

MEDICINE

Atom Defense—3,000 MDs

Only a few men and women are prepared to give medical defense against the dropping of atom bombs. Army and Navy may give them special training.

➤ A THIN LINE of at most 3,000 men constitutes our first line of medical defense against atom bombs if any nation uses them against us. These 3,000 are the men and women physicians in the United States specializing in X-ray and radium work.

They are the ones who will be responsible for determining which buildings, which food, water and milk supplies and even where the air is safe from deadly doses of radioactivity dispersed by a bomb explosion.

Those of them attending the meeting of the Radiological Society of North America in Chicago were told by Dr. Stafford Warren of the University of Rochester, formerly of the Manhattan Project medical division, that next spring or summer they will hear from the Army and Navy of plans to give them special training for the job they will have in the next war, if one comes.

Radioactivity equivalent to that from several thousand pounds of radium was released by the underwater explosion at Bikini, Dr. Warren reported. He was not allowed to reveal the exact amount as that is still a military secret.

The approximate figures were frightening enough to the radiologists accustomed to using utmost care in handling radium in microgram amounts. Micrograms are millionths of a gram, a gram itself being about one-thirtieth of an ounce.

Contamination with deadly radioactivity was not a problem in the case of the bombs dropped over Japan because the deadly fission products rapidly rose to the stratosphere. Following the underwater explosion at Bikini, a black rain of radioactive material fell, and a mist of the same deadly stuff was carried for miles by the wind.

Explosion of a few atom bombs under the water of any of the Great Lakes would make uninhabitable not only Chicago, Cleveland, Buffalo and other lake cities but others miles away. All inhabitants of the cities who escaped immediate death would suffer the fate of the radium watch dial workers in the last war who died of cancer from the minute amounts of radium that got into their bones.

Detecting material contaminated with radioactivity is only one part of the vast job facing our medical defense workers, Dr. Warren pointed out. Once the material is detected, a safe way of disposing of it must be found. It cannot be dumped into the sewers because that would endanger people many miles away whose water supply comes from the rivers into which the sewers drain. And there will be tons and tons of such deadly material to dispose of if an atom bomb or two are exploded under water near only one of our harbor cities.

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ATOMIC PILE—Operators place a sample for irradiation on a stringer which will be pushed into the chain reacting pile at the Argonne National Laboratory.

The “permissible dose” of radiation now considered safe for workers is one-tenth Roentgen per eight-hour working day.

A shortening of the life span which Dr. Lorenz termed “unimportant” might “perhaps” result from this dosage, the mice studies showed. Such a dose, however, even over long periods of time, will not have cancer-causing effects except in the case of women.

Damage to the future children of persons exposed to this dosage probably will not occur. Dr. Lorenz said the present permissible dose gives a sufficiently wide margin of safety that “visible mutations will not occur.”

No visible mutations indicating damage from the radiation appeared in breeding experiments and continuous breeding of mice up to six generations under exposure. About 12,000 mice were used in this experiment.

A possible unknown factor in connection with slow neutrons that might injure atomic bomb workers was suspected during the early days of the Manhattan Project. This worry to the medical scientists responsible for health protection turned out to be unfounded, Dr. Raymond E. Zirkle of the University of Chicago reported. Practically all the damage that slow neutrons could do can be accounted for in terms of physical and biological events already known before

MEDICINE

X-Rays Endanger Women

➤ WOMEN NEED greater protection than men from radiation, whether they are atomic energy workers, or nurses and technicians helping give radium and X-ray treatments, or girls in candy factories using X-rays to check candy boxes.

Warning to this effect was given by Dr. Egon Lorenz, National Cancer Institute biophysicist, at the meeting of the Radiological Society of North America.

His warning was based on studies

with mice, made to aid in health protection of workers in atomic bomb production.

Cancer of the ovaries is the hazard faced by women working with penetrating radiations in atomic energy production or in X-ray laboratories. If their ovaries react to radiation in the same way mouse ovaries do, the working time of the women with such radiations should be reduced for a few years or the permissible dose should be decreased, Dr. Lorenz stated.