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104 SILICOSIS AMONG GRINDERS. J.L.A. Grout. Brit. Jour. Radiol. 11, 366-70, (June 1938).
The author gives an interesting report of the work of Sheffield grinders in sharpening knives, forks and needles and their working conditions during the 18th and 19 centuries. The grinding was all done with sandstone wheels, the grinding of knives being done wet and that of forks dry. Fork grinders seldom lived beyond the age of 32, while the knife grinders occasionally lived to 50 years. In 1833, out of 2500 grinders, not 35 had lived to be 50; of 80 fork grinders, exclusive of boys, not a single worker of 25 years was alive. Although some attempts were made to alleviate these conditions, they remained much the same for generations, until recently. In 1934 a dust control program, much the same as those in effect today, was proposed but was apparently never enforced. During more recent years the replacement of the sandstones by artificial abrasives has almost eliminated silicosis from this industry.

105 DETERMINATION OF ACID INSOLUBLE MATTER IN THE SPUTA OF SILICOTICS. E. Civin, I. A. Schreier, B. Martello and J.D. Hardy. J. Ind. Hyg & Toxicol., 21, 1-4, (January 1939).
The determination of mineral residue in the sputum of silicotics is a comparatively recent study, and no thorough investigation of the subject has as yet been made. Burke (see Abstract No. 873, Dec. 1938) made a microscopic study of the sputum of silicotics and non-silicotics, but the technic available made it difficult to distinguish particles accurately. In the present study the authors determined the weight of the total acid-insoluble solids in 100 cc of sputum. Their method is completely described in the paper. The average free silica content of the solid matter, determined with hydrofluoric acid after ignition, was 71 per cent. They found some solid matter in the lungs of all examined, but noted that the sputum of proved silicotics showed distinctively higher values than that of non-silicotics. The sputum of 83 non-silicotics contained from 0.2 to 2.5 mg. residue per 100 cc. while 84 per cent of 32 silicotic cases contained over 2.5 mg. per 100 cc, and some values were as high as 20 mg. Many silicotics gave high results even after years of absence from a dusty trade. It is suggested that these determinations may prove to be of value in the diagnosis of silico

106 VARYING ANATOMIC BEHAVIOR OF THE RIGHT HEART IN SEVERE SILICOSIS. M. Letterer, Verhandl. d. deutsch Gesell. f. Kreislauf. 11th session, pp. 400-5, (1938)(Germ
Of 13 cases of severe simple silicosis the author found that 11 had hypertrophy of the right heart with a 6-10 mm. thick wall of the conus pulmonalis. Of 22 cases with severe silicosis complicated by tuberculosis there were only 9 cases with this condition. It seems possible therefore that tuberculosis hinders the development of hypertrophy of the right heart and can perhaps even bring about a diminution of it.

107 THE DANGER OF SILICOSIS AND PRACTICAL SAFETY MEASURES. Derdack. Zbl.f.Gewerbeh 28, 169-70 (1938) (German).
The author discusses the dust produced in the manufacture of fireproof bricks and deals briefly with means for preventing its dissemination.

108 THE EXPERIMENTAL REPRODUCTION OF THE SO-CALLED SILICOTIC NODULE. A. Policard. Bull. Histol. appl. physiol. path. tech. microscop. 15, 67-76 (1938) (French).
Histologic and histo-chemical studies were made of pathologic tissue from the lungs of guinea pigs, rats and rabbits which had inhaled quartz or chalcedony dust for 8-25 months. The fibrous changes produced in the lungs of these animal differed markedly from the fibro-hyalin nodules found in human silicosis patients. Conclusion: the origin of human silicotic nodules cannot as yet be definitely ascribed to silica itself.
Note: See abstracts Nos. 15 and 16 in January, 1939, Bulletin.

109 ASBESTOSIS. J. V. Sparks. Brit. J. Radiol. 11, 371-7, (June 1938) (British)
The paper describes the clinical and radiological signs of asbestosis. The chief complications are (1) purulent bronchitis, (2) broncho-pneumonia, (3) pulmonary tuberculosis, and (4) carcinoma.

110 THE ADSORPTION EFFECTS OF VARIOUS DUSTS ON DILUTED "OLD"TUBERCULIN.
C.L. Cummins and E.M. Williams. J. Hyg., 38, 638-46 (1938).
The adsorption power of various types of finely-divided dusts for the active part of tuberculin was studied by shaking 1 gram samples of such dusts with 10 ml. of a 0.1 per cent solution of tuberculin for 5 minutes, incubating at 37° for 30 minutes and keeping them overnight at room temperature. The clear liqui was removed, centrifuged, sterilized and tested. It was found that the adsorpt power increased in the inversed ratio of particle size, that anthracite and fusian dust of comparable particle size have the same adsorption power, and the sandstone from different locations and chalc dust, sericite, chalcedony and quartz dust also adsorb the active principle of tuberculin to different extents It is suggested that the relatively low morbidity, toxicity and mortality from tuberculosis noted in coal miners exposed to siliceous dust are due to the adsorption of tuberculous toxin by finely-divided coal dust inhaled with the dust from hard stone.

111 THE PHYSIOLOGIC RESPONSE OF PLEURAL SURFACES TO IMPLANTED DUSTS. W.R. Bradley and M.W. First. J. Lab. and Clin. Med., 24, 44-52, (1938).
Forty rabbits were subjected to intra-pleural implantation of dust and, with 10 additional rabbits as controls, were autopsied after 15, 30, 45, 60, and 90 days. Typically inert, absorptive and proliferative reactions were produced by the pleura in response to various dusts. These responses were essentially the same as those produced in serous cavities elsewhere in the body by other worker The injection of dusts into the pleural cavities, especially because of its pro mity to lung tissue, was found to be suitable in both results and economy.

112 RADIOLOGICAL DEMONSTRATION OF PATHOLOGICAL CHANGES INDUCED BY CERTAIN INDUSTRIA PROCESSES. J.F. Brailsford Brit. J. Radiol., 11, 393-400 (1939) (British).
The author summarizes Roholm's study of fluorine intoxication contracted by those handling cryolite. Eighty-four per cent of the workers examined had bone changes -- a diffuse osteosclerosis, which was on the whole proportional to the period of employment. Half of the workers showed radiographic evidences of pul monary fibrosis similar to that seen in silicosis but more innocent in nature, but it was undecided as to whether the fluorine or the associated quartz had caused the fibrosis. Against this, an examination of 49 workers in Scotland ex posed to alumina and cryolite dusts failed to establish the existence of osteosclerosis or of pulmonary fibrosis in spite of long exposure. Other examples o the radiograph as a diagnostic tool are cited.

113 TESTS OF RESPIRATORY EFFICIENCY AND THEIR CORRELATION WITH RADIOLOGICAL APPEARANCES IN THE LUNGS. E.M. Killick. Brit. J. Radiol., 11, 401-4, (June 19 (British)
The tests of respiratory efficiency used were: (1) vital capacity of the lungs; (2) ventilation equivalent for oxygen (vol. of air breathed per 100 cc. oxygen absorbed); (3) volume of dead space; and (4) exercise tolerance tests. Seven m whose pulmonary lesions had been diagnosed as silicosis or asbestosis, all show d well-defined functional impairment on the basis of one or more of the above tests. Eleven are welders were examined and five of the number, having signs c early pneumoconiosis, gave, on the whole, poorer performances than the other si It is concluded that tests of respiratory efficiency should help to distinguish between early fibrosis and the deposition of dust in the lungs without marked fibrous tissue reaction.

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had a metastatic pulmonary carcinomatosis; and 199 were uncomplicated. In the entire series of cases studied, 28 cases of spontaneous pneumothorax (4.3%) were found, 8 having second- and 12 third-stage anthracosilicosis. Fourteen occurred in association with tuberculosis. Seven were found among those having simple pneumoconiosis, and one in the case with carcinoma. Intense dyspnea, a sense of impending suffocation, severe pain in the chest, a feeling of constriction on the affected side and shock were symptoms present in many cases; small collections of air produced no symptoms and the condition was discovered only by routine x-ray. Roentgenologically, the condition must be distinguished from emphysematous blebs and pulmonary cysts. While emphysema, bleb formation, and pleural adhesions are always present in anthracosilicosis and are factors which greatly favor the development of pneumothorax, and while the frequent coexistence of tuberculosis and the severe accompanying cough further predispose to pleural accidents, this effect is greatly decreased by the always present thickened visceral pleura which resists tearing or perforation and thus offers an actual protection against the formation of pneumothorax. This explains the low incidence of pleural perforations (4.3%) in this group of anthracite coal miners with anthracosilicosis.

629 MULTIPLE GIANT BULLAE ASSOCIATED WITH ANTHRACOSILICOSIS. E.R. Wiese, C.A. Neiken and Robert Charr. Am.J. Roentg. & Radium Ther., 42, 186-91 (August 1939). A case is presented of multiple giant bullae (large blisters or vesicles filled with fluid) of the lung associated with anthracosilicosis which was observed by the authors over a period of several years. They believe the case to be unique because of the multiplicity and the size of the bullae, which could readily have been mistaken for spontaneous pneumothorax. Diagnosis was confirmed by gross post-mortem findings and microscopic examination. The importance of differential diagnosis between bullae and pneumothorax is emphasized and a discussion is given of the two conditions in connection with emphysema of the lungs.

630 AN X-RAY STUDY OF THE LUNGS OF WORKMEN IN THE ASBESTOS INDUSTRY COVERING A PERIOD OF TEN YEARS. A.W. George and R.D. Leonard. Radiology. 33, 196-202 (August 1939).
The authors discuss some of the conclusions they have reached after an extensive experience examining asbestos workers. Each industry or occupation should be studied by itself because the hazards of each vary greatly. The most important variable with occupation is the percentage of free silica in the dust which can cause the development of a silicotic condition in addition to the asbestotic one. The authors are of the opinion that asbestosis is not a progressive disease after the individual has been removed from the dust hazard. They found also that the disease has no causal relation to tuberculosis. Unlike silicosis, X-ray appearance of tuberculosis and asbestosis are quite different. They found no clinical findings pathognomonic of asbestosis and state that diagnosis of asbestosis must depend alone on X-ray evidence.

631 PULMONARY ASBESTOSIS. V. A REPORT OF BRONCHIAL CARCINOMA AND EPITHELIAL METAPLASIA. K.M. Lynch and W.A. Smith. Am. J. Cancer. 36, 567-73 (August 1939). The authors present the case history of a patient with pulmonary asbestosis and carcinoma and, in addition, make a contribution to the statistics on the incidence of carcinoma and asbestosis. During the past 12 years in 2343 consecutive necropsies (35 cases of asbestosis among them) the incidence of carcinoma was 0.30%. Omitting the asbestosis cases the incidence was 0.21%. Among the asbestosis cases (35 in number) the incidence was approximately 6% (2 cases), but the statistical value of these figures is questionable because of the small numbers. The authors also note the observation that advanced asbestosis may lead to bronchial epithelial metaplasis of a type encountered in other locations where cylindrical epithelium may give rise to squamous-cell carcinoma.

ASBESTOSIS. E.W. Baader. Deutsch. med. Wchnschr., 65, 407-408 (1939). (Ge
A short but excellent description of the origin, clinical aspects and diagno of pulmonary asbestosis. Asbestos warts and lung cancer of asbestos workers discussed. It is comparatively rare to find asbestosis complicated by pulmona tuberculosis in Germany.

TUBERCULOSIS IN INDUSTRY. A.R. Riddell. Canadian Pub. Health J. 30, 156-160 (March 1939).
The author concludes that "although the relation of certain occupations to the occurrence of tuberculosis is somewhat disquieting, industry in general does no constitute a menace in this respect." He states that "industrialization has ac raised the general standards of living as to more than counteract any adverse influence which specific industries exert." Insurance reports indicate a highe death rate among industrial as contrasted with non-industrial groups in the com community. The influences which may exert an adverse effect on an industry's tuberculosis rating are discussed, particularly posture and overcrowding. The results of surveys of overcrowded plants are revealing. The importance of tube culosis in relation to silicosis is illustrated by observations on a series of 373 cases which occurred in Ontario during the past 10 years and one group in one of the northern mining camps, where the transmission of tuberculosis to con tacts was particularly noted. The economic aspect of tuberculosis exerts a se vere strain on the community and industry, and the results of treatment so far as the individual workman is concerned are not encouraging, few are ever again permanently self-supporting. The necessity of preventive measures for early detection of cases is pointed out. Such measures should include chest roentgen ograms, supplemented by laboratory facilities.

TUBERCULOSIS AND CAISSON DISEASE. J. Am. Med. Assoc. (Queries and minor notes) 112, 1990 (May 13, 1939).
A man who had an attack of caisson disease made an almost complete recovery. At that time his lungs were normal although no roentgenograms were taken. A year later the man developed active tuberculosis. The reply states that there is no logical connection between these two conditions; it is quite possible that pre-symptom tuberculosis was present originally but not detected.

A STUDY OF THE EFFECTS OF EXPOSURE TO DUST IN THE MINING AND MILLING OF PYRO-PHYLLITE. H.F. Easom, M.F. Trice and C.C. Carpenter. Division of Industrial Hygiene, North Carolina State Board of Health and North Carolina Industrial Commission, Bulletin, 100 pp. (February 1939). For sale by the Division, Raleigh, N. C. Price 50 cents.
Pyrophyllite is a natural hydrous aluminum silicate containing 20% alumina, 74% silica--of which from 25% to 35% is quartz. It is employed in the manufacture of rubber goods, textiles, roofing paper, soap, paint, toilet preparations, and ceramic products. Exposure of workmen in mining and milling processes, which are inherently dusty occupations, constitutes a serious hazard and many of them develop a lung condition designated as pneumoconiosis. The pyrophyllite dust causes a pulmonary fibrosis which appears on the x-ray film as massive tumor-like shadows bilaterally situated in the subapical region or as granular densities throughout the lungs. Emphysema is common and nodulation rare. The pathology appears to be permanent and tends to progress. Tuberculosis is not necessarily a complicating factor. The examinations reported here cover 101 present and former employees; 35% of those with 2 years or more exposure showed evidence of lung pathology. The Bulletin also includes methods for dust control, numerous reproductions of X-rays and microphotographs and many plant and mine scenes.

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