

- 475 Acute Accidental Superficial X-Ray Burns: An Interim Report on 11 Cases. R. D. Sweet.
Brit. J. Dermatol. 74, 392 (Nov. 1962).

A soft x-ray unit was incorrectly operated over a 6-day period with the result that 11 patients who should have received treatment with grenz rays generated at 10 kv. received, instead, x-rays generated at 50 kv. through a 0.05 mm. aluminum filter for a time appropriate for the delivery on the skin surface of 100 r. at 10 kv. The focus-skin distance (FSD) in 10 of the cases was 14.2 cm. One patient who was irradiated at a FSD of 20 cm. received a surface dose of 5,850 r. The reactions resulting in this patient were similar to those in the others. All patients had some form of chronic eczema, mostly of the hands and fingers. About 3 weeks after irradiation all treated areas were almost identically devastated. Between the 6th and 8th days the deepening erythema became tender to the touch and within a few hours spontaneously painful. The pain rapidly increased in severity during the next 2 or 3 days and it could not be modified by local applications including hydrocortisone, until the surface broke down. Swelling commenced soon after the area became acutely painful. Rings worn on the fingers had to be cut off. The first signs of healing were detected at the edges of the burnt areas by about the 21st day. Fingers and palms continued to heal at a steady rate, but not the backs of hands; here grafting of small areas will probably become necessary. The complete lack of the production of granulation tissue by the burnt dermis resulted in progressive slowing in the rate of healing the farther new epidermis had to grow from the edge of the burnt area. The considerable leukocytosis seemed dependent on dermal inflammation rather than on epidermal destruction. Treatment with large doses of prednisolone may have lessened pain and helped maintain function.

-- Cond. from J. Am. Med. Assn. References & Reviews

- 476 Radioactive Luminous Material Hazard. R. D. Clubb and T. J. Iltis.
Bur. Ships J. 12, 36 (Jan. 1963). (Bureau of Ships Journal*).
AVAILABLE FROM: U.S. Navy Department, Superintendent of Documents, Washington 25, D.C.
PRICE: \$1.75.

Direct radiation of radioactive luminescent material is usually minor, but radioactive particles can be a serious radiation hazard if taken into the body. Less than 1/100th of the strontium-90 in one type of marker represents the lifetime body limit for this isotope. Damaged or deteriorated luminescent markers or equipment can contaminate local areas with radioactive particles which can circulate in the air or be picked up on the hands or clothing of personnel. Whenever airborne radioactive particles are present, ventilation filters and electrostatic precipitators will collect and concentrate the particles and become radiological hazards themselves. Radium markers, even those without damage, can cause a build-up of airborne particles in the closed atmosphere of submarines through release of the gaseous decay product, radon. Safety precautions are discussed.

-- APCA Absts.

- 477 The Ingestion of Radium 226 in Food and Water in Great Britain. R. C. Turner.
Brit. J. Cancer 16, 200-208 (June 1962).

The author has made an elaborate study of how radium-226 gets into the body. It does so mainly by the food ingested and to a much lesser extent by the water drunk. The mean values, as measured by alpha-ray activity, are given as micromicrocuries per 100 g. weight; oatmeal and breakfast cereals head the list. The author investigated these contents among different social groups—professional, intermediate occupations, skilled, partly skilled and unskilled occupations. Throughout the entire range of these groups there was little variation, a result attributable to the large contribution of the total food taken by the high activity cereal foods. Turning to the radium content of water the author examined water from widely differing sources all over the country. The highest natural activity is shown in the water supplies of Cornwall, and otherwise it is found that the alpha-activity is broadly related to the mineral content of the water. Surveying the data as a whole it was found that the mean intake of radium-226 from food is remarkably constant at a value between 2 and 3 micromicrocuries per day per person, the cereal type foods contributing 60 - 70%. The mean daily intake from water represents only 5 - 6% of this; the one exception being Cornwall.

-- Bull. Hyg.

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