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IHF-510

# INDUSTRIAL HYGIENE DIGEST

## Literature Abstracts

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## Industrial Health News

VOLUMES 1 - 2
1937--- 1938



*Issued Monthly By*

INDUSTRIAL HYGIENE FOUNDATION

4400 FIFTH AVENUE

PITTSBURGH (13), PA.

11 PNEUMOCONIOSES OF THE WORKER. K. Wider. Ztschr. f. Gewerbehyg. u. Unfall, 44, 131-5 (1937).
Silicosis became compensable in Austria on April 1, 1935. Since then, 206 cases have been reported in the Workmen's Compensation Office; of these, 171 are miners, some from lignite mines. In the metal industry, most cases are among sandstone grinders and sandblasters.

12 PULMONARY ASBESTOSIS. IV. THE ASBESTOS BODY AND SIMILAR OBJECTS IN THE LUNG. Kenneth M. Lynch, M.D., Dept. of Pathology, Medical College of the State of South Carolina, Charleston, S. Carolina. J.A.M.A. 109, 674-8 (Dec. 11, 1937). Reprints probably obtainable from author.
The typical asbestos body (also called asbestosis body) is an object 10 to over 100 microns long and 1 to 12 microns thick and is composed of a central translucent fiber or needle crystal of asbestos with an enveloping shiny golden or brownish gelantinous substance constructing various architectural figures. Sometimes it is beaded or clubbed and sometimes spherical. A Prussian blue reaction for iron is given. These bodies may be found at various places in the lung, especially in the bronchioles, the alveoli and in the tissues along the lymphatic route; usually shorter at a distance from the alveoli, but often surprisingly long, considering the distance they have traveled. They sometimes cause fibrosis around them, but not necessarily. They are also found in the sputum of those exposed to asbestos dust, but their presence or absence in the sputum does not indicate the presence or absence of asbestosis; their presence only shows that exposure to the dust has occurred. Similar bodies have been found in persons exposed to coal dust, and in others who have died of heart failure, rheumatism and arteriosclerosis, without known heavy dust exposure. Exposure to asbestos dust does not always produce asbestos bodies; bare fibers have been found in the lungs of animals. The author has seen silica particles similarly enveloped, in cases of silicosis, not always so highly colored. It is suggested that other fibrous or crystalline dusts not yet studied may form similar bodies.

13 BLOOD EXAMINATIONS IN PULMONARY FIBROSIS OF HEMATITE IRON ORE MINERS. J. Craw. Tubercle, 19, 8-18 (October 1937).
In radiographic examinations of hematite miners in West Cumberland (England), the hematite accumulations show a definite and dense shadow, apart from any accompanying fibrosis, and there is a tendency to diagnose silicosis when a miner complains of unfitness and his pulmonary symptoms and the x-ray of the test show generalized nodulation. The silica content of inhaled dust, however, is low, and in spite of 20 to 30 years' work and general nodulation in all lung fields, the miners are perfectly fit for work and are not short of breath. For these reasons hematological work was instituted as an essential in diagnosis. Routine procedure included the following determinations: (1) sedimentation rate of the red cells; (2) total white cell count; (3) differential white cell count, and (4) the polymorphonuclear count of von Bonsdorff. The findings in 6 cases are given, with case histories. Of the 50 hematite miners studied, 20 normal miners had no complaint of breathlessness and no x-ray or physical signs of pulmonary fibrosis, while 30 complained of pulmonary disability in varying degrees, with positive x-ray findings. Many miners develop a pure pulmonary siderosis without accompanying fibrosis, and their blood picture is normal. Sidero-silicosis of uncomplicated type shows a definite increase in percentage of lymphocytes, and the ratio of polymorphonuclear cells to lymphocytes becomes 1 or less. The sedimentation rate and nuclear count are normal. When infection is present, the sedimentation rate increases, the nuclear count increases and there is a leucocytosis which may approach a septic count. Although the results are preliminary, the method is recommended for aiding the differential diagnosis of siderosis without fibrosis and of sidero-silicosis, and for detecting tuberculosis or other infective agents at an early stage.

540 THE APPLICATION OF DUST-CONTROL PRINCIPLES TO FOUNDRY OPERATIONS. R. R. Meigs. Second N. E. Regional Foundry Conf., Mass. Inst. Tech., April 8, 1938.
The paper presents a discussion of the principal sources of dust in each of the several operations of a foundry and outlines practical applications of control in each case. The subject is considered under 5 main headings: (1) molding, (2) coremaking, (3) shake-out, (4) sand conditioning and (5) castings cleaning. Many practical suggestions are made in regard to care, maintenance and methods of operation that will tend to improve existing conditions. The author has avoided consideration of the dust concentrations that may be encountered and the pathological effects of the dusts. A discussion by Manfred Bowditch and an additional paper by W. F. Terry combine to make the study an excellent and comprehensive treatment of the elements of dust control in foundries.

541 RECENT DUST EXHAUST APPARATUS. F. Prockat. Staub 6, 249-87 (1937). (German).
First is a description, with examples and illustrations of the most important points of exhaust apparatus and the various kinds of dust removal: gravity systems, removal by utilizing the mass inertia, by centrifugal force, by filters, etc. The author then describes exhaust hoods, partly in agreement with those expressed in Drinker and Hatch's book, partly also on the basis of some of his own investigations of piping installations.

542 WORK OF THE DUST CONTROL OFFICE IN COOPERATION WITH GERMAN INDUSTRIAL COMPANIES. A. Laemmert. Staub 7, 365-71 (1937).
German insurance carriers, because of silicosis compensation have become more interested in dust control. To furnish lacking data and knowledge of the physics and technic of dusts a central office was set up to do what could not be done individually. The central office set up a laboratory, began consulting individual inspectors and industries and investigating all problems bearing on dust control. Most of the interested companies joined.

543 ASBESTOS. S. R. Gloyne and E. R. A. Merewether. Occupation and Health, Supplement, 15 pp. International Labor Office, Geneva (1938). Information obtainable from International Labor Office, 734 Jackson Place, Washington, D. C.
This is one of several brochures recently issued as a supplement to the 2-volume Encyclopedia on Occupation and Health. It is a treatise on asbestos, including physical properties, chemical composition, uses, extraction, manufacturing process, and especially risks to health. The discussion of asbestosis includes its essential features, diagnosis, pathological features, distinction from tuberculosis, preventive measures and compensation. The references to difficulties in diagnosis and to formation of asbestosis bodies, illustrated by 41 drawings, are of special interest. The most important single clinical sign of asbestosis is that of diffuse bilateral impairment of the percussion note, slight in degree and associated with a slight sense of resistance. The other important feature is the radiographic examination of the chest. The distinguishing features between asbestosis and silicosis in x-ray pictures are listed. It is emphasized that neither method alone is conclusive, but that asbestosis can be diagnosed with certainty with the aid of both, even if symptoms and disablement are absent. In difficult cases where extensive tuberculosis is present, careful investigation of the subjects' exposure to asbestos dust will enable the correct decision to be reached. The preventive measures are based largely on the principles of the British Code of Regulations. The views expressed are authoritative and very instructive.

544 PREVENTION OF ASBESTOSIS IN INDUSTRY. F. Prockat. Staub. 5, 133-62 (1937).
The paper includes a description of asbestos, and of its various forms, its uses and methods of preparation for industrial purposes. It is shown by many illustrations how dust can be decreased in certain processes by installation of exhaust systems and practical planning.