Book reviews

have occurred had no major consequences, the potential hazards of nuclear plant remain, and continuing attention to emergency planning and exercising are essential in order to maintain the present position.

For those directly concerned in the study of accidents in the nuclear industry these Proceedings represent an invaluable group of papers which are well presented and are up to the usual high standard of the publications of the International Atomic Energy Agency in Vienna.

J. A. BONNELL

Noise in Foundries. (Pp. 32; £1.00). Health and Safety Executive. HMSO: London. 1978.

This report, from the Joint Standing Committee on Health, Safety and Welfare in Foundries, is directed at the operators of existing foundries and not the designers of new machines. In consequence it contains little by way of technical innovation. Its real value lies in the collection together of data and information relating to a specific industry in a form which is readily accessible to, and usable by, those persons responsible for health and safety in that industry.

Four general foundry processes are identified as always being hazardous, together with fettling and dressing which are considered as non-foundry operations. The noise control measures described are inevitably of the 'wrap it, box it or stuff it' approach. Actual examples and results are given which are well within the capabilities of most maintenance departments or fitting shops. Some ideas are remarkably practical and economic, such as the use of old conveyor belting for lining steel chutes and the application of expansion silencers to pneumatic exhausts to avoid clogging by sand. The inclusion of details of some schemes which have failed is especially useful.

Criticism of a report based on established practices is difficult, but a few points were noted. The use of a tripod to mount a sound level meter may avoid the relatively minor errors due to reflections from the observer's body, but can lead to untypical estimates of the exposures of mobile personnel unless a very large number of spot readings are taken. When dealing with personal exposures as opposed to machinery tests, the noise pattern over the whole work area should always be investigated. Noise-attenuating enclosures should not be placed 'as near

as possible' to the source, as acoustic coupling can occur due to the springiness of the intervening air, particularly with low frequency sources such as reciprocating compressors. Rather than just making numerous references to the 1972 Department of Employment Code of Practice, an opportunity has been missed to update some sections, and particularly the Appendices, in the light of subsequent developments. There is inconsistent use of the terms 'ear' and 'hearing' protection, even within the same paragraph.

Although the report has no legal status under the Health and Safety at Work etc. Act, it will undoubtedly acquire considerable significance as a statement of what is 'reasonably practicable' in both Statute and Common Law. It is therefore an important document for all concerned with foundries and allied operations.

W. I. ACTON

Legal Aspects of Medical and Nursing Service. (2nd Edition). By M. H. Whincup. (Pp. 88; £8.50 hard cover, £6.50 soft cover). Ravenswood Publications Ltd: Beckenham. 1978.

The first edition of this short book, volume 5 in the series Studies in Law and Practice for Health Service Management, appeared under the slightly different title of *Legal Rights and Duties in Medical and Nursing Service*.

One of the complaints of lawyers is that their books go out of date so quickly, but it is still unusual to see the second edition of a book on the law appear only two years after the first. Anyone who already possesses a copy of this book need not, however, feel constrained to rush out and buy this new edition. There have been few changes in the law within the scope of the book, and most of these have been minor. The majority of the text and the arrangement of the book also remain unchanged, the book's three chapters dealing with employment, the provision of safe working conditions and the civil liability of those in the medical service. The only major area of law which is likely to affect doctors and nurses which is not covered by the book is that of the criminal law.

Despite all this, while remaining very compact the book has increased notably in size. This is partly through the adoption of a new format, but the number of cases referred to has nearly doubled, and the text contains many more examples.

For instance the section on dismissal of employees, which in the first edition consisted mainly of a statement of principles, now contains several new pages illustrating their application.

Although most of the changes are small there can be little doubt that this new edition improves on the already high standard of the last, which it matches in accuracy and readability: and with no increase in price it offers comparatively better value.

R. A. PEARCE

The Birth of Industrial Nursing. By Irene H. Charley. (Pp. 224; £3.75). Baillière Tindall: London. 1954, reissued 1978.

There is a considerable amount of too-often repeated history in the early pages and large slabs of quotation and cosiness throughout this reissued book that are not, at first glance, encouraging. The temptation to cast it aside, however, should be resisted because reading it is well worth the effort.

Since 1954, when the book was first published, occupational health nurses have appreciated just how much Miss Charley and her contemporaries did for present-day occupational health practice. They were able to rally the support of physicians and others outside nursing to establish the need for training because they were committed and enthusiastic. They also seem to have been able to look clearly at other branches of nursing to observe all that they could offer to what was then called Industrial Nursing.

It makes depressing reading in parts because some of the simple problems discussed in the 1930s and 40s have still not been solved. Naturally, a few of the ideas expressed are now outdated but a number of the suggestions have been accepted and proved.

It would have been useful to bring the book up to date if only to show how slow the progress has been in occupational health nursing in the last 30 years.

Occupational health practitioners, whatever their training, should read this account of the courageous efforts to establish occupational health nursing on a sound professional basis. It is a lesson in gracious co-operative effort and explains something of what nurses in work places really aim to be.

D. RADWANSKI

The Effects of Inorganic Lead on Behavioural and Neurologic Function. (Pp.

92; \$2.75). Technical Report, US Department of Health, Education and Welfare.

This is the last in a series of reports by Repko and his colleagues in which they have presented the results of neurological and behavioural studies in workers with low-level lead exposure, that is, those whose blood lead concentrations were all below 80 $\mu\text{g}/100\text{ ml}$ (3.8 $\mu\text{mol/l}$). As far as the neurological studies are concerned, their findings are similar to those reported by others in that they were able to demonstrate a slowing in peripheral nerve conduction velocity compared with controls not exposed to lead.

They also report that the lead workers performed less well in tests of visual reaction time, that their pure tone auditory thresholds were higher, and that tone-decay occurred earlier than in the controls. None of these differences was very great, and those involving visual reaction time were significant only when the right hand was used; with the left hand the lead workers actually did slightly better than the controls.

The authors conclude that their studies demonstrate the adverse effects of occupational exposure to inorganic lead on certain functional capacities. However, while there seems no room to doubt that the slowing in nerve conduction velocity is a real phenomenon, its significance in real terms is by no means well established. For example, we know nothing of the natural history of this change, whether it advances remorselessly towards clinical neuropathy if exposure continues, nor if it improves when exposure ceases. Moreover, it is not necessarily the case that a slowing of nerve conduction velocity of 5–9 m sec^{-1} is harmful since there are, in the normal population, people whose conduction velocity is slowed by a greater margin than this and yet perform perfectly well in behavioural tests.

The slowing in nerve conduction velocity did not correlate with blood lead concentration, urinary ALA and erythrocyte protoporphyrin concentration, or with red cell ALA-D activity. This was also the case with the results of the behavioural studies.

The results of the behavioural studies in lead workers have not been confirmed by other authors; one recent very comprehensive investigation in this country failed to show any difference between cases and controls, although nerve conduction velocity was slowed (E. Mitran,

Effects of Acceptable Levels of Lead Absorption on Human Performance, PhD Thesis, University of London, 1978).

There are serious difficulties in interpretation in this kind of work, when small differences are being measured using techniques which are relatively insensitive. Moreover, close matching of cases with controls is by no means easy, and in the present study was not as precise as one would have liked.

The question of whether lead causes serious alterations in behaviour cannot yet be said to have been answered satisfactorily. In particular it is important to take heed of the caveat contained in one of the earlier Repko reports (but not the latest) that research should try to determine whether any changes which may be found are due to lead or to other factors in the environment.

H. A. WALDRON

Occupational Mortality: Decennial Supplement England and Wales, 1970–72. Office of Population Censuses and Surveys. (Pp. xviii + 224; £4.75). HMSO: London. 1978.

This, the twelfth decennial supplement on occupational mortality, differs from its predecessors in several respects. For the first time, deaths are tabulated at all ages from birth to 74. Further innovations include the analysis of deaths by socio-economic group and for married women by their own as well as their husband's occupation, standardisation by social class as well as by age, and the inclusion of abridged life tables. Whereas previous supplements have consisted largely of tables with a relatively short introduction, the present volume is essentially a commentary on the basic tables and includes many additional tables and diagrams which aid the interpretation of social class and occupational differences in mortality. The basic tables themselves are published separately on six microfiches each containing 98 frames and can be obtained from the OPCS at £1 per fiche or £5.45 for the set of six. Photocopies of individual frames are available from the OPCS at the cost of copying and an index to the fiche tables is available free.

The decennial supplement contains nine chapters. Chapter 1 is an introduction to occupational mortality studies while Chapter 2 describes how the data are collected. In addition to defining and discussing the relative merits of various

measures used to summarise mortality such as the Comparative Mortality Figure (CMF), the Standardised Mortality Ratio (SMR) and the Proportional Mortality Ratio (PMR), this chapter shows how the significance of these measures can be assessed. Chapter 3 is concerned with the limitations of the methods used and includes a discussion of the types of bias which arise in measures of occupational and social class mortality due to the different methods of recording occupation and social class at the census and at death registration. Even if the reader continues no further, these first three chapters are well worth reading as an introduction to the methods and problems associated with the collection and analysis of occupational mortality statistics.

Adult male mortality is discussed in Chapters 4 and 5 which deal with social class and occupation respectively. Chapter 6 considers general associations between mortality and occupation such as selection of an occupation, general pollution and smoking habits, while Chapter 7 discusses the mortality of women and children. Chapter 8 is concerned with general topics such as trends over time and regional variations. It also gives abridged life tables from age 15 for each social class, socio-economic group, occupational group and unit. The final chapter is a summary.

Differences between the social classes are found at all ages with mortality from most causes increasing from group I to group V. However, variations occur within the social classes and for example, in social class I self-employed professional workers have consistently higher death rates than those who are employees. As well as confirming previously reported associations the 1970–72 supplement has uncovered new associations, some of which may have plausible explanations. Butchers, for example, had high death rates from cancer of the lung and maxillary sinus. Their exposure to sawdust may account for this as similar excesses are found in woodworkers. Similarly, high death rates from lung cancer in electroplaters and dip platers may be related to their exposure to chrome.

The supplement includes an extensive bibliography and a list of useful definitions at the beginning. Inevitably there are typographical errors but many of these will be corrected in the second printing as will the erroneous formula given on page 15 which was similarly misrepresented in the previous decennial supplement.