BOOK REVIEWS

Principles of Exposure Measurement in Epidemiology. By BRUCE K ARMSTRONG, EMILY WHITE, RODOLFO SARALLI (Pp 351; price £40) 1992. Oxford: Oxford University Press. ISBN 0 19 261 705 2.

The main intended target for this book, as stated by the authors, is graduate students in epidemiology. The material is drawn largely from a course at the University of Washington, Seattle. Thus there is a tendency to relate to circumstances and examples in the United States, although with an international spread of authorship general application, at least across industrially developed countries, is assured. It is indeed a substantial textbook covering most of epidemiology as applied to occupational health and general population studies, not just exposure measurement. This is in fact interpreted very broadly, and deals with the classification of attributes such as occupational history, job type, smoking habits, or dietary factors in more detail than the measurement of environmental concentrations or personal exposures to specific contaminants. This accords with the authors' intention to confine themselves to "principles", although helpful examples are given throughout. The highly successful studies on smoking and health are cited in several different contexts, and one might add that despite limitations of recall and truthfulness current and even lifetime exposures through active smoking can be assessed more readily than those due to almost any other agent.

The twelve chapters present a coherent story although with a certain amount of overlap. The types of "instruments" used, ranging from questionnaires to biochemical observations are described first, drawing attention to differences between cumulative doses, exposure rates and absorbed doses, and the need to consider times over which doses may have been applied. Much attention is paid to errors in exposure measurement or classification, and to validation. These sections introduce considerable amounts of mathematical statistics, designed however to be applied by the non-specialist without recourse to the derivation of formulae.

The importance of reducing measurement errors is stressed with guidance on achieving this by increasing the number of measures per subject or otherwise, leading into practical details of quality control in the collection and processing of data.

Chapter 6, on the design of questionnaires, is central to the theme of the book, and might logically have been placed earlier. It opens with a quotation from Bradford Hill, pleading for the number of questions in any survey to be the minimum necessary. There are salutary reminders about the style of language, to be understandable and acceptable to the subjects concerned, without risk of bias, and problems inherent in translating questionnaires into other languages are discussed. A further chapter deals with the conduct of personal interviews, with the intriguing comment that female high school or college

graduates of 30 to 40 years of age perform best as interviewers. Alternative approaches through the use of existing records or diaries are then considered and one might need to stress that for diaries motivation of the subjects is important.

Two chapters are devoted to the measurement of exposures through determinations on the body, body fluids, or the environment. Detailed discussion of these topics is considered to belong to the fields of industrial or environmental hygiene and treatment here is limited to aspects affecting the epidemiological approach. This material, however, provides a good foundation for the hygienist before tackling practical monitoring work.

Discussions on response rates in surveys and on ethical issues complete this comprehensive handbook. Each chapter includes a bibliography, extending to 1991, and most have a summary at the end identifying the main points considered. Individual students may consider it to be fairly expensive, but it should certainly have a long term place in epidemiology and occupational medicine teaching departments.

RE WALLER

Legislative Action to Combat the World Tobacco Epidemic, 2nd edition. By RUTH ROEMER with a chapter by A DAYNARD. (Pp 297; price Swiss Francs 59, US\$53.10 (in developing countries Swiss Francs 41.30)) 1993. Geneva: World Health Organisation. ISBN 92 4 156 157 2.

This is not a book for gentle bedtime reading, but a comprehensive reference work dealing with a much broader range of topics on tobacco use than the title implies. This second edition brings the picture up to 1992, a time when new controls were emerging in Europe through EC directives and while these are referred to there are a few inconsistencies about the present position.

In the foreword attention is drawn to the alarming spread of the tobacco epidemic across the developing world, and one purpose of this book is to document the lessons learnt and the action taken in the industrialised countries. An increasing spread of legislative action around the world during the 1980s is reported and although not spelt out explicitly there is an impression that concern over the effects of passive smoking on health has been one stimulus.

There are 15 chapters, opening with a review of information on health risks, drawn largely from the series of reports of the US Surgeon General and including a large bibliography. The second chapter discusses the role of legislation, and a series of annexes at the back of the book provides highly detailed tabulations of action in individual countries, World Health Assembly resolutions, reported effects of legislation on tobacco consumption and examples of health warnings in use in selected countries. Although legislation rather than lesser action is advocated, the point is made that effective implementation is crucial and it is noted that nobody seriously suggests a total ban on tobacco use. A further chapter examines the case for different forms of control over advertising, citing the experience of countries where partial or total bans

have been introduced. The impact of health warnings on packets, and the declaration of yields of tar and nicotine are also discussed.

A quotation from Sir George Godber, "There is no hope of finding a safe cigarette . . ." opens the chapter on the control of harmful substances. This considers the pros and cons of reduced tar policies and provides a valuable review of the control of additives in a number of countries. Some of the points made here, however, are not wholly up to date nor technically accurate. Limitation of smoke components such as tar, nicotine, and carbon monoxide is recommended as a valuable component of control measures.

Consideration of economic strategies covers the dilemma of subsidies for tobacco growing as well as the impact of tax and price on consumption. The development of smoke free workplaces, as well as public places is seen to have accelerated rapidly in recent years, and the complementary roles of legislation and voluntary action are examined.

Other topics covered include preventing young people from smoking—a key issue for future trends in diseases related to smoking, action in health education, and the use of litigation as an instrument towards tobacco control. The challenge to developing countries is pressed home. The growing frequency of diseases related to tobacco in China, the Indian subcontinent, and Latin America are noted and the fact that products exported from the United States (and elsewhere) do not have to carry health warnings or tar and nicotine declarations.

This is very good value for the library bookshelf in a wide range of governmental, educational, occupational, and charitable institutions, and with the accelerating rate of change in this field a third edition may well be called for before long.

RE WALLER

Medical-Legal Evaluation of Hearing Loss. By RA DOBIE (Pp xiv + 381; price £60.50). 1993. 115 Fifth Avenue, New York, NY 100036: van Nostrand Reinhold. ISBN 0442 012 667

This volume meets a need for a single reference work in a complex field and, to this reviewer's knowledge, it is unique in its multidisciplinary coverage. It deals with the basics of the ear, the hearing mechanism, the testing of auditory function in straightforward, pathological, and difficult cases, the relations of cause to effect, the quantitative determination of hearing disability, the legal background, and the roles of the various players in the contest between plaintiff and defendant where negligence or breach of statutory duty is alleged for a hearing loss. The author is at pains to point out that the book is not solely about hearing loss induced by noise; other disorders are prominently discussed and are to be treated by a common assessment procedure. In the nature of things, however, the greatest emphasis is upon noise, and useful chapters are included on hearing conservation and the characteristics of hearing loss induced by noise.

The book should be compulsory reading for every professional called upon to provide testimony in a compensation claim for