

## REVIEWS

**Tsunamis: Their Science and Engineering.** Edited by K. IDA and T. IWASAKI.  
Reidel, 1983. 563 pp. \$113.00.

With the Pacific coastline, and in particular Japan, having suffered severely from tsunamis in the past, it was appropriate that the May 1981 International Tsunami symposium of the IUGG Tsunami Commission should be held in the Sanriku district of northern Honshu. This book contains the selected proceedings of the symposium, one of a biannual series of meetings. Of the total of 55 papers presented at the symposium, 39, giving a representative cross-section both of the contents of the meeting and of tsunamic literature, have been included in the present volume, after review. As the programme of the symposium is included in the book, the papers omitted can be noted by the reader. However, abstracts of these communications are not presented, which, given the recent decline in tsunami-related papers appearing in journals, is to be regretted.

The book opens with the welcoming addresses of the meeting and then proceeds to present the papers in seven sections, dealing with the gamut of tsunamic research activities. The first subdivision, of 2 papers, deals with tsunami impact on society and forms a good introduction to the volume, including apposite remarks on the prospect of future disasters. The second section consists of 6 contributions on tsunamigenic earthquakes and ways of connecting earthquake severity to the magnitude of the resultant tsunami. The papers are representative of the largely empirical attempts to quantify ideas in this field and contain some interesting proposals for recognizing tsunamigenic earthquakes from their Rayleigh-wave spectra.

Historical and statistical studies constitute the third section, of 9 papers. They convey a good impression of the difficulty in interpreting historical perspective. Some evidence for shelf modes playing an important role in the reception problem is given, as a result of tsunami spectra analyses. The fourth section, 4 papers on tsunami generation and propagation, is the weakest in the book. There are some parts needing greater clarity, and claims in one paper over the role of dispersion in the generation process need more convincing support. The results chiefly worry the edges of existing problems.

The next section, of 7 papers on the effects of topography on tsunami waves, is very interesting. The relatively unusual attention paid to transient, rather than steady, waves and several successful numerical experiments contribute to this. The penultimate section, of 4 contributions, deals with measures adopted in Japan to lessen the severity of tsunami impact. These include seawalls and breakwaters, and the reader is given both an idea of what has been constructed and some of the considerations used in the design process. The last subdivision, containing 7 papers on tsunami run-up, shows well the difficulty of this problem and leaves the reader with the impression that there is still a considerable distance to be covered before the run-up process is understood. It is clear, however, that progress was made by some of the papers contained herein.

To conclude, it should be mentioned that there are several drawbacks to this volume, some of which have already been described. An additional one is the lack of editorial control over the standard of English expression, which, given the large

proportion of contributors whose native language is not English and the long time between conference and publication (well over two years), is unsatisfactory. However, overall this volume is a useful addition to the literature on tsunamis, and it is to be hoped that it will remind both the scientific and political communities of the existence of these unpredictable hazards to coastal regions.

G. R. BIGG

**Axial Flow Fans and Ducts.** By R. A. WALLIS. Wiley, 1983. 444 pp. £39.75.

This is very much a book for those who need to design ducting systems or fans; it is not a book directed at those who are interested in fluid mechanics. For the latter group the style and material may well be irritating and the reader will not feel that new insights into the flow have been revealed. Where design or development aspects are being discussed the style is assertive rather than discussive. On the other hand a reader of *JFM* who needs, for example, a fan to supply a flow of gas might be well advised to read parts of this book; the author clearly has great experience as a designer and has brought together a fund of empirical information. One has confidence that his methods probably work, although it may be added that there are few examples in the book to show that this is so.

The book begins with a short guide to fluid mechanics, and this does seem a little out of place. A reader who does not feel comfortable with Bernoulli's equation would seem not to be ready to design fluid-mechanic hardware and should be directed to some excellent elementary textbooks to get a proper background. The section on boundary layers also seems to lack balance and is somewhat misleading, notably the figures, in chapter 2. Again the reader not comfortable with boundary-layer theory would do better to read, for example, Duncan Thom & Young.

To sum up, it is a book to use to meet specific needs for design guidance which, used by someone well based in fluid mechanics, will be very useful.

N. A. CUMPSTY