The Toxicity of Plutonium. Medical Research Council. (Pp. 38; 45p.) HMSO, 1975.

During the 1914-18 war, workers preparing luminous dials ingested small quantities (a few μg) of radium-226. By 1931 Martland was able to demonstrate beyond doubt the malignant reality of 'radium poisoning'. The nuclear reactors of the present day produce vastly larger quantities of radionuclides, among them plutonium-239 which resembles radium in its radiological properties. Moreover, the pattern of plutonium distribution on bone surfaces enhances the effective dose about 5-10 times. It says much for the system of radiation protection that hazards are in general so well under control, and in particular 'no cancer in man can be confidently attributed to plutonium'.

The maximum permissible values for body intake of radionuclides are subject to continual review by the International Commission for Radiological Protection. Recently it has been suggested that their recommendations considerably underestimate the hazards of plutonium-239, particularly if the material is inhaled in the form of 'hot particles'. In view of the importance of plutonium to the nuclear energy programme and the fact that the next ICRP review is not due for several years, the MRC committee was asked to prepare this summary of present knowledge about its hazards.

The report reassesses the plutonium hazards on the basis of the accepted system and concludes that only relatively small adjustments of the current standards may be needed. In particular the 'hot particle' problem is seen as the consequence of a theoretical model which finds scanty experimental support. Calculations suggest that the population genetic hazard is somewhat smaller than the risk of malignancy in exposed individuals.

In general the scientific argument appears to be balanced and convincing to the non-specialist, and yet a doubt remains. With what degree of confidence can those responsible for radiation safety apply the proposed limits in practice? Can they honestly say that the risks at the suggested exposure levels are indeed acceptable? I find this aspect of the report the most disappointing, especially because no safety factor is involved to cover the unavoidable uncertainties. For example, although errors in the relevant parameters are discussed the conclusions nevertheless appear to be based on 'best estimates'. More fundamentally, how can one be sure that there is not some flaw in the basic assumptions? The report makes much of the low cancer rate to be expected among radiation workers *as a whole*, even though few of them are exposed to anywhere near the permissible dosage and fewer still to the special risks of plutonium. It is cold comfort to the plutonium workers to know that their more numerous colleagues are so safe! Is there no information on the risks to plutonium workers? Surprisingly, the report has the argument both ways. 'It is unrealistic to estimate risks to the general public on the basis that everyone is exposed at the dose limit' (p.9). Is it not equally unrealistic to estimate the risks to plutonium workers (pp. 7-9) using rates which apply to radiation workers as a group?

M. J. DAY

NOTICES

XVIII International Congress on Occupational Health

The XVIII International Congress on Occupational Health will be held at the Hotel Metropole, Brighton, England from 14-19 September 1975. For all information relating to the Congress please write to: XVIII International Congress on Occupational Health, Conference Services Limited, 43 Charles Street, Mayfair, London W1X 7PB.

International Symposium on Industrial Toxicology

An International Symposium on Industrial Toxicology will be held at Lucknow, India from 4-7 November 1975.

Further information may be obtained from: The Director, Industrial Toxicology Research Centre, Mahatma Gandhi Marg, P.O. Box 80, Lucknow 226001, India.

International Conference on Environmental Mutagens

The Second International Conference on Environmental Mutagens will be held in Edinburgh from 11-15 July 1977 under the patronage of HRH The Duke of Edinburgh, KG, KT. Further information may be obtained from: The Secretary-General, Dr P. Brookes, Institute of Cancer Research, Pollards Wood Research Station, Nightingales Lane, Chalfont St Giles, Buckinghamshire HP8 4SP.

Rehabilitation Needs

A research programme is currently being undertaken at the Management Centre of the University of Bradford into the employment problems of professional people who become physically disabled during the course of their professional career. The programme is concerned with the rehabilitation needs of such people and the services that are currently available to them.

Rehabilitation services in the United Kingdom are more directly concerned with the semi-skilled, skilled, and clerical worker. It is suggested that rehabilitation for the professional, regardless of profession, should reflect the need of the professional to practise professional thinking during the time he or she is unable to work. In other words, as well as the usual rehabilitation services there should also be 'education rehabilitation'.

All those with any knowledge of rehabilitation of professional workers are asked to write to the Management Centre, University of Bradford, Emm Lane, Bradford, Yorkshire BD9 4JL. Replies will be treated in strict confidence.