Book review

Evolution: A Biological and Palaeontological Approach. Peter W. Skelton (ed.). Addison-Wesley, Wokingham (in association with the Open University, Milton Keynes). 1993. Pp. 1064. Price £19.95, paperback. ISBN 0 201 54423 7.

Who teaches evolution? Biologists and palaeontologists, obviously, although they rarely teach it together or even speak the same language when they're discussing it. Not so at the Open University, where the S365 'Evolution' course looks at the subject from a range of both biological and palaeontological perspectives. The students of this course are lucky enough to have the volume under review for their prescribed text; it is the most readable discourse on the subject that I have had the pleasure to scrutinize since I put down Maynard Smith's *The Theory of Evolution* many moons ago.

The vital statistics of this volume are impressive. The 1064 pages are a snip at only 1.875 p each. The book is 195 mm wide by 254 mm long by 48 mm thick and weighs as much as a laptop computer. The 17 chapters are grouped into four parts of unequal length, 'Microevolution' (8 chapters), 'Evolution of Species' (2 chapters), 'Macroevolution' (5 chapters) and 'Case Studies'. Each chapter (up to 100 pages in length) starts with a study comment and list of objectives, and concludes with a reference list and a set of self-assessment questions. Answers to these questions are printed at the back of the book, an obvious requirement that nevertheless is not included in all textbooks. Questions are also posed, in boxes, in the body of the text, which I found distracting at times, but they will undoubtedly help to keep students' minds from wandering too far. Illustrations are generally excellent, but some of the more complex figures (such as maps), which have an ornament to indicate different features of interest, may take some deciphering, as they tend to be drawn in subtly different shades of grey and green (I assume that using more colours would have raised the price). There is also a useful glossary and an adequate index. An important feature of the text is the derivation and clear explanation of statistical methodologies.

The quality of the text is absolutely first-class. Pete Skelton, apart from writing or co-authoring about a quarter of the chapters, also seems to have been the ringmaster for a circus of contributing authors which formed an integral part of a larger S365 course team. The word 'team' adequately

describes the impression that I got of how this book was written. From my own experiences as an editor, I know how the contributions of different authors can vary in style and approach even when writing on quite similar subjects. In the case of *Evolution*, the authors and editor have obviously taken huge pains to ensure that the book follows a standard pattern.

So, having enthused about the quality and quantity, what of the actual content? The breadth of *Evolution* is, I suspect, greater than will be required for most university courses. Good use is made of examples to start discussions on theoretical points, so the reader is able to determine how well, or otherwise, the data fit available hypotheses. Indeed, the authors take great care to clarify obscure points and do not favour one theory against another without due explanation. Some of the examples used were published as recently as 1992. However, I was peeved to keep reading, at least in some chapters, that hackneyed phrase 'the incompleteness of the fossil record'. The very fact that fossil data can be used to derive and test evolutionary models surely demonstrates that any incompleteness is irrelevant. Surely what is needed is an adequate fossil record, which is shown to exist by the numerous given examples. Errors are very few, but it was a surprise to find Jamaica transferred to the North American, rather than the Caribbean, tectonic plate in one diagram.

I am delighted to have this volume on my shelf as a reference, and as a very readable and up-to-date review of areas of the subject that are outside my own palaeontological evolutionary interests. I will recommend it to my own final year class. While a lot of the more biological content is outside the scope of my advanced palaeontology course, I trust that it will serve to enthuse my keener students. At under £20 it should be on the shelf of anyone with an interest in evolution, particularly new and not so new research students. However, everyone will find something of value in this treatment. One word of warning — I recommend reading *Evolution* with the book resting on a table unless you are particularly keen to build up your arm muscles!

STEPHEN K. DONOVAN
Department of Geology
University of the West Indies
Mona, Kingston 7
Jamaica