

MINERALOGICAL ASPECTS OF PNEUMOCONIOSIS RESEARCH. G. NAGELSCHMIDT, Research 2:170, 1949.

In this review of the literature, three different fibrotic mineralogical groups are distinguished: (1) quartz and other forms of uncombined silica, (2) other silicate minerals with or without quartz and (3) fibrous silicates, especially asbestos. The first two are discussed in more detail. There appears to be a relation between the solubility of silica and the fibrotic reaction. If the solubility is too high, as in silicic acid sols and gels, the material is eliminated too fast to produce fibrosis; if it is too low, as in mixtures of quartz and aluminum or of quartz and siliceous minerals, the fibrotic reaction is retarded. Crystal structure appears to have little effect. Two conditions seem to be necessary: (1) There must be a certain surface capable of releasing silica to lung fluids, and (2) the supply of silica from this surface must be maintained for a considerable time. There is an optimum size of quartz particle for each animal. In man, during inhalation, retention decreases from about 80 per cent for 2 micron particles to only about 25 per cent for 0.2 micron particles. Twenty-seven references are given.

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EXPERIMENTAL CONFIRMATION OF A PREVIOUSLY REPORTED UNUSUAL FINDING IN THE BLOOD OF CYCLOTRON WORKERS. M. INGRAM and S. W. BARNES, Science 113:32-34 (Jan. 12) 1951.

Previously the authors reported that lymphocytes with bilobed nuclei had been observed in the blood of cyclotron personnel at the University of Rochester. This paper reports hematological studies on three dogs exposed in relatively protected positions outside the cyclotron building while the cyclotron was operating. The dogs were given three exposures, one in August, one in October and one in December, of 30 minutes' duration. These dogs were about 50 ft. (15 m.) from the target at about the level of the tank well, outside the neutron beam. The incidence of bilobed nuclear lymphocytes increased after exposure and reached a maximum about two weeks after exposure. It is suggested that the occurrence of lymphocytes with bilobed nuclei may be a promising means of identifying potentially harmful operations before gross overexposure can occur.

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SMOKING SEEN AS FACTOR IN CANCER OF LUNGS. SCIENCE SERVICE, New York Times, Jan. 17, 1951.

The following news report came from London:

"Smoking is an important factor in causing cancer of the lung, two medical scientists conclude from a study just reported to the British Medical Journal here.

"Arsenic in insecticides used to protect the tobacco plants may be the chemical in the tobacco smoke that causes the cancer, they suggest.

"The scientists are Dr. Richard Doll of the statistical research unit of the Medical Research Council and Dr. R. Bradford Hill, honorary director of the same unit and professor of medical statistics at the London School of Hygiene and Tropical Medicine.

"Their conclusions about the part smoking, especially cigarette smoking, plays in causing cancer are based on studies of the smoking history of 1,732 patients with cancer of the lung, stomach or large bowel and 743 general medical and surgical patients who did not have cancer. Of the cancer patients, 649 men and 60 women had cancer of the lung.

"Among the lung cancer patients 0.3 per cent of the men and 31.7 per cent of the women were nonsmokers. Among non-cancer patients 4.2 per cent of the men and 53.3 per cent of the women were non-smokers.

"After the age of 45, the scientists found, the risk of developing lung cancer increases in simple proportion with the amount smoked. The risk may be about fifty times as great among those who smoke twenty-five cigarettes a day as among non-smokers.

"The scientists point out that the only cancer-causing chemical that has been found in tobacco smoke is arsenic. However, the evidence that arsenic can produce cancer of the lung is 'suggestive rather than conclusive,' they state."