There is no reference to radiation of frequency above 300 GHz, although ionising radiations, for example, have a significant effect on human tissue. The author's limited perspective is illustrated by his statement 'electromagnetism is invisible', and makes the book of doubtful value to nuclear scientists!

The author's claim to present a 'dispassionate and objective view of the subject' is not endorsed by the style in which the book is written. Personal anecdotes ('I can personally attest to its (diathermy's) effectiveness') are used freely, and a rather colourful style ('would you believe . . .') gives the impression occasionally not so much of a scientific text as of a popular magazine. There are several examples of rather loose writing such as, in a reference to the Bordeaux machine, the phrase '... human treatment of cancer' which should presumably be '... treatment of human cancer'.

The chapter on 'Regulatory Definitions' contains a number of minor misprints and the misleading statement that the most hazardous band of frequencies is from 50 to 60 Hz. Elsewhere, electrical field, field strength, field intensity and electrical charge potential are used synonymously.

This book may be recommended as a readable introduction to the effects of electromagnetic fields on man, to those who want a general acquaintance with this subject. Otherwise, it leaves much to be desired.

G. HARDING

Health Hazards from New Environmental Pollutants: Report of a WHO Study Group. Technical Report Series 586. (Pp. 96; 8 Sw. fr; \$3.20) WHO: Geneva. 1976.

In this book the usefulness and limitations are considered of methods of forecasting environmental health hazards arising from developments in the chemical industry. The main substance of the report is in four sections; the first two of these deal with laboratory methods of identifying hazards and identification by observation of the health of the population, and with the type of information required. There is always a limit to the resources available to deal with the increasing number of environmental problems.

The next section draws attention to those problems considered to be of high priority such as the effects of power production, metals, photosensitisers and pesticides. In the last section fifteen recommendations are listed. These are addressed to both the

WHO and member states. Many of the recommendations could well be considered by individuals, university departments and industrial organisations with a view to organising their own contribution.

The remaining two-thirds of the book consists of seven annexes in which the high priority topics are considered in greater detail. Among this information there is an account of the relevant data banks in the USA, and the tabular presentation of health and environmental hazards associated with alternative forms of power production is especially useful.

The international study group which prepared this report collected information from many sources. The result is a readable and thought-provoking account that contains something of interest to most people concerned with the environment. More particularly those involved in the study and control of occupational medicine will wish to consider this report. Some will be informed by the report, others will find it a useful reminder and yet others may use it as a check-list for areas of concern and action.

D. H. NAPIER

Experimental Studies of Shiftwork. By P. Colquhoun, S. Folkard, P. Knauth, and J. Rutenfranz. (Pp. 279; illustrated; DM. 39.0). Friedr. Vieweg & Sohn: W. Germany. 1975.

This collection of 25 papers (all in English) summarises the proceedings of the 3rd International Symposium on Night- and Shiftwork, held in Dortmund in 1974, under the auspices of the Subcommittee on Shiftwork of the Permanent Commission and International Association on Occupational Health. The first symposium (1969) was especially concerned with shiftworking and morbidity; the second (1971) placed emphasis on its psychological and social aspects. The meeting reported here concentrates 'on laboratory and field studies of the various forms of shiftworking'. Papers mainly concern sleep deprivation and disturbance, and the adaptation of physiological and performance functions under both laboratory and field conditions.

In their introduction the authors suggest that before one can confidently advise individuals and organisations on shiftworking problems 'it is necessary to study shiftwork first in the laboratory under controlled conditions so that we can establish basic principles'. And they add that they 'would like the symposium to be seen as a step towards the formulation of

a programme of laboratory research'. Although they do also stress that such a programme should be 'relevant to real-life problems', it would be interesting to know to what extent their view was wholly accepted by participants.

An alternative view is that concurrently with experimental studies in the laboratory, equal research time and effort should be devoted to carefully-conducted studies under working conditions outside. A supplementary line of attack might be the regular collection, preferably in a form standardised internationally, of details of current practice in the arrangement of working hours. At present we have little systematic information of this kind. The justification for this dual approach is that problems differ in their amenability to laboratory or outside-laboratory investigation. This applies whether one's concern is with particular effects of particular shift patterns, or with different forms of individual adaptation.

In this connection it is also worth remembering that, in this country at least, we are dealing with two broad categories of personnel on abnormal arrangements of working hours. The first consists of those in such process industries as glass and steel manufacture, who are employed fairly consistently on shiftworking, and even on shiftwork of a particular type, for a considerable period of their working lives. But for very many more, experience of shift- and night-working is a much more inconsistent and erratic business, partial or seasonal, or involving perhaps the odd emergency night shift and the occasional marathon stint. It may be that a laboratory approach is more suited to a study of the problems of the second category than of the first.

Since discussions following papers are often the best part of meetings of this kind, a somewhat fuller account of their main directions would have been welcome here. Conclusions and suggestions for future action are rather tantalisingly compressed into a single page.

R. SERGEAN

Handbook of Industrial Toxicology. Edited by E. R. Plunkett. (Pp. 536; £17.50). Heyden & Son Limited: London. 1976.

In the preface to his book, the author states that 'this is still a handbook intended as a quick reference guide', and it is exactly what he states. The print is large and the information given is concise, clear, easily understandable and up to

date. Approximately 500 or more names of industrial chemicals, drugs, insecticides and other compounds are arranged alphabetically. Under each name all the essential data are listed under clear sub-headings: synonyms, route of entry into the body, toxicity, treatment and recommended precautions.

Doctors and others in the field of occupational medicine and hygiene and those concerned with the treatment of possible intoxications, will find this a very useful reference book.

I find it difficult to understand the rationale behind the inclusion of ingestion as a route of entry for some compounds (liquids and even powders and flaky solids) and omitting this route for others. Systemic absorption from the stomach did not seem to be the sole reason. Nor is mention made of the hazard from aspiration of petroleum hydrocarbons (especially those of low viscosity) following ingestion, a hazard most occupational physicians agree is greater than any systemic effect following absorption from the stomach.

The treatment that is recommended following ingestion is gastric lavage. Many authorities would disagree that this is the only method of treatment for ingestion as the author implies. No mention is made of induction of emesis with ipecacuanha (especially in children), the length of time following ingestion, or even that aspiration of the stomach contents must be avoided.

These criticisms apart, the book serves, its purpose very well as a quick reference guide for all those concerned with occupational medicine who may be called on to give advice on the adverse effects of many industrial compounds.

R. C. LEMON

Industrial Audiometry. By M. E. Bryan and W. Tempest. (Pp. 56; illustrated; £2.25) Published by the authors. 1976.

The Foreword opens with the tale of Joe Wilson who went deaf because of the negligence of his employer, and who successfully claimed damages in Common Law. This story might have been better told in a Trade Union paper. Much later on, the objectives of the booklet are stated as 'a practical guide for . . . anyone who may be involved in the conservation of hearing, or with the assessment of hearing damage due to noise. It is hoped it will also serve as a guide to those who have to make decisions . . .'. The former aspect has been covered quite well, but

far less assistance is forthcoming for those who have to make decisions.

Topics such as the choice of hardware, calibration and maintenance of equipment, and the effects of background noise and other factors on accuracy have been dealt with thoroughly, but these facts are readily available from standard texts. Audiometric threshold data have been quoted relative to International Standard throughout, without mention of British Standard data for earphone types in common use in this country. The specimen pre-audiometric medical questionnaire is exhaustive, but some explanation of how the factors listed can affect the hearing might have engendered more enthusiasm in those who have the tedious job of asking the actual questions. Taking audiometric thresholds by the method of limits has been described in some detail, which should help to overcome some of the slipshod practices encountered all too often in industry. The instruction to take care 'to ensure there is no collapse of the ear canal' has been given, but how is this to be effected when the ear canal is not visible? The detection of nonorganic hearing loss, including malingering, has been mentioned, but more detail would have been welcome as this problem will almost certainly become more widespread with the increasing scale of industrial injuries benefits and Common Law litigation.

Only median data have been given for the effects of presbycusis (hearing loss due to advancing age), whereas statistical spreads would have been more useful in deciding whether a given audiogram was within the normal range for a particular age. The difference between typical audiometric patterns produced by exposure to continuous or steady-state noise on the one hand and exposure to impact or impulse noise on the other has not been mentioned in the text, yet is apparent from certain figures. How should the already deafened person who requires to hear warning signals for the maintenance of safety be managed? With ear protection, the signals will not be audible, yet without protection the hearing loss will worsen. Discussion of this important question has been omitted.

Considering the relatively high price, the booklet is poorly presented and produced, and the standard of printing left much to be desired in the review copy. Several trade photographs have been used which have not reproduced well. Finally, the authors tend to confuse their role as members of the academic staff of a Uni-

versity with their private consulting interests.

W. I. ACTON

Underwater Medicine. By S. Miles and D. E. Mackay. Fourth edition. (Pp. 330; illustrated; £10.00) Adlard Coles Ltd: St. Albans. 1976.

Four editions and one reprinting in 14 years is perhaps the best objective measure of the success of this book. In the current edition Admiral Miles has been joined by Captain Mackay, formerly Senior Medical Officer, Underwater Medicine Department, Institute of Naval Medicine, Alverstoke, Hants.

In the last decade there has been an unprecedented increase not only in the number of men involved in professional diving but also in both its depth and duration. This has been accompanied by a great expansion in the associated research fields with an accompanying outpouring of scientific papers particularly in the United States. One result of all this activity has been an awareness among a large number of doctors who have been drawn into the fringes of the subject that they should acquire some basic knowledge of underwater medicine if only to satisfy their own curiosity.

As explained in the preface to this Fourth Edition, the book is not a reference textbook but rather a selection of aspects of the subject that seem to be firm and of use for future foundations.

It would be wrong to give the impression that the book is only about diving; it is about the underwater environment, understanding it, the hazards associated with it and how to come to terms with it. Chapters on drowning, water safety, submarines and marine animals are included. On looking back at the first edition it is interesting to note that there was no mention of saturation diving or submersibles and habitats. Instead of the in-phrase 'life support equipment' the corresponding chapter was just called 'underwater equipment'.

It was my intention when I began to read this book to note points which I could criticise and discuss in detail when I finally came to write my review. At the end I had so few notes which in retrospect looked so trivial that I have decided to give this book what can only be its due: that is, sound praise as a splendid and interesting overview of underwater medicine. Its contents should be known to every general practitioner and it should be learnt and digested by every doctor who