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74 RESEARCHES ON THE TREATMENT OF HYDROCYANIC ACID POISONING CAUSED BY INHALATION. W. Wirth. Arch f. exper. Path. Pharm., 179, 858-902 (1935).
The study of hydrocyanic acid poisoning has become highly important on account of its increased technical use. The author has investigated 60 substances and mixtures to determine how far they can reduce the effect of hydrocyanic acid poisoning. The animals used -- cats, rabbits, rats, mice and pigeons -- were first poisoned until the respiration ceased while the heart continued to function, then put into chambers in which the various substances were introduced in vaporized form. Sodium carbonate was found the most effective of the substances used. Its effect was confirmed by experiments on the isolate frog's heart. A characteristic fall of pH in rabbits dressed with hydrocyanic acid was followed by an opposing rise when grape sugar and methylene blue were administered. No good results were found in experiments with substances producing methemoglobin. These extensive investigations show that the greatest reserve must be held regarding therapeutic measures for severe hydrocyanic poisoning. Only under particularly favorable conditions can sufficient of the poison be neutralized to save life.

75 METHYLENE BLUE THERAPY IN NITROBENZENE POISONING. H.D. Leinoff. New England J Med., 215, 191-193 (July 30, 1936).
Methylene blue, an antidote for nitrobenzene or cyanide poisoning, was administered intravenously to a man with an extremely cyanotic and dyspneic condition, characteristic of either of these poisons. Nitrobenzene was recovered from gastric washings, and recovery was startling in rapidity. A brief discussion of the use of methylene blue is included.

76 THE MANSFELD PNEUMOCONIOSES ON THE BASIS OF PATHOLOGICAL-ANATOMICAL RESEARCH. J. Watjen. Nova acta Leopoldina, 3, 477-592 (1936).
Pneumoconiosis has been studied in this locality with unusual thoroughness, and a number of papers have been published dealing especially with anatomical and pathological aspects. The present paper combines all the material collected, which is based on 119 autopsies of pneumoconiotic cases. Only a few points can be mentioned here: The dust of copper schist is black as a result of its bituminous content and this color is what appears in the lungs. The most severe forms occur without tubercular complications. Softening and cavity formation also occ without tuberculosis, evidently more often than with other dusts. This softeni leads to dust mobilization and therewith to a progression of the process after cessation of exposure. The Mansfeld pneumoconiosis is undoubtedly a silicosis; it has one peculiarity -- cavity formation. This paper is considered one of the most valuable publications on silicosis.

77 THE PHYSIOLOGICAL RESPONSE OF PERITONEAL TISSUE TO CERTAIN INDUSTRIAL AND PURE MINERAL DUSTS. J.W. Miller and R.R. Sayers. U.S.Pub. Health Repts., 51, 1677-1689 (December 4, 1936).
Various dusts were injected into the peritoneum of guinea pigs. The response to each particular dust was constant in all the animals examined, and could be classified as an absorptive, proliferative or inert reaction. In the absorptive reaction, the injected dust disappeared from the peritoneal cavity without the production of scar tissue. This reaction is given by calcite, limestone, precipitated chalk, gypsum and cement. Interpretation of this reaction is difficult, but it appears logical that dusts which tend to remain in the tissues shou be considered potentially harmful, although not as dangerous as those causing a proliferative reaction. In the proliferative reaction the nodules produced by the dust continually increase in size. Quartz, tripoli and siliceous chert (forms of free silica) produce this reaction, which corresponds, therefore, to lung fibrosis and is produced by the same substances. In the inert reaction, given by anthracite and bituminous coal, precipitator ash, soapstone, talc,

asbestos, feldspar, silicon carbide, hematite, calcium phosphate and cerite, the amount of injected dust remained the same in the peritoneal cavity, but the nodules become more flattened and fine dust particles are carried over extensive areas by phagocytes. With this biological method of classification, which, in a number of instances, has been correlated with clinical observations and industrial surveys, it is quite possible to use intraperitoneal injection methods to determine the pneumoconiotic potentialities of a dust in a relatively short time, usually 60 days.

78 THE PNEUMOCONIOSES IN SOUTH WALES. S.L. Cummins. J. Hyg. Camb., 36, 547-558 (October, 1936).
In the South Wales coal field, many cases of lung disease are found which cannot be classified as silicosis, and are not compensable under present laws. The author describes some of these conditions and attempts to classify the pneumoconioses into four types: (1) silicosis and asbestosis; (2) silico-anthracosis and silico-siderosis; (3) anthracosis of coal trimmers and screeners, and (4) fibrot aggregations of inert dust occasionally present in all types, especially in silico-anthracosis. In all types there are appearances suggesting damage to the elastic structure of the lung, which may be related to the emphysema (inflation of lung tissue) and dyspnea (shortness of breath) often found. The emphysema is not necessarily a compensatory effect of fibrosis as it often occurs with very little fibrosis. Bronchitis is common, probably as a result, rather than a caus of pneumoconiosis. The amount of fibrosis and lung damage in South Wales pneumoconioses varies directly with the intensity and duration of exposure to siliceous dust, as expressed in the silica content of the dried lung.

79 PATHOLOGY OF THE PNEUMOCONIOSES. L.U. Gardner. N.Y. State J. Med., 36, 1377-13 (October, 1936).
This paper is a brief summary of the anatomic changes produced by inhaled silica and other dusts and the complications due to infection. Simple silicosis, when manifested by uniform nodulation, does not produce symptoms or incapacitate for work. A person with this type of reaction may continue working, but severe dust exposure should be avoided and yearly x-ray examinations should be made. However if there are massive areas of conglomerate fibrosis, usually associated with discrete nodulation, the patient will have dyspnea and limited capacity to work. He should be given lighter jobs, not discharged. No person with open tuberculosis should be allowed to work in silica dust. Persons over forty with well-healed adult tuberculosis can be safely employed where there is a silica hazard, provid means are taken to minimize it, but the younger the individual with a similar co dition, the less safely can he be exposed to silica dust. A young employee with silico-tuberculosis should be given sanatorium treatment.

80 ASBESTOSIS: A ROENTGENOLOGIC REVIEW OF 71 CASES. H.R. Shull. Radiology, 27, 279-2[illegible] (September, 1936).
A study of 71 cases of asbestosis is presented, with emphasis on roentgenologic appearances. The cases were classified as to the state of progression of the disease, which varied roughly with the length of exposure. Tuberculosis was found in about 12% of the cases, more frequently in the more advanced type. The author tabulates ten radiographic findings characteristic of asbestosis, and concludes that "while the roentgenogram is the most reliable diagnostic aid, the interpretation and correlation with clinical signs and symptoms is often difficult. Without the history of exposure a certain number of slightly advanced cases will not be recognized," that "a fair percentage of the slightly advanced and moderately advanced cases do tend to improve and the attendant disabilities to become lessened when removed from asbestos dust," that "asbestosis does not predispose to tuberculosis" and that from his observations asbestosis is not a progressive disease.

11 PNEUMOCONIOSES OF THE WORKER. K. Wilder. 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 miner 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 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. Cran. 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 sidero-silicosis, and for detecting tuberculosis or other infective agents at an early stage.

340 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.

341 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.

342 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.

343 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.

344 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.

803. ...ROSIS OF INTESTINES IN TUBERCULOUS ANTHRACOSILICOSIS. R. Charr and A.C. Conen. Am. J. Med. Sci. 196, 83-7 (July 1938).
Complete autopsies were made on 42 cases of anthracosilicosis plus pulmonary tuberculosis, and on 75 cases of pulmonary tuberculosis without anthracosilicosis. Of the former, 19% had intestinal tuberculosis and 5% of the latter. The incidence of intestinal tuberculosis in each group was apparently higher in the age groups below 30.

804. A STUDY OF ASBESTOSIS IN THE ASBESTOS TEXTILE INDUSTRY. W.C. Dreessen, J.M. DallaValle, T.I. Edwards, J.W.Miller, and R.R. Sayers. Pub. Health Bulletin No. 241, 126 pages (August 1938). Obtainable for 20 cents, cash, from Superintendent of Documents, Washington, D. C.
This is a report of a complete survey of the asbestos textile industry in North Carolina made in conjunction with the State Health Department. The report is comprehensive in its coverage of the subject and includes a good annotated bibliography of 65 references to asbestosis. It describes the industry, the processes in the manufacture, numbers employed in each process, dust counts made at various locations and incidences of asbestosis among the various employees. The incidence of the disease among the workers increased rapidly with increased dust exposure, and it was found that one-fifth of the workers with an exposure of 50 to 99 million particle-years and half the workers having an exposure of over 100 million particle-years had asbestosis. The threshold limit for exposure has been set tentatively at 5 million particles per cubic foot and it was found possible by methods already at hand to obtain this concentration in all processes. The medical part of the report is complete with physical examination data, laboratory findings, x-ray pictures and case histories.

805 INVESTIGATION ON CONTROLLING PNEUMONIA BY IMMUNIZATION OF WORKERS IN THOMAS SLAG MILLS. M. Gundel & E. Homann. Dtsche. med. Wchnschr. 64, 917-21 (1938). (German).
In an earlier paper, our Abstract No. 8, 1937, the authors had shown that pneumonia in Thomas slag mill workers was caused exclusively by pneumococci types I, II, III, but chiefly by type II. Since that time they have begun immunization in a plant where pneumonia had occurred. A Behring-Werke serum was used on 79 men in the mill, the remaining 49 refused it. No serious results followed its use. The serum was given in July and since then no pneumonia has appeared in the plant. Though it has not proved itself conclusively, in February, 1938, pneumococci of the above types could be found but very seldom, and less frequently than in another mill. The authors conclude that the results call for further work with the serum.

806 MEDICAL AND LEGAL ASPECTS OF TUBERCULOSIS AS AN OCCUPATIONAL DISEASE AND AS AN ACCIDENTAL INJURY. Mary G. Mack. National Tuberculosis Assoc. Social Research Series No. 6 (June 1938). Obtainable from the Association, 50 West 50th Street, New York, for $1.00 postpaid.
Generally speaking, tuberculosis is not recognized as an occupational disease, but there is a growing experience in the courts with reference to suits and claims for compensation because of tuberculosis contracted in ordinary course of industrial employment. The purpose of this bulletin is not to be an exhaustive summary of all cases, but rather to present representative decisions with discussions of various problems involved. Included is a review of medical opinions on the status of tuberculosis as an occupational disease and as an accidental injury; abstracts of court decisions on each of the two latter phases and a digest of the workmen's compensation laws, by states, as they effect occupational diseases.