FILE NAME: Johns-Manville (JMA)

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE . WASHINGTON 25, D. C.

BUREAU OF STATE SERVICES

Refer to: OH:C

KWS	5/9
CLS	

May 5, 1961

Dr. Kenneth W. Smith
Medical Director
Johns-Manville Corporation
23 East 40th Street
New York 16, New York

Dear Dr. Smith:

Over the past several years, a number of articles have appeared in the technical literature relative to clinical findings on individuals exposed to asbestos dust. The individual studies, however, have been limited in scope and in some instances have raised a number of questions concerning the interpretation of the resulting data.

It seems evident that considerable more information is necessary to assess properly the effects of exposures to asbestos dust. I am inviting a limited group to meet with me in Washington at 9:30 a.m., Thursday, June 1, 1961 (HEW South Building, Room 2225) to discuss the problem in some detail. The objectives of this meeting are to gain a better insight on what is currently known concerning the effects of asbestos dust on health, what further research needs to be done to obtain the information for this assessment, and the resources and facilities available for conducting the research.

I hope that you will be able to attend this meeting and participate in the discussions.

Sincerely yours,

Harold J. Magnuson

Harold J. Magnuson, M.D., Chief
Division of Occupational Health

DHEW South Bldg
4th & D

MEDICAL COLLEGE OF SOUTH CAROLINA
16 LUCAS STREET
CHARLESTON 16, SOUTH CAROLINA

DEPARTMENT OF PATHOLOGY

16 May, 1961

KWS 5/9
CLS 5/22

Kenneth W. Smith, M.D.
Medical Director
Johns-Manville Corporation
22 East 40th Street
New York 16, New York

Dear Doctor Smith:

This letter is to confirm the fact that I hope to be in New York on Friday, 26 May, and I shall give your office a call some time fairly early in the morning to find out when I might drop by to see you.

Sincerely yours,

Forde A. McIver, M.D.

FAMcI:pb

5/14

May 10, 1961

Dr. Paul Cartier
Thetford Industrial Clinic
Thetford Mines, Quebec
Canada

Dear Paul:

Recently there has been considerable discussion in various groups around this country concerning the relationship of the asbestos fibre and malignancy, not only pulmonary but also abdominal. Dr. Magnuson has decided to hold an informal meeting to discuss whether or not there is a problem and if there is, should the U. S. Public Health Service become interested and conduct a survey? This will be a limited group, probably composed of Doctors Vorwald and Sander, Dr. Lewis J. Cralley of the U. S. Public Health Service, Cincinnati, Dr. Shaw of the Asbestos Textile Institute and one or two others.

Because the U. S. Public Health Service is a federal agency, Dr. Magnuson feels he cannot invite anyone outside this country. He invited me and also asked for names of others to attend. I mentioned your name and he indicated that I could invite you as an interested person. I do hope that you will give this serious consideration and will attend on June 1, for you have a wealth of knowledge to add to the meeting. Please let me know if you can come so that I can advise Dr. Magnuson.

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

KWS	
CLS	5/24

May 22, 1961

Dr. Lewis Cralley
Division Special Health Services
U. S. Public Health Service
1014 Broadway
Cincinnati 2, Ohio

Re: Asbestosis Meeting
Washington

Dear Lewis:

Following your sugestion, I invited Dr. Paul Cartier of Thetford Mines, Quebec, to attend the meeting. He will be there.

In our recent discussion, I stated that Dr. Forde McKiver was the pathologist working with Dr. Kenneth Lynch in Charleston, South Carolina. I thought that he had left the university, but have just learned that he still is there. As a matter of fact, he will be here in my office next Friday, May 26. May I have your permission to see if he has any views on our malignancy problem? If he has, I shall let you know immediately so that you can advise Dr. Magnuson. You may want to transfer the invitation from Dr. Lynch to Dr. McKiver.

My tentative travel plans are to take the train to Washington arriving about 8 P.M., Wednesday. I shall have to leave on the five o'clock train, Thursday afternoon. I shall be staying at the Washington Hotel.

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

6/5

June 2, 1961

Dr. Lewis Cralley
Division Special Health Services
U. S. Public Health Service
1014 Broadway
Cincinnati 2, Ohio

Dear Lewis:

Wednesday night when we were discussing industrial hygiene instruments, I questioned the type of instrument best suited for our company needs. You kindly offered to contact your Noise Control Group and get their recommendations. I would appreciate it very much if you would ask them if the sound survey meter is satisfactory for our survey purposes, or if we should have a wave band analyzer in addition. Perhaps there is an instrument which will serve both purposes.

I think that we had a very interesting and constructive meeting yesterday. My only concern is the fact that Tom Mancuso appears to have incriminated the asbestos fibre and consequently the whole asbestos industry in his thinking whether or not the disease case-works in a pure exposure such as textile, or in the multiple exposure occupations such as brake lining, asbestos cement shingles or pipe covering. Please be honest and let me know if I belabor and am too apprehensive. I know that I do not understand biostatistical methods too well and if I am too apprehensive because of this, please be frank and let me know.

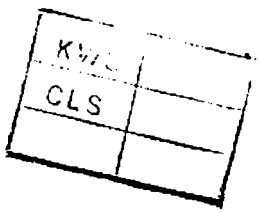
I probably shall phone you next week before or after the Asbestos Textile Institute Meeting.

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

Thetford Industrial Clinic

Thetford Mines, Que.



June 8, 1961.

Dr. Kenneth W. Smith,
Medical Director,
Johns-Manville Corporation,
New York 16, N.Y.

Dear Ken,

In the first place I want to tell you that I have been greatly impressed by the general atmosphere of the meeting in Washington and I thank you for having given me the opportunity of attending such an informative meeting.

I agree with you that the conflicting opinions and the confusion which reign among those interested in the various problems of asbestosis justify a thorough survey hoping that such a survey can produce "this time" solid conclusions scientifically acceptable to the majority of those concerned. On the other hand, the fact that Dr. Vorwald admits himself that he did not use the proper technique for the Saranac Experimental Study on Cancer of the lungs and also the fact that the conclusions of the recent Industrial Hygiene Foundation are not accepted even by some of the american medical authorities are of nature of rendering any one more reluctant or at least less enthousiastic about a new project. Fortunat[illegible] Magnuson seems to want to be very cautious and methodi[illegible] this new temptative.

Following the past experience, I remain slightly apprehens[illegible] because in too many instances a big institution even with a well qualified personnel has not succeeded to accomplish the desired task either because they do not have the same interest as the people living their problems or because they are too busy to give the time and the concentration required for any project of such importance.

On account of the large contribution that Dr. Mancuso might take in this possible study, I am taking the liberty of giving the following frank comments or impressions.

(cont'd)

I would question the method of investigation used by Dr. Mancuso in his last survey which shows that over 66% of the asbestos workers autopsied have developed a lung cancer; it has to be a very selective group or workers exposed to a dangerous mixture of dust. The opinion of an increased incidence of brain and peritoneum cancer in the asbestos industry would need further investigation before being accepted. Also the fact that Dr. Mancuso persists to consider the results of the comparative study of the death certificates of the County of Megantic where all cases of cancer of the lungs have been detected following a special medical investigation and autopsy, with the death certificates of the 2 or 3 surrounding counties without the same medical facilities and no autopsies, as a conclusive proof in favor of a positive relationship, this fact concurs to make me think that he has already a more or less definite opinion on some of the aspects to be investigated.

Sincerely yours,

PC/JS

Paul Cartier, M.D.

June 19, 1961

Dr. Myril C. Shaw
Asbestos Textile Institute
Schoolhouse Lane
Philadelphia 44, Pennsylvania

Dear Myril:

I have reviewed the attached draft of your letter and agree that you have covered the subject very well. I note that you have completely omitted the subject of cancer and probably have a very good reason for so doing. I wonder if it might not be wise to state quite frankly that the question exists concerning the association of asbestos and cancer, and that the U. S. Public Health Service would be able to give factual evidence for or against such a relationship. This survey, of course, would cover all other aspects of health in the asbestos worker in addition to possible cancer.

Aside from this thought, I have no other suggestions. I do hope that you will receive a favorable vote in the very near future so that we can ask Dr. Magnuson to draw up the framework for the survey.

For your information and records and also for Ralph Smith, the change in the Walsh-Healey Act became effective January 27, 1961. The part of the text to which I referred is Part 50-204, entitled "Safety and Health Standards for Federal Supply Contracts".

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

Attach.

6/20

June 19, 1961

C. W. Hite

Division Managers Meeting
June 21, 1961

You may wish to discuss the following information at your forthcoming meeting.

For many years, British and South African medical authorities have associated lung cancer with the inhalation of asbestos fibers. In recent years, American writers have reported numerous cases of cancer not only of the lung, but in other parts of the body, associating these conditions with asbestosis. While we have not had many cases of cancer in our Company these are numerous enough in other companies to cause me some concern.

Two weeks ago, a meeting was called in Washington by Dr. Harold Magnuson, Chief of the Occupational Health Division, U. S. Public Health Service. I was invited along with Dr. Paul Cartier, Thetford Mines; Dr. Arthur Vorwald, former head of the Saranac Laboratory and now at Wayne University; Dr. O. A. Sander, a specialist in industrial pulmonary diseases in Milwaukee; and Dr. Myril Shaw, Secretary of the Asbestos Textile Institute. Also present were several men from the U. S. Public Health Service who carried out the Diatomaceous Earth Survey a few years ago. It is Dr. Magnuson's responsibility to protect the health of the American worker and he called the meeting because he had become concerned over the asbestos and cancer question.

The immediate cause for calling the meeting was a report by Dr. Tom Mancuso who under the auspices of the University of Pittsburgh had studied the health of workers in a brake lining plant in Pennsylvania. Dr. Mancuso reported that there were 19 cases of lung cancer among 31 people who had asbestosis. This is a phenomenally high incidence. In addition, the incidence of abdominal cancer was 50 times higher in this group than would be anticipated in the normal population. Because it is a recognized fact that inhalation of certain fumes in the dye industry can cause cancer in parts of the body other than the lung, it was felt that the same might be true for inhaled asbestos.

At the end of our all day meeting, there was an unanimous decision that a problem exists in the asbestos industry. The question of whether or not an association exists between asbestos and cancer should be answered preferably by an authoritative group such as the U. S. Public Health Service rather than by University workers. Although Dr. Magnuson has the authority to investigate any American industry in which he feels a health problem exists, he would prefer to be invited by the industry to undertake a survey.

Dr. Magnuson indicated that he would set aside two million dollars in his budget if he is invited to study our problem. There will be no direct expense to industry other than making men and records available to the survey team. The whole program would be correlated with studies carried on in other parts of the world where different types of asbestos fiber are used. It is expected that a preliminary report could be ready in approximately 5 years.

Last week, Dr. Shaw and I reported the results of the Association meeting to the Asbestos Textile Institute. Their Board of Governors voted to invite Dr. Magnuson to survey that part of the asbestos industry. Letters have been sent to member companies requesting approval of this action.

I believe that we should participate in such a survey, realizing that if asbestos is incriminated as a cause of cancer, it might affect our Company business quite seriously. However, I feel that it is better to have the question answered by factual evidence rather than by hearsay. Certainly we could be no worse off than we are today when many doctors and lawyers quote medical texts associating cancer and asbestos. On the other hand, if the U. S. Public Health Service finds that no relationship exists, it would be of tremendous value in our future Workmen's Compensation cases and product liability suits.

Kenneth W. Smith, M.D.

E 7/19 7/20

July 18, 1961

Dr. M. C. Shaw
Asbestos Textile Institute
c/o Philadelphia Textile Institute
Schoolhouse Lane
Philadelphia 44, Pa.

Dear Dr. Shaw:

U. S. Health Education & Welfare Dept.
Proposed Survey of the Asbestos Industry

Referring to your request of June 26 regarding the above, we are returning herewith our voted ballot on the two questions that you present.

Unfortunately I was not present when this matter was presented in detail at the last A.T.I. meeting, but I have spoken with Mr. E. A. Schuman, and had a reflection of Raybestos Manhattan's opinion from Mr. J. A. Bettes.

As you will note it is our opinion that we want to be very cooperative in having the Asbestos Textile Institute offer every facility they have at their command to assist the Public Health Service in the event that they wish to make a specific study of this industry, however, we do not feel that it is wise to portray to them that we are unduly concerned about the health conditions of the industry and what has been done in the way of study and correction methods, perhaps creating the opinion that there have been some deficiencies. On the other hand, we feel that a great deal of study and thought on the part of all manufacturers have improved conditions over the years, but that if it is deemed advisable that a study be made, then we as representative of the Asbestos Textile Industry, should do all in our power to assist. It is for this reason that we have voted negative on Question #1 with the thought that probably our approach and opinions to Dr. Magnuson, Chief of the Public Health Service, could be phrased more in line with the thoughts I have expressed herewith.

We have voted affirmatively on question #2 feeling that if the Public Health Service is to investigate the Asbestos Industry then a subcommittee, composed of medical men, fully conversant with the problem will offer the greatest assistance in these matters.

Sincerely yours,

N. S. HOUGH

NSH:ef

Blind copies:

Dr. K. W. Smith
C. C. Simoni
E. A. Schumann

J. T. Griffis - H. K. Porter Co.
T. C. McCluskey - Tallman - McCluskey
J. A. Bettes - Raybestos Manhattan

Note to Dr. Smith:

Dr. Smith: In your absence on vacation I felt it advisable that this matter be answered even though I could not check further your own personal opinion. I trust that you will agree with our thinking on the matter and I will talk with you further when you return and any additional opinions that you have can be reflected to the A. T. I. in the event that you do not concur with what I have written.

N. S. H.

COPY LETTER FROM

KEASBEY & MATTISON COMPANY

AMBLER, PA.

July 7, 1961

Dr. M. Shaw
Asbestos Textile Institute
Schoolhouse Lane & Henry Ave.
Philadelphia 44, Pa.

Dear Dr. Shaw:

Your letter of June 26th forwarding a memorandum and letter ballot on the general subject of asbestos as an industrial hazard, has been shown to me for comment. Since I shall definitely suggest that this Company's vote be no on both propositions as they are now presented, I should like to explain my reasons.

In the course of a fairly short association with this industry, I have become convinced that we are subjected to a great deal of loose talk and far looser thinking prompted by emotion rather than intelligence, inspired by a general feeling of being against sin. wrong.

Using the word "asbestosis" as their take-off point, articles have been published by officials of the Department of Health, speeches have been made by doctors, diagnoses have been made by doctors, awards have been made by juries and recommendations for the expenditure of huge sums have been made by insurance companies. None of these, to my knowledge, have been able to define "asbestosis", or give any evidence, which can't be torn to shreds, as to whether the phenomenon, if it exists, is good or bad for the health of any individual. He lives not sought intelligent information

Resort is usually made to a discussion of "dust" without being able to define that. Despite my best filtering efforts, I am sure I inhale dust in my home, car and in the office. If I walk through an asbestos plant, I am sure I inhale dust. It seems reasonably possible I would also inhale asbestos. I doubt if fibers

a half inch in length are classified as dust, and I have no idea whether such one-half inch fibers would harm or help me if inhaled, and I likewise do not know this concerning fibers of any other length.

Further, I have yet to see any evidence, which cannot be torn to shreds, of a method for surely and uniquely measuring the presence of asbestos fibers in any body of air in any definite quantity even if we assumed we know what particular lengths and concentrations we might be looking for.

Despite all this, I should welcome a real clarification of the matter, since I should be most energetically anxious to remedy any situation which was, first, demonstrably bad and, second, provably susceptible to remedy.

I am, however, unalterably opposed to participating in any demonstration of foregone conclusions, or searching for a degree of guilt without having first established that there is <u>any</u> guilt.

The second paragraph of your memorandum states four numbered propositions which I should like to discuss in sequence.

"1. What constitutes hazardous conditions and how such conditions may be measured and identified."

I should prefer a slightly open-minded approach to this, perhaps by the simple amendment to include a search as to what constitutes a <u>non</u>-hazardous condition. I should like to think there is some admission in the minds of possible defamers of this industry that there conceivably could be a non-hazardous condition.

"2. How much of an association or contact with these conditions serves to identify one as an 'asbestos worker'."

Personally I would like to be free to continue considering myself an asbestos

worker. I should dislike being ruled out except on the one condition that I have been sinned against until someone demonstrates that such sinning exists at all, let alone in what degree.

"3. The identification of the type of physical degradation or the establishment of the particular disease resulting from exposure to asbestos dust conditions."

Being completely uninformed medically, I have a most obstinate feeling that any autopsy of myself will reveal a great many foreign bodies in my lungs, including asbestos. Before anyone starts identifying the type of physical degradation resulting from the asbestos, I would appreciate their keeping an open mind as to whether or not there is <u>any</u> such degradation resulting from asbestos or anything else, and if there is any, I would appreciate their entertaining the thought of the possibility of its emanation from a multitude of other foreign bodies. Further, before we identify the disease resulting from asbestos, I would appreciate a slightly open mind as to whether there is <u>any</u> disease resulting from asbestos. Stupid!

"4. Whether all asbestiform minerals are equally effective and offensive or whether each one of the group, chrysotile, crocidolite or amosite, may behave differently in attacking body organs or tissues."

Just an open mind is all I should ask for. Could we broaden the inquiry to cover the case of these being equally INoffensive? Same!

You say these are a few of the obvious questions and I wholeheartedly disagree they are in the slightest degree obvious on the basis of any evidence I have ever seen. However, my impression of such statements I have seen put out by officers of the Public Health Service is that these are likely to be the only questions asked, that asbestos and the asbestos industry are already condemmed.

It appears to me that whereas a person many years ago used, most often, to die of "complications", medical ignorance has now been refined to the point where any person at any time employed in the asbestos industry who suffers a spot on his lung or death from cause not too obvious, is automatically classed a victim of "asbestosis". I return to my opening remarks about inability to define what that is, etc.

I submit as a splendid example of the above, a diagnosis of "asbestosis" given us on a former employee whose total connection with the asbestos industry had been a few years as Office Systems Manager. There is extreme doubt in our minds that he was ever closer to asbestos than viewing the material in a showcase.

Accordingly, until there is some clarification as to the approach this proposed investigation might take, I shall heartily recommend that this Company vote no to both propositions.

Yours sincerely,

R. R. Porter

rrp:ma

cc: Mr. Burnett
Mr. Rohrbach
Mr. Griffis
NLB/RAS/RLL/WMD/LH

Copy Letter From

KEASBEY & MATTISON COMPANY

Ambler, Pa.

July 7, 1961

Dr. M. Shaw
Asbestos Textile Institute
Schoolhouse Lane & Henry Ave.
Philadelphia 44, Pa.

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"2. How much of an association or contact with these conditions serves to identify one as an 'asbestos worker'."

Personally I would like to be free to continue considering myself an asbestos worker. I should dislike being ruled out except on the one condition that I have been sinned against until someone demonstrates that such sinning exists at all, let alone in what degree.

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Yours sincerely,

R. R. Porter

rrp:ma

cc: Mr. Burnett
Mr. Rohrbach
Mr. Griffis
NLB/RAS/RLL/WMD/LH

CONFIDENTIAL

Division Headquarters
July 3, 1961

Kenneth W. Smith, M.D.

Mr. Bettes of Raybestos-Manhattan 'phoned me about the attached letter of June 30th, which he has just written to Dr. Shaw.

As indicated in the letter, they believe it would be preferable to approach Dr. Magnuson along the lines of offering the full cooperation of the A.T.I. membership, rather than making an outright invitation to come in and investigate.

This seems to be a very good thought, and inasmuch as Dr. Magnuson's investigation is already a definite proposed project, an offer to cooperate should be all that is necessary.

I trust this is in line with your ideas.

CCS:jmt

C. C. SIMONI

cc: W.S. Hough

9201

COPY

RAYBESTOS-MANHATTAN, INC.
Asbestos Textile Division
MANHEIM, PA.

30 June 1961

Dr. M. C. Shaw, Sec'y
Asbestos Textile Institute
c/o Phila. College of Textiles & Science
Schoolhouse Lane & Henry Ave.
Philadelphia 44, Penna.

Subj: U. S. Health Education & Welfare Dept.
Public Health Service Division
Proposed Survey of the Asbestos Industry

Dear Dr. Shaw:

We have carefully considered your letter 26 June and return our ballot herewith. You will note we have voted affirmatively on question #2.

We are much in favor of establishing an A.T.I. Medical Committee. We would like to nominate Dr. Kenneth Smith of Johns-Manville as Chairman. So far as I knew, he is the only man in the asbestos textile industry devoting his fulltime to these problems.

We have not voted yes or no on question #1. We would like to submit the following comments for the consideration of our Board of Governors.

Raybestos-Manhattan would be very reluctant to have A.T.I. write a letter INVITING a survey of the industry by the Public Health Service Division. We feel this would be asking for additional problems in the labor relations area.

We would prefer to have you write Dr. Magnuson advising we understand the Public Health Service Divisionis about to make a survey of the asbestos industry. As spokesman for the asbestos textile branch of the industry, we offer the full cooperation of the A.T.I. membership in making the survey factual and enlightening.

Perhaps we are a bit gun shy, but we have reason to be. A couple of doctors in our local hospital have given us a considerable amount of unfavorable publicity in recent months. Just about the worst possible publicity would be for the government to issue a news release saying in effect "Asbestos Textile Industry invites Public Health Service Division to investigate relationship between asbestosis and cancer."

We sincerely want to assist the government in making a factual survey. We must carefully avoid pointing the finger of suspicion at ourselves. This may be only a matter of wording, but in our opinion it's an important difference.

Sincerely yours,

J. A. BETTES, JR. - MANAGER
cc

cc: American Asbestos Textile Co. - A. J. Scanlan
Johns-Manville - C. C. Simeni
W. S. Keogh
Keasbey & Mattison - A. S. Whitfield
H. K. Porter - J. T. Griffis
Tallman-McCluskey - T. C. McCluskey
U. S. Rubber Co. - S. J. Peele

CONFIDENTIAL

Division Headquarters
July 13, 1961

Kenneth W. Smith, M.D.

Asbestos Textiles Institute

Attached for your information is copy of a letter dated July 7, addressed to Dr. Shaw by Mr. R. R. Porter of the Keasbey & Mattison Company.

One reading of it should remove all doubt as to Mr. Porter's position on how he thinks the A.T.I. should proceed in connection with the proposed investigation of the Public Health Service.

We have already forwarded you copy of Mr. Bettes' letter giving the suggestions of Raybestos-Manhattan on the same subject.

It would appear that a certain amount of reconciling will have to be done before the Institute can proceed with a united membership front.

I assume that you and Bill Hough will do the necessary in consulting with Dr. Shaw and doing whatever is required to straighten out this situation and protect the interests of J-M, as well as the Industry.

CCS:lat

C. C. SIMON

cc: W. S. Hough

State of New Jersey
SANATORIUM FOR CHEST DISEASES
GLEN GARDNER

SUPERINTENDENT AND MEDICAL DIRECTOR
JOSEPH A. SMITH, M. D., F. A. C. P.

TELEPHONE:
HAMPTON 2011

KWS	
CLS	

August 8, 1961

Dr. Kenneth W. Smith, Medical Director
Johns-Manville Products Corp.
22 East 40th St.
New York 16, New York

Dear Dr. Smith:

Apropos to our conversation the other day regarding cancer in asbestos, we enclose, herewith, a report of a meeting and a project proposed at this meeting.

I do not know whether this is the study you heard about or not. However, if this is new to you, it is confidential.

Yours very truly,

NEW JERSEY SANATORIUM

Joseph A. Smith

Joseph A. Smith, M.D.
Superintendent & Medical Director

JAS:de

REPORT OF VISIT TO PATERSON CLINIC

FROM: Mrs. King and Ann Tolomeo

DATE: July 26, 1961

PARTICIPANTS: Irving Selikoff, M. D., Jack Churg, M. D. pathologist, Barnert Memorial Hospital; Miriam Sachs, M. D., Health Officer, Metropolitan Health District; E. Lynn Schall, Coordinator, Occupational Health Program; Mrs. King and Ann Tolomeo, NJTHA.

PURPOSE: To discuss pulmonary asbestosis study in Passaic County.

MATERIAL: Review of previous field reports.

CONTENT: We met for lunch in the library of the Paterson Clinic. Dr. Selikoff began the discussion by stating that in a hospital as small as Barnert (125 beds) they have had 6 deaths due to pulmonary asbestosis (diagnosis by autopsy) in the last 10 years. Dr. Selikoff has had 21 patients with severe asbestosis; of these 2 have died due to cancer of the lungs; both cases were diagnosed as asbestosis in 1954; in one, lung cancer developed in '58, in the other lung cancer developed in '59. Dr. Selikoff mentioned that Fortune Magazine put out a list of the 500 largest companies (1000-5000 employees) in the United States; 7 of the asbestos companies were located in New Jersey. Dr. Selikoff said there are two things that must be considered - the individual exposure to asbestos and the clinical hazard peculiar to asbestos inhalation which is carcinoma. Dr. Selikoff said that in Great Britain there were 49 deaths due to cancer of the lung in 250 asbestosis patients. Dr. Tom Mancuso did a study for PHS on diability applicants with asbestosis; his findings confirmed the Great Britain finding of intraperitoneal cancer in addition to lung cancer.

Dr. Selikoff said that he had met with Dr. Harold Magnuson, Chief, Occupational Health Program, PHS, about the problem. Dr. Magnuson is eager to do some studies in this field. He has little literature available on the subject. Dr. Magnuson recently met with representatives of the asbestos industries, reviewed the literature with them, and asked their support and cooperation in undertaking studies in asbestos exposure. This group recommended that the asbestos manufacturers display leadership and support these projects. As a result, asbestos industries throughout the country are now being polled for their reactions. Dr. Magnuson assured Dr. Selikoff that if the industries did not support these studies, PHS would. Dr. Magnuson or his staff members would be willing to come to New Jersey and help with the planning of the study. One of his staff, Dr. Smith? is now in Europe reviewing the studies done there.

Dr. Selikoff asked Mr. Schall whether his department could assist in the project. Mr. Schall said that they [illegible] they could not be of help in the medical aspects [illegible] would be willing to assist with the engineering [illegible]

Dr. Sachs asked Dr. Selikoff how the study was to be [illegible] This brought up much discussion as to whether asbestos [illegible] a mechanical or chemical irritant. There is no answer to this, it just is not known. Dr. Sachs mentioned magnesium silicate in talc and the small incidence of talcosis around. Both Dr. Selikoff and Dr. Churg said that although about 25% of most asbestos is magnesium silicate, it may be that this, in combination with the other materials in asbestos, makes it harmful, or it may be another material in the asbestos. Dr. Sachs asked Dr. Selikoff how he intended to proceed. Dr. Selikoff said that he [illegible] the following at his disposal (1) Dr. Churg to prepare tissue cultures, (2) pulmonary function laboratories, (3) [illegible] Dr. Coleman Rubin and himself, (4) pathology departments. Dr. Selikoff said he would proceed in the following way:

(1) Work out a list of plants in which asbestos is used in any great quantity (these do not have to be confined to Passaic County). Dr. Selikoff needs help on how to do this. Mr. Schall suggested the Industrial Directory.

(2) After this is reviewed, Dr. Selikoff would then do X-ray surveys (NJTHA and SDH participating) in areas of potential exposure.

Dr. Sachs thought it would be difficult to get asbestos [illegible] and labor unions to cooperate. Dr. Selikoff thought this [illegible] worth exploring.

Dr. Selikoff stated that basic research is needed [illegible] (1) analysis of sputa, (2) pulmonary function patterns [illegible] up asbestosis, (3) other laboratory studies.

There was much discussion back and forth between [illegible] Selikoff. Dr. Selikoff made one point clear - he [illegible] the help of NJTHA and SHD, but he intends to proceed [illegible] regardless whether he gets help or not. He would like [illegible] occupational health laboratory at Barnert with the [illegible] for it.

The next steps (1) Mr. Schall will talk to Dr. [illegible] Schall will set up meeting of this group with Dr. [illegible] Kandle agrees (3) Mr. Schall will prepare list of [illegible]

RECOMMENDATIONS: Purpose accomplished.

OBSERVATIONS: Dr. Selikoff, although he has always been [illegible] has never been so forceful in his statements [illegible] regardless of help - this may be due to the [illegible] Dr. Magnuson.

ATurmf

10/18

October 18, 1961

C. W. Hite

U.S.P.H.S. Survey

In previous correspondence on this subject I indicated that Mr. R. R. Porter, President of Keasbey and Mattison, requested the Asbestos Textile Institute to call another meeting of representative companies to discuss with Dr. Magnuson the proposed survey. Invitations were sent to several concerns and Mr. Porter was asked to invite certain representatives from his Asbestos Cement Products Group.

When the letter of invitation was sent by Dr. Shaw of the Asbestos Textile Institute Mr. Porter telephoned Dr. Shaw, vehemently upbraided him for his action and said he would refuse to attend the meeting because the invitation had not been sent by a president of one of the member companies. He stated that he refused to talk to anyone not on a presidential level.

The meeting was held on September 25, and was attended by representatives from Raybestos Manhattan, the H. K. Porter Company and Johns-Manville. The doctor from Keasbey and Mattison was attending another meeting in the same hotel, but had been forbidden to attend our meeting. Dr. Magnuson outlined the purpose and the method of the proposed survey. Those present felt that we should participate in the survey.

Subsequently, I learned that Mr. Porter has refused to participate and apparently has managed to change the thinking of some people in Raybestos Manhattan. Mr. Zimmerman of Raybestos indicated to Dr. Shaw that he should not send a letter of invitation to Dr. Magnuson. Therefore, the Asbestos Textile Institute has advised Dr. Magnuson that they do not wish to participate in an industry survey but will cooperate if Dr. Magnuson initiates the study himself.

I believe that this can have serious consequences because surveys of the asbestos industries in Massachusetts and New Jersey definitely are being planned, and others in Ohio and Pennsylvania are proposed. I would surmise that without the company willingness and cooperation of the Asbestos Textile Group, Dr. Magnuson may be forced to devote his funds to various state groups requesting aid. I shall learn more about this next week at the Annual Meeting of the Industrial Hygiene Foundation at Pittsburgh.

Kenneth W. Smith, M.D.

(F)

8/28

[redacted]

Dr. Paul Cartier
Thetford Industrial Clinic
Thetford Mines, Quebec
Canada

Re: U.S. Public Health Service
Survey - Asbestos Workers

Dear Paul:

You will recall that we met with several others in Dr. Magnuson's office in June 1961 to discuss this subject. Plans now are well developed for this survey and three of the doctors would like to see some of the Canadian mining operations. They propose to visit our mine on September 25 and 26, and wonder if it would be convenient to see Thetford on September 27, and possibly the 28th. The purpose of this trip would be for basic knowledge only and is not part of the survey of the U. S. workers.

Could you please let me know whether or not these dates would be convenient for you? At a later time I can confirm exact travel plans on these or other suitable dates.

I probably shall accompany these men so it will be another good opportunity to see you once again.

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

8/28

CSQ
August 27, 1962

J. O. Eby, Jeffrey Mine

U. S. Public Health Service Survey
Asbestos Workers

Some time ago, we discussed the possibility of having three doctors from the U. S. Public Health Service visit your location in connection with a survey of asbestos workers which will be undertaken in this country. They now have asked me if it would be possible for them to see the mining operation and discuss certain health topics with Dr. Grainger on September 25 and 26. If these dates are acceptable, could you please let me know? I can confirm more precise travel arrangements at a later time. If these dates are not satisfactory, please so advise and I shall make other arrangements.

Following our proposed visit with you, they are going to see Dr. Paul Cartier at Thetford. I expect to accompany them for the entire trip.

Kenneth W. Smith, M.D.

cc: Dr. T. R. Grainger, Jeffrey Mine
R. B. Gresham, Jeffrey Mine

P.S. - J. O. Eby (only)
Do you think it would be possible and advisable for Roger to go to Thetford?

K. W. S.

OBJECTIVES AND GENERAL PLAN FOR OCCUPATIONAL HEALTH STUDY OF THE ASBESTOS PRODUCTS INDUSTRY

August 21, 1962

Division of Occupational Health

Public Health Service

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OCCUPATIONAL HEALTH STUDY OF THE ASBESTOS-PRODUCTS INDUSTRY

Asbestos is a generic term applied to a number of fibrous crystalline silicate minerals. Although chemically they are grouped as hydrated silicates, they vary greatly in degree of hydration, complex composition of the silicate, and physical properties of the crystalline fibrous structure.

Reference was made to asbestos as early as several centuries B.C. It was not established as a mineral of industrial importance, however, until around the end of the last century. Because of outstanding properties of chemical resistance, fibrous structure and incombustibility, asbestos has a wide variety of uses in modern industrial technology. It is used in the manufacture of textiles, felts, ropes, brake linings, roofing and flooring materials, asbestos-cement products, gaskets, insulation materials, special papers, filters and plastic products. These find use in practically every major industry.

Information from the Bureau of Mines' Minerals Yearbook, Volume I, 1958, shows an apparent consumption of around 685,000 short tons of asbestos in this country in 1958 in the manufacture of asbestos products. Chrysotile accounted for around 642,000 tons, crocidolite 26,000 tons, and amosite 17,000 tons. The consumption of other types of asbestos in this Country appears negligible. Of the above tonnage, this Country produced around 41,000 tons of chrysotile, the remainder of the chrysotile coming predominantly from Canada. The crocidolite was imported mainly from Bolivia, Australia and the Union of South Africa.

malignancy associated with asbestosis. The published data in this regard are based largely on mortality statistics and autopsy records of former employees in asbestos industries. While some of the reports strongly suggest that lung cancer is an occupational hazard of asbestos workers, the literature in this respect is by no means unanimous and the data are often conflicting.

Several factors may account for this apparent discrepancy in the technical literature. Diagnostic criteria for asbestosis are often poorly defined, making valid comparisons of studies difficult, if not impossible. Conclusions are too frequently applied to a broad classification encompassing all asbestos workers and are not confined to the group under investigation. Information on such factors as sex, community air pollution, personal smoking habits and family history of cancer are absent in the majority of reports. Environmental data are scanty. No clear attempt is made to define exposures to different asbestiform minerals or associated materials. Mortality studies often encompass a broad multi-exposure group and do not relate to a specific and single exposure. Despite the accumulated knowledge, the following questions remain unanswered:

1. What is the prevalence of pneumoconiosis in asbestos workers actively employed in the asbestos-products industry?
2. What is the significance of exposure to different sources and forms of asbestos and to other materials commonly employed in this industry in the development of pneumoconiosis?
3. What is the role of non-occupational respiratory disease in the development of the pneumoconiosis?
4. Are malignancies occupational risks of the asbestos worker in the asbestos-products industry? If so, what are the important etiological factors?

B. Laboratory Studies

Laboratory research is necessary to develop sampling and appraisal techniques which will permit a detailed definition of asbestos dust exposures. In addition, animal studies are needed to evaluate any relationship between asbestos fiber exposure and tumor formation.

C. In-plant Environmental Studies

The environmental studies will be designed to define the working environment of the various plants. Particular emphasis will be placed on levels and nature of exposures to asbestos dust. Exposures to other air contaminants -- silica and mineral dusts, fumes, mists, vapors and gases - which may be associated with asbestos or its processing also will be carefully assessed.

D. In-plant Medical Studies

The medical studies will be designed to develop specific information relative to the effects of asbestos dust and other associated exposures on health. They will include medical examinations of a substantial portion of the asbestos-workers in the asbestos-products industry and provide a sufficient background for periodic follow-up medical surveys. The medical findings will be related to the various aspects of the environmental exposures.

Research - Asbestosis
USPHS Survey

General Headquarters
September 13, 1961

C. W. Hite

CLS 9/18

U.S.P.H.S. Survey
Asbestos Industry

On June 19th, I wrote to you outlining this proposed survey. Following is a progress report since that time.

I have learned from confidential sources that some states are contemplating health surveys of asbestos workers using their own facilities and ignoring the U.S.P.H.S. plans. New Jersey probably will start with a survey in Passaic County. Obviously, each state will follow its own ideas in survey methods. With no consistency between them, there will be as many different reports and opinions as there are states. This could be very detrimental to our interests and, therefore, we are trying to get interested companies to cooperate with Dr. Magnuson in Washington.

The Board of Governors of the Asbestos Textile Institute agreed to invite the U.S.P.H.S. to make a survey. However, when the Asbestos Textile Institute membership was polled, Mr. R. R. Porter, President of Keasbey & Mattison, vehemently opposed this survey both vocally and in writing. A copy of his letter is attached. Reading this carefully, you will see that the man is opinionated, has not sought information on the subject, and has made numerous irresponsible statements not founded on fact.

On September 8th, at the annual meeting of the A.T.I., Mr. Porter repeated many uncalled for remarks interspersed with personal prejudices. Fortunately, no-one else at the meeting appeared to agree with him.

In an effort to educate Mr. Porter and to show him the seriousness of the situation, I have arranged a meeting with Dr. Magnuson in Philadelphia on September 25th. In addition to Mr. Porter, invitations are going to executives of the following companies:

Raybestos Manhattan
H. K. Porter
U. S. Rubber
Tallman-McCluskey
American Asbestos Company
Union Asbestos
Gatke Corporation
Carolina Asbestos Company
National Gypsum
Phillip Carey
Flintkote

I hope that after this meeting, everyone will see the necessity for a comprehensive survey carried out by a responsible agency.

You will note that C. B. Burnett received a copy of Mr. Porter's letter. I trust that he understands our problem and will try to educate Mr. Porter if the opportunity arises.

Kenneth W. Smith, M. D.

Attachment

V A WESTERN UNION

Mr. R. R. Porter
Keasbey-Mattison,Co.
Ambler, Penn.

KWS
CLS

Sept. 20, 1961

HAVE JUST LEARNED YOU ARE NOT PLANNING TO BE PRESENT AT THE MAGNUSON MEETING SEPTEMBER 25th. THIS IS VERY DISAPPOINTING AS WE FELT A.T.I. WAS RENDERING A SERVICE BY FOLLOWING THROUGH ON OUR SUGGESTION OF MORE REPRESENTATIVE INDUSTRY MEETING PRIOR TO A FINAL A.T.I. STATEMENT TO MAGNUSON . SOUTHERN ASBESTOS AND I BELIEVE R-M INTEND TO ATTEND ALONG WITH J-M. THESE FOUR REPRESENT LARGEST COMPANIES IN THE INDUSTRY. WONT YOU PLEASE RECONSIDER ATTENDING TO EXPRESS YOUR VIEWS INFORMALLY AND LEARN FIRST HAND WHAT IS MAGNUSON'S ATTITUDE REGARDING ENTIRE MATTER.

W. S. HOUGH
JOHNS-MANVILLE

bcc: C. C. Simoni
Dr. K. J. Smith - 2nd fl.
C. W. Hite

10/30
10/30

October 20, 1961

Dr. M. C. Shaw
Asbestos Textile Institute
c/o Philadelphia Textile Institute
Schoolhouse Lane
Philadelphia 44, Pa.

Dr. Magnuson's Asbestos Industry
Survey Matter

Dear Doctor Shaw:

Confirming our telephone conversation will you please plan, just as soon as possible, to send out the previously planned letter to Dr. H. Magnuson as per your draft letter of October 4.

Certain situations as explained to you that have recently taken place in the industry, in my opinion, makes it even more pertinent that our position in the A.T.I. be made known to Dr. Magnuson.

In accordance with the very latest line up of votes in the A.T.I., as per information from you, it is my understanding that four members have expressed an affirmative position and three members have expressed a negative position. The three members voting negatively are; Keasbey & Mattison, Raybestos Manhattan and Tallman McCluskey. Therefore, on this basis your letter should be issued at once changing of course the reference to the majority vote as being 4 to 3.

It is my request to you that a copy of this letter to the Public Health Service be given to each member of the Board of Governors of the A.T.I., with a letter of transmittal from you if you wish stating that the letter was being sent out by my direction after all factors had been weighed.

Yours truly,

W. S. HOUGH

WSH:ew

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

Occ. Health Research & Training Facility
Bureau of State Services
1014 Broadway
Cincinnati 2, Ohio

January 8, 1962

Dr. Kenneth W. Smith
Medical Director
Johns-Manville Corporation
22 East 40th Street
New York 16, New York

Dear Ken:

I am writing to confirm my telephone conversation with you of January 4, 1962. If it is convenient, I would appreciate your making arrangements for Dr. Philip Enterline, Dr. Roy Gibson, and me, of the Public Health Service, and Mr. E. Lynn Schall, Chief, Occupational Health Program, New Jersey State Department of Health, to visit your Manville Operations, February 14 and 15, to observe and become better acquainted with industrial processes of asbestos products. This is a general follow-up of our recent visit with you on November 22 to enable us to become more knowledgeable concerning the asbestos industry.

If this arrangement is satisfactory, we would plan to arrive at your Manville Plant around 10:00 a.m. on February 14. We will be driving from Philadelphia. It will be necessary for us to leave around mid-afternoon on the 16th.

Sincerely yours,

[redacted]

Lewis J. Cralley, Scientist Director
Assistant Chief, Occupational Health
Research & Training Facility

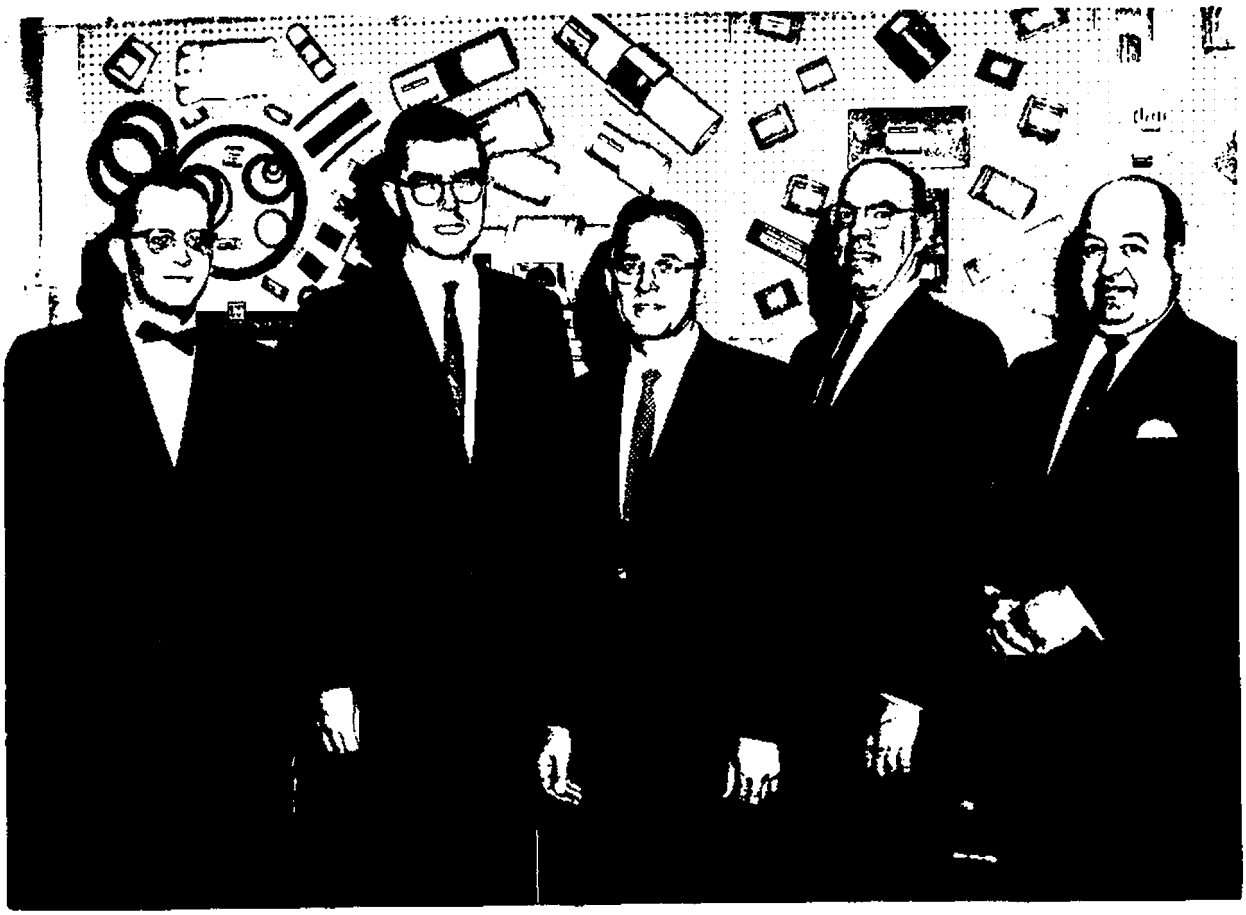
JOHNS-MANVILLE

JM PRODUCTS

TODAY

Manville Plants News Letter

MR. M. L. SCHALL of the New Jersey Department of Health. These men are interested in learning various aspects of the Asbestos Industry. Johns-Manville is happy to cooperate in demonstrating how Asbestos Fibre is used in industry.



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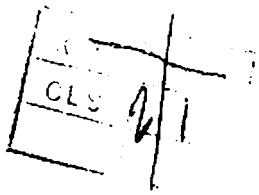

CHQ
February 1, 1962

C. L. Antonson, Manville
H. Engel, Manville
W. F. Fischer, Manville
K. H. Slater, Manville
C. L. Stake, Manville

Proposed Visit
U.S. Public Health Service

Several months ago, the U. S. Public Health Service advised us that it was interested in the health of asbestos workers and that a country-wide survey of the asbestos industry would be undertaken. Johns-Manville has agreed to participate in this survey. In order to understand how asbestos fibres are used we have offered to show some members of the Service certain of our Manville operations. It would be appreciated if you could arrange to have the following people visit your plant on February 14 and 15.

Dr. Lewis J. Cralley, U.S. Public Health Service
Dr. Roy Gibson
Dr. Philip Enterline and
Mr. E. Lynn Schall, N.J. State Dept. of Health

I shall accompany these men along with a representative of the Manville Industrial Relations Department. We expect to arrive about 10 A.M., February 14, and leave about 3 P.M. the following day. During this time, we would like to visit the following operations: Pipe, Rigid Shingle, Flexboard, Textile, Floor Tile and Brake Lining.

These men will conduct the survey of many different companies in the asbestos industry. They are interested only in dust control methods and occupational pulmonary diseases. I might state that the U. S. Public Health Service members include many of the group which was so helpful to Johns-Manville when the diatomaceous earth industry was surveyed in 1953.

Kenneth W. Smith, M.D.

cc: D. E. Hillier
A. B. Marchant
J. B. McCarty
C. C. Simoni
W. L. VanDerbeek
C. H. Grote, Manville

USPHS survey file - ATI

1/15
1/21

cc: S. Peele
Dr. Smith (2)

January 14, 1963

Dr. M. C. Shaw
Asbestos Textile Institute
c/o Phila. College of Textiles & Sciences
Schoolhouse Lane
Philadelphia, Pa.

Dear Dr. Shaw:

U. S. Public Health Survey
Asbestos Textile Industry

Unfortunately I have just learned on January 11 that our Dr. Kenneth Smith will be unable to be present at the coming A.T.I. Meeting at which time many of the company doctors will be in attendance.

I am afraid we let the announcement go too long and he has made a previous commitment to be at our mines and the date can't be changed, so we have lost out on that score.

Dr. Smith explained to me that he and possibly others will be contacting various Asbestos Textile Industry plants in England and on the Continent very soon. Dr. Sette of Turner and Newall in England is a key man in the situation and he will undoubtedly meet with the American doctors.

Dr. Cralley, through Dr. Smith would very much like to arrange for Dr. Paul Gross, Pathologist at Mellon Institute in Pittsburgh to accompany the group. I am advised that a non government employee is not considered proper unless sponsored, and it is Dr. Cralley and Dr. Smith's request that the A.T.I. appoint and sponsor Dr. Gross as their representative. This would be on the basis of no cost to the A.T.I., but it would make Dr. Gross, who is an authority on Asbestosis available to the Asbestos Research Council of England.

Will you be good enough to discuss this matter with Mr. Peele and see that it is placed on the agenda for Board of Governor's consideration on January 24.

Yours truly,

WSH:ow

W. S. HOUGH

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

Occupational Health Research & Training Facility
Bureau of State Services
1014 Broadway
Cincinnati 2, Ohio

January 16, 1963

AIR MAIL

Dr. John Beattie
Queens College
Cambridge, England

Dear Dr. Beattie:

The schedule contained in your letter of January 8, 1963, covering our visit in England, is excellent and very satisfactory. We would be most grateful if you would go ahead and make the hotel reservations.

To get approval for our trip, it is necessary for us to prepare an over-all schedule of the areas and places we plan to visit. I have gone ahead and made some forecasts along the lines of our discussions when we met in Dr. Smith's office in New York City. This includes spending the period of April 12-17 in France, visiting Dr. Jean Avril and Dr. Jean Champeix. Any details you work out on this would be quite satisfactory.

Following the outline of our discussions, we are also scheduling to fly from Paris to West Germany on April 18, spend April 18-22 in West Germany, fly from West Germany to Stockholm on April 23, spend April 24-25 in Stockholm, returning to New York City on April 26. While in Stockholm, we would like to visit the Department of Industrial Health of the National Institute of Public Health, as well as some of the industries you suggested.

Please keep in mind that these dates are flexible, so that we can fit into our schedule any itinerary you suggest. It is quite important that we depart for New York no later than the 26th, as I must return and prepare for the American Industrial Hygiene Conference to be held in Cincinnati the week of May 6-10, 1963.

Your assistance in helping us also with a schedule of visits in France, West Germany, and Sweden is deeply appreciated and I shall look forward to your additional suggestions in recommending schedules in these countries.

Best wishes.

Sincerely yours,

Lewis J. Cralley, Scientist Director
Assistant Chief

cc: Dr. Paul Gross (with copy of incoming letter)
Dr. Kenneth Smith " "
Dr. Enterline " "
Dr. Cooper " "

QUEENS' COLLEGE,

CAMBRIDGE. 8th January 1963

Dr. Lewis J. Cralley
Occupational Health and Research Facility
Bureau of State Services.
1014 Broadway
Cincinnati 2 Ohio.

Dear Dr. Cralley,

The English section of your visit has been finalised so that I can give you an outline in this letter. Later on I hope to be able to give you some details of the French section. It has not been possible yet to fix a suitable itinerary for West Germany but this I hope can be arranged within a few weeks.

31st March. Leave New York.
Arrive London.
Hotel. Brown's Hotel.

1st April
a.m. Meeting at the Ministry of Pensions and National Insurance to meet Chief Medical Officer- Dr. Watkins Pitchford- and some of his staff.
p.m. Meeting at the Ministry of Labour to meet the Chief Medical Officer-Dr. Lloyd Davies.
Dinner at Auther's Club.
Hotel. Brown's Hotel.

2nd April
a.m. Visit to an Occupational Health Clinic at a London Hospital.
p.m. Travel to Reading.
Dinner with members of the Asbestosis Research Council and their guests.
Hotel. White Hart, Sonning-on-Thames.

3rd April
All day meeting for Symposium on Asbestosis at Reading University.
Visit to Dr. Holt's Laboratories to see experimental dust exposures.
Hotel. White Hart Hotel.

4th April
Travel to Cardiff.
Visit to Pneumoconiosis Research Unit.
Hotel. Queen's Hotel, Cardiff.

5th April
a.m. Pneumoconiosis Unit.
p.m. Return to London.

6th April
a.m. Meeting of Association of Industrial Medical Officers, London Group.
p.m. Guests of the Association.
Hotel. Brown's Hotel.

7th April
Travel to Manchester.

Hotel. Midland Hotel, Manchester.

8th April. a.m. Visit to plant of Turner Brothers Asbestos Co. Ltd. at Rochdale.
p.m. Visit continued at Rochdale.
Dinner as guests of Turner Brothers Ltd.
Hotel. Guests of Turner Brothers Ltd at their guest House at Rochdale.

9th April a.m. Travel to Cleckheaton to visit plant of British Belting Co.
p.m. Continue visit.
Travel to London by train.
Hotel. Brown's Hotel.

10th April a.m. Visit to the Barking plant of Cape Asbestos Co.
p.m. Continue visit.
Hotel. Brown's Hotel.

11th April a.m. Travel to Cambridge.
Demonstration of electron microscopic studies of human and experimental asbestosis.
p.m. Sight seeing in Cambridge.
Dinner at Queens' College.
Hotel. Garden House Hotel, Cambridge.

12th April a.m. Return to London.
p.m. Fly to Paris.

I am in contact with Dr. Jean Ayril, Medical Officer of the Ferodo Company of France about a programme of visits to the Ferodo plants and with Dr. John Champeix of Clermont-Ferrand Medical Officer at the Michelin plant to see this plant and the experimental work on pulmonary function tests on asbestos workers.

If you agree with this outline I shall make the necessary hotel reservations for your party including Dr. Paul Gross. The travel arrangements within England will be worked out in some detail later but as the distances are relatively short it will not be necessary for you to make any bookings in the United States.

With my best wishes for the New Year

Yours sincerely

John Dupuis

Dr. Cralley

DIVISION OF OCCUPATIONAL HEALTH

Trip Report

F

NAMES:	Lewis J. Cralley, Scientist Director William S. Lainhart, Senior Surgeon Philip E. Enterline, Ph.D.
DESTINATIONS:	London, Reading, Rochdale, Cleckheaton, Cambridge, England; Cardiff, Wales; Paris, France; Bocum and Dusseldorf and vicinity, West Germany; Stockholm, Sweden.
DATE OF DEPARTURE:	March 30, 1963
DATE OF RETURN:	April 28, 1963
OBJECT OF TRIP:	(1) April 1, London - To meet with Chief Medical Officers of the Ministry of Pensions and Insurance and the Ministry of Labour; (2) April 2, London - To visit an occupational health clinic at a hospital; (3) April 3, Reading - To attend Asbestosis Research Council's Symposium on Asbestosis; (4) April 4-5, Cardiff - To visit Pneumoconiosis Research Unit, Medical Research Council; (5) April 6, London - To attend meeting of Association of Industrial Medical Officers; (6) April 7-10, Rochdale, Cleckheaton, London - To visit major industries processing asbestos fiber; (7) April 11, Cambridge - To observe demonstration of electron microscopic studies of human and experimental asbestos study; (8) April 12-17, Paris - To meet with Medical Officer, Perodo Company of France and to visit Perodo's Normandy Plant; (9) April 19-22, Bocum and Dusseldorf and vicinity - To meet with Silicosis Research Institute, and visit industries processing asbestos fiber; (10) April 24-25, Stockholm - To confer with Department of Industrial Health, National Institute of Public Health, and visit industries processing asbestos fiber.

GREAT BRITAIN

April 1 - The Ministry of Pensions and National Insurance of Her Majesty's Government. We met with: Dr. J. Watkins Pitchford, Dr. J. C. McVittie and Dr. Sims.

The ministry of Pensions and National Insurance is primarily interested in pneumoconiosis from the point of view of compensation. There are some 12 or 15 pneumoconiosis medical boards in the British Isles with three primarily interested in asbestosis. The latter boards are located in London, Manchester, and Sheffield. Last year there were some 3,600 new cases of pneumoconiosis of all kinds which came to the attention of the boards throughout the country. Of these, around 2,770 were from coal workers, 100 from foundry workers, 70 from pottery workers, and 40 from asbestos workers. The potential number of workers at risk in the asbestos industry approximates 7,000 which would indicate approximately five compensation cases per year per thousand workers at risk. This is very close to the figure given for the number of pneumoconiosis cases given in coal workers during the same time period. It was also stated that in recent years lung cancer has been found in about 40 percent of the autopsied cases of asbestosis. During the period 1955-59, 31 cases of asbestosis were given compensation among asbestos insulators. In Belfast, 11 mesotheliomas have been diagnosed, of which nine had an industrial asbestos exposure.

As far as the diagnosis of asbestosis is concerned, the medical boards go primarily on (1) exposure to asbestos dust; (2) clinical judgment which includes the presence of one or more of the following signs and symptoms: rales, clubbing, diffusion defects with a decreased maximum breathing capacity. It was felt that the pulmonary function tests can differentiate a diffusion defect from some other condition which might be confused with asbestosis.

April 1 - Ministry of Labour and National Service of Her Majesty's Government. We met with: Dr. W. D. Buchanan.

The factory inspector's responsibility is primarily to enforce the factory inspection law which has to do with the maintenance of good working conditions in factories of Great Britain. The medical section is primarily advisory to the factory inspectors.

One of the early stimuli to the current studies of asbestosis and lung cancer came from a 1947 report of the Chief Inspector of Factories, which showed that during the period 1924-46, out of 235 cases of asbestosis which had been autopsied, 31 or 13.2% had carcinoma of the lungs (17.2% of males and 8.4% of females). In the annual report of the Chief Inspector of Factories for the year 1955, covering the period 1924-54, of 344 asbestotics autopsied, 55 or 16.0% showed evidence of lung cancer (20% among males and 10.1% among females).

There is some current interest in the Ministry of Labour on the effects of nitroglycerin on the health of workers. Professor Wayne, Department of the Practice of Medicine at Glasgow University, has been working on this problem.

April 2 - The Department of Applied Physiology, London School of Hygiene and Tropical Medicine. We met with: Dr. M. L. Thompson and staff, and Dr. W. J. Smither.

Dr. M. L. Thompson has done a great deal of work in pulmonary physiology relating to asbestosis. Dr. Thompson outlined some of the problems which are apparently operating in cases of asbestosis which involve primarily a decrease in the inspiratory capacity with a resultant decrease in the vital capacity, total lung volume, a decreased compliance, and diffusion defects. In asbestosis, one finds that the diffusion defect is probably most easily measured. Dr. Thompson uses a single-breath carbon monoxide test which involves inhaling the carbon monoxide (mixed with 14% helium to test the residual volume) and then measuring the amount of carbon monoxide in the expired air after the breath was held ten seconds to allow the diffusion to take place. The carbon monoxide diffusion test in Dr. Thompson's laboratory involved the use of an infrared CO analyzer developed by the Infrared Development Company, Limited, Welwyn, Garden City, England. The laboratory also used a Waters-Conley Photoelectric Ear Oximeter in their studies.

In asbestosis, the diffusion or resistance of the alveolar membrane to the passage of gases is decreased presumably due to the development of fibrosis in the alveolar walls. It was pointed out that one must take into account the age of the individual for the diffusion gradient falls consistently with age. Mr. Hills, a statistician in the School of Hygiene, stated that when eight doctors, experienced in clinical diagnosis and in evaluating disability, were interviewed regarding the symptoms most valuable in diagnosis, the order ran: dyspnea, x-ray findings, rales, cyanosis, clubbing of fingers, exposure to dust, cough and sputum and survival. The statisticians found a very good multiple linear correlation between cyanosis, dyspnea, rales and x-ray findings and percent of disability. The level of disability, as measured by the pneumoconiosis boards was not well-correlated with the lung function tests, but there is a trend toward correlation with the inspiratory capacity. Dr. Thompson demonstrated the use of the whole body plethysmograph (using esophageal balloon) to measure pressure compliance.

April 2 - Department of Epidemiology, London School of Hygiene and Tropical Medicine. Professor Donald Reid

Dr. Enterline met briefly with Dr. Reid Tuesday afternoon to discuss problems relating to the Medical Research Council's questionnaire on chronic bronchitis. Dr. Enterline pointed out that when chronic bronchitis is defined as a productive cough, the questionnaire did not detect known population differentials in chronic bronchitis. Dr. Reid feels that the most important part of the questionnaire deals with repeated attacks of respiratory disease and presented data showing that this has differentiated rather clearly populations in which the prevalence of chronic bronchitis was known to differ. He feels that a productive cough represents a chronic bronchitis in its very early stage and that this is aggravated by such things as air pollution to produce "repeated attacks." He feels that it is at the point that "repeated attacks" can be detected that observations become of epidemiologic significance.

April 3 - Meeting of Asbestosis Research Council, Reading University.

The Asbestosis Research Council sponsored a symposium of speakers from industry, Universities of Reading and Cambridge, and Pneumoconiosis Research Unit, Penarth, Glamorgan, to discuss problems and current research on the effects of exposure to asbestos dust and fibers.

A series of papers were presented starting with a background paper by Dr. Gaze describing the properties of the three major types of asbestos used (chrysotile, crocidolite, amosite) and the source and commercial use of these minerals. He stated that annually the United States uses about 500,000 tons of chrysotile compared with roughly 100,000 tons in the United Kingdom, 10,000 tons of crocidolite compared with 4,500 tons in the United Kingdom, 15,000 tons of amosite compared with about the same amount in the United Kingdom. The figures he quoted for the United States are somewhat lower than those shown from the Bureau of Mines Minerals Yearbook, Volume I, 1958.

Dr. Knox, Turner Brothers Asbestos Company, Ltd., spoke of asbestosis from the point of view of the factory medical officer. He noted that there seemed to be a correlation between the number of years worked in the factory and the percentage of men having asbestosis. The shortest exposure reported by Dr. Knox was six months with the disease being recognized 24 years later at autopsy. The microscopic lesions of asbestosis as outlined by Dr. Knox were (1) desquamation of the bronchial membrane, (2) endarteritis, (3) thickening of the interlobar tissue, (4) thickening of the subpleural tissue, (5) an increase in the fibroblasts, (6) obliteration of some alveoli, (7) occasional giant cells, (8) amorphous brown pigment and, (9) presence of asbestos bodies. Dr. Knox has seen no mesotheliomas in this population. He discussed provisional figures of a plant population observed for 28 years (1939-61) as a follow-up of an earlier study by Dr. Richard Doll, indicating that the observed deaths due to all cancers and due to lung cancer were no more than might be expected in the general population.

	Expected	Observed
Death - all causes	43.6	43
all cancers	11.3	9
lung cancers	4.1	4
Men only - all causes	39.6	35
all neoplasms	9.95	7
lung cancer	4.0	3
Females only - all causes	4.0	8
all neoplasms	1.4	2
lung cancer	0.1	1

It was noted that in compliance with the Factory Inspectors Act of 1933, environmental exposures to asbestos dusts and fibers during the subsequent period were dramatically lower than that of the previous study. He felt that the above data reflect the improved dust conditions in the factory. The above study is expected to be completed and published in about another four years. For this reason the above data are provisional and are not available at this time for publication.

Professor Holt of the University of Reading discussed research he was doing sponsored by the Asbestosis Research Council. One of his findings is that the amount of ferratin which is absorbed onto the asbestos body is several times that of the albumin seen. This must mean that the protein is being put out by a cell and is not coming from the plasma itself. It was estimated that it takes at least two months to develop an asbestos body for they first find asbestos particles in macrophages, then in giant cells, then in fibroclasts. Work done by Dr. Davis, University of Cambridge, indicates that a macrophage is some sort of stem cell in the giant cell - fibroblast series. Dr. Davis also pointed out that the early lesion in asbestosis is found in cells just under the basement membrane in the alveoli. Next, there is nodular lesion formation with interstitial fibrosis in the septum which could be termed a type of interstitial pneumonia. There are subsequently increasing amounts of lung consolidation. Dr. Davis states that in the development of the giant cells a series of micropvilli, varying in length but about 12 $\overset{\circ}{A}$ units in diameter, apparently interdigitate to produce these cells. Asbestos particles are found in macropheges which have migrated to the trachea and lymph glands but apparently there is no development of asbestos bodies in these extraneous sites.

Dr. Smither, Cape Asbestos Company, outlined the problems of pulmonary function as seen by a factory medical officer. He pointed out that the basic pathology involved a stiffening of the lung due to interstitial fibrosis and pleural thickening. These processes decrease compliance and also contribute to an alveolar capillary block with a diffusion defect. Dr. Smither stated that there is marked disagreement in x-ray interpretation and that the x-ray cannot be used to demonstrate progression.

Mr. Ross Hunt, Pulmonary Function Technician, British Belting and Asbestos Company, outlined their program of lung function testing. They determine residual capacity, obtain an FEV and MBC, do diffusion testing (CO-helium) and an excercise test. These pulmonary function tests are done as a part of pre-employment and periodic examinations.

Dr. Beverley, Medical Officer at British Belting and Asbestos Company, outlined the pre-employment examination he uses with emphasis on medical history to rule out chest and heart conditions and collagen diseases, including Caplan's Syndrome. He examines the prospective employee by x-ray as well as by clinical examination and, as mentioned before, pulmonary function tests are used to provide a baseline.

Dr. John Cotes, of the Pneumoconiosis Research Unit at Penarth, outlined some of the problems of standardization of methods relating to pulmonary function testing. He stated that they have circulated for comparative purposes a series of aliquots of various gas mixtures to laboratories throughout Great Britain who are doing diffusion tests. There are three major sources of error in these tests: (1) analytical methods, (2) apparatus used, (3) differences in terminology. The primary source of error was in the analysis of carbon dioxide.

Dr. Addingley, British Belting and Asbestos Company, presented information on methods used by the industry in England to enumerate airborne exposures to asbestos. They are using the membrane filter for collecting the airborne particulates but differ somewhat from company to company in methods of counting the particulates. In every instance, however, only fibers are counted and this is used as an index of the overall exposure. A fiber is defined in general terms as a particle of asbestos over 5 microns in length but under 5 microns in width.

Dr. Addingley commented on the difficulty of comparing data derived from their method of counting as compared with that used in this Country in which in the past we used the impinger method of collecting and counting all particulates and fibers distinguishable by the light field microscopic technique of counting.

Mr. Bamble and Mr. Hill discussed the environmental effects of controlling exposures to asbestos dust and fibers in the factories with special attention given to ventilation installation, the maintenance, and operations costs. Heat loss in not being able to recirculate filtered air was stated as substantial.

Dr. Beattie, of Queens College, Cambridge University, gave a summary of the overall problem of exposure to asbestos dust and fibers as seen by the Asbestosis Research Council and a resume established to develop needed information. In addition to those points already mentioned, he stressed that the basic problem facing the group is how to define asbestosis. Should it be defined microscopically, pathologically, chemically, functionally or in some other manner

April 4 - Pneumoconiosis Research Unit, Penarth, Glamorgan. We met with: Dr. Gilson, Dr. Wagner, Dr. Cotes, Dr. McKerrow, Mr. Oldham, Mr. Skidmore and Mr. Clark.

Dr. Gilson, Chief of the Pneumoconiosis Research Unit discussed the overall activities of his program.

Dr. Wagner, formerly of South Africa, discussed data he has collected relating to the epidemiology of lung cancer, especially mesothelioma as related to asbestos exposures. In a series of 84 cases, Dr. Wagner reported that 74 were associated with Cape Asbestos Field in South Africa. Ten had industrial exposure to asbestos and only two had no known exposure. This series has been increased to something in excess of 120 with still only two individuals without known exposure to asbestos. He reported that the average time between exposure and the development of tumor was 42 years and that the blue asbestos is the type which is incriminated in most exposures where mesotheliomas are found. In only one case was there an exposure to amosite. None had been related to chrysotile. Dr. Wagner raised the question of whether we might expect a large increase in the number of cases of lung cancer due to blue asbestos in that the production of this mineral between 1920 and 1960 has considerably increased. Special stress was given to reports indicating that 3-4 benzopyrene has been isolated from the unmilled blue asbestos and not from other forms of asbestos.

Dr. Cotes discussed the use of pulmonary function test equipment and stated that they had been using a new treadmill called an exerciser produced by J. Collis and Sons of Barry, Glamorgan. This treadmill has a continuous variable speed

range between 0 and 8 miles per hour with a continuously adjustable incline from 0 to 1 in 6. The length of the table top is 6 feet and the belt width is 60 centimeters. Dr. Cotes felt that this treadmill produced more consistent results than the bicycle exerciser.

Dr. Enterline and Dr. Lainhart presented an outline to the staff of the Pneumoconiosis Research Unit of work being conducted by the Division of Occupational Health among coal miners and received comments and valuable criticisms from them regarding this project.

April 5 - Dr. Enterline and Dr. Lainhart met with Drs. Gilson and McKerrow to discuss revision of the MRC chronic bronchitis questionnaire.

April 8 - Turner Brothers Asbestos Company, Ltd., Rochdale. We met with: Mr. John Waddell, Mr. John Pearce, Dr. John Knox, Dr. Donald Holmes, Mr. Bamble and Mr. Wood.

We discussed the Medical Department's program and the environmental program for the control of asbestos dusts and fibers with Dr. Knox and Dr. Holmes and then made a trip through the plant to observe housekeeping, maintenance, ventilation, and other programs in use for controlling exposures to asbestos dusts and fibers.

In addition to the environmental control of asbestos particulates, the company maintains an excellent respirator program for the workers.

April 9 - British Belting and Asbestos Company. We met with: Sir William C. Fenton, Mr. Frank Pearson, Mr. Eric W. Sisman, Mr. Richard Barber, Mr. Charles M. Fenton, Mr. D. Michael Pearson, Dr. C. Gordon Addingley, Sister M. Preston, Dr. W. H. Beverley and Mr. Ross Hunt

Dr. Addingley and Mr. Hunt discussed the environmental control program of the plant and methods for measuring workers' exposure to airborne asbestos fibers. A visit was then made through areas of the plant to observe environmental conrol programs instituted for the control of exposures to asbestos particulates. A visit was also made to the Medical Department to discuss and observe practices in use.

April 10 - Cape Asbestos Company, Barking, Essex. We met with: Dr. Smither, Mr. Mendelle and Dr. Gaze and staff.

As mentioned previously, Dr. Smither felt that one cannot classify asbestosis by the ILO classification, rather one must depend on (1) the pleural thickening, especially diaphragmatic, (2) general loss of translucency in the lung fields, (3) increased lung markings, and (4) the development of a "shaggy heart." A part of the discussion involved a problem of whether infection triggers the development of asbestosis. Dr. Smither felt that there was some small degree of asbestosis in all patients and that infection of any kind, including the chronic bronchitis so prevalent in England might be the trigger mechanism for the development of asbestosis. Dr. Smither reported a series of asbestos workers who were examined at post mortem between September 1951 and May 1962. Of 41 workers, 31 had asbestosis and 10 of the 31 had cancer of the lung in addition.

We made a trip through the plant and the Medical Department to observe methods and practices in contrast to the other plants visited. In addition to chrysotile, this plant appeared to use a greater amont of crocidolite.

April 11 - Queens College, Cambridge University. We met with: Dr. Beattie, Dr. Davis, Dr. Smither and Dr. Avril.

Dr. Beattie outlined the research work being carried out on asbestos at the University of Cambridge, with sepcial emphasis on electron microscopy research as outlined by Dr. Davis. The results of this research were mentioned in the discussion of the meeting of the Asbestosis Research Council.

April 15 - National Coal Board, Dr. John R. Ashford.

Dr. Enterline did not participate in the visit at Cambridge University. Instead he discussed with Dr. Ashford the current program in the exchange of x-ray films initiated at the time of his visit last year. Dr. Ashford said that they have been much delayed in reading films and that currently Dr. Cochrane has not completed his conference readings they also need to make, which was agreed upon at the meeting last year. It will be at least another month before they are finished and before they will be able to send the films onto us.

WEST GERMANY

April 19 - Dust Research Institute, Bonn, Germany. We met with Professor Schmidt and staff.

Professor Schmidt outlined the functions of the Dust Research Institute which is devoted primarily to characterizing, evaluating and controlling dust exposures in industry. In addition, the Institute conducts an extensive respiratory filter and commercial filter testing program.

The Konimeter is used for collecting and counting airborne dust. In actual operation, the Konimeter field is compared visually with a set of photometric standards to estimate the airborne dust load where the sample was taken. It is their belief that this method using a great number of samples is preferable over other methods, especially since its use is for routine testing of the work environment with reference to the proper performance of control methods and not for research. The Institute also uses the membrane filter for collecting airborne dust but weighs the sample instead of doing particle counting. In determining silica content of the airborne dust, analysis is made only on that fraction of the airborne dust under 5 microns in size. West Germany has about 4,500 cases of silicosis a year and about 20 cases of asbestosis. There are 2-3 cases of lung cancer a year among asbestotics. The 20 cases of asbestosis represents around 2,500 workers at risk. Roughly 1,500 workers are in the asbestos brake lining and textile manufacture and about 500 in asbestos building products and the remainder are in miscellaneous manufacture of asbestos products. Dr. Schmidt feels there has been a big improvement in the quality of asbestos fibers received from the mines in recent years and that this has been very important in improving environmental conditions in the plants. Dust samples for counting are collected by the use of the Konimeter and dust levels maintained below 200-300 particles per cc with sizes ranging from 0.7 to 5.0 microns. For asbestos dust, dust levels are kept under 175 particles per cc for sizes under 1 micron and fiber below 30 per cc for sizes less than 15 microns. Plants with low dust levels are considered examples for others to emulate.

Dr. Schmidt stated that a Commission had recently been established in West Germany to examine the effects of ethlene glycol dinitrate on the health of workers. Dr. Eberhart Gross is head of this Commission.. Directly concerned is Dr. Beschz, the Medical Director of a dynamite company in Schlbusch. They have had some deaths recently.

April 22 - Medical Institute of Hygiene and Silicosis Research, Marburg. We met with: Dr. Antweiler and Dr. Schiller.

Dr. Antweiler, Chief of the Institute, described the research activities of the facility. He stated that they have found that phenylbutazone given at the time of sensitization of animals with egg albumin will result in no antibody production and therefore no anaphylactic shock. Also some

unpublished material was presented on the pre-treatment of phagocytic cells with P_2O_5 (called Dusseldorf substance) which is chemically polyvinyl pyridine anoxide. This substance provides protection against the action of quartz particles. There appears to be some kind of internal cellular protection for if 1 cc of 1% saline solution is given weekly, subcutaneously, to a 100-200 gram rat, there is protection against quartz particles introduced intratracheally. If the Dusseldorf substance is continued, it protects the animals, but when discontinued the animals develop silicosis. Information was not available on optimum dosage or whether the polyvinyl pyridine anoxide may be stored in the liver or other organs.

We also met with Dr. Eric Schiller, Pathologist at the Institute, who presented some evidence showing that vitamins, especially vitamins A and E and pantothenic acid may provide some protection against fibrosis in that there is an apparent increase of mitoses, multinucleated cells and total number of cells in the epithelial layers of the bronchial tree. The next step in his research is to give rats quartz plus vitamins to see if there is any change in the reaction to this foreign body with or without vitamins. An additional bit of information provided by Dr. Schiller was that they have had some dogs underground for up to six years, day and night, and in these animals there was hypertrophy of the bronchiolar epithelium after two to three years within the coal mine. There was also an increase in the number of goblet cells. He believed that pure coal dust will not produce fibrosis and that fibrosis is due to the silica present.

We were shown a new animal chamber dust feed system, constructed by Dr. Palley, Gottingen, West Germany. This instrument is not yet commercially available. In principle, the materials to be dispersed are compacted to a hard uniform density and released by gradual contact on the flat surface of a high speed emery wheel. The dust passes through a plenum settling chamber and then into the animal dust chamber. Automatic control of the dust exposures is maintained by the use of a tyndillometer so that as the dust cloud decreases, increased material is fed automatically onto the emery wheel. Dust clouds can be maintained uniformly within plus or minus 5% for prolonged periods.

<u>April 22</u> - Dr. G. Worth, Bethany Hospital, Moers.

Dr. Worth has an excellent clinical x-ray and pulmonary function unit in the Bethany Hospital. He examines from 7,000 to 8,000 miners per year. In addition, he has been doing some very interesting epidemiologic research. Using standard techniques he has found that (1) there is no change in the pulmonary function before, during and after a 7-1/2 hour shift in the coal mines, (2) no change was found following a 3-5 minute exposure to a concentration of dust about 30 times that which might be found in a mine.

He also found in a group of 1, 441 miners and 200 non-miners chosen from the population in and around Moers, that the residual volume was significantly increased in miners over non-miners and that the forced expiratory volume and maximum breathing capacity were significantly decreased in miners as compared with non-miners. Dr. Worth also made the point that it is felt in Germany that coal workers pneumoconiosis and progressive massive fibrosis are both due to silica. The former is due to traces of silica found in the coal dust, the latter, to massive silica exposure and not necessarily related to tuberculosis. As mentioned before, the German workers also emphasize the possibility of a triggering mechanism in the form of infection of any sort. Dr. Worth felt that the most reliable pulmonary function tests were those for argon or helium using infrared or mass spectrometry. The least reliable was the spirometer test, the main criticism being that the cooperation of the individual worker was difficult to obtain.

April 22 - Office of Industrial Medical Council, Bochum. We met with: Dr. Buckup and Dr. Mapes.

Dr. Buckup is area referee in workmen's compensation cases and has seen a number of cases of asbestosis. He said that the workmen's compensation law, while requiring that coal miners have silicosis, is interpreted very liberally and implied that the use of the word silicosis in the law is not depriving any miners compensation if they were truly entitled to it by virtue of their physical condition. We were told that West Germany has very few statistics on cases of mesothelioma but East Germany has reported more in their asbestos workers than in general population. We were also told that no pleural plaques were seen in West Germany but were seen in East Germany. There was also the report that the East Germans feel that there is some connection between asbestosis and tuberculosis in that asbestosis may predispose and accelerate the development of tuberculosis. However, the incidence of tuberculosis in East Germany was said to be higher than that of West Germany so that no major conclusions can be drawn. Dr. Buckup pointed out that many of the former workers from East Germany were now living in West Germany and that as a result they were having some problems with asbestosis which actually had its origin many years ago elsewhere in Germany.

We discussed the use of the 1958 ILO classifications for pneumoconiosis and Dr. Buckup, while he likes this classification, finds it difficult to use in his work since most of the private physicians in the area are using the 1930 Sidney classification. He feels that it would be very difficult to change.

In contrast to England, filtered air from within the asbestos factory is permitted to be recirculated in the West German factories.

SWEDEN

April 24 - Svenska Arbets Givaresoreningen, Stockholm.

Dr. Forssman expert consultant to Svenska Arbets Givaresoreningen. One of his responsibilities is to encourage industry to inaugurate occupational health programs.

No mining of asbestos is done in Sweden. Its primary use in that country is in the lagging of ships. There is one textile and friction materials plant in the country.

Since all of the asbestos operations in Sweden were done in Goteborg, he made arrangements for us to proceed there enroute to Copenhagen the following day to talk to personnel concerned and to see these operations.

Dr. Forssman stated that they had a death among their workers in the nitroglycerin plant and that there was some concern concerning this. The worker was exposed only to nitroglycerin and they feel skin absorption was probably an important factor. Dr. Forssman was also very interested in occupational research being done in the United States. He mentioned especially any information we had on long term effects of arsenic exposure.

April 25 - National Institute of Public Health of Sweden, Stockholm.

Dr. Ahlmark, Chief, Department of Occupational Health of the National Institute of Public Health, outlined the research their technical services activities carried out in his department. He gave us a list of 27 project areas on which they are working. A considerable portion of their time is spent on pneumonconiosis problems in iron foundries and iron mines, a broad scope of plant investigations dealing with hazardous materials and uses, study of the effects of various industrial solvents on health and some investigation on insecticides and pesticides on vegation and animals.

April 25 - Professor A. Svensson, Karolinska Hospital, Stockholm.

Dr. Svensson is in the Department of Preventive Medicine of the Medical School of Stockholm. His particular interest is in asbestos research in relation to the development of fibrosis in animals. He has attempted to elucidate the relative fibrogenicity of different dusts in rats by giving saline suspensions intratracheally. He then evaluates microscopic appearance of the lung and weighs the lung feeling that the weight is a good measure of changes. He also identifies the amount of hydroxyproleno in the lungs which is used as a measure of the amount of collagen production. He finds a good correlation between the dosage and the reaction when working with particles below 3 microns in size. There is a marked progression in the weight of the lungs and an increase in the amount of collagen when quartz is injected intratracheally. There is only a small increase in lung weight and a little increase in collagen formation when blue asbestos below 3 microns is given to these animals in the same manner. Dr. Svensson stated that he had some trouble with intercurrent infection in his laboratory animals. He felt, however, that they had started with a sufficiently large group of animals within each treatment group so that the amount of infection did not influence his result. He stated that he feels that the reactions commonly observed among coal miners is primarily due to the

presence of quartz in coal and presented some data which showed a very definite reaction of rats to 3% quartz. Dr. Svensson was also interested in insecticides and said that Dieldrin had causes some deaths of animals in Southern Sweden.

April 26 - Laboratory of Clinical Physiology to the Sahlgrenska Hospital, Goteborg. We met with: Dr. J. Bjure and Dr. Sven-Eric Lindell.

Dr. Bjure's primary interests are in byssinosis where he has done work with Dr. Bouhuys, who is presently working at Emory University in Atlanta, Georgia. In addition to this work in byssinosis, Dr. Bjure has been working in the area of pulmonary function with particular interest in the diffusion capacity of the lungs. He has also done heart catheterization on all their work groups. His major finding is that the diffusion capacity is significantly lowered in asbestosis as compared with workers in glass wool industries. He stated that in asbestos there is said to be an alveolar membrane block but he feels that there is also a block in the small arterioles with thickening of the vessel walls. They are hoping to do a follow-up on the men in their study which is to be reported in the magazine Thorax some time in the near future.

We also talked with Dr. Sven-Eric Lindell also a clinical physiologist at the Sahlgrenska Hospital. He too was interested in byssinosis and indicated that the incidence in Sweden is increasing. In a recent new study brought on by local union pressure using Schilling's questionnaire, they found that the incidence was as great in the newest factory as in the oldest. There was a decrease in incidence in a factory where rayon was primarily used and very little cotton was handled. He also noted that spirometry on a Monday after a two-day holiday revealed a significant decrease in the pulmonary function. Dr. Lindell stated that there is apparently a relationship between smoking and byssinosis. If the workers smoke their pulmonary complaints were intensified. This causes cotton mill workers to smoke appreciably less than the general working population. Dr. Lindell is going very soon to the University of Malmo where he will be Chief of the Clinical Physiology Laboratory at the new medical school there.

April 26 - Mr. Thord Borë, Factory Inspector for Department of Labor in Goteborg, Sweden.

Mr. Borë took us on an inspection tour which included both a very modern shipyard and a plant where asbestos lagging was demonstrated. In the latter the asbestos fibers are mixed with water and sprayed (impinged) onto a metal sheet which simulated the structural membrane of a ship. The company conducting the demonstrations contracts for the insulation of ships using asbestos. The supervisor stated that the use of a respirator was mandatory during this operation

DENMARK

April 27 - Dr. A. Grut, Senior Medical Inspector of Factories, Copenhagen, Denmark.

Dr. Grut was greatly interested in the occupational health study we have underway of the asbestos products industry in this Country. We spent considerable time discussing the scope of our study. Dr. Grut has primary interests in factors of the work environment in the factories in Denmark as well as related compensation problems. The actual number of asbestos workers in Denmark is not known, but there are some 300 in the union designated as insulation workers and 30-40 as lagging workers. Some asbestos is used in both weaving and building materials but the number of workers involved is unknown. In a study of 35 insulation workers who had been working from 18-45 years with an average experience of 29 years, 22 of the 35 had some x-ray changes; nine of the cases showed only lung changes, 19 had pleural changes, but only three of the 23 had symptoms. There were also some plaque formation in these insulation workers when amosite was used. Although there have been some compensation cases from exposure to asbestos, no lung cancer has been identified, but it was recognized there are only small numbers involved. If a person is diagnosed as having pneumoconiosis, he is advised not to work with asbestos, However, if he continues to work with any pneumoconiosis-producing dust, he is required to wear a respirator.

The industries in Denmark have an annual x-ray program with nearly 100% participation, as they get paid by the factory to have their chest x-rays taken In the asbestos factories, 30 x 40 cm. films are taken, as well as 10 x 10 cm. The men who read the films find that the small size is more satisfactory for asbestos exposures and Dr. Grut is now tempted to use only the small films for the asbestos workers. He is also considering instituting a program of taking films for silicosis using the small size.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

Occupational Health Research & Training Facility
Bureau of State Services
1014 Broadway
Cincinnati 2, Ohio

2/1

January 23, 1963

AIR MAIL

Dr. J. C. Gilson, Director
Pneumoconiosis Research Unit
Llandough Hospital
Penarth, Glamorgan
United Kingdom

Dear Dr. Gilson:

I appreciate very much your letter of January 15, inviting me to visit with you and Dr. Wagner in connection with attendance at the Asbestosis Research Council meeting in Reading in April.

Dr. John Beattie, Queens College, Cambridge, is making up a schedule of visits for us during the trip and I am sure you will be hearing from him soon. It is tentatively planned for us to visit with you April 4 and 5. Dr. William S. Lainhart and Dr. Philip E. Enterline, from our Division of Occupational Health, and Dr. Paul Gross of the Industrial Hygiene Foundation, will also participate in these visits.

We are looking forward to meeting with you and Dr. Wagner and discussing the research work you are doing on asbestos.

Sincerely yours,

Lewis J. Cralley, Scientist Director
Assistant Chief

cc: (with copy of incoming letter): Dr. Beattie
Dr. Gross
Dr. Enterline

3/13

March 13, 1963

Dr. Lewis J. Cralley, Scientist Director
Assistant Chief
Occ. Health Research & Training Facility
Dept. of Health, Education and Welfare
Public Health Service
1014 Broadway
Cincinnati 2, Ohio

Dear Lewis:

I thought you would be interested in the attached copy of an article in the official magazine of the Asbestos Workers Union. I think that it is an excellent project if the workers' health can be protected and improved. However, I fear the report which Dr. Selikoff will make, and the use to which he will put the information he is gathering.

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

ROSCOE P. KANDLE, M.D., M.P.H.
STATE COMMISSIONER OF HEALTH

ALFRED H. FLETCHER, B.S., M.S., DIRECTOR
DIVISION OF ENVIRONMENTAL HEALTH

4/5/63

State of New Jersey

DEPARTMENT OF HEALTH
BOX 1540, TRENTON 25

April 4, 1963

Kenneth W. Smith, M.D.
Johns Manville Corporation
22 East 40th Street
New York 16, New York

Dear Doctor Smith:

Many thanks for your consideration and interest in obtaining for us the service of your representative, Mr. Walter T. Huber. His discussion of products and the knowledge imparted were excellent. Attached is a copy of my letter to him which is self explanatory.

I appreciated receiving your letter dated March 13, 1963, and the attachments. Doctor Selikoff previously forwarded us the abstract from The Asbestos Worker, February 1963. It is interesting to see what may develop from this study.

With warm personal regards, I remain

Sincerely yours,

Lynn

E. Lynn Schall
Chief
Occupational Health Program

att.

els/jwp

D.O.H. Activities

DIVISION OF OCCUPATIONAL HEALTH
Public Health Service
Department of Health, Education, and Welfare

No. 2, April 1963 Washington, D. C.

PROJECT HIGHLIGHTS

ANALYTIC METHODS A project to develop separation and concentration procedures for spectrochemical analysis of metallic elements is continuing, with evaluation of methods by radiotracer techniques. Work was resumed on the development of volatization characteristics of beryllium and of internal standard elements which have been found to be most precise for the quantitative spectrographic analysis of beryllium in biological materials. The analytical losses of beryllium during the application of the direct spectrographic method are being evaluated.

Recent work has included refinement of the spectrographic method for beryllium, indium, and antimony, development of a quantitative spectrographic method for indium and antimony in human sweat samples, and development of a method for the collection of urine samples in field studies and for their transport to the laboratory for gas analysis.

DUST SAMPLING TECHNIQUES Electron micrographs indicate that the dust cloud produced by a newly constructed device for dispersing dry asbestos dust differs in character from that produced by the device for dispersing wet asbesto[redacted]

Wo[redacted] underway to determine the effects of density and viscosity of the collect[redacted]ution and the effect of dust particle densities upon settling time, as described by Stokes' law. The mathematical model indicates that wide differences in theoretical settling times in a Dunn cell are possible for the same diameter particles in commonly used collecting media.

COAL MINE STUDY Medical examinations by mobile field units of both inactive and active coal miners continue in West Virginia. In cooperation with mine operators and unions, medical examinations have been scheduled for other localities in the State.

D.O.H. Activities

DIVISION OF OCCUPATIONAL HEALTH
Public Health Service
Department of Health, Education, and Welfare

No. 3, July 1963 Washington, D. C.

PROJECT HIGHLIGHTS

COAL MINE STUDY Since the study to determine the prevalence of chest diseases among coal miners began in January, 250 inactive and 500 active miners have been given medical examinations in the Division's mobile field unit.

Pulmonary function and work capacity tests are also being administered to the miners participating in the study to determine any changes in pulmonary function, relationship to work capacity, and correlation with clinical status. Only 20 percent of the men who were retired or otherwise not currently working as coal miners completed the work test (riding a stationary bicycle for 12 minutes), while over 98 percent of the active miners completed the tests; this is not in itself unexpected in view of age differences and obvious selective factors. The data also revealed that oxygen consumption during work on a bicycle ergometer is not independent of the body weight of the rider. A single breath nitrogen washout test has been added to the pulmonary function battery.

The Beckley, West Virginia, Memorial Hospital has been given two contracts as part of the coal miners study. Under one contract, information was provided on a cohort of 557 miners working in the year 1937. Within 20 years after they were first observed, 20 percent of the group were dead, and 25 percent had applied for workmen's compensation. Under the second contract, the hospital will [redacted] pulmonary function and work capacity data on a group of 75 miners who [redacted] viously studied 3 years ago.

[redacted] from the National Vital Statistics Division are being studied to examine the causes of death among coal miners for comparison with the general working population of the United States.

ASBESTOS INDUSTRY STUDY Work is continuing on preliminary phases of a comprehensive study of the effects of asbestos fibers and dusts on the health of workers in the asbestos products industry in this country. Environmental in-plant studies are scheduled to begin early this fall and medical studies approximately a year later.

6/24

June 21, 1963

Dr. Lewis J. Cralley, Scientist Director
Assistant Chief
Occupational Health Research & Training Facility
Department of Health, Education & Welfare
Public Health Service
1014 Broadway
Cincinnati 2, Ohio

Dear Lewis:

Many thanks for letting me read the attached Trip Report. I sure wish that I could have been with you.

I have heard no repercussions whatsoever following the Asbestos Textile Institute Meeting. You must have done an excellent job in allaying their fears. If I do hear anything in the future, I'll let you know immediately.

Sincerely,

Kenneth W. Smith, M.D.
Medical Director

Attach.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

Occupational Health Research & Training Facility
Bureau of State Services
1014 Broadway
Cincinnati 2, Ohio

June 25, 1963

FILE

Mr. C. W. Hite, Vice President
Industrial Relations
Johns-Manville Products Corporation
22 E. 40th Street
New York 16, New York

Dear Mr. Hite:

I am writing in follow-up of the occupational health study which our Division is undertaking in the asbestos products industry.

Plans for initiating elements of the study, as outlined in the protocol which Dr. Kenneth W. Smith has received, are progressing. A study of cohort groups employed in the asbestos products industry, using social security records, is now underway. It will be another year, however, before data from this source can be assembled and analyzed.

We are ready now to begin the in-plant study, as outlined in the protocol, to obtain baseline data for prospective follow-up. Although the environmental and medical phases of the in-plant study will be conducted independently, it is important that we obtain the information available through both these avenues if meaningful correlation of the data is to be made and the objectives of the study are to be achieved. We plan to start the environmental work early this fall. It would be approximately another year, however, before the medical phase of the in-plant study gets underway.

We believe that information obtained from an environmental and medical study of some of your selected plants, as outlined in the protocol, would be invaluable in obtaining factual data to achieve our objectives. For this reason it is requested that you participate in the environmental and medical in-plant study. We can get together at a subsequent date in discussing specific asbestos products plants which would be suitable for inclusion in the study. Other plants in the asbestos products industry also will be requested to participate so that representative and statistically

meaningful study groups can be constructed. We cannot, at this time, give a specific time for scheduling the start of environmental studies in individual plants which may be selected. We will, however, give a minimal notice of two months, and longer if possible, so that satisfactory arrangements can be made prior to our arrival.

We would greatly appreciate early consideration of this request for your participation in the study.

Sincerely yours,

Lewis J. Cralley

Lewis J. Cralley, Scientist Director
Assistant Chief, Research & Technical
Services Branch

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

Occupational Health Research & Training Facility
Bureau of State Services
1014 Broadway
Cincinnati 2, Ohio

January 20, 1954

Mr. R. W. Lane, Jr.
Manager
Johns-Manville Corporation
Marshville, North Carolina

Dear Mr. Lane:

Enclosed are the copies you requested, through Dr. W. L. Wilson, of our two issuances covering plans for an occupational health study of the Asbestos Products Industry.

I am looking forward to the opportunity for Dr. Wilson and me to discuss these plans in more detail with you.

Sincerely yours,

Lewis J. Cralley, Scientist Director
Assistant Chief

cc: Dr. W. L. Wilson

Implementing Plan of Occupational Health study of Asbestos Products Industry

A protocol was developed and approved by the Division of Occupational Health Public Health Service (August 21, 1962) covering general plans for a study of occupational health problems in the asbestos products manufacturing industry, as well as specific plans (February 6, 1963) for obtaining necessary environmental and medical in-plant data.

Past in-plant medical and environmental studies of the Division have been cross-sectional in that health problems of an industry were studied by correlating pertinent medical and environmental data collected through a one-time approach. In these studies all of the medical and environmental data were collected by official agencies. They were essentially a one period in time study with retrospective data having minimal meaning due to its sparsity and the inability to confirm its validity. With the rather massive environmental exposures of the past associated with the occurrence of frank occupational diseases, often in epidemic proportion, this type of study has been very useful in developing information relative to the nature of such diseases and their prevention.

However, with the increased attention given to the control of in-plant dust exposures and to medical programs providing surveillance over employees, the effects of exposures have changed from an acute to a chronic type response, often requiring periods of a lifetime of employment before the response may be manifest through today's study techniques.

This response to low levels of exposure over prolonged periods as well as broadened knowledge on the suspect relationship of such exposure to diseases which in the past were considered as entirely nonoccupational in origin invalidates the use of the one time cross-sectional study approach in collecting data in the asbestos products industry for correlating effects of the working environment on health. This study will require the establishment of base line data and following this on a prospective plan until an adequate exposure time has been covered.

In implementing the plan of study outlined in the protocol, it is planned to establish procedures that will facilitate the collection of base line data from which representative cohorts can be constructed and prospective data added to these cohorts on a routine basis. This entails defining the industrial population to be studied, obtaining identifying and other characterizing information on the cohorts, and establishing the nature and extent of pertinent in-plant exposure for each individual throughout his employment in the industry. Mortality rate and causes

of death will be determined for the cohorts and this data correlated with environmental exposure and other information on the cohorts. Special medical studies as outlined in the protocol will be designed to obtain needed supplemental data. These will be set up as separate studies.

The following are procedures of implementing the plan of study for obtaining necessary in-plant epidemiologic data.

I. Base line in-plant data for constructing cohorts.

A. Environmental
Environmental data characterizing the nature and extent of in-plant exposures will be obtained in each participating plant as outlined in the protocol. This data will be collected by the Public Health Service with assistance when available from state and local occupational health agencies.

B. Employee
The entire in-plant employment of each participating plant will be included in the cohorts. The following information will be obtained for the Public Health Service on each individual. It may be collected on a pre-established basis by trained and competent personnel of the medical department of the plant or by state or local occupational health agencies or by the Public Health Service.

1. Identification data on each employee.
2. Occupational history on each employee.
3. Job descriptions and classifications on each employee.
4. Smoking history on each employee.

Forms for securing the above information will be provided by the Public Health Service.

II. Prospective follow-up on cohorts.
The base line in-plant data will be constructed into cohorts to which prospective data will be added until twenty to thirty years of retrospective and prospective data on employment experience has been obtained on a significant number in each cohort. Mortality rates and causes of death will be determined for the cohorts and correlated with environmental exposure data and other information on the cohorts. In establishing and adding supplemental data to the cohorts:

A. The Public Health Service will maintain a roster of all employees in the cohorts as well as environmental exposure and personal data characterizing each person in the cohort.

[redacted] environmental exposure data obtained by management in established environmental monitoring programs will be provided to the Service [redacted] basis throughout the prospective study. The Service may supplement these as necessary with separate environmental studies to assure adequate data on which to characterize exposures of individuals in the cohorts.

C. Plant management will provide current information throughout the prospective study in changes on any person in the cohorts including job changes, leaving industry, disability retirement, retirement, etc.

III. Medical data on employees in cohorts.
Medical studies as covered in the protocol will be done on representative groups in the cohorts. Where feasible, these studies will be done by plant medical departments and the data given to the Public Health Service. Criteria and procedures to be used will be developed by the Service and close surveillance maintained to assure uniformity of data. These studies will be set up as separate studies but designed so that the data will supplement that of the established cohorts. Arrangements for these studies [redacted] as well as their prospective follow-up as long as necessary will be made on a separate and individual plant basis. These studies will include:

A. Pulmonary function tests as covered in the protocol.

B. 14" x 17" chest x-rays.

C. Medical histories.

D. Physical examination data as covered in protocol.

E. Morbidity records.

F. Sputum examination as covered in protocol.

[redacted] will pay for x-ray films and their development and will [redacted] special instrumentation needed for pulmonary function

The above procedures will necessitate the following changes in the protocol of February 8, 1963:

A. Release of medical information.
The first sentence under "Release of Medical Information," page 9, of the protocol states: "Medical data will be released to the physician designated by the worker whenever, in the judgment of the Public Health Physician withholding it might lead to impairment of health." This paragraph would not apply in those instances where plant medical departments provide the Service with medical data on employees. In these instances the Public Health Service Physicians will not be examining employees and there will be no Public Health Service physician-employee relationship relative to obtaining and possessing medical data on employees.

Where the plant medical department provides the Service with 14" x 17" chest x-rays on employees, the chest x-rays provided the Public Health Service will be duplicates obtained by the plant medical department during scheduled examination of employees. Interpretations of these individual films by the Public Health Service panel of pneumoconiologists will not be given to the plant medical department, management, employee or union.

B. Reports.
The first sentence under "Reports," page 10 of the protocol states, "No reports will be issued by the Public Health Service on the study until sufficient information has been collected to permit drawing valid conclusions." Since the study will need to cover a period twenty to thirty years of exposure experience, progress reports will need to be issued whenever timely and justified.

[redacted]

D

4/3

Pkg. & Fric. Matls. Div.
Marshville, N. C.
1 April 1964

Dr. Kenneth Smith - GHQ

Today I talked to Dr. W. L. Wilson, Chief, Occupational Health Section of the North Carolina State Board of Health, in regards to the engineering and medical study planned by the Public Health Service.

This is the matter that you and Mr. Sheckler discussed with Dr. Wilson during your visit with him last December and were in accord in participating in this survey.

This survey is tentatively scheduled for the Marshville Plant for the period of May 4 — 15 and will be purely an environmental study covering extended dust counts, humidity and air flow and the usual annual visit of the mobile x-ray unit.

Dr. Wilson pointed out that on this visit the Public Health Survey Unit would not become involved with individual histories of our employees but that this would probably be incorporated in their visit next year.

R. M. Lane, Jr.

R.M.L:edt

cc: E. H. Wells
C. L. Stake
C. Sheckler

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

[illegible] Research & Training Facility
Bureau of State Services
1014 Broadway
Cincinnati 2, Ohio

June 25, 1963

Mr. C. W. Hite, Vice President
Industrial Relations
Johns-Manville Products Corporation
22 E. 40th Street
New York 16, New York

Dear Mr. Hite:

I am writing in follow-up of the occupational health study which our Division is undertaking in the asbestos products industry.

Plans for initiating elements of the study, as outlined in the protocol which Dr. Kenneth W. Smith has received, are progressing. A study of cohort groups employed in the asbestos products industry, using social security records, is now underway. It will be another year, however, before data from this source can be assembled and analyzed.

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We would greatly appreciate early consideration of this request for your participation in the study.

Sincerely yours,

Lewis J. Cralley, Scientist Director
Assistant Chief, Research & Technical
Services Branch

cc: Dr. Kenneth W. Smith