389 Observations on the Relationship Between Quartz Cytotoxicity and Fibrogenicity While Testing the Biological Activity of Synthetic Polymers. H. W. Schlipkoter and E. G. Beck. Med. lavoro 56, 485-493 (June-July 1965).

After illustrating the cytotoxic action of quartz and the mechanism of action of polyvinylpyridine-N-oxide, the authors discuss in detail cell culture experiments carried out to obtain further information on the cytotoxic effect of quartz and to test different protective substances. Experiments with protecting polymers, carried out in parallel in vitro and in vivo, should demonstrate whether experiments on cell cultures may replace trials on experimental animals. The results obtained do not support this possibility, as in some cases the observations in vivo and in vitro are at variance. The causes for such disagreements are discussed. -- APCA Absts.

390 The Retention of High and Low Rank Coals in Rats' Lungs. J. W. Skidmore, et al. Ann. Occ. Hyg. (London) 8, 182-192 (May, 1965).

The prevalence of coal workers pneumoconiosis appears to be higher in high rank than in low rank coal mines. Two experiments were carried out to test whether rats inhaling dust of high and low rank coal at equal concentrations, take up and retain the high rank coal more than the low rank coal. The results did not show any sign of such an effect and it is concluded that a similar effect in man is unlikely. Certain differences in the results of the two experiments are described and discussed. -- APCA Absts.

391 Lysosomal Enzymes in Relation to the Toxicity of Silica. J.S. Harington and A. C. Allison. Med. lavoro 56, 471-484 (June-July 1965).

Several studies have shown that damage to the macrophage by silica is a prerequisite for the subsequent fibrosis caused by this dust. The present study concerns the nature of the primary damage to the cell by silica and emphasizes the importance of lysosomes and phagosomes (or phagocytic vacuoles) in this process. The experimental evidence indicates that silica particles are taken up into phagosomes in the cytoplasm of the macrophage. Once taken up, the silica, either directly (by surface action) or by the release of silicic acid in a confined situation, damages the membrane of the phagosome in such a way that the hydrolytic enzymes secreted into it by lysosomes during phagocytosis are released into the cytoplasm of the cells. This results in autolysis and the eventual death of the cell. The damage to the phagosomal membrane is believed here to be the primary site of damage to the cell by silica. -- APCA Absts

392 Intratracheal Injection Into Rats of Size-Graded Silica Particles. B. Goldstein and I. Webster. Brit. J. Ind. Med. 23, 71-74 (Jan. 1966).

An experiment is described in which suspensions of size-graded silica particles of less than one micron, one to three microns, and two to five microns nominal size ranges and of equal surface area (600 sq. cm./ml.) were injected intratracheally into rats. After four months the rats were killed and the lungs were examined histologically for the grade of fibrosis and chemically for the silica and collagen content. The results were analyzed statistically and it was found that, under the experimental conditions described, the degree of fibrosis produced by the two large size fractions was more than that produced by the under one micron particles and was apparently related to the quantity (by weight) of the silica injected or the size of the particles and not to the surface area. -- Authors' abst.

393 Observations on Pollution Caused by Asbestos. A. Laamanen, L. Noro, and V. Rainio. Occupational Medical Foundation and Institute of Occupational Health, Annual Report 1964, Helsinki, 1965 pp. 41-42.

The quarrying of asbestos in Finland has a tradition of approximately 50 years. The production is nowadays about 15,000 tons of antophylliteasbestos. In his work on non-occupational endemic asbestosis, published in 1960, Dr. R. Kiviluoto mentioned that in approximately 500 persons living around the quarries calcifications of pleura were found in x-ray examinations. Dr. V. Raunio, who at present is studying further the incidence of pleural calcifications among the population around the quarries, has mentioned that 1300 additional cases have been found. Dr. Kiviluoto, however, estimates that approximately ten per cent of the population living around the quarries might have pleural plaques. At the request of Dr. V. Raunio and the Finnish asbestos company, Suomen Mineraali, the Institute of Occupational Health has performed some air pollution studies around quarries, trying especially to find out the presence of asbestos in the air. In the following there are some preliminary observations. The first survey was made between August 20—November 28, 1961, and