

MEDICINE

Beta Rays Cause Burns

➤ SEVERE burning of the hands is reported in four men who handled radioactive materials at the recent atomic tests at Eniwetok Atoll.

The damage was due to beta rays, which are composed of electrons, units of electricity. Although the materials they handled also emitted gamma rays which are like light waves or X-rays, there was no body damage beyond the local burns on the hands, a team of doctors at Los Alamos, N. Mex., reported in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (Sept. 24).

The physicians are Norman P. Knowlton, Jr., Edgar Leifer, John R. Hogness, Louis H. Hempelmann, of the Los Alamos Scientific Laboratory, and Drs. Loren F. Blaney, Dan C. Gill, William R. Oakes, and Charles L. Shafer of the Los Alamos Hospital.

The patients, in order to speed their work, had discarded the handling devices provided, it was discovered, and used rubber gloves or bare hands to work the materials. Exposure time in all was from 40 to 60 minutes.

The physicians describe four definite phases which resulted from the burns. In the first phase, the patient had a sensation of tingling and itching of his hand while handling the radioactive materials. This was shortly followed by a reddening and swelling of the hand with blanching of the skin in some areas. In the second phase, there was a period of three to five days when the symptoms decreased. In the third phase, which lasted about three weeks, the reddening of the hands spread and blisters formed. These were painful and required draining. The skin then peeled off and left a new layer of skin which was thin and tight with a shiny appearance. During the fourth phase, which is also the chronic stage of the disease, ulcers formed which would not heal and required grafting of the skin. Also, there was noted wasting and loss of soft tissue in the fingers with loss of power to move the fingers in some cases.

Other effects noted were damaged blood vessels in the burned area, retarded growth of nails, loss of hair on the back of the fingers and a stoppage of perspiration in the palms.

Treatment consisted of ice packs to cool the hands, cutting out the unhealed areas and skin grafting. Besides this, the patients were given rutin, for strengthening the walls of blood vessels, a high protein diet, several necessary vitamins and penicillin to check further infection.

The physicians point out that these patients had just entered the fourth stage of the disease and their progress would have to be followed for a few years. The danger they fear is that some malignant changes may occur.

"It is hoped," they state, "that by calling attention to the early signs and symptoms of injury by beta radiation, overexposure will be recognized and hazardous operations discontinued before more damage is incurred."

Science News Letter, October 1, 1949

MEDICINE

Report Method for Finding Early Inaccessible Cancer

➤ A METHOD for detecting cancer of certain organs playing an important role in digestion and the secretion of body juices before it reaches the hopeless stage is reported by Drs. Henry M. Lemon and Walter W. Byrnes of the Boston University School of Medicine and Boston City Hospital.

Each year about 10,000 people die of cancer of the liver, the bile ducts leading from the liver and the pancreas. Although cancer in these areas accounts for only 5% to 10% of all cancers, the death toll

is high because this region is hard to get to, the physicians declared in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (Sept. 24).

They suggest that at the first sign of upper abdominal pain or jaundice the following technique should be followed: A tube be inserted down into the duodenum, which is the first part of the small intestine, and the fluid removed by suction. After the fluid has settled, the cells obtained from it are smeared on slides and stained. Cells which are characteristic of cancers can thus be identified because they usually show more and larger nuclei to the protoplasm than in normal cells.

Drs. Lemon and Byrnes do point out that it is not possible to identify the origin or type of cancer by this method. But they were able to diagnose cancer in patients who came ill to the hospital which was confirmed when the patients died. In their experience, the patients they diagnosed had come too late for treatment.

This study was supported in part by a grant from the U. S. Public Health Service.

Science News Letter, October 1, 1949

GENERAL SCIENCE

Giveaways to New Babies Hit by Hospital Bureau

➤ GIVEAWAYS are now slapped down by a hospital organization. The giveaways in this case are being operated not over the radio but through hospital staffs as a "service" to mothers who receive a gift package of baby items while still in the hospital.

This promotion scheme puts the hospital in the position of "endorsing several commercial products which may or may not have real merit," declares the Hospital Bureau of Standards and Supplies in New York.

Advantages to the manufacturer are having his product sampled and getting weekly lists of the families supplied including the babies' first names for personalized direct mail pieces.

The scheme will "lower the professional standing of hospitals in their communities," the Bureau warns its members.

Now in operation in New York, covering 53 hospitals and 52% of the births, the scheme will be in Philadelphia next, then in Baltimore, Boston, Chicago, Pittsburgh, Cleveland and Cincinnati.

The Hospital Bureau is a non-profit, co-operative buying organization operated by and for voluntary hospitals.

Science News Letter, October 1, 1949

The so-called "enrichment" of flour, required during the war and now still widely followed, means the addition of very small quantities of iron and the synthetic vitamins, niacin, thiamine and riboflavin.

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