



PROGRAMS



Dr. Paul Gross, Director of the Research Laboratory, reviews slides of lungs of rats that had inhaled fibrous glass dust.

EXPERIMENTAL RESEARCH

ALUMINUM

Laboratory animals (rats, hamsters and guinea pigs) have been exposed to high concentrations of metallic aluminum dusts. In only one species did this exposure result in fibrosis. There is reason to believe that much of the fibrosis is related to the presence of endogenous lipids (cholesterol type) rather than to the dust per se. Follow-up of animals as long as 18 months shows substantial reduction in the amount of aluminum dust stored in the lungs. The rate of clearance, however, requires quantitation and will be investigated in continuing studies. (Sponsors: Aluminum Company of America, Reynolds Metals Company, Silberline Manufacturing Company, Inc., U. S. Bronze Powders, Inc. and Valley Metallurgical Processing Company, Inc.)

EMPHYSEMA

The chief purpose of the third and fourth years of the emphysema research was evaluation of the retention of dusts in the lungs of emphysematous versus nonemphysematous laboratory animals by biochemical analysis. This was to confirm an impression by light microscopy that lungs damaged by emphysema do, in fact, retain less dust than those of control animals. This impression, which resulted from the first two years of the study, was reported in an article "Emphysema and Pneumoconiosis: An Experimental Study on Their Interrelationship" (Arch. Environ. Health 18:340-349, March 1969). In addition, a paper, "Experimental Emphysema as a Tool in the Study of Pneumoconiosis" was presented at the Johannesburg, South Africa Pneumoconiosis Conference, April 23-May 2, 1969. Work to date has continued to support this hypothesis. (Sponsors: American Iron & Steel Institute and Bituminous Coal Research, Inc.)

FIBROUS DUSTS

Results to date of studies on the bioeffects of certain fibrous dusts (quartz, chrysotile asbestos, talc, ceramic aluminum, silicate, silicon carbide, glass and brucite on the lungs of experimental animals were reported in a paper, "The Pulmonary Response to Fibrous Dusts of Diverse Composition," presented at the American Industrial Hygiene Association Conference in May, 1969, and is scheduled for publication. This investigation concerns the comparative pathogenicity of fibrous dusts in general and the determination of the locus of pathogenicity in asbestos dusts including studies both of the inflammatory and the oncogenic components. (Sponsors: Johns-Manville Corporation, PPG Industries, Pittsburgh Corning Corporation, Raybestos-Manhattan, Inc., U. S. Public Health Service.)