

historians, it is surely a point that must be taken seriously. And in a sense this book is a marvellous illustration of the element of truth in the claim. The object of study of the historian of science is the record of scientific events, in all its massive complexity, and ultimately the historian cannot escape his dependence on the record given to him from the participating scientists. This book ought to make salutary reading for professional historians, in that it realistically portrays the sheer complexity of the way science actually happens, though scientists themselves are usually blissfully unaware of many of the causal factors and forces operating. Such a subject defies easy or simple “explanations” or modes of analysis. We surely need books like this to help us to at least approach a familiarity with the facts needing explanation.

Has somatic cell genetics’ time finally come? It is possibly still too early to judge whether Professor Harris’s intimations of completion are historically justified. Is it even a distinct subject in the way this book implies? Or is it somewhat artificially defined around a supposed single future target, particularly a hoped-for cure for cancer? One suspects the story has some way still to go, especially in terms of its potential to lead to new therapies. On this and many of the issues readers are left to come to their own conclusions.

**T J Horder**, Oxford University

**Peter J Bowler**, *Life’s splendid drama: evolutionary biology and the reconstruction of life’s ancestry, 1860–1940*, Chicago and London, University of Chicago Press, 1996, pp. xiii, 525, £30.25, \$37.95 (0–226–06921–4).

Peter Bowler, Professor of History and Philosophy of Science at the Queen’s University of Belfast, is a well-known member of the Darwin Industry, and one of the most prolific historians of science at work today. For a good many years, he has been examining aspects of the history of evolutionary biology

in the post-Darwin period, and he is now one of the leading authorities on the subject for the later years of the nineteenth century and the first half of the twentieth century. This is the period covered by his latest book (his eleventh, and most substantial to date), *Life’s splendid drama*—a phrase borrowed from one of the volume’s more important figures, William Diller Matthew.

In his *Eclipse of Darwinism* (1983), Bowler drew attention to the proliferation and prevalence, indeed domination of *non-Darwinian* ideas about evolution in the late nineteenth century—*after* the so-called “Darwinian Revolution”. The world was full of ideas about orthogenesis, neo-Lamarckism, and so forth. Bowler’s earlier study of such topics is developed further here, but in such a way as to encompass a much wider field. He contends (p. 15) that in the late nineteenth century there were researches in evolutionary morphology, palaeontology, and biogeography (to which one might add embryology and taxonomy), which together “interacted to create a network of . . . debates about the course of life’s evolution on earth”.

But hitherto, Bowler argues, this has not been quite the way the matter has been seen by historians. With a tendency to view the past through the lens of present concerns, they have commonly focused attention on the debates about selection, the arrival of Mendelism, and the eventual establishment of the synthetic theory of evolution. Thus in Bowler’s view the true character of late nineteenth/early twentieth-century evolutionary biology has been somewhat distorted. Even if it be granted that selection theory was not accepted for a considerable time, there was, nevertheless, a profound shift in biological understanding brought about by transmutationist ideas. The effort to tell the story of the history of life on earth served in itself as a major research programme.

So Bowler attempts the mammoth task of depicting this complex history. He points to the difficulties that evolutionary biologists themselves constantly faced—specifically the problems involved in recognizing the

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occurrence of evolutionary convergence and parallelism. Also, they had to try to relate their ideas to geological theories about the former distributions of land masses (including possible “isthmian links”) and climatic changes.

To give structure to his monstrously large topic, Bowler focuses on a smallish number of major themes: the shape of the “tree of life”; the question of whether arthropods were a natural group (in the Darwinian sense of having a common ancestry); the events that occurred in the transition from invertebrates to vertebrates; likewise the transition from fish to amphibia; the origin of birds; the origin of mammals; and problems in biogeography. The “tree of life” problem is to some extent revisited in Chapter 7 (‘Patterns in the past’), with additional comments on the issue of mass extinctions. The book is rounded off with a chapter on ‘The metaphors of evolution’, which considers, for example, whether the political imperialisms of the period may have left their mark on biologists’ thinking about “life’s splendid drama”.

There can be no doubt that we have here a major book. The author’s erudition and command of his subject are impressive indeed. The volume will lay the groundwork for future studies, and were I to attempt to add a chapter on to ‘Darwinism and biology’ to my old textbook *Darwinian impacts* I should undoubtedly have constant recourse to Bowler’s work. For I am readily persuaded that his theses are essentially correct (though further research amongst German and more particularly French sources might perhaps necessitate some modifications). Even so, I did not find the book a joy to read. It is dense; and each chapter leaves the reader somewhat unsatisfied. Setting his face firmly against the slightest hint of “presentism”, Bowler is primarily concerned to tell, in almost positivist fashion, just what evolutionary biologists were thinking and doing in his period (roughly from Darwin to about 1940). As a result, none of the “stories” that Bowler tells has an “ending”. The issues do not really get disentangled or resolved. They are mostly just “left” (“abandoned” would be too strong a word) at about the

middle of the twentieth century.

Take, for example, the question of the debates about mammal-like reptiles and the transition from reptiles to mammals. This topic warrants a book in itself. And were anyone to undertake the task, we might have the narrative carried forward until the time when a consensus was achieved (or we could have the story of a series of consensuses). The same might be done for the debates about the origins of feathers and flight, which is a fascinating historical story, about which I would gladly know more. And so on . . .

However, as said, Bowler has other objectives in view, which I must and do respect; and if his programme is accepted, then one must willingly acknowledge that it has been amply fulfilled. But one could hardly say that we have a “rattling good story”. I venture to suggest that the absolute eschewal of the slightest hint of Whiggery may be partly responsible!

**David Oldroyd,**

The University of New South Wales

**Eva Bertram, Morris Blachman, Kenneth Sharpe, Peter Andreas, *Drug war politics: the price of denial*, Berkeley and London, University of California Press, 1996, pp. xiv, 347, £40.00, \$48.00 (hardback 0-520-20309-7); £13.95, \$17.95 (paperback 0-520-20598-7).**

The continuing battles to modify the punitive stance of the U.S. “war on drugs” have been marked by hard hitting investigative analyses forcefully advancing the reformist case. *Drug war politics* is the latest of these. Committed and activist, it nevertheless explores the issue more deeply than usual, closely illustrating how U.S. policy, in purporting to prevent drug use, actually causes more harm through deepening race and class divisions, facilitating the spread of HIV, and fatally injuring individual human rights. Meanwhile, the punitive method fails in its primary objective—to prevent or stop drug use.

How, the authors ask, can policy continue to