Dangerous Properties of Industrial Materials. 3rd ed. By N. Irving Sax. (Pp. 1251; 326s. 6d.) London: Reinhold Publishing Corporation. 1968.

The third edition of what has become a virtually indispensable reference book for doctors and scientists in industry comes five years after the second edition and 12 years after the first. By using smaller type in the earlier chapters it has been possible to keep this very large book to about the same size yet to incorporate more material.

The general layout is similar to that of the previous edition. The bulk of the book is devoted, as before, to an exhaustive list of chemicals with the toxic hazard rating of each and a short note on counter measures where applicable. The hazard is assessed on a simple rating code and the cross reference to other similar materials is very helpful. The value of this information, the ready accessibility and the ease of reference has resulted in the wide use of 'Sax', and it is to be found at the elbow of most people throughout the world who have to deal with toxic materials and who can afford to have it. One still feels the lack of references to original sources, but to have included even the most important would have made the book too large and unwieldy.

The more discursive chapters on toxicity, radiation hazards, air pollution, allergic disease in industry, and control of the environment have been brought up to date – to the time of going to press – which is the most one could hope for. Some inaccuracies in the earlier editions have been corrected, for example, aniline is no longer wrongly described as a carcinogen, but some remain, for example, the reader could still be confused between byssinosis and mill fever.

From the time it first appeared this book must have been constantly on the desk of most industrial physicians and occupational hygienists and may be by the bedside of some. The third edition is a worthy and timely successor to the first two and, while it may be too heavy, in weight and in content, for bedtime reading, it will continue to be much consulted and referred to by even the most expert. The less expert should regard it as a rough guide to toxicity and should supplement it by consulting original papers, more extensive works or experienced colleagues. With this reservation, one can only add that to be without 'Sax' is to be at a disadvantage.

T. S. SCOTT

Questionnaire Design and Attitude Measurement. By A. N. Oppenheim. (Pp. ix + 298; 18s.) London: Heinemann Educational Books. Reprinted 1968.

Much loose survey work, generally of the inadequately planned 'fact-gathering' type, is conducted by medical and social researchers including practitioners of occupational medicine. Defects stem from an unscientific approach often allied to operational deficiencies, woolly thinking, and failure to understand the logical restrictions of 'epidemiological' evidence. Any book which deals intelligibly, scientifically, simply yet thoroughly with the formidable problems surveys raise is a welcome addition to the sparse literature available in assimilable form to the non-specialist.

The present textbook aims 'to provide guidance for the design of questionnaires and to discuss various techniques for the measurement of attitudes and their analysis', but in fact ranges wider and examines informatively most contingent aspects of survey design and operation. It contains nine logically sequenced chapters each with a short selected reading list; a 30-page appendix comprising mainly useful 'occupational prestige' scales; and an adequate mixed subject and proper name index.

Particularly strong are those chapters dealing with questionnaires (chap. 2-4) and attitude measurement and associated techniques (chap. 5-7) which are (or should be) vital to any survey which puts even simple questions to individuals. Less satisfactory, though by no means unsuccessful, is the last chapter – The Quantification of Questionnaire Data – where the author tackles the formidable, perhaps impossible task of explaining complex data handling and analytical methods in everyday terms: in fact, those parts of the book dealing with statistical treatment are generally less convincing than the others. Everywhere points are clearly explained and illustrated with well-chosen examples, and the lesson of pilot studies is forcefully taught.

Throughout, the writing is lucid and coherent in the now familiar mid-Atlantic idiom. This may grate on some ears, but the author displays easy mastery of the style and allows it to lapse only rarely into such jargon as '[decisions include] for each variable the order of questions within each question sequence, such as funneling, quintamensional design, and factual versus attitudinal opening' (p. 25).

This is an excellent book and can be enthusiastically recommended to all planning survey work. To such researchers a *cri de coeur*: consult this book before, not during, the survey; and cultivate the simple scientific approach admirably re-stated in chapter one.

P. FROGGATT

The Physiology and Medicine of Diving and Compressed Air Work. Edited by P. B. Bennett and D. H. Elliott. (Pp. 528; 150 illustrations; 160s.) London: Baillière, Tindall, and Cassell. 1969.

Rarely does a reviewer have the opportunity to state categorically that the book he is considering is a landmark in the field with which it deals. This is such a book. It has its imperfections and the architecture might not be completely satisfying but it will be very many years before any author can claim to have written an adequate paper on diving and compressed air work without referring to this monumental work. The Ministry of Defence (Navy) is fortunate to have on its staff a civilian scientist, Dr. Bennett, and a uniformed medical scientist, Surgeon-Commander Elliott, who can together attract the eminent contributors to round out the subject of the book. Naturally it reflects in major part the interest of the two editors, inert gas narcosis and decompression sickness, but other aspects are covered to greater or lesser degrees. Altogether 23 writers, as well as the two editors, contribute to this volume. It is a good point to see an article by some civil engineers on the compressed air environment in such a volume as it reminds all

concerned that the whole problem of the field is the assistance needed from science to allow the means so that a productive end can be attained. (It is a blemish that there is no comparable section from the commercial diving firms.) This point is emphasized in the foreword by Professor Lambertsen when he mentions the desirability of 'tight and fruitful collaboration between science and operations'. Professor Fenn writes on the physiological effects of hydrostatic pressures which are generally much greater than is envisaged at present for practical work or even current research but his article is a fascinating glimpse of the problems of the future.

Any person in this field devotes sections to the dynamic and mechanical problems of respiration and respiratory apparatus; to oxygen and carbon dioxide toxicity; and to miscellaneous items such as speech distortion. This volume is no exception, but it differs in that foremost authorities of long practical experience write these sections in a way which, while not pandering to fellow experts, allows a novice to follow the difficulties and keep them in perspective. The article by Kylstra on the feasibility of liquid breathing and artificial gills, while killing stone dead the flights of fancy of recent other writers, is an interesting source full of ideas for further work. The special value of the book lies in the six articles on decompression theory. Each author puts the case for his basic theory and its application or development in a plain manner so that for the first time an interested reader can see the arguments for and against each one between the same covers.

The editors have tried to disarm criticism in their foreword by specifying topics which are not covered, such as heated suits, but this is slightly ingenuous in an expensive but well-produced tome such as this. Indeed a greater attempt for completeness' sake would have well justified an extra increment on the cost. Temperature regulation is vital physiology to the diver. Skin diving and subaquacub sport is a large industry which deserves some attention, especially when one of the authors has had much experience with the problems of aero-embolism (even in the limited definition suggested by Professor Walder in his article) and diving accident investigation. The problem of bone necrosis is serious and worrying and, one would have thought, deserves an illustrated chapter of its own instead of roughly one page. The symptomatology of decompression sickness is treated in a mixed manner with the relatively unimportant (considering the possible sequelae) cutaneous and lymphatic signs receiving considerably more space than the cerebral effects. Even doctors experienced in diving accidents have labelled cases 'hysterical' in the past and delayed or amended treatment, sometimes with a dramatic outcome, and inexperienced general practitioners have had to deal with most bizarre patients.

It seems to be impossible to produce a book with such a tremendous amount of abbreviations and units of measurement without a few slips, and this book has a few errors in spelling and unit transformations – roughly one every 80 pages, which must be nearly a record low number. The different nationalities of the authors leads to a refreshing contrast of styles in language, and the use of unfamiliar words such as 'dissolution' for the evolution of gas from a liquid (by an Irish author) keeps the reader alert for the form as well as the content of the articles.

However, it must be repeated that this book is of such stature that the blemishes and faults can be regretted and disregarded. No reader, however well versed he is in the various topics covered, can fail to gain advantage from almost every chapter and yet no intelligent reader, however inexperienced he is, will find himself out of his depth. The book is highly recommended as a personal buy for all workers in the field and a 'must' for any self-respecting reference library.

D. E. MACKAY

NOTICES

Tape Course in Occupational Health

The Medical Recording Service (Royal College of General Practitioners) with the T.U.C. Centenary Institute of Occupational Health (London School of Hygiene and Tropical Medicine) offer a tape course: (a) to describe to general practitioners, hospital and public health staff some aspects of occupational medicine, and some of the problems that may arise from the patient's occupation, (b) to introduce doctors and nurses already engaged in occupational medicine to some of the problems in industries other than those with which they are familiar.

The course consists of 13 talks, illustrated with reference notes, slides, etc. The tapes are available on standard 5 in. reels at 3½ in./sec. which can be used on any domestic tape recorder or cassettes type C90. The slides are standard 2 × 2 in. which can be used on any slide projector. No special equipment is needed.

The course is available complete with necessary non-returnable literature at an inclusive rate of approximately £6 6s. 0d. for the complete course. Enquiries giving the probable number taking the course should be made to: Royal College of General Practitioners, Medical Recording Service, Kitts Croft, Writtle, Chelmsford, Essex. Telephone: Writtle 316.

4th International Congress on Ergonomics

The Fourth International Congress on Ergonomics will be held from July 6 to 10, 1970 at the University of Strasbourg (France). It will be organized by Professor B. Metz (official Congress-languages: French, English, German).

The suggested scientific programme is as follows:

I. *Four plenary sessions:* Each major topic will be introduced by a paper from an invited speaker.

- (1) Safety and reliability in industry.
- (2) Relevance of physiological and psychological criteria to 'Man-Machine Systems'.
- (3) Remote handling and anthropomorphic machines.
- (4) Machine perception and pattern-recognition.

II. *Four general sessions with panel-discussions:*

- (1) Ergonomics and architecture.
- (2) Ergonomics in agriculture and forestry.
- (3) Ergonomics and social factors.
- (4) Ergonomics of instructions and forms.

III. *Sixteen informal sessions:* About 90 informal short papers can be submitted.

For more details and for application forms (these will be sent between October 1 and 31, 1969) please write to: Congrès International d'Ergonomie, C.E.B.-C.N.R.S., 21, rue Becquerel, 67- Strasbourg-3, France.