

Acorns and geese after Darwin

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Barnacle Biology. Edited by Alan J. Southward. A.A. Balkema: 1987. Pp. 413. £47.

CHARLES Darwin's monographs on barnacles remain standard works on this widespread and highly modified group of crustaceans. Now, in *Barnacle Biology*, new studies have been brought together with the various aims of replacing, complementing or simply adding footnotes to Darwin's interpretations.

Here are to be found current opinions on the phylogeny and origins of the higher taxa (families and suborders). The available palaeontological evidence is summarized in a readable chapter and there are contributions on larval form and function; that on balanomorph (acorn barnacle) larvae is likely to prove particularly useful for teaching. We are also given a detailed and readily interpretable review of feeding and other functions of the cirri (modified appendages). It is notable that comparative zoologists still have a considerable part to play in integration of the evolutionary, palaeontological and ecological strands into a vision of form and function of extant animals.

The sexual antics of barnacles prompted Charnov to develop models to account for their various types of reproduction. He discusses them in his chapter. Austin and Dando review methods of analysis of barnacles' small and difficult chromosomes, and the use of polymorphic enzymes to shed light on hermaphroditism, self-fertilization and taxonomic problems.

More practical aspects — how barnacles settle and adhere, and how to prevent both activities — are covered in sections on fouling. Gregarious settlement by larvae has often been reviewed previously; here, the chemistry of the proteins responsible for inducing settlement is given prominence, as is the role of proteinaceous adhesives left by cyprids when they are exploring a surface before they finally settle. Both are important in determining how, where and when barnacles will settle, and discussion of them leads to a good account of the application, mechanisms and effectiveness of anti-fouling treatments.

There are reviews of many other aspects of the biology of barnacles. These contributions fall into two groups. The first, covering such topics as the circulatory system, lipid metabolism, structure of shells, endocrinology and excretion, provides comparisons between barnacles and other crustaceans. These are a mine of useful

information; anyone interested in the ecology or general biology of barnacles will want to read them. The second group, of two chapters only, is concerned with the neuromuscular system. These articles tell us not so much about barnacles themselves, but a great deal about how useful barnacles are for learning about other types of animals.

The two chapters on ecological relationships, and settlement and competition, are disappointing. They miss the variety of non-linear interactions of barnacles with other animals. The alternative outcomes of such interactions are emerging from recent experimental studies of the complex roles that barnacles have in the structure of intertidal assemblages. More critical evaluation of the worth of experimental ecological data would have made these chapters much better; for example neither

of them discusses the consequences for ecology (of barnacles and, possibly, generally) of recent models formulated by Roughgarden and his co-workers.

The book is dedicated to J. H. Crisp. Such *Festschriften* are often patchy, but in this case Southward has done a splendid job of editing. The volume is comprehensive and well organized, and each author seems to have been given a well-defined brief. Non-ecologists can learn a great deal from it; ecologists can learn even more, because the authors provide so many good syntheses outside that field. Darwin's monographs have apparently been replaced by a worthy successor, albeit one unlikely to stand for so long the tests of time. □

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Attitudes to AIDS

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The Search for the Virus: The Scientific Discovery of AIDS and the Quest for a Cure. By Steve Connor and Sharon Kingman. Penguin: 1988. Pp. 230. £3.95.

WITH ITS implication that here is an account of the early work leading up to the realization that AIDS is a sequel to a specific infection, and of the subsequent identification of the infecting organism, the title of this book whets the appetite. Sadly, that appetite is likely to remain unsated.

It is not entirely clear at whom the book is aimed. Certainly, readers of popularized science, as exemplified by *New Scientist* for whom Connor and Kingman both write, will be at home with the depth and style of presentation. Parts of the book have already appeared in print, and the certain lack of fluency may be a result of an imperfect melding of the original manuscripts. In the first two chapters it is disconcerting to be continually moving backwards and forwards between 1981 and 1988, and dates in between, which makes it difficult to get a feel for the sequence of events and changing attitudes. A more specific criticism is that, as in their original articles, the authors take a partisan stance for the Pasteur Institute (Montagnier) and against the National Institutes of Health (Gallo) in the dispute over who discovered HIV. That dispute was more between patent agents than between the scientists, and both groups have over the past five years collaborated fully with their counterparts in other countries. That should not be forgotten.

The first 30 or so pages contain a useful if salutary review of the identification of the infectious nature of AIDS, whilst the following section, of the same length, is

devoted to an exposé of the Gallo-Montagnier affair. Finally purged, the reader emerges into the remaining two-thirds of the book.

Here the treatment is better balanced but somewhat superficial. The authors pay lip service to the idea that the serological test for antibody to HIV (anti-HIV) was unsuitable for diagnostic use because "the test was made in order to stop infected people from donating blood. . . . The use of the test as a diagnostic tool . . . was in fact a spin-off of this" (p.65). If anything, the blood-bank screening was the spin-off. More importantly, although Connor and Kingman imply otherwise, it is unlikely that the origins of the anti-HIV test had anything to do with the emergence of ethical problems related to its use.

The chapter on vaccines suffers not only from being removed from the chapter on virus structure, but again from shallowness. Thus it is stated that, alone, it is the variability of the virus that hampers production of a vaccine. This is one, but only one, aspect of the difficulty of producing HIV vaccines. A more robust and perhaps conventional account of vaccine and protective immunity (and the absence of it in HIV-infected persons) would have been of greater benefit for the non-specialist reader.

Parts of this book are interesting, but the interest at times borders on the prurient. For example, the descriptions of the techniques of obfuscation used by the authorities in the United States are not flattering and will come as a surprise to some readers. These days there is a plethora of AIDS books milling around on the starting line, and this one — though out of the stalls — is unlikely to be a winner. □

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