Bove and Davis’ diving medicine, 4th edition

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There are currently three major English-language textbooks in diving medicine: this book, Bennett and Elliott’s Physiology and medicine of diving (B & E) and Edmonds et al’s Diving and subaquatic medicine. All are in their fourth or fifth edition. It is inevitable, therefore, that some comparisons need to be drawn between the three and that the question be asked why this subspecialty needs three such books; surely they overlap a great deal? Clearly, Saunders consider B & E and Bove and Davis to be complementary as they publish both. B & E is regarded as the main scientific reference text with a multitude of ‘expert’ contributors and in-depth reviews of a wide range of subjects. As such, it tends not to be particularly clinically orientated, but rather is solidly grounded in the basic and applied sciences. Edmonds et al is the opposite, written by a small group of Australian authors all of whom draw strongly on their time at the School of Underwater Medicine in Sydney, and is very much a clinical textbook combined with good summaries of the relevant background theory and physiology. Being an Australian textbook it is probably less regarded in the Northern Hemisphere, and especially the USA, than it deserves.

Bove and Davis lies somewhere between the two, having a large number of contributors (over 30) but with a greater clinical emphasis to it than B & E. Therefore, in the USA which is clearly its main market, it is likely to fill the same niche as Edmonds et al does in our neck of the woods. This text is new to the reviewer, who had not read any of the previous three editions.

There are 29 chapters, ranging from an opening gambit into history and exiting with a look at US Navy diving practices, four appendices and an extensive index. Nine of the chapters are written by the same authors as the equivalent, more detailed chapters in B & E, making for some strong similarities between the two books in these areas. For instance, the chapters by Francis and Mitchell on the pathophysiology of decompression sickness and that by Bennett on inert gas narcosis and the high-pressure nervous syndrome follow closely the content and format of their contributions in B & E. This works well in the first case, but is a disappointment in the latter, leading to a not very readable account. Other authors, though including much of the same content, have altered their text to provide more clinical emphasis. This is sometimes the result of the involvement of a different joint author, as in the case of the hypothermia chapter where the inclusion of Frank Golden produces a quite different presentation.

The chapter on physics, written by Larry Taylor, a scientist at the University of Michigan, deserves special attention because most doctors tend to skip the physics sections of these books, judging by their generally poor understanding of this area of the diving environment. Taylor’s account is worth reading as it is well written with lots of examples to help. The difficulty, however, lies in the necessity to use both the English system (used in the USA) and the metric system (used pretty well everywhere else) of measurement to meet market needs, which will undoubtedly add to some readers’ confusion. There is at least one error in the calculations and figure 2.2B has been incorrectly reproduced.

Highlights for me included Richard Vann’s two excellent chapters on inert gas exchange and bubble formation, and the mechanisms and risks of decompression. Hard going, but if you want just one source to help come to grips with this difficult area then Vann’s accounts are the ones to go for. Ed Flynn contributes a chapter, full of common sense and clearly based on years of experience, on the medical supervision of diving operations that should be mandatory reading for all diving physicians. There is some duplication of information here on ENT aspects when compared with the chapter by Hunter and Farmer, but the practical clinical approach adopted by Flynn will be particularly useful for many readers. An increasing number of women dive, but there are few data regarding issues of their physiology and health. Maida Taylor brings together a wide range of material in an interesting account of current knowledge, and this chapter indicates some clear lines for future research. How divers perform underwater is reviewed succinctly by Egstrom and Bachrach; it’s not just about inert gas narcosis. Carl Edmonds’ and Richard Moon’s chapters maintain their usual high standard.

Ten chapters, about one third of the book, are devoted to specific clinical issues such as cardiovascular disease, diabetes and the neurologic consequences of diving, and are rounded off with reviews of the medical evaluation of recreational (Bove) and working (Elliott) divers. It is in this area that this text departs significantly from and is complementary to B & E. Amongst a number of interesting issues in the neurology chapter was a brief discussion of post-decompression illness chronic pain syndromes, of which the reviewer has seen several cases but about which there is little information in the literature.

So, what was disappointing? Nothing really, though Egstrom’s other contribution, on diving equipment, seemed...
somewhat dated and was supported by poor photos, often illustrating equipment of a decade ago. Three chapters by Neuman, one of the current editors of B & E, on pulmonary barotrauma, pulmonary disorders and near drowning are average, but readable. He provides no real insights into the controversy about asthma and diving. Some authors have managed to include papers from 2003 and even early 2004 in their discussions, whereas others appeared not to have made much effort to update their reference lists. Other minor omissions include inadequate discussion of the alternative descriptive system to the Type 1/Type 2 categorisation of decompression sickness and no reference in the chapter on carbon monoxide poisoning to the extensive research on mechanisms of poisoning by Gorman’s group.

Presentation of the book is good as one would expect from a major publisher, with legible typefaces and few typographical errors (one on page 117 on an equivalent air depth calculation needs correcting). However, some of the photographs and X-ray images do not reproduce particularly well, and deserve better attention in the future, whereas diagrams and tables are generally clear. The use of units of measurement used only in the USA is irritating for any non-American. Each chapter is accompanied by an extensive reference list. The one quibble about references is that they are only partially in the Vancouver format and should be fully converted for the next edition. The index runs to nearly 50 pages, but contains some errors. For instance, a check of the various entries for ‘Immersion’ revealed that four of the 10 items listed were incorrect.

This textbook is worth having, as are B & E and Edmonds et al. Any hyperbaric unit should have all three, as should all physicians working in the diving field as a regular component of their professional activities. If I had to recommend only one for healthcare workers with only an occasional diving medical involvement or just an interest, and for educated divers wishing to understand more of their body’s interaction with their watery environment, then my choice is firmly rooted in Australia and Edmonds et al’s book; a hard thing for a Kiwi to admit!

Mike Davis, Editor, SPUMS Journal

Key words
Underwater medicine, textbook, book reviews

Diving-related fatalities document resource

All the coronial documents relating to diving fatalities in Australian waters up to and including 1998 have now been deposited by Dr Douglas Walker for safe keeping in the National Library of Australia, Canberra.

These documents have been the basis for the series of reports previously printed in this Journal as Project Stickybeak.

These documents will be available free of charge to bona fide researchers attending the library in person, subject to the stipulation that the researcher signs an agreement that no identifying details are to be made public.

Accession number for the collection is: MS ACC 03/38.

It is hoped that other researchers will similarly securely deposit documents relating to diving incidents when they have no further immediate need of them. Such documents can contain data of great value for subsequent research.

The SPUMS web site is at http://www.SPUMS.org.au

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