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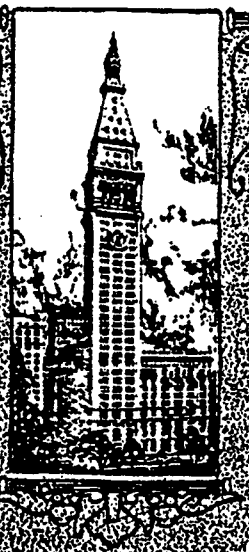
See also

"Asbestos in Mine Workers Coverup"

in Metropolitan Life file

([redacted] ml2.ald)

Assuring Life by Insuring Lives



METROPOLITAN LIFE
INSURANCE COMPANY
NEW YORK
1924

THE THETFORD MINES EXPERIMENT

The high rate of infant mortality in French Canada caused the Company, in 1921, to undertake a demonstration in child welfare intended to prove that this waste of child life was needless. After a careful survey, the town of Thetford Mines, an asbestos mining center in the Province of Quebec, was selected as the seat of the experiment. A French-speaking nurse with extensive experience in maternity center work was placed in charge and assigned a staff of two other French-Canadian nurses and later a physician, all of whom were given special training in New York City.

As a result of the three-year experiment, the infant death rate in Thetford Mines has been reduced from 338 per 1000 to 96.4 per 1,000.

Another gratifying outcome of the experiment has been that because of the results obtained in Thetford Mines, the Provincial Government of Quebec has appropriated $500,000 to be used during the next five years in child welfare work in the province.

THE INFLUENZA COMMISSION

Because of the enormous loss of life that occurred during the influenza epidemics of 1918 and 1919, the Metropolitan undertook to finance a study of this disease, about which so little is known. A commission composed of five of the leading sanitarians of the country and two representatives from the Company was organized. All of the research work on influenza being carried on in the country to-day is mobilized under this commission.

Thus far the cause of influenza has not been determined, but encouraging results have been obtained in studies of

COPY)

February 23, 1944

Mr. Ivan Sabourin
Aldred Building
Montreal, P. Q.
Canada

Dear Mr. Sabourin:

While the matter is still fresh in my mind I am writing you at length on my impression of the situation on Asbestosis in Quebec in so far as it involves relationships between the producers, the medical profession and the Compensation Commission. One conference with Mr. Sharp, Dr. Vidal and Mr. Dick gave me a much clearer picture than I had gotten previously. Before doing so I offer a few comments on autopsy material.

I am enclosing my report on the lung tissues of Philemon Tardif. Of necessity the conclusions are not too satisfying as they are based only upon examination of two blocks of tissue, approximately 2 x 4 centimeters in diameter without even an indication of the parts of the lung from which they were taken. However, they like the material from the two previous cases, do demonstrate that the Thetford operations produce limited amounts of indisputable Asbestosis. In the presence of advanced tuberculosis this is obscured and not likely to be identified except on microscopic examination of pulmonary tissue. X-ray during life will not show it.

Today I have also examined in gross the sagital section through the entire right lung of Majorique Perron which we collected yesterday from the toxicological laboratory in Montreal. This is a much more satisfactory specimen with which to work. It likewise shows a combination of widespread chronic tuberculosis upon a background which will probably prove on microscopic examination to be minimal Asbestosis. Sections will be prepared as soon as possible for microscopic examination. In order to make my report complete in this case, I would appreciate it if you would send me a brief summary of the occupational and clinical history including: How long employed, character and date of first symptoms, date of quitting work, whether Koch's bacillus was found in sputum and date of death. I neglected to copy this information from your record.

PRODUCED S/C/M/Ms

This autopsy material on fatal cases and the X-rays that are now reaching the Commission are bound to create in their minds the impression that tuberculosis is an all too common complication of Asbestosis. If I were in their position with my experience limited to evidence of this kind I would find it difficult to resist the conclusion that there is causal relationship between even slight amounts of

MET 0699

asbestosis and tuberculosis of the lungs. I have told you repeatedly as I told Mr. Sharp yesterday that I did not agree with this conclusion but I doubt whether he or Dr. Vidal will be persuaded when they see a succession of cases like those which are now passing before them. They must be made to realize that these cases are the exceptions rather than the rule and that there is a great majority of employees in the asbestos industry who are free from tuberculosis.

I would therefore urge that immediate steps be taken to survey every employee in the asbestos industry in Quebec so that the necessary statistics can be assembled. Dr. Stevenson's X-ray films already taken on the men at Asbestos will provide you with material for a preliminary report. Coupled with this there might be an analysis of mortality data contrasting the total death rate from tuberculosis in Thetford and Asbestos with that in other industrial communities of the Province. It would be still more convincing if you could show the separate rates of males and females unless the number of the latter employed in the asbestos plants constitutes an appreciable proportion of the female population. Finally the age distribution of deaths from tuberculosis in those employed in the asbestos plants as contrasted with that in other occupations would help in determining whether the occupational factor was contributory.

My own observations elsewhere and your intimation that the rate for tuberculosis was higher in St. Hyacinthe than in Thetford and / or Asbestos make me confident that the companies would acquire information of greatest service to themselves by such a survey and analysis. If asbestosis specifically is predisposing to tuberculosis in the same sense as silicosis does the effect should be just as apparent in North Carolina and Pennsylvania as it seems to be in Quebec or England. But the films of employed asbestos workers in the States show a very low incidence of associated tuberculosis. It is my firm belief that in Quebec and England, factors outside the occupation are responsible.

As I sensed the situation in Montreal yesterday the asbestos industry will have to produce evidence to prove this point and start on it immediately or the industrial commission will become increasingly convinced that our position is biased and not founded upon truth.

PRODUCED S/C/M/Ms

Furthermore the industry would undoubtedly profit by undertaking a general program of community control of tuberculosis. By instituting case finding machinery not only among employees but among the members of their families, the open cases of tuberculosis would be discovered and the sources of spread of the infection could be removed.

One of the iron mining companies whom we serve has such a program with a public health nurse, a program for tuberculin testing of school children and follow up of the contacts of every known case of open tuberculosis. The program has paid dividends by practically eliminating tuberculosis with resultant lowering of compensation costs and the good will of the employees is unmeasurable. The asbestos industry of Quebec has a serious problem because its labor force is drawn from a population in which the tuberculosis rate is high but their situation is no worse than that which our other clients attacked successfully in an iron mining community.

The second point which is becoming increasingly apparent to me is that the asbestosis of the Quebec mines and mills is quite generally less severe and extensive than the asbestosis of the fabricating plants of the States. Comparison of the X-ray findings in the two groups reveals very few cases with typical patterns among Thetford or Asbestos mill men. Some asbestosis is unquestionably produced for we have microscopic evidence of it in the four autopsy cases now available but it is not advanced enough to replace much of the functional parts of the lungs and thus cause the X-ray shadows that are generally recognized as characteristic of the disease. (Most of us disagree with Dr. Pendergrass when he says in Lanza's book that there is no characteristic pattern of asbestosis). If my observations are correct this relatively slight amount of disease should not cause disability for only the framework of the lungs is involved leaving most of the parts that carry on the functions of respiration intact.

But here again the Canadian industry is on the defense against its medical profession and their representatives on the advisory board to the industrial commission. The doctors have seen only their own local manifestations of asbestosis without opportunity to compare it with the really severe manifestations that are produced elsewhere. They find the abnormal shadows in the X-ray films of exposed workmen, which they are convinced must cause symptoms and disability. They find asbestosis bodies in the lungs of autopsied cases associated with minimal tissue reactions or overwhelming manifestations of concurrent pulmonary infections and now they are sure of their ground.

PRODUCED S/C/M/M

In order to defend itself the industry in Quebec must have more facts which will require time to collect, analyze and publicize. These findings will have to be contrasted with those in the fabricating plants either in Asbestos or elsewhere. In the city of Asbestos the spinning and weaving mill has been in operation for only four years which is the minimum time to produce much disease in those exposed, but in another year or two one may expect to find evidence of it here unless I am much mistaken.

As I have told you in conversation, our experimental observations lead me to believe that the true hazard in asbestos plants is proportional to the amount of small, individual, uncrushed fibres in the industrial atmosphere. I suspect that the reason why one sees little or no typical asbestosis in the mines and mills is because there is probably too little such fibre in the air of these plants. Conversely the reason for the "typical" disease in the fabricating plants is the fact that the processes there open the bundles of asbestos fibre and tear them into lengths short enough to be inhaled in dangerous quantities.

The mills and mines are dusty but the dust is largely serpentine with relatively few fibres large enough to do harm to the lungs. This dust enters the lungs where it produces reaction around blood vessels and other framework structures that are just like any other inert dust. We see the shadows of such inert reaction manifested in X-ray as an exaggeration of the normal shadows of blood vessels. This condition is not asbestosis nor necessarily preasbestotic any more than the identical changes in men working in hard rock mines are necessarily presilicotic. In free silica industries regardless of exposure we do not diagnose silicosis from X-rays until we find the characteristic pattern of nodulation; in the asbestos industry we should do likewise and refrain from a diagnosis of asbestosis until the X-ray reveals the characteristic pattern of haziness or fine stippled appearance spreading throughout the lower thirds or more of the lung fields. The situation with asbestosis is even more difficult than with silicosis for today the requisite condition of the dust exposure is not appreciated by the medical profession.

PRODUCED S/C/M/V

Therefore I strongly urge that surveys be made to compare the relative quantity and nature of the dusts in the mills and the fabricating plants in order to present proof that in the first instance the percentage of thin fibre of inhalable dimensions is insignificant in comparison with the quantity created in spinning and weaving. It is going to be hard to persuade physicians of the importance of these factors but similar factors govern the reaction to quartz and the development of silicosis. These physical limitations of atmospheric dust often determine the outcome in contested cases involving a diagnosis of silicosis and I forsee that they will have equal weight in asbestosis. A competent industrial hygienist should collect and analyze enough of the atmospheric samples in weaving and spinning mills and in the mines and processing plants to establish this basic difference so that it will stand beyond controversy. We have the experimental background; we now must demonstrate its industrial application. When correlated with the results upon exposed workmen, I feel certain that our position will be secure.

To summarize: I would make the following recommendations to your clients, the Canadian Asbestos Producers in order that they may defend themselves against a growing conviction among the local physicians that employment in this Quebec industry is highly dangerous.

I. Correct an erroneous impression of the Industrial Commission that asbestosis is frequently associated with pulmonary tuberculosis.

a) Statistical data based on X-ray of all employed workmen to indicate the incidence of pulmonary tuberculosis

b) Comparative mortality statistics on tuberculosis in Asbestos and Thetford and in other communities of Quebec indicating the frequency by sex and age.

2. Consider the possibility of inaugurating a program of tuberculosis case finding and control in the general populations of Asbestos and Thetford in order to eliminate sources of new infection among employees.

3. Make a detailed comparative study of the nature of the dust in the fabricating plants and the asbestos mines and mills.

I trust that you will agree with these recommendations and be willing to pass them along to your clients.

May I take this opportunity to thank you for your delightful hospitality while I was in Montreal and thank you for making my visit profitable and pleasant.

Sincerely yours,

PRODUCED S/C/M/Ms

Leroy U. Gardner, M. D.
Director

LUG:EH

0703

RPI

DFW for your [illegible]

February 28, 1944.

Mr. Ivan Sabourin
Aldred Building
Montreal, P.Q.,
Canada

Dear Mr. Sabourin:

I have your letter of February 22 asking for comments on the relationship between asbestosis and susceptibility to tuberculosis. This question cannot be answered decisively from a study of post mortem material alone. Medical problems of this nature are usually solved on the basis of probabilities and it is this matter of probabilities on which we need further evidence in the case of tuberculosis associated with asbestosis.

Merewether in his "Memorandum on Asbestosis" Tubercle November and December, 1933 and January, 1934) admits that "the data on the subject are meager." He reports that of 374 workers while at work, only 4 showed signs of active tuberculosis and that the British Silicosis and Asbestos Medical Board in its first periodic examination of workers in this industry found only one case of asbestosis and tuberculosis in 1512 examinations. On the other hand the English post mortem material at that time revealed 35.7% of the cases complicated by tuberculosis. (Subsequently he appears to have found more cases if Dr. Riddell is correctly informed). In the publication cited Merewether concludes:

> "The evidence therefore, points to the hypothesis that at present the added risk to asbestos workers from pulmonary tuberculosis is limited and definitely less than in workers exposed to free silica; virulent massive infections will as in the general population, cause death; lesser ones will result in more widespread fibrosis than would appear in cases amongst the general population and slight infections, in common with many other affections, are likely to precipitate death in cases of advanced asbestosis where they wouldn't do so in the general population." The underscoring is mine but I agree with these views.

PRODUCED S/C/M/Ms

When Dr. Merewether was in this country last year he visited me for several days and we spent most of our time discussing these problems. He still accepts our experimental work which proves that there is no specific susceptibility to tuberculosis induced by asbestosis and he, like ourselves, is anxious to accumulate comparative statistics from various parts of the world to establish the general clinical experience.

MET 0704

As I indicated in my last letter the Quebec experience is not yet analyzed; there is only an impression that most of the asbestos workers die of tuberculosis without taking into account the excessive prevalence of such infection among the population of the Province. This impression needs verification by careful analysis of morbidity and mortality statistics collected from the employees of the asbestos industry, from their families not exposed to asbestos dust and from other communities in the Province of Quebec. Such data should then be compared with similar statistics for asbestos workers in other countries. If there is a specific occupational predisposition to tuberculosis it will become apparent on such analysus just as it has for silicosis. Wherever silicosis is being created, the high mortality from tuberculosis cannot be hidden.

I do not believe that there is much tuberculosis among asbestos workers in the United States and suspect that the excess mortality from this cause in England is probably due to the low living standards of industrial workers. Possibly selection of cases coming to autopsy has influenced the picture. American studies have thus far failed to demonstrate enough tuberculosis among asbestos workers to cause comment. The U. S. Public Health Service Study of Asbestosis in the Asbestos Textile Industry in North Carolina, (Bulletin 241), issued in 1936, hardly mentioned tuberculosis, dismissing the subject with the statement on page 51 that "there were only 2 cases of active, pulmonary tuberculosis in the group" (541 employees). Shull, (Radiology 27, No. 3, 279-292: 1936) examined 71 of 100 cases discharged from the plants where the Public Health Service made its study 15 months later and found 8 cases complicated by tuberculosis of slight to moderate extent but only 2 were active. These two subsequently died of this cause and in 2 others the infection later became active. Shull states in his conclusions that "asbestosis does not predispose to tuberculosis." Presumably he infers, although he does not say so, that the 4 cases of active disease among 541 workmen represented accumulated disabilities when the examination pregram was inaugurated. Donnelly (J. Ind. Hyg. and Tox. 18, No. 4, 222-228:1936) also examined 151 discharged employees including the 100 reported by Shull. He gives more details on the cases of tuberculosis. One of them had worked in the asbestos industry for 5 months and the others 15 months. The remaining 2 had worked 6 and 18 years respectively and their infections might have been aggravated by exposure to asbestos dust. He points out, however, that an incidence of 2 cases among 151 industrial employees is no higher than in any other industrial group. McPheeters, (J. Ind. Hyg. and Tox., 18, 229-239: 1936) likewise examined and reported on these cases and he is in entire agreement with the other reporters. In his conclusions he states, "No activating or aggravating effect of asbestos dust or asbestosis or tuberculosis was observed." Finally I believe I told you that I myself, had just returned from North Carolina where I had reviewed chest films of some 100 employees of the local asbestos industry and saw only one that showed any indication of adult type pulmonary tuberculosis. This was complete

PRODUCED S/C/M/Ms 0705

healed. I commented on the fact to the members of the Medical Board of the State Industrial Commission with whom I was conferring and the Chairman, Dr. Vestal, told me that tuberculosis was a rare finding among asbestos workers although common enough in other industrial workers in their state. It would therefore, appear that in North Carolina asbestosis does not favor or predispose to tuberculosis.

I have just now completed a review of 125 films for an asbestos fabricating plant in another state. In this plant the amount of severity of the asbestosis on the first examination in 1930 was well marked, approximately 40% of the group showing definite X-ray evidence of the disease. Nevertheless, the total adult type tuberculosis rate was only 5%; four of these cases occurred in persons with asbestosis and 2 of them were considered probably active.

A second examination was made upon 67 of the original group after an interval of 5 years during which they remained at work. Now the incidence of asbestos had increased to 62% but the tuberculosis rate had fallen to 2.9%. A third examination was done on 57 of the original group who still remained in employment after a further interval of 3 to 4 years; in this group the incidence of asbestosis was over 80% ...t that for tuberculosis only 3.5%. In spite of excessive amounts of severe asbestosis the tuberculosis rate remained within the limits usuall; found in American industrial populations.

The behavior of the tuberculosis in these people was not unusual. For example one man, a spinner for 13 years, was 31 years old when first examined. He had at that time an early non-specific dust reaction and evidence of old tuberculosis in the top of his lungs. In two succeeding examinations his dust reaction steadily increased to reach first stage asbestosis 9 years after he was first seen. His tuberculosis however, remained apparently uninfluenced. Most of the others behaved in the same manner. These people had already been exposed to asbestos dust for periods of 3 to 18 or more years when they were first examined and the three subsequent examinations during the following 9 years give us a good opportunity to follow what might have developed. No new case of tuberculosis appeared. If it had not by that time the chances were not very great that they would later.

After they left the asbestos industry we do not know what happened to most of them but on a few there are insurance records that indicate the cause of death. Two died of tuberculosis. One had had his infection when he was examined in 1930 at the age of 50. At that time he had an early asbestosis after weaving for 10 years and evidence of associated chronic tuberculosis. He was advised to leave which he did and died of his infection about 3 years later. The second an aged 32 had been a weaver for 12 years and had first stage asbestosis but no evidence of tuberculosis at the time. He left his job after the

PRODUCED S/C/M/Ms 0706

first examination for reasons not stated. Three years later he was reported to have died of tuberculosis in a sanitorium. Such cases could occur anywhere.

It is possible that if we had follow-ups on more of these cases after they left the asbestos industry we would find more persons who subsequently contracted tuberculosis and died of it. However, the evidence now available indicates no such tendency. Animal experiments, contrary to those upon silicosis, disclose no theoretical reasons for suspecting that asbestosis creates any special susceptibility to the tubercle bacillus of Koch.

I am becoming more and more convinced that that the high tuberculosis rates reported in English autopsy statistics are due to causes other than occupation. I believe that the same must hold true in Quebec where the amount of severity of the asbestos dust reaction is very much less than it is in the fabricating plants in the United States.

I believe I have covered the other points raised in your letter and will therefore not prolong this discussion further.

Very truly yours,

Leroy U. Gardner, M. D.
Director

LUG:RH

cc to Mr. Vandiver Brown

PRODUCED S/C/M/Ms

-: M E M O R A N D U M :-

TO: Dr. Wheatley

FROM: Miss Reilly

DATE: June 19, 1944

Attached are copies of the surveys made by Mr. Fehnel of the Johnson's Company mines and mills in 1939 and of the new mill in March 1931. The dust concentrations found were much higher than the allowable concentration of five million particles per cubic foot as established by the U.S. Public Health Service for dust in asbestos mills. Although there was an improvement in the new mill, the concentrations in the crusher department and the screening department were still too high.

Among six men physically examined two showed first degree asbestosis but none of the men appeared to have tuberculosis.

The sanitary conditions in the plant were rather poor and it was noticed that there was an unusual degree of carelessness among the employees in spitting on the floor. Housing conditions in Thetford Mines were also poor. Since the war the mills and mines have been operating 24 hours a day. The increased work causing a corresponding increase in the production of dust, and the lack of rest may produce a decreased resistance among the employees which may influence the incidence of tuberculosis.

If it is advisable Mr. Fehnel can arrange to go to Thetford Mines to make a recheck survey of the Johnson's Company properties. If possible, it might be well to include a survey of living conditions of employees.

Reilly

M E M O R A N D U M

July 3, 1944

DR. ARMSTRONG:

The Actuarial Division has asked us to study the Johnson's Mine Company on which we have Group Life coverage, because in the last three years we have paid 28 claims of which 13 deaths were due to tuberculosis. The Group is increasing the premium on the company as of July 1, 1944.

Johnson's Mine Company quarries and manufactures asbestos and is located in Thetford Mines. Several industrial hygiene surveys have been made at Johnson's Mines in past years--the first was in June 1930 in connection with the study of an asbestos industry in Canada. Another study was made in March 1931. As you will probably recall the conclusion reached in the asbestos study was that asbestosis did not predispose to tuberculosis. Very high dust counts were found at Johnson's Mines with 99.85% of the particles of less than 10 microns. Workers were very careless about expectorating on the floors; drinking water was supplied in buckets and common drinking cups were in use. A number of recommendations were made to improve general operating conditions of this mine. No subsequent study has been made. I have suggested, inasmuch as Mr. Fehnel is planning to visit Canada on other business, that he include Johnson's Mine in his trip with a view to a recheck survey of the Johnson's Company properties and a survey, if possible, of the living conditions of employees. If you think it feasible, I might be able to arrange to go along on this trip also. It seems to me regardless of whether asbestosis contributes to tuberculosis, there is a tuberculosis problem, not only in Johnson's Mines but in Thetford Mines. The latest mortality figures that I could secure show that Thetford Mines in 1941 had a tuberculosis mortality of 259 per 100,000; in Quebec 80 per 100,000; and in Canada 51 per 100,000. I have written to Dr. Gardner in Saranac to ask his advice about the present status of asbestosis in relation to tuberculosis and also for any suggestions as to the approach to this problem in Canada. I discussed the matter briefly with Dr. Burnette when he was last here and he suggested getting in touch with Dr. Turgeon, Director of the Division of Industrial Hygiene in Quebec City. I plan to write to Dr. Turgeon for more up-to-date figures on tuberculosis mortality and a breakdown by male age groups. If I went to Canada I could discuss the problem more freely than I could by mail. Before plunging into this, however, I should like to have your advice as to the proper lines of procedure so as to avoid crossing any administrative lines or stirring up trouble without leading to any constructive result. I might add that the Actuarial Division has asked Dr. McConnell about the health conditions in Johnson's Mine from time to time. Dr. McConnell's opinion was that the employees were French-Canadians and looked undernourished and that, in his opinion, the claim experience would not be very good. It has been for this reason that A&H has not been sold.

PRODUCED S/C/M/MS

George M. Wheatley, M.D.

MET 0698



MEMORANDUM

July 3, 1944

DR. WHEATLEY:

I think it would be highly desirable, if you can arrange it, to go with Mr. Fehnel to Thetford Mines. You could materially supplement his observations by paying some attention to general sanitation, housing, medical supervision, if any, etc.

When is Mr. Fehnel visiting Canada and what contacts is he making? Mr. Barrett spoke to me about this, but I do not have a record of the detailed plans. Mr. Barrett said he would clear Fehnel's contacts with Mr. McDonald, by sending him a note regarding them, and by sending copies of the same to Dr. Burnette and to me.

The simplest procedure would be to discuss this with Mr. Barrett and have him include a reference to the Thetford Mines contact in his memo to Mr. McDonald.

If you have an opportunity before the visit to discuss it further with Dr. Burnette when he is next in the Home Office that would be desirable.

It would no doubt be desirable to write to Dr. Turgeon. I assume he is Director of the Provincial Division of Industrial Hygiene.

One other important issue remains and that is the attitude of the Johnson Mine Company. Are they at all aware of their unfavorable tuberculosis record? I suppose they are, as their rate is being increased. Have they asked the Company to make a study? If not, their cooperation or at least acquiescence should be secured before we visit the place. Mr. Morecroft might know about this factor, though I expect it may have to be cleared through Mr. Barrett or the Group Division.

Third Vice-President.

P-Wheatley
9
4&B 11-6-44

July 9, 1944

Dr. Leroy U. Gardner, Director
Saranac Laboratories
Saranac, New York

Dear Dr. Gardner:

Could you give me your present opinion about the relationship, if any, between asbestosis and tuberculosis? I know that previous studies appear to indicate that asbestosis would not predispose to tuberculosis. Has any recent experience changed this point of view? Recently I have had occasion to look over our claim experience in Thetford Mines and note that tuberculosis is the chief cause of death. Of course, mortality with respect to tuberculosis for the population as a whole in Thetford is high. On the other hand, as far back as 1931, we have found some pretty high dust counts in some of these mines with instances where 99.85% of these dust particles were less than 10 microns. We are inclined to think that the claim experience represents the type of worker we are dealing with and is not related to working conditions. However, we are planning to study this a little more closely. Before getting into it, I would appreciate your advice in approaching this problem. Regardless of whether this is a problem directly related to working conditions, it is obviously a problem in the control of tuberculosis. Who in the public health field in Canada would be most interested and helpful in studying and doing something about this?

We will probably ask Fehnel to make some more dust studies in some of the places that we have access to and I am also trying to secure some tuberculosis mortality figures for comparison for Thetford by age groups from Thetford, Quebec, and the Dominion of Canada. If you have any data I would appreciate having them.

With kindest regards.

Sincerely yours,

Assistant Medical Director

PRODUCED S/C/M/Ms

THE SARANAC LABORATORY
FOR THE STUDY OF TUBERCULOSIS
OF THE EDWARD L. TRUDEAU FOUNDATION
SARANAC LAKE, N.Y.

P.Wheatley 10
10
DEB 11-6-84

July 6, 1944

JUL 7- P.M.

Dr. George M. Wheatley
Assistant Medical Director
Metropolitan Life Insurance Company
New York, New York

Dear Dr. Wheatley:

Your letter of the 3rd arrived at a most opportune moment as I am just planning to go up to the asbestos mines next week to review again the situation there. I am bringing Dr. Vestal of the North Carolina Board with me because he has had so much experience with the real asbestosis that they see in his vicinity.

The films that I have already reviewed from Quebec generally fail to show characteristic shadow patterns and I have reached the conclusion that the disease which they have is minimal and quite different from the changes produced by inhaling fibre in the fabricating mills. Most of the Quebec cases show little more than non-specific, linear exaggeration which I believe is due to particulate serpentine and other non-fibrous silicates.

I have had three or four autopsies from the Thetford region; all of them complicated by advanced tuberculosis. Microscopic examination revealed minimal amounts of asbestosis but the change was not sufficiently marked to be diagnosable on gross inspection. I have felt however, that the infection was incidental and not a specific result of occupational dust. This opinion is strengthened by the fact that in North Carolina the incidence of tuberculosis is lower in the asbestos employees than in the population at large. If a predisposition were involved it should operate with equal effect in every part of the world

I would think that mortality checks such as you propose collecting would be extremely valuable. In fact I have urged the Canadian group to obtain figures for men in Thetford and in Asbestos as well as other communities of the Province. We know that the tuberculosis rate is excessive everywhere up there but reliable figures on the comparative mortality in and out of the industries are not available. If you can get any data I am sure it would be most helpful.

I am in correspondence with Fehnel about the matter collecting more dust samples to determine the relative number of fibres and particles in air-borne dust. The former, I believe, are the only ones capable of producing fibrosis and up to now we have based our estimate of the hazard on the total dust count. If we can get a more refined standard it should be of practical significance.

PRODUCED S/C/M/Ms

With best wishes,

Sincerely yours,

Leroy U. Gardner, M. D.

Dr Armstrong, -

I would suggest a study of the Bell Co mine and mills at the same time a visit is made to the Johnson Co. The Bell mine is adjacent to and opens into the Johnson mine. The comparison studies may be of value in analyzing the claim experiences of these companies

JWT

7/6/44

MET 0825

PRODUCED S/C/M/Ms

July 26, 1944

Dr. Paul Parrot, Demographer
Ministry of Health and Social Welfare
Parliament Buildings
Quebec City, Canada

Dear Dr. Parrots

I would like to thank you very much for the information which you were good enough to give me in your letter of July 24th. Your kindness in compiling and sending us the figures on tuberculosis mortality so promptly is much appreciated.

Sincerely yours,
DR. WHEATLEY

Assistant Medical Director

MET 0824

PRODUCED S/C/M/Ms

P-Wheatley 16
16
DBB 11-6-84

MEMORANDUM

July 26, 1944

Dr. N. L. Burnette
Assistant Secretary
Canadian Head Office

You will recall on your last visit I discussed with you the problem of tuberculosis in Thetford. Since that time I have made further investigation of the problem and it would seem to be worth while for me to visit Thetford with a view to first-hand observation of the situation there. Several industrial hygiene surveys have been made at Johnson's Mine in past years. The first was in June 1930 when Dr. Lanza was studying the asbestos industry. Another study was made in March 1931. At that time very high dust counts were found in Johnson's Mine. Workers were very careless about expectorating on the floors; drinking water was supplied in buckets; common drinking cups were used. A number of recommendations were made to improve general working conditions of this mine. No subsequent study has been made. Adjacent to Johnson's Mine is Bell Mines, also a Group policyholder. We have made a comparison of their mortality rates over the last four years, and the following table shows the difference in mortality. This may not be statistically significant but would seem to warrant further investigation, both of Bell and Johnson's Mines.

Although Dr. Lanza had concluded from his asbestos study that tuberculosis was not an expected complication from this disease, in view of this experience in Johnson's Mines I felt warranted in writing to Dr. Gardner in Saranac to find out what his present opinion is. He has made some recent studies, both in Quebec and in North Carolina of this possible relationship and the postmortem evidence indicates, in his opinion, that asbestosis does not predispose—like silicosis—to tuberculosis. However, he thought that comparative mortality and morbility studies of tuberculosis and asbestosis in Thetford and other communities in Quebec and other provinces would be very worth while. Following a trip to Quebec last week, he has just written me that, in his opinion, the outstanding feature in Thetford is not asbestosis but tuberculosis.

Since Bill Fehnel is planning a trip to Canada also, I thought I would plan to go at the same time. This we expect will be the week of September 11th. Bill Barrett is arranging, through Mr. Perry, to get invitations for us to visit Johnson's and Bell Mines. There are some other industrial health contacts that Mr. Perry seems to think it would be desirable for us to make also.

Since this problem in Thetford appears to be largely one of tuberculosis, it would seem to be a fertile field for the Canadian Tuberculosis Association and public health agencies in Canada. I would be interested in meeting the people that you think would have an interest in this problem, both in the Province and in the Dominion. If they are interested in making an attack on the problem, we might be in a position to give them some technical and statistical help and perhaps promote the interest of management in this disease.

In view of this pending trip, other activities or points of

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interest in relation to our Welfare work may occur to you as pertinent for us to look at together.

George K. Wheatley, M.D.
Assistant Medical Director

PRODUCED S/C/M/Ms

THE SARANAC LABORATORY
FOR THE STUDY OF TUBERCULOSIS
OF THE EDWARD L. TRUDEAU FOUNDATION
SARANAC LAKE, N.Y.

SEP 29 P.M.

September 28, 1944

Dr. George M. Wheatley
Medical Director
Metropolitan Life Insurance Company
New York, New York

Dear Dr. Wheatley:

I have recently been in communication with Mr. Vandiver Brown and the local attorneys of the Canadian Asbestos interests regarding the matter of your proposed investigation of the incidence of tuberculosis in the Province of Quebec. I have assured these gentlemen that it would be most desirable from every standpoint if one could obtain more accurate information on the incidence of tuberculosis in this section of Canada. The local doctors appreciate that they have a problem but I am not sure that they realize how serious it is. From the claims standpoint in the asbestos industry I think there is a tendency to attribute much of this infection to exposure to asbestos dust. I don't believe that this opinion can be substantiated because in other sections of this country where there is much more asbestosis than there is in Quebec, the tuberculosis rates are not excessive. In fact in North Carolina there is less tuberculosis in those exposed to asbestos dust than in all the other industries.

I believe it would be most desirable if your organization could establish both male and female rates in the communities of Thetford and Asbestos and also as controls determine rates in other industrial towns of similar size. This would afford the information which is badly needed on the tuberculosis rates among those exposed to asbestos and provide adequate controls. I would be very much surprised if you found any excess of tuberculosis in the exposed male population of the communities where asbestos is mined and milled. A bulletin published by the Metropolitan setting forth these findings would do much to clarify the local opinions on this matter.

We have completed our counts on Mr. Fehnel's samples of the dust taken at Manville and find that the total concentrations are apparently low. Most of the samples contain appreciable amounts of asbestos fibre and we are looking forward to making a comparative study of the material that he will collect in Quebec in the coming weeks.

With best regards,

Sincerely yours,

Leroy U. Gardner, M. D.
Director

LUG:RH cc to Mr. Brown

MET 0886

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DRAFT

TRIP TO MONTREAL, ASBESTOS, THETFORD MINES, QUEBEC

10/16/-10/21/44

Purpose

To explore the high tuberculosis mortality rate in Thetford Mines; to advise the asbestos industry regarding health progress in Thetford Mines; to visit Group policyholders in Montreal.

Individuals and Groups Visited

October 16, 1944

Radio Corporation of Canada: Mr. Deacon, the new President, Mr. McCallum, Personnel Director; Dr. Kaufman, Medical Director, Mr. Rousseau, Safety Director. Charles Frosst Co., pharmaceutical manufacturers: President, Eliot S. Frosst; Mr. Sheen, the Plant Manager; and Dr. Lozinsky, Director of Research.

October 17, 1944

Called on Mr. Robert Steele, President of Asbestos Corporation; Dr. Jacques Cartier of the Montreal Antituberculosis Society; 20 physicians doing industrial medicine in Montreal who are members of the Congress of Industrial Physicians, and their president Dr. Graham Ross, Medical Director of National Breweries. The meeting was held in the projection room of the Aluminum Company of Canada, whose Medical Director is Dr. [redacted]. Guest at the meeting was Dr. Tourangeau, Director of Industrial Hygiene, Provincial Health Department of Quebec.

October 18, 1944

** Mr. Steele explained also that Mr. Ivan Sabourin, lawyer, through whom Mr. Frank Roe arranged for our visits to Asbestos and Thetford Mines, is the legal representative for the Asbestos Producers Association of Canada. This includes not only the three operators in Thetford, but Johns-Manville in Asbestos. Mr. Sabourin has been handling the compensation cases arising out of the asbestos industry. He has also been guiding the producers at Thetford Mines in the setting up of the health clinic which they are charged to do by law. Mr. Sabourin is interested in securing all the help and guidance possible, not only as regards the establishment of a health clinic but in a study in the problem of asbestosis and, indirectly, tuberculosis. Several cases have come before the Compensation Commission of Thetford Mines since the disease has become compensable. The prevailing medical opinion in the Province is that asbestosis contributes to tuberculosis. Furthermore, there is enough confusion about the subject in the minds of the doctors that claims are being filed for asbestosis when the cause of death may be due to kidney or heart disease when the x-ray picture also reveals some degree of asbestosis. There is also no agreement on the type of x-ray film which should be taken to properly reveal asbestosis.

Meeting with Mr. Sherry, Manager of the Johns-Manville Plant in Asbestos. The meeting was attended by about a dozen of the executives of Asbestos, including Dr. Stevenson, Medical Director, and Dr. Smith, his assistant, and Mr. C. M. McGaw, in charge of Industrial Relations. Visited the asbestos mill and weaving plant in Asbestos, also the hospital there.

MET 0841

* Mr. Steele explained that asbestos producers in Thetford, of which is corporation is one, are planning to establish a health clinic which the law makes necessary the government is giving the industry the chance to set it up. * Thus ...

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October 19, 1944

In Thetford, conference with Mr. O. C. Smith, President of Bell Mines; Mr. Andrew Johnson, President of JohnsonsMine; Mr. Alfred Penhale, Manager of Asbestos Corporation Mine in Thetford. Inspected the Bell, Johnsons, and Asbestos Corporation mills. Visited the Thetford Mines Hospital. Conferred with Dr. Sirou, practicing physician in Thetford Mines who specializes in tuberculosis and has charge of the tuberculosis service at the hospital; and Miss Chess, Metropolitan Nurse in Thetford.

October 20, 1944

Conference with Dr. Parrott in Quebec, the statistician for the Provincial Health Department; Dr. Foley, Epidemiologist, Dr. Gregoire, Deputy Minister of Health; and Dr. Gilbert, Director of Health Education.

October 21, 1944.

Conference with Dr. Burnette.

Results

RCA claim rate, as analyzed by Mr. McCallum and Mr. Roussêau, is running currently 40 per 1000. It reached a peak during August of this year. I do not believe that all these claims are legitimate illness. The bulk of the claims and the highest disbursements are in the radio department which employes about 90 percent females. Predominant diagnoses are neurasthenia, weakness, anemia, etc. Dr. Kaufman was very critical of the Company's claim administration, especially the part played by the Medical Examiner. He said they were poorly trained and did not help in controlling malingering. He made a point of the fact that Examiners' examination was no more revealing of the patient's physical condition than the patient's own physician. He complained about the Company's failure to use laboratory procedures such as blood tests, x-rays, etc., to check up on vague diagnoses submitted by attending physicians. He was bitter about one case which the Company permitted to have 13 weeks' disability because our Medical Examiner agreed with the attending physician, although Dr. Kaufman believed the worker was malingering. On the other hand, on a case where he knew the facts and thought that the worker needed a rest the claim was turned down.

The Radio Department was inspected and new ventilating hoods to take off soldering fumes were observed. These followed Mr. Fehnel's previous study of the plant. He will make a recheck of these working conditions on this trip.

Charles Frosst Company is planning a health service for its 200 employees. Mr. Fehnel and I inspected the plant, made suggestions regarding the health service, and we will send Dr. Lozinsky information on the medical setup for a small plant. Several working locations in the plant raised the question of possible hazard from mixing drugs. Mr. Fehnel will make a survey of in these working locations on this trip.

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On October 17th at 3:30 at the Aluminum Company of Canada, Mr. Fehnel and I spoke on industrial hygiene. Dr. Ross presided. I described the organization and purpose of the Industrial Hygiene Bureau of the Company, and then discussed briefly the reason for our visit, with some discussion about tuberculosis and asbestosis. Also discussed the role of industrial medical service in the problem of rehabilitation of veterans returning to industry and recent developments in the control of respiratory infections. Also saw a very interesting color film on nutrition produced by Squibb & Co. It is a 16-mm. film, runs about 40 minutes, and is called "Modern Nutrition". A copy can be obtained from W. B. McHargue, Chief of the Nutrition Department of Squibb in New York. Mr. Stoddart was their Canadian representative. This film is intended for a medical audience. Dr. Ross would like copies of our industrial hygiene material to distribute to physicians in his group—about 25 copies of any material would be appropriate. Dr. Tourangeau was very much interested in our proposed visit to Asbestos and Thetford Mines. He said that he was hopeful of making some dust studies there himself. We promised to try to secure the approval of the Asbestos operators in Thetford for Dr. Tourangeau's laboratory man to work in Thetford with Mr. Fehnel the following week.

On October 18th, conference with Mr. Sabourin, Mr. Smith, Mr. Johnson, Mr. Penhale, and Mr. Fehnel, and myself. The health clinic was discussed. Mrx. Smith The three operators have agreed to the establishment of the clinic and are prepared to spend xxx between $50,000 and $60,000 to establish it. They want the best x-ray equipment possible are ready to employ a full-time physician. Dr. Cartier was the physician that they have considered. In Not knowing this, but knowing he was interested in the problem of tuberculosis, I had called on him the previous day at Dr. Burnette's suggestion. Dr. Cartier has had very good training in the field of medicine and especially tuberculosis. He is seriously considering the offer to go to Thetford Mines. I urged him to accept it if it were offered. At the meeting of the mine operators, I recommended him and it was agreed to offer him a position. I also suggested that the doctor be put on the Management Committee for the health clinic which is composed of the three mine operators. The health clinic will be established for preplacement medical examinations and subsequent fullow-up examinations and health supervision of the workers in the three companies. It is intended to employ one or more nurses, as necessary, and a technician for x-ray and other laboratory purposes. It was thought that the plan could be initiated at once if Dr. Cartier could accept. They would permit him to determine his own leads and give him sufficient time to study the local situation and visit other places in order to become fairly well oriented with his problem. A specified yearly sum will be available to him for travel and post-graduate study.

The Provincial Health Department will send me mortality data on tuberculosis in the Province. The tuberculosis mortality rate at Thetford Mines is high, but it is also high in a number of other Provinces in the community. No breakdown has been made which will show whether there is an excess male mortality from tuberculosis in Thetford. If asbestosis contributes to tuberculosis, one would expect a higher mortality among males in Thetford Mines since practically no women are employed in the industry in Thetford. Dr. Parrott promised to send in two or three weeks age-specific mortality rates for males and females in the Dominion, in the Province of Quebec, and in Thetford Mines, Asbestos, Valleyfield, Rimouski, St. Hyacinthe, St. Jean, Cap de Madeleine, and Chicoutimi. He will

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PRODUCED S/C/M/Ms

He will likewise send infant mortality for these communities. We were interested in securing a description of the economic and living conditions of these same communities.for comparison with Thetford Mines. Dr. Parrott said that the Dominion census had secured this information but that it had not been analyzed. Therefore, it is not available. When I met Dr. Burnette on Saturday, I discussed this with him and he thought it would be possible for our Nurses to secure this information.

In discussing with Mr. Sabourin what further steps might be taken to clarify this problem of asbestosis and tuberculosis, we agreed that there was need to educate the physicians in the Province regarding asbestosis. There was also urgent need for agreement among physicians and roentgenologists and others who were being called upon to act as experts in this disease on standards of x-ray examination and diagnosis. To this end, Mr. Sabourin thought it would be possible to do two things: (1) to invite a medical commission to review and agree upon standards of diagnosis; (2) to arrange a clinical symposium on asbestosis. He thought that the Asbestos Association might pay half of the expenses to bring doctors in the Province to this clinical symposium;

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PRODUCED

TRIP TO CANADA

Monday Visited RCA in morning. Oct. 16th.

Conferred with Mr. McCallum, in charge of personnel; Mr. Rousseau in charge of safety. Reviewed their claim high rate in radio department. When 90% female claims are for neurasthenia, weakness, etc.

Dr. Kaufman - good man - critical of medical procedure in claim administration. Medical Examiners poor lot. Lack training in their job. One case was permitted 13 weeks when it was malingering. Another we turned down when it was legitimate.

Inspected plant. Blind man was assembling. Fehnel will check, especially soldering hoods in but not perfect. Lunch with Mr. Deacon and Mr. McCallum, Perry, Fehnel.

Afternoon. Charles E. Frosst & Co. pharmaceuticals.

200 employees. Health service? Dr. E. Losinsky, Director of Research - M.D. in mixing dept. housekeeping left something to be desired. Fehnel will visit to make survey.

Tuesday Visited Group Office.

Mr. Robert Steele, President, Asbestos Corporation. Mr. Sabourin, legal representative for Asbestos Products Association. Health clinic by law - government or industry - industry has chance to do it. Want all help then can get.

Lunch with Dr. Ross.

Met Dr. Cartier.

Meeting with Congress of Industrial Physicians at Aluminum Company of Canada. Drs Ross, Billfeld; Dr. Tourangeau, of Provincial Health Department.

Ind. Hyg. setup
Rehabilitation
Tbc. and asbestosis
Resp. infec.

Dinner with Ross, Tourangeau, Billfeld, Fehnel, Perry.

Ross would like copies of industrial hygiene material. Tourangeau's lab. man was interested to work with Fehnel.

Wednesday Drove to Asbestos. Lunch with Mr. Sherrod, Manager; Dr. Stevenson, Dr. Smith, and others. Visited plant, hospital, and doctors.

Stevenson - Co. should emphasize on form sent to claimant that it is not for vacation, etc. Good health program for years - strong position in view of developments in compensation field.

MET 0845

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Smith - x-ray mobile units of Health Department not very good
poor equipment.
No safety shoes. Tuberculosis in women in the weaving mill.
very dusty. Pretty new ventilating equipment in. Electrostatic precipitation only about 75% because now being overloaded.

Want to enlarge hospital. Takes care of surrounding country to capacity but turns away many.

Mr. McGaw said they'd like nursing service - thought they'd have it; wants outline of health education material.

Evening.

Met Mr. Smith of Bell, Johnson of Johnson's, and Penhale of Asbestos Corporation. Discussed plans for clinic. Doctor - x-ray - $50,000-$60,000. $700 ($1,000 for travel) Doctor, nurse, Managing Committee—3 managers (doctor also)

Local doctors be interested - Dr. Sirouf

Manager agreed to invite Health Department men to works. Fahnel agreed to ask Cartier.

Thursday Bell - older men
Asbestos
Johnson's - tin cups. toilet on 1st floor of 4 story mill.

Afternoon - Hospital. 150 beds - 75 tbc. 1930 run by Sisters. Sister thinks tbc. due to dust, but males do not predominate. Excellent, modern equipment, except x-ray machine (20 years old - 100 milliamperes) No EKG. Dr. Sirou in charge of tbc. service on outskirts of city (800 acre farmers)

Miss Chesa - NLI Nurse since Oct. 1st. Homes are better than ones she visited in Quebec. Mostly maternity - families not large that she has visited. Advised her to call on Mr. Smith and Mr. Johnson.

Dr. Sirou (see other notes)

Friday Dr. [redacted]
Dr. [redacted]
Dr. [redacted]
Dr. [redacted]

Saturday Dr. Burnette

PRODUCED S/C/M/Ms

Dr. Sirou in charge of tbc work for Health Department and at hospital. Obsolete equipment - 20 yrs. old - 100 milliamps. Sister is technician. Excellent other equipment. Believes tbc caused by asbestos. 6 cases (he has twice written otherwise) skeptical of Gardner, uses Lanza.

Chicoutimi
Cap de Madeleine
St. Jean
St. Hyacinthe
Rimouski
Valleyfield
Asbestos
Thetford

Dr. Foley - Epidemiology - County health adm. Thetford $15,000 budget for health. County pays 10% of local health budget. 5 part-time nurses, 1 full-time Health Officer, Dr. Blais, But for every known open case probably 10 cases (not open)

Follow-up poor. Nurses poorly trained for tbc.

Didn't know compensation law had made asbestosis compensable.

Thought industry was uncooperative. No information on length of occupation. (Sabourin past 5-6 yrs. if they asked they would have gotten it, from industry) ade only 1 attempt to get Lanza's report (doubt if he knew what report was migration of miners (not so) No tbc. director (of hospitals)

Dr. Parrot - 2-3 weeks will send information on age-specific
5 towns comparable in geography, economic status, industry,
size desceiption of medical services, also infant mortality.
geography
economid status

Dr. Gregoire

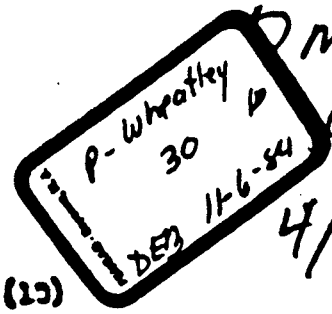
Pittsburgh all hygiene meeting with Sabourin, Lanza, Gardner
Standards of x-rays, etc.
Clinical meeting to educate doctors.
Check on lab. equipment.

Clinical session
Symp. and diagnosis
Pathology
Xray

0847

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Copy for Dr. Wheatley



(13)

MML-60
BBC
4/13/79

October 25, 1944.

Dr. A. Losinsky, Director of Research,
Charles E. Frosst & Co.,
Montreal, Que., Canada.

Dear Dr. Losinsky:

In accordance with our discussion last Monday, October 16 when we visited your plant with Mr. Fehnel, I have put together some ideas which you may find helpful in planning and developing your health service for employees. The following comments are intended to cover the needs of an organization with the number of employees which you now have.

The eventual purpose of an industrial medical service is health maintenance of the working force, or prevention of disease and injury through medical supervision and health education. This long-term purpose should be held in mind continuously, but it is eclipsed in the more immediately important problem of providing prompt medical and surgical care as required by law for the treatment and rehabilitation of workers suffering industrial accidental injuries or occupational diseases, which actually are the cause of only a small fraction of the total lost time due to sick absence from work. The smaller plant needs attention to health maintenance as much or more than the large plant which usually has an effective employee selection and placement program.

The fundamental basis of all industrial medical services is the physical examination. The more comprehensive services are developed from it, and have as their foundation an accurate knowledge and record of the physical condition of the workers, correlated with a thorough knowledge on the part of the physician of the character of the working environment, and the potentially hazardous materials and processes involved. An accurate record of the incidence, frequency, and severity of all illnesses and injuries, both occupational and non-occupational by causes is the essential working basis for a sound preventive medical program according to modern standards.

Upon the knowledge of the number and nature of illnesses and injuries occurring in the workers, and upon the number of physical examinations as entrant from labor turnover and number working in exposure to health hazards, will depend to some extent the decision concerning the number of hours or days when a p time physician will be needed on the plant premises. The physician's time can be substantially conserved by the employment of a graduate registered nurse.

As a suggestion for a plant employing 300 workers, the employment of a competent nurse in charge of a well-equipped dispensary might be considered. She

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Dr. Losinsky.

should work under the direction of a part-time physician, who should be at all times on call, but who might serve at the dispensary during certain specified hours once or twice a week. The nurse can then arrange to have him see all indicated cases that are not of an urgent nature. Such a plan would be correlated with the Metropolitan's home visiting nursing service for those workers discovered to be absent due to illness.

The operation of a simple first aid room in charge of a nurse in a small plant is described in the enclosed booklet "Medical Service in Small Industrial Plants", and the procedure, space, and equipment for physical examinations is described in the enclosed booklet "Physical Examinations in Industry".

The health maintenance program for the small plant should at least include:

1. Preplacement physical examinations for all applicants for employment.
2. Periodic physical examinations of all employees yearly or biennially; special periodic examinations including appropriate laboratory tests, at much more frequent intervals for all workers exposed to toxic substances or other potential health hazards.
3. Physical supervision of all physically substandard or handicapped workers and examination of those upon transfer from one job to another to assure that their work is within their physical capacity.
4. Follow up of all sick absentees to assure that they are obtaining needed medical care and diagnostic facilities from their physicians or local clinics, and examination of workers returning to work after absence due to illness or injury to assure that they are fit to resume the occupation and non-infectious to others.
5. Efficient emergency care of all industrial injuries and occupational diseases with supervision and follow up of subsequent treatment and rehabilitation of these (in some cases a program of complete medical and surgical care of workmen's compensation cases is adopted by the employer, with approval of the state compensation authority).
6. Record system for the analysis of lost time analyzed by cause, nature, duration of disability and department or occupation of workers.
7. Supervision in cooperation with plant safety department of the working environment and plant sanitation.
8. Health education program organized to provide instructions for safe working methods and personal hygiene, and appropriate general health instruction such as could be provided by suitable selections from the Metropolitan health pamphlets which are distributed to Group policyholders every other month in quantities sufficient for every worker to have a copy. Special campaigns can be introduced as the need is made apparent.

The selection of a physician is very important to the success of the program and little of value can be expected to result unless he is interested in the work, given opportunity to become familiar with plant processes and hazards, adequately remunerated, and given a free hand to the extent that he reports direct to a major

PRODUCED S/C/M/MS

Dr. Loeliger.

establish ethical professional relations in the community. He must have the confidence of the workers, and this can only be achieved through genuine interest in their welfare. If the physician selected has had no previous experience or training in industrial medicine and hygiene he should be given an opportunity to take advantage of some of the postgraduate or "refresher" courses and symposia now being widely offered in this subject by medical colleges and medical societies throughout the country.

The Council on Industrial Health of the American Medical Association has issued a series of publications on industrial medical relationships, procedures for physicians, space and equipment of medical departments (photostatic copy enclosed), suggested standing orders for physicians to issue for the guidance of nurses who have immediate responsibility over an industrial dispensary, and so on, which can be obtained from Dr. L. H. Petersen, Secretary, Council on Industrial Health, American Medical Association, 535 North Dearborn Street, Chicago, Ill.

Another source of advice and assistance would be Dr. F. J. Tourangeau, Director of Industrial Hygiene, Ministry of Health and Social Welfare, Parliament Buildings, Quebec.

Supplementary diagnostic facilities for clinical laboratory tests and X-ray diagnosis can often be arranged for by small industries through the local Health Department, the local hospitals or sometimes through the local tuberculosis association. As you probably know, the Montreal Anti-Tuberculosis Society has been making X-ray surveys in industry.

The enclosed photostatic copies of articles describing requirements for space and equipment and illustrating floor plans for small plant dispensaries may aid in planning the dispensary, but the physician should be given a chance to express his own views in this matter.

As to the cost, little that is useful can be said under present-day conditions. This can best be estimated after the program has been more definitely formed and the scope of the work declared upon. The principal operating cost item is the salaries of the professional personnel, and information on this topic is best secured from the local medical society and the local nurses' organization, since salaries vary greatly according to locality.

A bulletin in which the monetary value of plant medical service is estimated is enclosed, and certain rough estimates of the average per capita cost of operation can be obtained by reference to the surveys of industrial medical services mentioned in the attached reference list.

If, after you have gone over this material, there is any other information you would like, please write to me.

Very truly yours,

George M. Wheatley, M.D.
Assistant Medical Director

PRODUCED S/C/M/MS]

PLAINTIFF'S EXHIBIT
Jml 601
11-29-82

November 11th, 1944.

Vandiver Brown, Esq.,
General Attorney,
Executive Offices,
Johns-Manville Corporation,
22 East 40th Street,
New York City.

Dear Vandiver:- RE: CLINIC AT THETFORD (ASBESTOS CORPORATION LIMITED; BELL ASBESTOS MINES LIMITED AND JOHNSON'S COMPANY).

Dr.Cartier, whom as you know was highly recommended by Dr.Gardner and also by Dr.Wheatley of New York has finally accepted the appointment as of this date and it has occured to me that it would be immensely helpful for him to attend the Pittsburg Air Hygiene Conference if arrangements could be made accordinly. I wonder, therefore, if without putting you out too much an invitation could be arranged for Dr.Cartier.

Yours faithfully,

IVAN SABOURIN

IS:RS

C.F. Dr.Wheatley
Mr.Sherry

IOEH 1178.

RECEIVED

KING MINE

ASBESTOS CORPORATION

Thetford Mines, Quebec, Can.

* * *

A recheck survey of the dust conditions in the mill of this company was made by the Industrial Health Section of the Metropolitan Life Insurance Company on October 26, 1944.

A previous study had been made in June, 1930.

* * *

See also Lanza - 2070
Lanza - 2077

INSTITUTE OF OCCUPATIONAL
AND
ENVIRONMENTAL HEALTH
MONTREAL, CANADA

MANUFACTURING OPERATIONS

No changes have been made in the mill operations since the first survey. The only effort at dust suppression consisted in covering some conveyors.

METHODS OF SAMPLING AND ANALYSIS

The samples were collected and analyzed by the method devised and used by the United States Public Health Service.(1)

The following table shows the concentrations of dust found at the time of this survey.

(1)U.S. Public Health Service, Public Health Bulletin #217, Determination and Control of Industrial Dust, J.J. Bloomfield and J.M. Dallavelle, 1935.

King Mine

Asbestos Corporation

Thetford Mines, Quebec, Can.

Sample No.	Location	Date of Sampling	Cu. Ft. Air Sampled	Millions of Dust Particles per cu. ft. air	Type of Dust	Remarks
1	Crusher house, picking belts on primary crusher	10/26/44	15.0	11.6	Asbestos talc	Test made on special run of small quantity of rock. Clear day. Not full production.
2	Mill Bldg. 4th floor (fans and collectors)	"	20.0	14.8	"	Brick building, wooden floors. Windows open. Clear day.
3	Mill Bldg. 3rd floor fibre screening	"	15.0	17.0	"	Wooden floor, windows open. Clear day.
4	Mill Bldg. 2nd floor rock screening	"	15.0	26.6	"	
5	Mill Bldg. 1st floor bagging	"	15.0	18.1	"	Concrete floor, windows and doors open. Clear day.

PERSONAL FACILITIES

Ample toilet facilities are provided and kept clean. Drinking water is supplied by bubbler type fountains. Heated rooms or cabanas are located on each floor of the mill building.

CONCLUSIONS AND RECOMMENDATIONS

The concentrations of dust found at the time of this survey are much lower than those found in 1930. This may be due to the mill not operating to capacity and improvement in the housekeeping. Covering of conveyors is, no doubt, a contributing factor also. When the samples were taken, the windows were open and the day was clear.

It is recommended that efforts be made to further reduce the dust concentrations. According to the United States Public Health Service,(2) five million particles per cubic foot may be regarded as the maximum allowable concentration of asbestos dust.

HEALTH HAZARDS

There are attached reprints of two studies which may be of interest in connection with the hazard of asbestos dust:

"Effects of the Inhalation of Asbestos Dust on the Lungs of Asbestos Workers"

"Asbestosis"

(2)U.S. Public Health Service, Public Health Bulletin No. 241, "A Study of Asbestosis in the Asbestos Textile Industry", 1938.

October 31, 1944.

(10)

Mr. Ivan Sabourin,
507 Place d'Armes,
Montreal, Que.,
Canada.

Dear Mr. Sabourins

This is a somewhat delayed letter, and I offer my apologies for not being able to get off a note to you sooner. However, I have been very busy catching up with what has been happening while I was in Canada.

The plane trip was uneventful and we arrived in LaGuardia in an hour and a half, which is considered excellent time. Again let me thank you for the hospitality which you extended to Mr. Fehnel and me. I hope that I can return this, in some small measure at least, when you come to New York.

The delay in writing to you has had some advantages, because I have had an opportunity to talk with Mr. Woodard, Colonel Lanza and Dr. Gardner. The latter two dropped into the office on Friday and I was able to give them a verbal report of our activities. I told them that there was some possibility that a clinical discussion of asbestosis by recognized experts was contemplated and they were both heartily in favor. Colonel Lanza did not think he could participate while he is still in the Army because of the difficulty of getting time off for such a meeting. Dr. Gardner said that he would be available, and he would suggest inviting Dr. Vestal, Chairman of the North Carolina Medical Board of the State Industrial Commission. Both Colonel Lanza and Dr. Gardner thought that it would be a constructive move to have a committee to establish standards for X-ray examination and diagnosis of asbestosis. They are planning to be at the meeting of the Industrial Hygiene Foundation in Pittsburgh, Pa. on November 15 and 16. I doubt if I can make it because of other commitments, but Mr. Fehnel will be there and arrange to have you meet Colonel Lanza.

Mr. Woodard was, of course, very much interested in what we had done during the week and he told me that he had received a letter from you reporting our visit and which covered the points that I mentioned.

Incidentally, I enclose a carbon copy summarizing my observations of the trip. I am exceedingly interested in the plan to establish a health clinic in Thetford Mines and shall be glad to give you all the advice possible in helping the group there get started. I hope you have been successful in getting Dr. Cartier. Dr. Gardner spoke very favorably about him on Friday.

I am sending you shortly an outline of the purpose and scope of an industrial medical service which I believe the group at Thetford Mines will find helpful perhaps in visualizing the kind of program that they are looking forward to.

MET 0893
PRODUCED S/C/M/Ms

Mr. Sabourin.

There was one point that I was not clear about in connection with the health clinic physician's function. I understood that he would be expected to do preemployment medical examinations. Is he also to treat occupational illness and injury? Mr. Smith mentioned that at the present time in Thetford the employees have their own physician in case of occupational injury and illness. From his explanation I got the impression that the law specifies that the employee should be treated by his own physician and not by the company physician. Is this interpretation correct? I received the impression at Asbestos that all occupational illness and injuries are treated by the company physicians. In many places in the States it has been found that the cost of treating occupational illness and injury is much less when done by the company physician and the quality of care is usually better.

Dr. Gardner is looking forward to seeing the mortality data on tuberculosis which the Provincial Health Department has promised. He reiterated again his belief that it would be desirable to have tuberculosis X-ray surveys made, preferably starting in communities outside the asbestos industry. The group with experience in doing this is the Montreal Anti-Tuberculosis Society and perhaps they will aid Dr. Cartier in studying tuberculosis in Thetford. He could also utilize the facilities of the Montreal Anti-Tuberculosis Society in making surveys in some of the other communities that we have picked for the mortality study.

Both Colonel Lanza and Dr. Gardner thought that the 35 mm. and the 4 by 5" X-ray film which is usually used for tuberculosis surveys would not be satisfactory for X-raying workers in the asbestos industry. They thought that 4 by 5" films could be used for the general population in Thetford Mines and Asbestos, but that regular sized films ought to be used for workers. I think that Dr. Cartier had the same opinion when I discussed some of the practical procedures in carrying out such a survey as we had in mind.

I shall be glad to be kept posted on the progress of the health clinic and will be glad to advise you on any questions that may arise. I presume that I would clear any suggestions through you rather than writing directly to Mr. G. C. Smith, unless you suggest otherwise.

I am enclosing two reprints on asbestosis which you may find interesting.

With kindest regards and thanks again for your assistance in making our trip so pleasant, I am

Very sincerely yours,

George M. Wheatley, M.D.
Assistant Medical Director

Copy to Dr. Burnette

C 0899

PRODUCED S/C/M/MS

METROPOLITAN LIFE INSURANCE COMPANY

PML-68

9 Doc

FREDERICK H. ECKER, Chairman of the Board
LEROY A. LINCOLN, President

WELFARE DIVISION
M. L. BURNETTE, D. Sc. E.
Asst. Secretary

CANADIAN HEAD OFFICE
OTTAWA, CANADA

October 31, 1944

4/13/79

P. Wheatley
38 10
DEB 11-6-84

Dr. George Wheatley
Assistant Medical Director
New York Home Office.

Dear George,-

As I am not to have the pleasure of seeing you on the 2nd, it seems advisable that I answer your letter.

With reference to the Company's Industrial Health material,- our distribution in Canada is not, and I do not think ever will be, sufficiently large to warrant the expense of printing in this country. From time to time we requisition on Home Office for such moderate quantities as will fill our normal requirements. Because of your very recent contact with Dr. Graham Ross and Dr. Billfeld I think you might send these men the publications direct from your office; you will probably want to write to them.

The general welfare pamphlets are another matter. They are printed in Canada,- very often with necessary changes, and we print in both official languages. For these reasons it seems advisable that you should not send this type of material from New York. I will send a set to Mr. McGaw and also to Mr. Sabourin.

I am not going to comment on the statements of Dr. Koffman of R.C.A. or Dr. Stevenson our medical examiner in Asbestos, except to refer you to studies of the claims of the International Nickel Company made by me back in September, 1943. Neither the statements of Dr. Koffman and Stevenson nor the findings of the various Home Office expeditions to Groups in Canada have added one iota to my original analysis. If you have any ideas as to how to improve the situation which, be it remembered, is wide-spread among Groups in general, then I think you ought to discuss this with Vice-President Campbell.

Sincerely yours,

Norman

ds

PLAINTIFF'S EXHIBIT 5234.0

PRODUCED S/C/M/MS

46

MINISTÈRE DE LA SANTÉ ET DU BIEN-ÊTRE SOCIAL

HÔTEL DU GOUVERNEMENT

DIVISION DE LA DÉMOGRAPHIE

QUEBEC

MINISTRY OF HEALTH AND SOCIAL WELFARE

PARLIAMENT BUILDINGS

DIVISION OF DEMOGRAPHY

NOV 27 P.M.

QUEBEC, November 25th 1944.

Doctor George M. Wheatley, Assistant Medical Director,
Metropolitan Life Insurance Company,
1 Madison Avenue,
NEW YORK CITY.

Dear Dr. Wheatley:

In reply to your communication of the 20th instant, I wish to apologise for having omitted to include in the tables I forwarded to you the data on infant mortality in the Province and the listed cities. Under this cover I am enclosing a new table providing these data and I do hope that you will find same satisfactory.

As it was understood, copy of those data was sent to Mr. Yvon Sabourin, Aldred Building, Montreal City. If you can help me in providing the full address of Mr. Sabourin, I will appreciate your assistance because the letter which was addressed to him has been returned to me as unclaimed.

Yours truly,
the Demographer,
PAUL PARROT.M.D.

PP/MF.

MET 0823

PRODUCED S/C/M/Ms

November 28, 1944

Dr. Norman L. Burnette
Assistant Secretary
Canadian Head Office

Dear Norman:

Thank you very much for sending me the nurses' reports on health and living conditions in the towns for which we are also getting mortality figures. We have received the mortality figures from Dr. Parrot, but rate tables will have to be constructed from this data and we will send you a copy as soon as they are available.

Sincerely yours,

Assistant Medical Director

PRODUCED S/C/M/Ms

MET 0775

November 28, 1944

Dr. Paul Parrot, Demographer
Division of Demography
Ministry of Health and Social Welfare
Parliament Buildings
Quebec, Que., Canada

Dear Dr. Parrot:

Thank you very much for the data. Mr. Ivan Sabourin's address, as we have it, is the Aldred Building, Montreal, Que., and we have another address which you might try——507 Place d'Armes, Montreal, Que. I hate to keep coming back for more information, but we would be very much interested in having the mortality from tuberculosis for the town of Asbestos on the same basis as you have given for the six communities and Thetford Mines. I realize that Asbestos is a community of much smaller size and is hardly comparable to Thetford Mines. Nevertheless, in view of the industrial health service which existed for a good many years at Asbestos, I am curious to see their mortality figures for tuberculosis and infant deaths.

You will perhaps be interested to know that the mine operators in Thetford Mines recently engaged Dr. Jacques Cartier of Montreal, who has had excellent preparation in tuberculosis, to come as director of the industrial health clinic which they are establishing. No doubt Dr. Cartier will be getting in touch with you, as I have suggested that he make your acquaintance.

Sincerely yours,

DR. WHEATLEY

Assistant Medical Director

MET 0822
PRODUCED S/C/M/Ms

MINISTÈRE DE LA SANTÉ ET DU BIEN-ÊTRE SOCIAL

HÔTEL DU GOUVERNEMENT

DIVISION DE LA DÉMOGRAPHIE

QUEBEC

MINISTRY OF HEALTH AND SOCIAL WELFARE

PARLIAMENT BUILDINGS

DIVISION OF DEMOGRAPHY

QUEBEC, December 2nd 1944.

Dr. George M. Wheatley, Assistant Medical Director,
The Metropolitan Life Insurance Company,
1 Madison Avenue,
NEW YORK CITY.

DEC

Dear Doctor Wheatley:

In reply to your letter of November the 28th, I wish to thank you for providing the address of Mr. Yvon Sabourin.

As regard your demand for statistics identical to those already supplied, but for the town of Asbestos, I have to state that our usual tabulation is not made for that City because it falls into the group under 4,000 population. To obtain the data you would like to know would request a numerical count of all the forms and at this time of the year I cannot foresee this could be done without considerable disturbance in our work.

I am glad to know that Doctor Jacques Cartier has been engaged by the Company of Thetford Mines. I personally know Dr. Cartier and I am sure that he will be able to handle the situation properly.

Yours very truly,
the Demographer,
PAUL PARROT.M.D.

MF.

MET 0821
PRODUCED S/C/M/Ms

January 19, 1945

Dr. Leroy U. Gardner, Director
Saranac Laboratory
Saranac Lake, New York

Dear Dr. Gardner:

I am enclosing a copy of the tuberculosis mortality study in Thetford Mines for your sight and comment. You will recognise, of course, many of your ideas in the body of this report.

I want to take this occasion to thank you for the very great help that you gave me in working out this study. I regret that it is not as thorough as we would have liked it. We were handicapped because the mortality data which Dr. Parrot sent us was for different age groups than the census data on population in Quebec. We also did not receive from him the experience on as many years as we had hoped to get. Nevertheless, I hope that this may be an opening wedge into the investigation of this whole problem by others up there. I have sent ~~another~~ to Mr. Sabourin for passing on to Dr. Cartier; also to Dr. Tourangeau, Director of Industrial Hygiene of the Ministry of Health of the Province. I have asked him to show his copy to Dr. Parrot. I have also sent a copy to Dr. Burnette and asked him to show it to Dr. Wherrett. Any other suggestions that you have for the report's further distribution will be welcomed.

With kindest personal regards.

Sincerely yours,

DR. WHEATLEY

Assistant Medical Director

MET 0817
PRODUCED S/C/M/Ms

January 19, 1945

Dr. N. L. Burnette
Assistant Secretary
Canadian Head Office

Dear Norman:

I am enclosing a copy of the study of tuberculosis mortality in Thetford Mines. After you have reviewed it, I would appreciate your sending it to Dr. Wherrett for his sight. At your suggestion I wrote to Dr. Wherrett about this problem and he suggested some important contacts for me to make while in the province of Quebec. I think, therefore, that he would have a logical interest in this report and might be in a position to implement some of the recommendations.

I want to thank you also for the other help that you gave in making this trip fruitful, especially the information that you secured on living and health facilities in the other communities. Naturally I would appreciate any suggestions and comments that you have to make on the report.

Sincerely yours,

DR. WHEATLEY

Assistant Medical Director

MET 0818

PRODUCED S/C/M/Ms

January 19, 1945

Dr. Paul Parrot, Demographer
Division of Demography
Ministry of Health and Social Welfare
Parliament Buildings
Quebec, Que., Canada

Dear Dr. [redacted]

I have just sent to Dr. Tourangeau a copy of the tuberculosis mortality study which we have made on the basis of the figures which you so kindly furnished us. In my letter to Dr. Tourangeau I have asked him, because of the few copies of the report that I have available, to share his copy with you. I would welcome your comments and suggestions after you have had an opportunity to review the report.

Again I wish to thank you for your help in making the material available to us.

Sincerely yours,

DR. WHEATLEY

Assistant Medical Director

MET 0819

PRODUCED S/...

January 19, 1945

Dr. F. J. Tourangeau, Director
Division of Industrial Hygiene
Ministry of Health and Social Welfare
Quebec, Que., Canada

Dear Dr. Tourangeau:

I am enclosing a copy of the tuberculosis mortality analysis made from the data furnished through the courtesy of Dr. Paul Parrot. I would appreciate any comments you may wish to make after going over this material and would also like to have you show this report to Dr. Parrot. I have only a limited number of copies and that is why I am asking you to share yours with Dr. Parrot.

I want to thank you for your courtesy extended to Mr. Fehnel and me on the occasion of our trip to Quebec. With kindest regards.

Sincerely yours,

Assistant Medical Director

MET 0820

PRODUCED S/C/M/Ms

J January 19, 1945

Mr. Ivan Sabourin
Aldred Building
Montreal, P. Q.,
Canada

Dear Ivan:

I am enclosing a copy of the tuberculosis mortality study which is at last completed. I believe that Dr. Cartier will be interested in it since he is the most logical person to take the initiative in carrying out some of the recommendations.

I had thought we would see you here before this, but no doubt some change in your plans has occurred. I certainly appreciated your thoughtfulness in sending me the Christmas card of your home under the snow. It reminded me of the most hospitable week that Bill and I enjoyed with you.

I also appreciate the assistance you gave us in securing the data from which the enclosed study was made. With kindest regards.

Sincerely yours,

DR. WHEATLEY

Assistant Medical Director

PRODUCED S/C/M/Ms

PML-23
9/BL
4/13/79

THE SARANAC LABORATORY
FOR THE STUDY OF TUBERCULOSIS
OF THE EDWARD L. TRUDEAU FOUNDATION
SARANAC LAKE, N.Y.

January 22, 1945

PLAINTIFF'S EXHIBIT
Wheatley 64
DGB 11-6-84

Dr. George M. Wheatley
Metropolitan Life Insurance Company
New York, New York

Dear Dr. Wheatley:

I am tremendously interested in the report on the tuberculosis situation at Thetford and in the Province of Quebec. I have not had opportunity to do more than scan it but it would certainly appear that the data thus far collected do not tend to incriminate the asbestos exposure as the primary cause of the excess of infection in Thetford.

Dr. Cartier is coming down here at the end of the month and by that time I shall have digested it and will discuss the situation with him. I also hope to be seeing Dr. Lanza in Chicago shortly.

For the moment I do not know of anyone else who should receive a copy. We may be pretty sure that Mr. Sabourin will make certain of its wide-spread dissemination.

I deeply appreciate your collaboration in this program and believe that by following through we are going to develop information which will be of scientific and practical value to everyone.

You will be hearing from me anon.

Sincerely yours,

Leroy U. Gardner, M. D.
Director

LUG:RH

PRODUCED S...

8

IVAN SABOURIN
ADVOCATE

MONTREAL.

January 22nd, 1945.

Dr. George M. Wheatley,
Assistant Medical Director,
Metropolitan Life Insurance Company,
New York City.

Dear George:- RE: Q.A.P.A. (TUBERCULOSIS STUDY)

I acknowledge yours of the 19th instant. Contents have been noted with a deep interest. I am taking this matter up directly with Dr.Cartier and shall keep you duly informed. I agree, of course, fully with you when you say that Dr.Cartier would be the man to carry out these recommendations properly.

I expected to be in New York before this date. I shall be there shortly, however, and will get in touch with you.

Best personal regards.

Yours faithfully,

Ivan Sabourin/B.
IVAN SABOURIN

IS:BS

MET 0815

PRODUCED S/C/M/Ms

ALDRED BUILDING

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, *Chairman of the Board*
LEROY A. LINCOLN, *President*

WELFARE DIVISION
N. L. BURNETTE, D. Sc. S.
Asst. Secretary

CANADIAN HEAD OFFICE
OTTAWA, CANADA

January 24, 1945.

Dr. George M. Wheatly,
Assistant Medical Director,
Metropolitan Life Ins. Co.,
New York Home Office.

Dear George,

Thank you very much indeed for allowing me the privilege of seeing the study of Tuberculosis mortality in Thetford Mines.

As suggested by you, I am passing this on to Dr. Wherrett.

Sincerely yours,

Assistant Secretary.

AP

MET 0774

[redacted]

PRODUCED S/C/M/Ms

PRODUCED S/C/M/Ms

January 25, 1945

Dr. H. L. Burnette
Assistant Secretary
Canadian Head Office

Dear Norman:

Thank you for your note regarding receipt of the tuberculosis mortality study and for sending it on to Dr. Wherrett. Just had a note from Jim Campbell who saw this report and he said he assumed that McDonald is going to see it. When it comes back from Dr. Wherrett you may have an opportunity to pass it along for Mr. McDonald's information.

Sincerely yours,

Assistant Medical Director

PRODUCED S/C/M/MS

MET 0773.

Canadian Tuberculosis Association

Honorary President
HIS EXCELLENCY THE RIGHT HONOURABLE
THE EARL OF ATHLONE, K.G.,
GOVERNOR-GENERAL OF CANADA

President
E. L. RUDDY,
TORONTO, ONT.

President-Elect
COL. J. D. ADAMSON, B.A., M.D., M.R.C.P. (C), F.R.C.P. (C),
WINNIPEG, MAN.

PLAZA BUILDING
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Honorary Vice-Presidents
THE LIEUTENANT-GOVERNORS OF ALL THE PROVINCES

Honorary Treasurer
E. A. STEPHENS,
OTTAWA, ONT.

Executive Secretary
G. J. WHERRETT, M.D., M.R.C.P.

February 13, 1945.

Dr. George M. Wheatly,
Assistant Medical Director,
Metropolitan Life Insurance Company,
New York City, U.S.A.

Dear Dr. Wheatly:-

Dr. Burnette has passed along to me a copy of the very interesting study of tuberculosis mortality in Thetford Mines, P.Q., which you have recently made.

I think this is a very excellent report. This should tend to clear up any tendency to blame the high death rate for tuberculosis in this area on the asbestos industry.

The report will also be helpful in focussing attention on that locality and I am wondering if it would be possible to interest the provincial group to undertake a community survey there.

With kind regards,

Yours sincerely,

G. J. Wherrett, M.D.,
Executive Secretary.

GJW/S.

MET 0743

PRODUCED U/OMMS

MINISTRY OF HEALTH AND SOCIAL WELFARE

DIVISION OF INDUSTRIAL HYGIENE

QUEBEC

January 25, 1945.

JAN 29 P.M.

Dr. George M. Wheatley,
Assistant Medical Director,
Metropolitan Life Insurance Company,
New York City,
U.S.A.

Dear Doctor Wheatley,

I beg to acknowledge receipt of your letter of January 19th, together with a copy of the tuberculosis mortality analysis made from the data furnished to you by Dr. Paul Parrot.

I have read it with great attention and found it highly interesting. Your conclusions seem to me very logical considering the small figures you had to deal with.

I have suggested to Dr. Parrot to make some comments to explain why the mortality rate for tuberculosis in the mining region of Abitibi and Témiscamingue, where the silica hazard exists in the mines, is much lower than at Thetford-Mines, Rimouski and Chicoutimi.

One factor, which probably explains partly such condition is that the process of education is slower in the regions showing a high rate, from the point of view of family hygiene. Another big factor according to Dr. Parrot is that the Abitibi and Témiscamingue regions are new regions and that most of its population is younger than anywhere else and more vigorous.

I wish to congratulate you for this very interesting study. It will clarify many points which were hitherto far from being clear.

Very sincerely yours,

F.J. Tourangeau

F.J.Tourangeau, M.D.,
Director of the Division

FJT/H.-

MET 0789
PRODUCED S/C/MMMs

February 20, 1945

Dr. G. J. Wherrett
Executive Secretary
Canadian Tuberculosis Association
Plaza Building
Ottawa, Ont., Canada

Dear Dr. Wherrett:

Thank you very much for your communication of February 13th relative to the study which was made of the tuberculosis mortality of Thetford Mines and some other communities in the Province. I am glad that you raised the question about the possibility of a community survey in Thetford Mines. I think the time is ripe for such an undertaking. It will depend, however, on someone's taking the initiative to carry it through. As you may know, Dr. Jacques Cartier has been appointed Medical Director of the Industrial Health Clinic for the asbestos operators in Thetford Mines. Dr. Cartier has had experience in tuberculosis surveys through his connection with the Montreal Antituberculosis League. I think he would be interested in doing such a study if he were approached. I think you would know better than I whether a public or private agency should sponsor such a study. I think unquestionably the mine operators would be more receptive to such a study than at any time in the past.

I sent a copy of the report to Dr. Tourangeau, Director of Industrial Hygiene of the Provincial Health Department. He showed it to Dr. Parrot, the Provincial Demographer, but I do not know whether he showed it to Dr. Paley. I met Dr. Paley when I was in Quebec. I shall write to Dr. Tourangeau and suggest that he show the report to Dr. Paley. This may help pave the way for a proposal that the Provincial Health Department undertake a community survey, if this seems the best method of having the survey done.

I hope it will be possible for you to follow up the situation. Dr. Burnette will, I know, be just as interested as we in the outcome and will want to cooperate in any way that is possible. With kindest regards.

Sincerely yours,

MET 0742

Assistant Medical Director

Copy to Dr. Burnette

PRODUCED BY CMMS

(COPY)

IVAN SABOURIN
Advocate

Montreal

Copy for you

May 14, 1945

N. L. Burnette, Esq., D.Sc.,S.,
Assistant Vice-President,
Welfare Division,
Metropolitan Life Insurance Co.,
Ottawa, Ontario

Dear Mr. Burnette,-

I acknowledge yours of the 30th ultimo. Contents have been noted. This letter is indeed of deep interest to me.

I shall take up the matter with the Thetford people at an early date and shall keep you duly informed. I indeed appreciate that kind, helpful thought of Dr. Wheatley and yourself.

Believe me,

Yours sincerely,

(Signed) Ivan Sabourin

MET 0747

PRODUCED S/C/MMS

MEMORANDUM

May 25, 1945

DR. LANZA

SUBJECT: Survey of Canadian Johns-Manville Operations at Asbestos, Quebec, May 9, 1945 to May 17, 1945.

I learned, soon after arrival, that there were eight cases, claiming asbestosis, filed with the Industrial Commission of Quebec. These cases originated in both the factory and mill.

Mr. Sherry, General Superintendent is ill and hospitalized in Montreal. In his place there has been set up a Mines Steering Committee headed by Mr. G. E. Foster as Chairman. This Committee dictates the policies of the mine and mill, while Mr. A. S. Gardner, Superintendent of the factory, guides the policies of the factory. By this set up of management control, the mine and mill function technically as one unit while the factory operates as a separate enterprise.

On Friday, May 11, 1945, Mr. Foster invited Mr. Redlin, Mr. Petrick and me to a dinner meeting at the Iroquois Hotel in Asbestos. Mr. L. V. Cooper, in charge of maintenance of mines, Mr. Bosley mill foreman, Mr. E. H. Smith, and Mr. G. H. McKay, personnel director, were also present. No representative of the factory attended this meeting.

Matters discussed were:

1. The advisability of taking periodic dust samples.
2. The method of sampling to be used.
3. The training of personnel for taking dust samples and making dust counts.

Mr. McKay raised the question as to whether there should be one or two committees appointed to guide management regarding industrial health problems and the elimination of dusts. Mr. Foster replied that he would leave that up to the New York Office.

On Saturday, May 12, while we were surveying the factory, Mr. Gardner asked Mr. Redlin, Mr. Petrick and me to have lunch with him and Mr. Nelson. At lunch he asked us if we could arrange to meet with him and his staff on Tuesday afternoon at 3:30 in the conference room at the factory. The following attended the conference on Tuesday, May 15:

Mr. A. E. Rathgeb, Ventilating Engineer, Johns-Manville, Manville, N.J.
Mr. J. W. Fehnel, Industrial Hygiene Laboratory and Field Services, MLICo.
Mr. A. J. Redlin, Technician at Saranac Laboratory.
Mr. P. A. Petrick, Metropolitan Life Insurance Company.

PRODUCED Chemistry

Dr. R. H. Stevenson, Head Doctor, Canadian Johns-Manville.
Dr. K. W. Smith, Assistant to Dr. Stevenson.
Mr. F. H. Nolson, Assistant Factory Superintendent.
Mr. A. D. Tocter, Department Head.
Mr. R. J. Morrison, Department Head.
Mr. W. A. McGinnis, Department Head.
Mr. E. L. Gilbert, Department Head.
Mr. R. S. Gardner, Factory Superintendent.
Mr. G. M. McCaw, Personnal Director.

At this meeting on Tuesday, Mr. Gardner stated that he had discussed with me various phases of control for potential health hazards in the plant and that he agreed with all my criticisms, and wished to correct these conditions. It was his opinion that the lack of action to control these conditions was due to:

1. The lack of help for janitor service.
2. The increased production and demands of the Production Department.
3. The laxity of their own management to take action to correct the conditions enumerated in previous reports.
4. The procedure necessary for submitting the plans and their approval by the New York Office.

Mr. Gardner stated that these were not offered as excuses, but were factors that enter into the regular routine of factory management. Mr. Gardner remarked that he felt that the Canadian Johns-Manville operations had one common problem and that was dust control and elimination. For that reason, he favored one committee to outline and guide the industrial health program. He then asked for suggestions as to how this program could be carried out. I suggested that, first of all, a list of raw materials at present in use in both the factory and the mill be submitted to the Medical Director for his guidance in determining whether there was an exposure to health hazards of employees using these materials in the normal procedure of manufacture. I also suggested that this list should be kept up to date, and all new materials brought into the plant should be reported immediately to the Medical Director, outlining the way in which they were to be used.

The second consideration is a good industrial hygienist who could not only make the dust surveys, take the samples, make the counts, but could also evaluate any industrial health problems. This person should be well-grounded in biochemistry and microscopic technique, and should be under the direct supervision of the Medical Director. The hygienist would be a valuable aid to the medical set-up in making necessary tests to aid in diagnosis, such as blood chemistry tests, urinalysis, blood counts, etc. The amount of work involved in dust counting is not sufficient to occupy a good technician full time. For that reason, he could be kept in training by doing the blood counting work which is along lines similar to dust counting technique.

PRODUCED [illegible] MS. 0660

The industrial hygienist should at all time cooperate with the ventilation engineer assigned to design and install corrective measures for the control of health hazards. The Medical Director should familarise himself with all plant operations and can readily do this with the cooperation of the industrial hygienist.

This plan was endorsed immediately by Mr. Gardner, Dr. Stephenson, Dr. Smith, and Mr. Rathgeb; Dr. Stephenson stated that he also was in favor of one committee, if for no other reason than to cut down the time necessary for the Medical Director to cooperate fully. He stated that if two committees were planned he would normally have to spend four half days a month in attending their regular meetings.

I also suggested that the committee should not only take into consideration potential health hazards and their elimination, but should make a study of safety hazards. The safety procedures in the factory and mill are lax. It was noticed that there was a great deal of fooling and horseplay among the employees. Make-shift guards have been placed as protection for certain moving parts and belts, and there is careless piling of stock and materials in the factory. Aisles and passageways are often blocked with materials and trucks.

Before leaving Asbestos, on Thursday, May 17, I was informed that Mr. Foster made the statement that he was able to [illegible] Mr. Woodard in New York the idea of two committees, with two men engaged in dust counting under each committee. It seems to me that this is a duplication and a waste of time and energy. Dust counting alone will not be a solution to the problem and it is not necessary to make periodic checks oftener than about four times a year in order to evaluate the effect of seasonal weather changes on the dust concentration in the mill and factory.

.....
Industrial Hygiene Laboratory

0681

PRODUCED S/OMMS

June 12, 1945

xxxxxxxxxxxx xxxx
Assistant Vice-President, Welfare

Mr. Ivan Sabourin
Aldred Building
Montreal, Que., Canada

Dear Ivan:

One or two recent developments prompt me to write you again about Thetford Mines. Our good friend, Bill Fehnel, just before leaving to go up to Canada again told me of the very wonderful care that you took of him and Mr. Petrick on their last visit. I certainly envied their opportunity of being with you.

Dr. Burnette of our Canadian Office whom you have met, I believe, is down here today with Father Emile Bouvier of the University of Montreal to give the latter an opportunity of meeting some of the people in our health and welfare services. I had a chance to talk with Father Bouvier and learned that the suggestion had been made to you that one of Father's Bouvier's students who did some work last summer at Asbestos would be available again this summer. I think if you could persuade the mine operators group in Thetford to invite this young man to Thetford to study the living and working conditions, it would be a constructive thing to do. As you know, from the study we made of tuberculosis mortality in Thetford, we drew the conclusion that the problem was a community one, but we had practically no evidence which described the social and economic conditions of the community. Such data is important, not only for correlation with the mortality study that we have made but also in connection with any morbidity or case-finding which Dr. Cartier will undertake. Moreover, the information to be gained by such a survey of the environment and habits of the community is essential for a health education program which I think eventually must be undertaken if the tuberculosis problem is to be successfully attacked in Thetford. I would certainly think it to the advantage of the asbestos operators to sponsor this study which could be done under the aegis of the University of Montreal. The expense involved in underwriting this would be negligible. I expect for the two or three months it might be at the rate of $25 or $30 a week. It would seem to me that no small outcome of such a survey might be to further the rapport between industry and the community leaders such as the clergy, physicians, and labor leaders since part of the study would necessarily involve interviews with such individuals.

I expect that Dr. Lanza will be visiting Canada the end of the month in connection with some industrial hygiene problem of the Canadian Army. He expects to be in Montreal for a day or two. I hope that he can see you and possibly get down to Thetford Mines and see Dr. Cartier and the others there that you would feel he should see. I am sure that he could give some very valuable advice concerning some of the problems that Dr. Cartier must be facing. With kindest regards.

Sincerely yours,

MET 0745
S/C/M/Ms

Assistant Vice-President, Welfare

June 15, 1945

xxx xx xxxxx xx
Assistant Vice-President, Welfare

Dr. C. J. Wherrett
Executive Secretary
Canadian Tuberculosis Association
Plaza Building
Ottawa, Ont., Canada

Dear Dr. Wherrett:

I have just been going over some correspondence relating to the tuberculosis problem in Thetford Mines and thought the letter I received through Dr. F. J. Tourangeau from Dr. Foley might interest you, because in your letter of February 20th to me you said that you hoped the Provincial Health Department would undertake a tuberculosis survey of the community of Thetford Mines. Dr. Foley states "It is extremely desirable that x-ray study should be undertaken among the population of Thetford Mines. The presence of Dr. Cartier on the spot would be of great assistance to us. However, it is so difficult to obtain the necessary material that I doubt whether this important work could be undertaken and brought to a successful finish."

Very sincerely yours,

Assistant Vice-President, Welfare

MET 0741

PROPOSED CORRMe

[redacted]
Assistant Vice-President, Welfare

June 15, 1945

Very Reverend Father Emile Bouvier
Ecole de Service Social
de l'Universite de Montreal
1961 Rue Rachel Est
Montreal, Que., Canada

Dear Father Bouvier:

There will be a delay in getting a copy of the Thetford Mines study to you because I am trying to get copies made. I will send it to you as soon as copies are available.

Sincerely yours,

Assistant Vice-President, Welfare

MET 0745

PRODUCED S/S/NMM

Copy for Dr Lanza.

June 18, 1945

XXXXXXXXXXXXXX
Assistant Vice-President, Welfare

Mr. Ivan Sabourin
Aldred Building
Montreal, Que., Canada

Dear Ivan:

I am very glad to have your note of June 14th and to know that you think well of the arrangement to have the young man from the University of Montreal go to Thetford Mines this summer. It also pleases me to know that you are looking forward to Dr. Lanza's visit. Dr. Lanza tells me that he will arrive in Toronto the morning of June 24th and will be there until the evening of the 27th when he goes to Montreal. He expects to be in Montreal the 28th and 29th. He is planning to get in touch with you on his arrival in Montreal. May I suggest that you drop him a note advising him of the most convenient way to communicate with you on his arrival. Dr. Lanza said, and I quote, "If I go to Asbestos and Thetford I imagine that will carry over the weekend, but I will be governed by what develops in the conversations with Mr. Sabourin".

I am enclosing a copy of a letter I received from Dr. Parrot which answers the question you raised concerning allocation of deaths by residence. With kindest regards.

Sincerely yours,

Assistant Vice-President, Welfare

MET 0744

DISCLOSED S/C/M/Ms

Canadian Tuberculosis Association

Honorary President
HIS EXCELLENCY THE RIGHT HONOURABLE
THE EARL OF ATHLONE, K.G.,
GOVERNOR-GENERAL OF CANADA

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CANADA

Honorary Vice-Presidents
THE LIEUTENANT-GOVERNORS OF ALL THE PROVINCES

Honorary Treasurer
E. A. STEPHENS,
OTTAWA, ONT.

Executive Secretary
G. J. WHERRETT, M.D., M.R.C.P.

June 20, 1945.

JUN 22 P.M.

Dr. George M. Wheatley,
Assistant Vice-President, Welfare,
Metropolitan Life Insurance Company,
New York City, U.S.A.

Dear Dr. Wheatley:-

Thank you very much for your letter of June 15th and for sending me the information you have received from Dr. Tourangeau regarding the tuberculosis problem in Thetford Mines. I will discuss this further with Dr. Foley the next time I see him.

I think that, as he says, the presence of Dr. Cartier on the spot should be very helpful in improving the situation and many of the things we would like to do may be carried out under his direction.

Yours sincerely,

G.J. Wherrett, M.D.,
Executive Secretary.

GJW/S.

MET 0740

PRODUCED S/C/M/MS

IVAN SABOURIN
ADVOCATE

MONTREAL. June 30th, 1945.

George M. Wheatley, Esq., M.D.,
Assistant Vice-President, Welfare,
Metropolitan Life Insurance Company,
NEW YORK CITY, N.Y.
U.S.A.

Dear George,

I beg to acknowledge receipt of yours of the 18th inst. Contents have been noted.

I have not succeeded in having young Ethier work at Thetford this summer as the operators there had lately made some changes in their "public relations" set-up which set-up they did not wish to disturb for the coming Summer. I have informed Father Bouvier accordingly and Father Bouvier appeared appreciative of my efforts and of yours. Dr. Lanza is meeting Father Bouvier this morning.

I have spent part of the day yesterday with Dr. Lanza and he will be spending the week-end at my home. He met the Doctors of the Quebec Workmen's Medical Board yesterday and made a deep impression on them. His contribution, I am sure, will prove to be very helpful in the proper appreciation by the medical experts, here, as regards our asbestosis-tuberculosis incidence.

Thank you for the copy of the letter written by Dr. Parret. This point is now fully cleared up.

Best personal regards.

PRODUCED CONTENTS

Cordially,

IVAN SABOURIN

S.3

MET 0737

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[redacted]
Assistant Vice-President, Welfare

July 10, 1945

Dr. F. J. Tourangeau, Director
Division of Industrial Hygiene
Ministry of Health and Social Welfare
Quebec, Que., Canada

Dear Dr. Tourangeau:

I was very glad to hear from Dr. Lanza what an enjoyable meeting he had with you recently in Quebec. He tells me that the subject of my paper on tuberculosis and asbestosis came up for discussion and that you expressed some interest in having it published. I think this is very kind of you and I should be very pleased to have you do so. No doubt, you would wish to have it translated into French. Should this be inconvenient for you I, no doubt, can make arrangements to have it translated, if you wish to publish it. I am enclosing a copy of the paper.

Sincerely yours,

Assistant Vice-President, Welfare

REPRODUCED B/C/M/Ms

MET 0736

MINISTRY OF HEALTH AND SOCIAL WELFARE

DIVISION OF INDUSTRIAL HYGIENE

QUEBEC

August 6, 1945.

AUG

Dr. George M. Wheatley,
Assistant Vice-President, Welfare,
Metropolitan Life Insurance Company,
New York City,
U. S. A.

Dear Doctor Wheatley,

Following a prolonged absence from my office, your letter of July 10th was handed to me together with a copy of your paper on tuberculosis and asbestosis.

I intend to send it to the Canadian Public Health Journal for publication, unless you prefer to have it published in a French Journal.

Sincerely yours,

F. J. Tourangeau

F. J. Tourangeau, M.D.,

Director of the Division

FJT/H.-

PRODUCED S/C/M/Ms

MET 0735

Clee

February 17, 1948

Mr. H. A. Smith
Bell Asbestos Mines
Thetford Mines, Quebec
Canada

Dear Mr. Smith:

Your letter to our Canadian office has been referred to me for reply. I am enclosing a copy of the English translation of the article which appeared in "Laval Medical". The original report, however, is much longer and as soon as copies are available, two will be sent to you. You may also be interested to see a copy of a letter sent to Mr. Lessard of the Federation Nationale des Employes de L'Industrie Miniere.

OK 2/20

Sincerely yours,

George M. Wheatley, M.D.
Assistant Vice-President

PRODUCED S/C/MMMS

MET 0719

IVAN SABOURIN, Q.C. Alard Building,
ADVOCATE Montreal, P.Q.

MONTREAL.

MEMO

This Tuberculosis-Asbestosis 1944 Survey conducted by Metropolitan Life (Dr. George Wheatley then Assistant Medical Director of Metropolitan Life in New York) might be of interest to you. At the time this study was communicated to the officers at Quebec such as Workmen's Compensation Board, departmental heads and also to the members of the Pneumoconiosis Committee of the Workmen's Compensation Board and also to the then pulmonary experts in the Province.

The attached copy was made out of the basic report of Dr. Wheatley which I have in my files.

In connection with Cancer, the same prejudice is rampant now, as you know, which was rampant before 1944 as to Tuberculosis. The Metropolitan survey dispelled that prejudice. At that time we also had test cases conducted (the hearings being attended by the leading experts of the continent) to prove that asbestosis exposure did not invite T.B.

As to Cancer - exposure to asbestos incidence, the Pittsburg survey took place in the 50's (Dr. Daniel Braun - his study was also published) which survey's conclusions, just as in the case of asbestosis, concluded that there is not seemingly any relationship between dust exposure and cancer.

Dr. Braun (together with Dr. Grégoire, Professor Beattie of Cambridge, Professor Kushner of New York University -- an expert in the pathalogy of cancer tumors --) is a member of the scientific committee of our proposed institute under the chairmanship of Dr. Wright.

April 29th, 1966. I.S.

TUBERCULOSIS [illegible]

A brief review of current knowledge with emphasis of the [illegible] available in the asbestos-mining community of Thetford Mines, P.Q., Canada.

Recent developments in Canada have focused attention on the question of the relationship between asbestosis and tuberculosis. Asbestosis has been declared a compensable disease in the Province of Quebec, thus increasing medico-legal interest in the establishment of this diagnosis and evaluation of any contributing factors. Autopsy of asbestos miners has disclosed evidence of active tuberculosis and asbestosis in the same individuals. In Thetford Mines, where a substantial part of all the asbestos in Canada is produced, the mortality from tuberculosis has in the past 16 years approximately doubled in contrast to a significant decline in the Provincial rate. These developments have materially helped to create the impression in the Province of Quebec that there is a causal relationship between tuberculosis and asbestosis similar to the carefully demonstrated and generally accepted relationship between silicosis and tuberculosis.

Observations in the United States

Previous studies of workers exposed to asbestos dust have not disclosed a higher incidence of tuberculosis among workers with clinical and X-ray evidence of asbestosis.

(1) Lanza in 1935 concluded that asbestos dust did not predispose to tuberculosis. In his examination of 126 workers in the industry in the United States, 53.1% were found to have definite X-ray evidence of asbestosis. Two cases of active tuberculosis were found. One of these was a worker with asbestosis.

(2) In 1936 Donnelly reviewed X-ray film of 151 workers in asbestos mills and found evidence of asbestosis among 34.4% of the group. No cases of active tuberculosis were found among workers with asbestosis. On the other hand, in the group without asbestosis he found 4 active cases of tuberculosis. Two of these active cases had been in the asbestos industry, 6 and 10 years respectively. Donnelly concluded that there was no tendency per in this type of industrial occupation to exacerbate old tuberculous lesions.

(3) McPheeters reported in 1936 an X-ray survey of 210 persons exposed to asbestos dust. He found 25.2% had some evidence of asbestosis. Three cases of active tuberculosis were

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found. No tuberculosis was found in workers with asbestosis. The three individuals with tuberculosis had been exposed to asbestos dust 6, 9 and 10 years respectively. In five cases healed pulmonary tuberculosis and asbestosis were found in association. The average duration of exposure for the 5 was 10.4 years and for the entire group 10.2 years. McPheeters decided there is no accelerating effect of tuberculosis on asbestosis.

In summation of this evidence it can be said that X-ray and clinical studies among asbestos workers in the United States does not reveal a significantly greater amount of tuberculosis than found in the routine examination of workers in any industry. Moreover there is no evidence from these studies to indicate that long exposure to asbestos dust activates or accelerates the tuberculous process. Both these observations are in contrast to findings among workers exposed to free silica.

Canadian Observations

There have been no published reports of studies among asbestos workers in Canada with respect to the prevalence of asbestosis or of tuberculosis in the asbestos industry. In 1930 Pedley and his associates examined physically and by X-ray 195 asbestos workers in the town of Asbestos and Thetford Mines.(4) The results of this survey appear in Table I.

TABLE I

	Asbestos	Thetford Mines
# examined	141	54
% with more than 10 years exposure	22	83.4
# with asbestosis	18	24
% with asbestosis	12.7	44.4

One case of active tuberculosis was found among the 195 individuals examined. (insert)

This is a very satisfactory incidence of tuberculosis among an industrial group, even today. For example, approximates the incidence in a surgey in 1940 (influenza) of the garment trade when an incidence of 1 case was found in 200 individuals examined.

(5) Pedley (data) found that the tuberculosis mortality in Thetford Mines for the years 1926, 1927 and 1928 compared favorably with the tuberculosis mortality for the Province of Quebec.

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Table 2

Average Tuberculosis Mortality for All Ages per 100,000

Place	1926-28	1940-42	% Change
Quebec	123.6	78.6	35 -
Thetford	137.9	252.1	83 +

However, since this report of Pedley there has been a sharp change in the relationship between Thetford Mines and the Province as a whole. Table 2 shows that in the Province of Quebec the average rate for the three years 1940-42 has decreased 35% compared to the average rate for the years 1926-28. This corresponds to experience elsewhere in Canada and the United States. On the other hand, in Thetford Mines for the corresponding period tuberculosis mortality has increased more than 80%. The obvious existence of a serious tuberculosis problem in Thetford Mines has led to speculation regarding the influence of asbestos dust.

TUBERCULOSIS MORTALITY STUDY

If the industrial exposure is a significant factor in exacerbating or accelerating tuberculosis one would expect to find a significant difference in males over 25 years of age since, in Thetford Mines, practically all of this part of the population are or were in the asbestos industry. Socio-economic factors are also significant in relation to tuberculosis, therefore comparison of the tuberculosis mortality rates in Thetford Mines with communities in the Province of like size, medical and public health facilities, socio-economic and racial characteristics is important. Dublin has pointed out that where socio-economic factors were dominant the tuberculosis mortality rates for both husbands and wives were similarly affected; where industrial factors played a leading role the standardized mortality rates for the husbands greatly exceeded that of the wives. (6) (p. 50. Tuberculosis in Industry - Saranac Laboratory Symposium. 1941)

Through the courtesy of the Provincial Health Department Statistician, Dr. Parrot, we were furnished the number of deaths from tuberculosis by age and sex for the years 1939 to 1943 for the cities of Thetford Mines, Rimouski, Chicoutimi, Cap de Madeleine, St. Hyacinthe, St. Jean, and Valleyfield, as well as for the Province and the Dominion as a whole. Of the six communities picked with these characteristics in mind, the town of Rimouski more nearly corresponds to Thetford Mines, except instead of asbestos mining its principal industry is lumbering and wood finishing. (see Table 3)

TABLE 3

Shows the Mortality Rate by Sex for All Ages in the Province and in the Seven Cities 1940-42

	Tuberculosis Death Rate per 100,000 All Ages	
	Male	Female
PROVINCE OF QUEBEC	77.5	80.8
Cap de la Madeleine	55.9	44.5
St. Hyacinthe	84.5	90.9
St. John	75.1	109.8
Valleyfield	101.7	85.3
Chicoutimi	141.8	149.1
Thetford Mines	190.1	223.9
Rimouski	171.9	287.3

0833

From Table 3 it will be noted that three of the seven towns for which data was obtained have a tuberculosis mortality which is appreciably higher than the Provincial rate. Females in Rimouski have the highest average rate for the years 1940-42. Females in Thetford Mines have a higher average mortality for the corresponding period than males in Thetford Mines who ranked third in this analysis.

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Further analysis by age and sex has been attempted for the communities of Rimouski and Thetford Mines and the results appear in Table 5. Interpretation is difficult because of the small number of persons involved in the age groups in the two communities. It is of interest to note, however, that among Thetford males the highest mortality rate is recorded in males aged 25-34. In Rimouski males the highest rate is in the group 35 and older. Thetford females aged 25-34 have the highest rate in either male or female groups, being 519.8 per 100,000, or four times the Provincial rate for the same ages. The rate in the corresponding age group in Rimouski females is 446.4 which is nearly three times the Provincial rate in the same age group. Tuberculosis also takes a high toll in Rimouski females 35 and older. Here the rate is four times the ~~provincial rate for those 35 and older.~~ rate of the Province females of the same age.

Insert 4

TABLE 5

Tuberculosis Deaths and Death Rates per 100,000 1940-1942

Males

AGE	Prov. of Quebec Deaths	Prov. of Quebec Rate	Rimouski Deaths	Rimouski Rate	Thetford Mines Deaths	Thetford Mines Rate
All Ages	3888	77.5	17	171.9	36	190.1
0-24	1167	45.2	5	93.3	13	121.3
25-34	803	102.1	2	114.4	10	342.9
35 +	1918	116.2	10	360.9	13	245.0

Females

	Prov. of Quebec Deaths	Prov. of Quebec Rate	Rimouski Deaths	Rimouski Rate	Thetford Mines Deaths	Thetford Mines Rate
All ages	4019	80.8	32	287.3	43	223.9
0-24	1614	62.7	13	211.9	18	162.5
25-34	1072	134.1	9	446.4	16	519.8
35 +	1333	83.1	10	334.7	9	178.1

TABLE 6

DESCRIPTIVE DATA ON SELECTED COMMUNITIES

	Population	Industries	Health Officers	Health Unit	Pub.H. Nurses	# Priv. Physicians	Phys.Ratio Population
Thetford Mines	12,000	Asbestos mining	1	1	5	12	1/1000
Rimouski Incl. suburbs	10,000	lumbering, wood finishing	1	1	4	10	1/1000
Cap Madeleine	13,000	rubber mfg. steel foundry, bag, mfg. silk	1	1**	6	2	1/6500
Three Rivers	45,800	paper, linen mfg. rubber, iron	1	1	9	40	1/1150
Chicoutimi	25,000	aluminum, pulp, paper, iron fdry, clay products	1	1***	10	19 (incl. 7 specs)	1/4500
St. Hyacinthe	18,500	textile mfg.	1	1****	6	14	1/1300
Valleyfield	20,600	munitions, other war inds. cotton silk.	1	1	5	10	1/2000

*full time health officers
** including 1 dentist
***including 1 tb. specialist
**** including 2 full-time physicians

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DISCUSSION

It is obvious that tuberculosis mortality is excessive in the town of Thetford Mines. But there is no indication from these data that occupation is a dominant factor because: 1) the mortality is equally bad among females; 2) it is excessive in the age group under 24 where there is little or no industrial exposure; 3) tuberculosis is also a serious problem in Rimouski where there is no asbestos industry.

The age and sex distribution of mortality from tuberculosis resembles the picture of tuberculosis in a heavily seeded, susceptible population with a substantial proportion of the mortality occurring in both sexes under age 24 and the majority of deaths under age 35. There is no evidence, if asbestos dust is a factor, that it resembles free silica in its influence on tuberculosis mortality. Careful and thorough mortality studies (7) among granite cutters in the state of Vermont revealed that they are subject to an exeessive frequency of deaths from pulmonary tuberculosis, not because of an exceptional risk of contact infection, or because of inferior physique, or because of unfavorable housing conditions or other sanitary deficiencies, but primarily because of the occupational exposure. This same conclusion has been reached in every other study of workers who contract silicosis.

Unfortunately we were unable to calculate expected deaths based on the Provincial rates because the age groupings obtained for Thetford Mines and Rimouski did not correspond to the age groupings available in the census data for the Province. For further insight into the magnitude of the tuberculosis problem in these two communities, it would be desirable to construct such expectancy tables, but to carry out case finding studies in these and similar communities in the Province of Quebec.

CONCLUSION

1. Based on current mortality data, tuberculosis in Thetford Mines, in contrast to many communities in the Province as well as the Province as a whole, has substantially increased.

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2. Rimouski, a lumbering town, comparable to Thetford mines in socio-economic conditions, medical and public health resources, has a high tuberculosis mortality comparable to Thetford Mines.

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0835

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3. Analysis of the tuberculosis mortality by age and sex in Thetford Mines, in the other communities and in the Province shows that both males and females in Thetford succumb to the disease with approximately the same frequency. This is not the mortality picture seen where there is industrial exposure to free silica.

4. Admittedly our data is inadequate for final conclusions, nevertheless there is no indication from this mortality study that demonstrates asbestos mining per se in Thetford Mines is the cause of the high tuberculosis mortality.

5. Further mortality studies should be made to construct expectancy tables for age and sex in Thetford Mines, Rimouski, and perhaps elsewhere in the Province.

6. Tuberculosis case-finding surveys should be made both in Thetford Mines and comparable communities.

George M. Wheeler

The statistical analysis was performed by Mr. R.J. Vane who also assisted in the interpretation. Dr. A. J. Lanza and Dr. N. Burnett shared the advice of in the preparation of the final report. contributed the socio-economic conditions of the selected communities.

Mr. R.J. Vane, manager of Occupational Ratings has contributed to this study by valuable suggestions regarding the handling and interpretation of the data as well as by making the statistical analysis.

Dr. A. J. Lanza has very generously permitted us to use his unpublished data secured by Peddle in 1930 on the asbestosis and tuberculosis miners of Thetford and Asbestoria. Dr. Lanza has also advised on the preparation of the final report.

Dr. Norman Burnett secured for us the information on the socio-economic conditions of the selected communities

0836

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1. Langa, A.J. M.D. McGill [illegible]
[illegible] #1665, [illegible], Vol 50, #1, July 4, 1935.

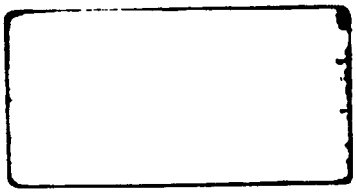
2. Donnelly, J. M.D. "[illegible]"
[illegible], Vol. 18, #4, Dec 1936.

3. MacPhedran, S.B., M.D. "[illegible]"
[illegible], Vol 18 #4, Dec 1936.

4 Pedley + Langa.
5 [illegible] Industry. Canada p. 199
6 Pedley, Frank G. M.D. "[illegible]" Can. Med Ass. Journal
Nov. 1930, p. 596.

7 Injuries in Industry. Canada Year [illegible]
NTA. p. 50

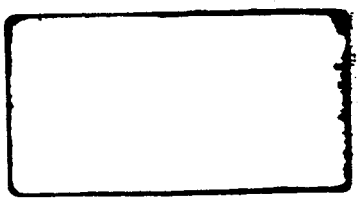
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J. Hoffman, Fredk L. Lt. S. = Co. of Pk Rhetians & ors
vs ors / US Govt [illegible] Georgia, May 1944.

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PRODUCED S/C/M/Ms

D R A F T

ENVIRONMENTAL OBSERVATIONS AT THETFORD

Visual inspection of the mills of the three asbestos operators was made. Dust counts were made at all important working locations of these properties, and the results are given in a separate report. There was no opportunity to personally observe home conditions, eating and living habits of the population, but this information was reported to us by competent observers.

Several conditions prevail in the mills which would favor the spread of pulmonary tuberculosis. The workmen appear to be careless about spitting and other personal habits. In order to keep warm in cold weather they huddle in groups in small wooden cabin-like enclosures. These measure about 6' x6'. They usually contain a bench or two and a chair, with some heating facilities; a small tin can on the floor which is used for cigarett butts, spitting, or left-over food. In one mill a tin drinking cup has been in use for many years. It is obvious that, if there is an employee with tubercule bacilli in his sputum, these environmental conditions favor the spread of tuberculosis. It should be noted that in review of the death claims in the mines insured with the Company a great difference in tuberculosis mortality was found. In Mine A between 1941-44 8 deaths due to tuberculosis with a rate of 2.8 per 1,000 employee-years. In Mine B for the corresponding period there were 2 tuberculosis deaths with a rate of 1.4. It was in Mine A that the most conspicuous unsanitary practice, the common drinking cup, was found.

Home living conditions are crowded and it is common practice for children and adults to share beds. This is an important factor favoring the transmission of the disease--not only because it promotes closer human contact but, by interfering with adequate rest, the individual's resistance to infection is lowered. Poor eating habits and food selection which prevail also contribute to the lowering of resistance to tuberculosis. These observations on environmental factors are admittedly superficial because of the brief time available for inspection and observation. Nevertheless, because of their probable importance in creating and maintaining tuberculosis in the community, further investigation of them would seem to be warranted.

MET 0839
PRODUCED S/C/M/Ms

3. Lanza, A. J., McConnell, William J., and Fehnel, J. William. "Effects of the Inhalation of Asbestos Dust on the Lungs of Asbestos Workers". Reprint #1665, from the Public Health Reports, Vol. 50, No. 1, January 4, 1935.

4. Donnelly, J. "Pulmonary Asbestosis: Incidence and Prognosis". Journal of Industrial Hygiene and Toxicology, Vol. 18, No. 4, April 1936.

5. McPheeters, S. B. "Survey of a Group of Employees Exposed to Asbestos Dust". Journal of Industrial Hygiene and Toxicology, Vol. 18, No. 4, April 1936.

6. Lanza, A. J., and Pedley, Frank G. Unpublished data.

7. Tuberculosis in Industry. Saranac Laboratory Symposium, 1941. Published by the National Tuberculosis Association. p. 199.

8. Pedley, Frank G. "Asbestosis". Canadian Journal of Public Health, November 1930. p. 576.

9. Tuberculosis in Industry. Saranac Laboratory Symposium, 1941. Published by the National Tuberculosis Association. p. 50.

10. Hoffman, Frederick L. The Problem of Dust Phthisis in the Granite Stone Industry. Bulletin of the U. S. Bureau of Labor Statistics No. 293, May 1922.

1. Desmeules, R., Rousseau, L., Giroux, M., & Richard, P. "Asbestosis & Pulmonary TB", Laval médical, (published by hospital nurses' union Laval) Vol. 8, ~~XII~~ March 1943, p. 217.

2. Desmeules, R., and Giroux, M. "Asbestosis & Pulmonary TB", Laval médical, Vol 8, March 1943, p. 447.

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TUBERCULOSIS AND ASBESTOSIS

A brief review of current knowledge and analysis of tuberculosis mortality in the asbestos mining community of Thetford Mines, P.Q., Canada

Recent developments in Canada have focused attention on the question of the relationship between asbestosis and tuberculosis. Asbestosis has been declared a compensable disease in the Province of Quebec, thus increasing medico-legal interest in the establishment of this diagnosis and evaluation of any contributing factors. Autopsy of asbestos miners has disclosed evidence of active tuberculosis and asbestosis in the same individuals.[1,2] In Thetford Mines, where a substantial part of all the asbestos in Canada is produced, the mortality from tuberculosis has in the past 16 years approximately doubled in contrast to a significant decline in the Provincial rate. These developments have materially helped to create the impression in the Province of Quebec that there is a causal relationship between tuberculosis and asbestosis similar to the carefully demonstrated and generally accepted relationship between silicosis and tuberculosis.

Observations in the United States

Previous studies of workers exposed to asbestos dust have not disclosed a higher incidence of tuberculosis among workers with clinical and X-ray evidence of asbestosis. Lanza[3] in 1935 concluded that asbestos dust did not predispose to tuberculosis. In his examination of 126 workers in the industry in the United States, 53.1% were found to have definite X-ray evidence of asbestosis. Two cases of active tuberculosis were found. One of these was a worker with asbestosis.

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In 1936[4] Donnelly reviewed X-ray film of 151 workers in asbestos mills and found evidence of asbestosis among 34.4% of the group. No cases of active tuberculosis were found among workers with asbestosis. On the other hand, in the group without asbestosis he found four active cases of tuberculosis. Two of these active cases had been in the asbestos industry, six and ten years respectively. Donnelly concluded that there was no tendency per se in this type of industrial occupation

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to exacerbate old tuberculosis lesions.

McPheeters[5] reported in 1936 an X-ray survey of 210 persons exposed to asbestos dust. He found 25.2% had some evidence of asbestosis. Three cases of active tuberculosis were found. No tuberculosis was found in workers with asbestosis. The three individuals with tuberculosis had been exposed to asbestos dust 6, 9, and 10 years respectively. In five cases healed pulmonary tuberculosis and asbestosis were found in association. The average duration of exposure for the 5 was 10.4 years and for the entire group 10.2 years. McPheeters decided there is no accelerating effect of tuberculosis on asbestosis.

In summation of this evidence it can be said that X-ray and clinical studies among asbestos workers in the United States does not reveal a significantly greater amount of tuberculosis than expected in the routine examination of workers in any industry. Moreover there is no evidence from these studies to indicate that long exposure to asbestos dust activates or accelerates the tuberculous process. Both these observations are in contrast to findings among workers exposed to free silica.

Canadian Observations

There have been no published reports of studies among asbestos workers in Canada with respect to the prevalence of asbestosis or of tuberculosis in the asbestos industry. In 1930 Pedley and his associates examined physically and by X-ray 195 asbestos workers in the towns of Asbestos and Thetford Mines.[6] The results of this survey appear in Table 1.

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TABLE 1

	Asbestos	Thetford Mines
# examined	141	54
% with more than 10 years exposure	22	83.4
# with asbestosis	18	24
% with asbestosis	12.7	44.4

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One case of active tuberculosis was found among the 195 individuals examined. This is a very satisfactory incidence of tuberculosis among an industrial group, even today. For example, it approximates the incidence in a survey in 1940 of the garment trade when 1 active case was found per 165 individuals examined.[7] Pedley[8] found that the tuberculosis mortality in Thetford Mines for the years 1926, 1927, and 1928 compared favorably with the tuberculosis mortality for the Province of Quebec.

TABLE 2

Average Tuberculosis Mortality for All Ages per 100,000

Place	1926-28	1940-42	% Change
Quebec	123.6	78.6	35 -
Thetford	137.9	252.1	83 +

However, since this report of Pedley there has been a sharp change in the tuberculosis mortality relationship between Thetford Mines and the Province as a whole. Table 2 shows that in the Province of Quebec the average rate for the three years 1940-42 has decreased 35% compared to the average rate for the years 1926-28. This corresponds to experience elsewhere in Canada and the United States. On the other hand, in Thetford Mines for the corresponding period tuberculosis mortality has increased more than 80%. The obvious existence of a serious tuberculosis problem in Thetford Mines has led to speculation regarding the influence of asbestos dust.

Tuberculosis Mortality Study

If the industrial exposure to asbestos dust is a significant factor in exacerbating or accelerating tuberculosis one would expect to find a significant difference in males over 25 years of age since, in Thetford Mines, practically all of this part of the population not in military service work in the asbestos industry. Socio-

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economic factors are also significant in relation to tuberculosis. Therefore, comparison of the tuberculosis mortality rates in Thetford Mines with communities in the Province of like size, medical and public health facilities, socio-economic and racial characteristics is important. Dublin has pointed out that where socio-economic factors were dominant the tuberculosis mortality rates for both husbands and wives were similarly affected; where industrial factors played a leading role the standardized mortality rates for the husbands greatly exceeded that of the wives.[9]

Through the courtesy of the Demographer of the Provincial Ministry of Health and Social Welfare, Dr. Paul Parrot, we were furnished the number of deaths from tuberculosis by age and sex for the years 1939 to 1943 for the cities of Thetford Mines, Rimouski, Chicoutimi, Cap de Madeleine, St. Hyacinthe, St. Jean, and Valleyfield, as well as for the Province and the Dominion as a whole. Of the six communities picked with these characteristics in mind, the town of Rimouski was thought more nearly to compare with Thetford Mines, except instead of asbestos mining its principal industry is lumbering and wood finishing (see Table 3, p. 4a)

TABLE 4

Shows the Average Mortality Rate by Sex for All Ages in Province and in the Seven Selected Communities 1940-1942

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	Tuberculosis Death Rate per 100,000 All Ages	
	Male	Female
PROVINCE OF QUEBEC	77.5	80.8
Cap de la Madeleine	55.9	44.5
St. Hyacinthe	84.5	90.9
St. John	75.1	109.8
Valleyfield	101.7	85.3
Chicoutimi	141.8	149.1
Thetford Mines	190.1	223.9
Rimouski	171.9	287.3

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TABLE 3

Descriptive Data on Selected Communities

	Population	Industries	Health Officers*	Health Unit	Pub.H. Nurses	# Private Physicians	Ratio Phys. to Population
Thetford Mines	12,000	Asbestos mining	1	1	5	12	1/1000
Rimouski (incl. suburbs)	10,000	lumbering, wood finishing	1	1	4	10	1/1000
Cap Madeleine	13,000	rubber mfg., steel foundry, bag, mfg. silk	1	1**	6	2	1/6500
Three Rivers	45,800	paper, linen mfg., rubber, iron	1	1	9	40	1/1150
Chicoutimi	25,000	aluminum, pulp, paper, iron fdry, clay products	1	1***	10	19 (incl. 7 specs.)	1/4500
Ste. Hyacinthe	18,500	textile mfg.	1	1****	6	14	1/1300
Valleyfield	20,600	munitions, other war industries, cotton, silk	1	1	5	10	1/2000

*full-time health officers
**including 1 dentist
***including 1 tb. specialist
****including 2 full-time physicians

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From Table 4 it will be noted that three of the seven towns for which data was obtained have a tuberculosis mortality which is appreciably higher than the Provincial rate. Females in Rimouski have the highest average rate for the years 1940-42. Females in Thetford Mines have a higher average mortality for the corresponding period than males in Thetford Mines who ranked third in this analysis.

Further analysis by age and sex has been attempted for the communities of Rimouski and Thetford Mines and the results appear in Table 5. Interpretation is difficult because of the small number of persons involved in the age groups in the two communities. It is of interest to note, however, that among Thetford males the highest mortality rate is recorded in males aged 25-34. In Rimouski males the highest rate is in the group 35 and older. Thetford females aged 25-34 have the highest rate in either male or female groups, being 519.8 per 100,000, or four times the Provincial rate for the same ages. The rate in the corresponding age group in Rimouski females is 446.4 which is nearly three times the Provincial rate in the same age group. Tuberculosis also takes a high toll in Rimouski females 35 and older. Here the rate is four times that of Provincial females of the same ages.

TABLE 5

Tuberculosis Deaths and Death Rates per 100,000
1940-1942

PRODUCED S/C/M/Ms

MALES

AGE	Prov. of Quebec Deaths	Rate	Rimouski Deaths	Rate	Thetford Mines Deaths	Rate
All Ages	3888	77.5	17	171.9	36	190.1
0-24	1167	45.2	5	93.3	13	121.3
25-34	803	102.1	2	114.4	10	342.9
35 +	1918	116.2	10	360.9	13	245.0

FEMALES

AGE	Prov. of Quebec Deaths	Rate	Rimouski Deaths	Rate	Thetford Mines Deaths	Rate
All Ages	4019	80.8	32	287.3	43	223.9
0-24	1614	62.7	13	211.9	18	162.5
25-34	1072	134.1	9	446.4	16	519.8
35 +	1333	83.1	10	334.7	9	178.1

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ENVIRONMENTAL OBSERVATIONS AT THETFORD

Visual inspection of the mills of the three asbestos operators was made. Dust counts were made at all important working locations of these properties, and the results are given in a separate report. There was no opportunity to personally observe home conditions, eating and living habits of the population, but this information was reported to us by competent observers.

Several conditions prevail in the mills which would favor the spread of pulmonary tuberculosis. The workmen appear to be careless about spitting and other personal habits. In order to keep warm in cold weather they huddle in groups in small wooden cabin-like enclosures. These measure about 6' x 6'. They usually contain a bench or two and a chair, with some heating facilities; a small tin can on the floor which is used for cigarette butts, spitting, or left-over food. In one mill a tin drinking cup has been in use for many years. It is obvious that, if there is an employee with tubercle bacilli in his sputum, these environmental conditions favor the spread of tuberculosis. It should be noted that in review of the death claims in the mines insured with the Company a difference in tuberculosis mortality was found. In Mine A between 1941-1944, eight deaths were due to tuberculosis with a rate of 2.8 per 1,000 employee-years. In Mine B for the corresponding period there were two tuberculosis deaths with a rate of 1.4. It was in Mine A that the most conspicuous unsanitary practice, the common drinking cup, was found.

Home living conditions are crowded and it is common practice for children and adults to share beds. This is an important factor favoring the transmission of the disease—not only because it promotes closer human contact but, by interfering with adequate rest, the individual's resistance to infection is lowered. Poor eating habits and food selection which prevail also contribute to the lowering of resistance to tuberculosis.

These observations on environmental factors are admittedly superficial because of the brief time available for inspection and observation. Nevertheless, because of their probable importance in creating and maintaining tuberculosis in the community, further investigation of them would seem to be warranted.

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DISCUSSION

It is obvious that tuberculosis mortality is excessive in the town of Thetford Mines. But there is no indication from these data that occupation is a dominant factor because: 1) the mortality is equally bad among females; 2) it is excessive in the age group under 24 where there is little or no industrial exposure; 3) tuberculosis is also a serious problem in Rimouski where there is no asbestos industry.

The age and sex distribution of mortality from tuberculosis resembles the picture of tuberculosis in a heavily seeded, susceptible population with a substantial proportion of the mortality occurring in both sexes under age 24 and the majority of deaths under age 35. There is no evidence, if asbestos dust is a factor, that it resembles free silica in its influence on tuberculosis mortality. Careful and thorough mortality studies[30] among granite cutters in the state of Vermont revealed that they are subject to an excessive frequency of deaths from pulmonary tuberculosis, not because of an exceptional risk of contact infection, or because of inferior physique, or because of unfavorable housing conditions or other sanitary deficiencies, but primarily because of the occupational exposure. This same conclusion has been reached in every other study of workers who contract silicosis.

Unfortumately we were unable to calculate expected deaths based on the Provincial rates because the age groupings obtained for Thetford Mines and Rimouski did not correspond to the age groupings available in the census data for the Province. For further insight into the magnitude of the tuberculosis problem in these two communities, it would be desirable not only to construct such expectancy tables, but to carry out case-finding studies in these and similar communities in the Province of Quebec.

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CONCLUSION

1. Based on current mortality data, tuberculosis in Thetford Mines, in contrast

to many communities in the Province as well as the Province as a whole, has substantially increased.

2. Rimouski, a lumbering town, comparable to Thetford Mines in socio-economic conditions, medical and public health resources, has a high tuberculosis mortality comparable to Thetford Mines.

3. Analysis of the tuberculosis mortality by age and sex in Thetford Mines, in the other communities and in the Province shows that both males and females in Thetford succumb to the disease with approximately the same frequency. This is not the mortality picture seen where there is industrial exposure to free silica.

4. Admittedly our data is inadequate for final conclusions, nevertheless there is no indication from this mortality study that demonstrates asbestos mining per se in Thetford Mines is the cause of the high tuberculosis mortality.

5. Further mortality studies should be made to construct expectancy tables for age and sex in Thetford Mines, Rimouski, and perhaps elsewhere in the Province.

6. Tuberculosis case-finding surveys should be made both in Thetford Mines and comparable communities.

7. Health education concerning prevention of the disease is needed, as well as improved sanitation, particularly in the plants.

George M. Wheatley, M.D.
Assistant Medical Director
Metropolitan Life Insurance Company

Mr. R. J. Vane, Manager of Occupation Ratings, has contributed to this study by valuable suggestions regarding the handling and interpretation of the data as well as by making the statistical analysis.

Dr. A. J. Lanza, ~~Assistant~~ Associate Medical Director, has very generously permitted us to use his unpublished data secured by Pedley in 1930 on asbestosis and tuberculosis in miners of Thetford and Asbestos. Dr. Lanza has also advised on the preparation of the final report.

Dr. N. L. Burnette, Assistant ~~Secretary~~ V.P. Canadian Head Office, secured for us the information on the socio-economic conditions of the selected communities.

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REFERENCES

1. Desmeules, R., Rousseau, L., Giroux, M., and Richard, P. "Asbestosis and Pulmonary Tuberculosis". Laval medical, Vol. 8, March 1943. p. 217.

2. Desmeules, R., and Giroux, M. "Asbestosis and Pulmonary Tuberculosis". Laval medical, Vol. 8, March 1943. p. 227.

3. Lanza, A. J., McConnell, William J., and Fehnel, J. William. "Effects of the Inhalation of Asbestos Dust on the Lungs of Asbestos Workers". Reprint #1665, from the Public Health Reports, Vol. 50, No. 1, January 4, 1935.

4. Donnelly, J. "Pulmonary Asbestosis: Incidence and Prognosis". Journal of Industrial Hygiene and Toxicology, Vol. 18, No. 4, April 1936.

5. McPheeters, H. B. "Survey of a Group of Employees Exposed to Asbestos Dust". Journal of Industrial Hygiene and Toxicology, Vol. 18, No. 4, April 1936.

6. Lanza, A. J., and Pedley, Frank G. Unpublished data.

7. Tuberculosis in Industry. Saranac Laboratory Symposium, 1941. Published by the National Tuberculosis Association. p. 299.

8. Pedley, Frank G. "Asbestosis". Canadian Journal of Public Health, November 1930. p. 576.

9. Tuberculosis in Industry. Saranac Laboratory Symposium, 1941. Published by the National Tuberculosis Association. p. 50.

10. Hoffman, Frederick L. The Problem of Dust Phthisis in the Granite Stone Industry. Bulletin of the U. S. Bureau of Labor Statistics, No. 293, May 1922.

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One case of active tuberculosis was found among the 195 individuals examined. This is a very satisfactory incidence of tuberculosis among an industrial group, even today. For example, it approximates the indicence in a survey in 1940 of the garment trade when 1 active case was found per 165 individuals examined.[7] Pedley[8] found that the tuberculosis mortality in Thetford Mines for the years 1926, 1927, and 1928 compared favorably with the tuberculosis mortality for the Province of Quebec.

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Metropolitan Life Insurance Company

Mr. R. J. Vane, Manager of Occupation Ratings, has contributed to this study by valuable suggestions regarding the handling and interpretation of the data as well as by making the statistical analysis.

Dr. A. J. Lanza, Assistant Medical Director, has very generously permitted us to use his unpublished data secured by Pedley in 1930 on asbestosis and tuberculosis in miners of Thetford and Asbestos. Dr. Lanza has also advised on the preparation of the final report.

Dr. N. L. Burnette, Assistant Secretary, secured for us the information on the socio-economic conditions of the selected communities.

REFERENCES

1. Desmeules, R., Rousseau, L., Giroux, M., and Richard P. "Asbestosis and Pulmonary Tuberculosis". Laval medical, Vol. 8, March, 1943. p.217.

2. Desmeules, R., and Giroux, M. "Asbestosis and Pulmonary Tuberculosis". Laval medical, Vol. 8, March 1943. p. 227.

3. Lanza, A. J., McConnell, William J., and Fehnel, J. William. "Effects of the Inhalation of Asbestos Dust on the Lungs of Asbestos Workers." Reprint 1665, from the Public Health Reports, Vol. 50, No. 1, January 4, 1935.

4. Donnelly, J. "Pulmonary Asbestosis: Incidence and Prognosis". Journal of Industrial Hygiene and Toxicology. Vol. 18, No. 4, April 1936.

5. McPheeters, S. B. "Survey of a Group of Employees Exposed to Asbestos Dust". Journal of Industrial Hygiene and Toxicology, Vol. 18, No. 4, April 1936.

6. Lanza, A. J., and Pedley, Frank G. Unpublished data.

7. Tuberculosis in Industry. Saranac Laboratory Symposium, 1941. Published by the National Tuberculosis Association. p. 199.

8. Pedley, Frank G. "Asbestosis". Canadian Journal of Public Health, November 1930.

9. Tuberculosis in Industry. Saranac Laboratory Symposium, 1941. Published by the National Tuberculosis Association. p.50.

10 Hoffman, Frederick L. The Problem of Dust Phthisis in the Granite Stone Industry. Bulletin of the U. S. Bureau of Labor Statistics, No. 293, May 1922.

Rom fyles of Ivan Sabourin Q.C.

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IVAN SABOURIN, Q.C.

ALORED BUILDING, MONTREAL.

MEMO

This Tuberculosis-Asbestosis 1944 Survey conducted by Metropolitan Life (Dr. George Wheatley then Assistant Medical Director of Metropolitan Life in New York) might be of interest to you. At the time this study was communicated to the officers at Quebec such as Workmen's Compensation Board, departmental heads and also to the members of the Pneumoconiosis Committee of the Workmen's Compensation Board and also to the then pulmonary experts in the Province.

The attached copy was made out of the basic report of Dr. Wheatley which I have in my files.

In connection with Cancer, the same prejudice is rampant now, as you know, which was rampant before 1944 as to Tuberculosis. The Metropolitan survey dispelled that prejudice. At that time we also had test cases conducted (the hearings being attended by the leading experts of the continent) to prove that asbestosis exposure did not invite T.B.

As to Cancer - exposure to asbestos incidence, the Pittsburg survey took place in the 50's (Dr. Daniel Braun - his study was also published) which survey's conclusions, just as in the case of asbestosis, concluded that there is not seemingly any relationship between dust exposure and cancer.

Dr. Braun (together with Dr. Grégoire, Professor Beattie of Cambridge, Professor Kushner of New York University -- an expert in the pathology of cancer tumors -- is a member of the scientific committee of our proposed institute under the chairmanship of Dr. Wright.

April 29th, 1966.

I.S.