

bleshooting and useful tips. The level of knowledge required for effective use varies from chapter to chapter; in the case of the more involved chapters, the protocols are not as complete as in roughly equivalent texts, and referral to other references is required. For this reason the book is probably best targeted at the reasonably well informed. However, in essence the book is well compiled and a jolly good read for the practising molecular biologist.

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Natural Selection and Patrick Matthew. Evolutionary Concepts in the Nineteenth Century. W. J. Dempster. The Pentland Press, Edinburgh. 1996. Pp.365. Price £12.50, paperback. ISBN 1 85821 356 8.

There are so many things wrong with this book that one could easily overlook what an indispensable contribution it makes to the literature. After Darwin published *On the Origin of Species* in 1859, a Scottish horticulturalist, Patrick Matthew, was the most plausible claimant to insist he had published a theory of evolution by natural selection long before. He did not accuse Darwin of plagiarism, but he did want recognition, and that Darwin duly gave him. Matthew's exposition was in a few pages of an appendix to a book of 1831: *Naval Timber and Aboriculture*; so Darwin did not feel too badly about having missed it.

Traditionally historians have been content to mention Matthew, to note how marginal he was to mainstream, prestigious science and to emphasise the obscurity of his text, although it was published by well-known houses in both Edinburgh and London. When they have dwelled on his theorizing they have tended to agree that, yes, a concept very much the same as Darwin's, a concept of natural selection, is indeed there, albeit rather sketchily articulated; but that it was coupled with a catastrophist geology strongly contrasting with the uniformitarianism Darwin has learned from Lyell. More recently, following an indispensable article of 1973 by Kentwood Wells, in the *Journal of the History of Biology*, historians have looked at Matthew's life and work as a whole and made

connections, especially, between his views on the origins of species and his views on emigration and colonies. These connections have very broad significance, for they are matched in Darwin's thinking too. So, if one was standing back and asking how the theory of natural selection related to the ideology and practice of British capitalism, one might do well to concentrate more on capitalism as manifested in empire and less on capitalism as manifested in manufacturing industry.

It is a virtue of Dempster's book that it actively pursues such issues, and so advances our understanding not merely of Matthew himself but also of the integration at that time of social and biological concepts. Very useful too are Dempster's accounts of selection as a technique deployed by nineteenth-century animal and plant breeders, of Edward Blyth's study of variation in animals, and of Matthew's review of Darwin's *Descent of Man*. What, then, is wrong with this book? It would be churlish to draw up an exhaustive inventory. But readers should be warned that it is full of inaccuracies, great and small, that it is often grossly anachronistic in its interpretation, that it indulges in a chippy Scottish chauvinism that must only irritate admirers of Scottish scientific culture, and that the prose abounds with all kinds of flaws, many serious enough to render arguments and assertions incoherent or obscure.

One would be curious to know more about the history of Dempster's own book. The first edition appeared in 1983, and he explains that he has been encouraged to produce an expanded version by the trustees of the Patrick Matthew Trust whose funds covered the costs of production. Matthew, it seems, is not just a historical figure but has become once again a current cause and a living presence. Dempster writes as a partisan. Constantly complaining that scientists have never given Matthew his due, he is himself consistently ungenerous and carping about what other historians have written about his hero. But this is a familiar price to pay for learning about a minor player from the past; often only those with axes to grind will take up such a topic at all. In this case the price is well worth it.

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