Book reviews

through, but makes a useful reference volume for all those concerned in the diagnosis and treatment of low back pain, although the reader unfortunately will not find out why manipulation works.

The book is well printed on good paper with numerous tables and diagrams; too many in some chapters, in my opinion. It should, however, certainly be on the library shelves of all academic centres.

A. ZINOVIEFF

Rheumatism in Populations. By J. S. Lawrence. (Pp. 572; illustrated; £22.) William Heinemann Medical Books Limited: London. 1977.

This book will keep occupational health physicians up to date in a subject in which, because of its diffuseness in the scientific journals, it is difficult to keep abreast, especially for those of us in industry. The 16 chapter headings cover mainly the most important rheumatic diseases, but include diseases of bone, immune deficiency diseases, disc disorders and occupational aspects of rheumatic diseases, the latter two being of particular interest to physicians in industry. Disc disorders are discussed in detail over 30 pages; their early history is given, disc degeneration is defined and the standard radiographs of cervical and lumbar grades are well reproduced. The prevalence and geography of disc disorders in Britain is discussed, the significant relationship between symptoms and radiographic change is outlined, and the differentiation between disc degeneration and disc prolapse is maintained. Under Occupation and Disc Disorder none of the papers from the occupational medical literature such as those by Jackson, Blow or Wilson, are quoted, but only those from rheumatology. The author falls into the trap frequent in back pain literature of working out the pathology to fit the painful symptoms without giving any objective supporting evidence, e.g. "As a result the interspinus ligament readily tears or becomes partially stripped from its attachment to bone when subject even to minor stress. This gives rise to an inflammatory reaction which may last for a week or more" (p. 84).

The chapter on the occupational aspects of the rheumatic diseases (28 pages) is well balanced and includes discussion of sickness absence due to rheumatic complaints, a comparison of

trades (mainly in terms of back complaints), pre-employment exclusion of men with radiographic evidence of disc degeneration and an account of various industrial surveys carried out by Lawrence, Duthie, Anderson and others. In summary, it is essential reading for anyone about to embark on rheumatic research, whether clinical or epidemiological, and an excellent account of all the field surveys carried out by the Arthritis and Rheumatism Council's Units, though the world literature is also well covered. However, it is an expensive book and perhaps too detailed to recommend for the bookshelf of every occupational health physician.

J. R. GLOVER

The Epidemiology of Road Traffic Accidents: Report of a Conference, Vienna, 4-7 November, 1975. WHO Regional Publications, European Series No. 2. (Pp. 38; 6 Sw. fr.) WHO: Copenhagen. 1976.

Road traffic accidents are a major public health problem, though few Ministers of Health admit it. Road traffic accidents are the cause of one-half or more of all deaths among young males in the 15-24 age group in the European Region of WHO.

This and the increasing severity of injuries sustained and the growing numbers of young people grossly disabled should be the serious concern of all public health authorities. However, the Department of Health and Social Security in the United Kingdom has only recently even mentioned the problem (in *Prevention and Health: Everybody's Business*), leaving the responsibility for prevention entirely to the Department of Transport.

The fundamental problem is the lack of useful epidemiological data which link the details of road traffic accidents collected by the Police with those of the injuries received in these accidents and which are recorded by hospital authorities. This is a classic problem of lack of record linkage. The report examines in detail the difficulties of obtaining adequate record linkage and of defining criteria of accident severity which will be acceptable in different countries. The report by experts from various countries in the European Region examines, within the limitations of the data at present available, the roles of age, visual acuity, medical

conditions, psychological and sociological factors and the use of alcohol and other drugs in the causation of road traffic accidents.

The report also reviews the value of health education in reducing the risk of involvement in road traffic accidents and deals with the use of legislation to modify adverse aspects of the interaction between road users' behaviour and environmental conditions.

This report is of value to occupational physicians in two ways: as an analysis of a problem in epidemiology and as a reminder of the many factors which may affect the chance of a member of one's staff having a road traffic accident.

P. A. B. RAFFLE

Environmental Health Criteria 2: Polychlorinated Biphenyls and Terphenyls. (Pp. 85; 10 Sw. fr.) WHO: Geneva. 1976.

Polychlorinated biphenyls (PCBs) have entered the sphere of public debate in the last five to ten years, largely as a result of two unrelated circumstances. One was a severe outbreak of poisoning in Japan, resulting from eating food cooked in rice oil contaminated with PCBs containing a relatively high proportion of a particularly toxic impurity tetrachlorodibenzofuran. The other is increasing awareness of the extent to which PCBs are accumulating in the environment, largely through analysis of tissue samples taken from many different kinds of wildlife as well as from man, but also from analysis of river waters, the atmosphere, and soil.

PCBs are used in technological applications of considerable value to society. Chemical inertness, resistance to heat, non-flammability, low vapour pressure, and high dielectric constant have made them particularly suitable for use in transformers in the electricity distribution industry, and in capacitors for domestic electrical equipment.

As far as occupational health is concerned, these products have caused little or no occupational disease, except for some chloracne in the early years of manufacture. Although there is some experimental evidence of carcinogenicity, there is no epidemiological evidence that PCBs have caused cancer in man. Acute poisoning from accidental food contamination can readily occur with any chemical product, so the major public issue is that of environmental persistence and

accumulation. It is indeed the very properties which make PCBs so useful to the electrical industry that lead to persistence and accumulation.

This booklet, published under the joint sponsorship of the United Nations Environment Programme and the World Health Organization, provides a useful review of the environmental and toxicological properties of polychlorinated biphenyls and terphenyls and analytical methods. It is factual, sensible, and balanced. The only possible criticism is that perhaps it fails to differentiate adequately between the higher chlorinated compounds and the lower, in so far as there exist substantial differences, both in toxicity and in biodegradability.

ALEXANDER MUNN

Hygiene Standard for Impulse Noise. No. 5 of a Series produced by the British Occupational Hygiene Society Committee on Hygiene Standards. Published in *Annals of Occupational Hygiene*, (1976), 19, 179-191. Price £2 from Mr P. J. Hewitt, Honorary Business Secretary, BOHS, University of Bradford.

This document reviews the evidence which has become available since the drafting of the earlier British Occupational Hygiene Society *Hygiene Standard for Wide Band Noise* (published 1971) and the Department of Employment *Code of Practice for Reducing the Exposure of Employed Persons to Noise* (published 1972). The conclusion reached is that the equal energy concept (i.e. a 3 dB(A) correction for every halving or doubling of exposure time) is applicable, and the above documents may be extended to include impulse noises which show a peak level of up to 150 dB(A) followed by a near-exponential decay envelope. This includes virtually all impulse noise of industrial origin but not, for example, explosive noises such as those from firearms or weapons fired outdoors. In this connection, it is perhaps unfortunate that the title had not been made more specific by the inclusion of the word 'industrial'.

A useful Appendix includes methods of measurement and calculation of equivalent continuous sound level (L_{eq}) for impulse noise. It stresses that conventional sound level meters, graphic level recorders and statistical distribution analysers (of the electromechanical type) are not suitable

for measuring discrete impulses spread in time. It must be hoped that this will further discourage a practice, which seems fairly widespread, of deriving so-called average levels by applying arbitrary duration factors to 'slow' sound level meter readings, as the result is inevitably an underestimate of the real situation. Some elaboration of techniques and practical use of suitable instrumentation in the form of a following paper or review would have been useful, and the early publication of such guidelines would still be welcome if the Subcommittee on impulse noise could be reconvened.

This is an important publication covering an area of industrial noise which previously has not been adequately considered by standardising authorities and the like. However, it is essential that with the present state of knowledge, extrapolations are not made to situations beyond the limits specified.

W. I. ACTON

Protection of Workers against Noise and Vibration in the Working Environment. (Pp. 74; 17.50 Sw. fr.) ILO: Geneva. 1977.

'This code of practice was adopted at a meeting of experts convened by the ILO', runs the summary on the back cover. These beginnings have resulted in a rather theoretical document with the liberal use of adjectives such as 'suitable', 'adequate', 'qualified', 'competent' and so on, but generally without practical guidance as to what is suitable or adequate, or who is qualified or competent.

The basic exposure criteria adopted are generally in line with current scientific thinking. A 'warning limit' of 85 dB(A) and a 'danger limit' of 90 dB(A) are set for noise with the use of equivalent continuous sound levels derived according to the equal energy concept for shorter periods. Unfortunately, the only tabulated figures are derived according to the American 5 dB(A) rule, and although they are intended to be specific to tractors, their inclusion can only lead to confusion on the part of readers not versed in the fundamentals of acoustics and the history of the situation. Utilisation of the draft International Standard for whole body vibration exposure is recommended.

A number of statements are made which appear to be without scientific foundation,

and for which substantiating references are not given. For example, loss of weight and anaemia are listed as results of exposure to noise, women are said to be especially susceptible to vibration, and youth (under 18 years) and age (over 50 years) are considered to be medical contraindications for vibration exposure.

For practical guidance, it would seem better to follow Codes of Practice such as those published by the British Health and Safety Executive and similar authorities. Nevertheless, this is a book which ought to be read by industrial medical, safety and personnel officers, both as a useful check list for their own plan of action and also as an aid to appreciating the arguments and perhaps legislation they may have to face in the foreseeable future.

W. I. ACTON

Law on Accidents to Health Service Staff and Volunteers. By W. A. J. Farndale and Susan Russell. (Pp. 72; £5.50 soft cover, £7.50 hard cover.) Ravenswood Publications: Beckenham. 1977.

This book, which is No. 7 in the series *Studies in Health Service Management Law and Practice*, seeks to provide a guide to the legal implications of accidents at work, especially to health service staff and volunteers. It is intended for all employers and employees, particularly those in the health service, as well as students, trade unionists, lawyers and lecturers. It is, perhaps, scarcely surprising that in only 60 pages of text the book does not fully achieve such an ambitious aim.

The method which the book adopts of prefacing each chapter with a question and following it with explanatory text, leads in this instance to a degree of repetition which is not entirely justified by the claim in the introduction that repetition is valuable in teaching. Probably the majority of those reading the book will be using it for reference rather than for learning. Moreover, some of the matters which are repeated are of no great importance, such as the statement that neither National Health Service hospitals nor the Department of Health and Social Security take out an employers' liability insurance. This in no way affects the right of an injured employee to compensation. The purpose of employers' liability insurance is simply to ensure that the employer can pay the compensation.