



Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

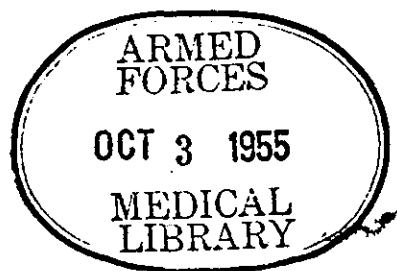
MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL . . . decisions and trends



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INDUSTRIAL HYGIENE FOUNDATION

MELLON INSTITUTE

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FOUNDATION FACTS

Foundation Facts is a monthly news-letter issued to industrial concerns holding membership in Industrial Hygiene Foundation. The Foundation is a nonprofit association of industries for the advancement of healthful working conditions.

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CLOSE ASSOCIATE OF FOUNDATION DIES

Carl M. Peterson, M.D., Secretary of the Council on Industrial Health of the American Medical Association, Chicago, died on September 27, 1955 of injuries received a day earlier in the crash of a private plane on a mountainside near Asheville, North Carolina. His untimely death means a great loss to the whole field of industrial health, a loss which will be keenly felt by Industrial Hygiene Foundation, on whose Medical Committee Dr. Peterson had served since 1948.

DR. WALMER PRESENTS PAPER ON AUTOMATION

Dr. Walmer presented a paper on "Worker Welfare in the Era of Automation" at a Special Manufacturing Conference on Automation held by the American Management Association, October 10-12, 1955, New York City.

NEW REPRINTS

Reprints are available upon request for the following technical papers of Foundation staff members:

"Pitfalls in Using Maximum Allowable Concentrations in Air" by Dr. H. H. Schrenk, Research Director, presented at the Industrial Hygiene Conference, April 27, 1955, Buffalo, N. Y. Published in the Annals of the Industrial Hygiene Association, Quarterly, September, 1955.

"Index for Evaluating Heat Stress in Terms of Resulting Physiological Strains" by H. S. Belding and F. F. Hatch, published in Heating, Ventilating & Air Conditioning, August, 1955.

20TH ANNUAL MEETING OF I-H-F

Detailed program information for the Technical Conferences to be held at Mellon Institute on the first day of Industrial Hygiene Foundation's 20th Annual Meeting, November 16, 1955, appears on subsequent pages of the Digest. The General Meeting, outlined in last month's issue of the publication, will take place on November 17. Member companies are urged to send representatives to the Medical, Legal, Engineering, Chemical-Toxicological, Joint Medical-Chemical-Toxicological, and Joint Engineering-Legal Conferences, and to the management session, the General Meeting.

- 1237 Adsorption of Serum Proteins at the Surface of Silica; Its Possible Importance in the Genesis of Silicosis. B. Pernis and M. Battigelli. Med. lavoro 46, 1-13 (Jan. 1955). Italian with English summary.

A series of recent hypotheses on the pathogenetic mechanism of silicosis is based on the adsorption of proteins by silica. The research described was undertaken to determine which proteins are most likely to be thus adsorbed. Experiments were made in which serum albumins, gamma-globulins, and whole human serum were adsorbed on carbon, quartz, and Aerosil powder. The experiments show that human serum globulins, and particularly gamma-globulins, have a high tendency to be adsorbed on silica. It is held probable that the adsorption on quartz is followed by a denaturation of the adsorbed proteins and that this phenomenon could have an importance in the genesis of silicosis. -- Cond. from English summary (Bull. Hyg.)

- 1238 Rheumatoid Arthritis in Males: An Epidemiological Study of a Welsh Mining Community. W. E. Miall. Ann. Rheumat. Diseases 14, 150-158 (June 1955).

It has been shown (IHF Absts. 180, 181, Feb. 1954) that some coal miners with rheumatoid arthritis and with pneumoconiosis have characteristic chest x-rays. To determine whether the progressive massive fibrosis was a causal factor in arthritis, a survey of rheumatoid arthritis patients was undertaken in a Welsh mining valley, in which progressive massive fibrosis was common among the miners. The survey showed that, though the prevalence of rheumatoid arthritis among all patients with massive fibrosis is about 2.7%, compared with 0.6% among miners without massive fibrosis, the prevalence of the disease in miners does not differ significantly from that among non-miners, and therefore it is unlikely that massive fibrosis predisposes to rheumatoid arthritis. It is concluded, therefore, that neither exposure to dust nor the lung changes of complicated pneumoconiosis play a causal role in rheumatoid arthritis. Heredity seems to play a causal role in rheumatoid arthritis, in Caplan's syndrome, and in Caplan chest x-ray findings without arthritis. -- Cond. from J. Am. Med. Assn.

- 1239 Pulmonary Disability in Asbestos Workers. K. W. Smith. Arch. Ind. Health 12, 198-203 (Aug. 1955).

Respiratory disease experience among several thousand male and female asbestos workers in the United States and Canada is reported. Of all workers exposed to the fibers, very few develop asbestosis. This disease is insidious in onset and progresses slowly with continued exposure, causing respiratory embarrassment and cardiac failure. Expansion of the lung is difficult, and there is impaired gas transfer through the lung. Diffuse, obstructive emphysema is not common. The typical x-ray pattern

cannot be confused with other pneumoconioses. An x-ray survey of 708 employees in a milling operation showed that the majority had normal x-ray patterns, that ten or more years of exposure were necessary to produce x-ray changes, and that no cases of asbestosis were found who had worked less than 20 years in the dust. The incidence and duration of nonoccupational respiratory disease were not increased by exposure. Asbestos does not predispose to tuberculosis, nor does it aggravate an apparently healed lesion. There are several reasons for different opinions expressed concerning the relationship of asbestosis and bronchogenic carcinoma. Differences in asbestos fibers were noted.

-- Cond. from author's summary

- 1240 The Effects of Inhaled Talc-Mining Dust on the Human Lung. G. W. H. Schepers and T. M. Durkan. Arch. Ind. Health 12, 182-197 (Aug. 1955).

The talc mined in Northern New York State consists of a mixture of talc, tremolite, and anthophyllite. Quartz is also present in moderate amounts in the dust generated in mining and processing. The three constituents of the talc were present in the lungs of deceased employees. Quartz was present in significant amounts only when the men had been additionally exposed in other mining industries. The histological features suggest that tremolite may be the main pathogenic agent in provoking the characteristic "talc" lung lesion. The roles of talc and of anthophyllite have not been wholly excluded. The presence of quartz modifies materially the nature of the "talc" reaction, and the presence of "talc" dust in the lungs modifies both the response to quartz dust and the course of associated infection. Marked pulmonary vascular damage was present in cases where the quartz content of the lungs was highest, and this feature is in harmony with the tendency to cardiac deaths. Bronchitis, bronchiolitis obliterans, and bronchiolectasis are associated major findings in this series.

-- Cond. from authors' summary

- 1241 Disabling Pneumoconiosis from Limestone Dust. A. T. Doig. Brit. J. Ind. Med. 12, 206-216 (July 1955).

Attention is drawn to the occurrence of cases of pneumoconiosis in limestone workers. This pneumoconiosis is associated with fibrosis of the lungs and, in advanced cases, with disability. The lesion produced is almost certainly silicosis, due to the free silica content of the limestone. The pneumoconiosis hazard, in the mining and grinding of at least certain limestones, is considerable, in spite of the relatively low free silica content. Whether or not calcium carbonate can modify the action of silica, it would not apparently, judging from these observations, have any inhibitory effect.

-- Author's summary