

PHYSICAL ASPECTS OF THE ENVIRONMENT

- 192 Long-Term Study Relating Temporary and Permanent Hearing Loss. J. Sataloff, et al. Arch. Environmental Health 13, 637-640 (Nov. 1966).

In 1961 a longitudinal study in a large paper plant was initiated in an attempt to answer certain questions concerning the effect of industrial noise on temporary threshold (TT) and on permanent threshold (PT). The authors were especially interested in determining whether permanent threshold shift due to noise could occur in the absence of temporary threshold shift measure within ten minutes after exposure and whether ears exhibiting some amount of temporary threshold shift (TTS) in turn incurred more permanent damage than did ears exhibiting no TTS. There are nine references.

RADIOACTIVITY AND X-RADIATION

- 193 Chromosome Studies on Women Formerly Employed as Luminous-Dial Painters. J. T. Boyd et al. Brit. Med. J. 1, 377-382 (Feb. 12, 1966).

Sixty-two former luminizers were found to have a radium body content ranging from not measurable to as high as 0.56 microcurie. A control population of 57 women was chosen within the age 15-64 years. Blood cultures were made, and the chromosome abnormalities in lymphocytes counted. It was found that the incidence of abnormal chromosomes was higher in the luminizer group, and that there was a consistent gradient when a grouping by body content of radium was made. The control group was older than the luminizer group. Consequently, the difference may actually be larger, since an increase in abnormal forms with age has been reported.

-- J. Occ. Med. Abstr.

- 194 Effects of Radiation on Learning Ability. J. H. Schulte and J. W. Schulte. Arch. Environmental Health 13, 662-663 (Nov. 1966).

In the past 20 years, the total production of radioisotopes in the United States has increased from less than 100 curies to more than two million curies. During the same period of time, the number of industrial plants using radioactive sources expanded from less than 100 to more than 7500. There are also more than 500 nuclear power reactors which have been constructed during this brief time and there are more than half a million people who are engaged in some form of employment which involves exposure to ionizing radiation. Soviet scientists have extensively studied the effects of radiation on cortical functions as they relate to conditioned reflexes, behavioral reactions, and electrophysiological responses. The purpose of this study was to determine whether or not alterations in the functions of some of the higher learning centers in the central nervous system could be demonstrated in animals exposed to sublethal doses of ionizing radiation. There are five references.

- 195 The Standard Man in Relation to Internal Radiation Dose Concepts. W. S. Snyder. Am. Ind. Hyg. Assn. J. 27, 539-545 (Nov.-Dec. 1966).

The extension of the Standard Man concept, insofar as radiation protection is concerned, is considered to provide a basis for estimation of dose when exposure of a population is in question. Discussion is organized around three main considerations: (1) data of a physical and chemical nature concerning the principal organs and tissues; (2) data of metabolic nature concerning body intake and excretions; and (3) ranges of individual variation that are not uncommon and means of allowing for these differences. There are 12 references.

-- Author's abstr.

- 196 Detection of Effects of Ionizing Radiation by Population Studies. G. Hems. Brit. Med. J. 1, 393-396 (Feb. 12, 1966).

By interpolation, one would expect any effects of the low population radiation doses produced by occupational exposure or variation in natural background to be of very low incidence. For statistical significance, then, large populations would be necessary to draw meaningful conclusions concerning this association. Calculation shows that the minimum population size of tens of thousands of man-years would be necessary to detect radiation-induced leukemia, and even more man-generations for the detection of radiation-induced dominant mutations. It appears unlikely that populations of sufficient size with sufficient exposure will be found. Additional problems would attend the selecting of a suitable control population.

-- J. Occ. Med. Abstr.

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