

treated in similar detail, all without the mixed blessing of citations from the original literature. The authors introduce some very recent work, biological and otherwise, and also give a taste of how contemporary oceanography is done. Insertion of brief essays on special topics, including a couple of speculative interviews, varies the pace for the reader.

I continue to prefer the drier, academic style of Parsons *et al.* and Valiela. Students who are mature enough to appreciate the enormous wealth of information presented by Thurman and Webber should also be curious enough to check original sources for points of evidence occasionally, and should be willing to cope with concepts in a mathematical as well as a descriptive form. □

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Ecological thoughts

John Lawton

Community Structure and the Niche.

By Paul S. Giller.

Chapman & Hall/Methuen: 1984.

Pp. 176. Pbk £5.95, \$11.95.

Predation.

By Robert H. Taylor.

Chapman & Hall/Methuen: 1984.

Pp. 166. Hbk £17.50, \$39.95; pbk £8.95, \$17.95.

PREDATION and interspecific competition are key ecological processes, although there is currently profound disagreement about their relative importance in structuring communities. Both phenomena have also spawned a diffuse and specialized literature that students and teachers alike find hard to break into. There is therefore considerable scope for good, simple introductory texts on both topics.

Giller's book has as its main theme the organization of communities, in particular the processes that control the numbers and relative abundances of species. It ranges widely to include discussions on predation, species-area relationships and food webs, although the dominant theme throughout is the concept of the ecological niche, as conceived by G.E. Hutchinson, nurtured by R.H. MacArthur and subsequently embraced by a whole generation of ecologists. In contrast, Taylor focuses on two- or three-species interactions, with a clear emphasis on mathematical rigour, testable hypotheses and the continual interplay between theory and experiment. Only in the last, short, chapter does he look at predation in communities, drawing the conclusion that "students of whole communities will need to be satisfied with a descriptive approach to static . . . patterns" — more or less what we find in Giller's book.

In general terms, therefore, the books make an interesting pair, with the potential at least to introduce students to a wide range of ecological problems and ways of thinking. Both are written for second- or third-year undergraduates, and postgraduates, with Giller's perhaps more accessible to novices and Taylor's decidedly more interesting for research ecologists of any age.

Specific details aside, I have some personal doubts about whether *Community Structure and the Niche* truly catches the spirit of its subject matter in the mid-1980s. Giller undoubtedly tries to explain controversies, and to draw attention to the uncertainties, doubts and problems that abound in this area of ecology. But he still left me with the impression that in spirit and philosophy the book could have been written in 1975. Moreover, I frequently found myself disagreeing with his main conclusions and interpretations, whilst in certain places crucial literature was ignored. A number of other things about the book also reduce its value as a teaching text. The 326 references appear in citation order (as in a letter to *Nature*), making it very difficult to follow the work of particular authors. More seriously, I frequently felt that the text was so packed with hurried references that many ideas would be unintelligible to all but the initiated. This fear was confirmed when I tested several sections on a brighter than average tutorial group. They found them cryptic and baffling. A slightly longer text, with less frenzied, fleeting allusions to everything that might be relevant would undoubtedly have made a better book.

No such criticisms can be levelled at Taylor. He explains theory and experiment with a lucid, direct style. Predator-prey interactions, ranging from protozoa, through insects, to birds and mammals, are mainly described using differential equations, but not in a way that should put off students — the mathematics is not very hard, and is made more palatable by plenty of graphical interpretations. I was particularly impressed by Taylor's careful discussions of why ecologists find it useful to construct mathematical models, and by his repeated attempts to highlight problems and difficulties, both in the construction of tractable models and in their empirical tests. In short, *Predation* should instil in young ecologists a way of thinking about problems that will be valuable whatever ecological processes they go on to study.

Predation may or may not be more important than competition as a force structuring ecological communities. Perhaps the next generation of ecologists will find such comparisons, and questions of relative importance, boring. But while we are training them to decide, I have no doubt that *Predation* provides more insights and a better foundation than *Community Structure and the Niche*. □

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Southern histories

Barry Cox

Vertebrate Zoogeography and Evolution in Australasia.

Edited by Michael Archer and Georgina Clayton.

Hesperian Press, 65 Oats Street, Carlisle, 6101 Western Australia: 1984. Pp. 1,202. A\$55. Post and packing A\$10 inside Australia, A\$14 overseas.

THIS is not so much a coffee-table book as a coffee-table in itself (area 650 cm², weight 3kg). Sixty authors have contributed 80 papers; most are concerned with Australia, but 13 deal with New Guinea, New Zealand and Lord Howe Island.

For Australians interested in biogeography and evolution, the trouble is that most books on these subjects treat Australian examples as a sort of awkward appendage, tacked on as a divine afterthought to the rest of Creation — a sabbatical daydream in which evolutionary fag-ends (for example monotremes) or pseudo-mediaeval beasts (kangaroos, wombats, moas and so on) were conjured up, their bizarreness emphasizing the sturdy normality of Northern Hemisphere animals, and their almost total lack of an evolutionary history teasing the poor palaeontologist. Australian students, in particular, have long needed a book centred on their part of the world. Well, here it is.

The first 13 contributions provide the background information relevant to Australasia in such topics as plate tectonics and palaeogeography, ecological zoogeography, the history of the climate and flora of Australia, vicariance and dispersal biogeography, and systematics. Each of the following sections on fish, amphibians, reptiles, birds and mammals commences with an account of the general evolutionary history of the group and ends with a checklist of the Australian representatives. The remaining contributions (a few being reprints of original research papers) deal with aspects of the zoogeography, evolution, ecology or discovery of Australian members of the group, or with the effects of man upon them. The book contains many figures and half-tone illustrations, and a few colour plates. The text is sometimes lighthearted in tone, and is also enlivened by occasional cartoons.

Though the quality and depth is inevitably a little patchy, this is in general an excellent student textbook. Even adding A\$14 for postage and packing, it still works out at about 0.04p per page. So students should buy it now, use it as a reference book until it's out of date — and then have a ready-made doorstep. □

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