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motely resembling those of silicosis by injecting sericite." The authors realize that their results "may not exactly represent the pathological changes produced by the inhalation of sericite by miners" but they feel that the results may be useful for the comparisons which are made possible between quartz, sericite, and other dusts.—*Philip Drinker.*

FAMILIAL DISPOSITION TO SILICOSIS. *I. Lochtemper. Aerztl. Sachverständ.-Zeitung, vol. 41, pp. 174–175 (1935).*

The author writes of a family several members of which contracted silicosis shortly after working in the same industry, where they were exposed to quartz dust. Members of another family, on the other hand, showed only light cases of silicosis, although they had worked some years under the same conditions. The author draws attention to the fact that there may be a family disposition to silicosis, although he cannot assert that this is true.—*L. Teleky.*

EPIDEMIOLOGICAL ASPECTS OF SILICOSIS AND TUBERCULOSIS. *A. S. Pope and D. Zacks. Am. Rev. Tuber., vol. 32, pp. 229–242 (1935).*

1. In representative groups of both granite- and foundry-workers in Massachusetts the frequency of silicosis, and of silicosis with tuberculosis, was found to be positively correlated with the duration of exposure to dusts containing free silica and to the concentration of such dusts in the occupational environment.

2. Among the granite workers examined, silicosis alone was found in 15.2%, and silicosis complicated with tuberculosis in 7.6%.

3. Tuberculosis is the cause of death in over one-third of all granite-workers, a proportionate mortality three times that in foundry-workers, and four times that in all males of 20 years and over.

4. Among the employees of 10 Massachusetts foundries, silicosis was found in 8.8% and silicosis with tuberculosis in 2.6%, a total frequency of one-half that found in granite-workers.

5. The silicosis found in foundrymen was not only less frequent but also less advanced in degree than that in granite-workers.

6. Though there is an excess of tuberculosis deaths among foundry-workers, pneumonia, which is the cause of about one-fourth of all deaths of foundrymen, appears to be the greatest occupational hazard in the industry.—*Authors' summary.*

TWO CASES OF SQUAMOUS CARCINOMA OF THE LUNG OCCURRING IN ASBESTOSIS. *S. R. Gloyne. Tubercle, pp. 5–10 (Oct., 1935).*

The two cases described were women workers in an asbestos factory. One, aged 35, had been a spinner for 8 years and survived for further 9 years. The other, aged 71, worked only for two periods of 6 and 13 months as a mattress maker and lived for 15 years afterwards. No etiological association between the carcinoma and the asbestosis is claimed. The malignant lesions were small and were not recognized during life. They were circumscribed with no extension to important structures; no secondary deposits were present. The asbestosis was fairly advanced and of long standing; pigment, asbestos fibres, and asbestosis bodies were pushed aside by the advancing growth. Neither disease seemed to be sufficiently advanced to have caused death by itself; the combination was fatal.—*E. L. Collis.*

LUNG FUNCTION AND X-RAY PICTURES IN THE LEGAL ESTIMATION OF LUNG DAMAGE FROM DUSTS IN COMPENSATION CASES. *W. Schmidt, E. Gaubatz, and Holtzmann. Aerztl. Sachverständ.-Zeitung, vol. 41, pp. 178–182 (1935).*

The authors have investigated lung damage from dust inhalation by procedures other than x-ray. Lung function was determined spirometrically, the apneic pause and residual air was determined and work tests were performed using an ergometer. Vital capacity alone was found insufficient for judging functional disability but the apneic pause and residual air gave a convenient objective scale for judging emphysema while the work studies gave useful data on the heart action. It was established that working capacity and disability could not be judged by x-ray alone—facts which are in general acceptance.—*L. Teleky.*

middle and upper parts of both lungs. Occasionally, he suffered from rise in temperature coincident with increase in expectoration. The patient finally died at the age of 44.

The autopsy showed some pleural exudates in the left lung, marked lobulation, and the presence of some granulation. Microscopic examination showed heavy deposits of iron, silica, and coal dust.

In the zones of massive fibrosis, there were places in which the fibroblasts had disappeared almost entirely, but the general microscopic picture was one of fibrosis. Lung permeability had disappeared.

The author found the presence of large multi-nuclear cells, whose morphological characteristics differ from those seen in tuberculosis—*C. A. Sands.*

ASBESTOSIS AND ITS PREVENTION. *T. Windel. Arbeitsschutz, pp. 26–32 (1938).* Continuing his earlier work (see these abstracts, vol. 19, p. 112, 1937), the author first presents more material on asbestosis in the textile industry. The number of asbestos workers has increased and now there are about 1300 in Germany, of whom about 1000 are considered to be dangerously exposed, including the weavers. Up to March 31, 1937 there have been 27 cases of asbestosis, of which 16 have been fatal. Since April 1, 1937, asbestosis has been legally rated as an industrial disease on an equal basis with accidents and since then (in 6 months) 10 cases have been indemnified. The earliest observed symptom of the disease is seen after 3 or 4 yrs.' work. An x-ray should be taken of each new employee and each should be examined after 3 yrs. and then at intervals to be determined by the doctor. Above all, observers must prove whether or not a light case will inevitably progress in spite of removal from exposure.

With the help of many illustrations, the author shows obsolete and new, satisfactory protective measures and describes the technical improvements that are necessary. —*L. Teleky.*

DUST, SMOKE, FUMES, AND VAPORS: THEIR DETERMINATION AND ELIMINATION

A STUDY OF THE CRYSTALLINE SILICEOUS MINERALS PRESENT IN SILICOTIC LUNGS BY THE X-RAY DIFFRACTION METHOD. *C. M. Jephcott, W. M. Gray, and D. A. Irwin. Canadian Med. Ass. J., vol. 38, pp. 309–315 (March, 1938).*

A series of 35 lung ashes and several mine dusts and tamping powders were analyzed by the x-ray diffraction method. The authors describe briefly the fundamentals of x-ray diffraction and also the method of preparing lung ashes. The lungs examined were from persons exposed to various types of dusts, including those encountered in brick making, granite cutting, enamelling, and metal mining. The control minerals used were micas, kaolin, quartz, microcline, orthoclase, talc, tourmaline, chlorite, and tremolite. The findings revealed that quartz was present as the chief constituent in all the lung ashes; mica and soda feldspars were important components; potash feldspars, talc, and tremolite occurred only as traces. It was also found that correlation between crystalline siliceous material found in the lung ashes by the x-ray diffraction method and the occupational history of the individual was not possible.—*C. R. Williams.*

PETROGRAPHIC IDENTIFICATION OF ATMOSPHERIC DUST PARTICLES. *W. D. Foster and H. H. Schrenk. U. S. Bur. Mines Rept. Invest. #3368 (Jan. 1938).*

A dark-field method of determining quartz by immersion is proposed. The writers preface the description of their method by a brief discussion of the petrographic technic and its limitations. Comparative tests showing the limit of visibility of quartz in liquids of different refractive indices by light-field and dark-field methods are given. The curve for light field shows that in a 1.540 liquid, quartz particles must be larger than 2μ to be seen. This figure is somewhat high when an oil-immersion objective is used. The method described involves immersing the sample in liquids of various indices of refraction and judging the amounts of various minerals present by the brightness or faintness of the particles in various liquids. It is impossible by this