
In this report a WHO Study Group points out that in order to prevent overt disease or disablement, the criteria of health impairment, if possible, be based on early reversible changes preceding the occurrence of manifest signs and symptoms. The purpose of the Group was to review measures used in periodic medical examinations of workers to detect early health impairment, and to make recommendations to Governments and WHO on the development of this field of preventive medicine. The Report does not propose standards, but only preliminary guidelines for use in occupational health practice.

The effects of work environment or workload vary in the extent to which they affect the worker's functional capacity, and the Report discusses the relevance of some of them to health and the differences in response that may be expected in different subjects following similar exposure. In discussing health impairment it introduces the concept of overload and underload; the former representing the presence of hazardous factors, such as toxic agents, noise, or fibrogenic dust, and the latter representing the absence or deficiency of environmental factors such as lack of sufficient muscular activity, deprivation of communication with other people, lack of variability in work tasks and lack of intellectual challenge. It is admitted that relatively little is known regarding the health effects of underload.

The Group considered the validity of tests to be applied in periodic health examinations of workers and agreed that their sensitivity and specificity should be quantitatively determined. Criteria for the selection of tests and the use of cross-sectional and longitudinal studies are reviewed. Attention is also drawn to areas in which further knowledge is needed.

To be critical, this Report attempts to cover too much in too technical a manner in too small a booklet. This concentration together with the fact that it is written by a committee does not make for easy reading. The booklet is not well balanced; some parts are abbreviated, for example the health effects of psychological factors are dealt with in 15 lines whereas the early detection of health impairment due to carbon disulphide is allotted eight pages. It is surprising that a WHO booklet published in 1975 does not give biological measurements in SI units.

However, I consider that this Report has an important contribution to make and is essential reading for those physicians responsible for planning occupational health programmes which include the early detection of health impairment.

E. S. BLACKADDER


In modern civilisation the increase and diversification of technological processes represent an important characteristic. Knowledge of technological processes in general and in detail will help various experts in the field of occupational health and safety to evaluate and prevent risks and hazards in modern industry. On the other hand, technical experts engaged in the industry have also to be aware of these risks and hazards and to avoid them by proper measures in the planning and development of technological processes.

This book by Professor Candura provides essential information for both categories of experts. Its material is organised in such a way as to give a very clear picture on each point. The author describes in detail technological processes in various branches of industry, pointing out the risk of injury or of dangerous exposure to physical and chemical agents in each phase of production, and the book thus comprises a link between technology and occupational safety and health.

The chapters are concerned with the technological processes of all important branches of modern industry such as primary materials, extraction, energy production, ceramics, chemicals, metallurgy, plastics, textiles (natural and artificial), dyes, the food industry and even printing.

Processes are described clearly using chemical formulae and diagrams. For each step risks and hazards are listed briefly, and diagrams of machinery help to indicate possible sources of risk.

Undoubtedly this book would be of use to all experts in the field of occupational safety and health and also to technical industrial experts; it is a pity that only those with a knowledge of Italian will be able to benefit from it.

DUŠAN DJURIĆ


The introduction reflects the prevailing feeling of unease. 'Plutonium is one of the most controversial elements which nature has given to man. It elicits feelings of hope and awe on the part of those who see its benefits . . . and feelings of concern or fear to those who see only the potential harm'. Legitimate public concern will not be allayed by Dr. Harold Agnew's heavy emphasis on the decisive role of competent technical people who don't panic.'

The Symposium is concerned, first, to assess the quantities to be dealt with. By the end of the century the projected annual plutonium production is of the order of 100 tonnes with activity 10^6 curies (US figures are given throughout). Though the comparison may be facile, it is salutary to reflect that the maximum permissible body burden (for occupationally exposed persons) is of the order of 10^-7 curies and that the half-life of plutonium-239 is 24 000 years. Strict and long-term control of dispersal of the material is therefore essential. An historical account of the development of techniques for confinement of contamination is followed by a look forward to the problems of managing 25 x 10^6 litres of solid high-level waste, producing altogether 200 megawatts of heat.

There are eight papers on plutonium in man, chiefly concerned with toxicity and the setting of safety standards, either by calculation of radiation dose to a critical organ or alternatively by the more empirical methods of the chemical toxicologist. The inestimable value of continued study of persons with measurable radium and plutonium burdens is stressed.

The last six papers deal with plutonium in the environment and include recent studies at Bikini and Eniwetok atolls. Reoccupation of the islands may result in significant dosage, perhaps 80 rems in 30