

## Reviews

**ANTARCTIC FISH AND FISHERIES.** Karl-Hermann Kock. 1992. Cambridge: Cambridge University Press. xvi + 359 p, illustrated, hard cover. ISBN 0-521-36250-4. £55.00.

Ichthyologists and fisheries scientists have been eagerly anticipating this book about Antarctic fish for some time because the literature is scattered among the reviewed and 'grey' press, and it is also published in a diversity of languages reflecting the international nature of activities in the Southern Ocean. With this book Karl-Hermann Kock has achieved an excellent assimilation of the current literature to produce an authoritative and readable reference work.

The account is systematically divided into two major sections; the first is about the biology of Antarctic fish, and the second describes Antarctic fisheries. The initial section begins with a succinct description of the environment and the current wisdom about the evolution of Antarctic ichthyofauna as a result of progressive cooling of the region during the past 40 million years. Nearly 300 species of fish have been described from the Southern Ocean, and there follows a clear account of their classification, composition, and geographical and bathymetric distributions. Ice as a major forcing-factor in the marine ecosystem is perhaps the most important parameter that characterises the Antarctic marine environment. Kock introduces the reader to the concepts of the 'ice-free,' 'seasonal pack-ice,' and 'high Antarctic' zones as the major habitat divisions and describes their assemblages, focusing on the krill-fish and ice associated communities. Thereafter follow chapters about the biology of the Notothenioidei, the sub-order of fish that have evolved to fill most available niches in the Southern Ocean, dominate the neritic waters of Antarctica, and comprise the bulk of fin-fish in commercial catches.

The chapters on distribution, life-history, and development of Antarctic fish are well presented, but Kock is not a physiologist, which is most evident in his chapter devoted to their adaptation to the environment. Antarctic fish have unique physiological and biochemical adaptations to enable them to successfully inhabit an environment at or near the freezing point of sea-water, where temperature varies very little but the light/production regime varies considerably over the annual cycle. This chapter summarises information about lack of haemoglobin, freeze resistance, and anatomical adaptations, but loses objectivity by seeming to support the now-disavowed phenomenon of 'cold adapted metabolism.' This term was coined during the 1960s for a phenomenon that was more the result of experimental artifact than genuine adaptation. Physiologists are still struggling to understand the true nature of the adaptations of Antarctic fish to the Antarctic ecosystem

and for a broader view readers would be well advised to review these topics in a recently published symposium proceedings: *The biology of Antarctic fishes* (di Prisco and others 1992).

To manage fish stocks effectively, it is imperative to have a knowledge of the rate of growth of exploited species and to have agreed techniques for determining the age of individuals. Kock describes the progress made in estimating the age, growth, mortality, and biomass among Antarctic fish and alludes to fish populations having declined as a result of over-exploitation and having failed to recover as a result of a lack of knowledge about these key aspects of their biology. Predator/prey interactions are considered here as well as the role of parasites among Antarctic fish. There is an interesting discussion about the consumption of fish by predators and a recognition that in some areas there may well be direct competition between the natural predators and commercial-scale fisheries. This initial section concludes with thoughtful suggestions about future themes for research.

The second section of the book is devoted to an account of the development, methodology, products, research, and conservation of fin-fisheries in the Southern Ocean. These are topics about which Kock is especially qualified to describe and discuss since he has had an active participation in the field during research and stock assessment cruises since the 1970s and direct involvement in development of conservation measures under the aegis of the Commission for Conservation of Antarctic Marine Living Resources (CCAMLR) since its inception during the early 1980s. He starts with a description of the commonly exploited and by-catch species, illustrating these with useful half-tone photographs. The following chapters cover the history of the fisheries, the fishing grounds, and the techniques applied for detection and capture, as well as cataloguing the range of marketable products. Throughout the chapter on the history of the Southern Ocean fishery, one is aware of a certain undercurrent of discomfort when Kock relates yet another case-history about the results of exploiting a marine resource without effective controls and insufficient knowledge of the species. Commercial-scale fishing in the Southern Ocean, largely by the pelagic 'eastern block' fleets, greatly reduced the primary fish stocks during the 1970s and then proceeded to successively exploit alternative species until few were left by the 1980s. International concern provided the environment in which effective management controls could be established, but these have only provided proper protection during the past few years. Another example of too little, too late, this case-history will be of great interest to industrial historians as well as fisheries biologists. Kock nicely concludes this section with a discussion of various

approaches to managing Antarctic fisheries and the prospects for more effective management in the future.

This section of the book is followed by three annexes reproducing the published conservation measures introduced by CCAMLR, the equivalent measures introduced for the peri-Antarctic islands and Antarctic territory administered by the French, and a statement to resolve potential resultant ambiguities. There are also a glossary of terms and acronyms, a useful index, and an extensive bibliography amounting to no fewer than 43 pages.

Kock has produced an informative and authoritative account about Antarctic fish that will serve as a general reference on the subject for years to come. It is gratifying to note that the book has been produced to a high standard, which is very necessary because this publication will inevitably have to withstand heavy use by specialist polar biologists and general readers alike, and may, in some part, justify the relatively high cost. (Martin G. White, British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET.)

#### References

di Prisco, G., B. Maresca, and B. Tota (editors). 1991. *The biology of Antarctic fishes*. Berlin: Springer-Verlag.

**THE MYTH OF THE EXPLORER: THE PRESS, SENSATIONALISM, AND GEOGRAPHICAL DISCOVERY.** Beau Riffenburgh. 1993. London: Belhaven Press, in association with the Scott Polar Research Institute; New York: St Martin's Press. ix + 226 p, illustrated, hard cover. ISBN 1-85293-260-0. £39.50.

At a time when the news media increasingly are having to defend themselves against charges of purchasing, controlling, and trivializing the news, *The myth of the explorer* arrives to remind us that, while the technology of delivering news might have changed radically in the last century, the type of people who are in charge of the news business has not.

News is what sells. News is what people want to read. But mostly, news is what the people in charge of the news business say it is. And the wisest of these knew in the nineteenth century, just as they know now, that without an audience to buy the news, there is no news, or, at least, no commercially viable news industry.

Taking place primarily during the half-century between 1860 and 1910, and set against the Victorian motif of global exploration, *The myth of the explorer* is a valuable, and extremely readable, chronicle of an age before television and satellites, of a time when news could be and often was privately controlled by those wealthy enough to sponsor and, therefore, create it.

As the nineteenth century passed its midpoint, rival newsmen whetted the public's appetite for sensationalism by privately sponsoring explorer-correspondents in Africa. Later still, newspapers on both sides of the Atlantic bankrolled expeditions to the northern polar regions, the principal aim of which was getting a leg up on their journalistic competitors. To the extent that the public's knowledge of unknown places and conditions was ex-

panded as a result of this competition, so much the better, but such a happenstance was little more than a serendipitous by-product of what were fierce personal and business rivalries.

While nineteenth-century British and American explorers initially might have had the best of scientific intentions, as far as their newspaper sponsors were concerned, the *raison d'être* for all this charging off into subtropical jungles or frigid polar climes were those two old standbys — fame and fortune.

For the few directly involved, it was a game in which it appeared everyone could win. Newspaper owners used their hired explorers, and explorers used their wealthy patrons, each group outwardly espousing platitudes about increasing the world's understanding, but really, for the most part, viewing each other as little more than a means to an end: ego gratification and personal wealth, both, if possible, to be earned at the expense of those who would dare to challenge them.

As Riffenburgh rightly observes when describing the nastiness surrounding the issue of who really was the first man at the North Pole, 'the controversy was as much a competition between these newspapers [*The New York Herald* and *The New York Times*] as it was a feud between the rival explorers [Dr Frederick A. Cook and Robert E. Peary]' (page 1).

And what a competition it was!

Not only a contest among newspaper moguls and their paid champions, the frenzy surrounding this era of global exploration also was a nationalistic competition between the American and English media. Fortunately, in relating how this contest played out, *The myth of the explorer* describes well some of the personality differences between the world's two greatest English speaking peoples, at least as reflected by what they liked to read.

'The newspapers in the US presented more exciting accounts...the English built images based on overcoming appalling conditions that were, to a great extent, of their own making' (page 35), Riffenburgh writes. But after a while, when it became obvious that excitement and sensation sold more readily than did tales of bravely fighting the good fight only to come up short, some of the more commercially enlightened leaders of the English press succumbed, however grudgingly, to the American diet of self-promotion, scandal, and increasingly lurid reporting.

Not that this was a change that went over well in all quarters of a nation where newspaper readership largely had been confined to the habitués of the genteel parlors and smoking rooms of the upper classes. As a worried G.M. Trevelyan commented, 'The Philistines have captured the Ark of Covenant [the printing press] and have learnt to work their own miracles through its power. "The pen," as our grandfathers optimistically observed, "is mightier than the sword." Mightier indeed, but, as we now have learnt, no whit more likely to be in good hands' (page 46).

In no time, leading English journalists showed that they were every bit as adept as their American cousins in creating and then building up their heroes, only later to tear