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An encyclopaedia of natural life

Alwyne Wheeler & James H. Price

Synopsis and Classifications of Living Organisms, 2 vols. Edited by Sybil P. Parker. Vol.1, pp.1,166; Vol.2, pp.1,232. ISBN 0-07-079031-0. (McGraw-Hill: 1982.) £150, \$205.

THESE immense and awesome volumes are certainly, even at first sight, an impressive piece of work, embracing the efforts of 174 authors in covering the entire spectrum of living organisms. Aside from the authors, some 14 section-organizing consultants and 10 editorial staff are listed; quite how many others have been involved is anyone's guess. The galaxy of talents so involved embraces many world authorities on various groups, despite the (not surprising) strong, but by no means total, bias towards the North American continent.

The general format is of chapters dealing with particular groups of organisms, written by individual authors; in complex groups where fields are studied separately, several authors have been called on for different parts of chapters. References for additional reading appear at the foot of each section or chapter, and groups of photographic plates illustrate taxa and organisms as considered appropriate by the compilers. Generally, both references and plates are thoughtfully organized, although some of the non-classic references listed for additional reading are rather dated. Some section references tend to reveal author bias, while other sections have insufficient referencing; in some cases the only citation may be given at class or subclass level and, as a result, only the most general works are cited. An opportunity to provide a lead into the more specialized literature is thus lost.

Some plates do not add a great deal to the textual matter, although any generalist using the books as a primary source of reference will probably be glad of the visual impression they provide. The selection of photographs is also uneven as many of the animals at least are clearly very dead (some of the common insects, like the mole cricket, being pinned specimens), and the omission of some really photogenic groups, such as diatoms, seems surprising. On the other hand this must be the only encyclopaedia of natural life that has no photographs of birds or mammals; in view of the prolific illustrations of these animals already available, this was a justifiable decision.

A profound disadvantage of the unavoidable division of the work into two volumes is two-fold: first, all animal groups do not occur in one volume; second, the first volume does not contain an index. The index provided at the end of Vol.II is very good in content and coverage, but it does mean that its 100 or so

pages (35,000 entries, according to the preface) are not accessible to anyone spatially separated from the second volume. Since both plates and credits for plates are listed in full in front of Vol.I but under subheads of the two volumes separately, why could not the same have been done for the index, either repeating the whole in both volumes, or as appropriate to the individual volume?

The layout is good, and information is easily absorbed from this type-face once data are located. The shortcoming in inadequate citation of literature aside, these volumes constitute an astonishing achievement and a most useful reference work. Specialists will probably disdain to use it for their own group, but its value in the reference library and to generalists in biology will be immense. □

Alwyne Wheeler and James H. Price are taxonomists on the staff of the British Museum (Natural History), London, with particular interests in fishes and cryptogamic botany respectively.

Two views of nerve cells

P.F. Baker

Physiology and Electrochemistry of Nerve Fibers. By Ichiji Tasaki. Pp.348. ISBN 0-12-683780-5. (Academic: 1982.) \$36, £23.80.

THE author of *Physiology and Electrochemistry of Nerve Fibers*, Dr Ichiji Tasaki, is an experimentalist of the very first rank. It follows that when such an individual chooses to write on a topic to which he has devoted a lifetime of effort, other students of the field will have a high expectation of the result.

It has to be said that these expectations are largely unfulfilled. Indeed, the overwhelming impression is that, with the exception of optical studies of nerve, the author has made no real attempt to come to grips with developments in the rest of the world over the past 15 years. There is, for instance, no mention of the study of single-channel conductances in either nerve cells or artificial membranes. As a result, the book provides only a very one-sided account. Obviously Dr Tasaki has every right to take up a stance that differs from the prevailing dogma; but he owes it to himself to make every effort to interpret his own interesting findings within the accepted framework before rejecting the whole fabric of modern cellular electrophysiology for a rather ill-defined alternative.

Dr Tasaki seems convinced that cellular