intends to take more than a passing interest in the subject.

* Knowing of my own involvement with this subject many medical students and doctors ask me what they can read as background material: Miles and Mackay is my answer.

D. N. WALDER

Early Detection of Health Impairment in Occupational Exposure to Health Hazards: Report of a WHO Study Group. Technical Report Series 571. (Pp. 80; 8 Sw. fr.) WHO: Geneva. 1975.

In this Report a WHO Study Group points out that in order to prevent overt disease or disablement the criteria of health impairment should, 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 uses 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

Elementi di Tecnologia Industriale a uso dei Cultori di Medicina del Lavoro. (Elements of Industrial Technology of use to Experts in Occupational Health). By Francesco Candura. (Pp. 823; no price stated). Aurora: Pavia. 1975.

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

Plutonium—Health Implications for Man: Proceedings of the Second Los Alamos Life Sciences Symposium, May 1974. Edited by J. W. Healy. (Pp. 639; £10.00.) Pergamon Press: Oxford.

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 10^8 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 25×10^6 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 Enewitok atolls. Reoccupation of the islands may result in significant dosage, perhaps 80 rems in 30

years. Plutonium is not at present an important contributor, though it will remain as the chief contaminant after the fission products have decayed away.

In general the papers represent typical applications of the science of health physics to what is recognised to be one of the major problems of nuclear energy. The general reader will perhaps be comforted by Dr H. M. Parker's closing remark that acceptance of risk is 'a societal problem and all that we (scientists) can do is to place our concepts of the real risk before the public, honestly and forthrightly, and hope (for) . . . agreement on these risks sometime before we get to the nuclear economy of the year 2000'.

M. J. DAY

Clinical Toxicology of Commercial Products: Acute Poisoning. By R. E. Gosselin, H. C. Hodge, R. P. Smith and M. N. Gleason. 4th Edition. (Pp. 1783; \$54.00.) Williams and Wilkins Co: Baltimore.

Anyone familiar with previous editions of this book will welcome the appearance of the fourth edition. Still under the same management, this compendious reference work should prove as popular as its predecessors.

Like previous editions, the book is divided into seven sections and it is essential for readers to understand how it is set out if they are to realise the full potential of the work. In order to make this clearer, the authors have incorporated a flow chart opposite the fifth page which guides the uninitiated through the (coloured) sections.

Section I contains a brief and unremarkable account of the first aid and emergency treatment of acute poisoning. This is a gentle introduction to the detailed systematic account of supportive management in Section IV. Both are written clearly, with the needs of practising clinicians in mind.

Sections II, III, V and VI are the real meat. Section II gives alphabetical and numerical indices (Chemical Abstract Service Registry Number) to short accounts of the toxicology of over 1300 substances, or classes of substances. Each entry categorises the compound into one of 80 'reference congeners' which are fully described in Section III. Each reference congener typifies a group of related compounds, stressing toxic signs and symptoms as well as appropriate programmes of treatment. Important refer-

ences are also included. Section V is an alphabetical listing of 17 000 commercial products. Each entry details the manufacturer, and the ingredients, with an asterisk against ones likely to produce major toxic effects. Section VI describes the usual constituents of substances of unknown generic origin, and Section VII gives the addresses and telephone numbers of American manufacturers.

This book is obviously of the greatest value for American medicine. The fact that the commercial index is derived from compounds widely used in the United States reduces the value of Section V for physicians on this side of the Atlantic. However, British physicians involved with industrial medicine, toxicology and poisoning will find most of it appropriate and much of it useful.

MICHAEL D. RAWLINS

Poison Detection in Human Organs. By Alan Curry. 3rd Edition. (Pp. 356; \$21.50.) Charles C. Thomas; Illinois. 1976.

Poisoning is now a major cause of acute admissions to hospital, and an important cause of death. This book is a laboratory manual for the detection and quantification of poisons, particularly drugs. The first part of the book is of a more general nature dealing with emergency toxicology, analyses of liver, alimentary tract, brain and kidney, as well as abuse screening. The second part is an alphabetical list of poisons with methods for their determination and information on the interpretation of the results.

The book contains some disappointments. The methods advocated rely heavily on spectrophotometry, the specificity and sensitivity of which are now very suspect. There is little mention of modern mass spectrometric and mass fragmentographic methods of identification and analysis, radioimmunoassay, and polarography. The volume will be of value to forensic scientists; its value to clinical biochemists will be less because of the increasing realisation that analytical data have a very limited place in the management of acute poisoning. Only for those drugs where specific methods of treatment exist, can such laboratory data be regarded as important. For the large majority, clinical management, irrespective of the quantitative findings, represents the only effective means of preserving life.

MICHAEL D. RAWLINS

Occupiers' Liability Act 1957 and the Liability of Hospitals. By B. Williams. (Pp. 69; £6 soft cover, £8 hard cover.) Ravenswood Publications: Beckenham. 1976.

This is one of the uniformly excellent series of Case Studies on Health Service Management Law and Practice, and fully maintains the high standard set by earlier volumes. The subject dealt with is a complicated one, the complications introduced by such factors as the danger on hospital premises being produced by independent contractors, or the damage being suffered by such classes of persons as children who can't read warning signs, or trespassers. It is not easy for a lawyer to judge whether what is plain to him is made equally plain to non-lawyers, but as far as this lawyer can judge, the treatment of the subject in this book is a model of clarity and comprehensiveness.

The method used is that of setting out an imaginary case of an accident occurring and dealing *seriatim* with the legal and factual points which will or may arise. The points are dealt with by posing direct questions, such as is the Hospital liable to visitors to houses and flats let to staff? The answers are direct and clear (so far as the state of the law allows) and are illustrated by copious citation of actual cases in the reports. The author is to be congratulated on producing a work which not only prepares students for the examinations of the Institute of Health Administrators, but which will also be useful as a reference book for administrators faced with accidents which actually arise in their daily work. The only reservation is, as usual with this series, the high price.

D. W. ELLIOTT

Environmental and Industrial Health Hazards: A Practical Guide. Revised Reprint. By R. A. Trevethick. (Pp. 214; £5.75.) William Heinemann Medical Books: London. 1976.

This reprint of a book designed for lay and medical staff in industry and for postgraduate medical centres comes only three years after the first publication which was reviewed in the *British Journal of Industrial Medicine*, (1974) 31, 80. It has now been extended and brought up to date. It has the same format as before with facing pages dealing with a particular hazard; the right-hand page in black type is a Hazard Data Sheet for lay