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RE Pulmonary Cancer and Cancer Research

COPY

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Gentlemen:

Report to
Quebec Asbestos Miners Association
re Pulmonary Cancer
and Supplementary Memorandum
re Cancer Research

At the Skytop meeting, Mr. Shepherd promised
to look into the above subject on his return to England.

We are now pleased to send you herewith a copy
of the report he recently forwarded us.

Yours very truly,

QUEBEC ASBESTOS MINES LTD.

O. C. Smith
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Encl.
OCS/AS

CC. Mr. W. M. Gontar
Mr. J. Cartier
Mr. J. Smith
Mr. J. G. Gauthier

(2) Members of post-neoplasia examination
of which I have records from
1930 - 1936

TABLE I

Number of post- neoplasia examina- tions	Number of cases in which carcinoma was associated with neoplasia	Duration of expo- sure to dust	Percent- age rate of cancer	Average age at death	Period of exposure prior to completion of full programme of production (1932)
573	10	22.4 years	10%	56.4	13.8 years

REPORT TO
COLENEC ASSISTANT LINDING ASSOCIATION
RE PULMONARY CANCER
AND SUPPLEMENTARY MEMORANDA
RE CANCER RESEARCH

Comments by Dr. J. P. Kenna,
Factory Medical Officer for
Turner Brothers Adhesives Co. Ltd.

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In the Annual Report of the Chief Inspector of Factories for the year 1947, published by H. M. Stationery Office in January 1949, there is a section (p. 79) entitled "Asbestos and Carcinoma of the Lung". Table XXXII to XXXIV also refer to this subject. Although the first group of figures on page 2 of the Supplementary Memorandum of the Croydon Asbestos Mining & Speculation Board some 2000 cases to them, they are not exactly similar and each qualifying further - no case has been omitted. The important statement made in the Chief Inspector's Report is "During the 23 years 1924 - 1946 inclusive, 235 deaths, either caused by asbestos or in which asbestos has been proved at autopsy, have been notified. Cancer of the lungs or pleura was found to be present either as a cause of death or as a concomitant in 21 (11.7%) of these 235 cases". For comparison I can also show three groups of figures:-

Comment

The case has arisen out of the association of carcinoma of the lung and asbestos in the area in question starting not later than 1925. There was only one woman in the series. She was aged 51 and was suspended for eight years. Men and women are employed in about equal numbers in the scheduled areas of the Rockdale Works.

It is noted that according to Table 2, three cases of carcinoma have occurred in two groups - one of six cases with established asbestos and suspended for three years or more, and another group of four cases. In the latter group, two were suspended one year before death and two not suspended at all. It is reasonable to assume that the suspension disability from which those who died while suspended following occupation were suffering was in fact the early symptoms of carcinoma of the lung.

TABLE 2

Case	Death	Exposure in years	Age	Exposure to death in years	Period of work	Period of exposure prior to completion of full program of protection (1922)
1	1915	13	42	1	1922	10
2	1935	16	54	3	1917	13
3	1936	23	45	0	1913	19
4	1937	19	46	1	1919	13
5	1939	24	49	0	1915	17
6	1941	25	52	3	1921	14
7	1942	25	59	1	1916	16
8	1943	22	53	13	1925	7
9	1944	24	48	13	1916	16
10	1944	27	54	0	1923	9
Average	-	22.4	54.4	-	-	14.3

(10) Details concerning these 10 cases in column 2, Table 1.

(page 3)

Although this is an account of 100 autopsies it does not represent all the people who have died following employment in the Asbestum industry in this area. There is an unknown number of both men and women who, after working in asbestos areas for years, have drifted away to other industries or who have remained at home and whose subsequent deaths have not been reported to the Coroner and therefore made the subject of post-mortem study. There are no precise pathological criteria of asbestosis and the Coroner has linked the term asbestosis with many deaths where the degree of fibrosis was slight and the association between this and the major cause of death not apparent. On the other hand, the lungs of people with out obvious disability and who have died suddenly of coronary thrombosis or cerebral haemorrhage have been found to contain the usual asbestos bodies, some pinky fibrous and such changes as would automatically have been associated in the Coroner's verdict with their employment if the death had occurred more slowly. It is considerations such as these which make me view all statistical material on asbestos with reserve. As an indication of the difficulty of diagnosis during life, only 47 of these 100 cases were suspected during their lifetime.

(3) Cancer mortality figures extracted from the Registrar General's Statistical Review, 1940 - 1945, Vol. 1, Medical:

On the subject of Carcinoma of the Lung on page 176, it is stated that "The rise in mortality from cancer of this site alone accounts for most of the recent increase in male cancer death rates from cancer of all sites at ages 55 - 59 which have been noticed above. Whereas in 1938 lung cancer contributed 27% of all cancer deaths of males, at this age period in 1945 it contributed 30%".

From Table LXXVII the following figures are obtained:

Males 45 - 65 years. Cancer deaths per 1,000 deaths from all non-violent causes 1943 - 1945 : 213

From Table LXXIX:

The proportion of deaths from cancer of lung to total cancers at ages 45 - 55 : .73 7.1%

Recent suggestions to account for this increased incidence of lung cancer include cigarette smoking, and inhalation of petrol and oil fumes.

It seems difficult to understand the comparative figure of 1.32 given as the incidence of carcinoma of the lung in silicosis autopsies on page 2 of the Memo- randum and in the Chief Inspector's Report of 1942. If this is so, it would appear that this silicotic group has a lower incidence of lung cancer than the general population.

(page 4)

(3) Figures derived from death certification
in asbestos poisoning.

In the last 100 death certificates issued by me, a use of which concerned asbestos workers, there were seven lung cancer deaths with an average age of 62.7 years.

General observations

On page 5 of the Memorandum of the Quebec Asbestos Mining Association the incidence of lung cancer in the general population is given as 1.36% and in asbestos workers as 1.4%. This seems to me a fairly reliable method of estimating the incidence of the two groups than the autopsy material. In the section on page 5 of the Memorandum on the incidence of lung cancer in various types of pneumoconiosis, the data is attributed to Dr. Redhouse Gloyne. This observer wrote the section on Pathology in *Asbestos and Asbestosis* (Lange) Oxford Medical Publ. 1938. On page 245, he writes "carcinoma has been found in six cases by the writer at autopsy". If this figure refers to a series of 100 cases mentioned in the preceding paragraphs, his percentage rate is 6%. He further states that until more statistics are available it is impossible to draw definite conclusions as to the relation of the two diseases. In giving the figure of 21 under cancer in Total cases of Pneumoconiosis, with 17 cases of lung cancer, he would seem to be singularly unfortunate in finding 11 cases in his next 20 autopsies. The total number of asbestos deaths up to the end of 1948 is given by the Chief Inspector of Factories as 247. Dr. Gloyne could hardly claim to have first-hand knowledge of a series of 100 cases.

Without further qualification the statement in the memorandum that lungs of 165 individuals without pneumoconiosis, but employed in the same set of industries as above, yielded 14 cases of cancer of the lung or 8.5% means little. At today's carcinoma of the lung rates per man in the 55-65 age groups it would not represent more than 1% above the average for the country as a whole.

On the question of asbestos as a carcinogenic agent, I would agree that the approach suggested by the Quebec Asbestos Mining Association is an excellent one. On the short term programme, provided the statisticians have access to figures which are reliable, this should be an interesting report. As regards the long-term programme of experimental work, much of the preliminary study has been done and the animals suitable for the work, as well as the dose and concentration of fibre which will produce experimental asbestosis, are well known now. As far as I am aware, there is no record of carcinoma of the lung occurring in an animal which was the subject of experimental asbestosis.

The third phase of the programme is one which will meet general approval. All concerned will benefit from the widest publication of accurate statistics and informed articles containing clinical studies on the asbestosis problem.

(page 5)

In considering the possibility of carcinogenic action of asbestos fibers, the emphasis so far has been on the lung. The question has been raised of carcinogenesis by the through contact with skin as is the case with certain mineral oils. I can state that neither my former partner, Dr. G. H. Bowman, whose practice is this, nor covered 45 years, nor myself in the last 25 years has seen a skin cancer in association with an asbestos skin wart. These warts are common and are due to the penetration of the skin by minute fragments of fibers. A fibrous tissue reaction of the foreign body type occurs around them.

J. F. Kamm.