66 A Follow-Up Study of Workers from an Asbestos Factory. P.C. Elwood, et al. Brit. J. Ind. Med. 21, 304-307 (Oct. 1964).

Associations between exposure to asbestos and carcinoma of the lung, diffuse mesothelioma of the pleura, and diffuse abdominal tumors have been demonstrated. Only by an epidemiological approach can the total risks of exposure to asbestos be estimated, and such a study is reported here. This suggests that white asbestos (chrysotile) may not be a serious hazard as far as mesothelioma or abdominal tumors are concerned, though there is some evidence of an excess in the number of deaths from carcinoma of the lung and bronchus. -- Authors' abst.

67 Experience in the Study of the Effect of Dust on Various Tissue Cultures. V.M. Perelygin. Gigiena i Sanit. No. 5, 34-37 (1964). Russian.

The effect on tissue cultures of bast factory dust (native, organic and mineral components, and hashish and its alkaloids) as compared with the effect of cotton, coal, and crystalline quartz dust was investigated. It was found that the native bast dust caused cytopathological changes in the tissue culture (swelling and pyknosis of the nuclei; lysis, granular degeneration, and shrinking of cells; inhibition of cellular division) but to a lesser extent than did its mineral components and the dust of crystalline quartz, hashish, and its alkaloids. The organic (fibrous) part of the bast, cotton, and coal dust did not produce any pronounced changes in the tissue culture cells. -- Public Health Eng. Absts.

PHYSICAL ASPECTS OF THE ENVIRONMENT

68 Muscular Exercise at Great Altitudes. L. G.C.E. Pugh, et al. J. Appl. Physiol. 19, 431-440 (May, 1964).

Six subjects performed ergometer exercise at various altitudes from sea level to 24,400 feet during a Himalayan expedition lasting 8 months. Oxygen intake for a given work rate was constant and independent of altitude, up to the maximum work rate that could be maintained for 5 minutes. Maximum oxygen intake declined with increase in altiltude, reaching 1.4 liters/minute at 24,400 feet in the best subject. Ventilation for a given work rate was independent of altitude in light and moderate exercise but increased at each altitude as maximum oxygen intake was approached. Heart rates at altitude were higher at low and moderate work intensities, but the same as or lower than the corresponding sea-level value for the same work load, as maximum oxygen intake was approached. Breathing oxygen at sea-level pressure at 19,000 feet reduced ventilation and heart rate for a given work rate, restored work capacity almost to sea-level values, and increased maximum heart rate. Evidence that lung diffusion, cardiac output, and the high oxygen cost of extreme ventilation all contributed to the limitation of exercise at 19,000 feet is presented. -- Aerospace Med. Absts.

69 Work Tolerance: Age and Altitude. D.B. Dill, et al. J. Appl. Physiol. 19, 483-488 (May, 1964).

The work capacity at sea level and high altitude was measured on 9 men, 5 of whom had taken part in similar studies at high altitudes from 18 to 33 years earlier. Except for a few measurements on the treadmill at sea level each subject rode the bicycle ergometer; the brakeload was increased minute-by-minute until his limit was reached. The maximum capacity for oxygen intake declined with age both at high altitude and at sea level. Individual responses varied greatly: the most fit individual, age 54, had about as great an oxygen intake on the ergometer at a barometric pressure of 455 mm. Hg as had a man one-half his age at sea level. After 5 or 6 weeks of acclimatization a man of 71 attained at a barometric pressure of 485 a greater oxygen intake per minute and per kilogram than that of a man of 27. At that barometric pressure the limiting oxygen intake on the bicycle ergometer may be only one-half of the sea-level value 2 or 3 days after arrival; after 4-6 weeks it may range from two-thirds to five-sixths of the sea-level value. -- Aerospace Med. Absts.

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