BOOK REVIEWS


In this monograph, Dr. Cooper considers in detail one important aspect of respiratory equipment: resistance to breathing. Although he deals particularly with closed-circuit sets designed for use in mine rescue and recovery operations, much of the work is applicable to other types of respiratory apparatus.

After considering the application of aerodynamic principles to breathing apparatus, Dr. Cooper reviews the effects of breathing against resistance. It is shown experimentally that the rate at which men do extra respiratory work in breathing against an external resistance is approximately the same as the rate at which a sinusoidal pump, moving the same volume of gas per minute, would do work against the same resistance. For frictional resistances this work rate can be derived if the variation of the resistance with flow rate is known. A possible limit on the acceptable resistance of a breathing apparatus is put forward in terms of the rate at which respiratory work is done on the apparatus, and a method of testing this is recommended. Finally, a number of practical suggestions are made for reducing resistance.

A few points could be faulted; for example, the repeated criticisms of the (alleged) inadequacy of official testing procedures, about the nature of which Dr. Cooper appears to be misinformed. If the tests were as described by him they would indeed be inadequate, but none of the criticisms made in the first chapter, for example, has been valid for many years. In fact, Dr. Cooper’s own work has had a beneficial effect on present testing methods. In another chapter he recommends, without supporting evidence, a total counter-lung capacity considerably greater than is usual. These, however, are only minor blemishes in a book in which the argument is presented carefully and lucidly with the aid of over 50 figures and over a 100 references. Particularly helpful is the provision in each chapter of a short introductory statement and a summary. Although opinions may differ on some of the conclusions, for example on the details of the suggested limit for resistance, fewer workers in this field could read this book without profiting from it and being grateful to Dr. Cooper for summarizing his work on resistance in this useful form.

C. R. Senneck


There are multitudes of books designed to increase the layman’s knowledge of atomic energy but very few seek to broaden the outlook and deepen the understanding of the non-specialist whose professional interests make him want to know more about those radiation health hazards that may be encountered by both the general population and the worker in industry. The publishers suggest that this book could be used by the layman, but the omission of medical terms in the glossary suggests that it is really intended for medical and semi-medical audiences—indeed a symposium for Medical Officers of Health in 1958 stimulated its production. There are 10 authors and the 11 chapters are virtually essays that aim to inform in a general way rather than instruct in the manner of a textbook.

The majority of the chapters are easy to read and understand. The chapters on the physical aspects of radiation, often a stumbling block to the medical reader, are very well done and are remarkably free of mathematics. There are clear and well-balanced surveys of dose rates from natural and man-made sources, occupational hazards, strontium-90 in food, and various public health aspects including the disposal of radioactive wastes. The chapter on biological monitoring discusses the control of accidental or occupational absorption of radioactive materials by means of excretion analysis and the measurement of radioactivity in intact man. It may be the most complicated chapter in the book but it is also one of the most rewarding.

The chapter on radiation hazards to the population and their clinical effects contains many unfortunate statements and some equally unfortunate omissions. Among other things one reads that radiation of the skin produces an erythema and can produce necrosis, but there is no mention of the intermediate state of blister formation. Radiation anaemia is said to be “due to red cell destruction” when actually it is not a haemolytic anaemia but an aplastic or hypoplastic anaemia. The role of thrombocytopenia in the anaemia is not mentioned. In the description of intestinal damage it is stated that the villi are shed when really it is the epithelium of the villi which is eventually shed, the difference being significant as it is the epithelium of the crypts rather than that of the villi which is primarily affected. A radiotherapeutic approach with its emphasis on short-term effects is not appropriate for a book orientated towards preventive medicine. Nevertheless a radiation exposure is more than once referred to as a “treatment” and after quoting the U.N. report that 200 rads may produce cataracts the author counteracts it by stating that “2,000r. of x-rays may fail to produce clinically significant cataract within five years” (reviewer’s italics). In spite of this bias, the reader who is not medically qualified might get the impression that fracture of the neck of the femur is a common occurrence after pelvic irradiation.

The reader who is not well informed on radiation topics is liable to be confused in a number of places. For example routine blood counts are admitted to be a very insensitive test for chronic irradiation (p. 65) but elsewhere a depression in the white cell count is described as being the most consistent indication of chronic radiation exposure (p. 63). On p. 68 epilation following whole-body penetrating irradiation is confused with epilation after exposure to beta particles; consequently it is not made clear that the former indicates a degree of acute damage to deeper organs, which may result in death, while the latter indicates only local damage. Even the uninitiated will realize how confused the paragraph on blood chimeras (p. 71) is when he finds a dose of radiation being described as “not large enough to kill the animal; that is, not greater than about one and a half times the LD50”—provided, of course, he knows that
LD₅₀ means a dose which is lethal to 50% of a population.
It is a pity that a book which is otherwise admirable should be marred by one chapter, and it is very surprising that the editors have not insisted on extensive alterations. The book is pleasantly produced and not very expensive. Misprints are uncommon but in the Tables of Appendix II one series of columns is without a proper heading to indicate that the energy of the gamma component is being quoted. On p. 53 the initials of one of the editors are incorrect!

E. V. HULSE


The author wrote this book because he considered existing texts inadequate. It is intended for the general practitioner and resident hospital staff as “a practical guide to the treatment of acute poisoning”. “Wherever possible full details of specific and tried remedies are given. When this is not possible the application of general principles is discussed in detail. Where controversy exists among experts an attempt is made to present both sides of the case so that the doctor in charge may make a considered choice”. These are high aims, and, as the author wrote those words in January 1961 and the book did not appear until 1962, it may fairly be supposed that he had not then found out how hard to attain these ideals were to be.

The book is sensibly planned and begins with chapters on incidence and epidemiology, diagnosis, and principles of treatment of acute poisoning. Then follow individual accounts in which the author works assiduously through all likely and some unlikely poisons, showing no signs of flagging until he reaches “motoring specialities”. At this point he appeals to the fact that the number of possible causes of poisoning is so great and the number of patients involved is so small! He has the reader’s sympathy. The task is not only impossible to accomplish in a book to be sold at a reasonable price, but, owing to the rapidly changing commercial scene nothing short of a continuously operating reference system can hope to be both up to date and comprehensive. The book ends with medico-legal aspects and an alphabetical appendix of proprietary preparations.

Unfortunately the main part of the book is marred by vague statements and terminology and by errors whose frequency is sufficient for it to be hard to acquit the author of casualness in fields where meticulous accuracy and clarity should be the order. Typical examples of these include: the table (p. 388) giving “a selection of the more frequently used poisons in Schedule I”, which lists acenite, nalorphine, pirotoxin, relaxant drugs, curariform compounds, cantharides and cyclophosphamide! Also, any reader who, like the reviewer, does not know what are “benzethidine”, “Dinosam”, “dimenoxadole and salts” and “furethidine and salts” gets no help from the inadequate index. A table of “predictable side-effects” (p. 375) is similarly erratic and is sometimes misleading (cyanocobalamin, phenothiazine). The treatments “offered” for cocaine poisoning are bizarre and potentially dangerous and are not discussed at all. It is also inappropriate to equate procainamide with neostigmine as one of the anticholinesterases.

The use of the terms simple hypotension, shock, and peripheral circulatory failure are obscure, and the author’s ideas on the therapy of these conditions are far from clear (pp. 74, 96, 99). The “so-called specific” against strychnine in the table on p. 101 receives no mention in the discussion on treatment (p. 256-7). Monoacetin is classed as “of value” in fluoracetate poisoning on p. 101, but on p. 322 it is stated that there is no report of its use in man. The alphabetical list of drugs already mentioned is carried out curiously, for where a preparation contains several important agents only one of them is recorded so that opposite Drinamyl, only amylobarbitone appears, with no mention of dexamphetamine and, opposite the similar preparation Dieded, methylamphetamine alone is recorded. The objection is not mitigated by the use of an asterisk, against Drinamyl but not Dieded, to indicate that the preparation contains “other, possibly toxic, materials”.

Many drugs are not mentioned on the pages to which reference is made in the list, and the relevance, though sometimes self-evident, is by no means always so, e.g. Dewfume (propylene dichloride), thymol. That these objections are not the result of a laudable desire to save space is shown by no less than nine entries of different forms of codeine (linctus, syrup, etc.) under its own name, though designated “proprietary”, with, opposite each, the words codeine phosphate. Similar waste of space occurs with other drugs, and it is impossible to believe that the author had any purpose in mind when he constructed these parts of the list.

Especially after reading the preface it is hard to accept without impatience the bald statement that the obsolete operation of renal decapsulation “has been practised with success” in salicylate poisoning.

The size, plan, and price of this book are such as may “fill a need”, but it will need to be purged (there is no account of purgative poisoning, incidentally) of much error before it can be recommended to general practitioners and resident hospital staff as a reliable practical guide.

D. R. LAURENCE


In the new (fourth) edition of this work the writer has emphasized the legal difference between those diseases that must be notified and those that may involve right to compensation. When both occur together we find that, according to legislation in Western Germany, there are now 47 groups of conditions.

Certain postulates are laid down regarding length of exposure to a recognized noxious agent; and it should be noted that certain forms of compensation originally intended to cover accident are now extended to occupational diseases of more insidious development.

Koelsch first describes the big group of conditions due
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