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PLAINTIFF'S
EXHIBIT

TN-4009

COPY OF DR. W. HIRST BATEMAN'S COMMENTS, DATED
OCTOBER 3rd, 1930, ON THE RECENT HOME OFFICE
REPORT ON THE EFFECTS OF ASBESTOS DUST ON THE
LUNGS.

I have arranged my comments under the following five heads..

- A. What does the report say?
- B. What is fibrosis of the lungs, and how is it produced by asbestos dust?
- C. Comments upon statements contained in the report.
- D. What results will follow the scheduling of asbestosis as an industrial disease?
- E. How can the problems associated with the scheduling of asbestosis be faced?

A

What does the report say?

1. That fibrosis of the lungs is a definite occupational risk amongst asbestos workers as a class.
2. That a certain percentage "rather less than 1 in 8 or excluding those employed under 5 years, rather less than 1 in 3" of those employed in certain branches of the Asbestos Industry have some degree of fibrosis of the lungs due to the inhalation of asbestos dust. The branches concerned are those which involve the inhalation of pure or almost pure asbestos dust.
3. Taking the estimated number of workers given in the report viz. 2200, the number of cases of fibrosis at present existing would be 250.
4. That "these general incidence rates are convenient merely as affording a rough indication of the inherent risk associated with exposure to asbestos dust at the present time. They have no permanent value either as an index of the general risk of fibrosis in the industry from year to year, or as a measure of the risk in any particular factory or group of employees".
5. That the fibrosis depends upon two factors and two factors only.
 - (a) The degree of dust concentration in the air breathed by the worker.
 - (b) The duration of employment in such atmosphere.

6. That the fibrosis is not affected by the age or sex of the worker.
7. That the incidence of the fibrosis varies very widely with the exact nature of the worker's employment and that this is dependent upon the degree of concentration of dust in the air breathed by the worker.
8. That the spinning, twisting, doubling, plaiting etc. section of the work shows the least effect upon the workers, and that dry cloth weaving is amongst the worst.
9. That estimation by "Owens Jet Apparatus" of the dust content of the atmosphere breathed by the workers at the various jobs is a good, though rough guide of the risk associated with each job.
10. That the length of time needed to produce fibrosis varies enormously with the different jobs but that fibrosis was not found in any workers who had not been in the employment for more than five years.
11. That variations in conditions of employment alter the time of incidence and the rate of development of the fibrosis, that is to say that the development of the fibrosis is dependent upon the continuing inspiration of the asbestos dust in a certain minimum degree of concentration.
12. That the application of measures resulting in the reduction of the concentration of dust in the air in the neighbourhood of dusty asbestos processes will cause, firstly, a great increase in the length of time before

workers develop a disabling fibrosis, and secondly, the almost total disappearance of the disease, as the measures for the suppression of dust are perfected.

13. That asbestos workers have no increased susceptibility to Tuberculosis of the Lungs, either before or after the development of fibrosis.

14. Discussing preventative measures (page 17) recommends

Periodical medical examination of workers.

Education of individual worker in avoidance of risks.

Constant watchfulness in the prevention and efficient removal of dust.

15. Concludes by stating

(a) That for a time the number of cases coming forward will show an increase.

(b) That after that time there will be a steady fall in the number of cases.

PART II

Discusses the different manufacturing processes in the industry the amount of dust produced by each process with the exact point of its production and the most efficient method of removing or preventing such dust.

These follow to a great extent the lines laid down by me in previous reports on the condition of factories inspected viz:

1. The provision in the factories of ample space and light for all machinery and processes.
2. Neatness and orderliness in the factories so as to provide no catchment surfaces and areas for dust.
3. The removal of all dust at the point of production, where possible.
4. The removal of all dust collected on machines, floors, etc., as often as possible, and in such a way as to avoid disseminating it once more into the atmosphere.
5. The efficient ventilation of all rooms.
6. The substitution of mechanical methods for handwork, wherever possible.

The detailed statements in Part II are of greater importance to the management than to me as your medical adviser, but I would like to draw attention particularly to the following statement:-

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5.

P.20. Exposure in some degree to asbestos dust is common throughout all the factories but steps have been taken extending over many years to deal with dust produced at various points though the necessary degree of efficiency has generally speaking, not been reached.

B

What is fibrosis of the lungs and how is it produced by asbestos dust?

Proper respiration in the healthy individual takes place through the nose, and the air travels through the nasal passages and throat down the wind pipe and bronchial tubes into the lungs.

Nature protects the individual from the bad effects of dust in the respired air by

1. Passing the air over the moist sticky membranes of the nose and throat, to which dust particles will adhere.
2. By providing the entrance to the windpipe with a very sensitive covering membrane so that coughing is readily set up with the consequent expulsion of dust.
3. By lining the whole of the internal surface of the passages into the lungs with a membrane covered with minute hair like processes called cilia, which by their regular wave-like action remove foreign from the lungs and carry them away.

It consequently follows that if the amount of dust in the inspired air does not exceed a certain amount, nature has methods of dealing with it, and the individual is preserved from injury.

If the amount of inspired dust exceeds that with

which nature can deal, then fibrosis of the lungs will be set up.

By "fibrosis of the lungs" we mean the replacement of the functioning lung tissue by useless fibrous or scar tissue with the consequent gradual pro rata impairment of the breathing power of the individual.

The production of fibrosis by asbestos dust is due to the physical character of the particles setting up irritation. Asbestos is not a poison; chemically it is inert. Consequently the rapidity of the development of fibrosis will depend upon the number of irritating particles of dust retained in the lungs.

CComments upon the statements contained in the report.It should be noted

1. That the figures refer to workers in all the factories which were the subject of the enquiry, and that consequently the proportion of cases of fibrosis will be too high for the good factories and too low for the bad ones.
2. That the examinations were carried out by one person, and the individual factor in determining what constitutes a recognizable fibrosis, etc. cannot be eliminated. My own experience of Dr. Mereweather's examinations enables me to say that he strove in all cases to be fair and judicial in his findings, but the fact remains that the exact figures will vary with the individual examiner, especially in the early stages of fibrosis.

The actual details of the clinical findings have not yet been published, so that criticism is impossible.

3. That the findings are in the main borne out by my own clinical experience as a doctor working amongst asbestos workers in the Rochdale area.
4. That the workers examined were those breathing air containing pure asbestos dust, and consequently

the figures etc. only apply to such workers, and not to those breathing mixed dusts.

5. That as a general rule the asbestos weaver continues to work at his trade for a longer period of years, and more continuously, than the worker in the cardroom or spinning room, and this fact may have some bearing upon the greater incidence of fibrosis amongst weavers.

6. That the presence of so-called "asbestos bodies" in the sputum of workers proves only that they have inhaled asbestos dust, and nothing else.

7. That the times given as to the rate of progress and duration of fibrosis are of little or no value as they vary so enormously, being affected by -

- (a) The individual factor.
- (b) The exact nature of the process.
- (c) The perfection of the dust removal in each particular factory at different times.

8. That the development of fibrosis is always a matter of years.

9. That the careful and periodic estimation, by an efficient apparatus, of the dust content of the air breathed by the worker in each individual process would be a useful guide to the efficiency, or otherwise, of the means taken to protect him, or conversely, of the risk to the health of the worker.

D

What results will follow the scheduling of asbestosis
as an industrial disease?

1. A number of claims from workers alleging that they are suffering from pulmonary asbestosis will be received.
 2. Such claims will need very careful investigation and the assessment of the extent of the disease and the amount of impairment of the lungs will not be without difficulty.
 3. Knowledge will rapidly spread amongst the workers of the existence of the disease and of its signs and symptoms.
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EHow can the problems associated with the scheduling of asbestosis be faced?

I venture to make the following suggestions:

1. The diffusion amongst the workers of knowledge of the exact nature of the disease and its method of production in order that they may be secured from panic and that their co-operation in dealing with the problem may be enlisted.
2. Care in the enlistment of new workers so as to eliminate those unfit to undertake the work, e.g., mouth breathers persons with previously impaired lungs, etc.
3. Constant attention to all details of dust prevention and removal.
4. Periodical, though infrequent examination of workers in dusty processes so as to eliminate all those who show the early stages of the disease and the provision for such workers of employment in non-dusty processes.

To be complete, this examination would involve X-ray examination also.
5. The problem of providing for the compensation of those certified as unfit for work owing to asbestosis while not exactly coming within my

province has received my earnest consideration and I should like to draw your attention to the following points:

- (a) It will be exceedingly difficult to form any conception of the proportion of such cases to the number of workers in individual factories until some years have elapsed to enable statistics to be collected.
- (b) This proportion should be a diminishing one with the perfection of means for dust removal and prevention.
- (c) The total number of workers concerned is not large and insurance companies are not likely to establish machinery for the rigorous examination of claims.
- (d) The extent of disability in a condition like asbestosis which is a very slowly progressive one will be much more difficult to assess than conditions arising from accident or chemical poisons like lead. It is not the mere presence of asbestosis but its presence to a disabling extent which will be the point at issue.
- (e) The experience of employers in dealing with the similar problem in workers affected by silicosis would be very valuable in enabling you to deal with this question.