

PUBLIC HEALTH

Urge Caution in Radiation

► A SPECIAL United Nations scientific committee on the effects of atomic radiation has called for a decrease in the exposure of all humans to radiation from all sources under mankind's control.

Included would be the radioactive fallout from tests of atomic and hydrogen bombs. In a carefully worded statement, in which the section dealing with suspension of nuclear bomb tests was not approved by Russia, Czechoslovakia and the United Arab Republic, the UN committee concluded that "all steps designed to minimize irradiation of human populations will act to the benefit of human health."

Such steps, the committee reported to the UN General Assembly, include avoiding unnecessary exposure resulting from medical, industrial, and other procedures for peaceful uses of radiation. They also include "the cessation of contamination of the environment (atmosphere, ground, plants, etc.) by explosions of nuclear weapons."

The committee pointed out that effective control of all these sources of radiation involved national and international decisions outside the scope of its work.

Even the smallest amounts of radiation are likely to cause unwanted and harmful genetic effects. Any radiation reaching the reproductive cells can cause mutations that are passed on to future generations. Small amounts of radiation may also cause injury to body cells concerned with the maintenance of the individual, such as bone marrow, blood, liver or nervous system cells.

Since both the genetic and direct-body effects may have long delays in appearing, the committee urged "great caution" in treating the radiation problem. So little is known about the long-term effects that present damage estimates are possibly very much underestimated.

The committee estimated that, even if there were no more nuclear tests, from 400 to 2,000 persons each year would develop leukemia due to radioactivity in fallout from previous weapons tests, provided there is no minimum dose necessary for leukemia development.

Because of the increasing levels of radiation exposure and of uncertainties concerning the nature and extent of radiation effects on man, particularly when received at low dose rates over long periods, the committee called for much further research on the effects of radiation on living matter.

Science News Letter, August 23, 1958

ROENTGENOLOGY

X-Ray Examination Shortens Life Span

► X-RAY EXAMINATIONS may help save your life but they also shorten the life-span.

Why this happens is still a mystery, as in fact no visible signs of sickness are displayed that indicate how much irradiation has been received. This was reported by two scientists at the International Congress on Radiation Research in Burlington, Vt.

They warned that for every roentgen received over the whole body for short periods of time a human being loses about 12 days of life. A roentgen is a measure of radiation dosage. Some fluoroscopes may pour several roentgens into the body in the course of a single examination.

The scientists, Drs. H. J. Curtis, Brookhaven National Laboratory, and H. D. Brues, Argonne National Laboratory, made it clear that X-ray examinations in many cases are urgently needed for life-saving and life-prolonging medical diagnoses. They believe that practitioners using X-rays should

fully understand the nature of radiation, its benefits and its dangers.

Both men agreed that the fluoroscopic method of sizing feet in shoe stores should be abolished. It is not necessary, it is dangerous to the customer, and especially so to the salesman who is continuously exposed to large doses.

The actual mechanisms by which radiations of all kinds shorten lives are not known. Dr. Curtis, who has conducted studies on mice and has interpreted his results to include humans, said that the effect of radiation on animals is a curious one. The animals may not show signs of sickness, but the more they are irradiated, the less time they have to live.

Another unusual aspect of radiation exposure is that long-term doses do not have the life-shortening effect as acute doses.

Dr. Curtis says there is no minimum dose for the life-reducing action, although Dr. Brues disagreed with him. Dr. Curtis believes that the natural background radiation all over the earth has a small, but nonetheless definite, effect on the length of the human life span.

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BIOLOGY

Antarctic Fish Parasites Sent North for Study

► A UNIQUE shipment of fish from Antarctica will be making its way north to the Virginia Fisheries Laboratory, Gloucester Point, Va.

The fish are not what interest Laboratory scientists, however. The fish are hosts to certain parasites, especially those found on fishes' gills, that do interest scientists.

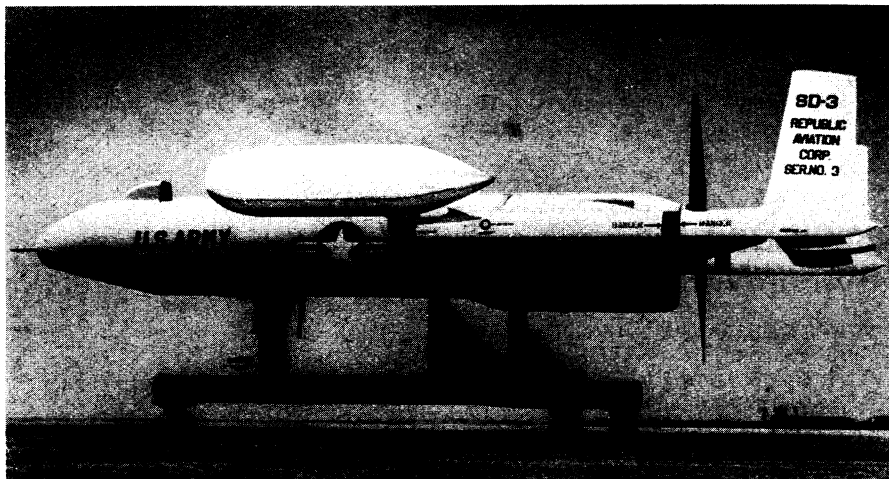
These parasites, Dr. William J. Hargis Jr. said, can provide a great deal of information about the relationships and travels of fish. Over long periods of time the "parasites have evolved in ways which enable them to survive year after year on the fishes to which they are attached," Dr. Hargis explained. Most parasites have become so highly specialized that they will not develop unless a specific host fish is available.

Study of the fish parasites "has tremendous potential importance" to our understanding of parasitism itself, the scientist pointed out.

Members of the International Geophysical Year expedition in the Antarctic are collecting and shipping the fish to Dr. Hargis. Because of the winter season in the Southern Hemisphere, however, it is believed to be doubtful if the shipment will arrive before the end of the year.

Two years ago Dr. Hargis made a similar study of fish parasites based on gills taken from South African coelacanths.

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SURVEILLANCE DRONE—Details of the SD-3 combat surveillance drone—a pilotless plane—being built for the U. S. Army Signal Corps by Republic Aviation Corporation, Farmingdale, N. Y., are revealed in this photograph of the first model. The propeller-driven vehicle would use sensory techniques to keep watch on possible enemy installations and movements. The drone is zero-length launched and recoverable.

An active 90-pound *child* bears a weight of 1,350 tons a day on his shoes; this is pounding weight, involving far greater stresses on the shoe.

Pellets containing 16 grams of *plutonium* serve as neutron sources capable of producing 1,600,000 neutrons a second to bombard other atoms.