those areas which the author regards as uncharted.

This review will no doubt introduce the topic of shiftwork to a new and nationally wider circle of readers. It will certainly serve to underline to them the range and complexity of the problems involved, but they should not regard it as the final or latest word on the subject.

R. SERGEAN

Toxicology of Pesticides. By Wayland J. Hayes, Jr. (Pp. 580; \$39.50). Williams & Wilkins: Baltimore. 1975.

Unfortunately toxicology has never been a discipline that has attracted many able scientists from the more glamorous aspects of pharmacology, yet it can be easily argued that the development of selective pesticides has been of much greater benefit to mankind than all the components of the drug revolution used in the treatment of human disease. This enormous benefit has also been obtained at much less cost! As pointed out by the late John Barnes, more agricultural workers die each year from tractor accidents than the total number poisoned by pesticides since they have been in common use. Most of such cases were undoubtedly due to gross misuse.

This book is a magnificent testament to the knowledge that has been developed into their proper use. It begins with the best introduction I know on the benefits from pesticides in modern agriculture and an assessment of the problems posed by pesticides. This introduction is followed by three chapters on the general principles of toxicology as applied to pesticides, with particular reference to dosage, metabolism, and nature of chemical injuries produced. A further three chapters are devoted to studies in man and these are followed by diagnosis and treatment of poisoning, and an excellent synopsis on prevention of poisoning which should be of great practical use to all doctors involved in occupational medicine. Finally, and appropriately, there is a chapter on the effects of pesticides on wildlife, which should be mandatory reading for all who have read *Silent Spring*.

This book is an excellent, up to date and exhaustive study of modern pesticides. As an example, it includes all measurements of pesticide levels in human breast milk. It is produced by a photographic process which is almost as good as old-fashioned printing, but its price of £22 is unbelievable for just over 500 pages. It should certainly

be available for reference in all departments concerned with occupational medicine.

R. KILPATRICK

Travel Medicine: A Handbook for Practitioners. By Anthony C. Turner. (Pp. 250; £4.25). Churchill Livingstone: Edinburgh, London, and New York. 1975.

The author writes 'The purpose of this book is twofold. Firstly to inform the GP of advice he can give his patients before they travel; the advances in preventive medicine with regard to tropical diseases have probably been greater than in any other branch of medicine. Secondly to help the GP in his differential diagnosis of these exotic diseases'.

The first chapter on 'pre-travel immunisation' and the second on 'pre-travel and in-travel advice' cover part of the first aim. The history both of international sanitary regulations and of the discovery of the aetiology of motion sickness are given, although why a general practitioner would wish to advise his patients of this is not clear. Much useful information is in fact contained in these chapters. In the section on travel sickness no doses are given of 'the most popularly used drugs' and mgm is used in place of mg for the one dose that is later given.

Further chapters on climate and acclimatisation, diseases of insanitation, and insect-borne diseases complete aim one.

In the second part of the book, post-travel symptomatology, heat disorders, fevers, alimentary and urinary tract infections, skin problems, bites, stings, venereal diseases, other infections both parasitic and non-parasitic are discussed. The advice given on the diagnosis and management of LGV using the Frei test and bed rest sounds rather old fashioned. Fitness to travel by air is a useful chapter.

The book concludes with a good review of medical assessment for living in warm climates.

Appendices are given on the vaccination requirements (WHO, January 1975) and on the climate of various countries, the location of yellow fever vaccination centres around the world, admitted malarious areas (WHO, 1972), overseas medical costs, and useful addresses.

Some of the material in the appendices is available elsewhere (WHO) and will date rapidly. It seems a pity to add to the cost of the book by including such

information. A bibliography and index complete the book.

This book will be useful to those with little experience in this field, but will not compete with Brian Maegraith's book *Exotic Diseases in Practice* in the geography of disease, in useful clinical pointers or in the clinical aspects of exotic disease.

In summary, a useful book for reference, which could also help nursing staff. It is expensive even by today's prices and is written in rather turgid English. It is a pity that the companion volume *The Traveller's Health Guide* was not available for review at the same time.

A. WARD GARDNER

An Introduction to Epidemiology. By Michael Alderson. (Pp. 226; £4.50). Macmillan Press Ltd: London. 1976.

People concerned with occupational health will recognise that, as in many other branches of medicine, epidemiology 'the study of the determinants of the incidence and prevalence of disease' is playing an ever-increasing part. Although this book is not specifically aimed at occupational health physicians it does provide a general introduction to the way epidemiologists think and tackle problems, and a guide to the tools of their trade.

The chapter titles: the Role of Epidemiology; the Use of Mortality Statistics; Other Sources of Routine Data; Cross-sectional Studies; Retrospective Studies; Prospective Studies; Intervention Studies; and Medical Care Studies, conceal the emphasis that is placed on practical aspects of the subject. Examples such as the rise in daily deaths following the fog in December 1952 and the rise in cigarette consumption coupled with a rise in deaths from lung cancer throughout this century are used to illustrate particular epidemiological techniques. After describing the examples each chapter is then concerned at a general level with the important aspects of study design, methods of analysis and the interpretation of the data.

Those readers who will want to use this book as a foundation for epidemiological investigations are likely to find the omission of definitions and technical explanation a little frustrating. The approach results in considerable forward referencing which occasionally leads to a nonexistent or wrong subsection. There is, however, an extensive list of references at the end of each chapter and these provide the basis for further reading on most aspects of

epidemiology. The value of the advice given will probably only become apparent later in the epidemiologist's career and he may well want to refer back to this book.

The general physician and student gain most from this emphasis on practical examples. The relevance of epidemiological thought will be brought home to them before they have been frightened off by the technical aspects of the subject. Having read this book they should be better qualified to understand the requirements of the epidemiologist and subsequently to interpret their findings for management and workers.

A. J. FOX

Methods Used in the USSR for Establishing Biologically Safe Levels of Toxic Substances. A collection of papers presented at a WHO Meeting in Moscow, 12-19 December 1972. (Pp. 172; 30 Sw. fr.). WHO: Geneva, 1975.

In this volume is described the approach in the USSR to the assessment of hazards of chemicals to occupational and general populations. Considering such an extensive problem covering all types of chemicals, many biological responses, and exposure *via* the lung and the oral route, it is not surprising that the main emphasis is on the philosophy of approach. The volume makes interesting reading and has the following contents: Permissible Limits and Threshold of Harmful Action; Chemical and Biological Activity; Toxicometry and Prophylactic Toxicology; Accumulation and Adaptation Processes; Long-Term Effects; Central Nervous System Effects; Species and Sex Differences; Establishment of Safe Levels for Communal and Occupational Hygiene; Safe Levels of Fibrogenic Aerosols, and the Use of Data on Human Health and Environmental Conditions.

Perhaps for obvious reasons the principles adopted by the USSR and other nations for the derivation and evaluation of the safe dose, maximum allowable concentrations or threshold limit values, are sometimes stated in stark contrast. In addition there is much discussion throughout the volume of the various indices of toxicity. The industrial hygienist will find much to interest him even if he cannot agree with some of the propositions (for example, the principle of the limiting index on page 127).

It is perhaps inevitable that, in a volume of this size, there is little in the way

of hard data although there are many references to literature unfamiliar to many of us. In the preface the hope is expressed that international agreement on common principles and methods for establishing permissible levels of harmful substances in the environment may be attained. In a planned society such as the USSR, presumably there are no fundamental problems about record linkage of health records, etc. A major contribution to improvement of the protection of man from chemical hazards would be international agreement on epidemiological methods for the assessment of accuracy of previous evaluation of MACs or TLVs rather than the standardisation of the methods of evaluation. Comparison by recognised and acceptable epidemiological methods of the incidence of occupational disease in the conditions of work in different countries would be most valuable. Perhaps in the future we may have a similar volume concerned with this potentially soluble problem.

W. N. ALDRIDGE

Chemicals in Food and Environment. *British Medical Bulletin*, 1975, Vol. 31, No. 3. (Pp. 87; £3). The British Council, 65 Davies Street, London W1Y 2AA.

This issue of the *British Medical Bulletin* illustrates very well the orientation and the scientific methodology which is common to both occupational and environmental medicine. Many of the concepts first formulated in the field of occupational medicine earlier this century are now being used by workers in the wider field of general environmental pollution. A series of short well-written articles illustrates the variety of scientific disciplines, from molecular biology to epidemiology, which are essential to solve the problems posed by chemical contamination of food and the environment. Not all of these hazards are related to modern technology, as pointed out by Drs Crampton and Austwick. There are chapters on the cumulative metals lead, mercury and cadmium and a short review by the director of the London Poisons Unit on chemical hazards in the home. The assessment of hazards from low doses of toxic substances over long periods and the problems related to the establishment of a safe level of intake are discussed by the late J. M. Barnes. Appropriately, the first article in the series considers the acceptance of risk in hazardous occupations and compares this with the risks of everyday life. Sir Edward

Pochin draws attention to the substantial risks which may be taken by the individual daily which are dependent on motivation and which are usually taken without any knowledge of the magnitude of risk involved. However, from the point of view of the health of the community it is important to have the best available quantitative estimates of the levels of risk regarded as acceptable in situations where such risks may be unavoidable. While the analysis of risk or hazard involves scientific discipline, it is society as a whole which has the responsibility of setting criteria for safety and which can define benefit.

Finally, I would like to draw attention to Professor Higgins' article on the contribution which can be made by epidemiology. He comments on the remarkable lack of information on which dose-response relationships may be based, even under the relatively controlled conditions of occupational exposure. He makes a plea for the systematic collection of data from which levels of exposure can be related to outcome.

There are chapters in this thought-provoking issue of the *British Medical Bulletin* which will be of interest and relevance to all physicians in occupational medicine, and the publication is strongly recommended.

G. KAZANTZIS

Occupational Medicine: Principles and Practical Applications. Edited by Carl Zenz. (Pp. 944; illustrated; £33). Year Book Medical Publishers Inc: Chicago. (Distributed in UK by Lloyd-Luke Ltd., London.)

There are few authoritative, extensively referenced textbooks concerned with the whole field of occupational medical practice and for this reason alone this book is likely to find a place on the shelves of many of the larger libraries. Although claimed to cover the whole field, there are some surprising omissions and coverage of a few subjects is very brief. Nevertheless the book is an impressive one, not merely because of its size and weight, but in the array of 44 authors including the editor, who have produced many up-to-date reviews on their chosen subjects which are of undoubted instructional value. Although predominantly written by Americans, particularly from Illinois, and of the greatest relevance for their home market, five of the authors are Scandi-