

Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL . . . decisions and trends

ARMED FORCES
MAY 1953
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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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PREPARATIONS FOR ANNUAL MEETING

The Board of Trustees of Industrial Hygiene Foundation will meet at the Yale Club in New York on May 27. One of the major items of business will be the program for the Annual Meeting.

The various Committees are also meeting this month to shape up plans for the Conferences to be held on November 18. The Medical Committee met in Chicago on May 6. The Chemical-Toxicological Committee has scheduled a meeting for May 20 at Mellon Institute. The Legal Committee will meet in New York on May 26. A number of suggestions have already been received for the Engineering Conference that will be given attention at a later date.

DR. HUSSEY DIES

Dr. Raymond Hussey, Scientific Director of the Council on Industrial Health of the American Medical Association, Chicago, died on April 15. Dr. Hussey was a member of the Medical Committee of Industrial Hygiene Foundation from 1942 to 1952 and of the Foundation's Air-Pollution Control Committee since its formation in 1950.

NOISE PROBLEM DISCUSSED

Dr. Walmer presented a paper on "The Need for a Center for Coordinating Data on Noise (Historical Background and the Legal Problem)" at the Industrial Health Conference in Los Angeles, Calif., which was held from April 18 to 25. Dr. Walmer's presentation was a part of the Symposium on Noise, jointly sponsored by the Industrial Medical Association and the American Industrial Hygiene Association, held on April 22. The paper was published in the May issue of Industrial Medicine and Surgery and reprints will soon be available.

NEW REPRINTS

Reprints of a paper on "Noise, Its Effects and Costs" by Sam L. Hooper (Remington Rand, Inc.; Past President, National Noise Abatement Council) are available on request. The paper was presented at the 17th Annual Meeting of Industrial Hygiene Foundation on November 19, 1952.

Also available are reprints of another paper given at the meeting on "Review of Latest Developments in Outdoor Air Pollution." The paper is under the authorship of W. C. L. Hemeon, Engineering Director of the Foundation.

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494 A Critical Review of the Chemical Theory of Silicosis. Luise Holzapfel. Beitr. Silikose-Forsch. No. 15, 1-19 (1952) German.

The solubility theory is first reviewed and reasons are given why it cannot be maintained in its original form, which says that silicosis is due to dissolved silica. The main argument is that silicosis requires years to develop, while the solubility of quartz drops in the course of days or weeks. A modified solubility theory is suggested by the author's published work and on her recent results with carbohydrates. From plant extracts, a fraction containing carbohydrate and silica could be isolated, and experiments with blood and quartz showed specific adsorption of a galactose complex. The galactose adsorbed on quartz still reacts with hydrazine, demonstrating that the aldehyde group does not take part in the reaction with quartz. Next follows a very speculative chapter dealing with the structure of silica-galactose complexes. Collagen is said to contain galactose but there is no evidence on its structure. The osazone reaction can be used to demonstrate quartz in human silicotic lesions, as well as to demonstrate galactose adsorption on quartz, and a number of colored illustrations of this effect are shown. Electron micrographs of serpentine asbestos after disintegration in water are also shown.

-- Cond. from Bull. Hyg.

495 Considerations on a Case of Progressive Massive Silicosis Following Past Limited Exposure. M. Bodo and L. Briccarello. Rass. med. ind. 21, 233-238 (May-June 1952) Italian.

The authors discuss a case of progressive massive silicosis of the lungs which was seen by them in April, 1951. The patient was a metal worker, aged 28, who had been employed, for 2 years only, at chiseling grindstones in 1939-40. Signs and symptoms of silicosis, which are described, appeared in November, 1950. At the time of the examination, signs and symptoms were said to be stationary. Tuberculosis was absent. X-rays showed a generalized deep and confluent shadow on the lungs, except for clear areas which may have been due to spontaneous pneumothorax or to localized emphysema. In the light of this case the authors question the statement that simple pneumoconiosis can be arrested by removing the patient from exposure to dust. The tendency to progress varies with the physico-chemical properties of the dust and the individual tissue reactivity. As in the case of hepatic cirrhosis, the causative agent may start a chain reaction which does not stop progressing after the cause has been removed. -- Cond. from Bull. Hyg.

496 Usefulness of the Photoroentgen Method in Silicosis and Asbestosis Investigations of Workers. E. Zanetti. Rass. med. ind. 21, 130-132 (1952) Italian.

A comparative study of several tens of thousands of photoroentgen films and roentgenograms has produced several interesting conclusions concerning investigations of silicosis and asbestosis among workers. 35 mm. photoroentgen films were found to represent clearly massive silicosis, advanced

asbestosis, and nodular silicosis. In silicosis which is represented by reticulation, identification is more difficult, but it is still possible in the hands of an expert. The identification of mild or moderate asbestosis is still more difficult. Only a great deal of experience which is integrated with a knowledge of concentrations and exposures of the dust involved makes possible an intelligent interpretation of such films. -- Biol. Absts.

497 Does Silicosis Affect the Silica Content of Human Blood? G. Worth and G. Campen. Z. physiol. Chem. (Hoppe-Seyler's) 288, 155-164 (1951). German.

The authors determined the silica content of blood of 264 persons, half of whom were coal miners with various stages of silicosis, using the molybdenum blue technique. The mean result for the whole group was 8.3 ± 2.4 micrograms silica per ml. of blood. Neither sex, different kinds of inflammatory or other diseases, nor silicosis caused any difference in the silica content of the blood. Tests were also made after ingestion of organic silicon compounds. Here a rapid rise of silica content of blood and urine was found, but the blood silica had dropped to its normal value after 9 hours. The bearing of these findings on the silica solubility theory is discussed. If the theory is to be maintained, it must be assumed that the amounts dissolved are too small to be demonstrated in the blood or that excretion through the kidneys is too rapid.
-- Cond. from Bull. Hyg.

498 Silicotic and Tuberculosilicotic Lesions Simulating Carcinoma. F G. Kergin. J. Thoracic Surg. 24, 545-567 (Dec. 1952).

The appearance of unilateral massive densities in the lungs of eight men between the ages of 49 and 69 with chronic pneumonitis has been reported. In each of these patients clinical and radiographic evidence strongly suggested bronchiogenic carcinoma. Five of the eight patients had prolonged exposure to silica-containing dust in various occupations. Five patients were treated by pneumonectomy, one by lobectomy, and one by thoractomy and biopsies were made. The fundamental feature of the pathological process in this group of patients was complete or partial bronchial obstruction by pressure of lymph nodes, which were the site of a chronic inflammatory reaction secondary to inhalation of silica-containing dust. In five patients the chronic obstructive pneumonitis was non-specific, and in three there was an added tuberculous infection. It is suggested that this condition be called "chronic silicotic lymphadentis with obstructive pneumonitis (nontuberculous or tuberculous)." The patients are all alive; the six patients treated by excision have been relieved of their complaints. -- Cond. from J. Am. Med. Assn.