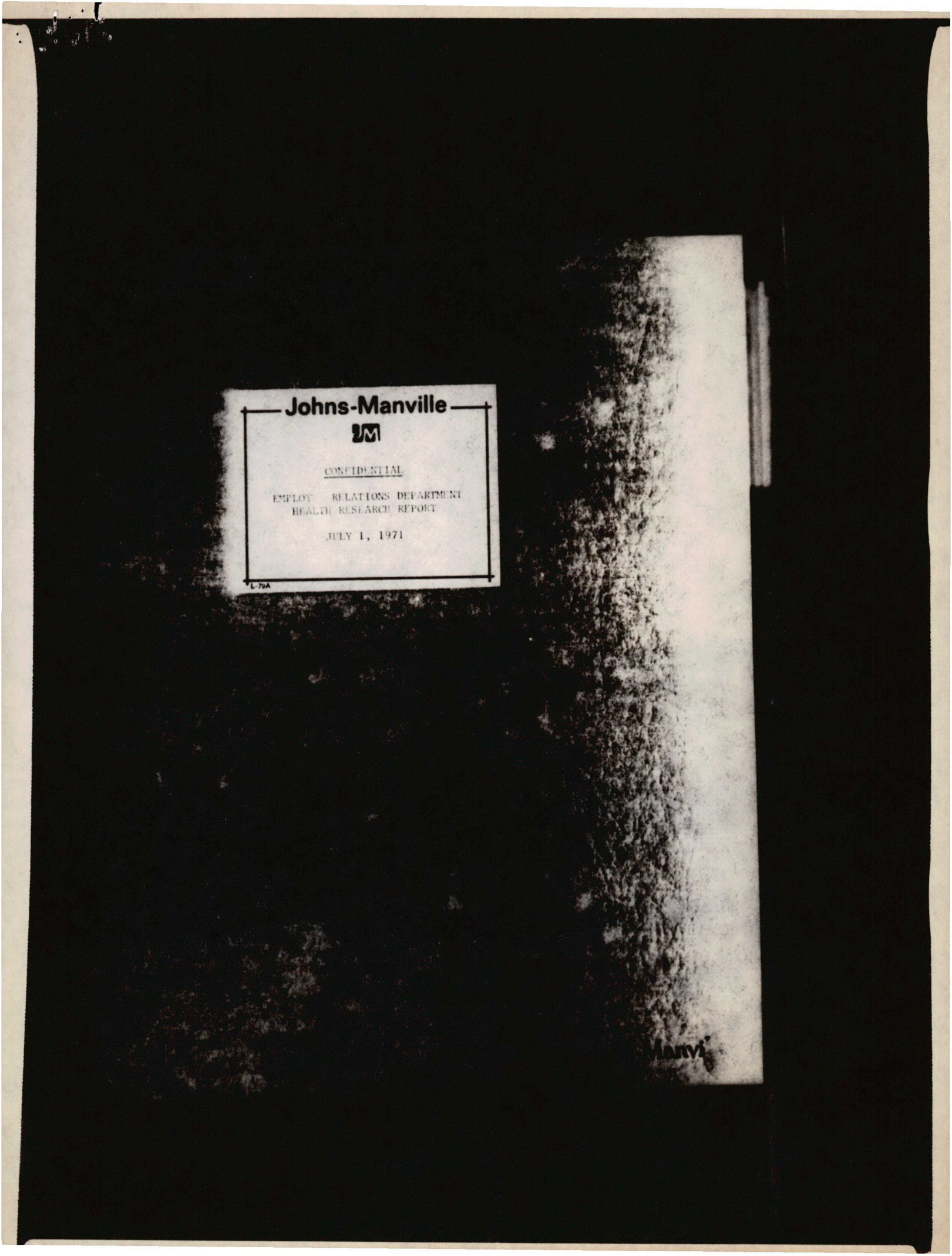


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EMPLOYEE RELATIONS DEPARTMENT
HEALTH RESEARCH REPORT
JULY 1, 1971

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This report defines the status of Health Research Programs, including medical, research, and scientific studies, plus other related projects, in which Johns-Manville is actively participating.

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EMPLOYEE RELATIONS DEPARTMENT
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JULY 1, 1971

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HEALTH RESEARCH REPORT

The following is a progress report of health research studies in which Johns-Manville is actively participating.

FIBROUS DUST STUDY
INDUSTRIAL HEALTH FOUNDATION

This study involves the investigation of the health hazards of four various types of asbestos: chrysotile, amosite, crocidolite and synthetic. In addition, fibrous glass, mineral wool, and some organic fibers are being studied.

The portion of the study related to quantitating inhaled fibrous dust particles and ferruginous bodies found in the lungs has been completed. A paper entitled; "Fibrous Dust Particles and Ferruginous Bodies - Methods for Quantitating Them and Some Results From the Lungs of City Dwellers" by Paul Gross, M.D.; Jiri Tuma, ScD; and Robert T. P. deTreville, M.D., has been published in the July 1970 Volume 21 issue of Archives of Environmental Health.

The study of the inflammatory and onogenic components of the determination of the locus of pathogenicity of asbestos dust continues in progress since the animals will not be sacrificed but will live out their lives.

EPIDEMIOLOGICAL STUDY OF THE CANADIAN GENERAL POPULATION
INSTITUTE OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH

This study proposed to relate the health status of asbestos-exposed population to the non-exposed population.

A paper entitled "Qualitative Aspects of Dust Exposure in the Quebec Asbestos Mining and Milling Industry" was presented at the Third International Symposium on Inhaled Particles, British Occupational Hygiene Society, London, September 1970, by G. W. Gibbs, Department of Epidemiology and Health, McGill University, Montreal, Quebec.

A paper entitled "Mortality in the Chrysotile Asbestos Mines and Mills of Quebec" by J. Corbett McDonald, M.D.; Alison D. McDonald, M D.; Graham W. Gibbs, MSc; J. Siemiotycki; and Charles Rossiter, M.A.; was published in the Archives of Industrial Health, Volume 22, June 1971.

Continuation of the study, approved by QAMA, will attempt to develop a basis for a Threshold Limit Value through a more definitive review of individual exposure histories and bronchogenic cancer involvement.

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HEALTH RESEARCH REPORT

**ESTABLISH LIBRARY OF WORLD-WIDE ASBESTOS RESEARCH AND HEALTH STUDIES
INSTITUTE OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH**

This project is designed to assemble information on world-wide asbestos research and health studies for future reference and distribution upon request.

Gathering, codifying and indexing world-wide asbestos information is being continued by Dr. Pelnar.

**ASBESTOS INDUSTRY STUDY
UNITED STATES PUBLIC HEALTH SERVICE**

This is a 7 to 10 year environmental, clinical and epidemiological study of workers exposed to asbestos. This study was initiated in January 1963.

USPHS medical officers, along with Dr. R. Liss, Manville Plant, medically counseled some Textile Department employees under study. Others will be contacted by mail at a later date. The medical study portion of this study has been completed at the Manville Plant.

A paper entitled; "Health in Asbestos Textile Processing - Progress Report" by R. Knight, M.D.; H. Raymond, M.D.; R. Ligo, M.D.; R. Weidner, and L. Cralley, Ph.D.; was presented by W. Lainhart, M.D.; U.S.P.H.S. at the American Conference of Governmental Industrial Hygienists on May 24, 1971 in Toronto, Ontario, Canada. Dr. Lainhart indicated that 780 of the 2600 workers participating in the study have had physical examinations. 216 of the 780, the group over 50 years of age, have been medically evaluated. 17% of 122 males and 13.8% of 94 females had some positive medical findings possibly related to occupational exposure in asbestos textile manufacturing. 83% of the males and 85.2% of the females were found to have negative medical findings associated with their occupation.

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HEALTH RESEARCH REPORT

INSULATION INDUSTRY HYGIENE RESEARCH PROGRAM
MT. SINAI ENVIRONMENTAL SCIENCES LABORATORY

This is a combined industrial hygiene and preventive engineering research program designed to develop improved methods that will minimize exposures of insulation workers to dust and fumes encountered in their jobs.

IIHRP has subcontracted for three months with the Florida Institute of Technology to investigate portable, small room air cleaners for confined spaces, such as ships, and to make a preliminary investigation of the feasibility of very light weight, portable air supply respirators.

The composition of adhesives for fibrous glass insulating jacketings is being investigated as a possible cause of rashes and, in some instances, numbness of extremities. In the next few months, considerable attention will be directed to indirect exposures of shipyard workers at the Sun Shipyard near Philadelphia.

Recently the purpose of this program was misstated in the Bureau of National Affairs, Occupational Safety and Health Reporter, April 15, 1971 issue. This matter is currently being clarified.

FIBROUS GLASS AND MINERAL WOOL INDUSTRY STUDY
UNITED STATE PUBLIC HEALTH SERVICE

This is a 7 to 10 year environmental, clinical and epidemiological study of workers exposed to fibrous glass and mineral wool. This study was initiated in March 1968.

This study has been underway for approximately three years. Epidemiological data has been collected from the plants and is being processed through the Social Security records and will be further analyzed by Dr. Cralley's group to determine if there is an increased mortality among fibrous glass workers. It is expected that this study will be completed sometime within the next year.

The National Insulation Manufacturers Association is currently discussing an epidemiological study of the fibrous glass industry to supplement the work being done by the U. S. Public Health Service.

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HEALTH RESEARCH REPORT

BIOEFFECTS OF FIBROUS GLASS STUDY
INDUSTRIAL HEALTH FOUNDATION

The purpose of this study is to provide current and definitive knowledge of the bioeffects of fibrous glass on pulmonary function, emphysema, and human pulmonary tissue. It is sponsored by the National Insulation Manufacturers Association.

The experimental animal portion of this study is reported in the June 1970 issue of Archives of Environmental Health article; "The Pulmonary Reaction to High Concentrations of Fibrous Glass Dust". The conclusion is that fibrous glass dust is biologically inert.

Dr. Gross presented a paper entitled; "The Lungs of Workers Exposed to Fiber Glass", at the Third International Symposium on Inhaled Particles, British Occupational Hygiene Society, London, September 1970. This paper will be published in the near future.

Two papers were presented at the Industrial Health Foundation Annual Meeting in Pittsburgh, October 3rd, entitled; "Report of an Epidemiological Study: Part 1", by H. Michael D. Utidjian, M.D., and, "Results of a Comprehensive Physiological Study: Part 2", by Henry Lynn Hook, M.D. Both papers will be published in the near future.

EPIDEMIOLOGICAL STUDY OF J-M RETIRED EMPLOYEES
SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF PITTSBURGH

This is an epidemiological study to determine and analyze the life span, causes of death, and possible causal relationship to work exposures, of J-M retired employees. Comparisons will be made between this group and similar age groups in the general population.

The initial report covering operations which utilize silica, asbestos, diatomaceous earth as raw materials has been received and indicates that while the over-all mortality rate is comparable to that of the general population, there are certain types of causes of death which are higher than those found in the general population.

The study is being continued to include data on other manufacturing and sales locations.

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HEALTH RESEARCH REPORT

EXPOSURE OF INSULATION WORKERS TO AIRBORNE FIBROUS GLASS
UNIVERSITY OF CALIFORNIA

This is a study to define qualitatively and quantitatively the airborne concentrations of fibrous glass in the breathing zones of workers engaged in fabrication, application, finishing and other operations involved in installation of prefabrication and other fibrous glass insulation materials.

This study is being coordinated by the National Insulation Manufacturers Association Health and Safety Committee. A paper entitled; "Exposure of Insulation Workers to Airborne Fibrous Glass", by W. C. Cooper, M.D., J. L. Balzer, Ph.D., and D. P. Fowler, has been published in the American Industrial Hygiene Association Journal.

EVALUATION OF FIBROUS GLASS LINED AIR TRANSMISSION SYSTEMS
UNIVERSITY OF CALIFORNIA

This is a study to obtain quantitative estimates of amounts of fibrous glass introduced into living and working areas from ventilation or heating ducts lined with fibrous glass.

This study is being coordinated by the National Insulation Manufacturers Association Health and Safety Committee. A paper entitled; "Airborne Fibers in Relation to Fibrous Glass Lined Air Transmission Systems", by W. C. Cooper, M.D., J. L. Balzer, Ph.D., and D. P. Fowler, has been published in the American Industrial Hygiene Association Journal.

EPIDEMIOLOGICAL STUDY - NEW ORLEANS
TULANE UNIVERSITY

This two-year study of the health effects related to asbestos exposure in industry was initiated in December 1969. The physical examination portion of the program involving personnel of both National Gypsum and J-M plants in the New Orleans area is proceeding on schedule. The collation and analysis of employment and exposure records has been initiated.

The recent reduction in personnel at the Marrero Plant has had no adverse effect on the employee participation in this study.

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HEALTH RESEARCH REPORT

GENERAL POPULATION HUMAN PULMONARY TISSUE STUDY
INDUSTRIAL HEALTH FOUNDATION

This is a study to determine core identification of ferruginous bodies found in the general population autopsies.

The QAMA Scientific Advisory Committee has approved the Industrial Health Foundation's protocol and work is currently underway.

RESPIRATOR DEVELOPMENT
JOHNS-MANVILLE RESEARCH

Work is continuing in our cooperative development program with the Willson Products Company.

It appears that the new Bureau of Mines specifications for disposable respirators cannot be met with a filter medium prepared by our wet forming process. There is some promise, however, that a dry formed filter medium using glass MICRO-FIBERS might be excellent for this application. This approach is being pursued in cooperation with the Willson Company. Willson Company has produced protocol models. These models are currently being evaluated.

BIOLOGICAL EFFECTS OF MODIFIED INORGANIC
FIBROUS MICROPARTICULATES
MT. SINAI ENVIRONMENTAL SCIENCES LABORATORY

This two-year program, initiated in October 1969, will investigate significant variations of biological effects of fibrous microparticulates that may occur following alterations on their surface and other physical-chemical properties. In vitro test systems will be used to identify the effect of modifications of several materials including chrysotile, crocidolite, glass-MICRO-FIBERS, MICRO-QUARTZ.

Dr. Schnitzer has begun animal studies with the interperitoneal injections to study the effect of modifications of fibers as a result of his work on hemolysis.

Based on Selikoff's reported prolongation of life of mesothelioma victims, Government sources have suggested the possibility of a Government-sponsored program directed towards the management of mesothelioma. Dr. Selikoff verbally indicated his belief that up to one-third of mesothelioma cases may not be attributable to asbestos and believes that a program to identify co-factors or accelerating factors for mesothelioma should be started with Government support. A review meeting on this program at Mt. Sinai early in the Fall has been proposed by Dr. Selikoff.

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HEALTH RESEARCH REPORT

FIBROUS PARTICLES IN AMBIENT AIR
UNIVERSITY OF CALIFORNIA

This is a NIMA study to determine the description of the type and concentration of fibrous glass particles to be found in ambient air. Secondary objectives are: (1) description of possible sources of fibrous glass, in terms of those general categories of human and natural activities and processes which appear to generate fibrous glass particles, with relative importance of each source to be assigned, in relation to the type of glass fiber produced, and, (2) description of the natural conditions which favor the presence of fibrous glass in the air, comparing the concentrations of fibers to the concentration of other particulates, and types of glass fibers in air with each other.

This study has been completed and a draft of the paper enticled, "Glass Fibers in Ambient Air", by J. L. Balser, Ph.D., W.C.Cooper, M.D., and D. P. Fowler, has been completed. Subsequent to review of this paper it will be published.

SHEET METAL WORKERS OCCUPATIONAL EXPOSURES TO FIBROUS GLASS
UNIVERSITY OF CALIFORNIA

This is a NIMA study to define qualitatively and quantitatively the airborne concentrations of fibrous glass in the breathing zones of sheet metal workers engaged in the fabrication, application, finishing, and other operations involved in the installation of air transmission systems containing fibrous glass.

This study has been completed and a draft of the paper entitled; "Exposures of Sheet Metal Workers to Airborne Fibrous Glass", by J. L. Balser, Ph.D., D. P. Fowler, and W. C. Cooper, M.D., has been completed. Subsequent to review of this paper it will be published.

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HEALTH RESEARCH REPORT

RELATIONSHIP BETWEEN THE DIMENSION OF FIBERS AND THEIR ABILITY TO PRODUCE TISSUE REACTION
ST. LUKE'S HOSPITAL, CLEVELAND

This is a study to further explore the relationship between the dimension of fibers and their ability to produce pulmonary tissue response.

Dimensional fibers of Coalinga chrysotile, synthetic chrysotile, crocidolite and glass have been prepared by J-M Research and submitted to Dr. G. W. Wright.

More than 700 guinea pigs have been injected intratracheally during this period. Of these, 328 died or were sacrificed and the lungs examined in detail. This high mortality was due to three factors.

1. Deliberate manipulation aimed at learning what fiber characteristics were required in order to get the individual fibers to the alveolar part of the lung, rather than have them lodge in a tangled mass in the bronchioles.

2. Infection associated with introduction of fibers.

3. Development of a new method of anesthesia characterized by virtual zero mortality, thus permitting repeated injections of fibers over a period of time.

At present the following classes of fibers are in animal groups for long term observation:

Five glass, five crocidolite, one synthetic chrysotile, one Coalinga, one sterile water controls.

For some of these there are separate groups that have received differing doses of fiber.

We anticipate receiving seven additional fiber samples for injection within the next few months. Projection over a two-year span of post injection observation will require this study to go through 1973.

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HEALTH RESEARCH REPORT

RESPIRATOR EVALUATION
McGILL UNIVERSITY

This is a study to determine the effectiveness of various types of respirators, including disposable respirators, to control the inhalation of asbestos fibre.

The study is being conducted by McGill University's "Institute for Mineral Industry Research", and is being sponsored by the Asbestos Fibre Division.

Filter media efficiency and resistance tests have been started on ten types of respirators. The first tests were conducted using asbestos fibre concentrations of 20 fibres per cubic centimeter of air. Evaluations were made with fibres 5 microns and over in length, also total fibres.

Two new disposable respirator styles will be introduced into the study.

Jeffrey Mine will use several types of disposable respirators that tested satisfactory in the initial filter media efficiency test for evaluating employee acceptance.

Considerable work will be required before any conclusions regarding total respirator efficiency can be determined. Face fit leakage tests will be equally as important as evaluating filter media. Face fit studies will follow the filter media tests.

MEETINGS, CONFERENCES AND GENERAL INFORMATION

A. National Insulation Manufacturers Association

The Health and Safety Committee developed and published a new booklet entitled; "Health Aspects of Fibrous Glass in Air Transmission Systems for Building Construction". It is to be used by sales and engineering personnel in the field, also by Division and Headquarters personnel responding to customer inquiries.

(Contd.)

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HEALTH RESEARCH REPORT

MEETINGS, CONFERENCES AND GENERAL INFORMATION

A. National Insulation Manufacturers Association (Contd.)

Our Health and Safety Committee appeared and testified at legislative hearings in New Mexico, California, Florida, Connecticut, Indiana, Nebraska, and Oklahoma.

Legislation was introduced in these states and would have eliminated the use of fibrous glass insulation on the interior of air transmission systems.

The reason for eliminating fibrous glass was stated as an alleged health risk resulting from eroding fibres.

Our NIMA Committee was successful in each instance in convincing the legislative committees, based on documented engineering and medical evidence, that studies over the past 30 years show fibrous glass to be a biologically inert substance which presents no health risk greater than any other nuisance-type dust.

We were also successful in our efforts to have the New York City Environmental Protection Agency remove references to elimination of fibrous glass from their original regulation draft. Work is presently underway with the New York City Department of Health sub-committees regarding the use of fibrous glass as an asbestos substitute in certain instances.

Our Health and Safety Committee has also appeared before Legislative and Environmental Committees in Los Angeles, Boston, New York State and Philadelphia. In these hearings we, along with the Asbestos Information Association, opposed the banning of asbestos product use and urged controls instead of elimination. Hearings are presently pending in Michigan and Illinois.

Our Medical and Scientific Committee has been continuing administration of medical research projects as heretofore described in this report.

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HEALTH RESEARCH REPORT

MEETINGS, CONFERENCES AND GENERAL INFORMATION

B. Perlite Institute

The Health and Safety Committee recommended to the Board that a radiologic evaluation of workers exposed to Perlite dust in member and non-member companies be made. The questionnaire concerning the willingness to cooperate and availability of x-rays has been forwarded.

The Board agreed to the recommendation of the Committee to accept the proposed Threshold Limit Value for Perlite dust at the inert or nuisance type dust threshold limit value recommended by the American Conference of Governmental Industrial Hygienists.

C. Asbestos Textile Institute

The ATI Environmental Health Committee is actively reviewing and circulating medical and scientific literature concerning fibrous materials.

Booklets entitled; "Recommended Health and Safety Practices", and, "Method for Determining Asbestos Dust Concentrations", have been published and distributed to member companies.

At the June 1971 Meeting, we presented a program describing the activities of the Asbestos Information Association of North America. W. P. Raines made the presentation for AIA-NA.

The ATI Environmental Health Committee is receiving increasing numbers of health inquiries regarding use of asbestos textile products.

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HEALTH RESEARCH REPORT

MEETINGS, CONFERENCES AND GENERAL INFORMATION

D. Asbestos Cement Products Association
Health & Safety Council

The ACPA Health and Safety Council has approved its Chairman appearing before legislative committees and environmental agencies to support control of dust from asbestos-containing products but vigorously oppose the banning of such products.

C. L. Sheckler presented an analysis of the Federal Occupational Health and Safety Act provisions at the recent meeting.

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