

BIOPHYSICS

Anti-Radiation Treatments

Four scientists recently overexposed to radiation may not have gotten damaging overdose. Blood with blue dye, antibiotics are possible treatments for such cases.

► THE ACCIDENT which overexposed to radiation four atomic scientists at the Argonne National Laboratory, Chicago, may give medical scientists a unique opportunity to test methods of treating atomic bomb victims developed during the years since the atomic bombing in Japan. The methods so far have been developed and tried on laboratory animals.

The four scientists may not need such treatment. Overexposure means the amount of radiation they were exposed to was more than is considered safe for a given period of time. Safety levels are set fairly low, so the scientists may actually not have gotten a big enough dose to cause any damage. Blood tests and development or absence of symptoms over a period of weeks will give the answer on that.

One very promising method of treating radiation damage has been developed by Dr. Leon Jacobson, professor of medicine at the University of Chicago and associate director of the Argonne Memorial Hospital which opens in September. This consists of injections of an extract from the spleen, one of the body's blood-forming organs. Damage to the blood-forming system with consequent anemia and susceptibility to infection is the most serious feature of radiation injury.

Mice exposed to more than the usual killing dose of radiation immediately began producing new blood when given injections of ground-up spleen. But, Dr. Jacobson's latest report was that the substance in spleen which saves mice must be further refined before it can be given to humans.

Blood transfusions will probably not be given the victims unless protamine sulfate or the dye, toluidine blue, is also given. One of these is needed to control the bleeding tendency that follows radiation injury. The bleeding tendency might be increased by transfusions of whole blood alone, another University of Chicago medical scientist, Dr. J. Garrott Allen, reported.

Antibiotics, such as aureomycin, may also be given the four atomic scientists. These would, it is believed, help the body fight infection during the period when its normal anti-germ defenses have been weakened by the radiation damage.

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TECHNOLOGY

Squeeze Metal Pipe As Toothpaste From Tube

► WHITE-HOT METAL pipes 60 feet long and two inches in diameter now can be squeezed from metal-shaping equipment much like toothpaste from a tube. The new process permits pipes to be made quickly of hard-to-forge materials needed for atomic energy and commercial projects.

Just installed by the Babcock and Wilcox Co., Beaver Falls, Pa., the machinery simplifies shaping such materials as titanium, certain stainless steels, molybdenum and some of its alloys. It is difficult or impossible to forge economically any of these materials into tubes by conventional piercing and rolling methods. Yet the machine does it in less than five seconds.

Hot metal billets 28 inches long and eight inches in diameter are forced through an opening in the machine. The two-inch hole has a small plug suspended in its center, but the plug is not as large as the hole. Hot metal is forced out of the hole around the edge of the plug. It emerges as a white-hot pipe. Solid metal bars can be formed when the plug is removed.

Based on a French-developed hot-extrusion process, the new equipment is the first in America to make full use of the new method.

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Question Box

ENGINEERING

What problems face servicemen in the Arctic? p. 378.

HORTICULTURE

What is a "sandwich tree"? p. 377.

MEDICINE

Are you an alcoholic? p. 370.

How often should heavy smokers get their chests X-rayed? p. 377.

Photographs: Cover, Fremont Davis; pp. 371 and 378, U. S. Air Force; p. 373, British Information Services; p. 374, University of California.

OPTICS

How can amateurs now take three-dimensional movies? p. 374.

ORNITHOLOGY

Do birds use their eyes when alighting? p. 377.

PSYCHOLOGY

In what way does the mind affect eating habits? p. 375.

PUBLIC SAFETY

What safety rules should be followed on a shore vacation? p. 376.