

- 478 An Evaluation of the Health Physics Problems from Thorium and Its Daughters in a Thorium Purification and Fabrication Process. C. M. West.
Health Physics 8, 279-297 (June 1962).

Evaluation of the health physics problems associated with thorium processing is complicated by the presence of the short-lived daughters of the decay chain. Direct radiation measurements and film meters were used to evaluate exposures to penetrating radiation. Measurements made during exploratory thorium purification and fabrication processes include direct counting, alpha- and gamma-spectrometry, and *in vivo* counting. Data illustrating and defining the daughter complications are reported. These data indicate that, in many cases, over 90% of the alpha activity noted by conventional counting techniques is due to the daughter elements. A realistic evaluation of radiological hazards associated with thorium processing should include isotope identification techniques as well as screening by direct radiological counting.

-- APCA Absts.

- 479 Roentgen Diagnosis and Incidence of Leukemia. G. Neumann.
Deut. med. Wochschr. 87, 90-94 (Jan. 12, 1962).

From 1954 to 1960, 10 fatal cases of leukemia were recorded in Stuttgart among tuberculous patients over 14 years of age, in a sample equivalent to 91,549 person-year. In contrast to these 10 cases, 5.86 cases of fatal leukemia were recorded in a corresponding sample of the general population of Stuttgart in the same period, or 233 cases in the total population. Leukemia in the tuberculous patients who were presumably exposed to more frequent chest roentgenography than control subjects, was one case of the chronic myeloid type, 4 of the acute myeloid type, and 5 of the lymphoid type. Only 2 cases were under 50 years of age and the sex distribution was 5:5. In none of the 10 cases was radiation exposure excessive, in fact, case records showed that their exposure was slightly lower than for the whole sample of tuberculous subjects. In view of this fact and because the incidence of leukemia is not statistically significantly greater in these subjects than in the general population, thoracic diagnostic radiography did not appear to favor development of leukemia in these subjects.

-- Nuclear Sci. Absts.

- 480 Radioactivity of Water. E. W. Taylor. Chem. Ind. (London) 1229 (July 7, 1962).
(Chemistry & Industry (London), Society of Chemical Industry, 14 Belgrave Square, London SW1 *).

The significance of radioactivity, both natural and man-made, is discussed in relation to drinking water supplies in Britain. Regular examination of the major surface drinking water supplies of Great Britain and Northern Ireland revealed that water contributes only a very small proportion of human daily ingestion of Sr-90. Monitoring for total beta activity was carried out by many water works and although this gave no indication of the individual radionuclides present, it gave prompt information of the general level of activity and whether or not pollution occurs from discharge of radioactive substances into a water course. The data obtained indicate that man's activities have had no significant effect on the general level of radioactivity of Great Britain's drinking water supplies.

-- Nuclear Sci. Absts.

ENVIRONMENTAL MEASUREMENTS

- 481 Estimation of the Density of Smoke in the Air. D. Rondia.
Intern. J. Air and Water Poll. 6, 353-375 (Sept.-Oct. 1962). French.

Three routine methods of estimation of a smoke sample, collected by filtration through fibrous media are described. The standard error is calculated and the results compared. A statistical computation of the differences, according to seasons and sampling sites, points to the

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