

in the week. In spite of the occurrence of byssinosis, chronic bronchitis was no more prevalent among flax workers than among the others, the average ventilatory function was no worse, and radiographs of the chest revealed no differences. The characteristic fall in expiratory flow rate during the course of exposure to flax dust on Mondays is similar to that found in cotton workers, and is absent in jute workers and in flax workers not admitting to symptoms of byssinosis.

-- Authors' abst.

264 The Relation Between Lung Dust and Lung Pathology in Pneumoconiosis. G. Nagelschmidt. *Brit. J. Ind. Med.* 17, 247-257 (Oct. 1960).

Methods of isolation and analysis of dust from pneumoconiotic lungs are reviewed, and the results of lung dust analyses for different forms of pneumoconiosis are presented. A tentative classification separates beryllium, aluminum, abrasive fume, and asbestos, which cause interstitial or disseminated fibrosis from quartz, coal, hematite, talc, kaolin, and other dusts, which cause a nodular or local fibrosis which may change to forms with massive lesions. The data suggest that in the first, but not in the second, group the dusts are relatively soluble; only in the second group do amounts of dust and severity of fibrosis go parallel for a given form of pneumoconiosis. In classical silicosis the quartz percentage is higher, and the amount of total dust much lower than in coal miners' pneumoconiosis. Mixed forms of both groups occur, for instance, in diatomite workers. The need for more research, especially in the first group, is pointed out.

-- Authors' abst.

265 Connective Tissue in Experimental Silicosis and Anthracosis. Histochemical Features of Development. A. I. Strukov and N. T. Raikhlin. *Arch. Pathol.* 71, 142-150 (Feb. 1961).

The development of the connective tissue in experimental silicosis commences with the appearance at the sites of silicon deposition of non-differentiated fibroblasts rich with ribonucleic acid, which is rapidly transformed into fibrocytes. Apparently, in connection with the features specific to the mucopolysaccharides—component of the complex procollagen—the surface of the collagenous fiber has weak bonds with the rest of the fiber. In the silicotic connective tissue there occurs formation of incomplete collagenous fibers, as a result of which they undergo considerable readjustment and become disarranged. Accumulation in the tissue of products of the collagen complex and their subsequent combination are conducive to conditions favorable for the appearance of hyalinosis. Necrosis of silicotic nodules is closely connected with poorly formed collagenous fibers, which are produced under pathologic conditions. During experimental anthracosis the development of sclerosis proceeds at a low rate and never reaches the degree attained in silicosis. The manifestations of hyalinosis are also pronounced to a lesser extent, while necrosis of the fibrous-dust foci is of very rare occurrence. Of major importance in the mechanism of collagenous fiber production is the acellular type of sclerosis. Procollagen (the surface phase of collagenous fiber) is united more strongly with the remaining portion of the fiber (collastromin) and is not removed by collagenase. The disclosed features peculiar to the connective tissue in experimental silicosis and anthracosis are of importance for the classification of certain aspects of pathogenesis in pneumoconiosis.

-- Authors' conclusions

266 Prevention of "Silica Shock" by Aluminum. G. W. H. Schepers and A. B. Delahant. *Arch. Environmental Health* 2, 9-15 (Jan. 1961).

The intracardiac injection of 40 mg. of particulate quartz causes splanchnic hyperemia and death in guinea pigs. This silica "shock" can be prevented by adding from 4 to 26 mg. of colloidal aluminum hydroxide to the suspension. When precipitated aluminum hydrate is added to the silicon dioxide the splanchnic vascular reaction is intensified. Metallic aluminum particulates, oxidized or unoxidized, are inadequate antidotes against silica "shock" though capable of preventing silicosis when inhaled as aerosols. Colloidal aluminum hydroxide is nontoxic on intracardiac injection within a therapeutically effective dose range. This fact, coupled with its proved antidotal action against the circulatory disturbance induced by silicon dioxide, suggests that aluminum hydroxide may mitigate disabling bronchiolar spasm and pulmonary hypertension in silicotic patients.

-- Authors' summary