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APRIL 29, 1971

PLAINTIFF'S EXHIBIT

CAP-1555

ASBESTOS/HEALTH

Attached are documents on this subject, accumulated since our March 24 mailing.

I. MEDICAL PAPERS OF INTEREST AND IMPORTANCE (Evaluation Sheets Only)*

"Changing Attitudes to the Diagnosis of Asbestos Disease,"
JOURNAL OF THE ROYAL NAVY MEDICAL SERVICE, January/February
1970, F.A.F. Mackenzie and P. G. Harries.

"Diffuse Pleural Mesothelioma: A Clinical and Pathological
Study," BRITISH JOURNAL OF DISEASES OF THE CHEST, October
1970, G. H. Roberts.

"Identification and Control of Asbestos Exposure," AMERICAN
INDUSTRIAL HYGIENE ASSOCIATION JOURNAL, February 1971,
L. J. Cralley.

"Exposure of Insulation Workers to Airborne Fibrous Glass,"
AMERICAN INDUSTRIAL HYGIENE ASSOCIATION JOURNAL, February
1971, D. P. Fowler, J. L. Balzer and W. C. Cooper.

II. MEDICAL PAPERS OF SOME INTEREST (Evaluation Sheets Only)

"Further Observations on the Ultrastructure and Chemistry
of the Formation of Asbestos Bodies," EXPERIMENTAL AND
MOLECULAR PATHOLOGY, December 1970, J.M.G. Davis.

"The Early Radiological Changes in Pulmonary and Pleural
Asbestosis," CLINICAL RADIOLOGY (British), October 1970
D. E. Fletcher and J. R. Edge.

"A Study of Macrophage Reaction of the Plumonary Tissue of
Hamsters in Response to the Intratracheal Insufflation of
Tritium Labelled (³H)-Benz(a)pyrene Mixed with Carbon
Black and Asbestos," PATOLOGICHESKAYA FIZIOLOGIYA Y
EKSPERIMENTALNAYA TERAPIYA (USSR), July/August 1970, L.M.
Pylev, F.J.C. Roe and D. Vorvik.

III. MEDICAL PAPERS OF MINIOR INTEREST

A list describing each paper.

*Entire paper attached to sets addressed to those individuals
who have asked to see the full text of important papers.

IV. SPRAYED ASBESTOS

1. On April 13, C. L. Sheckler testified before the Los Angeles Department of Building and Safety on a proposal to remove the "approved" status of all fireproofing sprays containing asbestos. Sheckler represented the Asbestos Information Association/North America, the Asbestos Cement Products Association, and the National Insulation Manufacturers Association. A copy of a report on the meeting from a Hill & Knowlton representative on the coast is attached. Sheckler's prepared testimony was almost exactly the same as that delivered by Fred Pundsack before the Boston hearing in March. The Boston testimony was distributed in the last mailing.
2. On April 19, the City of Philadelphia Department of Health held hearings on a proposed ban of asbestos-containing spray insulations in that city. Among those who presented testimony were Dr. Sidney Speil, representing the Asbestos Information Association/North America; C. L. Sheckler, representing the National Insulation Manufacturers Association and the Asbestos Cement Products Association; and Herbert Levine, representing the Sprayed Mineral Fiber Manufacturers Association. Attached is a report on the hearings by M. M. Swetonic, who also attended.

V. ASBESTOS INFORMATION ASSOCIATION/NORTH AMERICA

As we reported in last month's mailing, the Asbestos Information Association/North America held a press briefing for science writers and editors on March 2. Attached are two clippings on the briefing, one from INDUSTRY WEEK and the second from JOB SAFETY AND HEALTH REPORT.

VI. ENVIRONMENTAL PROTECTION AGENCY

On March 31, the recently established Federal Environmental

- More -

Protection Administration listed three materials -- including asbestos -- in the Federal Register as being "hazardous air pollutants" for which national standards will be set in the next few months. A news release put out by the EPA announcing the listing stated that "even slight exposure" to the three materials "may contribute to death or serious illness." The AIA/NA has obtained an appointment to meet with Dr. John Middleton, head of EPA's Air Pollution Control Office, on May 12 in Washington to discuss the situation. A copy of the EPA press release is attached, as well as stories on the subject from the NEW YORK TIMES and the DENVER POST.

VII. RALPH NADER

Consumer protection advocate Ralph Nader has sent a letter to the EPA asking them to set up a program to monitor asbestos dusts eroded from return air plenums. Attached is a story on the subject which appeared in the WASHINGTON POST and a reply from the AIA/NA.

VIII. NEW YORK STATE

The New York State Senate has passed a law requiring permits for the spraying of asbestos-containing insulations throughout the State. Attached is a story on this new legislation from the NEW YORK TIMES. Because a companion action being proposed by the New York State Department of Environmental Conservation would prohibit all spraying of asbestos, the AIA/NA chose not to contest the Flynn bill. Dr. Pundsack is scheduled to testify on May 10 at a hearing before the New York Department of Environmental Conservation.

IX. OTHER ITEMS

1. Johns-Manville and the AIA/NA were the subjects of a devastating article in the March 20 issue of ENVIRONMENTAL ACTION. A reply, distributed to Policy Committee members on April 21, has been sent to the publication. Attached is a copy of the original article.
2. An article from the April 7 PLAINFIELD COURIER-NEWS on recent work by Dr. William E. Smith of Fairleigh-Dickinson University on mesothelioma.

- More -

3. An article from PILOT, a publication of the Manufacturing Chemists Association, on asbestos-related disease as an occupational problem.
4. An article from the March 1971 issue of ENVIRONMENT entitled "A Special Burden." It contains a section on asbestos starting on page 29.
5. Community Medicine Newsletter (Winter edition) from Mount Sinai School of Medicine. It contains much information on the activities of Dr. Selikoff.
6. A calendar of upcoming medical meetings.

Bice
W. P. Raines



SUMMARY AND EVALUATION

Subject: Pleural abnormalities found in British Navy dockyard workers intermittently exposed to asbestos. Of interest and importance.

Evaluation: The finding of pleural plaques among dockyard employees who do not work directly with asbestos, but have been exposed lightly for long periods of time, is described as "worrying" because of the possible development of mesothelioma. The authors note that "the significance of these changes in relation to the development of malignant disease is not yet known." Exact number of pleural abnormalities found among the 50,000 current and former dockyard workers is not given.

Authors: Mackenzie, F.A.F. and Harries, P.G. (Royal Navy).

Journal: Journal of the Royal Naval Medical Service, January-February 1970.

Title: "Changing Attitudes to the Diagnosis of Asbestos Disease"

Summary: "A large number of patients with pleural abnormalities have been discovered in Plymouth, and in the light of our experience we expect that many more have yet to be revealed. During the next few years the problem will be to assess the progress of these changes. The modified oblique view is required to display the pleural lesions adequately. The standard oblique view does not do this. Right and left obliques may be required. We would like to suggest that asbestos exposure should be considered in the differential diagnosis for any patient over the age of 30 with an unexplained effusion."

- xxx -

SUMMARY AND EVALUATION

Subject: Incidence of mesothelioma in Glasgow, Scotland, supposedly related to asbestos exposure. Of interest and importance.

Evaluation: This retrospective study of autopsy records for the period 1950-67 in one Glasgow hospital reveals that there were 20 cases of pleural mesothelioma out of 5,406 autopsies. Occupational histories of the subjects are sketchy; two men had "a definite history" of work in the shipyards, four more had trades which "suggested" shipyard employment at some time. "Evidence of exposure to asbestos, based on the presence of asbestos bodies in the lungs was present in 18 cases." (There are no data on the prevalence of so-called "asbestos bodies" among persons who did not have mesothelioma.) "There was histological evidence of asbestosis in 18 cases." (The criteria for the definition of asbestosis is not otherwise given.)

Author: Roberts, G.H. (Southern General Hospital, Glasgow)

Journal: British Journal of Diseases of the Chest, October 1970.

Title: "Diffuse Pleural Mesothelioma: A Clinical and Pathological Study"

Summary: As given above.

- xxx -

SUMMARY AND EVALUATION

Subject: Study of airborne fiber glass resulting from insulating work.
Of interest and importance.

Evaluation: This study should be useful in countering false claims that the use of fiber glass insulating materials constitutes a potentially greater hazard than asbestos. Other workers have studied the health effects of fiber glass exposure on factory workers, and found that the substance is biologically inert. The present authors accept these findings and conclude: "It is doubtful that the concentrations of airborne fibrous glass found in our study are of long-term biological significance." Some extremely valuable data are included:

- In Northern California and Nevada, insulating workers use fiber glass on more than half of the jobs.

- The TLV of 10 milligrams per cubic meter is about ten times the actual average exposure of insulating workers.

- Installing fiber glass insulation requires a series of varied operations with different exposures, as compared to the more stabilized exposure resulting from the fewer operations performed in installing asbestos materials.

- The exposure of insulators to airborne fiber glass is "significantly lower than their exposures to other fibrous materials."

- "The assumed absence of chronic effects should be checked by appropriate long-term observation of those whose work involves frequent or daily inhalation of glass."

Authors: Fowler, D.P., Balzer, J.L. and Cooper, W.C. (University of California).

Journal: American Industrial Hygiene Association Journal, February 1971.

Title: "Exposure of Insulation Workers to Airborne Fibrous Glass"

Summary: As given above.

SUMMARY AND EVALUATION

Subject: Continued study of the formation of asbestos bodies in experimental animals. Of some interest.

Evaluation: Although the controversy concerning the nature of asbestos bodies apparently has become less intense, basic research on this subject is of continued interest in adding to knowledge of the pathological processes in asbestos-related disease.

Author: Davis, J.M.G. (Cambridge University)

Journal: Experimental and Molecular Pathology, December 1970

Title: "Further Observations on the Ultrastructure and Chemistry of the Formation of Asbestos Bodies"

Summary: In guinea pigs and mice, the longer dust fibers were seldom ingested by a single macrophage cell, but were surrounded by macrophages which eventually fused to form giant cells. It is while dust fibers were surrounded by partially fused macrophages that the earliest signs of body coating were seen. It is therefore suggested that only those fibers that are retained in a site of partial fusion for some time ever become coated. The coating process probably ceases when fusion is complete and the body is completely enclosed in a fully formed giant cell. The first coating material of the asbestos bodies seems to be a mucus-like substance, but this coating soon becomes impregnated with iron.

- XXX -

SUMMARY AND EVALUATION

Subject: Discussion of early fibrous pleural plaques as a guide to the diagnosis of asbestos-related disease in subjects without clinical asbestosis. Of some interest.

Evaluation: The authors state: "The purpose of this paper is to examine the earliest demonstrable X-ray changes in both types of asbestos disease" (asbestosis and pleural plaques). While their purpose is to clarify, their choice of terminology ("pleural asbestosis") may create some added confusion.

Authors: Fletcher, D.E. and Edge, J.R. (North Lonsdale Hospital, Barrow-in-Furness, U.K.)

Journal: Clinical Radiology (British), October 1970..

Title: "The Early Radiological Changes in Pulmonary and Pleural Asbestosis"

Summary: "A radiological investigation of 484 men with signs of asbestosis acquired in the shipyards and engineering workshops at Barrow-in-Furness has been conducted by examining all previous X-ray films and studying them to determine the earliest diagnosable lesions. There were 63 cases with pulmonary fibrosis, the earliest changes of which are described. The interpretation of these is considered to be too subjective to be of great value. Diffuse pleural thickening is non-specific and although pleural calcification is a valuable sign with characteristic appearances, it takes many years to develop. The earliest appearances of fibrous pleural plaques are described and the view is expressed that they may be as easily recognised and as reliable as calcified lesions, provided they are carefully studied to distinguish them from normal muscle shadows. Mention is also made of the curious distribution of calcified plaques on the left heart border in 21 cases; this appears to be fairly characteristic."

- XXX -

SUMMARY AND EVALUATION

Subject: Comparative study of asbestos and carbon black as carriers of carcinogenic benzpyrene. In Russian with English summary. Of some interest.

Evaluation: The results of this study suggest that carbon black has a greater affinity for benzpyrene as compared to asbestos. Radioactive "tagged" benzpyrene, either by itself or combined with asbestos or carbon black, is ingested by lung macrophages. Macrophages are large cells which ingest foreign particles. The English summary of this paper is given in full below.

Authors: Pylev, L.M., Roe, F.J.C. and Vorvik, D. (Institute for Experimental and Clinical Oncology, Moscow; and Chester Beatty Research Institute, London).

Journal: Patologicheskaya Fiziologiya y Eksperimentalnaya Terapiya (USSR), July-August 1970.

Title: "A Study of Macrophage Reaction of the Pulmonary Tissue of Hamsters in Response to the Intratracheal Insufflation of Tritium Labelled (^3H) - Benz(a)pyrene Mixed with Carbon Black and Asbestos"

Summary: "Macrophage count was studied in hamsters following a single intratracheal insufflation of tritium labelled (^3H)-benz(a)pyrene -- (^3H)-BP mixed with carbon black or asbestos. More macrophages could be found after the administration of (^3H)-BP + carbon or asbestos, than after the administration of (^3H)-BP alone, but the radioactivity per macrophage was the highest in the group treated with (^3H)-BP alone. The total radioactivity of the lung after washing out of the macrophages was also studied. It was the same in all the three groups during the first week of the experiment. Later on it proved to diminish more rapidly in the first group of the animals to which (^3H)-BP alone was administered."

- xxx -

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MEDICAL PAPERS OF MINOR INTEREST

The following medical papers have been screened and filed, but judged of insufficient interest to warrant full summary and evaluation.

Grilliat, J.P., Debry, G., Laurent, J., Floquet, J. and Vautrin, D.A., "Doerge-Potter Syndrome and Pleural Mesothelioma with Hypoglycemia," Journal Francais de Medecine et Chirurgie Thoracique, April 1970. In French. Doerge-Potter Syndrome is a very rare disease characterized by low blood sugar and certain types of tumors, in this case a pleural mesothelioma. The single case presented here concerns a 64-year-old female. No occupational or environmental history is given, and the possibility of asbestos exposure is not suggested.

"Asbestos and the UICC," Boletim do Instituto Portugues de Oncologia de Francisco Gentil, September 1969. In Portuguese. Anonymous news report on the establishment by the International Union for the Control of Cancer of the Johannesburg "asbestos bank" of standard samples for research.

Otto, H. and v.Fragstein, J.G., "Occurrence of Asbestos Needles in Human Lungs," Internationales Archiv fur Gewerbepathologie und Gewerbehygiene, March 1969. An examination of dust from the lungs of persons engaged in dusty trades indicates that those exposed to asbestos dust exhibit a higher proportion of needle-shaped particles than persons working in the ceramics or porcelain industry. It is suggested that the relative number of needle-shaped particles in the lungs may be of diagnostic value.

Frommhold, W., Lagemann, K. and Lindlar, F., "Pleural Calcification and Malignancy as Late Sequelae of Asbestosis," Fortschritte auf Gebiete der Rontgenstrahlen, June 1969. In German. A single case history. The patient, a 69-year-old man, had worked in an asbestos factory for nine years. Thirty years after leaving the factory he developed extensive pleural calcifications and bronchial carcinoma in the lower lobe. "This was regarded as an asbestos carcinoma."

Burger, B.F. and Engelbrecht, F.M., "The Biological Effects of Long and Short Fibres of Crocidolite and Chrysotile After Intrapleural Injection into Rats," South African Medical Journal, November 7, 1970. Confirms the findings of other investigators that long fibers are more pathogenic than short fibers of either variety of asbestos. Contrary to previous investigations, no mesotheliomas appeared in these animals up to 120 days.

Burger, B.F. and Engelbrecht, F.M., "The Biological Effects of the International Standard Reference Asbestos Samples (UICC) on the Lungs of Rats," South African Medical Journal, November 7, 1970. A follow-up investigation using five types of asbestos: Short-fibered crocidolite, anthophyllite, amosite and Rhodesian chrysotile, long-fibered Canadian chrysotile. Again it was found that the long-fibered sample was most fibrogenic. "It would appear that the relative length of the asbestos fibres is of primary importance in inducing asbestosis in the lungs of rats."

El-Sewefy, A.Z., Awad, S. and Abdel-Salam, M.S., "Chest Symptomology in an Egyptian Cement-Asbestos Pipe Factory," Journal of the Egyptian Medical Association, 53 (1), 1970. "The results showed that there is a high incidence of respiratory signs and symptoms due to the high dust concentration in this plant." No attempt was made to diagnose any specific disease. In one operation the mixed dust count was as high as 626 milligrams per cubic meter of air.

Juvara, I., Dragomirescu, C., Tomescu, O. and Velican, D., "Mesothelioma of the Pericardium," Journal of Cardiovascular Surgery, May-June 1970. A single case report in Rumania. The patient was a male, aged 56. No occupational or environmental history. No mention of asbestos.

- xxx -