

FIBROUS GLASS

The results of a study of the dust in the lungs of 20 long-term fibrous glass workers has been submitted for publication. The amount of total dust, the number of fibers per gram of dry lung, the dimensions of the fibers in the lungs of the fibrous glass workers were not significantly different from similar data derived from the lungs of Pittsburghers not occupationally exposed to fibrous glass dust.

A new study has been begun on the rate of transport of fibrous dust particles from lung tissue to lymph nodes. Preliminary data indicate that only few fibers are transported to lymph nodes—and these are shorter and thinner than the average fiber found in the lungs. (Sponsors: Certain-teed Products Corporation; Johns-Manville Corporation; Owens-Corning Fiberglas Corporation; PPG Industries)

LIPID-COATED QUARTZ

The lungs of rats injected intratracheally with quartz dust that had been coated with lipids extracted from the lungs of animals with "acute" silicosis were compared with the lungs of rats injected intratracheally with the same quartz dust but uncoated. Histological examination and chemical determinations of the lipid, hydroxyproline, and silica contents of the lungs disclosed no significant differences. The probable explanation is that the lipid coating on the quartz particles was removed too quickly by natural enzymatic processes. (Sponsor: Department of Health, Education & Welfare, National Institutes of Health.)

COMMUNITY LUNG STUDY

In order to determine the magnitude of the fibrous dust, and particularly, the asbestos dust burden in the lungs of known asbestos workers as well as of people who have not lived in a large metropolis, selected lungs are being collected from people belonging in the above categories. The fibrous dust will be isolated, and quantitated optically according to methods elaborated in IHF's Research Laboratory and published. With the collaboration of Dr. John M. G. Davis of Cambridge, England, aliquots of the fiber suspensions will be examined with the electron microscope for the enumeration of submicronic fibers and the identification of chrysotile fibers. (Sponsor: U. S. Public Health Service, Environmental Control Administration.)

MENTAL HEALTH PROJECT

IHF's continuing education study on employee mental health and industrial nursing practices being conducted by the American Institutes for Research is now in its fifth year.

Activities during Years 1 and 2 were concerned primarily with the collection of relevant data on the current status of the role of occupational health nurses in working with the emotional and psychological problems of employees. The third year is devoted to analysis and interpretation of data and the fourth year to the development of instruction materials. During Year 5 efforts will be concentrated on program implementation, i. e., how the five course will be packaged and made available to the total population of occupational health nurses.

This project has been supported by a five-year grant from the National Institute of Mental Health and it is anticipated that continuing studies will be needed for maintaining the viability of the course, well as for collecting useful data relating to the extent and types of mental health problems in industry as seen by the occupational nurse (data now available).

IHF/ATMI RESPIRATORY STUDY

A study of cotton textile workers was undertaken by IHF in December 1969 at the request of the American Textile Manufacturers Institute (ATMI) to attempt to determine whether or not there are respiratory problems peculiar to the cotton textile industry in the United States, and, if so, to identify the causative factors and thus permit their control through industrial health and hygiene practices.

A respiratory condition termed byssinosis has been found in other countries, but has been vaguely defined and no specific patho-physiologic or etiologic descriptions have been given. It is characterized by subjective complaints of tightness of the chest and difficulty in breathing which may or may not be accompanied by a significant decline in Forced Expiratory Volume (FEV).

The Foundation's study was designed around a 12-plant matrix into which could be placed prototype types of plants processing only cotton, according to increasing rates of card speed and decreasing grade of cotton.

To elicit reliable information regarding subjective symptoms, it was necessary to construct a questionnaire to be administered to employees when the prototype plants were visited. A bellows-type spirometer was selected for measuring pulmonary function in the field.

The results of replies to questionnaires and of pulmonary function tests on all workers tested have been analyzed and compared.

On the basis of the preliminary data it now appears that a specific causative agent may possibly be isolated, perhaps related to the microbiological components of cotton dust.