

Book reviews

Evolution (2nd edn). Mark Ridley. Blackwell Science, Oxford. 1996. Pp.719. Price £22.50, paperback. ISBN 0 86542 495 0.

The first edition of *Evolution* was a landmark undergraduate textbook. Here was a book which covered the whole of evolution and which gave complete and thorough explanations. What of the second edition? Broadly it covers the same material, ranging from absolute geological time to zygotic isolating mechanisms, via beak size, cladism, the handicap theory, the iridium anomaly, outgroups, parsimony, retroelements, titanotheres and unrooted trees. There are 23 chapters in the same five sections: Introduction, Evolutionary Genetics, Adaptation and Natural Selection, Evolution and Diversity, Palaeobiology and Macroevolution, but there are changes at all levels. Coevolution gets a chapter of its own as does the fossil record which is promoted from an appendix. Individual chapters have changed too: for example, Mukai's work on the rate of deleterious mutations is added, in some detail, to the chapter on quantitative genetics and there are new sections on the origin of scattered repeats and the possible benefits of sex in reducing numbers of deleterious mutations. In Chapter 16 asymmetric speciation is out and in comes a welcome section on speciation by polyploidy in plants. Some examples too have been improved. Out go *Panaxia*, *Larus* and the Turkana snails as examples (respectively) of selection in action, ring species and punctuated equilibria to be replaced by *Passer domesticus* in America, an updated account of *Ensatina* and Caribbean bryozoans. Although there are many such changes, they have little effect on the coverage of the subject which is still balanced and thorough. They represent an updating as reflected in the extensive list of 800 references of which around 100 are post 1993 (the date of the first edition). As in the first edition the care taken to explain ideas, theories and data is exceptional; Ridley takes the reader by the hand and patiently guides them through what is often complex material. These explanations are greatly assisted by the large number of diagrams, drawings, graphs and tables, now in two colours with two percentage tints in a tasteful shade of blue.

The net effect of these changes, I estimate, should not have led to an increase in the size of the book, but with 719 pages and weighing in at 1.8 kg, it is bigger and heavier than its 670 page predecessor. This is partly to do with layout; the section headings have moved from the left margin to the start of each section which, together with the blue line between sections, makes the appearance of the page more attractive. Also the list of contents and the index are expanded and thus much improved. In the first edition each chapter ended with a summary but now

each also has an Introduction. While this obeys the old dictum, 'say what you are going to say, say it, say what you've said', which is pedagogically sound, it is perhaps overkill. There are also four pages of colour plates. These enhance the readers' knowledge of mimicry in *Papilio memnon* and hybrid species in *Iris hexagona* but I'm not convinced the same is true for other subjects such as *Ensatina* and Darwin's finches.

Some of the extra pages can be accounted for by the addition of study and review questions at the end of each chapter (with answers). I suppose this is aimed at the US market, but do we need them? A book like this which covers so much and sets things out so clearly could threaten extinction for lecturers who teach evolution to undergraduates. Ridley might at least have left us to dream up the questions! There are some mistakes. Some are small irritants such as the q^3 on p. 101 and the Å on p. 163. However, others, for example the use of numbers for the various stages in Fig 13.3 when the legend and text use letters should have been picked up as should the disaster with the formulae on p. 158.

All in all this is an excellent book. Undergraduate teachers should have a copy; it is full of up-to-date material, nice examples and explanations of difficult topics. I doubt that many students will be persuaded to buy it, partly because of the cost and partly because of its scope. It covers too much and my guess is that in these days of modules, few students study evolution in its entirety and this deeply. It should nevertheless feature prominently on reading lists for courses in evolution at all levels and students should be referred to it constantly.

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Evolution CD-ROM. Mark Ridley. Blackwell Science, Oxford. 1996. Price £29.50 (in UK with VAT, £34.66). ISBN 0 86542 757 7

I installed this with no problems and it ran quickly and efficiently on a Pentium 75, with 8 Mb of RAM, a 1 Gb hard drive and a super VGA monitor. On my 15" screen the display occupied a rectangular panel of about 26cm by 13cm, usually subdivided into two squares. One contained text and, where appropriate, the other contained a picture, diagram or a simulation. There are 7 parts: Timeline, Classic texts, Experiments, Image gallery, Video gallery, A–Z browser and Tutorial, and they were all easy to access and use.