

PUBLIC SAFETY

Shipped Isotope Strays

Package of cobalt-60 traveled some 1,500 miles on the outside of radiation-proof canister, exposing railroad workers and shipping clerks to radiation.

► **RADIATION HAZARDS** are not confined to fallout from atom bomb tests. A few railroad workers and shipping clerks learned this recently when they were exposed to radiation from a shipment of cobalt-60.

A package of this highly radioactive isotope, which is used in industry and medicine, arrived at the Convair plant in Fort Worth, Texas, attached to the outside of the lead, radiation-proof canister in which it was originally placed. It had traveled about 1,500 miles in five days and, according to a report in the November issue of the Texas Health Bulletin, it was probably handled several times from the time it left the shipper until it arrived on the receiving dock of Convair.

Geiger counter readings indicated 24 milliroentgens per hour about three feet away and about 13 roentgens per hour on contact.

"While not necessarily dangerous at a distance, the package of cobalt-60 presented a serious potential hazard to anyone who handled it for any period of time—for instance, someone sitting on the canister," the Bulletin noted.

The package was prepared and shipped by the National Bureau of Standards which is licensed by the Atomic Energy Commission. According to AEC spokesman, W. E. Kriegsman, the cobalt-60 left the National Bureau of Standards properly sealed in a lead container, a foot high and nine inches in diameter.

It had been set into the three-inch pocket in the center of the container and covered with the thick lid that fitted flush into the pocket, providing shielding to contain most of the radiation from the isotope package. The shipment was placed in a sealed box car. Somehow, in transit, the lead container, which the AEC said appears to have been defective, "mysteriously" opened. The cobalt-60 somehow emerged and when it arrived at Fort Worth was taped or tied outside the lead canister.

The canister was marked "Radiation—Caution." The carrier employees who handled it in transit had no reason to suspect that the radiation was not contained as it should have been.

There is no special supervision of radioactive material once it is shipped from a licensee. "It is not our problem then; it is a matter for the common carriers," the AEC said.

This means that in interstate shipments of radioactive materials, the Interstate Commerce Commission has the responsibility for safety.

The AEC said that their investigations show that none of the people who handled the unprotected cobalt-60 received exposures in excess of the standards set forth for atomic industry workers. However, recommended levels of exposure to ionizing radiation for atomic workers is about ten times greater than that for the general population.

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MEDICINE

Hormones Affect Nerves

► **ADD SEX HORMONES** to all the other things that can make you feel depressed on some days and elated on others.

Evidence that sex hormones can affect the body's central nervous system in roles unrelated to sexual functions has been reported by physiologists at the University of California, Berkeley.

The findings show that a potent female hormone known as estradiol has a marked effect on brain excitability, a fact that may help explain the well-known monthly ups-and-downs of feminine temperament.

Contrary effects produced on the brain by male and female hormones also point to a possible chemical basis for a woman's generally more excitable nature.

Moreover, the findings may shed additional light on clinical observations showing a relation between menstrual cycles and the incidence of seizures in some female epileptics.

Employing rats as test animals and a complex series of electroshock tests, the hormone experiments are part of a continuing project by Dr. Paola S. Timiras, assistant professor of physiology, and Dr. Dorothy E. Woolley, postdoctoral fellow.

Several groups of rats were studied separately in the experiments, which involved a series of electrically-induced convulsions comprising a standard scientific measurement of the levels of brain excitability.

The researchers reported that:

1. Females generally showed lower electroshock "seizure thresholds"—therefore higher brain excitability—than males of the same age and strain.

2. Injections of estradiol, the female sex hormone, lowered the seizure threshold in both male and female rats for as long as 20 days during treatment.

3. Brain excitability was lower in female

rats who had their ovaries removed before puberty.

4. The oestrus, or period of increased sexual activity, was marked by a sharp rise in brain excitability in female rats, a fact explained by the animals' increased secretion of estradiol during this period.

The research, supported in part by a grant from the National Academy of Sciences, is published in the current volume of "Excerpta Medica" (International Congress Series).

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GENERAL SCIENCE

Study on Motivation Of Youth in Science

► **HOW TO MOTIVATE** high school students in science by extracurricular activities, such as science clubs and fairs, will be explored at the annual meeting of the American Association for the Advancement of Science when it convenes in Denver, Colo., Dec. 26-31.

A special session to be held in the Columbine Room of the Shirley Savoy Hotel on Friday, Dec. 29, at 2:00 p.m., has been arranged by Miss Leslie V. Watkins, executive secretary, Science Clubs of America.

Opportunities for science-interested students in special institute programs, summer employment, research projects and the relation of extracurricular science activities to the school program will be discussed by specialists.

Discussion leaders will be F. P. Venditti, project engineer, Denver Research Institute; R. B. Feagin, director, University of Denver's Summer Training Program for High-Ability Science Students; Charles L. Bragaw, assistant to the director, Boulder Laboratories, National Bureau of Standards; and Richard S. Peterson, state science supervisor, Utah State Department of Education. Watson Davis, director, SCIENCE SERVICE, will preside at the meeting.

Science teachers and club sponsors, science supervisors, guidance counselors, science fair committee members, and Science Talent Search cooperators are being invited to attend this session of the AAAS and to participate in the discussion.

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MEDICINE

New Therapy Prevents Acute Kidney Failure

► **A NEW METHOD** that effectively combats acute kidney failure was developed at the Walter Reed Army Institute of Research, Washington, D.C.

Mannitol, a hydrogenated sugar fed intravenously, has saved many patients afflicted with kidney failure from death as well as decreasing their suffering. Previously, patients who survived acute kidney failure went through long periods of suffering and expensive medical care before kidney function returned, Dr. Kevin G. Barry, a physician at the research institute, said.

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