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April 26, 1957

Dr. Daniel C. Braun, Medical Director
Industrial Hygiene Foundation of America, Inc.
Mellon Institute
4400 Fifth Avenue
Pittsburgh 13, Pennsylvania

Dear Dr. Braun:

The Air Hygiene Committee of the Asbestos Textile Institute has had two memorandums from your institute under study for about a year now. At the last meeting of the Air Hygiene Committee in Philadelphia on March 7th it was the opinion of the Committee that both of these memorandums were to be dropped at this time.

The first was a memorandum regarding the Environmental Dust Survey for the Asbestos Textile Institute. This memorandum was forwarded from your office on February 29, 1956. The second memorandum was entitled "Epidemiological Study of Lung Cancer in Asbestos Workers". Both of these proposals were rejected at this time for various reasons and, therefore, the writer, as Chairman of the Committee, was instructed to inform you of the decision of the Committee on these two memorandums.

If at a later date it is the Committee's desire to reopen either of these memorandums you will be so informed.

Very truly yours,

By 
D. R. Holmes, Chairman
Air Hygiene Committee
Asbestos Textile Institute

DRH:fk

August 23, 1957

Mr. Hugh M. Jackson, Manager
Industrial Health Program
Johns-Manville Corporation
22 East 40th Street
New York 16, New York

Dear Hugh:

Thank you for your letter of August 19 regarding the September meeting of the ATL.

As a matter of fact, having completed the literature search, it is apparent to us that the possibility of an association between lung cancer and asbestosis is much more likely to exist in asbestos factories than in mining operations. For example, of 99 cases which had been reported up to 1955, at least 80 appear to have occurred in asbestos workers other than miners. A number were women, and the occupations given were: weaver, carder, mattress maker, lagger, bagger, pipe coverer, spinner, etc.

Two specific articles which mention the type of exposure and the job is that by Doll (1) and that by Isselbacher, et al. (2). Seventeen cases studied by Gloyne and 31 reported by Merewether, as well as three mentioned by Harrison and one each by Cureton and Owen occurred in England. If my information is correct, there is no mining of asbestos in England, and these must all have been workers in textile or similar jobs. In this country, the ten cases reported were apparently all in textile workers. The first case, reported in 1935 by Lynch and Smith was a weaver in an asbestos factory for 21 years. Isselbacher's cases involved a contractor's helper engaged in cutting and sawing asbestos board and sorter in an asbestos mill.

Mr. Hugh M. Jackson

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August 23, 1957

The QAMA study is in the final stages which are, of course, the slowest. All of the statistical analysis has been completed, and the report is 99% written. What remains is mainly minor revisions, typing the manuscript and proofing. It should go to the print shop by the end of this month.

I hope this supplies you with what you need for the meeting. If there is anything further, please let me know and I will try to get it to you in time.

Sincerely yours,

Daniel C. Braun, M.D.
Medical Director

DCB:la

Enclosure

References

1. Doll, R.: Mortality from Lung Cancer in Asbestos Workers.
Brit. J. Indust. Med. 12, 81-86, 1955.
2. Isselbacher, K. J.; Klaus, H.; and Hardy, H. L.: Asbestosis and
Bronchogenic Carcinoma. Am. J. Med. 15, 721-732, November
1953.
3. Doll, R.: Bronchial Carcinoma: Incidence and Aetiology (Milroy
Lectures, abridged) Brit. M. J., 2, 521-527, Sept. 5, 1953;
585-590, Sept. 12, 1953.

COPY

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

MELLON INSTITUTE, 4400 FIFTH AVENUE

PITTSBURGH 13, PA.

March 16, 1956

Memorandum on
PROPOSED EPIDEMIOLOGICAL STUDY
OF LUNG CANCER IN ASBESTOS WORKERS
for the
QUEBEC ASBESTOS MINING ASSOCIATION

INTRODUCTION

Reports of the occurrence of cancer of the lung in patients with asbestosis have been accumulating since about 1935 (Lynch and Smith, Angrist, Desmeules et al, Cartier, Gloyne, Merewether, Kennaway and Kennaway, Doll, and others). According to Hueper, such cases now total about a hundred. Many of the above authors refer to "asbestosis cancer" of the lung, and claim to show a definite relationship between the two conditions. Up to the present time, all attempts at correlation appear to have been limited to lung cancer with asbestosis, although a connection between cancer and mere exposure to asbestos has been inferred. Published reports, together with the occurrence of some fifteen cases in the towns of Thetford Mines and Asbestos, led the industry to consult the Industrial Hygiene Foundation regarding the possibility of a study having

Memorandum...for the Q. A. M. A.

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as its objective to prove or disprove, if possible,

1. Whether there is a relationship between asbestosis and lung cancer, and
2. Whether a relationship exists between exposure to asbestos and lung cancer.

It is believed that persons having any considerable exposure to asbestos should be included in any study because, eventually, claims of lung cancer in this group will undoubtedly be made.

SOURCES OF INFORMATION

During the week of February 20, 1956, a preliminary survey of potential sources of information was made with the help of Dr. Kenneth W. Smith, Medical Director of Johns-Manville Corporation; Dr. Paul Cartier, Director of the Thetford Industrial Clinic; and Mr. Ivan Sabourin, General Counsel for the Quebec Asbestos Mining Association. Conferences with representatives of the Health Department of the city of Montreal, the Deputy Minister of Health for the Province of Quebec, representatives of the Canadian Cancer Society, leading clinicians in the field, and many others indicated that considerable data relating to the general population of the Province can be obtained for purposes of comparison with the population group under study. Morbidity data, although limited, is potentially available from such sources as the hospitals in Montreal and Quebec city and some of the 13 cancer detection centers in the Province. Mortality figures, also subject to certain limitations, are available through the Ministry of Health's Vital Statistics Department, headed by Dr. Paul Parrot.

Memorandum...for the Q. A. M. A.

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Simultaneously, the various categories of information relating to the asbestos workers were explored with Dr. Cartier at Thetford Mines and Dr. Granger at Asbestos. From these conferences, it was apparent that extensive and detailed information is obtainable with respect to this group:

1. Medical data, including serial x-ray examinations of the chest, extend over a period of about 20 years.
2. In Asbestos, it will be possible to obtain, through insurance company records, information on the diagnoses and causes of death among the insured workers.
3. Hospitals in Sherbrook and Arthabaska serve most of the people in Asbestos, and records in these institutions should be obtainable.
4. Finally, autopsy findings exist on most of the cases of lung cancer from the Thetford Mines area.

PROPOSAL

Obviously, several possibilities exist for a comparative statistical study between the asbestos workers and either the general population of the Province of Quebec or segments of that population having similar cultural and ethnic characteristics. Careful consideration of the sources

and kind of available information and of its probable reliability in consultation with biostatisticians has led to the conclusion that a study of this problem is feasible and should result in statistically valid deductions. The details of procedure, including the decision as to which data should be utilized and in which order the available information should be studied, must await more detailed investigation. However, it would appear from a review of copious notes assembled at the time of the preliminary survey that a reasonable starting point would be an intra-industry study, selecting a group which entered the asbestos industry from 10 to 20 years ago. Such a cohort of workers could then be followed according to their subsequent exposure to asbestos as well as to the subsequent development of asbestosis. The precise incidence of lung cancer in the cohort would be determined by detailed study of the experience of these various groups as reflected in insurance company records and careful analysis of the medical and x-ray examinations. This method would approximate as nearly as possible the controlled conditions of an actual experiment, and information derived therefrom should be of prime importance.

The next logical procedure would be a comparison of the experience among asbestos workers as determined by the previous phase and among the general population of the Province of Quebec or a suitable segment thereof. Our preliminary observations would strongly indicate that this phase would also be both feasible and meaningful. It would involve detailed study of morbidity data at hospitals in Megantic and Richmond counties,

Memorandum...for the Q. A. M. A.

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in Arthabaska county and in Montreal and Quebec city. It would also require careful investigation of the mortality rates developed in the office of Dr. Parrot. Extensive individual checking of hospital records and death certificates and thorough follow-up of individual cases would be necessary.

The third and ultimate phase of the study would be a comparison of data relating to morbidity and mortality as developed in the first two stages for the asbestos workers and the general population of Quebec with similar statistics for the Dominion of Canada and for the United States. It is not anticipated that the statistics for Canada and the United States would be developed during the study since they are available through the public health services of both countries. The most recent published figures would be used and, if necessary, could be supplemented by figures in possession of the respective national cancer societies.

The cost of the proposed study will be \$20,000 (U. S. currency) including all travel expenses and the cost of preparing and printing the report.

August 26, 1955

Mr. Hugh M. Jackson, Manager
Industrial Health Program
Johns-Manville Corporation
22 East 40th Street
New York 16, New York

Dear Hugh:

The enclosed letter is self-explanatory. We did not feel that we could reply in correspondence to Mr. Kane, and therefore invited him to the Institute for a conference. We notified him of the fact that much information is available on the safe handling and use of practically all insulating materials, and we supplied him with sufficient data to allay his fears.

Some time in the future I would like to discuss this matter with you.

Sincerely yours,

C. Richard Walmer, M.D.
Managing Director

CRW:dh

Enclosure (Letter August 13, 1955 from Mr. John W. Kane, Corresponding Secretary, International Association of Heat and Frost Insulators and Asbestos Workers - DH)

INTERNATIONAL ASSOCIATION OF
HEAT AND FROST INSULATORS AND ASBESTOS WORKERS
Affiliated with the American Federation of Labor and
Building and Construction Trades Department

Writer's address: 36 Perry Lane

Local Union No. 2

City: Pittsburgh 29, Pa.

August 13, 1955

Dear Sir:

I have and always will continue to have the greatest respect for the Mellon Institute and the really great people who staff her. And so it is with little wonder that I urgently appeal to you people for possible help, in the light of the many, many advancements made by the Institute in the examination of air pollution, that Sir is our problem, seven of the last nine of the members of our Union, the Asbestos Workers, (pipe covers) have died of lung disorders. It is believed by many of us to be an occupational disease, although I am familiar with the fact that asbestosis is the number 2 occupational disease I do not believe we are hindered to any great extent as we are not subjected to breathing in great amounts of it in confined areas. But I, as all others also believe that our new hazards are found in our comparatively newer materials all of these are fibrous they are fiberglas, foamglas and other glass type insulations, mineral wool (the loose type wool which has the addition of formaldehyde to it). When working with these materials in confined areas it so pollutes the air that it seems to remain suspended in the air and visibility is not great where it is used extensively. One of the results of this action is that it slows the men down as though they were not receiving enough oxygen. These materials are also irritating to the skin of some and itchy to all. Although I know the Mellon Institute is not a social organization I was in deep hope that you may give us some information and practices that we may adopt, for instance our men do not wear respirators in the application of these materials. They claim they slow them down and provide improper breathing. We would appreciate any information you could give us on these materials and what dangers they could create. We are interested both in a measure of prevention if any, and control of the air pollution which if ever gauged for density would most certainly be declared contaminated. I am sure that you as thoughtful human beings will help us make a deep cut in the preventable cases, by giving the proper knowledge and safety factors we may practice.

Sincerely,

(s) John W. Kane
Corresponding Secretary

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SEP 23 1948
J. F. M.
Abd...

September 23, 1948

Mr. J.P. Woodard,
Director of Personnel Policies
Johns-Manville Corporation
22 East 40th St.
New York 16, N.Y.

Dear Mr. Woodard:

We have made a copy of the French article "Asbestosis and Pulmonary Tuberculosis" as it appears in the British Journal of Industrial Medicine for April, 1948. You will note that this is an abstract of the French article but is longer than the abstract which we published in the Industrial Hygiene Digest.

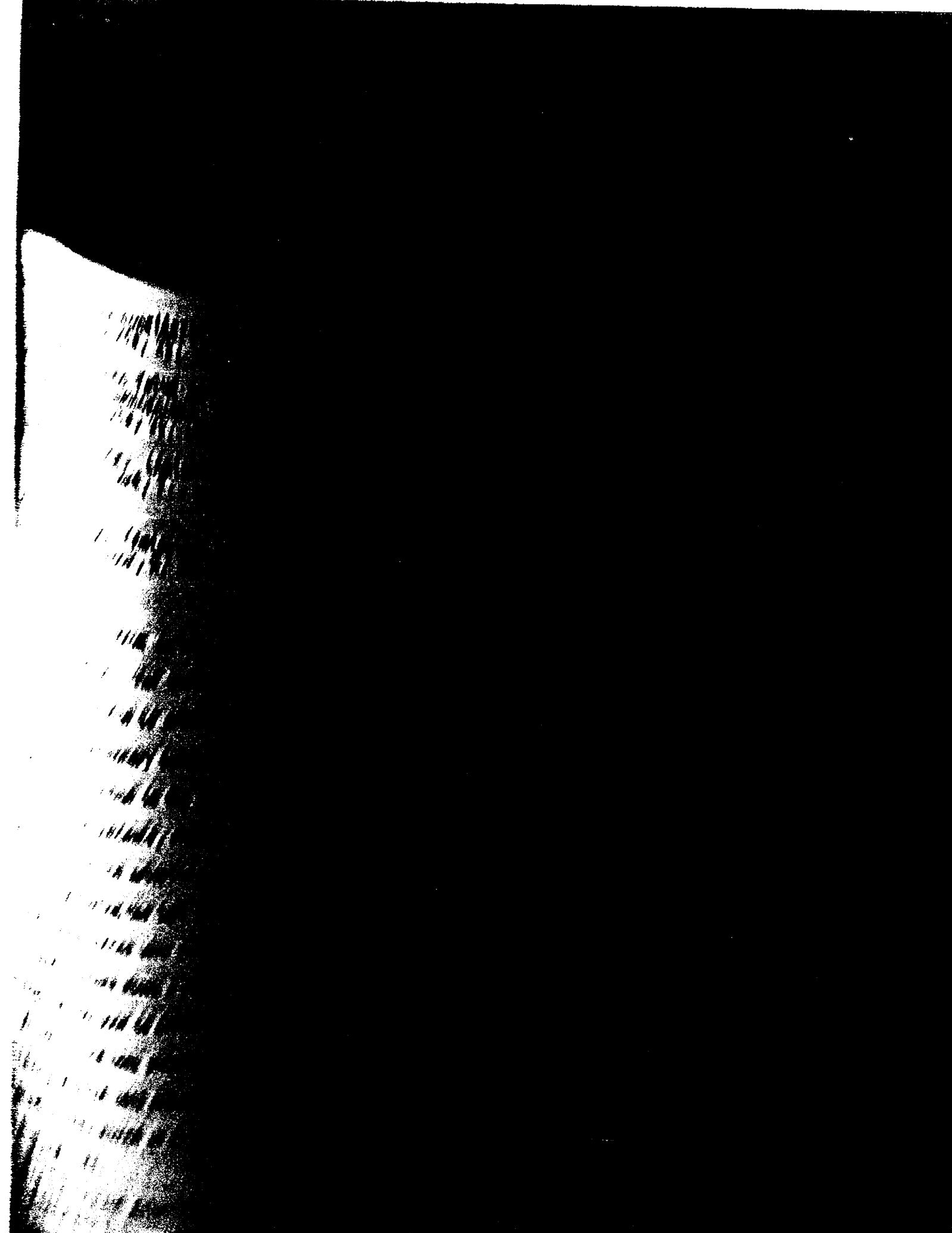
We have been unable to locate the full name and address of the French publication. It is simply identified as Sem. Hop. Paris. I suggest that you can probably secure this article through G.E. Stechert & Co., 31 E. 10th St., New York, N.Y. Another source for foreign publications is the H.W. Wilson Co., 950 University Ave., New York, N.Y.

Finally, in case you wish to write to the British Journal of Industrial Medicine, their address is: British Medical Assoc., Tavistock Square, W.C. 1, London, England.

Very truly yours


John F. McMahon
Managing Director

JFM:d



Some Remarks on Asbestosis. (Quelques considerations sur l'amiantose.)
Rousseau, L. (1947). Sem. Hop., Paris, 23, 1811.

Experimental Asbestosis. Pathognomonic Value of the "Asbestos Body."
(Amiantose experimentale. Valeur pathognomonique du "Corps d'Amiante.")
Giroux, M. (1947). Sem. Hop., Paris, 23, 1814.

Asbestosis and Pulmonary Tuberculosis. (Amiantose et tuberculose pulmonaire.)
Desmeules, R., Giroux, M. and Richard, P. (1947). Sem. Hop., Paris, 23,
1818.

Asbestosis and Cancer of the Lung. (Amiantose et cancers pulmonaires.)
Desmeules, R., Rousseau, L., Giroux, M. and Birois, A. (1947). Sem. Hop.,
Paris, 23, 1820.

These four papers come from Quebec, Canada, where several workers in the asbestos mines have been studied. The Quebec school disagrees with the statements of Gardiner that pneumoconiosis due to asbestosis is not an important factor in the production and progress of pulmonary tuberculosis, and that the presence of asbestos bodies in the sputum has no value in the diagnosis of asbestosis. Rousseau gives brief descriptions of four patients, some of whom are also reported in the following papers. One had worked in the asbestos industry for 18 years, and experienced respiratory symptoms only during the last three. He complained of cough and an asthma-like dyspnea. Asbestos bodies were found in his sputum, but no tubercle bacilli. Radiography is said to have shown a ground-glass appearance in his lungs (unfortunately the illustration is too poor to demonstrate this.) This is the only case seen at this hospital in which it has been possible to make a diagnosis of asbestosis during life. Another patient, who had been exposed to asbestos dust for 25 years and who died from some unrelated cause, showed no clinical or radiological signs of any abnormality in his lungs during life.

Giroux exposed guinea-pigs, rabbits, and a dog to crude asbestos dust in a chamber daily for several months. The rabbits, killed after periods of from three to 12-1/2 months, had no asbestosis and no asbestos bodies. The dog showed no lesions after 10 months' exposure: only the guinea-pigs showed lesions in the lungs and asbestos bodies. In these animals he traces the stages of formation of asbestos bodies: fibres reaching the alveoli are rapidly covered by phagocytic cells;

movement of the fibres results in microscopic bleeding from damaged alveolar walls; the haemoglobin from the liberated red cells is taken up by the phagocytes which already enclose the asbestos fibres. Subcutaneous or intratesticular injections into guinea-pigs of suspensions of asbestos in olive oil resulted in the production of granulomatous lesions but no asbestos bodies. When, however, the suspension was injected into an area into which 1 ml. of blood had been injected immediately before, asbestos bodies were found after a month. He considers that the presence of asbestos bodies in sputum has significance, since it implies tissue damage in the lungs.

Desmeules, Giroux, and Richard report a patient, aged 44 years, in whose family there was no history of tuberculosis. He had worked as a bagger of asbestos for 20 years: after 10 years he began to experience dyspnea on effort, accompanied by cough and expectoration. He became more severely ill some nine months before his death, which was due to tuberculosis and asbestosis. The authors argue that the asbestosis preceded and paved the way for the tuberculosis, but admit that they have no proof of this. (The association of tuberculosis and asbestosis is generally admitted in Britain but is doubtful in the United States.)

Desmeules, Rousseau, Giroux, and Sirois record brief details of two patients who had asbestosis and cancer of the lung. (The claim that carcinoma of the lung with asbestosis has been recorded before in only one case cannot be allowed. Nor will there be general agreement with the statement that silicosis is admitted to play an important part in the pathogenesis of pulmonary carcinoma.)

--- Taken directly from British Journal of
Industrial Medicine, Vol. 5, No. 2,
p. 100 (April, 1948).

JOHNS-MANVILLE CORPORATION

TWENTY-TWO EAST FORTIETH STREET

NEW YORK 16, N.Y.

EXECUTIVE OFFICES

December 30, 1957

Mr. Ivan Sabourin
St. Johns
Quebec

Re: I.H.F. Survey

Dear Ivan:

Hugh Jackson and I have reviewed the condensation of the survey which you sent us. We have noted deletion of all references to the association of asbestosis and lung cancer in this condensation. While we believe that this information is of great scientific value, we can understand the desire of the Q.A.M.A. to emphasize the exposure of the asbestos miner and not the cases of asbestosis. We also are in agreement with the deletion of the reference to smoking and lung cancer.

It must be recognized, however, that this report will be subjected to criticism when published because all other authors today correlate lung cancer and cases of asbestosis. If we are to restrict this condensation to asbestos miners, greater emphasis should be placed on the choice of words used in defining the cohort. The fact that all members of the cohort had 5 or more years of exposure to asbestos should be reiterated.

Following are comments on certain paragraphs of the condensation.

Page 9

We believe the first sentence in paragraph 2 should read "Perhaps no one has written so extensively - - -".

Page 14

In the third sentence of paragraph 2 the definition of cohort should be expanded to emphasize that non-exposed personnel were not included in the sample. This might be done by adding a sentence similar to the following: "Office and other non-exposed personnel, regardless of length of employment were not included in the cohort".

Page 18

To further emphasize the exposure aspect of the miners the second sentence of paragraph 2 might read, "All workers with more than 5 years of exposure were placed in one of three categories".

It might be advisable to add another sentence at the end of this paragraph, "As previously noted workers with no exposure were not included in the data".

December 30, 1957

Page 23

In the fourth sentence reference is made to "the 95% level of significance". This phrase was explained clearly and thoroughly on Pages 23 to 25 in the section on Statistical Methods of the original survey. Because this whole section was deleted in the condensation we feel it might be advisable to explain by footnote the meaning of "the 95% level of significance".

We feel that the fifth sentence might be made stronger by the following change. "However, having found just 12 cases, we are not above this level, and therefore the hypothesis that asbestos miners do not have a higher mortality from lung cancer than does the general population cannot be rejected".

Page 41

The table in the center of the page shows a rate of 271 in the 45 - 54 age group. In the original survey this rate was 27.

Page 48

In the last sentence of the first paragraph we would like to suggest the substitution of the word "undertaken" for the word "commissioned".

In the second sentence of paragraph 3 we would like to suggest that the elements of the cohort definition be repeated. "A cohort was defined as a group of asbestos miners having at least 5 years of exposure in the industry and who were in the industry during 1950. Only those workers who met these criteria were included in the study".

Page 49

In the last sentence of paragraph 1 we would like to suggest the deletion of the phrase "which have been explained in some detail" since such explanation was deleted in the condensation.

This publication should form the basis for future surveys and reports. Dr. Braun should be asked to establish the framework of reporting for Doctors Grainger and Cartier so that each year the status of every member of the original cohort could be reported to the Industrial Hygiene Foundation and the continuing study be analyzed by their experts. We cannot emphasize this point too strongly because nowhere in the literature today is there reported a study which is so valuable and which approximates this magnitude.

We agree with Doctors Cartier and Braun that a certain number of workers probably have some asbestotic fibrosis which cannot be diagnosed by x-ray. Unfortunately, we cannot take lung biopsies on all workers and we have no other means of making a diagnosis before there are x-ray changes. Therefore the annual study of all exposed asbestos workers becomes increasingly important.

We feel that Dr. Braun and his staff are to be congratulated heartily for this very valuable contribution to our medical knowledge. We trust that their efforts will be rewarded in the near future by the publication of this work in a recognized journal.

Sincerely,



Kenneth W. Smith, M.D.
Medical Director