



Industrial Hygiene Digest

INDUSTRIAL HEALTH NEWS

LITERATURE ABSTRACTS

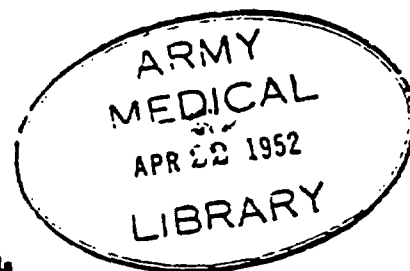
MEDICAL

ENGINEERING

CHEMICAL

TOXICOLOGICAL

LEGAL . . . decisions and trends



APRIL, 1952

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INDUSTRIAL HYGIENE FOUNDATION

MELLON INSTITUTE

4400 FIFTH AVENUE -:- PITTSBURGH 13, PA.



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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NEW ADDITIONS TO FOUNDATION MEMBERSHIP

The following companies have recently affiliated with the Foundation:

Copperweld Steel Co.

Chromium Mining & Smelting Corp., Ltd.

Diamond Alkali Co.

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Festoria Glass Company

Mathieson Chemical Corp.

Pabst Brewing Company

TALKS BY STAFF MEMBERS

Dr. C. Richard Walmer, Managing Director, will discuss the administration of medical health programs at a training course in industrial relations sponsored by Industrial Relations Counselors, Inc., of New York, which is being held at the San Marcos Hotel, Chandler, Arizona, April 7 to 17. He will also serve as discussion leader for two seminar groups.

Mr. W.C.L. Hemeon, Engineering Director, presented a paper entitled "Design and Use of Equipment in Air-Pollution Measurements" at a meeting of the Pittsburgh Section of the Instrument Society of America, held on April 4.

FOUNDATION ACQUIRES ADDITIONAL SPACE

Mellon Institute has made available to the Foundation additional space consisting of two offices, a conference and library room, and a small laboratory. The Foundation is grateful to the Institute for these supplemental facilities, which are needed to provide for the expanding program of work and increased personnel.

INDUSTRIAL HEALTH CONFERENCE

The Industrial Hygiene Foundation will be well represented at the 1952 Industrial Health Conference, which will be held in Cincinnati, Ohio, April 19-26. The entire senior staff will attend the meetings and participate in numerous conferences and committee sessions.

REPRINTS AVAILABLE

Reprints are available, upon request, of the paper entitled "Experimental Endogenous Lipoid Pneumonia," by Dr. Paul Gross, the Foundation's Research Pathologist, published in the American Journal of Pathology, 28, 211, (April, 1952).

I - H - F

- 432 The Cardiovascular Reactions of Silicosis and Anthracosilicosis. A Contribution to the Study of "Cor Pulmonale." F. Lavenne. Institute d'Hygiene des Mines, Hasselt (Belgium). Communication No. 83, 11 pp., mimeographed, (1951). (In French).

Cor pulmonale is a frequent complication of silicosis and anthracosilicosis, especially of the massive conglomerate type. Among the coal miners of South Wales with anthracosilicosis 23.7% died of right heart failure. Cor Pulmonale develops as a result of both pulmonary and cardiac insufficiency. It is frequently difficult to separate the pulmonary manifestations from the cardiac manifestations. The development and stages of cor pulmonale can be established by definite electrocardiographic, x-ray and clinical criteria. Some of these criteria are discussed by the author. Miners who have been exposed over a long period and whose lungs contain many "coal nodules" should be kept on the job, since pulmonary fibrosis is inevitable.

However, the heart and lungs of such miners should be examined at least once a year. In the determination of worker disability, electrocardiographic findings, as well as the use of the x-ray and computation of maximal breathing capacity, serve to establish the degree of pulmonary and cardiac pathologic change. -- Arch. Ind. Hyg. & Occ. Med.

- 433 The Action of Different Forms of Silica in Sensitized Animals. W. Koch. Frankfurter Z. Path. 60, 58-96, (1949). (German).

Animals were given repeated subcutaneous injections of quartz or colloidal silica, together with albumen, nucleic acid, or a specific antigen mixture called "Gripalin." Animals were killed and examined from a few weeks up to 36 months. The tissue reactions are described in detail. With quartz, a foreign body granuloma is followed after a few weeks by necrosis which is complete after five months. Fibrosis is just visible after six months and very well developed after three years. Fat accumulates during the necrotic and early fibrotic stages, but little fat is seen in the late fibrotic stage.

When colloidal silica is administered, the early stages are the same but no fibrosis occurs up to 18 months. Cysts then develop, but not at the site of the injections. They may reach several inches in diameter. The cysts contain 4.4% silica; 92% protein and water, 3.5% lipoids and fats, and 1.1% other ash. The animals lose resistance to infection and die within a few months. A detailed but speculative discussion follows the report of the results. One chief point is that the action of the quartz is due both to foreign-body effect and silica solubility.

With colloidal silica, small amounts are completely removed; too large amounts lead to instantaneous death; intermediate doses as in the experiments described result in the formation of a complex between silica, fat, and protein. -- Cond. from Bull. Hyg.

- 434 Penetration of Dust Particles and Sites of Dust Stores in Pneumoconiosis. G. Mottura. Brit. J. Ind. Med. 9, 65-69, (January, 1952).

The author presents additional evidence in support of his theory that dust particles in the lungs are generally carried as such in the lymph stream and in the liquid on the surfaces and in the interstices of alveolar tissue, and not primarily by phagocytes. (IHF Absts. 77, 78, Jan., 1952).

- 435 Streptomycin Treatment in Silicosis with Tuberculosis. F. Lang. Mtt. der Med. Abt. der Suva, No. 27, 8 pp., (Jan., 1951). (German).

No beneficial effect followed streptomycin treatment of 25 out of 32 cases of silicosis with tuberculosis. In the other seven there was some improvement, but in only four was even partial working capacity restored. No reports are as yet ready on the effect of streptomycin combined with other drugs.

-- Cond. from Bull. Hyg.

- 436 Experimental Asbestosis. W. Behrens. Schweiz. z. Allg. Path. u. Bakt. 14, 275-297, (1951). (In German).

Pure chrysolite asbestos was injected intraperitoneally and intratracheally into mice and rats. The fibers varied from 5 to 180 microns in length. Unsuccessful attempts to secure fibers of standard length are described. The general picture is one of non-specific focal fibrosis resulting from the introduction of foreign bodies. No solution or toxic action of the asbestosis could be demonstrated. Asbestosis bodies were not formed. The theories of the pathogenesis of asbestosis are discussed.

-- Cond. from Bull. Hyg.

- 437 Pneumoconiosis Due to Talc. G. Kohler, G. Leopold, and W. Steyer. Z. Artzl. Fortbildung 45, 375-382, (July 15, 1951). (German).

A survey was made in a factory in Leipzig making talc powder for cosmetic and medical purposes, where until 1944 talc was the only mineral base used, although minor amounts of kaolin and colloidal silica were used for a time later. Among 28 workers one case of stage 2 pneumoconiosis and two of stage 1 were found after 19, 25 and 30 years exposure respectively. Clinical observations show little or no disability for stage 1, but emphysema, bronchitis, a reduced vital capacity, and a shortened apneic pause for stage 2.

The radiological pictures resemble asbestosis rather than silicosis. Working conditions and materials are described, and size distributions are given. Initial and annual x-ray checks are recommended. Modern exhaust ventilation has greatly improved dust control since 1940.

-- Cond. from Bull. Hyg.