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Excerpt from the *PROCEEDINGS*

Of the *RHODE ISLAND INDUSTRIAL HEALTH INSTITUTE*

TRANSCRIPT OF REMARKS ON HEALTH ASPECTS OF FIBERGLAS MATERIALS

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PROVIDENCE, RHODE ISLAND, MAY 19, 1943

(Additional copies of this leaflet are available without charge upon request to the Division of Industrial Hygiene, Rhode Island Department of Health, State Office Building, Providence.)

EXCERPT FROM THE PROCEEDINGS OF THE RHODE ISLAND INDUSTRIAL HEALTH INSTITUTE

PROVIDENCE, WEDNESDAY, MAY 19, 1943

(AFTERNOON SESSION)

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As Dr. Deery¹ stated in his announcement of this meeting, "The manufacture and processing of Fiberglass is a new industry in Rhode Island. The finished product is handled by multitudes of workers in many plants throughout the state and nation. Its war-time use is of national importance, and it is destined to become a common substance in the lives of all of us."

When any such new material is launched, it falls on the manufacturer, the consumer and the state to ascertain what, if any, are the health hazards associated with its use, and how it can be manufactured and applied in safety. Fortunately, such an investigation of Fiberglass has been underway since the early days of its commercial distribution. The facts are now at hand; what's needed is their widespread dissemination.

Dr. Walter J. Siebert of St. Louis reported in *Industrial Medicine* for January, 1942, that he had looked at the wrists, arms, ankles and other such areas of 200 employees of the plant which was manufacturing Fiberglass. He examined serial microscopic sections. He concluded:

"Contact with glass wool may cause ephemeral discomfort among workers inexperienced in handling the material. The skin irritation, however, cannot be regarded as a progressive dermatitis for it is non-toxic and usually disappears in a few days."

Dr. Louis Schwartz reporting in *Industrial Medicine* for March, 1943, on "Skin Hazards in the Manufacture of Glass Wool and Thread" said:

"Workers handling glass fibre in textile manufacturing may develop dermatitis from the mechanical cutting action of the fibers on the skin. . . Some new employees experience sensitivity to handling the glass fibers for a few days, but an immunity seems to develop quickly, so that the great majority of experienced workers prefer to work without gloves or special clothing."

This afternoon Dr. Sulzberger² has reported on systematic, controlled experiments—not only on animals, but on men and women, where the exposure,

that is, the opportunity, for acquiring a skin ailment was greater even than among workers in the plant where the product is fabricated. Dr. Sulzberger found:

"All of the reactions observed were of a transitory and superficial nature. . . The pieces of material which were seen sticking into the skin after rubbing with Fiberglass in its wool-like form appeared to be very superficially imbedded. Ordinary washing with water easily removed a large part of them."

Mr. Durkan³ has reported on animal experiments conducted by him and Dr. Gardner⁴ in which animals lived in a dust room for several hours a day over a period of months exposed to as high a concentration of air-borne glass wool dust as could be obtained. No hazard to the lungs was found. These experiments carry conviction, for the technic was one which has been developed by Dr. Gardner, Mr. Durkan and their associates through recent years to a point of great reliability in predicting lung damage, or absence of it, in humans.

Knowing these facts, the job for the plant physician and personnel director is to satisfy the possible anxieties of workers who handle this material. This is often no small task. Indeed, it is sometimes resisted because today a few people are eager to imagine a health injury which can be used as a prod for getting some gain of a totally unrelated nature.

People have a horror of being injured by glass. It seems deep rooted. When we cut ourselves with a penknife, we think only of the bleeding wound, but when we run afoul of a broken window pane, we think first of the injury and then of the fact that glass caused it. In the last war some of you may recall that enemy spies were said to be sabotaging the home front by mixing peanut butter with ground glass. So serious was this that some able experimenters in Richmond fed animals, and then themselves, ground glass diets to see what would happen. Nothing happened, except in the case of the dogs where there was a slight reddening of the intestinal tract. The men lived—and the speaker heard firsthand their interesting story years later. No authenticated case of poisoning from eating glass among

¹Wm. P. Deery, M.D., Medical Director of Industrial Hygiene, R. I. Department of Health.

²Walter J. Siebert, M.D., Comdr. (MC) U.S.N.R., See Siebert, Walter J., M.D., and Siebert, Rudolf L., M.D., with the technical assistance of Lovensberg, Clara, M.S., and Monast, Mildred, O.S., "The Effects of Fiberglass on Animal and Human Skin—Experimental Investigation" in *Industrial Medicine*, Vol. XI, No. 10 (October, 1942), pp. 482-484.

³Thomas M. Durkan, Chief Chemist, The Sarnes Laboratory.
⁴Leroy U. Gardner, Director, The Sarnes Laboratory.

Thus performers, babies, or anyone else—was found at that time.

The best and most recent evidence that there is nothing inherently poisonous about glass to human tissue comes from surgeons who are today using glass fiber sutures. One of their advantages as given by Dr. Scholz and Dr. Mountjoy⁵ is that the glass threads are inert and nonreacting.

People still feel, nevertheless, that the irritation a new worker sometimes experiences from glass fibers is worse because it is caused by glass. Actually, this afternoon's papers show it is no more injurious than the hair clippings that get stuck inside a person's shirt collar when he has a haircut. These points should be clarified to the worker by the personnel director on hiring, and by the private physician when asked by the employee for a doctor's certificate of disability due to fibrous glass dust.

Plant people who have read of silicosis may become alarmed at breathing air that has glass particles floating in it. They know sand goes into the making of glass, and they know sand dust may cause silicosis. Glass, however, is not the free silica which causes silicosis, but a combined silicate—and no silicate aside from asbestos, which has an entirely different composition, has been definitely proved to

⁵Scholz, Ray Philip, M.D., and Mountjoy, Philip S., M.D., "Fiberglas Suture Material" in *American Journal of Surgery*, Vol. LVI, No. 3 (June, 1943), pp. 619-21.

cause any specific disabling disease of the lungs. Furthermore, glass fibers large enough to be seen floating in the air will be too big to enter the small regions of the lungs.

Today manpower is all-important. The job of the industrial hygienist is to show manufacturers how they can use all manner of materials *safely*, without injury to any worker. If there is a real danger, it must be explained; and if the danger is imaginary, this, too, must be emphasized. In the case of Fiberglass, in view of today's papers, the danger is not real but imaginary. The following points might well be discussed with employees when they are hired, and periodically afterwards:

1. Breathing glass fiber dust is not harmful to the lungs.
2. Irritation of the skin is temporary, superficial, and not progressive.
3. No special personal protective devices or clothing need be worn, except that in overhead application of glass fiber, goggles are often desirable to protect against falling bodies.
4. Frequent washing and a daily shower with soap and warm water will readily remove most of the small fibers clinging to the skin and will reduce any "itching."

DOSSIER

On

Health Aspects of Fiberglas
Materials

Prepared for

MEMBERS

of the

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CAMDEN, NEW JERSEY

Monday, July 10, 1944

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