BOOK REVIEWS

MATHEMATICS IN BIOLOGY

Mathematical Biosciences

An International Journal. Vol. 1, No. 1 (March 1967). Edited by Richard Bellman. Pp. v+141. Subscription rate: Volume 1 (four parts), \$20.00, plus \$1.00 postage. Single copy price, including postage, \$6.50. (New York: American Elsevier Publishing Company, Inc., 1967.)

ONE'S heart usually sinks when one sees that yet another scientific journal has been launched by a commercial publishing company; already there are so many journals that one despairs of being able to keep up with the literature even in a closely defined subject. But perhaps the growth of the scientific literature should be viewed as a process of evolution by variation and natural selection. When the intellectual environment offers new ecological openings it is inevitable that new journals should be formed to provide niches for those novel ideas which cannot easily be classified under previously existing headings. At the present time there is undoubtedly a revolution afoot in the area of study which touches biology on one side and systems analysis on the other. One sign of the frenzied activity in this field is the proliferation of new names which attempt to describe this still unformed subject. To mention but a few: "Bionics", "Neurocommunications", "Ergonomics" and now "Mathematical Biosciences", which is the name of the new journal published by Elsevier and edited by Richard Bellman. Bellman founded the theory of dynamic programming, and has a mind to be seriously reckoned with. He sees the need for sophisticated mathematical models in the study of biological systems, and the first number of this journal bears witness to his faith. The papers cover a wide spectrum of problems, ranging from fairly conventional mathematical studies of biochemical kinetics, through theoretical studies of evolutionary processes and immunological responses, to what one might call "artificial biology" represented by an attempt to construct programmes which simulate meaningful human conversation. (This last paper, which is the first in the journal, obviously owes much to Weizenbaum's pioneer work at M.I.T.) Altogether a fascinating potpourri.

Mathematical Biosciences will probably serve up a lot of skimmed milk before it produces very much cream, but one should not worry too much about this; bad work does not seriously affect the production of good, and science tends to proceed by the exploration of all possible blind alleys. Much of what is published in this journal will undoubtedly infuriate those biologists who resent the intrusion of the biologically inexperienced mathematician; but if, as seems certain, the new journal publishes one important paper in a hundred it will have justified its existence.

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INFORMATION PLEASE

The Use of Biological Literature

Edited by R. T. Bottle and H. V. Wyatt. Pp. ix+286. (London: Butterworth and Company (Publishers), Ltd., 1966.) 58s.

THIS book would have been better arranged as a text dealing with the matter of the first six chapters: the

problem of the information explosion, the use of libraries, primary publications, secondary publications (abstracts, indices, reviews, monographs, textbooks, and reference books), foreign serials and translations. This would have been followed by lists of books and journals (preferably annotated) for each field of biology classified under the primary and secondary headings. As it is, the authors of the next ten chapters dealing with the various fields have mostly embedded their lists in review-type articles. The contortions of "elegant variation" this involves are often tiresome and so is the frequent repetition of matter already covered in the introductory chapters. These are the consequences of the attempted compromise between a reading book and a reference book.

The scope of biology is so vast that the coverage of each field is necessarily restricted but generally adequate. As an endocrinologist/physiologist I find my field rather cursorily dealt with (physiology is combined with anatomy and pathology in a chapter written by a pathologist) and was distressed to find no reference to the *Bibliography of Reproduction*. This is a mini-Medlars run from Cambridge which also provides at a reasonable price individually tailored bibliographies. Should the Government decide that we cannot afford the elaborate computerized systems that the Americans can, then this is the sort of service that may lie within our means even without Government aid.

It is useful (but how useful?) to have chapters dealing with patent and trade literature and amusing to have H. V. Wyatt's epilogue tilting at current foibles and fatuities of biological publication. There are appendixes on the terminology of "reprography" and a set of practical exercises based on the book and used in a graduate course on information. (I assume the misprint in Exercise 4 (7) is intended to ensure that the book has been read.)

For a reference book, the index is rather thin. Ringdoc is not indexed but is dealt with in the abstracts chapter where the publisher is given but not the information that Ringdoc is a private service to the pharmaceutical industry. This is found in the patents chapter and this is the only page reference under the publisher's entry in the index. A glossary of acronyms might also be useful—I was stumped by ABCC Technical Reports, and BEPS (page 103) is puzzling in a reference to *The Invertebrata* when two of the authors' names are omitted, though correctly given in a later chapter (page 225).

The criticisms of the form of the book do not mean that it will not be extremely useful, particularly to young biologists who have had no training in information—and that is most. It is therefore all the more pity that the publishers have costed it as a scientific book (£1 for 100 pages) and not as a reference book. It is the old story: the biologist is priced out of the market and the librarian is held to ransom.

P. C. WILLIAMS

MEDICAL FACTS

Stedman's Medical Dictionary

A Vocabulary of Medicine and its Allied Sciences, with Pronunciations and Derivations. Twenty-first edition. Pp. xlix+1836+41 plates. (Edinburgh and London: E. and S. Livingstone, Ltd., 1966.) 105s.

ONE can sympathize with the compilers of the new edition of *Stedman's Medical Dictionary* for the task which must have faced them. Since the twentieth edition of this book was published in 1961, they have found no fewer than 9,183 new words to go into it, and have had to revise the entries dealing with a further 8,897. If the *British Medical Dictionary* is the *Oxford English Dictionary* of medicine, then *Stedman's* is its *Webster*. Like *Webster*, *Stedman's* has come down firmly on the side of the view that the job of a dictionary is to record medicine as she