

BOOK REVIEWS

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FARANDA, F. M., L. GUGLIELMO, AND A. IANORA [EDS.]. 2000. **Ross Sea ecology: Italian antarctic expeditions (1987–1995)**. Springer. xx + 604 p. \$242. ISBN 3-540-65372-4.

Antarctic science has an inspirational dimension. Although the primary goals of many legendary Antarctic expeditions were non-scientific, nearly all had scientists on board (e.g., Robert Clark and James Wordie were the biologist and geologist on Shackleton's *Endurance*, and Edward Wilson and Apsley Cherry-Garrard were on Scott's *Discovery*). Marine scientists played a prominent role in the exploration of the Antarctic, and their exploits have been passed down to today's polar scientists. To be infused with the wonders of Antarctic science one has only to consider the navigational (and survival) capabilities (and instincts) of Frank Worsley on the *James Caird*, or the incredible hardships that Cherry-Garrard withstood during his winter trek to collect emperor penguin eggs for embryological studies. Polar studies still involve substantial hardships and risks, and the opportunity to contribute to the evolving body of knowledge about such remote places continues to be a challenge to us all.

The Ross Sea has played a prominent role in Antarctic exploration. It was the base for Scott's ill-fated attempt to reach the South Pole, Shackleton's prior attempt, and other exploratory efforts. The region was first sampled for science over 150 years ago during James Ross's cruises in the 1840s. Scientific efforts continued with the *Discovery* and *von Humboldt* cruises in the 1930s, and intensified during the first International Geophysical Year in 1957. Oceanographic cruises to the region became common during the period 1960–1990, after which the Ross Sea was a focus for many modern, multidisciplinary oceanographic studies, such as the recent U.S. Southern Ocean JGOFS project. The Ross Sea is clearly a scientifically fascinating (and in many ways unique) area relative to other Antarctic subsystems, and much remains to be learned about it, particularly in view of what we now know about the distributions of phytoplankton, water masses, and birds.

The present book is a collection of 43 papers that largely deal with the Ross Sea. Most of the authors are members of the Italian Antarctic research community, with a handful of North American and European contributions. There are sections covering biogeochemical processes, circulation, nutrients, particulate organic matter, phytoplankton, zooplankton, krill, nekton, and benthos. As with any book of this type, the contributions vary widely in thoroughness and clarity. Particularly excellent are the paper by Gambi et al.,

which analyzes 83,000 specimens to assess biological interactions in the benthos, and the one by Monti and Fonda Umani, who provide a thorough taxonomic description of microzooplankton. Most of the papers are descriptive, providing a wealth of data that others could use to model trophic dynamics and formulate hypotheses about the controlling processes in this region. A few papers already take this step, focusing on processes, models, and interactions. In any case, it is very useful to have a condensed version of Italian research completed in this area made available to the broader community.

This book is complementary to Hempel (1993) and recent volumes of the Antarctic Research Series (e.g., Jacobs and Weiss 1998; Jeffries 1998; Lizotte and Arrigo 1998), the latter three containing numerous papers about recent investigations in the Ross Sea. Further synthetic analyses of parallel systems within the Antarctic (e.g., from the Weddell and Bellingshausen Seas) would be fruitful.

The book is well produced, with a complete subject and taxon index; the latter is particularly welcome because it allows papers that refer to specific taxa in the region to be easily located. Unfortunately, the book's high cost will preclude its purchase by all but highly motivated individuals and libraries. This will lessen the impact of this useful book, which provides important insights and summaries of work on marine chemistry, biological oceanography, and marine ecology in the Ross Sea at the end of the millennium. I congratulate the editors for producing this book; it will be fascinating to see what new scientific paradigms grow from these roots in the coming decades.

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