. Finalizing studies that I had made for them on their products.

Q 247 Okay. And, they were primarily interested in fiberglas products at that time, is that correct?

A Yes.

Q 248 And, in fact, I think they were interested in the development of the Chevrolet Corvette with a plastic--

A Yes.

Q 249 --a fiberglas body?

A Yes.

Q 250 Okay. So, you consulted with Owens Corning in terms of that particular project?

A I had been studying for them the biological properties, in other words, the way animals would react and therefore human beings might react of what is called fiberglass plastic. It's like this structure here made of a plastic and glass fibers put into it for strength. And, they were making motor boats and automobile bodies from that. And, by 1956 they approached me to add to the studies, the study of fiberglass with asbestos instead of glass fibers.

Q 251 Okay. So, they wanted to mix asbestos in with the fiberglass instead of the glass fibers?

A Not the fiberglass, but the plastic.

Q 252 The plastic?

A Yes. Substitute it for the fiberglass.

Q 253 And, Doctor Bishop of Owens Corning consulted you with respect to that possibility?

A I don't know that it was Bishop. It was somebody from Owens Corning.

Q 254 Okay. Now, Doctor, at any time during your consultations with Owens Corning in the 1950s or even up until 1962, did Doctor Bishop or Mr. Black

or anyone else from the company ever mention to you that they were selling or distributing or manufacturing the Kalow product?

A No. Nobody did. I had a long conference with them in the summer of 1956 at the headquarters near Toledo, Granville, the City of Granville. I spent a whole afternoon with them discussing this project, the proposed project of the Corvette body and talked to about twenty-two people there, but nobody mentioned that. Nobody mentioned the involvement with the Kalow.

Q 255 Now, Doctor, when you had that conference--and you said that was in, I think, the summer of 1956--

A Yes.

Q 256 --with twenty or twenty-two Owens Corning people, that was at their Granville, Ohio facility?

A Yes.

Q 257 Okay. Doctor, what did you tell them with respect to the advisability of mixing asbestos in with the fiberglass product?

A I advised them not to touch asbestos. I told them that they had a good product in the form of fiberglass plastic and that they should stay with it and stay away from asbestos.

Q 258 Did you tell them why they should stay away from asbestos?

A Yes. It's because of the peculiar property of the asbestos fiber to seek out cells, being so small that it could get into cells and produce disease wherever it traveled in the body.

Q 259 Did you use the Kalow studies that you had previously done to help demonstrate this to the Owens Corning people?

A Precisely. I used, like I said, the example of why I knew that I could predict that if you put asbestos into the plastic, it would have the same effect as the Kalow.

Q 260 Did you, in fact, Doctor, use the word Kalow in your discussions with the Owens Corning people?

A Oh, yes. I--the way one does it would be to project slides on a screen and show them, now, this is what Kalow does and so forth and so I used the terminology all the time.

Q 261 Did you give them an example, Doctor, of any particular type of workmen who would be at risk if they chose to mix asbestos in with the Corvette body?

A Well, if an automobile like that is made, it would

have--it would be molded, it would come out of patterns. There would be rough spots, there would be some that would have to be sanded to smooth it down to make it look good. So, that fellow with the sanding machine would be very much at risk, because if you have done any sanding yourself, you know how much dust that stirs up. Now, that was intended to be a sports car. The likelihood of the sports car crashing at high speed is very good, because it's expensive they wouldn't throw it away, they would try and repair it. So, there would be a garage mechanic who would be assigned the job of repairing the damaged fenders and the hood of the car and he wouldn't know of the danger and he would go along there sanding it and polishing it and painting it. And, incur the risk of breathing a lot of asbestos.

Q 262 Doctor, do you know or did you know a Mr. M. D. Burch, and that's spelled, B-U-R-C-H, at Owens Corning Fiberglas?

A Yes. He was chief of the personnel relations of the company.

Q 263 In fact, Doctor, was his full title director of personnel and industrial relations of Owens Corning

Fiberglas?

A

Yes, sir.

BENCH DISCUSSION

MR. PINKLEY: Your Honor, may we approach on this document?

THE COURT: Yes.

MR. WEINGARTEN: I will bring the other one up also.

MR. PINKLEY: Okay. Yes. It's the same thing.

MR. WEINGARTEN: I don't have any problem--I think what you have got, Your Honor, I think that counsel's problem is that--

THE COURT: Now, wait a minute. Now, what are we talking about.

MR. WEINGARTEN: There are two letters that I am going to show Doctor Schepers. They have to do with partially with fiberglas and partially with asbestos. I think that The Court's ruling is that the fiberglas is not relevant and at this point, what I am going to do is ask the doctor to identify the documents to

authenticate them and then to discuss the aspect of the documents that deal only with asbestos. And, then I have no problem with redacting, before this goes to the jury, anything other than on page--on the February 6th document, these two paragraphs--

MR. PINKLEY: Yes.

MR. WEINGARTEN: --that the jury, I think, should see. Plus the--

MR. PINKLEY: That's fine. That's consistent with The Court's ruling.

MR. WEINGARTEN: And, on the July document it's only the fourth paragraph on the first page.

MR. PINKLEY: Let me see. I couldn't remember. That's right. That's right.

MR. WEINGARTEN: Okay. So, then it can be used without objection.

MR. PINKLEY: Yes. With that agreement, Your Honor, that takes care of it.

THE COURT: All right.

MR. KIRSHNIR: Your Honor, we would request an admonition that these exhibits

are not introduced against Keene Corporation.

THE COURT: Are not what?

MR. KIRSHNIR: Are not introduced against Keene unless counsel can represent otherwise. There has been no evidence that this was published to Keene or to its predecessor.

MR. PINKLEY: That's fine.

THE COURT: I am not going to give a special admonition. I am keeping track of this.

END OF BENCH DISCUSSION

Q 264 Doctor Schepers, I am going to now show you a document that has been shown to defense counsel and it's been marked for identification purposes as Plaintiff No. 124. And, I will just ask you a few very specific questions about that document. To begin with, Doctor, is that document on the letterhead of the Saranac Laboratory?

A Yes, sir.

Q 265 And, what is the date of the document?

A The date?

Q 266 The date?

A February 6th, 1956.

MR. WEINGARTEN: Okay. Your Honor, I
don't know if the microphone is back on.

Q 267 Doctor, please, if you can keep your voice up. I
think the microphone is still with us. But,
sometimes it--

A Okay.

Q 268 --leaves a little to be desired. I think, Doctor,
you had said that the date of that document is
February 6th, 1956?

A That's correct, sir.

Q 269 And, Doctor Schepers, who wrote the document?

A I did.

Q 270 And, to whom was it addressed?

A To Mr. Burch.

Q 271 And, that's the director of personnel of Owens
Corning that we have just discussed a few moments
ago?

A Yes, sir.

Q 272 And, it's a four page letter, is it not, Doctor?

A Yes.

Q 273 And, was this letter written before or after you
had the discussions at the Owens Corning facility
outside of Cincinnati?

A No. Before. About six months before.

Q 274 Okay. And, at page 4, if you look at page 4 of the letter, Doctor Schepers.

A Yes.

Q 275 Can you read for the jury those portions of the first and second paragraphs on that page that have to do with advice concerning asbestos disease?

A You mean the one that is underlined here?

Q 272 I think I have highlighted it so you can find it.

A Yes.

Q 273 Right. If you could just--

A I said to them, the case of our earlier glass will asbestos and talc studies--

Q 274 Let me explain, these are old documents that have been photocopied many times and they are difficult for--even for young eyes to read.

A Yes. Very much. I can fix that. Glass and asbestos and talc studies, we showed that unfavorable results sometimes ensued during the third year of exposure which rather remained in abeyance previously.

Q 275 And, down here, Doctor, what conclusion is it?

I suppose--

A I suppose you already know that asbestos is

fairly well incriminated as a carcinogen and the asbestos causes lung damage by virtue of the length of its fibers and property it shares with the fiberglas.

Q 276

Doctor, and what were you telling Owens Corning by those two comments?

A

I warned them that they were making a product that is made of long fibers. And, that although up to that point the glass fiber study had not been shown to be--have dangerous effects on the animals, that was the first paragraph I quoted, they shouldn't be completely reassured yet, because in the third year results may come which were not present yet. Okay? So, therefore I said wait until we have the full story. Then the second part was to introduce the topic of cancer as a potential effect of fiberglas. And, I introduced that the concept through the reference to asbestos because fiberglas is similar to asbestos in that it consists of fibers of silica, in the case of fiberglas sodium silicate, in the case of asbestos magnesium silicate.

Q 277

What did you mean, Doctor, by your comment in 1956 that asbestos is fairly well incriminated as a

carcinogen?

A Well, it meant that by that time, when I wrote that, that more or less everybody accepted the concept that exposure to asbestos entails the risk of developing cancer.

Q 278 Now, Doctor Schepers, I am going to show you another document that has already been looked at by defense counsel and this has been labeled for identification purposes as Plaintiff's 120. And, again, Doctor, is that on the letterhead of the Saranac Laboratory?

A Yes. It is again.

Q 279 And, who is the person who signed and wrote that particular letter?

A That's again myself.

Q 280 That's you?

A I did.

Q 281 And, who was this letter written to, Doctor Schepers?

A Again to Mr. Burch.

Q 282 The same individual we have been talking about?

A Yes.

Q 283 And, he's at Owens Corning?

A Yes.

Q 284 And, this document is dated July 27th, 1956?

A That's correct.

Q 285 I am going to spare your eyes on this one, Doctor. And, let me just read to you a portion of the letter from the fourth paragraph where you make the following statement; glass is a silicate. In our various experiments in this laboratory, silicates with one exception have been found to be relatively harmless compared to materials containing pre----- . The exceptional form is asbestos. Our interest in the glass fiber arose out of the fact that it is fibrous and we had previously shown in this laboratory that asbestos dust is harmful only if inhaled in a fibrous state. My question to you, Doctor Schepers, is what did you mean by that comment to Owens Corning?

A That I explained to them through that statement that asbestos causes a disease--various diseases because it is a fiber. If you pulverize asbestos, if you ground it up so that all of the particles are as short as they are long, then it doesn't produce disease. Now, that's a hard thing to do, due to the--in the laboratory cases, you can put a quantity of asbestos in what is called a volnur

(phonetic) and just set the thing to rolling for five or six weeks and at the end of that time, you can float the materials in water and any of the residual fibers would stay behind, the particles would drop down. They'd still be chemically asbestos, you could test for that. Then if you put that into the fiber--this asbestos into animals, no effect follows. So, it's not chemically active. It is--produces the disease because of its shape.

Q 286

When it's inhaled?

A

Yes.

MR. WEINGARTEN: And, at this time, Your Honor, I would like to move in subject to the redaction we discussed at the bench, Plaintiff's Exhibit 120 and 124.

MR. PINKLEY: As redacted, no objection.

Q 287

I have got one more question. Doctor Schepers, despite the meeting that you had with the Owens Corning people in the summer of 1955 or '56 and also the letters that you wrote to them that we just discussed in February and July of 1956, at any time after those discussions or letters, did anyone from Owens Corning tell you that they were selling or manufacturing or distributing any products

containing asbestos?

A

No. I was completely unaware of that.

MR. WEINGARTEN: Those are all of the questions that I have, Your Honor. And, I think defense counsel has requested a short recess.

THE COURT: All right. We will accommodate them. We'll take a ten minute recess, Ladies and Gentlemen. Now, please remember my admonition that you're not to let any--that your not to talk to anyone about this case and you're not to let anyone talk to you about the case and you're not to talk to each other about it until it's submitted to you.

RECESS

THE COURT: Let the record show that all members of the jury, all parties and all counsel are present. And, you may proceed.

MR. PINKLEY: Thank you very much, Your Honor.

CROSS EXAMINATION

BY MR. PINKLEY:

Q 1 Good morning, Doctor Schepers. I am Harold Pinkley. I introduced myself to you this morning, but we have met before, is that right, Doctor?

A Yes, sir. In Brunswick, Georgia.

Q 2 Okay. I think, if everything goes well, Doctor, I hope we can get you out of here before lunch time. And, so, let's get started, if we can.

A That will be good.

Q 3 You told the jury earlier in your direct examination that you have testified in asbestos cases many times, is that right?

A That's correct.

Q 4 And, I think that, at least as of--when I talked to you back in January that was in excess of 100 times, in actually in court testimony, is that right?

A At least that, yes.

Q 5 Okay. And, you have testified by deposition more than 200 times in asbestos cases?

A More than 500.

Q 6 More than 500. Okay. And, you have testified in many different states in this country, have you not, Doctor Schepers?

A All except two.

Q 7 Okay. So, that's forty-eight of them that you have testified in, is that right?

A Forty-eight, yes.

MR. PINKLEY: Okay.

A I think there are forty-eight. There are fifty states.

Q 8 Right. So, you started in this in about 1979, is that right, Doctor Schepers?

A Yes.

Q 9 And, that was after you had met with a plaintiff's lawyer and a--a person who was representing plaintiffs in asbestos cases--

A Yes.

Q 10 --and then you started testifying, right?

A Yes.

Q 11 Okay. Now, it's true, Doctor Schepers, isn't it, that even though you have retired, you do make a charge for each one of these trips and the testifying that you do, is that right?

A Yes. There is a charge.

Q 12 All right. Now, Doctor Schepers, there are a number of substances, are there not, that can cause disease in humans, if the people are exposed at

high levels?

A Yes.

Q 13 And, that has been known for a long time, has it not?

A For a long time, yes.

Q 14 Okay. One of medical sciences primary occupations in this century has been--at least with regard to asbestos, has been to try to determine what level of exposure would cause disease, is that right, Doctor Schepers?

A Yes.

Q 15 Okay. Now, let's talk about some of the medical articles in which that endeavor is traced in history. Okay? Do you remember an article published in 1930 by Doctor Meriwether and Mr. Price?

A Yes.

Q 16 I think I have it right here, as a matter of fact. It's got little stickies all over it. And, I was told a report on the effects of asbestos dust on the lungs and dust suppression in the asbestos industry, right?

A Yes, sir.

Q 17 And, Doctor Meriwether was his majesty at that

time, there was a king, is that right?

A It was the--

Q 18 His majesty medical inspector of factories?

A Yes. The equivalent of OSHA and NIOSH, yes.

Q 19 Okay. Now, Doctor Meriwether went into asbestos textile manufacturing plants in order to study the people who worked there, is that right?

A Yes.

Q 20 Okay. And, he limited his study, the statistical part of his study, did he not, to people who were exposed to, I think he said, pure or almost pure asbestos, is that right?

A I don't know you can say almost pure, because, you know, that's a nebulous concept. But, it was a high concentration of asbestos in the textile factories.

Q 21 All right. In fact on Page 6, if you would like to, I will let you follow it.

A Just read it. You can just read it.

Q 22 Okay. Doctor Meriwether says, the manufacturing process is effective far more and less sharply in the two groups, one, those in which there is exposure to pure asbestos or asbestos mixed with a very small percentage of cotton or other vegetable

fibers.

A Yes.

Q 23 Right. And, those are the people to which he limited his statistical survey?

A Yes.

Q 24 Right. Okay. And, Doctor Meriwether did, indeed, find the existence of asbestosis in some of those people, right?

A Yes, he did.

Q 25 And, one of the recommendations that Doctor Meriwether made was that the--there ought to be dust control in those factories?

A Yes.

Q 26 In fact, he mentioned in his report, did he not, that it appeared that if you kept the dust level down to that experienced by the spinners, that there--he would expect that there would be very few, if any, cases of asbestosis, is that right?

A That was a hopeful statement that he made.

Q 27 Okay. And, in fact, the very next year, 1931, there were asbestos regulations enacted by British Parliament, is that right?

A Yes.

Q 28 And, they covered only people who were working in

the kind of plants that Doctor Meriwether studied--

A Yes.

Q 29 --that is asbestos textile plants, right?

A Yes.

Q 30 Okay. Now, in 1935, Doctor--do you remember--you know who Doctor Lanza was.

A Yes.

Q 31 I think you mentioned him in your direct. In fact, Doctor Lanza has a building named after him at the New York University Medical School, is that right?

A Yes.

Q 32 Okay. He is one of the pioneers of occupational medicine in this country, would that be fair?

A Yes.

Q 33 Okay. Doctor Lanza undertook a study published in 1935 published in the Public Health Report called, effects of the inhalation of asbestos dust on the lungs of asbestos workers.

A Yes.

Q 34 And, once again, Doctor Lanza studied asbestos textile manufacturing plants, is that right?

A Right. Right.

Q 35 Okay. And, he too found--

A For that study.

Q 36 I am sorry?

A Doctor Lanza studied all sorts of asbestos workers. But, for that paper, that is--

Q 37 For this study?

A --a textile paper.

Q 38 Okay. And, he too found the existence of some cases of asbestosis, right?

A Yes.

Q 39 And, he too recommended that a possible solution was the reduction in the dust levels?

A Yes.

Q 40 Okay. Now, we have already--okay. We have already heard some, I think, about Doctor Dressen's report. You are familiar with that, are you not, Doctor?

A Yes, sir.

Q 41 Okay. It's a fairly thick thing. Does that look like it to you, Doctor?

A 180 pages.

Q 42 Okay. I have something like that. A study of asbestosis in the asbestos textile industry.

A Yes.

Q 43 And, it was written primarily by Doctor Valdimar Dressen?

A Yes.

Q 44 At the direction of the Surgeon General for the Public Health Service--

A Yes.

Q 45 --is that right?

A A large part of it was written by Doctor Sayers. But, Dressen was the head of the department in Public Health. So, his name would come first.

Q 46 Okay. Since he was the head--

A Yes.

Q 47 --he got to be on the top. But, Doctor Sayers is down here at the bottom?

A Yes.

Q 48 Okay. In fact, this report was sort of summarized a year later and published in the regular medical literature and Doctor Sayers came first, is that right?

A Yes.

Q 49 Okay. But, it essentially said the same thing?

A Yes.

Q 50 Now, is it true, Doctor, that Doctor Dressen studied asbestos textile manufacturing workers in North and South Carolina primarily?

A Yes.

Q 51 Okay. Now, asbestos textile manufacturing workers

both here and in Great Britain, a lot of those people were exposed to raw asbestos coming in off of trains or trucks or whatever it was they used and they were put into parting machines and spinning machines and whatever else they had in order to make asbestos textiles, like cloth and tape and thread and stuff like that, is that right?

A Not entirely. You shouldn't use the word a lot, because that doesn't really say how many.

MR. PINKLEY: All right.

A At the start of the process the asbestos would come in bags and would be delivered at a delivery shed of some sort--

MR. PINKLEY: Yes.

A --and then somebody would pick it up from there and feed it into a shoot--

MR. PINKLEY: Yes.

A --at the beginning of the process. And, then from there on, it's an enclosed process. And, then the asbestos becomes fiberized and it gets mixed in with cotton further along. And, it goes through a long process. Now, people at the shoot unloading the material from the bags, they would be exposed to 100 percent asbestos.

MR. PINKLEY: Yes.

A But, as the factory process goes on, further along, the numbers of people who would be exposed to 100 percent asbestos would be less and less--

Q 52 Because the--

A --because it gets mixed with cotton. See?

Q 53 I am sorry. I didn't mean to interrupt you, Doctor.

A Yes.

Q 54 It would be true to say, wouldn't it, Doctor, that several of the occupations involved in the asbestos textile manufacturing process would be exposed to very high levels of particular matter, including asbestos and whatever cotton there was?

A Yes, you can say that.

Q 55 Okay. Now, Doctor Dressen, I think we said--we have already talked a little bit about, but in his summary he said that below five million particles per cubic foot, they found only three doubtful cases of asbestosis, is that right?

A Yes.

Q 56 And, so, he recommended as a tentative guide for a tentatively safe level, I guess, if you want to call it that, five million particles per cubic

foot, is that right?

A Yes.

Q 57 Okay. Now, are you familiar, Doctor, with a paper called Industrial Hygiene and the Navy in national defense published in War Medicine by Captain Ernest Brown, published in 1941?

A Let me see if I can--

MR. PINKLEY: May I?

THE COURT: Sure.

A No, I don't know this paper.

THE COURT: Please feel free to do that in your--

MR. PINKLEY: Thank you, Your Honor.

Q 58 Okay. We'll just skip by that one. You are familiar with a health survey of pipe covering operations in constructing naval vessels?

A That is--

Q 59 This is the Fleischer/Drinker report?

A Yes, sir. That I know of.

Q 60 Okay. This, in fact, for the jury, I think it's Fleischer, Viles, Gaze and Drinker?

A Yes.

Q 61 Okay. They studied people who were putting asbestos containing pipe covering and block

on board ships during World War II, is that right?

A Yes.

Q 62 Okay. And, they made certain conclusions, did they not? Well, let me ask you this first. I will withdraw that question. They said, did they not, Doctor, and I will be glad to show it to you, if you would like, in general we feel that dust counts below five million particles per cubic foot by centimeter and that's a method of counting the dust, right?

A Yes.

Q 63 Five cubic centimeters indicate good dust control, do you recall their saying that part?

A I remember that, sir.

Q 64 All right. Now, they had some conclusions over here on the last page of their article, do you remember those, Doctor?

A Yes.

Q 65 Did they conclude this, Doctor, that their first conclusion was the character of asbestos pipe covering industry on board naval vessels is such that conclusions drawn from other asbestos industries, such as textiles, cannot be applied--

A Yes.

Q 66 --do you recall that?

A Yes.

Q 67 Okay. Two, they said the operations of bandsaw cutting, grinding, cement mixing and installation on board ship, should be equipped with exhaust ventilation to keep the total dust concentration low?

A Yes.

Q 68 That's perfectly well in line with what Doctor Meriwether and Doctor Lanza and Doctor Dressen had all recommended, right?

A Yes.

Q 69 Okay. And, the third conclusion was, the incidence of asbestosis among pipe coverers--now pipe coverers are the same as insulators, right?

A Yes.

Q 70 Okay. Pipe coverers in the shipyard study was low, 0.29 percent or three cases out of 1,074. In view of the nature of shipyard pipe covering work, this low incidence is not surprising, that's what they concluded, right?

A Yes.

Q 71 And, lastly, they concluded that since each of the three cases of asbestosis had worked at asbestos

pipe covering in the ship yards for more than twenty years--

A Yes.

Q 72 --it may be concluded that such pipe covering is not a dangerous occupation. Is that what they concluded?

A Yes.

MR. PINKLEY: Okay.

A Depends on what they meant by such?

Q 73 I am sorry?

A I can say yes. You and I can agree what they meant by such.

Q 74 The type of pipe covering they were talking about in the paper as people who were using amosite pipe covering to cover--

A No. I--

Q 75 Wait. Let me finish my question.

A Okay.

Q 76 And, then you can answer all you want. Okay?

A Yes.

Q 77 They were talking about, were they not, individuals who were working in the naval ship yards during World War II using amosite asbestos pipe covering on board ship, right?

A Yes.

MR. PINKLEY: Okay.

A Provided we know that it's amosite that we're talking about.

Q 78 Right. And, amosite is a type of asbestos?

A Yes.

MR. PINKLEY: Right?

A Yes.

Q 79 Okay. Now, also, in 1946, and you mentioned this a little bit previously, an organization called the American Conference of Governmental Industrial Hygienists men.

A Yes.

Q 80 This was not the first time they had met, was it, Doctor?

A No.

Q 81 The organization had been going on for awhile?

A That's correct.

Q 82 Okay. They met and they adopted, did they not, what they called, maximum permissible concentrations of various kinds of things?

A Yes. Yes.

Q 83 There is a whole list of them here, right?

A Yes.

Q 84 And, included in that was a group 3 mineral dusts?

A Yes.

Q 85 And, it says, asbestos, five million particles per cubic foot, do you recall that, Doctor?

A Yes.

Q 86 Okay. It is true, isn't it, Doctor Schepers, that the ACGIH did not recommend a lowering of the maximum permissible concentration or TLV, as it later became to be known, until 1968?

A That's correct.

Q 87 Okay. And, you never wrote anything in published medical literature criticizing the ACGIH or the five million particles per cubic foot standard, did you, Doctor?

A No. I didn't see anything.

Q 88 Okay. Now, was it--is it true, Doctor, that with regard to asbestos pipe coverers, that is insulators, the next epidemiologic study to appear after the Fleischer/Drinker report in 1946, was Doctor Selikoff's work that appeared in this volume?

A Yes, sir.

Q 89 This is a compilation of the papers that were presented at the 1964 conference called the

Biological Effects of Asbestos, right?

A Right.

Q 90 And, this was published on December 31, 1965 and began to be disseminated--

A Yes, sir.

Q 91 --to libraries and to other people who wanted to read it in this country in 1966?

A Yes, sir.

Q 92 Okay. Now, Doctor Selikoff's article called the Occurrence of Asbestosis Among Insulation Workers in the United States, right?

A Yes.

Q 93 And, he wrote that with Doctor Jacob Churg, who was a pathologist at Mt. Sinai?

A Yes.

Q 94 And, Doctor E. Cuyler, that's C-U-Y-L-E-R, Hamlin, right?

A An epidemiologist, mathematician.

Q 95 Right. He worked for the American Cancer Society?

A Right.

Q 96 Okay. Now, they start this article off, do they not, Doctor Schepers, by talking about how one should not refer to asbestos workers just as asbestos workers. One should separate out the

various occupations, is that right?

A Yes.

Q 97 And, that's because each of those occupations has different exposures to various kinds of asbestos, is that right, Doctor?

A Yes.

Q 98 Okay. Now, they say on page 140, do they not, Doctor, and again, I'll be glad to let you look along, if you like. The only large scale survey of asbestos insulation workers was undertaken in the U. S. by Fleischer and others in 1945. And, that's the Fleischer/Drinker report, right?

A Yes.

Q 99 Okay. They found only three cases of asbestosis and concluded that asbestos pipe covering of naval vessels is a relatively safe operation--

A Yes.

Q 100 Right. Okay. Do they go--they go on to say, do they not, Doctor, on page 142 that the measurement of dust exposure to insulation workers had shown and in concluding their own work, that those people, that is insulation workers, were exposed to dust levels that were generally within the five million particle standard?

A That's what they said.

Q 101 That's what they said?

A Yes.

Q 102 And, what do they say? Such counts that have been available made during work engaged by men studied by us have some shown a range similar to the published accounts?

A Yes.

Q 103 Okay. Now, he sets his hypothesis next, doesn't he? That is what he is trying to--what he did the study to prove or disprove. We undertook the study that questioned whether asbestos exposure ruling insulation work in the U. S. was associated with the hazards of asbestosis and its complications, right?

A Yes.

Q 104 Okay. And, then he goes on to find that it--

A Yes.

Q 105 --does present such a hazard, right? Now, at the concluding part of his paper Doctor Selikoff, here on page 151 says, scattered case reports have previously been recorded of neoplasms, now, that's cancerous, right?

A Yes.

Q 106 Of neoplasms among insulation workers including both lung cancer and mesothelioma--

A Yes.

Q 107 --of both the pleura, that is the lining of the chest, and the peritoneal, the lining of the abdominal cavity.

A Yes.

Q 108 Okay. A lung cancer has also been reported in a workman in a factory making asbestos insulation.

A Yes.

Q 109 However, these reports, while interesting and valuable, could not establish an association between the two conditions, is that what Doctor Selikoff said?

A That's what he said, yes.

Q 110 Okay. Now, you're familiar, are you not, Doctor, with a paper by J. Leroy Balser and W. Clark Cooper that appeared in 1968 in the American Industrial Hygiene Association Journal?

A Yes.

Q 111 They confirmed, did they not, Doctor, that ship board insulators, the people whom they studied, were, indeed, exposed to asbestos at levels generally below that of the five million particle

per cubic foot standard, is that right?

A Well, you shouldn't say that. You should say that, then I can say yes.

Q 112 They did say that, did they not, Doctor?

A But, I don't agree that is right.

Q 113 Okay. Well, let's just look at what they said. They say on page 227, do they not, the breathing zone dust levels found in industrious operations observed were not as high as the incidents of pneumoconiosis may have lead us to expect. Some sample areas exceeded the present threshold limit value recommended by the ACGIH. However, these samples were not for extended periods of time. Although we attempted to sample the dustiest operations the time weighted averages for dust samples containing asbestos would probably not exceed the TLV in most situations even on ships. This conforms to findings by Fleischer and others by Mar, who just published the previous year, right?

A Well--

Q 114 --I am sorry, the previous year that Doctor Selikoff--

A Yes.

Q 115 --1963. And, by Lathoric and Sanderson and to recently reported findings by Farris, who last year reported studies in the same shipyard earlier appraised by Fleischer?

A Yes.

Q 116 So, that's what they said, right?

A That's what they said.

Q 117 Okay. Now, this five million particle standard that was put out by the ACGIH, that was adopted by several states in this country, was it not, Doctor Schepers?

A Yes. About the number.

Q 118 Including Ohio where Owens Corning is headquartered and Berlin, New Jersey, where OCF--

A Yes.

Q 119 --made Kalow at one time?

A Yes.

Q 120 Okay. You did some work and you have already discussed some of it with Mr. Weingarten. You did some work on asbestos in the 1950s, right?

A Yes.

Q 121 And, you published the article that's been introduced into evidence, right?

A Yes.

Q 122 Now, I think you have previously testified, have you not, Doctor, that you considered Kalow to be an improvement over the previously existing high temperature insulation products?

A Yes.

Q 123 Because it created less dust when it was manipulated by the workmen?

A Correct.

Q 124 Okay. Now, once again, those studies that were done at Saranac Lake were animal studies?

A Yes.

Q 125 These animals were not exposed to five million particles per cubic foot of asbestos dust, were they Doctor?

A That--I now have reason to doubt and it will sound like double talk, because the figures are in my paper. But, it's--

Q 126 Well, what does the paper say, first? Then you can explain it.

A I am sorry?

Q 127 What does the paper say? How--

A I think, the paper gave only the dust count in the room. And, that I think was 126 million particles per cubic foot.

Q 128 126 million particles. Okay.

A But, that was not what the animals breathed, because you have to also measure it at the cages and apparently the paper left that out.

Q 129 I see. You have reviewed the interim reports and the final report that were submitted to Owens Illinois, have you not, Doctor?

A Yes.

Q 130 And, those all say that the dust counts in the inhalation room averaged and the numbers varied, but somewhere between 115 and 125, even up to 150 million particles per cubic foot?

A Yes.

Q 131 Okay. And, that was for five and a half days a week?

A Right.

Q 132 For the lifetime of the animals?

A Right.

Q 133 Okay. Now, when you published the article--here it is--you didn't find any cancers in those animals, is that right, Doctor.

A Yes. No.

Q 134 In fact, I hesitate to read the whole sentence, because it's full of words that I cannot pronounce,

but let me try. This change produced a microscopic sectional effect resembling multiple adinomotosis (phonetic).

A Yes.

Q 135 --but as there is no lack of differentiation of the cellular components no neoplastic change could be postulated?

A Yes.

Q 136 And, that means you didn't see any cancers?

A I couldn't decide whether it was cancer.

Q 137 Okay. Now, when you finished reviewing the Kalow dust studies, you told Owens Illinois, did you not, that if the dust exposures were kept below five million particles per cubic foot, that would be a reasonable safe working environment?

A Yes.

Q 138 And, you told them that because you believed it to be true, is that right, Doctor?

A Yes.

Q 139 And, that was the perception not only of you but also of a number of other scientists at that time?

A Of other people we have mentioned.

Q 140 That's right. And, that remained the perception of many in the medical community who were concerned

about this up until 1967 or '68?

A Yes.

Q 141 Okay. In fact, with respect to insulation workers, that was the state of the art up until 1967 or '68, is that right?

A State of the art was invented during this litigation, I think. But, you know, we didn't use that term but you might apply it, I suppose.

Q 142 So, but the answer to the question is, that was the state of the art up until 1967 or '68?

A Yes.

Q 143 Okay. You would agree that there was a reasonable body of medical authorities up until at least '67 or '68 who believed that if you kept the dust below five million particles per cubic foot, that that was a reasonably safe working environment?

A Yes.

Q 144 Okay. Now, and just so we understand, Doctor Marr, Doctor Selikoff and Doctors Balzer and Cooper told us that insulators by and large were exposed to less than five million particles per cubic foot, right?

A Shipyard insulators.

MR. PINKLEY: Right.

A Their papers only refer to shipyard workers.

Q 145 Okay. Now, when you came to or when you went to Granville--Granville, Ohio in 1956, to talk to the Owens Corning people about the Corvette bodies.

A Yes.

Q 146 Owens Corning wasn't making Kalow at the time, were they--

A I don't know that--

Q 147 --did you know that?

A I didn't know that then. I learned it through this litigation process.

MR. PINKLEY: Okay.

A I understand they started making it in '58.

Q 148 In 1958?

A Yes.

Q 149 So, they weren't even making the product, then, right?

A They were selling it, but they weren't making it.

Q 150 Okay. Was there anybody at your meeting that was involved, to your knowledge, in the high temperature insulation products?

A Not that I know of.

Q 151 Okay. There were people who were involved in fiberglass and trying to make the Corvette bodies?

A Yes.

Q 152 Okay. Let's--we've talked a little bit about Doctor Hammond, do you recall that, Doctor, talking about Doctor Hammond?

A Yes.

Q 153 You are aware, are you not, Doctor, that this same Doctor Hammond contributed a chapter to a book called Pulmonary Carcinoma edited by Mayer and Mayer in 1956?

A Yes.

Q 154 And, he wrote a chapter called environmental and occupational factors. And, he says, although lung cancer has been reported in autopsies of asbestotic lungs, there are at present too few cases and too little epidemiologic data to establish a significant relationship. Interpretation of associations are complicated by the differing compositions, associated materials and conditions of exposure in the various parts of the world. The data at present are suggestive, but inference as to causal relationship is not warranted. Do you recall Doctor Hammond saying that in 1956?

A No. I don't recall that. But, I know that sort of thing he retired.

Q 155 Okay. In fact, Doctor Hammond in a discussion at the conference in 1964, followed up on that, didn't he?

A Yes.

Q 156 He said, I believe that there was hardly anybody a few years ago, who would have suspected that there was a lung cancer risk in this group of insulation workers. These men were not asbestos weavers, nor asbestos miners and nobody at that time had suggested an increased risk at all for insulation workers. Doctor Hammond said that at the conference, did he not?

A Yes.

Q 157 And, you were there when he said it, right, Doctor?

A Yes.

Q 158 Okay. Okay. In fact, in 1964, at that same conference, and it may have been in the same session, you made a comment too, didn't you, Doctor Schepers?

A Yes.

Q 159 You said, now this was 1964, it was nine years after the publication of the Kalow study and the medical literature, that didn't say anything about cancer, right?

A Yes.

Q 160 Eight years after the letter to Mr. Burch, that said asbestos was a carcinogen?

A Yes.

Q 161 You said my first impression is that there now is less certainty that asbestos insulation in--I am sorry--asbestos inhalation is associated with pulmonary neoplasm that there was ten or twenty years ago. Doctor, would you agree with me that medical knowledge changes over time? That we know more now than we did ten years ago?

A That's true.

MR. PINKLEY: Thank you very much, Doctor. Those are all of the questions I have for you right now.

MR. WEINGARTEN: Is there any other cross examination?

MR. KIRSHNIR: I have no cross examination for Keene, Your Honor.

MR. WEINGARTEN: I have a few questions on redirect, if I might, Your Honor. And, I think we can still get everybody out by noon.

REDIRECT EXAMINATION

BY MR. WEINGARTEN:

Q 1 Doctor Schepers, Doctor Hammond was not an M.D.,
was he?

A No. He was a statistician.

Q 2 Okay. He was a PhD doctor?

A I think so, yes.

Q 3 Doctor, Mr. Pinkley read to you from your comments
at the 1965 conference. Can you put those in
context for the jury and explain to the jury what
you meant by those statements?

A Would you say that again?

Q 4 Sure. Let me come up, Doctor. Mr. Pinkley read to
you from the Selikoff conference in 1965, your
statement that your first impression is that there
was less certainty that asbestos was associated
with pulmonary neoplasm than there was ten or
twenty years ago. What were you referring to when
you made those comments, Doctor?

A Well, this is about the issue of how certain we
are. I was saying that in ten years ago we were
absolutely certain. But, now conditions have
changed. There was no longer the same heavy
exposures to asbestos and methods of control being

introduced so that there was less exposure. So, we had less evidence and that is really what that meant. We had less evidence now because conditions have changed.

Q 5 And, that's what you were talking about in that comment?

A Yes.

Q 6 Doctor, the five million particle per cubic foot measurement was never meant as a control against cancer or mesothelioma, was it?

A No. It only pertains to disabling asbestosis. Not to cancer or any other--there is no number for cancer control.

Q 7 *Cert* Now, Mr. Pinkley asked you about the findings of cancers in the Kalow studies, Doctor, do you recall those questions that he asked you?

A Yes.

Q 8 And, in fact, were there cancers found in the mouse--in the mice studied by Doctor Gardner?

A Oh, yes. Doctor Gardner had found that eight-one percent of the mice that had breathed chrysotile fibers had developed cancers of the lung.

Q 9 Have you done anything, Doctor, recently to re-examine the pathology slides that were looked

at in the 1940s by Doctor Gardner?

A Yes.

Q 10 What have you--how have you done that and what have you done?

A I found the original Doctor Gardner notes in his own handwriting in a box. And, I found some of the slides that had been selected for preservation. And, so, I've had an opportunity in the past year to study those.

Q 11 The slides as well as the notes?

A The original things from fifty years ago.

Q 12 And, in reviewing those slides, did you confirm that there were, indeed, cancers found by Doctor Gardner?

A No question about it.

Q 13 Doctor Schepers, is there any difference between the lungs of an insulator or a pipe coverer or a plumber or a lawyer or a judge or anybody else?

A No. All lungs are the same.

MR. WEINGARTEN: Thank you, Doctor Schepers, that's all I have.

MR. PINKLEY: Your Honor, I have a couple of things.

RECROSS EXAMINATION

BY MR. PINKLEY:

Q 1 This question of Doctor Gardner's mice--let me come up there. The question of Doctor Gardner's mice--

A Yes.

Q 2 --what he actually found were adenomas, right, Doctor Schepers?

A No. No.

Q 3 Those are non--

A They were carcinoma.

Q 4 Wait just a second. Those are not malignant tumors that Doctor Gardner found, as he reflected in his 1948 report, is that right?

A No. No. The opposite. He says they were malignant cancers.

Q 5 They were adenomas?

A No. No. No. No.

Q 6 Which report are you talking about?

A I am telling you what his own notes show.

Q 7 This is not published in anything.

A Adenocarcinoma.

Q 8 This is not published anywhere?

A No. No. His notes--

Q 9 And, this is not reflected in the reports that he submitted to anybody?

A He never got around--he wrote a letter to the sponsor saying, I am amazed to find that eighty-one percent of these animals have developed cancers. Have you seen that letter?

Q 10 No, Doctor Schepers, I have never even heard of it before.

A Well, I am referring to it. Mr. Weingartner asked me was, what did his own notes say? And, he described the cancers as this is an adenocarcinoma, this is a laomiocarcicoma (phonetic), this is such and such, these are all malignant tumors.

Q 11 All right. Now, Doctor Gardner did studies with other kinds of asbestos, did he not? In fact, he did some studies for another group of asbestos manufacturers starting in the late or mid 1930s?

A Yes.

Q 12 And, he reported on those in his papers that were submitted in the late 1940s, is that right?

MR. WEINGARTEN: Your Honor, at this point, I am going to object in that we are getting beyond the scope of the redirect examination.

MR. PINKLEY: Your Honor, these are the very studies that Doctor Schepers is testifying about.

THE COURT: Overruled.

MR. PINKLEY: Thank you.

A Are these for the company?

THE COURT: I want to remind counsel, respectfully, now, I don't want to get into a debate between you and the witness.

MR. PINKLEY: Very well, Your Honor. I will shut this down real quick.

Q 13 You are familiar, are you not, Doctor Schepers, that Doctor Gardner did research for other asbestos manufacturers in the 1930s and 1940s?

A Yes.

Q 14 And, he submitted reports. Have you seen those reports?

A Yes. Yes. He sent reports to the companies.

Q 15 Okay. And, in one of those reports it says something about eighty-one percent of the mice showing adenomas, right, do you recall that?

A No. No adenomas, adenocarcinomas. Carcinomas--

Q 16 The report says adenomas, does it not?

MR. WEINGARTEN: Your Honor, this is,
again--

A I don't remember that report.

MR. PINKLEY: Okay.

THE COURT: Wait a minute. Well, you
have asked him. He can answer it again.
He has asked the same question again,
Doctor.

MR. WEINGARTEN: He is arguing with the
witness, Your Honor.

THE COURT: Well, I don't know--

MR. PINKLEY: I don't mean to be, Your
Honor.

THE COURT: Yes. I think he's asked it
contrary to what you said. But, you can
ask the question once more, if you want
to clear it up now and get a final report
from him. But--or statement.

Q 17 Okay. In that report, do you know which one we are
talking about? The Kings Point--the Kings Float
Asbestos Document?

A Apparently I don't know what you are talking about.

Q 18 Okay. Well, then we are not going to--

A I just know about the cancer report and you're

talking about an adenoma report. I think that's somebody else you're quoting.

Q 19 I am talking about--let me make sure I understand. You are not familiar with Doctor Gardner's work on the Kings Float Asbestos that he reported on in 1948 and reported an eighty-one percent incidence in mice--

A Oh, no. No.

Q 20 Wait just a second.

A You're totally wrong.

Q 21 --of adenomas? Are you familiar with that?

A The Kings Float study was finished in 1931. So, there was no Kings Float study after that.

Q 22 There were some other studies after that in addition, right, Doctor Schepers?

A No. No. That's wrong.

Q 23 That's all of them?

A No. It's completely wrong. The Kings Float study was completed in 1931. And, there was no further report on the Kings Floats after '31.

Q 24 No. I am sorry, Doctor Schepers. We're misunderstanding each other. After the Kings Float study was completed, there were other studies on other asbestos products--

A Yes. Chrysotile.

Q 25 Okay. Even before the Kalow project started.

A Oh, yes. Separate from Kalow.

Q 26 Exactly. That's the one I am talking about. Are you familiar with that study?

A Yes.

Q 27 In that study, Doctor Gardner issued a report in 1948 showing that there was an eighty-one percent incidence of adenomas in the mice, do you remember that one?

A No.

Q 28 Thank you very much. I am just asking you if you remember it, Doctor?

A No. I don't remember it.

THE COURT: Well, he may--you may explain your answer that he doesn't remember it.

MR. WEINGARTEN: Please explain your answer, Doctor.

MR. PINKLEY: Well, if he doesn't--wait just a second. If he doesn't remember, there is nothing to explain, Your Honor.

THE COURT: Well, we'll leave that up to the witness.

MR. PINKLEY: Okay. That's fine.

REDIRECT EXAMINATION

BY MR. WEINGARTEN:

Q 1 Please explain, Doctor.

A These reports are not published reports, they are documents created by Doctor Gardner to the sponsors of the research. The sponsors of the research was a consortium of asbestos manufacturers and varieties of companies. And, the reports were periodic reports, once every quarter. And, in 1943 Doctor Gardner's report for the first time mentioned cancer. And, in that report he said, I had previously--

MR. PINKLEY: Your Honor, excuse me. I am sorry, Doctor Schepers. This is a letter that he is talking about that Doctor Gardner wrote and it's hearsay and I object to it.

THE COURT: Well, overruled.

MR. PINKLEY: Your Honor, it's not a medical report. It's a letter.

THE COURT: The objection is overruled.

MR. WEINGARTEN: Thank you, Your Honor.

MR. PINKLEY: Thank you, Your Honor.

Q 2 Please continue, Doctor.

A In this report to the sponsors, Doctor Gardner stated, I had previously not thought of cancer as a particular problem with dust diseases. But, now I have made the discovery that eighty-one percent of the mice exposed to chrysotile dust in particular experiment negates the experiment evidence about cancer of the lung. And, that's all it says. And, then it goes on and provides the individual descriptions for each one of those mice describing the kind of cancer that he had found.

Q 3 And, chrysotile dust is asbestos dust?

THE COURT: Well, now, I think he has answered.

Q 4 I am still on redirect, Your Honor. Chrysotile dust--

THE COURT: Well, this is re-redirect.

MR. WEINGARTEN: Yes. Re-redirect.

Q 5 I just want to clarify. You use the phrase chrysotile dust, Doctor, that's cancer of asbestos?

A Yes. This is chrysotile only.

Q 6 Thank you. But, that's asbestos?

A That's asbestos.

MR. WEINGARTEN: That's all I have, Your

Honor.

THE COURT: Doctor, you're excused.

A

Thank you.

FURTHER THIS DEPONENT SAITH NOT

STATE OF KENTUCKY)
COUNTY OF FRANKLIN)

I, Melody Curtis, a Notary Public in and for the state and county aforesaid, do hereby certify that the foregoing testimony was taken by me at the time and place and for the purpose stated in the caption; that the witness was duly sworn before giving his testimony; that said proceeding was taken down in shorthand writing by me and later reduced to typewriting under my direction.

The foregoing One Hundred Eleven (111) pages of typewritten matter constitute a true and correct record of all proceedings.

Witness my hand and notarial seal this 7th day of January, 1994.

Notary Public
State of Kentucky at Large

My commission expires: 6/13/96