MEDICINE

Glass Cloth Stops Rays

Clothing made of lead fiberglas may protect relief workers after an atom bomb burst in event of another war. It will also protect doctors using X-rays.

➤ GLASS CLOTHING will allow rescue workers in the next war to rush into the "hot areas" after an atomic bomb burst, thanks to successful efforts of five Virginia doctors to protect X-ray workers from the radiation that causes deadly leukemia.

Shown to the American Medical Association in Atlantic City for the first time, the fibers of glass, heavy with protective lead, stop the "bullets" of dangerous radiation from atomic bomb debris.

Doctors using X-rays to find and destroy cancers that threaten their patients' lives will themselves be saved from death by leukemia. This deadly disease, which has been likened to a cancer of the blood, is now killing X-ray specialists at eight times the rate it kills other doctors.

This death toll among his colleagues led Dr. Vincent W. Archer of the University of Virginia to a search for better protection than is given by the lead-impregnated rubber aprons now used for this purpose.

The heavy, silky material made of lead fiberglas by Owens-Corning Fiberglas Company is the answer. For X-ray workers, this material forms the sleeves and front of a white apron-coat. Part of the apron is made of three- to five-ply weave of the material, to give extra protection to the arms and abdomen. These regions, Dr. Archer's tests showed, get more radiation than other parts of the body as the X-ray doctor works.

The new apron, in a medium size to fit the average man, weighs nine pounds, twelve ounces, which is only two ounces more than the less protective lead rubber aprons now used. Cost of the first hundred pounds of the material, enough to make four aprons, was $5,000. But this high cost included all the initial expenses of setting up a new pilot plant for production of the lead fiberglas. When made on a large scale, the material probably will not cost more than $15 or $20 per apron.

Large scale production has not started and the material is not now available, Dr. Archer told doctors whose first question was, "Where can we get them?"

The fibers of lead glass will not be made into protective clothing for wear in event of an atom bomb burst because it will not give protection against the intense, immediate radiation from the bomb itself. Only many feet of concrete or heavy thicknesses of metal such as lead, will protect against that. But the material will protect against the radiation coming off from contaminated material and debris from the bomb after the burst. It is this factor that makes it valuable for rescue workers going into areas immediately after the burst.

The material is flexible, like any heavy fabric. It is strong, resistant to chemicals, does not deteriorate in storage, is fireproof, nonshrinking and will not cause allergies in wearers.

Dr. Archer was assisted in development of this new protective fabric by Drs. George Cooper, Jr., Herbert D. Hebel, and John G. Kroll of the University of Virginia Hospital and Dr. Christian V. Cimmino of Fredericksburg, Va.

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MEDICINE

Technique for Leukemia

➤ A HOPEFUL advance in leukemia fighting was announced at the meeting of the American Medical Association in Atlantic City. It consists of a precision technique for treatment that would be lost if doctors had to continue the trial and error methods of the past.

A young man who about a year ago was given three days to live is now back at his work as college athletic director, thanks to the new precision technique for treatment. His case and others also as dramatic were reported by Drs. Charles A. Doan, B. K. Wiseman and Claude-Starr Wright of Ohio State University College of Medicine.

He is alive because the Ohio doctors have found that each of three modern chemicals used to treat leukemia works best in one kind of leukemia, but the one that is good medicine in one type of the disease is not good in another. Aminopterin, an anti-vitamin chemical, for example, is effective in lymphocytic leukemia and a little effective in monocytic leukemia. But it does not help patients with myeloid leukemia. That kind is helped by urethane, a chemical that is not effective in other leukemias. And nitrogen mustard, the war gas chemical, is good in monocytic leukemia, a little effective in the myeloid type and ineffective in the lymphocytic leukemia.

A patient coming to the hospital with acute leukemia is just as sick and in just as great danger as a patient with acute appendicitis, Dr. Doan emphasized. Vitally precious time may be lost if the doctor has to try first one treatment and then another in the hope of hitting one that is effective. But study of a patient's blood cells and bone marrow will tell which type of leukemia he has and, therefore, which type of treatment will be most effective.

Diet treatment is also prescribed by the Ohio doctors for some leukemia patients on the basis of the kind of leukemia they have. In one kind, the study of the blood cells shows that an enzyme chemical needed to handle fat is missing or ineffective. Such patients get a diet that completely eliminates fat. Another kind are limited to less than two ounces of protein food a day because they lack a protein digesting enzyme.

The techniques the Ohio doctors have worked out resulted from the study of over 1,000 leukemia patients during the last 18 years.

Science News Letter, June 18, 1949

METEOROLOGY-BOTANY

Complete Weather Control Obtained for Plant Studies

➤ ALL TYPES of climatic conditions from hot to cold and dry to wet can be reproduced in a new plant research laboratory dedicated in Pasadena, Calif. It is claimed to be the first in the world designed and built so as to obtain complete weather control.

It is the Earhart Plant Research Laboratory of the California Institute of Technology, constructed with a donation from the Earhart Foundation of Ann Arbor, Mich. In it can be duplicated arctic or tropical weather, cold nights and hot days, or vice versa, humid or dry weather, rain storms of varying intensities, and wind storms up to 20 miles an hour.

Out of the research to be conducted under these various climatic conditions, according to Dr. Fritz Went who will be in charge, scientists will obtain new knowledge of the conditions under which specific plants can be expected to produce good crops, or poor ones.

In the laboratory are six air-conditioned greenhouses in which natural daylight is the light source. There are 13 equipped with huge batteries of fluorescent lamps as an artificial light source. In addition there are 11 darkrooms and nine other greenhouses, the latter to be kept at constant temperatures and humidity.

An intricate control board at which workers can control the climate in any individual laboratory is provided. By opening and closing valves and throwing electrical switches, the conditions of a room can be changed from equatorial to polar. Other controls can produce a pea soup California fog, a hot desert wind, a cloud-burst or a lazy drizzle of rain.

Science News Letter, June 18, 1949