



**EYE DAMAGE EXAMINATION**—Dr. Robert M. Sinskey, Lt. j.g., U.S.N., is shown here examining the eyes with an ophthalmoscope in a study of radiation damage made for the Atomic Bomb Casualty Commission.

#### MEDICINE

## Cataracts From A-Bomb

Chances of damage to the lenses of eyes sufficient for blindness as result of atomic bomb attack found to be small, study using both ophthalmoscope and slit lamp shows.

► IF YOU survive an atomic bomb attack, the lenses of your eyes may be damaged by the radiation, even to the point of cataract formation. But the chances of the lens damage being great enough to blind you appear rather small.

This impression is gained from the latest report on radiation cataracts among atom bomb survivors at Hiroshima. The report is the first on a two-year study by Dr. Robert M. Sinskey, Lt. j.g., U.S.N., made for the Atomic Bomb Casualty Commission.

Dr. Sinskey could not give exact figures for the chances of lens damage. He pointed out, moreover, that his findings were for radiation damage, probably neutron and gamma rays, from the first atom bomb. What damage more recently made atom bombs or hydrogen bombs might do could not be told from his study.

Blindness from heat from the bomb was not covered in Dr. Sinskey's report. Scientists working at the Air Force School of Aviation Medicine at Randolph Field, Tex., have calculated that the heat from "the primitive bomb touched off at Hiroshima" would be blinding even at a distance of four miles if the eyes were directly focused on it.

Of the 154 cases of radiation cataract among survivors at Hiroshima, only two had so much loss of vision that an operation was necessary to restore sight, Dr. Sinskey said. These were among 25, out of the 154, which have less than 20/20, or normal, vision. Most of the 23 have "serviceable" vision. In many of these 23, extreme nearsightedness which is very common among Japanese is probably responsible for the loss of vision.

Dr. Sinskey actually found more radiation damage in the eyes of survivors at Hiroshima than had previously been reported. This is because he examined the eyes with both the ophthalmoscope and the slit lamp. Earlier examinations had been made only with the ophthalmoscope which does not show the granules and plaques, looking like an oil slick, at the very back of the eye lens in cases of radiation damage. This appearance also is seen in the eye lens in some cases of old age cataracts, in glass blowers' cataracts and in a few other conditions.

The radiation damage in the eyes of Hiroshima survivors has not progressed in the past three years. Dr. Sinskey considers it unlikely, though not impossible, that it

will progress to the point of causing loss of vision in the future.

The changes in the eye lens Dr. Sinskey described cannot, in an individual case, be diagnosed as radiation cataract. But if there is a history of exposure to ionizing radiation and no other reason for the changes, they may be considered due to the radiation. The patients Dr. Sinskey examined had all lost all their hair. This was taken as a sure sign of exposure to the atom bomb radiation.

Science News Letter, March 14, 1953

#### TECHNOLOGY

## Quartz Fluorescent Lamp Is Brighter, Lasts Longer

► A FLUORESCENT lamp with a quartz inner tube has been developed that gives about two and a half times more light than an equal-wattage incandescent lamp and that lasts about five times longer.

Eugene W. Beggs of the Westinghouse Lamp Division, Bloomfield, N. J., told the International Association of Electrical Inspectors meeting in New York that the new lamp is a combination of a mercury lamp and a fluorescent lamp. Its life is rated at 5,000 hours.

Light from the mercury half is generated in the quartz inner tube. The light contains ultraviolet rays which make phosphors glow on the outer tube. The phosphors glow red and turn the normally bluish-white mercury light into "golden white" light.

Mr. Beggs predicted the lamp would find wide use in factories, stadiums, parking fields, building exteriors, railroad yards and on streets and highways. It is particularly adaptable to large-scale operations, he said.

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#### PHYSICS

## Cosmic Ray Particles Cause Flashes in Sky

► FAINT FLASHES of light produced when powerful cosmic ray particles plunge from outer space into the upper atmosphere seem to account for a little of the light of the night sky.

Two investigators, W. Galbraith and J. V. Jelley of Britain's Atomic Energy Research Establishment at Harwell, measured, with a photomultiplier apparatus, the light-pulses of short duration that correlate with cosmic radiation. They made their report in *Nature* (Feb. 21).

These flashes are due to an effect discovered by a Russian scientist, P. A. Cerenkov, in 1934. Cerenkov radiation is blue-white light created when fast-moving particles are shot into a medium such as the atmosphere. It can be explained by assuming that the particles travel faster than light in the same medium. The idea that this kind of radiation was involved in about a ten-thousandth of the light of the night sky was advanced in 1948 by Prof. P. M. S. Blackett, British Nobel physicist in physics.

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